Regulatory Amendment 21 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region

DECISION DOCUMENT

Minimum Stock Size Threshold (MSST) for snapper grouper stocks with low natural mortality

March 2014

Background

At their December 2013 meeting, the Council discussed the recent stock assessment for blueline tilefish (SEDAR 32 2013). The South Atlantic stock of blueline tilefish was found to be overfished and undergoing overfishing. When a stock's biomass is below the Minimum Stock Size Threshold (MSST), the stock is considered overfished an the Magnuson Act requires that a rebuilding plan be put in place. However, blueline tilefish has a low estimated natural mortality (M) which affects the MSST threshold under the current definition: MSST = (1-M)SSB_{MSY} or 0.50SSB_{MSY}, whichever is greater, where SSB_{MSY} is the biomass when the stock is at the maximum sustainable yield (MSY) level and considered to be rebuilt. Thus, when the natural mortality rate is low, less than 0.25, even small fluctuations in biomass due to natural variations not related to fishing mortality may cause a stock vary between an overfished or rebuilt condition.

The Council has already redefined MSST for other snapper grouper stocks with low M. Red grouper, snowy grouper, and golden tilefish have had their MSST redefined to 75%SSB_{MSY} through previous amendment to the Snapper Grouper FMP. In addition, at their most recent meeting, the Scientific and Statistical Committee (SSC) recommended setting the overfished threshold for species with low M at 75%SSB_{MSY}. Hence, the Council requested that Regulatory Amendment 21 be deveoped to redefine the MSST for blueline tilefish and other snapper grouper species with natural mortality estimates below (or equal to) 0.25.

Regulatory Amendment 21 is scheduled for approval for submission to the Secretary of Commerce at the March 3-7, 2014 Council meeting. A public hearing will be held for this amendment during the Council meeting week beginning at 5:30 p.m. on March 6th in Savannah, Georgia.

Purpose and Need

Purpose for Action

The *purpose* for the action is to modify the definition of MSST for select snapper grouper species with low natural mortality rates.

Need for Action

The *need* for the proposed action is to prevent snapper grouper stocks with low natural mortality rates from frequently alternating between overfished and rebuilt conditions due to natural variation in recruitment and other environmental factors.

COMMITTEE ACTION: Approve Purpose and Need

Proposed Action and Alternatives

2.1 Proposed Action. Re-define Minimum Stock Size Threshold for Select Species in the Snapper Grouper Fishery Management Unit

Alternatives approved by the Council in December 2013 and IPT recommendations for modifications:

Alternative 1 (No Action). Retain the current definition of minimum stock size threshold (MSST) for species in the snapper grouper fishery management unit (FMU). For golden tilefish, red grouper, and snowy grouper, MSST equals 75% of SSB_{MSY}. For the remaining species in the snapper grouper FMU, MSST equals SSB_{MSY}*(1-M or 0.5, whichever is greater).

Alternative 2. Change the MSST for select species in the snapper grouper FMU ~~automatically~~ to 75% of SSB_{MSY}. ~~based on the estimation of the natural mortality rate (M) from a peer-review report (e.g. a SEDAR stock assessment)~~.

IPT NOTE: The current wording of Alternative 2 indicates that it would set up a framework for establishing a MSST definition for these and other species. However, such an action would require an FMP amendment and could not be done through a framework amendment. Therefore, in keeping with the framework procedure, the IPT has made the above recommendations to clarify that this amendment would affect specific species under a one-time action.

Sub-alternative 2a. Change MSST if the estimation of M is 0.15 or lower based on the estimation of the natural morality rate (M) from a peer-review report (e.g., a SEDAR stock assessment).

Species	M
Red snapper	0.08
Blueline Tilefish	0.10
Gag	0.14
Black Grouper	0.14

Sub-alternative 2b. Change MSST if the estimation of M is 0.20 or lower based on the estimation of the natural morality rate (M) from a peer-review report (e.g., a SEDAR stock assessment).

Species	M
Red snapper	0.08
Blueline Tilefish	0.10
Gag	0.14
Black Grouper	0.14
Yellowtail snapper	0.20

Sub-alternative 2c. Change MSST if the estimation of M is 0.25 or lower based on the estimation of the natural morality rate (M) from a peer-review report (e.g., a SEDAR stock assessment).

Species	M
Red snapper	0.08
Blueline Tilefish	0.10
Gag	0.14
Black Grouper	0.14
Yellowtail snapper	0.20
Vermilion snapper	0.22
Red porgy	0.23
Greater amberjack	0.23

Alternative 3. Change the MSST for select species in the snapper grouper FMU with low natural mortality rates to 50% of SSB_{MSY}.

Species	M
Red snapper	0.08
Blueline Tilefish	0.10
Gag	0.14
Black Grouper	0.14
Yellowtail snapper	0.20
Vermilion snapper	0.22
Red porgy	0.23
Greater amberjack	0.23

IPT NOTE: Alternative 3 is worded to indicate that this definition of MSST would only apply to select species, rather than applying to all species in the snapper grouper FMU, and being applied "automatically" for the same reasons stated by the IPT under Alternative 2.

COMMITTEE ACTION: WORDING OF ALTERNATIVES
OPTION 1. APPROVE THE SUGGESTED CHANGES TO ALTERNATIVES 2 (INCLUDING SUBALTERNATIVES) AND 3.

OPTION 2. MODIFY WODING (COUNCIL TO SPECIFY).

OPTION 3. OTHERS???

COMMITTEE ACTION: PREFERRED ALTERNATIVE?
OPTION 1. SELECTE ALTERNATIVE 2, SUBALTERNATIVE **X** AS THE PREFERRED ALTERNATIVE.

OPTION 2. OTHERS???

COMMITTEE ACTION: APPROVAL FOR FORMAL REVIEW
OPTION 1. APPROVE SNAPPER GROUPER REGULATORY AMENDMENT 21 FOR SECRETARIAL REVIEW. GIVE STAFF EDITORIAL LICENSE TO MAKE ANY NECESSARY EDITORIAL CHANGES TO THE DOCUMENT AND GIVE THE COUNCIL CHAIR AUTHORITY TO APPROVE THE REVISIONS.

OPTION 2. OTHERS???

Note: MSSTs are not codified so there is no need for codified text for Regulatory Amendment 21.

Biological Effects

Alternative 1 (No Action) would retain the Minimum Stock Size Threshold (MSST) definition established in Amendment 11 to the Snapper Grouper FMP (SAFMC 1998) for the snapper grouper species addressed in this amendment. If it is determined that biomass is below the MSST, a stock is overfished, and the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) requires a rebuilding plan, which could result in harvest reductions. The current definition for snapper grouper species addressed by this Regulatory Amendment 21 (**Tables 4.1.1-4.1.3**) requires MSST to be at least one half of SSB_{MSY}, but allows for it to be greater than this value if natural mortality (M) is suitably low. If (1-M) is equal to 0.5, then the value obtained from this alternative would be the same as that obtained from **Alternative 3**.

The estimate of natural mortality for species addressed by Regulatory Amendment 21 is very small ranging from 0.08 to 0.25 (**Tables 4.1.1 to 4.1.3**). Therefore, under **Alternative 1 (No Action)** the biomass threshold for determining if a stock is overfished is very close to the biomass associated with a stock when it is not considered overfished (SSB_{MSY}). Since **Alternative 1 (No Action)** nearly eliminates the buffer between MSST and SSB_{MSY} for stocks with low natural mortality rates, a stock would never be permitted to fall below SSB_{MSY} without triggering an "overfished" determination and a mandatory development of a rebuilding plan.

If the same management measures are used to rebuild a stock under **Alternative 1 (No Action)** through **Alternative 3**, the stock would be expected to rebuild fastest under **Alternative 1 (No Action)** because the overfished threshold (MSST) would be closest to the rebuilt threshold SSB_{MSY}. Therefore, **Alternative 1 (No Action)** could be considered to have the greatest biological benefit among alternatives considered in this action. The tradeoff associated with the assurance provided by this conservative definition of MSST is that natural variation in recruitment could cause stock biomass to frequently alternate between an overfished and rebuilt condition (biomass at SSB_{MSY}), even if the fishing mortality rate applied to the stock was within the limits specified by the maximum fishing mortality threshold (MFMT). If realized, this situation, as explained in **Sections 4.1.2-4.1.4** (of Regulatory Amendment 21) could result in administrative and socio-economic burdens related to developing and implementing multiple rebuilding plans that may not be biologically necessary. However, simulations on a wide variety of species by Restrepo et al. (1998) indicated that stocks at biomass levels approximating 75% SSB_{MSY} can rebuild to SSB_{MSY} fairly quickly with little constraint on fishing mortality. Therefore, it is not biologically necessary to have extremely small buffers between overfished and rebuilt thresholds.

Alternatives 2 and **3** would redefine the MSST for select snapper grouper species that would establish a larger buffer between the biomass at the rebuilt and overfished conditions (see species in **Tables 4.1.1-4.1.3**). **Alternative 2**, which would set MSST equal to 75% SSB_{MSY}, is consistent with how the South Atlantic Council has approached defining MSST for other snapper grouper stocks with low natural mortality estimates. The South Atlantic Council has changed the MSST definition to 75% SSB_{MSY} for snowy grouper, golden tilefish, and red grouper in previous snapper grouper amendments (SAFMC 2008a; SAFMC 2008b; SAFMC 2011d). These species have low estimates of natural mortality, and the overfished threshold from the status quo MSST definition is very close to the biomass threshold when stocks are not considered overfished. The biological benefits of **Alternative 2**, which would trigger a rebuilding plan when biomass is at 75% of SSB_{MSY}, would be expected to be greater than **Alternative 3**, which would have a lower biomass threshold for an overfished determination (50% SSB_{MSY}) because biomass would not be allowed to decrease as much as it would under **Alternative 3** before triggering implementation of a rebuilding plan. At their October 2013 meeting, the South Atlantic Council's Scientific and Statistical Committee acknowledged that the 75%SSB_{MSY} approach, currently being considered by the South Atlantic Council in Regulatory Amendment 21, is an acceptable choice for MSST, and they voiced no concern regarding the adoption of this management reference point for South Atlantic Council managed species.

Alternative 2 and its sub-alternatives would affect from four to eight snapper grouper species based on their estimated level of natural mortality (**Tables 4.1.1-4.1.3**). Under **Sub-alternative 2a**, red snapper, blueline tilefish, gag, and black grouper would have their MSST's defined at the 75%SSB_{MSY} level (**Table 4.1.1**).

Table 4.1.1. Snapper grouper species with natural mortality estimates below 0.15 (Sub-alternative 2a).

Species	M
Red snapper	0.08
Blueline Tilefish	0.10
Gag	0.14
Black Grouper	0.14

Sub-alternative 2b would add yellowtail snapper to the list (**Table 4.1.2**) whereas **Sub-alternative 2c** would include, in addition to yellowtail snapper, red porgy, vermilion snapper, and greater amberjack (**Table 4.1.3**)

Table 4.1.2. Snapper grouper species with natural mortality estimates below 0.20 (Sub-alternative 2b).

Species	M
Red snapper	0.08
Blueline Tilefish	0.10
Gag	0.14
Black Grouper	0.14
Yellowtail snapper	0.20

Table 4.1.3. Snapper grouper species with natural mortality estimates below 0.25 (Sub-alternative 2c) and would also be impacted under Alternative 3.

Species	M
Red snapper	0.08
Blueline Tilefish	0.10
Gag	0.14
Black Grouper	0.14
Yellowtail snapper	0.20
Vermilion snapper	0.22
Red porgy	0.23
Greater amberjack	0.23

Table 4.1.4 below shows MSST values for snapper grouper species addressed in this amendment under each alternative.

Table 4.1.4. Minimum Stock Size Threshold (MSST), natural mortality (M), and Spawning Stock Biomass at MSY (SSB_{MSY}) values under each alternative for snapper grouper species addressed in Regulatory Amendment 21.

				MSST				
Stock	**M**	**SSB_{MSY}**	**Units**	**Alt. 1**	**Alt. 2a**	**Alt. 2b**	**Alt. 2c**	**Alt. 3**
Black Grouper	0.14	5,920,000	lb ww	5,091,200	4,440,000	4,440,000	4,440,000	2,960,000
Blueline Tilefish	0.10	543,660	lb ww	489,294	407,745	407,745	407,745	271,830
Gag	0.14	7,925,000	lb gw	6,815,500	5,943,750	5,943,750	5,943,750	3,962,500
Greater Amberjack	0.23	4,277,000	lb ww	3,293,290	3,293,290	3,293,290	3,207,750	2,138,500
Red Porgy	0.23	8,671,000	lb ww	6,676,670	6,676,670	6,676,670	6,503,250	4,335,500
Red Snapper	0.08	344,000	lb ww	316,480	258,000	258,000	258,000	172,000
Vermilion Snapper	0.22	5.98	1e12 eggs	4.66	4.66	4.66	4.49	2.99
Yellowtail Snapper	0.20	6,773,000	lb ww	5,418,400	5,418,400	5,079,750	5,079,750	3,386,500

Like **Sub-alternative 2c**, **Alternative 3** would change the MSST definition for species with natural mortality rates equal to or less than 0.25. Sub-alternatives based on M are not considered under **Alternative 3**. **Alternative 2** creates a biomass threshold (MSST) of 75% of SSB_{MSY} that is equivalent to 1-M when M = 0.25. Therefore, under **Alternative 3**, which creates a MSST equal to 50% SSB_{MSY}, using M is not as useful in determining the separation between MSST and SSB_{MSY} as it is under **Alternative 2**. The MSST definition specified in **Alternative 3** would apply to red snapper, blueline tilefish, gag, black grouper, yellowtail snapper, vermilion snapper, red porgy, and greater amberjack. **Alternative 3** is the least conservative of the alternatives considered, because it would allow stock biomass to decrease to 50% of the stock biomass at the maximum sustainable yield (MSY) level before an overfished determination is made, regardless of stock productivity. Such a low threshold for determining an overfished status could be problematic for snapper grouper species that are particularly vulnerable to overfishing. This alternative could make it more difficult to rebuild the stocks from an overfished condition within the allowed time, and would likely result in more severe catch restrictions following an overfished determination. However, it would eliminate the potential administrative burdens (i.e., time and resources required for development of a rebuilding plan and implementation of restrictive management measures)

associated with setting MSST close to SSB_{MSY} by establishing a larger buffer between what is considered to be an overfished and rebuilt condition.

The proposed action would not significantly alter the way in which the snapper grouper fishery is conducted in the South Atlantic Region. Therefore, no impacts on Endangered Species Act-listed marine species, essential fish habitat, Habitat Areas of Particular Concern (HAPCs), or coral HAPCs are expected as a result of updating the MSST definition for the subject snapper grouper species.

Economic Effects

Redefining the MSST of a stock does not alter the current level of harvest or use of the resource because it does not change the annual catch limits or accountability measures. Instead, MSST is a biomass threshold used to determine if a stock is overfished. If overfished, the Magnuson-Stevens Act requires a rebuilding plan, which could have negative economic effects due to harvest constraints. If biomass is above the MSST, the stock is not overfished. If a stock was overfished and biomass is at or above SSB_{MSY}, the stock is considered to be rebuilt. This amendment would not implement a rebuilding plan or regulatory change for the subject species found in **Tables 4.1.1-4.1.3**. Consequently, **Alternatives 1 (No Action)**, **2**, and **3** would not affect current harvest or use of stocks, and would have no direct economic impact beyond the status quo. Any indirect impacts would be dependent on future management actions resulting from a determination of whether a stock is overfished. For example, if a stock is determined to be overfished, harvest and/or effort controls would be mandated as part of a rebuilding plan. These harvest and/or effort controls would directly affect those who exploit the resource, as well as other individuals and businesses.

Since there would be no direct effects on resource harvest or use because of this amendment, there would be no direct effects on fishery participants, associated industries, or communities. Direct effects only accrue to actions that alter harvest or other use of the resource. Redefining MSST, however, establishes the platform for future management, specifically from the perspective of bounding allowable harvest levels. The relationship between and implications of the harvests levels implied by the MSST alternatives relative to the status quo are discussed under Social Effects.

Fishery management decisions influence public perception of responsible government control and oversight. These perceptions in turn influence public behavior. This behavior may be positive, such as cooperative participation in the management process, public hearings, and data collection initiatives, or negative, such as non-cooperation with data initiatives, legal action, or pursuit of political relief from management action. Positive behavior supports the efficient use of both the natural resource and the economic and human capital resources dedicated to the management process. Negative behavior harms the integrity of the information on which management decisions are based, induces inefficient use of management resources, and may prevent or delay efficient use of the natural resource. The specific benefits and costs of these behaviors cannot be calculated. Although disagreement with the exact specifications contained in the MSST alternatives may occur, any of the alternatives satisfy the technical guidelines and would establish the required platform from which future action can be taken. However, the alternatives vary in implications for total allowable harvest and constituents who favor more liberal harvests would likely prefer the alternatives in the decreasing order of the potential harvest implied by the alternative specifications, while those who favor more conservative harvests would likely hold the opposing preferences. The net effect of the behavioral responses from these opposing constituent groups cannot be determined.

Administrative costs of fishery management accrue from the time and labor involved in developing new regulations, permitting systems, or other management actions. To the extent that **Alternatives 1 (No Action)**, **2** and **3** provide fishery scientists and managers with specific, objective, and measurable criteria to use in assessing the status and performance of the fishery, the economic effects of the various alternatives on administrative costs are indistinguishable. However, the more conservative (lower) the equivalent allowable harvest level, the greater the potential for an overfished determination, necessitating additional management action, with associated administrative costs.

The higher the value of the MSST, the greater the likelihood the size of the stock may fall below that value, resulting in an overfished determination, which would require a rebuilding plan that implements additional restrictive management measures. Among the alternative MSST specifications in Action 1**, Alternative 1 (No Action)** has the greatest probability of causing the subject species to reach an overfished status. When M is relatively small, such as 0.10, the current definition of MSST for some species would trigger a rebuilding plan if biomass fell slightly below SSB_{MSY}, in the above case, at less than 90% SSB_{MSY}. Natural variation in recruitment could cause stock biomass to frequently alternate between an overfished and rebuilt status. To avoid this, the South Atlantic Council previously redefined the MSST for red grouper, snowy grouper, and golden tilefish, which have low natural mortalities. The MSST for those species was set at 75% of SSB_{MSY} to provide a more appropriate buffer between the levels at which the stock is considered to be at rebuilt (SSB_{MSY}) and overfished (MSST) levels. However, other snapper grouper stocks that also have lower natural mortality, such as red snapper, blueline tilefish, gag, black grouper, yellowtail snapper, vermilion snapper, red porgy, and greater amberjack have not similarly had their MSST redefined. Consequently, **Alternative 1 (No Action)** may result in implementation of unnecessary rebuilding plans, which would unnecessarily reduce landings and net economic benefits from those landings.

Sub-alternatives 2a, 2b, and **2c** would redefine MSST for snapper grouper stocks with a low natural mortality to establish a more appropriate buffer between SSB_{MSY} and the MSST. **Sub-alternative 2a** would allow for larger reductions in the biomass of red snapper, blueline tilefish, gag, and black grouper before implementing catch restrictions that reduce net economic benefits from those stocks. **Sub-alternative 2b** would add yellowtail snapper to the above list of four stocks, and **Sub-alternative 2c** would add to the above five, greater amberjack, red porgy and vermilion snapper. Consequently, **Sub-alternative 2c**, which could avoid unnecessary catch restrictions for eight species, could have the largest long-run net economic benefit and **Sub-alternative 2a** could have the smallest long-run net economic benefit of the three sub-alternatives. **Alternative 3** would allow for the largest reduction in biomass of each of the above eight stocks, which could have the largest short-run net economic benefit of the three alternatives, but the magnitude of the long-term net economic costs to rebuild the stock could be substantial. Therefore, **Alternative 3** could have lower long-run net economic benefits than **Alternative 1 (No Action)**.

The alternatives and sub-alternatives in order of decreasing probability of reaching an overfished determination are **Alternative 1 (No Action)**, **Sub-alternative 2a**, **Sub-alternative 2b**, **Sub-alternative 2c**, and **Alternative 3**. However, if a MSST was set very low, the magnitude of the adverse long-term economic impacts to rebuild the stock to SSB_{MSY} could be substantial.

Social Effects

Social effects of revised biological parameters such as MSST for a stock would be associated with both the biological and economic effects of the modified MSST value. The estimated SSB as compared to MSST serves as a methodology for determining if a stock is overfished. If the methodology is not accurately representing the stock status, the outcomes of the 'overfished' designation when a stock is not overfished can have negative long- and short-term social effects associated with restricted or no access to the fish. Conversely, if an inaccurate methodology results in a stock designated as not overfished when it *is* overfished, the fishing fleets, associated businesses, and communities could be negatively impacted in the long term due to decline in the stock, and negative broader biological impacts of overfishing. Lastly, an inaccurate methodology that causes a stock to fluctuate between overfished and not overfished would likely have negative effects on fishermen by requiring changes in regulations on harvest too often. This could negatively affect stability and planning for fishing businesses, in addition to fishing opportunities for recreational anglers, due to inconsistent access to the resource. Although for some fishermen, any access to a stock would be beneficial, the positive effects of consistency in regulations (even if access is restricted) and stability in the fishery would also be expected from a more fixed designation as overfished or not overfished.

Because any individual with the commercial unlimited or limited snapper grouper permit can harvest all species in the snapper grouper fishery management unit, the alternatives in this action could affect any participant in the commercial sector of the snapper grouper fishery. Under **Alternative 1 (No Action)**, permit holders may be affected by continued or future restricted access to a specific species due to an overfished designation, which could have negative effects on associated fishing businesses and communities. **Alternatives 2** and **3** could reduce the number of species that are designated as overfished, which could improve access to these economically important species. Similar effects would be expected for the recreational sector of the snapper grouper fishery.

Under **Alternative 2**, potential commercial access to several important species in the snapper grouper fishery could be improved with a revised threshold for the overfished designation. There could be some fishing communities that could be affected more than others (described in detail in **Section 3.3.2** in Regulatory Amendment 21). For gag, vermilion grouper, and red porgy, changes to the MSST would be expected to benefit the communities of Murrells Inlet, South Carolina; Little River, South Carolina; Mayport, Florida; Winnabow, North Carolina; and Morehead City, North Carolina (**Figures 3.3.2.4**, **3.3.2.5**, and **3.3.2.8** in Regulatory Amendment 21) because of the higher relative commercial landings and value of these species in these communities. For greater amberjack, changes would most likely be beneficial to Florida communities that have the highest commercial landings, including Cocoa, Key Largo, Miami, Islamorada, Port Orange, and Fort Pierce (**Figure 3.3.2.5** in Regulatory Amendment 21). South Florida communities including Key West, Miami, Marathon, and Hialeah would also be the most likely to be affected by changes for yellowtail snapper (**Figure 3.3.2.10** in Regulatory Amendment 21), and Wanchese, North Carolina, would be the primary community affected by changes for blueline tilefish (**Figure 3.3.2.7** in Regulatory Amendment 21). Because red snapper is such an important species in the South Atlantic, almost all communities would expect to benefit from changes to the MSST for red snapper.

Overall, social benefits would be expected from increased commercial access to stocks that are currently or could be designated as overfished, as long as the MSST value is accurate and catch would not harm the stock. Access to the stocks for the recreational sector would be expected to improve fishing opportunities and support for-hire businesses by allowing harvest of popular species. Commercial access

to more fish would benefit the commercial sector by allowing harvest of popular and economically valuable species such as red snapper, blueline tilefish, gag, black grouper, yellowtail snapper, vermilion snapper, red porgy, and greater amberjack, in addition to providing opportunity for commercial fishermen to participate in multiple components in the snapper grouper fishery and maximize returns on fishing trips depending on prices, demand, and environmental conditions. In general, social effects would be most beneficial under **Alternative 3** because this would allow for the greatest decrease in stock biomass before triggering a rebuilding plan with harvest restrictions. Under **Alternative 2**, benefits to the commercial and recreational sectors would be expected to be greatest under **Sub-alternative 2c**, followed by **Sub-alternative 2b**, then **Sub-alternative 2a**, because more MSST values would be changed under **Sub-alternative 2c.** Under **Alternative 1 (No Action)**, the fewest benefits to commercial businesses, recreational anglers, for-hire businesses, and fishing communities would be expected, and continued restricted access for some species could have negative social effects if the MSST value could be changed and an 'overfished' designation be removed.

Administrative Effects

Alternative 1 (No Action) would result in no administrative benefits because it would maintain the status quo situation where several snapper grouper species (see species in **Tables 4.1.1-4.1.3**) may frequently alternative between rebuild and overfished conditions. When a species is designated as overfished, a plan must be developed to rebuild the stock in accordance with provision in the Magnuson-Stevens Act. Rebuilding plans mo softer take the form of amendments to the Snapper Grouper FMP, which are administratively burdensome in the short term, and may continue to require administrative resources in the long term depending upon what management measures are included in the amendment. Therefore, any option that would reduce the likelihood a snapper grouper species is designated as overfished would subsequently reduce the administrative burden associated with development and implementation of rebuilding plans.

Relative to **Alternative 1 (No Action), Alternative 2** would reduce the risk that snapper grouper species with low natural mortality rates are designated as overfished due to natural variations in biomass. Under **Alternative 2**, the buffer between MSST and SSB_{MSY} is smaller than under **Alternative 3**, and therefore, would result in overfished determinations more frequently than **Alternative 3**. Based on the probability of requiring a rebuilding plan based on an overfished determination, the administrative effects would be greatest for **Alternative 1 (No Action)**, and least for **Alternative 3**. However, because **Alternative 3** would allow for the greatest decrease in biomass before triggering a rebuilding plan, there could be large administrative costs associated with rebuilding the stock.