Appendix F. Bycatch Practicability

Population Effects for the Bycatch Species

Background

Commercial fishing for golden tilefish is prosecuted primarily with longline gear. Approximately 90% of the commercial golden tilefish catch is taken with longline gear with the remain 10% is from hook and line gear (Table 1). During 2006-10, landings of golden tilefish were dominated by the commercial sector (Table 2).

Table 1. Golden tilefish commercial catch by gear based on data from 2005-2010.

2005-10	Gutted Weight	Longline	Other	Handline
Average	341,997	307,082	121	34,875
Percentage	100.00%	89.79%	0.04%	10.20%

Source: SEDAR 25 (2011).

Table 2. Average landings (lbs gutted weight) during 2006-2010 for commercial, headboat (HB), and MRFSS.

Species	commercial	HB	MRFSS
Golden tilefish	348,961	0	9,529

Source: SEDAR 25 (2011).

Regulations, which are currently being used to manage the golden tilefish, are annual catch limits (ACL) and bag limits. The commercial ACL is 282,819 lbs gutted weight and the recreational ACL is 1,578 fish. SEDAR 25 (2011) indicates golden tilefish is no longer experiencing overfishing and is not overfished. Furthermore, SEDAR 25 (2011) suggests the ACLs for golden tilefish can be increased, which is being considered by the South Atlantic Fishery Management Council in Regulatory Amendment to the Fishery Management Plan for the Snapper Grouper Fishery in the South Atlantic Region (Snapper Grouper FMP).

Commercial Sector

Approximately 20% of snapper grouper permitted vessels from the Gulf of Mexico and South Atlantic are randomly selected each year to fill out supplementary logbooks. SEDAR 25 (2011) indicated golden tilefish discards could not be calculated for the commercial sector due to very low sample size. Fewer than 10 trips reported golden tilefish discards during the period 2002-2010. That total included all commercial fishing gear. Several factors suggest that few golden tilefish are discarded in the commercial fishery. Golden tilefish have very specific habitat requirements and commercial fishermen report that they are able to eliminate bycatch of tilefish during closed seasons by avoiding known tilefish habitat.

Barotrauma likely results in high fishing mortality because golden tilefish habitat is relatively deep (300 feet or deeper) and those fish were retained rather than discarded dead. In addition,

there is no minimum size limit for golden tilefish. Given the rare reporting of golden tilefish discards, the ease with which golden tilefish bycatch can be avoided, the likely high mortality of caught fish, and the lack of minimum size limit, which would require discarding; SEDAR 25 (2011) determined that golden tilefish discards are probably few in number
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Recreational Sector

For the recreational fishery, estimates of the number of recreational discards are available from Marine Recreational Fisheries Statistical Survey (MRFSS) and the NMFS headboat survey. The MRFSS system classifies recreational catch into three categories:

- Type A - Fishes that were caught, landed whole, and available for identification and enumeration by the interviewers.

- Type B - Fishes that were caught but were either not kept or not available for identification:

    - Type B1 - Fishes that were caught and filleted, released dead, given away, or disposed of in some way other than Types A or B2.

    - Type B2 - Fishes that were caught and released alive.

Length and/or weight are unknown for all modes of fishing covered by the MRFSS in the South Atlantic sub-region. All live released fish statistics (B2 fish) in charter or party/charter mode were adjusted in the SEDAR 25 (2011). At-sea sampling of headboat discards was initiated (NC/SC in 2004, GA/FL in 2005) as part of the improved for-hire surveys to characterize the size distribution of live discarded fishes. Where estimates for numbers of discards are available, variance estimates are high. No discarded golden tilefish were recorded from MRFSS for 2006-2010. The estimated number of discarded golden tilefish for 2005 is 1,036 fish. No estimates of discarded golden tilefish are available from headboats (SEDAR 25 2011).

Finfish Bycatch Mortality

SEDAR 25 (2011) indicates that bycatch and discards of golden tilefish were thought to be low overall in the South Atlantic. The recommended discard mortality rate for golden tilefish is 100%. No discard estimates were included in the assessment model as discards are assumed to be negligible.

Practicability of Management Measures in Directed Fisheries Relative to their Impact on Bycatch and Bycatch Mortality

Amendment 18B to the Snapper Grouper FMP includes alternatives addressing the golden tilefish commercial sector that would implement gear specific endorsements, and/or change the fishing year. These actions could reduce the number of vessels targeting golden tilefish. Since bycatch is already very low for golden tilefish, no change would be expected in the level of golden tilefish bycatch. Commercial fishing for golden tilefish is very selective and the trip limit

is large enough to prevent much discarded. Furthermore, there is not a great deal of recreational effort since the species is found in deep water and far offshore.

Regulatory Amendment 12 to the Snapper Grouper FMP would consider an increase in the commercial and recreational ACL based on the results from the most recent stock assessment (SEDAR 25 2011). An increase in the ACL is not expected to change the magnitude of bycatch in the commercial sector since there is no minimum size limit and all golden tilefish are retained. In the recreational sector, there is a 1 fish per vessel limit. However, golden tilefish are not generally caught when fishermen target other snapper grouper species. Furthermore, recreational catch of golden tilefish is extremely small (Table 2) and there were no discards reported in the recreational sector during 2006-2010. As the recreational allocation is only 3% of the overall ACL, only a small increase in the recreational ACL would be expected. Therefore, very little change in the bycatch of golden tilefish is expected from an increase in the recreational ACL.

Ecological Effects Due to Changes in the Bycatch

Alternatives proposed golden tilefish in Amendment 18B to the Snapper Grouper FMP addressing the golden tilefish commercial fishery that would implement gear specific endorsements, and/or change the fishing year could reduce the number of vessels targeting golden tilefish. Bycatch is already is extremely low and no change in bycatch would be expected from the proposed measures. Regulatory Amendment 12 to the Snapper Grouper FMP includes alternative to increase the commercial and recreational ACL and is not expected to increase the number of regulatory discards.

Overall fishing effort could decrease in the commercial sector in response to the specification of endorsements if all individuals who qualify for endorsements. In contrast, the increase in the commercial and recreational ACLs proposed in Regulatory Amendment 12 to the Snapper Grouper FMP could increase effort on golden tilefish. However, the Council's Scientific and Statistical Committee has established a large buffer between the overfishing limit and the acceptable biological catch (which is set equal to the ACL). Commercial fishery for golden tilefish is very selective, and few incidental species are taken. Therefore, an increase in the ACL would not be expected to negatively affect the golden tilefish stock, and few ecological changes would be expected for proposed measures in Amendment 18B or Regulatory Amendment 12 to the Snapper Grouper FMP.

The Comprehensive ACL Amendment for species in FMPs not experiencing overfishing includes additional measures to reduce bycatch in the snapper grouper fishery with the possible establishment of species units. Species grouping would be based on biological, geographic, economic, taxonomic, technical, social, and ecological factors. Amendment 14 to the Snapper Grouper FMP (SAFMC 2009) established Marine Protected Areas to protect a portion of the population and habitat of long-lived, deepwater snapper grouper species including golden tilefish, from directed fishing pressure to achieve a more natural sex ratio, age, and size structure.

Changes in the Bycatch of Other Fish Species and Resulting Population and Ecosystem Effects

The establishment of an endorsement program in Amendment 18B to the Snapper Grouper FMP is not expected to result in changes in bycatch of other fish species and result in ecosystem changes. The catch level of golden tilefish is constrained by the ACL. The endorsement action would identify those individuals who could target golden tilefish.

Furthermore, the increase in the ACLs proposed in Regulatory Amendment 12 to the Snapper Grouper FMP would not be expected to change the magnitude of bycatch for golden tilefish. Currently all golden tilefish caught are retained by commercial fishermen and recreational catch is minor. With an increased in the ACLs, it is expected fishermen would continue to retain all golden tilefish caught and recreational catch would continue to be very small.

Effects on Marine Mammals and Birds

Under Section 118 of the Marine Mammal Protection Act (MMPA), NOAA Fisheries Service must publish, at least annually, a List of Fisheries (LOF) that places all U.S. commercial fisheries into one of three categories based on the level of incidental serious injury and mortality of marine mammals that occurs in each fishery. Of the gear utilized within the snapper grouper fishery, only the black sea bass pot is considered to pose an entanglement risk to large whales. The southeast U.S. Atlantic black sea bass pot fishery is included in the grouping of the Atlantic mixed species trap/pot fisheries, which the 2009 List of Fisheries classifies as a Category II (73 FR 73032; December 1, 2008). Gear types used in these fisheries are determined to have occasional incidental mortality and serious injury of marine mammals. For the snapper grouper fishery, the best available data on protected species interactions are from the Southeast Fisheries Science Center (SEFSC) Supplementary Discard Data Program (SDDP) initiated in July of 2001 and sub-samples 20% of the vessels with an active permit. Since August 2001, only three interactions with marine mammals have been documented; each was taken by handline gear and each release alive (McCarthy SEFSC database). The bottom longline/hook-and-line component of the South Atlantic snapper grouper fishery remains a Category III under the LOF.

Although the gear type used within the black sea bass pot fishery can pose an entanglement risk to large whales due to their distribution and occurrence, sperm, fin, sei, and blue whales are unlikely to overlap with the black sea bass pot fishery operated within the snapper grouper fishery since it is executed primarily off North Carolina and South Carolina in waters ranging from 70-120 feet deep (21.3-36.6 meters). There are no known interactions between the black sea bass pot fishery and large whales. NOAA Fisheries Service's biological opinion on the continued operation of the South Atlantic snapper grouper fishery determined the possible adverse effects resulting from the fishery are extremely unlikely. Thus, the continued operation of the snapper grouper fishery in the southeast U.S. Atlantic EEZ is not likely to adversely affect sperm, fin, sei, and blue whales (NMFS 2006).

Northern right and humpback whales may overlap both spatially and temporally with the black sea bass pot fishery. Recent revisions to the Atlantic Large Whale Take Reduction Plan have

folded the Atlantic mixed species trap/pot fisheries into the plan (72 FR 193; October 5, 2007). The new requirements will help further reduce the likelihood of northern right and humpback whale entanglement in black sea bass pot gear.

The Bermuda petrel and roseate tern occur within the action area. Bermuda petrels are occasionally seen in the waters of the Gulf Stream off the coasts of North and South Carolina during the summer. Sightings are considered rare and only occurring in low numbers (Alsop 2001). Roseate terns occur widely along the Atlantic coast during the summer but in the southeast region, they are found mainly off the Florida Keys (unpublished USFWS data). Interaction with fisheries has not been reported as a concern for either of these species.

Although, the Bermuda petrel and roseate tern occur within the action area, these species are not commonly found and neither has been described as associating with vessels or having had interactions with the snapper grouper fishery. Thus, it is believed that the snapper grouper fishery is not likely to negatively affect the Bermuda petrel and the roseate tern. Measures proposed in Amendment 18B and Regulatory Amendment 12 to the Snapper Grouper FMP are not expected to negatively affect marine mammals and birds.

Changes in Fishing, Processing, Disposal, and Marketing Costs

The establishment of an endorsement program in Amendment 18B to the Snapper Grouper FMP would be expected to affect the cost of fishing operations. Regulatory Amendment 12 to the Snapper Grouper FMP includes alternatives that could increase the golden tilefish ACL. Thus positive economic benefits could occur.

Changes in Fishing Practices and Behavior of Fishermen

An endorsement program proposed in Amendment 18B to the Snapper Grouper FMP could result in a modification of fishing practices by commercial and recreational fishermen; however, this change in behavior is unlikely to increase the level of bycatch, which is currently extremely low. Furthermore, an increase in the ACL proposed in Regulatory Amendment 12 to the Snapper Grouper FMP could change fishing practices and behavior of fishermen but it is unlikely to affect the level of bycatch. It is expected there would be no regulatory discards in the commercial sector and very minor discarding in the recreational sector.

Changes in Research, Administration, and Enforcement Costs and Management Effectiveness

Research funds for observer programs, as well as gear testing and testing of electronic devices are also available each year in the form of grants from the Foundation, Marine Fisheries Initiative (MARFIN), Saltonstall-Kennedy (S-K) program, and the Cooperative Research Program (CRP). Efforts are made to emphasize the need for observer and logbook data in requests for proposals issued by granting agencies. Amendment 18A to the Snapper Grouper FMP was approved by the Council in December and includes an action, which will improve data reporting the recreational sector. A generic amendment is being developed by the Council and Gulf of Mexico Fishery Management Council to improve data reporting.

Changes in the Economic, Social, or Cultural Value of Fishing Activities and Non-Consumptive Uses of Fishery Resources

Preferred management measures, including those that are likely to increase or decrease discards could result in social and/or economic impacts as discussed in Section 4 of Amendment 18B and Regulatory Amendment 12 to the Snapper Grouper FMP.

Changes in the Distribution of Benefits and Costs

There is very little bycatch in the golden tilefish portion of the snapper grouper fishery. Measures proposed in Amendment 18B and Regulatory Amendment 12 to the Snapper Grouper FMP are not expected to increase the level of bycatch. Changes in the distribution and costs of proposed measures are described in Section 4 of the amendments.

Social Effects

The social effects of all the management measure are described in Section 4 of Amendment 18B and Regulatory Amendment 12 to the Snapper Grouper FMP.

Conclusion

This section evaluates the practicability of taking additional action to minimize bycatch and bycatch mortality in the South Atlantic snapper grouper fishery using the ten factors provided at 50 CFR 600.350(d)(3)(i). In summary, there is very little bycatch of golden tilefish in the commercial or recreational sectors of the snapper grouper fishery. Proposed measures in Amendment 18B and Regulatory Amendment 12 to the Snapper Grouper FMP are not expected to increase since golden tilefish are not discarded by commercial fishermen and recreational catch is extremely minor.

Additional measures to reduce bycatch in the snapper grouper fishery will be implemented in the future. The Comprehensive ACL Amendment includes measures to reduce bycatch in the snapper grouper fishery including species grouping based on biological, geographic, economic, taxonomic, technical, social, and ecological factors.