

## Appendix J

### **FISHERY IMPACT STATEMENT (FIS)**

The Magnuson-Stevens Act requires a FIS be prepared for all amendments to Fishery Management Plans (FMPs). The FIS contains an assessment of the likely biological and socioeconomic effects of the conservation and management measures on: 1) fishery participants and their communities; 2) participants in the fisheries conducted in adjacent areas under the authority of another Council; and 3) the safety of human life at sea.

### **Actions Contained in Amendment 24 to the Snapper Grouper FMP**

The red grouper stock of the South Atlantic was assessed in 2008. The assessment showed red grouper to be overfished and undergoing overfishing. The primary purpose of Amendment 24 to the Fishery Management Plan for the Snapper Grouper Fishery (Amendment 24) is to implement the rebuilding plan. The South Atlantic Fishery Management Council (Council) is also proposing the re-specification of management benchmarks such as the maximum sustainable yield and minimum stock size threshold. Besides establishing a rebuilding plan, the Council is proposing the implementation or revision of the following items:

- (1) annual catch limits (ACL)
- (2) annual catch targets (ACT)
- (3) accountability measures (AM)
- (4) allocations
- (5) maximum sustainable yield (MSY)
- (6) optimum yield (OY)

### **Assessment of Biological Effects**

The actions for modifying MSY and MSST for red grouper are expected to have positive biological impacts to the environment. The definitions are based on the most recent stock assessment and the best available scientific information reviewed by both Councils' Scientific and Statistical Committees, thereby suggesting the best protection for the resource.

The actions to specify ABC, ACL, and ACT would have positive effects to the red grouper stock and associated ecosystem. The specification of targets and limits, in the form of ABCs, ACLs, and ACTs, are crucial component of any management program involving natural resources. Without the designation of these components, regulations may not be sufficient to prevent overfishing. The Council would manage towards a biological benchmark based on scientific advice, in the form of an ABC level. The specification of an ABC would protect fishery resources to allow sustainable exploitation. Sustainable exploitation would allow the existence of an appropriate number of older, larger fishes in the population; a robust population provides additional protections against recruitment failure due to several years of poor environmental conditions for eggs and larvae. Conversely, delaying rebuilding could make stocks more

susceptible to adverse environmental conditions that might affect recruitment success, or to unanticipated errors in parameter estimates, which could result in excessive fishing.

The rebuilding plan would define a rebuilding strategy for red grouper that sets ABC equal to the yield at 75%FMSY. Under this strategy, the fishery would have at least an 81% chance of rebuilding to SSBMSY by 2020.

The biological effects of options that allocate more of the ABC to the commercial sector could have a greater biological benefit because there is less of a change than a commercial ACL is exceeded than a recreational ACL. Commercial data can be more closely monitored as they are based on dealer reports; whereas much of the recreational data (except headboat data) are based on survey information. The preferred allocation alternative (Subalterantive 2e), however, divides the ABC more or less evenly between the commercial and recreational sectors.

### **Assessment of Economic Effects**

Although alternatives for MSY, MSST, and rebuilding schedule would condition the management measures to be implemented on the red grouper fishery, they would not alter the harvest of or fishing opportunities for red grouper. Thus, they would have no direct economic effects on fishery participants and associated industries or communities. However, there is an important aspect of the rebuilding schedule that needs to be noted. Regardless of the length of the rebuilding period chosen, the long-term benefits from the fishery would depend on, among others, the regulatory regime adopted over time and the discount factor. Regulatory regimes that promote economic efficiency generally have a higher likelihood of generating higher economic values while preserving the sustainability of the fish stock. Other regulatory regimes could very well erode the economic benefits over time, even at higher stock levels. For example, if regulations proposed in this amendment were successful in rebuilding the red grouper stock, higher levels of harvest approaching the chosen OY would be allowed. But if nothing is done to address overcapacity and other open-access problems in the fishery that currently beset the fishery or will develop over time, the economic status of the fishery could fall back to its current, or possibly worse, condition.

The economic effects of the actions for rebuilding strategy, ACL, ACT, and commercial/recreational allocation are closely intertwined that in analyzing one action, the preferred alternative for the other actions were assumed. Results of the analysis for the commercial and recreational sectors point to the economic superiority of  $F_{\text{REBUILD}}(10 \text{ years})$  over the other rebuilding strategies. This alternative would result in positive effects on each sub-sector (by area or gear type) within the commercial sector as well as on the recreational sector. The other rebuilding alternatives may be ranked as follows:  $F_{\text{REBUILD}}(8)$ ,  $75\%F_{\text{MSY}}$ ,  $F_{\text{REBUILD}}(7 \text{ years})$ , and  $65\%F_{\text{MSY}}$ .

Because any action on commercial/recreational allocation would generally favor one sector over the other, the economic effects of each allocation alternative would have contrasting effects on the two sectors, at least in terms of magnitude. It is often the case that an allocation decision would benefit one sector over another, although there are rare cases when both sectors benefit. Alternative 2b would provide the largest benefits to the commercial sector (54%) and lowest to the recreational sector (46%) while Alternative 2d would have just to opposite effects.

Among the ACL/OY alternatives, the alternative equating ACL to ABC would yield the largest benefits to both the commercial and recreational sectors. On the other end would be the alternative with ACL equal to 80 percent of ABC. In addition, Preferred Alternatives 5 and 6 which would eliminate the commercial quota and recreational aggregate ACL for black grouper, red grouper, and gag, along with their associated AMs, would provide increased benefits to the commercial and recreational sectors.

All the ACT alternatives, except the no action alternatives, would result in lower benefits to both the commercial and recreational sectors, because these alternatives would provide potentially sectoral harvest limits lower than the ACL. The no action alternative, which is the preferred alternative, would provide the best economic scenario for both the commercial and recreational sectors.

The commercial and recreational AMs, including post-season AMs, would be expected to result in benefit reductions to both sectors. Considering, however, that baseline commercial and recreational harvests are less than the ACL, AMs were evaluated to provide no additional economic losses to both the commercial and recreational sectors. The economic effects of in-season AMs were estimated as part of the evaluation of the other alternatives in this amendment.

### **Assessment of the Social Effects**

The combined impacts of the amendment are from actions to establish harvest levels, sector allocations and accountability measures that will be established as part of a rebuilding program for red grouper. The effects are described below in summary fashion for all alternatives.

As part of the rebuilding plan, the actions that will establish the MSY, MSST, and ABCs in general may have some short-term social impacts by limiting harvest of red grouper, but overall should produce long-term social benefits as the red grouper stock rebuilds. The preferred timeline of 10 years will allow for the least short-term social impacts from the limits and restrictions on red grouper harvest.

The action that will establish separate allocations for the recreational and commercial sectors will have some social effects by limiting one sector over another. The preferred alternative for the sector allocations will reflect more recent trends, and is expected to result in minimal short-term social impacts. There may be some long-term social effects as sector allocations may limit expansion in the commercial sector and will restrict additional growth in the recreational sector; however, the rebuilding strategy on its own will initially limit both sectors, and the preferred sector allocations will allow for social benefits as the red grouper stock rebuilds.

The establishment of an ACL for red grouper will result in short-term social impacts as red grouper harvest is restricted, but as the stock rebuilds there will be long-term social benefits from future harvest opportunities. This may be particularly important if restrictions continue for other stocks. The action that will remove of red grouper from the aggregate ACL with black grouper and gag grouper will likely have minimal social impacts, except with any additional limits on red grouper harvest through the individual ACL.

The ACT is the final threshold from which the Councils chooses to manage harvest levels through a series of decisions about uncertainty with stock status and management. The proposed actions will not set a commercial ACT, which will have minimal effects on the commercial sector. For the recreational sector, the proposed actions will set the recreational ACT lower than the ACL. This ACT is more likely to be reached and AMs triggered, and there will be social impacts due to limits on recreational effort and fishing opportunities.

Although some short-term adverse social consequences would be expected to result where harvests will be reduced or closures are triggered by AMs, the proposed actions in this amendment will result in positive long-term social benefits. These measures are expected to result in improved likelihood of species recovery, where appropriate, and protection, which should provide better safeguards for producing and maintaining a stable resource capable of supporting steady and sustainable social benefits. These actions should allow corrective action, when necessary, to be implemented in a more timely and efficient manner, thereby reducing their severity and the magnitude of associated short term adverse social effects. Short-term social impacts on the fishery would likely result from changes in the commercial and for-hire fleets due to closures or subsequent shorter seasons in case of overages. Additionally, recreational fishing opportunities are expected to be impacted by in-season bag limit reduction on some species.

Overall, the actions in this amendment and the rebuilding strategy for red grouper will likely impact the commercial and recreational sectors by limiting harvest for a portion of the rebuilding schedule, but long-term social benefits will be expected as the red grouper stock biomass increases.

#### **Assessment of Effects on Safety at Sea**

The implementation of a rebuilding plan for red grouper would not be expected to affect the current level of safety at sea.