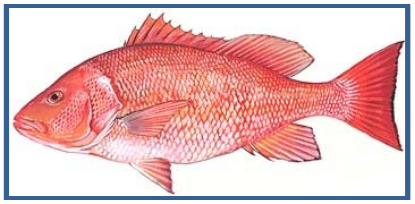
SUMMARY OF AMENDMENT 17A TO THE SNAPPER GROUPER FISHERY MANAGEMENT PLAN (AMENDMENT 17A)



The South Atlantic Fishery Management Council (Council) is developing regulations for red snapper in order to end overfishing and rebuild the stock. The regulations are expected to be implemented early in 2011. The stock status is based upon a red snapper stock assessment that was completed in 2008. A new red snapper stock assessment is currently underway; results will be presented to the Council at their December 2010 Council meeting. Regulations could change based upon that assessment.

This document is intended to serve as a SUMMARY for all the actions and alternatives in the Amendment 17A. It also summarizes the expected biological and socio-economic effects from the management measures.

Table of Contents for Actions in Amendment 17A

Background

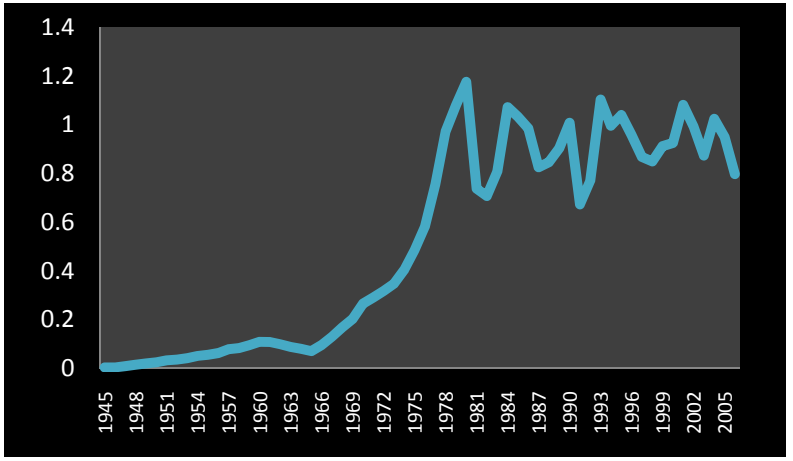
The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) requires the Regional Fishery Management Councils and NOAA Fisheries Service to prevent overfishing while achieving optimum yield (OY) from each fishery. When a stock is undergoing overfishing, measures must be put in place to end overfishing immediately upon implementation. In cases where stocks are overfished, the Councils and NOAA Fisheries Service must implement rebuilding plans.

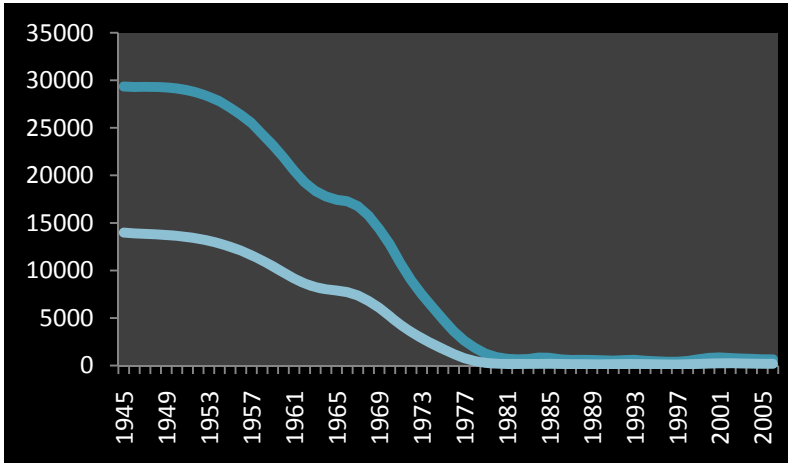
The most recent assessment for the red snapper stock in the South Atlantic shows that the stock is experiencing overfishing and is overfished (SEDAR 15, 2008). A new benchmark assessment for red snapper is scheduled for 2010.

Overfishing
A rate or level of fishing mortality that jeopardizes the capacity of a fishery to produce the maximum sustainable yield (MSY) on a continuing basis.

Overfished
When a fish stock is sufficiently small that a change in management practices is required to achieve an appropriate level and rate of rebuilding.

OVERFISHING is occurring at a high degree
(This is a graph of red snapper mortality rate from fishing activities over time)





The stock is severely OVERFISHED.
(This is a graph of biomass in pounds (top line) and spawning stock biomass over time)

Purpose and need of the proposed action

The *purpose* of Amendment 17A is threefold: (1) to implement management measures to end overfishing of the red snapper stock in the South Atlantic immediately upon implementation, (2) to rebuild the stock so it may ultimately produce optimum yield (OY), and (3) to minimize to the extent practicable adverse social and economic effects expected from the first two items.

The *need* for the action is to bring the red snapper stock back to a level that will produce optimum yield (OY). By allowing the red snapper stock to increase in biomass and maximize its reproductive potential, the population will again produce the optimum yield (OY). Optimum yield (OY), the ultimate goal of any fishery management plan, is the level of harvest that provides the greatest economic, social, and ecological benefit to the nation.

List of Management Actions

There are five *actions* in Amendment 17A that will accomplish the purpose and need.

(1) Establish a maximum sustainable yield proxy for red snapper
(2) Establish a red snapper rebuilding plan
  a. Rebuilding schedule (timeline)
  b. Rebuilding strategy, optimum yield, annual catch limit and accountability measures
(3) Establish red snapper management measures
(4) Require the use of circle hooks
(5) Establish a red snapper monitoring program

Each action has a range of *alternatives* in order to accomplish the purpose and need. Alternatives are developed for Council members and the public to weigh biological, economic and social impacts. The public is given the opportunity to comment on the alternatives as well. The range must include at least the no action (to do nothing) and preferred (the Council's choice) alternatives.

Red Snapper Life History – *An Overview*

The red snapper is found from North Carolina to the Florida Keys, and throughout the Gulf of Mexico to the Yucatan Peninsula in waters ranging from 33-623 feet . Adults are usually found over rocky bottoms. Juveniles inhabit shallow waters and are common over sandy or muddy bottoms. Red snapper do not migrate but can move long distances. They live in both pelagic (open ocean) and benthic (ocean bottom) habitats during their life cycles.

The spawning season for red snapper varies with location, but in most cases occurs nearly year round. The spawning season off the southeastern United States extends from May to October, peaking in July through September. Females are mature at 11 to 13 inches total length. Red snapper eat fishes, shrimps, crabs, worms, other invertebrates, and some plankton.

Red snapper can attain sizes as great as 40 inches total length and 50 lbs. The 2008 stock assessment for South Atlantic red snapper indicated that red snapper can live to a maximum of 54 years, far longer than the previous (1997) estimate of 25 years. Red snapper in the Gulf of Mexico have been reported up to 57 years old.

Among red snapper, larger fish aren't always older fish. There is a great deal of variability in the age of red snapper at larger sizes. For example, the average size of a 10 year old red snapper is around 32 inches, but 10 year old fish range in size from 27 to 40 inches in length. Fish are currently being caught before they become old enough to reach their peak reproductive levels. Increasing the abundance of older, mature fish is important to long-term sustainability.

The red snapper stock is part of the snapper grouper multi-species fishery with many species occupy the same habitat at the same time. For example, red snapper co-occur with vermilion snapper, tomtate, scup, red porgy, white grunt, black sea bass, red grouper, scamp, and others. Because red snapper are part of a multi-species fishery, they can be incidentally caught and killed when fishermen target co-occurring species.

❖ Action 1. Establish a Maximum Sustainable Yield (MSY) proxy for red snapper

The MSY alternatives are in Table S-1. Under the Magnuson-Stevens Act the Council is required to set MSY. If there are not enough data to establish MSY, a proxy must be used. A proxy is a place-holder until sufficient data become available to estimate MSY.

Table S-1. MSY and MSY proxy alternatives for red snapper.

Alternatives	Equation	F_{MSY}	MSY Proxy Values (lbs whole weight)
Alternative 1 (No Action)	MSY equals the yield produced by F_{MSY}. $F_{30\%SPR}$ is used as the F_{MSY} proxy.	$F_{30\%SPR}$[1]= 0.148[2]	2,431,000[3]
Alternative 2 *Staff recommends consideration of Alt. 2 as an alt.*	MSY equals the yield produced by F_{MSY} or the F_{MSY} proxy. MSY and F_{MSY} are recommended by the most recent SEDAR/SSC.[4]	$F_{40\%SPR}$= 0.104[2]	2,304,000[5]
Alternative 3 (Preferred)	MSY equals the yield produced by F_{MSY} or the F_{MSY} Proxy, MSY and F_{MSY} are recommended by the most recent SEDAR/SSC[4] . F_{MSY} proxies will be specified by the Council.	$F_{40\%SPR}$=0.104[2]	2,304,000[5]

[1]Prior to SEDAR 15 (2008), Potts et al. (2001) estimated $F_{30\%SPR}$= 0.40.
[2]Source: Red Snapper Projections V dated March 19, 2009
[3]The value for MSY was not specified in Amendment 11. Based on SEDAR15 (2008) $F_{30\%SPR}$ = 0.148; yield at $F_{30\%SPR}$ = 2,431,000 lbs whole weight (Table 4.1 from Red Snapper Projections V dated March 19, 2009).
[4]The Review Panel from SEDAR and the SSC recommended a proxy of $F_{40\%SPR}$ for F_{MSY}
[5]The values for MSY and $F_{40\%\,SPR}$ are defined by Red Snapper Projections V dated March 19, 2009. The range of MSY from sensitivity runs is 559,000 lbs whole weight to 3,927,000 lbs whole weight.

Maximum Sustainable Yield (MSY)
Largest long-term average catch or yield that can be taken from a stock or stock complex under prevailing ecological and environmental conditions.

- MSY = Maximum Sustainable Yield
- The Council must set MSY
- There currently is not enough information to calculate MSY for red snapper. Therefore, a proxy must be used
- A proxy is a placeholder until sufficient data become available to estimate MSY.

Impacts from Action 1 (Establish MSY Proxy)

Biological

Alternative 3 (Preferred) is based on the Council's Scientific and Statistical Committee's (SSC) recommendation and would specify an MSY proxy equal the yield at $F_{40\%SPR}$. Alternative 3 would establish a new proxy for F_{MSY} not previously used for red snapper, which is more conservative than the No Action proxy of $F_{30\%SPR}$. Alternative 3 which uses $F_{40\%SPR}$ as a proxy for F_{MSY} is more conservative and provides greater assurance overfishing would be ended and the stock would rebuild within the specified time as the rebuilding goal (SSB_{MSY}) is higher (Table S-2). Therefore, the biological benefits of Alternative 3 for the red snapper stock would be greater than **Alternative 1 (No Action)** because Alternative 3 would allow for less harvest and there would be a greater probability overfishing would end and the stock would be rebuilt to SSB_{MSY}. The difference between **Alternative 2 and 3** is that in **Alternative 2** the proxy from SEDAR/SSC is used and in **Alternative 3** the decision of the proxy is made by the Council.

Table S-2. A comparison of the rebuilding attributes when using two different F_{MSY} proxies.

	F_{MSY} Proxy	
	$F_{30\%SPR}$	**$F_{40\%SPR}$**
Rebuilding goal (SSB_{MSY})	Lower (13,283,000 lbs)	Higher (17,863,000 lbs)
ACL in Year One (2010)	Higher	Lower
OY at Equilibrium	Higher	Lower
Years to rebuild to SSB_{MSY}	Less time	More time
Probability of rebuilding to SSB_{MSY}	Higher	Lower

Socio-economic

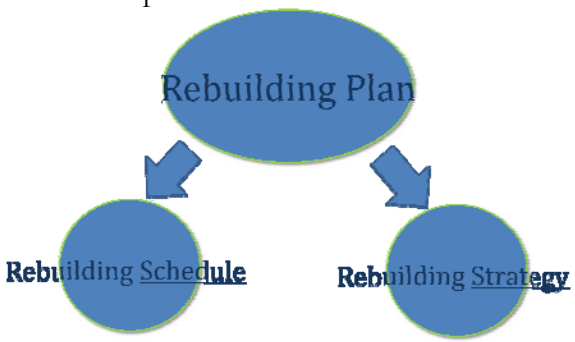
As the yield at $F_{30\%SPR}$ is greater than the yield at $F_{40\%SPR}$, a F_{MSY} proxy that is too conservative could have unnecessary negative social and economic effects in terms of more restrictive management measures including larger area closures. In principle, more stringent measures would logically be required under an MSY alternative that is more conservative from a biological standpoint; conversely, less stringent measures would be required under an MSY alternative that is less conservative. As with any fishing regulation, the economic issue involves the balancing of short-term costs and long-term benefits. The economically preferable MSY proxy choice would be one that results in the highest net economic benefits over time. In 2003-2007, the average combined commercial and recreational red snapper landings were approximately 440,000 pounds. In contrast, the MSY proxy could yield 2.431 million pounds (MP) under **Alternative 1 (No Action)** and 2.304 MP under both **Alternatives 2 and 3 (Preferred) once the stock is rebuilt**. This wide gap between current landings and potential landings has at least two implications. First, both MSY proxy options would require stringent management measures to rebuild the red snapper stock. Second, there is a relatively high likelihood that future benefits from the fishery would outweigh the costs of implementing stringent management measures.

What does this table mean?

In **Action 1** (MSY Proxy), the Council is deciding on what proxy to use to determine MSY. A proxy must be used as there is not enough information to specify MSY for red snapper. The two options under consideration are to use either $F_{30\%SPR}$ or $F_{40\%SPR}$. This table compares the two options. Basically, the use of $F_{40\%SPR}$ as a proxy for F_{MSY} is more conservative and provides greater assurance overfishing would be ended and the stock would rebuild within the specified time as the rebuilding goal (SSB_{MSY}) is higher.

❖ Action 2. Establish a rebuilding plan for red snapper

A **rebuilding plan** is a plan to recover overfished stocks to a sustainable level (B_{MSY}) within a specific period of time. Rebuilding **schedules** and **strategies** are two components of a plan.



Rebuilding Plan
A plan to recover overfished stocks to a sustainable level within a specific period of time.

B_{MSY}
Biomass when fishing at the maximum sustainable yield. B_{MSY} is often used as a biological reference point in fisheries management.

a) Rebuilding schedule

Alternatives for the **rebuilding schedule** are in Table S-3. The Council must choose the time period during which to rebuild the overfished red snapper stock. The Magnuson-Stevens Act and subsequent guidance sets a minimum and maximum amount of time the Councils have to rebuild overfished stocks. This range depends on several factors including the life history of the stock and the level of depletion of the stock.

Table S-3. Rebuilding schedule alternatives for red snapper.

Alternative	Year One	Time Period Allowed by Law	Years to Rebuild to Goal (SSB_{MSY})
Alternative 1 (No Action)	Do not implement a rebuilding plan		
Alternative 2	2010	Shortest (15 years)	2024
Alternative 3	2010	Mid-point (25 years)	2034
Alternative 4 (Preferred)	**2010**	**Longest (35 years)**	**2044**

- The Council must establish a **rebuilding schedule**.
- A **rebuilding schedule** specifies the number of years to recover the stock; this choice will affect the rebuilding strategies and management measures chosen.
- **The Council's preferred option is to take the maximum amount of time allowed by law (35 years) to rebuild the stock.** The Council believes this minimizes the expected adverse social and economic impacts to the fishing industry

a) Rebuilding strategy (includes optimum yield, annual catch limit, accountability measures)

The **rebuilding strategy** specifies the maximum rate of fishing mortality allowed during rebuilding. **Each strategy alternative has a corresponding Optimum Yield (OY) and Annual Catch Limit (ACL) (Table S-4).** The *OY* at equilibrium is the amount of catch that will provide the greatest overall benefit to the nation when the red snapper stock is rebuilt. Think of this as the long-term goal in terms of the poundage of red snapper in the ocean. The *ACL* is the level of annual catch (pounds or numbers) that triggers accountability measures to ensure that overfishing is not occurring. Accountability measures are discussed in the next section. The Council establishes the ACL and this number cannot exceed the Acceptable Biological Catch recommendations from the scientists. ACLs can be established for each sector (e.g., commercial, recreational) and would be called "sector-ACLs".

Table S-4. Rebuilding strategy, OY, and ACL alternatives for red snapper.

Alternatives	Rebuilding strategy (F_{OY} Equal To)	ACL in Year 1 of Rebuilding (2010)[1, 2]		OY Proxy Values at Equilibrium (lbs whole weight)
		Sub-Alt. A (Preferred)	Sub-Alt. B	
Alternative 1 (No Action)	$F_{45\%SPR}$	Not specified		2,196,000
Alternative 2	$85\%F_{40\%SPR}$	0	89,000	2,199,000
Alternative 3	$75\%F_{40\%SPR}$	0	79,000	2,104,000
Alternative 4	$65\%F_{40\%SPR}$	0	68,000	1,984,000
Alternative 5 (Preferred)	**$97\%F_{40\%SPR}$**	**0**	101,000	**2,291,000**
Alternative 6	$85\%F_{30\%SPR}$	0	125,000	2,392,000
Alternative 7	$75\%F_{30\%SPR}$	0	111,000	2,338,000
Alternative 8	$65\%F_{30\%SPR}$	0	97,000	2,257,000
Alternative 9	$98\%F_{30\%SPR}$	0	144,000	2,464,000

[1]For alternative 2-9, the ACL specified for 2010 would remain in effect beyond 2010 until modified.
[2]In Amendment 17A, the ACL and AM options are tied together. See the next section for the AM alternatives.

Rebuilding Strategy
The fishing rate that will result in a rebuilt stock within the designated rebuilding schedule.

Optimum Yield (OY)
The amount of catch that will provide the greatest overall benefit to the nation, particularly with respect to food production and recreational opportunities and taking into account the protection of marine ecosystems.

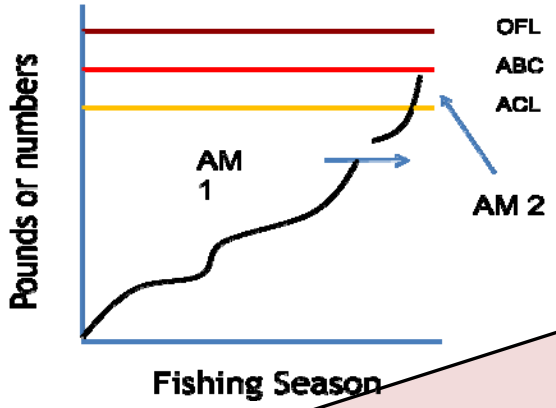
Annual Catch Limits (ACL)
The level of annual catch (pounds or numbers) that triggers accountability measures to ensure that overfishing is not occurring.

Based on the Council's preferred alternative (highlighted in table):

b) The rebuilding strategy sets the maximum fishing mortality allowed during rebuilding to "**$97\%F_{40\%SPR}$**". The ACL would be 0 and the OY (yield when rebuilt) would be 2,291,000 lbs. Why the ACL would be 0 is explained later.

c) Accountability measures

*Accountability measures (*AMs) are management controls to prevent ACLs, including sector specific ACLs, from being exceeded, and to correct or mitigate overages of the ACL if they occur. There are two categories of AMs: (1) in-season AMs and (2) AMs for when the ACL is exceeded. In the theoretical graphic of annual harvest below, **AM 1** represents a form of in-season regulation that prevents the ACL from being exceeded. An example is to close a fishery when a percentage of an ACL is reached. If catch exceeds the ACL, **AM 2** would implement actions after the fishing year. Examples include decreasing the ACL in the following year or shortening the subsequent year's fishing season.



What does this table mean?

This table specifies the ACL and accountability measures (AM). The AM describes (1) how the Council will track rebuilding and (2) what would trigger a change in management measures. The Council intends to track the rebuilding of red snapper through monitoring what is called catch per unit effort or CPUE. Amendment 17A contains options to implement fishery-dependent and independent programs (with and without the fishermen) to provide CPUE estimates. The Council intends to make adjustments to regulations (principally the size of the area closure) depending on CPUE. The Council also intends to set ACL = 0 and not change the closure size when discards exceed the ACL. The Council believes that *self-reported* discard information should not be the sole determinant of closure size. Therefore, "B" Sub-Alternatives are not the preferred options.

Accountability Measures (AMs)
Management controls to prevent ACLs, including sector-ACLs, from being exceeded, and to correct or mitigate overages of the ACL if they occur.

The accountability measures alternatives are in Table S-5. In Amendment 17A, the ACL and AM options are tied together.

Table S-5. AM and ACL alternatives.

Sub-Alternative	ACLs (lbs)	Accountability Measures
Alternative 1 (No Action)	Do not implement AMs or ACLs	
Alternative 2A	0	1. Track the CPUE of red snapper via a fishery-independent monitoring program to track changes in biomass and take action to end overfishing if the assessment indicates progress is not being made. 2. Track the biomass and CPUE through fishery-dependent sampling as proposed. 3. CPUE would be evaluated every three years and adjustments would be made using the framework action.
Alternative 3A	0	
Alternative 4A	0	
Alternative 5A (Preferred)	0	
Alternative 6A	0	
Alternative 7A	0	
Alternative 8A	0	
Alternative 9A	0	
Alternative 2B	89,000	Same as above but the following is added to number three: "The Council would evaluate the size of the area closures when the dead discards are estimated to exceed the ACL."
Alternative 3B	79,000	
Alternative 4B	68,000	
Alternative 5B	101,000	
Alternative 6B	125,000	
Alternative 7B	111,000	
Alternative 8B	97,000	
Alternative 9B	144,000	

Impacts from Action 2 (Rebuilding Plan)

a) Rebuilding Schedule

Alternative 1 - no action
Alternative 2 - 15 years
Alternative 3 - 25 years
Alternative 4 - 35 years

Biological

Alternatives 2-4 would establish rebuilding schedules that would rebuild red snapper within the time periods allowed by the reauthorized Magnuson-Stevens Act. These alternatives differ in the length of time prescribed to rebuild the species, ranging from 15 years (**Alternative 2**) to 35 years (**Alternative 4 (Preferred)**). Generally, the shorter rebuilding timeframes translate into higher biological benefits. **Alternative 2**, which would implement the shortest rebuilding schedule, would achieve the goal of rebuilding in the shortest amount of time. However, **Alternative 2** may not be realistic as it would not be expected to rebuild the stock to B_{MSY} because it is not possible to eliminate incidental mortality on one species in a multi-species complex, without prohibiting fishermen from targeting all co-occurring species. The Council is considering substantial measures to reduce fishing mortality in this amendment including an area closure for all snapper grouper species. This would reduce bycatch of red snapper but it is uncertain to what extent. **Consequently, the Council has chosen the longest rebuilding schedule alternative (Alternative 4; 35 years) as the preferred.**

Socio-economic

Alternative 3 would incur a level of negative short-term socioeconomic impacts between that of **Alternatives 2 and 4. Alternative 4** would require the least restrictive harvest limitations in order to achieve a rebuilt status within the 35-year period, and therefore, would incur the least negative socioeconomic impacts relative to Alternatives 2 and 3. In addition, Alternative 4 would provide a timeframe sufficiently long to rebuild the red snapper stock as well as flexibility in the type of management measures to implement over time. In this sense, Alternative 4 may have a higher likelihood of generating the highest net benefits over time.

b) Rebuilding strategy (includes optimum yield, annual catch limit and accountability measures)

Biological

OY values at equilibrium in the nine alternatives are distinguished from one another by the level of risk (and associated tradeoffs) each would assume. The more conservative the estimate of OY, the larger the sustainable biomass when the stock is rebuilt. The greatest biological benefit would be provided by **Alternative 4**, which would specify an OY at equilibrium equal to $65\%F_{40\%SPR}$ and would require a 91% reduction in total kill relative to 2005-2007 landings. The least amount of biological benefit would be provided by **Alternative 9**, which would specify a rebuilding strategy of $98\%F_{30\%SPR.}$

In general, the greater the percent reduction in red snapper mortality, the greater the positive impact to the stock and associated ecosystem (Table S-6).

Table S-6. The annual limit in red snapper kill, the percent reduction needed in total removals to end overfishing, and the probability of rebuilding for Alternatives 1-9.

Alternative	Total Kill	Percent Reduction	Year Rebuilt (50% Prob)	Prob rebuilt 2044
Alternative 1 (No Action) ($F_{45\%SPR}$)	89,000	85%	2035*; 2025**	70%*; 99%**
Alternative 2 (85%$F_{40\%SPR}$)	89,000	85%	2035	70%
Alternative 3 (75%$F_{40\%SPR}$)	79,000	87%	2032	84%
Alternative 4 (65%$F_{40\%SPR}$)	68,000	91%	2029	94%
Alternative 5 (Preferred) (97%$F_{40\%SPR}$)	**101,000**	**83%**	**2044**	**50%**
Alternative 6 (85%$F_{30\%SPR}$)	125,000	79%	2031	78%
Alternative 7 (75%$F_{30\%SPR}$)	111,000	82%	2028	92%
Alternative 8 (65%$F_{30\%SPR}$)	97,000	84%	2026	98%
Alternative 9 (98%$F_{30\%SPR}$)	144,000	76%	2040	53%

*Compared to SSB_{MSY} = 17,863,000 lbs whole weight for $F_{40\%SPR}$ F_{MSY} proxy.
**Compared to SSB_{MSY} = 13,283 000 lbs whole weight for $F_{30\%SPR}$ F_{MSY} proxy.

Based on the Council's preferred alternative (highlighted in table):

d) The annual red snapper kill through fishing activities (including as bycatch) **cannot exceed 101,000 lbs**. If it does, **overfishing** is occurring.

- An **83% reduction** in red snapper fishing mortality is required to **end overfishing**. (This will affect the size of the area closure discussed in the next section.)

e) There is a **50% chance** that the red snapper stock will be rebuilt within the chosen time frame (35 years, as discussed earlier).

Socio-economic

Alternative 4 and **Sub-alternative 4A**, expected to result in the largest biological benefit, is also expected to offer the largest long-term economic benefits but would require the most severe short-term reductions and therefore largest short-term negative economic impacts. **Alternative 9** with **Sub-alternative 9B** is expected to yield the smallest biological benefit. This would likely result in less stringent management measures and therefore the smallest short-term negative economic impacts but also the smallest long-term economic benefits to the fishermen.

Alternative 5 (Preferred) identifies an OY level based on the SSC's F_{MSY} proxy ($F_{40\%SPR}$). This alternative has the longest rebuilding period and a higher reduction in total removals (83%) than **Alternatives 6, 7,** and **9** but lower than **Alternatives 1, 2, 3, 4**, and **8**. **Alternative 5** could be expected to result in smaller long-term benefits than those alternatives with shorter rebuilding periods but might result in less stringent management measures and smaller short-term negative impacts than some alternatives.

Setting ACL to a Poundage Level Versus Setting ACL to Zero

If the Council chooses to set an ACL based on total removals, the Southeast Fisheries Science Center (SEFSC) would be required to monitor discarded red snapper in the commercial and recreational sectors. There are concerns that the monitoring of discards would rely on self-reporting by fishermen. This could create a disincentive for fishermen to report discards if they know that once a certain level of discarded fish is reached, accountability measures (AMs) would be triggered, which could potentially further restrict their snapper grouper harvest. Because of these concerns with monitoring discards, catch per unit effort (CPUE) of red snapper would be tracked via a fishery-independent monitoring program to identify changes in biomass. Furthermore, the Council is considering the use of fishery-dependent data collection by headboat and charterboat operators to determine if there are changes in CPUE and biomass.

❖ Action 3. Establish red snapper management measures

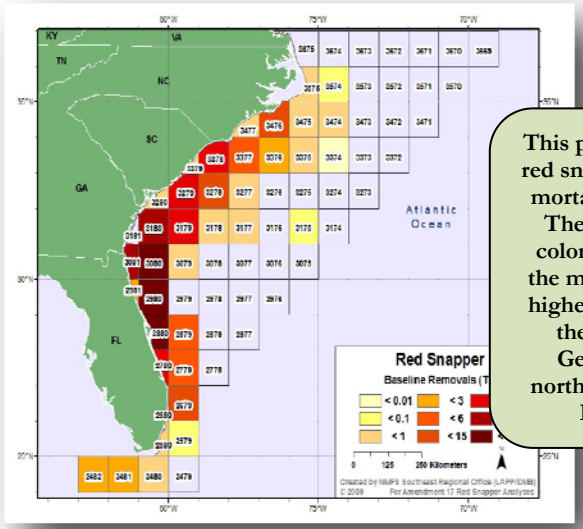
Alternative	Action
Alternative 1 (No Action)	Do not change current management measures.
Alternative 2.	Prohibit red snapper.
Alternative 3A-4D	Prohibit red snapper and close bottom fishing in certain areas.
Alternatives 5-7	Fishing exceptions within closed area
Alternatives 8A-8C.	Transit allowance within closed area.

Red Snapper Prohibition (Alternative 2)

Current regulations for red snapper include a recreational bag limit of 2 fish per person per day and a 20 inch total length minimum size limit for both commercial and recreational fishermen. **Through Amendment 17A, the Council is proposing to implement of a *total prohibition of red snapper***. However, a closure of the fishery will not end overfishing because of red snapper bycatch mortality as fishermen pursue other species in the snapper grouper complex. The red snapper stock is part of the multi-species fishery; many species occupy the same habitat at the same time. For example, red snapper co-occur with vermilion snapper, tomtate, scup, red porgy, white grunt, black sea bass, red grouper, scamp, and others. This is a significant issue as release mortality rates for red snapper are estimated at 40% for the recreational fishery and 90% for the commercial fishery (due to deeper waters fished and handling practices).

Area Closures for All Snapper Grouper Species (Alternatives 3A through 4D)

Due to the nature of the fishery and the release mortality rates, Amendment 17A also includes alternatives **(Alternatives 3A through 4D)** that would prohibit the harvest of *all snapper grouper species* in certain areas ***in addition*** to a prohibition of red snapper throughout the South Atlantic. The alternatives for the closed areas focus on locations where concentrated landings of red snapper are reported, primarily off the coasts of Georgia and the north and central east coasts of Florida (figure below). **Alternatives 5 through 8** evaluate the allowance of specific fishing activities within the closure. **Alternatives 8A through 8C** investigate transit provisions within the closed area.

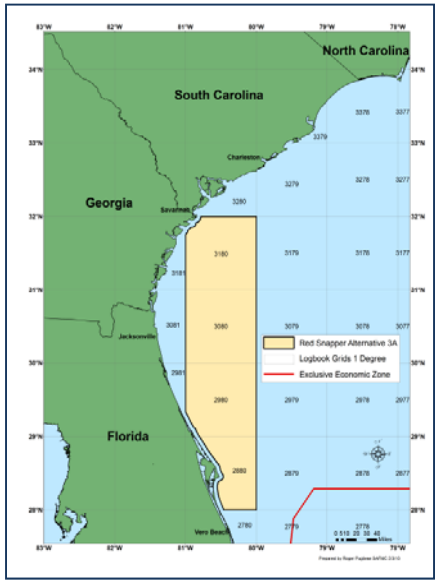


This picture shows red snapper fishing mortality by area. The darker the color, the higher the mortality. The highest level is off the coasts of Georgia and northeast/central Florida.

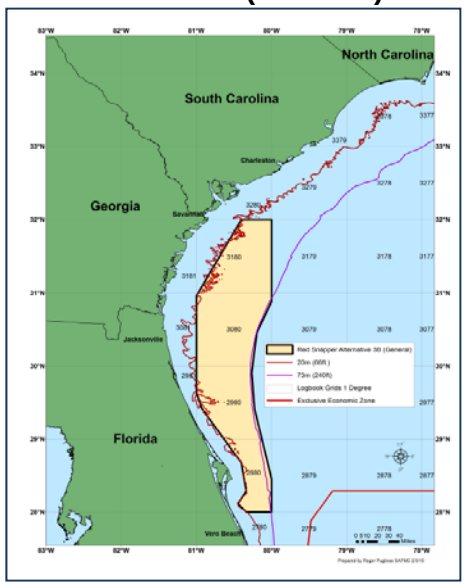
NOTE: The following two pages contain maps of the area closure alternatives and details for Alternative 3C (the Council's preferred).

Eight Area Closure Alternatives

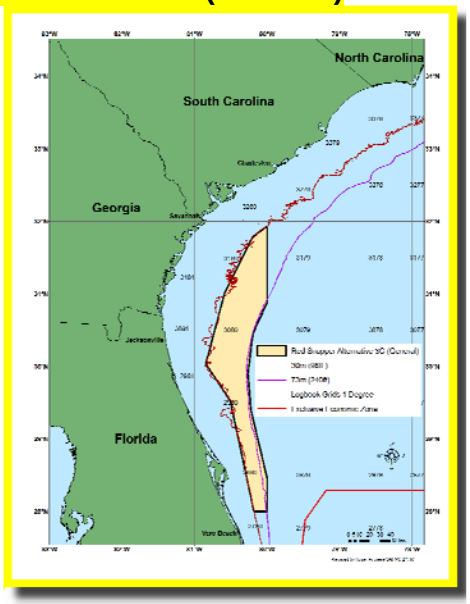
Alternative 3A



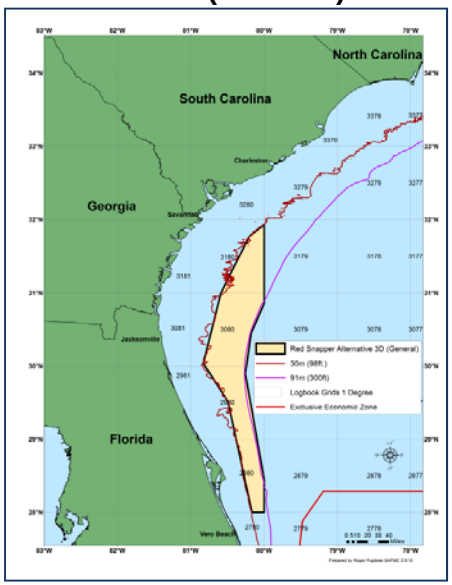
Alternative 3B (66-240 ft)



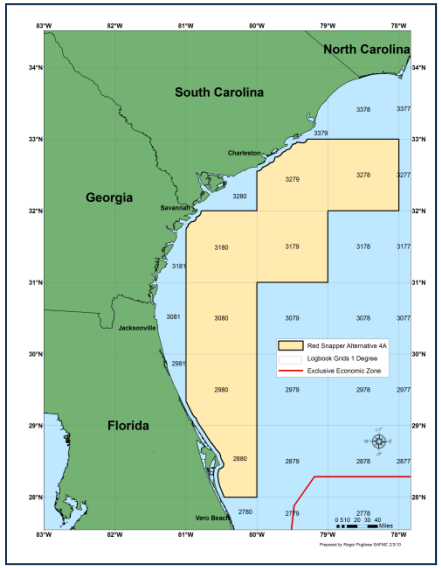
Alternative 3C (98-240 ft)



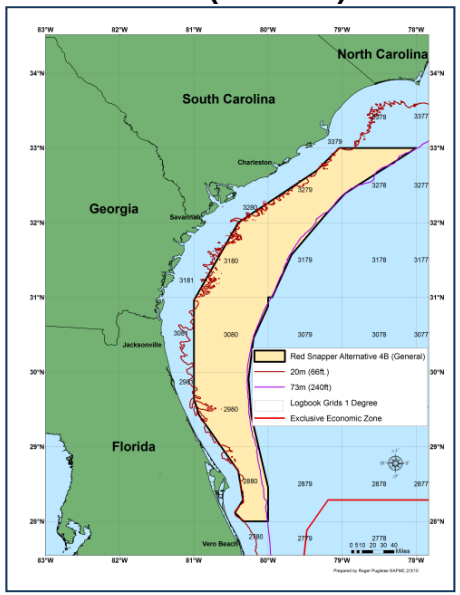
Alternative 3D (98-300 ft)



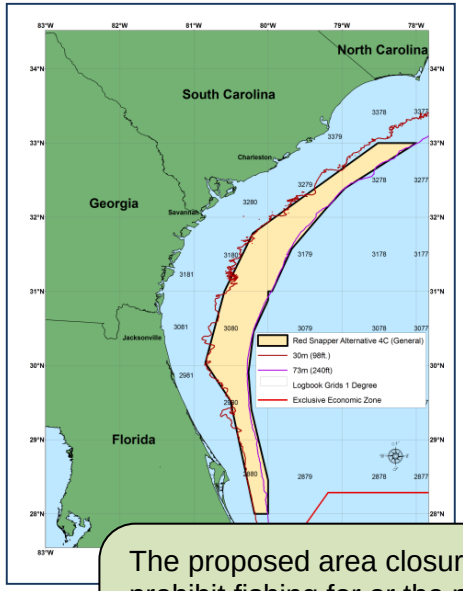
Alternative 4A



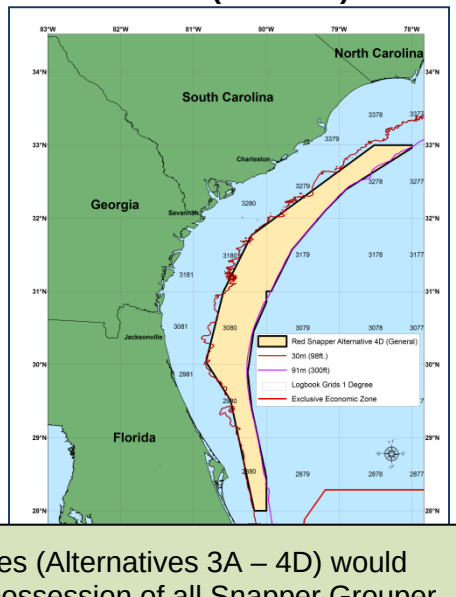
Alternative 4B (66-240 ft)



Alternative 4C (98-240 ft)

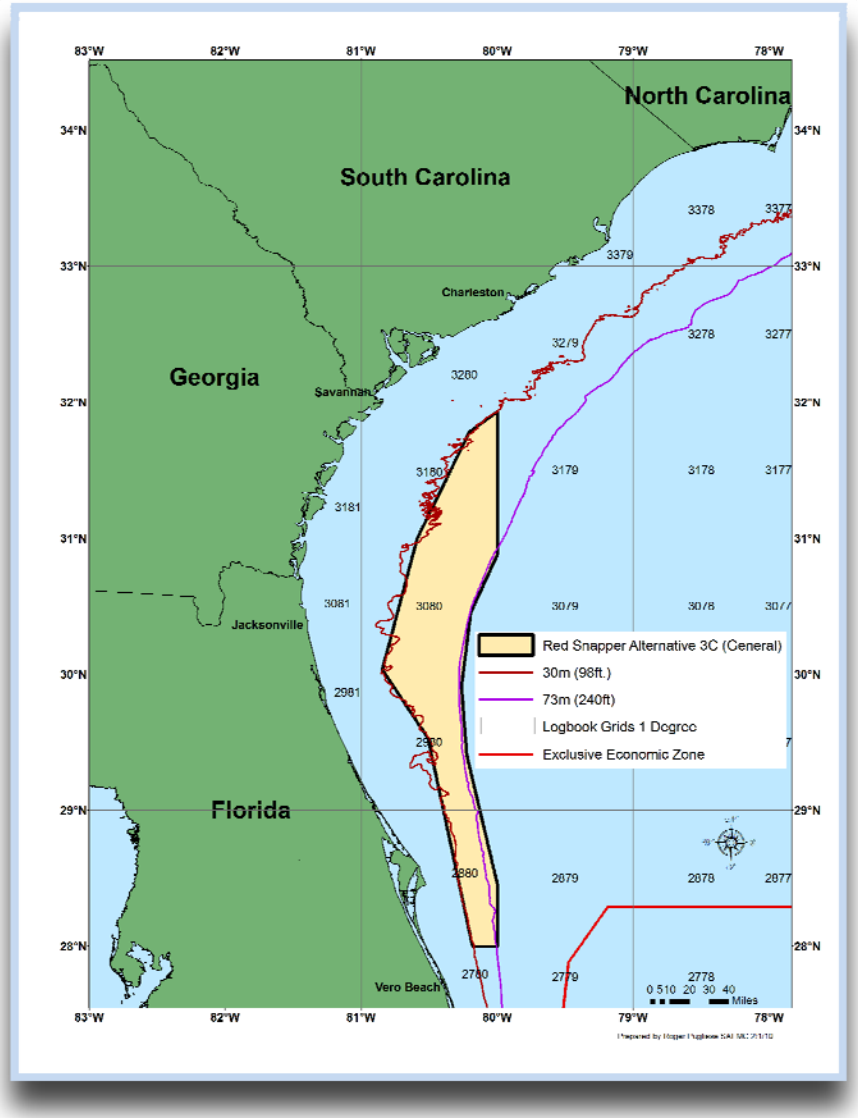


Alternative 4D (98-300 ft)



The proposed area closures (Alternatives 3A – 4D) would prohibit fishing for or the possession of all Snapper Grouper species year-round. ***In addition***, harvest of red snapper would be prohibited in federal waters (3 to 200 miles) in the South Atlantic region.

Area Closure Alternative 3C - Preferred



Alternative 3C (the Council's preferred) would prohibit fishing for or possession of Snapper Grouper species within the defined area between 98 and 240 feet. *In addition*, red snapper would be prohibited throughout federal waters in the South Atlantic

Point	Latitude	Longitude
1	28° 00' 00"	80° 00' 00"
2	28° 00' 00"	80° 10' 57"
3	29° 31' 40"	80° 30' 34"
4	30° 02' 03"	80° 50' 45"
5	31° 00' 00"	80° 35' 19"
6	31° 47' 00"	80° 12' 15"
7	31° 55' 55"	80° 00' 00"
8	30° 52' 54"	80° 00' 00"
9	30° 27' 19"	80° 11' 41"
10	29° 54' 31"	80° 15' 51"
11	29° 24' 24"	80° 13' 32"
12	28° 27' 20"	80° 00' 00"

Table S-7. Waypoints for Alternative 3C (Preferred).

Species in the Snapper Grouper Fishery Management Unit.

Snappers	Groupers	Grunts	Jacks
Blackfin	Black	Black margate	Almaco
Black	Coney	Blue-striped	B. rudderfish
Cubera	Gag	Cottonwick	Bar jack
Dog	Goliath	French	Blue runner
Gray	Graysby	Margate	Crevalle
Lane	Misty	Porkfish	G. amberjack
Mahogany	Nassau	Sailors choice	L. amberjack
Mutton	Red	Smallmouth	Yellow
Queen	Red hind	Spanish	**Porgys**
Red	Rock hind	Tomtate	Grass
Schoolmaster	Scamp	White	Jolthead
Silk	Snowy	**Triggerfish**	Knobbed
Vermilion	Speckled hind	Gray	Longspine
Yellowtail	Tiger	Ocean	Red
Tilefishes	Warsaw	Queen	Saucereye
Blueline	Wreckfish	**Sea basses**	Scup
Sand	Yellowedge	Bank sea	Sheepshead
Tilefish	Yellowfin	Black sea	Whitebone
Spadefishes	Yellowmouth	Rock	**Wrasses**
A. spadefish			Hogfish
			Puddingwife

Other Provisions for Area Closures

Harvest Exceptions Within the Closed Area

The Council is considering allowing harvest of snapper grouper species (not red snapper) in the closed areas with the use of certain gear. These gears are known to have low interaction with red snapper. Alternatives under consideration are shown in Table S-8.

Table S-8. Summary of harvest exception alternatives.

Alternative	Harvest Exception
Alternative 5	Allow fishing for, harvest and possession of snapper grouper species (with exception of red snapper) in the closed area if fish were harvested with black sea bass pots with endorsements.
Alternative 6	Allow fishing for, harvest and possession of snapper grouper species (with exception of red snapper) with bottom longline gear in the closed area deeper than 50 fathoms as specified in CFR §622.35.
Alternative 7 (Preferred)	**Allow fishing for, harvest and possession of snapper grouper species (with the exception of red snapper) in the closed area if fish were harvested with spearfishing gear.**

Based on the Council's preferred alternative:

- Spearfishing for snapper grouper species would be allowed in the proposed closure area (98 to 240 feet). **Note:** Harvest of red snapper would be prohibited in the closure area.

Transit Allowance Within Closed Area

The Council is considering allowing transit through the proposed closed area. Alternatives under consideration are shown in Table S-9.

Table S-9. Summary of transit allowance alternatives.

Alternative	Transit Allowance
Alternative 8A (Preferred)	The prohibition on possession does not apply to a person aboard a vessel that is in transit with snapper grouper species on board and with fishing gear appropriately stowed.
Alternative 8B	The prohibition on possession does not apply to a person aboard a vessel that has snapper grouper species onboard if the vessel is in transit.
Alternative 8C	The prohibition on possession does not apply to a person aboard a vessel that has wreckfish onboard if the vessel is in transit.

Based on the Council's preferred alternative:

- Transit is allowed with snapper grouper species onboard if gear is stowed.
- The term "transit" means: Direct, non-stop progression through any snapper grouper closed area in the South Atlantic EEZ on a constant heading, along a continuous straight line course, while making way by means of a source of power at all times.

Impacts from Action 3 (Area Closures)

Biological

The proposed regulations are expected to benefit the stocks of not only red snapper, but also the stocks of other species managed by the Council. As shown in Table S-6 earlier, **an 83% reduction** in red snapper removals is required to end overfishing. The reduction expected from each alternative is shown in Table S-10. The reduction varies with the differing assumptions in terms of the following: (1) expected effects of recent management actions, (2) change in release mortality stemming from management actions, and (3) compliance rate of proposed regulations.

Table S-10. The reduction in red snapper mortality from each management measure alternative and scenario type.

Alternative	Closed Depths	Scenario						
		1	2	3	4	5	6	7
2	None	29%	39%	52%	55%	60%	60%	60%
3A	n/a	72%	72%	83%	83%	87%	89%	90%
3B	66-240 ft	69%	70%	81%	81%	85%	87%	88%
3C	**98-240 ft**	**63%**	**65%**	**76%**	**77%**	**81%**	**83%**	**84%**
3D	98-300 ft	63%	66%	76%	77%	81%	83%	84%
4A	n/a	76%	77%	86%	86%	89%	91%	93%
4B	66-240 ft	73%	74%	83%	84%	87%	89%	91%
4C	98-240 ft	66%	69%	78%	80%	83%	85%	86%
4D	98-300 ft	67%	69%	79%	80%	83%	85%	86%

Scenario 1: No impacts A13C, A16; A17A eliminates targeted trips only; 80% compliance; 60%/60%offshore release mortality; 20%/20% inshore release mortality.
Scenario 2: No impacts A13C, A16; A17A eliminates targeted trips only; 80% compliance; 40%/90% offshore release mortality, 40%/90% inshore release mortality.
Scenario 3: No impacts A13C, A16; A17A eliminates targeted trips only; 85% compliance; 40%/40% offshore release mortality, 20%/20% inshore release mortality.
Scenario 4: Directed and targeted trips eliminated by A13C, A16, A17A; 85% compliance; 40%/90% offshore release mortality; 20%/20% inshore release mortality.
Scenario 5: Directed and targeted trips eliminated by A13C, A16, A17A; 87% compliance; 40%/40% offshore release mortality; 20%/20% inshore release mortality.
Scenario 6: Directed and targeted trips eliminated by A13C, A16, A17A; 95% compliance; 40%/40% offshore release mortality; 20%/20% inshore release mortality.
Scenario 7: Directed and targeted trips eliminated by A13C, A16, A17A; 100% compliance; 40%/40% offshore release mortality; 20%/20% inshore release mortality.

See More…..See **Appendix E** for more information on the biological model and the description of the scenarios.

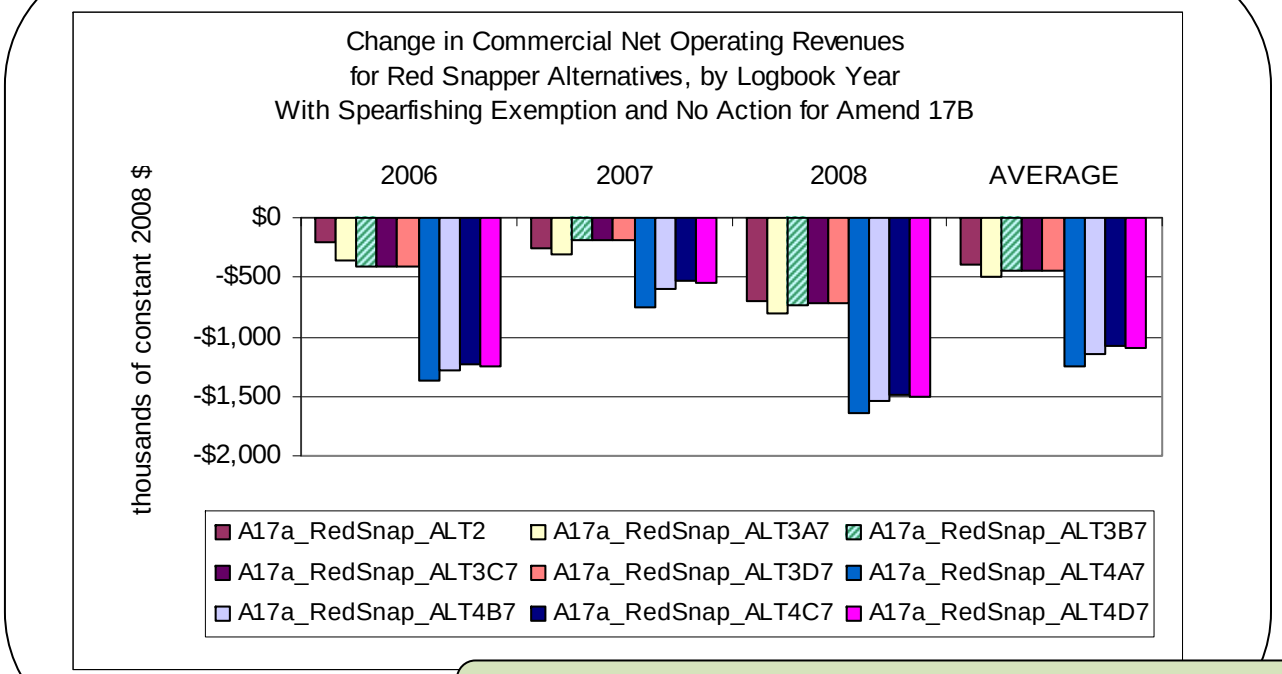
Impacts from Action 3 *(continued)*

Socio-economic

Commercial Industry

The proposed regulations are expected to adversely affect certain commercial fishermen, especially those that fish off Georgia and Northeast Florida. However, there are long-term benefits from having a rebuilt stock. The graph below displays the predicted changes in net operating revenues compared to the no action alternative for Amendment 17A. *For reference, the colors in the graph and around the maps match.*

A commercial vessel will typically have between 2 and 4 of these electronic reels or "bandit reels" attached to the vessel.

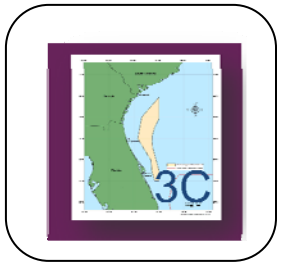


See More…..See **Appendix O** for more information on the economic model (commercial industry) and results

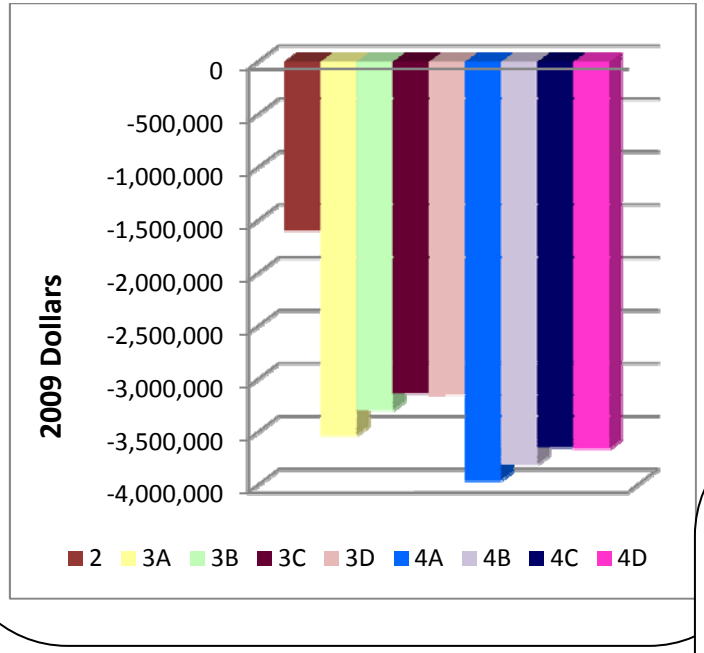
Impacts from Action 3 *(continued)*

Recreational Industry

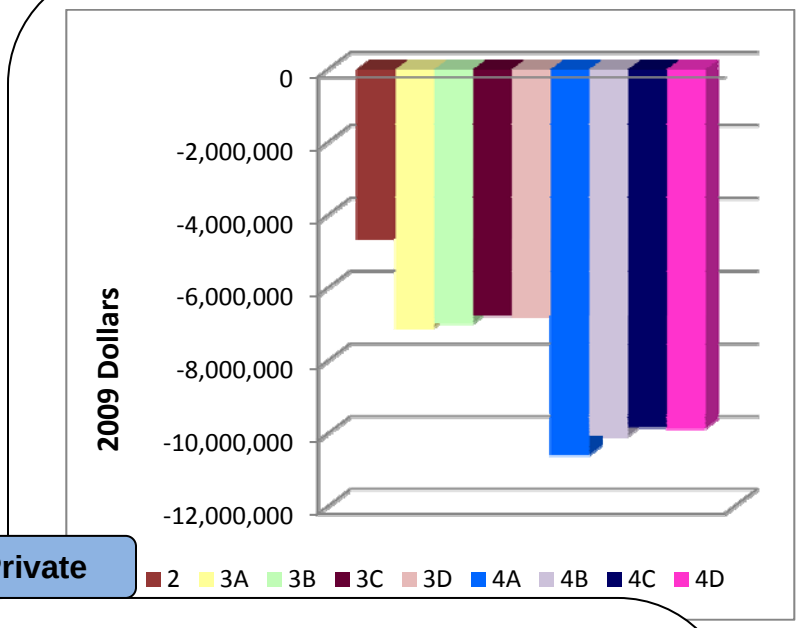
Socio-economic



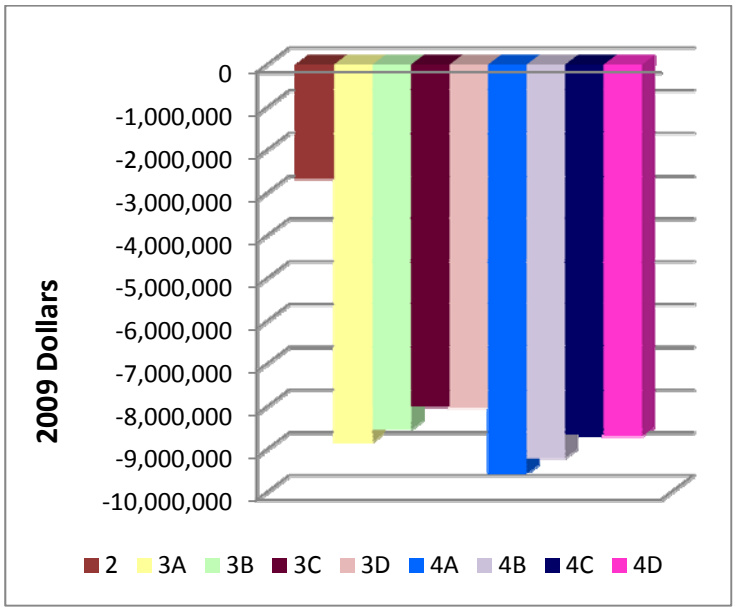
Charterboat



Headboat

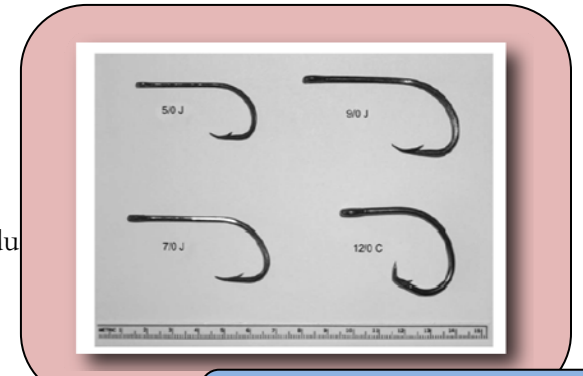


Private



❖ Action 4. Require the Use of Circle Hooks

The Council is considering requiring the use of circle hooks for all snapper grouper species to help redu discard mortality of red snapper. Alternatives under consideration are shown in Table S-11.



A picture of J-hooks (left) and circle hooks (right) from Bacheler and Buckel (2004)

Table S-11. Summary of harvest exception alternatives.

Alternative	Circle Hook Requirement
Alternative 1 (No Action)	Do not require the use of circle hooks when using hook and line gear for snapper grouper species within any particular area of the South Atlantic EEZ when fishing for snapper grouper species.
Alternative 2 (Preferred)	**Require the use of non-offset, non-stainless steel circle hooks when fishing for snapper grouper species with hook and line gear north of 28 degrees. It is unlawful to possess snapper grouper species without possessing non-offset, non-stainless steel circle hooks. Apply to the use of natural baits only.**
Alternative 3	Require the use of non-offset, non-stainless steel circle hooks when fishing for snapper grouper species with hook and line gear within the South Atlantic EEZ. It is unlawful to possess snapper grouper species without possessing non-offset, non-stainless steel circle hooks. Apply to the use of natural baits only.

Based on the Council's preferred alternative:

- The use of circle hooks would be required when fishing north of 28 degrees (southern boundary of the area closures) for species in the snapper grouper fishery management unit as listed in Table S-7.

- The Council felt it was important to limit the circle hook requirement to South Atlantic areas north of 28 degrees to not affect fishing for species such as yellowtail and mangrove snapper. Fishermen report that these species are not caught easily with circle hooks.

Impacts from Circle Hook Requirement (Action 4)

Studies on the effects of circle hooks and J hooks on retention and survival are limited to a handful of snapper grouper species. Some studies indicate beneficial effects while others are inconclusive. Due to limited data, it may not be possible to quantify the reduction in red snapper release mortality that would result from using circle hooks. Furthermore, not all species in the snapper grouper complex have the same mouth morphology and it is possible that circle hooks could negatively impact survival. Alternatively, use of circle hooks could substantially reduce harvest of some species, would have positive biological benefits but have negative social and economic impacts on fishermen dependent upon the species. In general, requiring the use of circle hooks may not substantially increase the cost of fishing to either the commercial or the recreational sectors, though the potential reduction in the harvest of some important species is noted.

Action 5. Establish a Red Snapper Monitoring Program

The Council is implementing a plan to monitor red snapper recovery. The Council recognizes **the effectiveness of traditional fishery-dependent data would diminish with the implementation of an area closure.** Further, existing fishery-independent data collection programs would not be sufficient to monitor red snapper due to limitations associated with the range of sampling. Monitoring program alternatives under consideration are shown in Table S-12.

What are the existing data programs?

Fishery-dependent methods include the Marine Recreational Information Program (MRIP), logbook, discard logbook, headboat logbook, Trip Interview Program (TIP), and dealer reported landings. Fishery-independent methods include Marine Resources Monitoring Assessment and Prediction Program (MARMAP), and the Southeast Area Monitoring and Assessment Program(SEAMAP).

Table S-12. Summary of red snapper monitoring program alternatives.

Alternative	Red Snapper Monitoring Program
Alternative 1 (No Action)	Utilize existing data collection programs to monitor the rebuilding progress of red snapper.
Alternative 2 (Preferred)	**Establish fishery independent monitoring program to track progress of red snapper. Sampling would include deployment of chevron traps, cameras, and hook and line at randomly selected stations.**
Alternative 3	Establish a red snapper fishery-dependent monitoring program involving for-hire vessels (charter boat and headboats). Participating vessels may be authorized to harvest and land fish in excess of Federal possession limits and/or during fishery closures. Retention limits for red snapper would be based upon research objectives. The trip limits and number of trips per month will depend on the number of selected vessels, available quota, and objectives of the research fishery..

- A fishery-independent program will be used to track the recovery of red snapper.
- Fishery-dependent data becomes limited if red snapper harvest is prohibited and area closures are used.

Impacts from Establishing a Monitoring Program (Action 5)

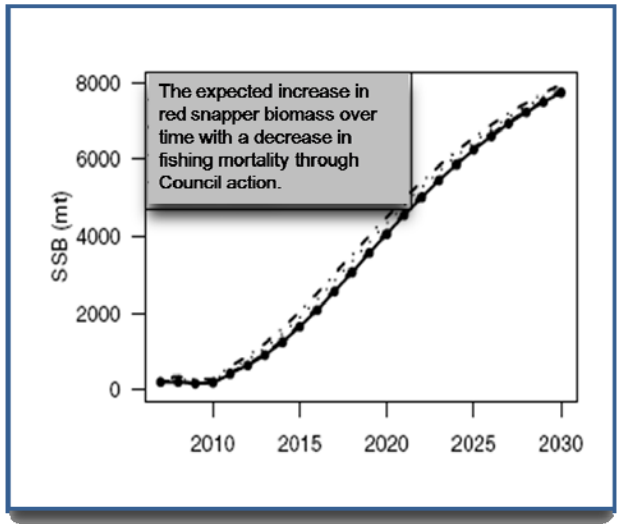
Alternatives 2 and 3 would benefit the stock as it would track rebuilding progress of red snapper through the rebuilding period. Those alternatives may benefit fishery participants in the long-term when data shows harvest may be increased.

Conclusion

The most recent assessment for the red snapper stock in the South Atlantic indicate that the stock is experiencing overfishing and is overfished. The purpose of Amendment 17A to the Snapper Grouper Fishery Management Plan (FMP) is to implement long-term management measures to end overfishing of the red snapper stock in the South Atlantic immediately upon implementation and to rebuild the stock ultimately achieving optimum yield (OY) while minimizing, to the extent practicable, adverse social and economic effects.

Current regulations for red snapper allow for a recreational bag limit of two fish per person per day and require a 20 inch total length minimum size limit for both commercial and recreational fishermen. Through Amendment 17A, the Council is proposing the implementation of a *total prohibition of red snapper harvest*. Due to the nature of the red snapper fishery and the high release mortality rates, Amendment 17A also includes alternatives that would prohibit the harvest of *all snapper grouper species* in certain area to reduce mortality of red snapper, including those incidentally caught when fishermen target co-occurring species. The alternatives for the closed area focus on locations where concentrated landings of red snapper are reported, primarily off Georgia and the north and central east coasts of Florida.

The Council and NOAA Fisheries are considering a range of options in Amendment 17A. In general, the positive effects to the stock and ecosystem are greatest with the largest closure and lowest annual catch limits. In turn, negative socio-economic effects increase with such options. However, there are long-term socio-economic effects from a rebuilt stock. As with many fishing regulations, the economic issue involves the balancing of short-term costs and long-term benefits. There is a wide gap between the current landings (approximately 440 thousand pounds) and potential landings for a rebuild stock (approximately 2.2 million pounds). This has at least two implications: first, more stringent management measures are needed to rebuild the red snapper stock; second, there is a relatively high likelihood that future benefits from the fishery would outweigh the costs of implementing stringent management measures.



A Healthy Red Snapper Stock

- A healthy stock will allow biomass, age and size structure, sex ratio, and genetic and community structure to be restored to more natural levels.