# Amendment 18A

## To the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region and Final Environmental Impact Statement with Regulatory Flexibility Act Analysis, Regulatory Impact Review, and Fishery Impact Statement

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## ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| ABC | Acceptable biological catch |
| ACCSP | Atlantic Coastal Cooperative Statistics Program |
| ACL | Annual Catch Limits |
| ACT | Annual Catch Target |
| AM | Accountability Measure |
| APA | Administrative Procedures Act |
| ASMFC | Atlantic States Marine Fisheries Commission |
| B | A measure of stock biomass in either weight or other appropriate unit |
| $B_{MSY}$ | The stock biomass expected to exist under equilibrium conditions when fishing at $F_{MSY}$ |
| $B_{OY}$ | The stock biomass expected to exist under equilibrium conditions when fishing at $F_{OY}$ |
| $B_{CURR}$ | The current stock biomass |
| CEA | Cumulative Effects Analysis |
| CEQ | Council on Environmental Quality |
| CFMC | Caribbean Fishery Management Council |
| CPUE | Catch per unit effort |
| CRP | Cooperative Research Program |
| CZMA | Coastal Zone Management Act |
| DEIS | Draft Environmental Impact Statement |
| EA | Environmental Assessment |
| EEZ | Exclusive Economic Zone |
| EFH | Essential Fish Habitat |
| EFH-HAPC | Essential Fish Habitat - Habitat Area of Particular Concern |
| EIS | Environmental Impact Statement |
| ESA | Endangered Species Act of 1973 |
| F | A measure of the instantaneous rate of fishing mortality |
| $F_{30\%SPR}$ | Fishing mortality that will produce a static SPR = 30%. |
| $F_{45\%SPR}$ | Fishing mortality that will produce a static SPR = 45%. |
| $F_{CURR}$ | The current instantaneous rate of fishing mortality |
| $F_{MSY}$ | The rate of fishing mortality expected to achieve MSY under equilibrium conditions and a corresponding biomass of $B_{MSY}$ |
| $F_{OY}$ | The rate of fishing mortality expected to achieve OY under equilibrium conditions and a corresponding biomass of $B_{OY}$ |
| FEIS | Final Environmental Impact Statement |
| FMP | Fishery Management Plan |
| FMU | Fishery Management Unit |
| FONSI | Finding of No Significant Impact |
| GMFMC | Gulf of Mexico Fishery Management Council |
| IFQ | Individual Fishing Quota |
| M | Natural mortality rate |
| MARFIN | Marine Fisheries Initiative |
| MARMAP | Marine Resources Monitoring Assessment and Prediction Program |
| MBTA | Migratory Bird Treaty Act |

| | |
|---|---|
| MFMT | Maximum Fishing Mortality Threshold |
| MMPA | Marine Mammal Protection Act of 1972 |
| MRFSS | Marine Recreational Fisheries Statistics Survey |
| MSFCMA | Magnuson-Stevens Fishery Conservation and Management Act |
| MSST | Minimum Stock Size Threshold |
| MSY | Maximum Sustainable Yield |
| NEPA | National Environmental Policy Act of 1969 |
| NMFS | National Marine Fisheries Service |
| NMSA | National Marine Sanctuary Act |
| NOAA | National Oceanic and Atmospheric Administration |
| OY | Optimum Yield |
| PQBM | Post Quota Bycatch Mortality |
| R | Recruitment |
| RFA | Regulatory Flexibility Act |
| RIR | Regulatory Impact Review |
| SAFE Report | Stock Assessment and Fishery Evaluation Report |
| SAMFC | South Atlantic Fishery Management Council |
| SDDP | Supplementary Discard Data Program |
| SEDAR | Southeast Data, Assessment, and Review |
| SEFSC | Southeast Fisheries Science Center |
| SERO | Southeast Regional Office |
| SFA | Sustainable Fisheries Act |
| SIA | Social Impact Assessment |
| SPR | Spawning Potential Ratio |
| SSC | Scientific and Statistical Committee |
| TAC | Total allowable catch |
| TL | Total length |
| $T_{MIN}$ | The length of time in which a stock could rebuild to $B_{MSY}$ in the absence of fishing mortality |
| USCG | U.S. Coast Guard |

# AMENDMENT 18A TO THE FISHERY MANAGEMENT PLAN FOR THE SNAPPER GROUPER FISHERY OF THE SOUTH ATLANTIC REGION

## INCLUDING AN ENVIRONMENTAL IMPACT STATEMENT, REGULATORY FLEXIBILITY ACT ANALYSIS, REGULATORY IMPACT REVIEW AND FISHERY IMPACT STATEMENT

| | |
|---|---|
| **Proposed actions:** | Update the black sea bass rebuilding strategy, acceptable biological catch (ABC), annual catch limit (ACL) and annual catch target (ACT); establish an endorsement program for black sea bass pots; limit trap effort in the black sea bass pot fishery; implement measures to reduce bycatch in the black sea bass pot fishery; modify current black sea bass accountability measures; consider a black sea bass spawning season closure; establish a commercial trip limit for black sea bass; modify the current black sea bass size limits; and improve the accuracy, timing, and quantity of fisheries data. |
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## ABSTRACT

The South Atlantic Fisheries Management Council (South Atlantic Council) is concerned that regulations implementing several recent snapper grouper amendments could increase the incentive to fish for black sea bass. Therefore, the South Atlantic Council is proposing management measures that would limit participation in the black sea bass component of the snapper grouper fishery and slow the rate of harvest to prevent the progressive shortening of the commercial and recreational fishing seasons. The South Atlantic Council is also concerned about the accuracy, timing, and quantity of fisheries data and is proposing management measures that would improve fisheries data.

Actions in Amendment 18A would:
Modify the rebuilding strategy, acceptable biological catch (ABC) , annual catch limit (ACL) and annual catch target (ACT)

- for black sea bass
- Limit participation in the black sea bass pot segment of the snapper grouper fishery through an endorsement program
- Establish an appeals process for fishermen excluded from the black sea bass pot endorsement program
- Allow transferability of black sea bass pot endorsements
- Limit effort in the black sea bass pot segment of the snapper grouper fishery
- Implement measures to reduce black sea bass bycatch
  Modify accountability measures for black sea bass
- Establish a spawning season closure for black sea bass
- Establish a commercial trip limit for black sea bass
- Modify the current commercial and/or recreational size limits; and
- Improve data reporting in the commercial and for-hire sectors of the snapper grouper fishery.

The Environmental Impact Statement (EIS) was been prepared to analyze the effects of implementing regulations to achieve the actions listed above.

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# Why is the South Atlantic Council taking Action?

According to the most recent stock assessment black sea bass are no longer overfished (the number of black sea bass in the water is too low) because the current biomass is above the Minimum Stock Size Threshold (MSST) but still below the Spawning Stock Biomass (SSB) at Maximum Sustainable Yield ($SSB_{MSY}$) (**Figure S-1**). This means the stock is still rebuilding and the biomass must be increased to the $SSB_{MSY}$ level by the end of the June 1, 2015 – May 31, 2016 fishing year. Black sea bass are undergoing slight overfishing (fish are being removed from the population too quickly) (**Figure S-2**).

Amendment 13C to the Fishery Management Plan (FMP) for the Snapper Grouper Fishery of the South Atlantic Region (Amendment 13C) (SAFMC 2006) included management measures to reduce harvest of black sea bass, and Amendment 15A to the FMP for the Snapper Grouper Fishery of the South Atlantic Region (Amendment 15A) (SAFMC 2008a) included a rebuilding plan for black sea bass as required by the Magnuson-Stevens Fishery Conservation and Management Act. A combination of a rebuilding stock and effort shifts into the fishery for black sea bass have caused the commercial quota to be met earlier and earlier each fishing season. Amendment 17B to the FMP for the Snapper Grouper Fishery of the South Atlantic Region (Amendment 17B) (SAFMC 2010b) established strict accountability measures (AMs) for black sea bass that close the fishery when the commercial and recreational annual catch limits are met or projected to be met.

To prevent AMs from being triggered early each fishing season, and associated negative social and economic impacts, the South Atlantic Fishery Management Council (South Atlantic Council) has determined action should be taken to modify the current rebuilding strategy including the acceptable biological catch (ABC), the annual catch limit (ACL) and AMs, reduce participation and effort in the black sea bass pot segment of the snapper grouper fishery, and adjust the current system of accountability in the recreational sector. Additionally, Amendment 18A to the FMP for the Snapper Grouper Fishery of the South Atlantic Region (Amendment 18A) would consider measures to improve data reporting in the commercial and for-hire sectors of the snapper grouper fishery.

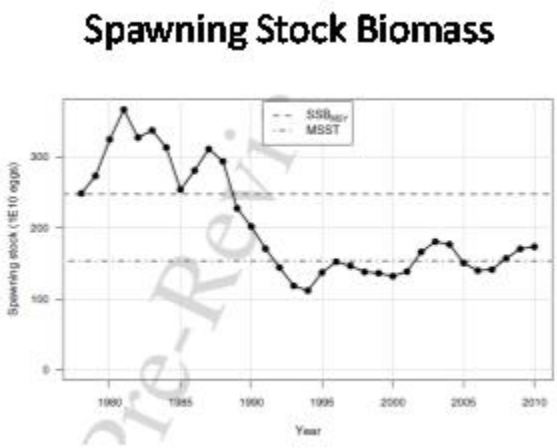



**Figure S-1.** Spawning stock biomass compared with the MSST and $SSB_{MSY}$.

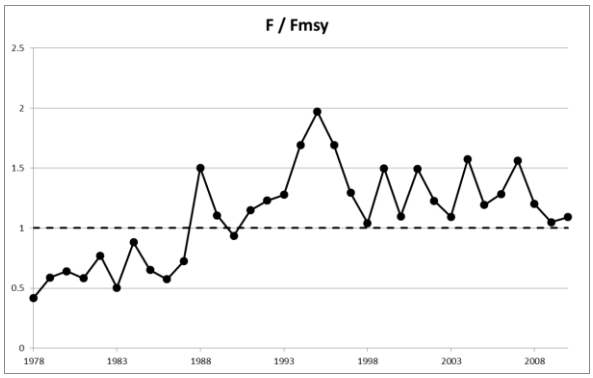
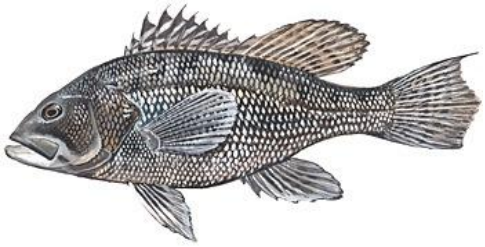



**Figure S-2.** Fishing mortality (F)/$F_{MSY}$.



*Black Sea Bass*

## Purpose and Need of the Proposed Actions

The **purpose** of Amendment 18A is to limit participation and effort in the black sea bass pot fishery; limit bycatch in the black sea bass pot segment of the snapper grouper fishery; modify the current system of AMs; modify the current rebuilding strategy including ABC, ACL and AMs; consider a spawning season closure in addition to other management measures to reduce the rate of harvest of black sea bass; and improve the accuracy, timing, and quantity of fisheries data, while minimizing, to the maximum extent practicable, adverse socioeconomic impacts. These actions will address issues that have arisen as a result of a more stringent regulatory regime in the South Atlantic region.

The **need** for action in Amendment 18A is to reduce overcapacity in the black sea bass segment of the snapper grouper fishery. Recent amendments to the Snapper Grouper FMP have imposed more restrictive harvest limitations on snapper grouper fishermen. In an effort to identify other species to target, a greater number of fishermen may target black sea bass. An increase in effort in the black sea bass component of the snapper grouper fishery would intensify the "race to fish" that already exists, which has resulted in a shortened season for the commercial and recreational sectors. Furthermore, the commercial quota for black sea bass was met in 2009 and in 2010 before fishermen had a chance to fish during the portion of the year (November-February) that has historically been most productive. The South Atlantic Council is concerned an increasing effort on these species will deteriorate profits.

# What Are the Proposed Actions?

There are 12 actions in Amendment 18A. Each *action* has a range of *alternatives*, including a "no action alternative" and a "preferred alternative". The range of alternatives must include at least the no action (to do nothing) and preferred (the South Atlantic Council's choice) alternatives.

### *Proposed Actions in Amendment 24*

1. Modify Rebuilding Strategy, ABC, ACLs, and ACTs for Black Sea Bass
2. Limit Participation in the Black Sea Bass Pot Fishery Through an Endorsement Program
3. Establishment of an Appeals Process for Fishermen Excluded from the Black Sea Bass Pot Endorsement Program
4. Allow for Transferability of Black Sea Bass Pot Endorsements
5. Limit Effort in the Black Sea Bass Pot Fishery Each Permit Year
6. Implement Measures to Reduce Black Sea Bass Bycatch
7. Modify Accountability Measures for Black Sea Bass
8. Establish a Spawning Season Closure for Black Sea Bass
9. Establish a Commercial Trip Limit for Black Sea Bass
10. Modify Commercial and/or Recreational Black Sea Bass Size Limits
11. Improvements to Commercial Data Reporting
12. Improvements to For-Hire Data Reporting

## Actions and Alternatives

### Action 1. Modify Rebuilding Strategy, ABC, ACLs, and ACTs for Black Sea Bass

### Action 1a. Modify Rebuilding Strategy and Set ABC for Black Sea Bass

**Alternative 1 (No Action).** Retain rebuilding strategy for black sea bass that maintains a constant catch throughout the remaining years of the rebuilding timeframe. The current ABC for black sea bass is 847,000 lbs whole weight (718,000 lbs gutted weight). Based on the current regulations in place the commercial ACL is 309,000 lbs gutted weight (gw) and the recreational ACL is 409,000 lbs gw for a combined ACL of 718,000 lbs gw.

**Alternative 2.** Establish a new constant catch rebuilding strategy with an ABC from the 2011 assessment and SSC review process.

**Alternative 3.** Define a rebuilding strategy for black sea bass that maintains a constant fishing mortality rate throughout the remaining years of the rebuilding timeframe.

**Sub-Alternative 3a.** $F = 75\%F_{MSY}$

**Sub-Alternative 3b.** $F = F_{rebuild}$ (by 2016)

The South Atlantic Council is considering modifying the rebuilding strategy for black sea bass because under the current rebuilding strategy harvest is not allowed to increase as the stock biomass improves. This causes the rate of harvest to increase as the population rebuilds and leads to early closures when quotas are met early in the fishing season.

**Alternative 4.** Define a rebuilding strategy for black sea bass that holds catch constant (847,000 lbs whole weight; recreational ACL = 409,000 lbs gw and commercial ACL = 309,000 lbs gw) in fishing years 2012/2013 and 2013/2014 and then changes to $F_{rebuild}$ fishing mortality rate throughout the remaining fishing seasons of the rebuilding timeframe. After the 2015/2016 fishing season the fishing mortality rate would be held constant until modified.

**Preferred Alternative 5.** Define a rebuilding strategy for black sea bass that holds catch constant (847,000 lbs whole weight; recreational ACL = 409,000 lbs gw and commercial ACL = 309,000 lbs gw) in fishing years 2012/2013 and 2013/2014 and then changes to $F_{rebuild}$ in 2014/2015. ($F_{rebuild}$ is defined as a constant fishing mortality strategy that maintains the 66% probability of recovery rate throughout the remaining fishing seasons of the rebuilding timeframe.) After the 2015/2016 fishing season the fishing mortality rate would be held constant until modified.

**Table S-1.** Black sea bass ABCs (lbs gutted weight) for Alternatives 2-5. Based on projections that assume 150% of ACL (commercial and recreational) met in June 2011-May 2012 fishing year. SSC approved projections for 2 years and requested an updated assessment before specifying an ABC beyond 2014.

| Fishing Year | Alternative 1 | Alternative 2 | Sub-Alternative 3a | Sub-Alternative 3b | Alternative 4 | Preferred Alternative 5 |
|---|---|---|---|---|---|---|
| 2012/2013 | 718,000 | 973,729 | 746,610 | 746,610 | 718,000 | 718,000 |
| 2013/2014 | 718,000 | 973,729 | 881,356 | 881,356 | 718,000 | 718,000 |
| 2014/2015 | 718,000 | 973,729 | 1,023,729 | 1,023,729 | 1,144,915 | *** |
| 2015/2016 | 718,000 | 973,729 | 1,134,746 | 1,134,746 | 1,212,712 | *** |
| 2016/2017 | 718,000 | 973,729 | 1,215,254 | 1,215,254 | 1,266,102 | *** |
| Probability of Rebuilding by 2016/2017 | 66% | 50% | <50% | 50% | 50% | 66% |

Note on values in Table S-1: Values under **Alternative 2** are based on Table 3.22 from SEDAR 25 (2011). Landings under **Sub-Alternative 3a** are assumed to equal those in **Sub-Alternative 3b** because the fishing mortality rate (F) for **Sub-Alternative 3a** (F= 0.48) is very similar to F for **Sub-Alternative 3b** (F = 0.52). It is likely that landings under **Sub-Alternative 3a** would be slightly greater than **Sub-Alternative 3b**. Values under **Sub-Alternative 3b** are based on Table 3.16 from SEDAR 25 (2011). Values under **Alternative 4** based on projection provided by the SEFSC dated November 4, 2011, and are based on $F_{rebuild}$ that allows an increase in harvest for 2012 fishing year. Values for 2014 to 2016 in **Preferred Alternative 5** would be determined from an updated assessment. A conversion factor of 1.18 used to convert whole weight values in assessment to gutted weight.

## Impacts from Action 1a:

### Biological Impacts

**Alternative 1 (No Action)** could result in unnecessary discards of black sea bass as biomass increases. However, release mortality of black sea bass is very low and actions were taken to reduce bycatch with increased mesh size in pots through Amendment 13C. Beneficial biological effects under **Alternative 1 (No Action)** include a more rapid rebuilding of the stock and increase in the average age and size structure compared to the other alternatives. **Alternative 2** would hold catch constant for the remaining years of the rebuilding plan and the ABC would not increase as the stock biomass increases. Based on results from SEDAR 25, the catch level could be increased from 718,000 lbs gw (~847,000 lbs ww) in the 2011/2012 fishing year to 973,729 lbs gw (1,149,000 lbs ww) in 2012/13 and then held steady through the remainder of the rebuilding period (end of 2015/2016 fishing year; **Table S-1**). **Alternative 3** would hold F constant and allow catch of black sea bass to increase as biomass of the stock increases**.** The current estimate of $F_{MSY}$ is F = 0.698. **Sub-Alternative 3a** would hold the fishing mortality rate at 75% of $F_{MSY}$, which is very close to the fishing mortality rate under **Sub-Alternative 3b. Sub-Alternative 3b** would allow the greatest amount of harvest possible, while still having a 50% chance of rebuilding by 2016. The South Atlantic Council's Scientific and Statistical Committee (SSC) endorsed **Sub-Alternative 3b**, which assumes 150% of the allowable catch was met in the 2011 fishing year. The SSC stated that catch

should not increase after the 2013/2014 fishing year until a new stock assessment update has been completed. **Alternative 4** would use a modified approach for a black sea bass rebuilding strategy. Biological impacts of **Alternative 4** would be comparable to **Sub-Alternative 3b** since after the first two fishing seasons the allowable harvest would fall into line with what the allowable harvest would be under $F_{rebuild}$. **Preferred Alternative 5** would provide similar biological protection to the stock as **Alternatives 1 (No Action)** and **4** for the first two years. It is unknown how **Preferred Alternative 5** wouldwwould affect stock status beyond the first two years of implementation until after the South Atlantic Council's Science and Statistical Committee reviews the status of the stock from an updated stock assessment after 2013 and recommends a new ABC for black sea bass for the 2014/2015 fishing year and beyond.

#### Socioeconomic Impacts

**Alternative 1 (No Action)** and **Preferred Alternative 5** could result in the greatest negative economic impact for commercial fishermen. As the stock recovers and there are a greater number of larger fish, the current commercial ACL is being caught more quickly each year. The commercial season that began on June 1, 2011, lasted only 6 weeks. **Alternative 2**, which holds catch at a different constant level during the remainder of the rebuilding period, would have similar effects to **Alternative 1 (No Action)** and **Preferred Alternative 5**. Under constant F rebuilding strategy (**Alternative 3**), ACLs would generally increase with a rebuilding stock. The advantage of this strategy is as more fish become available with increased stock size, more fish can be removed from the population. **Alternative 3** would result in a smaller negative economic impact to commercial fishermen compared to **Alternative 1 (No Action)** and **Preferred Alternative 5** which would hold the fishing mortality rate (F) at a constant level for the remaining years of the rebuilding schedule. **Sub-Alternative 3a** is associated with less than 50 percent probability of rebuilding the stock within the rebuilding timeframe, and so may not be a viable alternative according to the requirements of the Magnuson-Stevens Act. **Sub-Alternative 3b** has a 50 percent probability of rebuilding the stock, but would provide for an ACL less than that of **Sub-Alternative 3a**. In the short-run, **Sub-Alternative 3a** may provide for a better economic scenario than **Sub-Alternative 3b**; the reverse may be expected over the long-run. **Alternative 4** has the potential to provide the greatest economic benefit to the fishermen as the commercial ACL could increase due to adjustments as the stock rebuilds.

### Action 1b. Set an ACL for Black Sea Bass

**Alternative 1 (No Action)**. Do not change the existing ACL for black sea bass.

**Preferred Alternative 2**. Set ACL = ABC = OY. This results in sector ACLs based on the existing allocations. ACLs will not increase automatically in a subsequent year if the present year's projected catch has exceeded the total ACL.

**Alternative 3**. Set ACL = 90%ABC = OY. This results in sector ACLs based on the existing allocations. ACLs will not increase automatically in a subsequent year if the present year's projected catch has exceeded the total ACL.

**Alternative 4**. Set ACL = 80%ABC = OY. This results in sector ACLs based on the existing allocations. ACLs will not increase automatically in a subsequent year if the present year's projected catch has exceeded the total ACL.

**Table S-2.** ACLs (lbs gutted weight) based on Constant Catch shifting to Constant F rebuilding strategy (Action 1a, Preferred Alternative 5). ACL values after 2014/2015 will be determined from an update assessment.

| Constant Fishing Mortality Rate Options | Fishing Season | Combined ACL | Com. ACL (43%)* | Recreational ACL (57%) |
|---|---|---|---|---|
| **Preferred Alternative 2** ACL=ABC=OY | 2012/2013 | 718,000 | 309,000 | 409,000 |
| | 2013/2014 | 718,000 | 309,000 | 409,000 |
| **Alternative 3** ACL=90%ABC | 2012/2013 | 646,200 | 277,866 | 368,334 |
| | 2013/2014 | 646,200 | 277,866 | 368,334 |
| **Alternative 4** ACL=80%ABC | 2012/2013 | 574,400 | 246,992 | 327,408 |
| | 2013/2014 | 574,400 | 246,992 | 327,408 |

*Sector ACLs are based on the allocation formula used in Amendment 13C (SAFMC 2006) whereby the commercial quota is 43% of the total allowable catch (TAC) and the recreational allocation is 57% of the TAC.

## Impacts from Action 1b.

### Biological Impacts

**Alternative 1 (No Action)** would not change the existing ACL and OY for black sea bass. Based on a recommendation from the South Atlantic Council's SSC, Amendment 17B indicated that the ABC for overfished stocks is consistent with the value from the rebuilding plan. The Comprehensive ACL Amendment incorporated this definition of ABC for overfished stocks into the ABC Control Rule. The ABC for black sea bass is 718,000 lbs gw, which is equivalent to the ACL. **Alternative 2 (Preferred)** would set optimum yield (OY) equal to the ACL. National Standard 1 (NS1) establishes the relationship between conservation and management measures, preventing overfishing, and achieving OY from each stock, stock complex or fishery. Under **Alternatives 2 (Preferred)-4**, the ACL would be based on the ABC for black sea bass from SEDAR 25, which takes into consideration scientific uncertainty to ensure catches are maintained below a MSY/OFL level. **Preferred Alternative 2** is the least conservative option of all the alternatives under consideration in **Action 1b** by setting the ACL/OY equal to the ABC. The ACL would be divided into sector-specific ACLs based on the allocations of 43% commercial/57% recreational established in Amendment 13C to the FMP. **Preferred Alternative 2** would result in the greatest increase in overall allowable harvest over time while still allowing the stock to rebuild. **Preferred Alternative 2** would also provide no buffer between the ABC and the ACL. **Alternative 4** is the most risk adverse approach to setting a total ACL for black sea bass since it would create the largest buffer between ACL and ABC.

### Socioeconomic Impacts

Since an ACL is a major constraint in the harvest or use of the black sea bass resource, **Preferred Alternative 2**, which provides for the highest ACL, would be expected to impose the least constraint on fishing activities. In principle, **Preferred Alternative 2** would allow the commercial and recreational sectors to generate the largest short-term

economic benefits from the use of the resource. Inasmuch as this alternative would still allow for the stock to rebuild within the rebuilding timeframe, benefits from this alternative may be expected to persist over time. Along similar reasoning, **Alternatives 3** and **4** would allow for lower economic benefits than **Preferred Alternative 2**, at least in the short term. Unless the stock rebuilds significantly faster under **Alternatives 3** or **4** so that ACLs could be substantially increased much sooner, long-term economic benefits derivable from these two alternatives would be lower than those from **Preferred Alternative 2**.

## Action 1c. Set Annual Catch Targets (ACTs) for the Commercial Black Sea Bass Sector

**Preferred Alternative 1 (No action).** Do not set an ACT for the commercial black sea bass sector.

**Alternative 2.** Set the commercial ACT = 90% of the commercial sector ACL.

**Alternative 3.** Set the commercial ACT = 80% of the commercial sector ACL.

**Table S-3.** Values for Commercial ACT based on Preferred Alternative 2 in Action 1b. SSC approved projections for 2 years; an updated assessment would be conducted before specifying an ABC beyond 2014.

| Fishing Year | Commercial ACL | Preferred Alternative 1 | Alternative 2 | Alternative 3 |
|---|---|---|---|---|
| 2012/2013 | 309,000 | 309,000 | 278,100 | 247,200 |
| 2013/2014 | 309,000 | 309,000 | 278,100 | 247,200 |

## Impacts of Action 1c.

### Biological Impacts

**Preferred Alternative 1 (No Action)** would not establish a commercial ACT. The South Atlantic Council concluded a commercial ACT for black sea bass was not needed because commercial sector landings are closely tracked in-season through a quota monitoring system that allows NOAA Fisheries Service to project when the commercial ACL is going to be met so the fishery can be closed before the commercial ACL is exceeded. Therefore, a commercial ACT for black sea bass is not necessary for the successful management of the commercial sector for black sea bass, and could result in an unnecessary burden. Setting a commercial ACT at either 90% or 80% of the ACL (**Alternatives 2** and **3,** respectively), would establish a reference point that could be used as an indicator that the ACL could be reached or exceeded, but would have no direct biological consequences at this time.

### Socioeconomic Impacts

**Preferred Alternative 1 (No Action)** would not impose a buffer through the ACT and is less restrictive than **Alternatives 2** or **3**. With **Alternatives 2** and **3,** a buffer would be imposed which would reduce the harvest threshold further from the ACL. Therefore there is an increasing possibility of negative short-term socioeconomic effects going from **Preferred Alternative 1 (No Action)** to **Alternative 3**. Some of those effects are similar to other thresholds being met and may involve switching to other species or discontinuing fishing

altogether. Although these are common responses to closures, it is not known how fishermen may respond if closures are anticipated for several different species or groups. There could be a domino effect as one closure forces them to switch to another species which closes as thresholds are met with the added fishing pressure. However, under **Preferred Alternative 1 (No Action)** there may be long-term socioeconomic impacts due to an overage that would not result in an increase in the subsequent year's ACL for black sea bass.

## Action 1d. Set Annual Catch Targets (ACTs) for the Recreational Black Sea Bass Sector

**Alternative 1. (No action).** Do not set an ACT for the recreational black sea bass sector.

**Alternative 2.** Set the recreational ACT = 85% of the recreational sector ACL.

**Alternative 3.** Set the recreational ACT = 75% of the recreational sector ACL.

**Preferred Alternative 4.** The ACT equals recreational ACL*(1-PSE) or recreational ACL*0.5, whichever is greater.

**Table S-4.** Values for Recreational ACT based on Preferred Alternative 2 in Action 1b. SSC approved projections for 2 years; an updated assessment would be conducted before specifying an ABC beyond 2014.

| Fishing Year | Recreational ACL | Alternative 2 | Alternative 3 | Preferred Alternative 4 |
|---|---|---|---|---|
| 2012/2013 | 409,000 | 347,650 | 306,750 | 357,548 |
| 2013/2014 | 409,000 | 347,650 | 306,750 | 357,548 |

## Impacts of Action 1d.

### Biological Impacts

**Alternative 2, Alternative 3**, and **Preferred Alternative 4** would establish reduced harvest levels designed to hedge against an ACL overage by providing a buffer between the ACT and ACL to account for management uncertainty. **Alternative 2** would establish an ACT that is 85% of the recreational ACL, which would create a 15% buffer between the two harvest levels. The same applies to **Alternative 3**, which would establish an ACT at a more conservative level than **Alternative 2** (75% of the ACL). Under **Alternative 3** the buffer between the ACL and ACT would be greater than that under **Alternative 2**, and theoretically there would be more time to act to prevent the ACL from being exceeded. **Preferred Alternative 4** would have the greatest biological benefit of the four alternatives by adjusting the ACL by 50% or one minus the average Percent Standard Error (PSE) from the recreational fishery for 2005-2009, whichever is greater. The lower the value of the PSE, the more reliable the landings data. By using PSE in **Preferred Alternative 4**, more precaution is taken in the estimate of the ACL with increasing variability and uncertainty in the landings data.

### Socioeconomic Impacts

There is some expectation that ACTs used to trigger control measures would serve as cushions to effectively limit harvests and enable the stock to rebuild within the rebuilding timeframe. Long-term economic benefits would then ensue from a healthy stock. As long as long-term

economic benefits outweigh short-term costs, the fishing industry and society in general would be better off. Realization of long-term economic benefits depends on a host of factors, including the type of management regime adopted. These factors render relatively uncertain the long-term economic outcome of ACTs, at least from the standpoint of magnitudes.

## Action 2. Limit Participation in the Black Sea Bass Pot Segment of the Snapper Grouper Fishery through an Endorsement Program

**Alternative 1 (No Action).** Do not limit participation in the black sea bass pot segment of the snapper grouper fishery with the establishment of an endorsement program.

**Alternative 2.** Limit endorsements and tag distribution to entities with a valid or renewable South Atlantic Unlimited Snapper Grouper Permits on the effective date of the final rule whose *average* annual black sea bass landings using black sea bass pot gear between 1/1/99 and 12/31/10 were at least:

**Sub-Alternative 2a** - 500 lbs whole weight. Exclude those with no reported commercial landings of black sea bass using black sea bass pot gear between January 1, 2008, and December 31, 2010.

**Sub-Alternative 2b** - 1,000 lbs whole weight. Exclude those with no reported commercial landings of black sea bass using black sea bass pot gear between January 1, 2008, and December 31, 2010.

**Sub-Alternative 2c** - 2,000 lbs whole weight. Exclude those with no reported commercial landings of black sea bass using black sea bass pot gear between January 1, 2008, and December 31, 2010.

**Sub-Alternative 2d** - 5,000 lbs whole weight. Exclude those with no reported commercial landings of black sea bass using black sea bass pot gear between January 1, 2008, and December 31, 2010.

**Sub-Alternative 2e** - 10,000 lbs whole weight. Exclude those with no reported commercial landings of black sea bass using black sea bass pot gear between January 1, 2008, and December 31, 2010.

**Sub-Alternative 2f** - 3,500 lb whole weight. Exclude Unlimited Snapper Grouper Permits with no reported commercial landings of black sea bass using black sea bass pot gear between January 1, 2008, and December 31, 2010.

**Preferred Sub-Alternative 2g** - 2,500 lbs whole weight. Exclude Unlimited Snapper Grouper Permits with no reported commercial landings of black sea bass using black sea bass pot gear between January 1, 2008, and December 31, 2010.

**Alternative 3.** No South Atlantic state shall have less than two entities that qualify for black sea bass pot endorsements, provided that no entity qualifies whose minimum average landings are:

**Sub-Alternative 3a** - 1,000 lbs whole weight

**Sub-Alternative 3b** - 2,000 lbs whole weight

**South Atlantic Council's Decision:**
Applicants must have a valid or renewable South Atlantic Unlimited Snapper Grouper Permit by the effective date of the final rule for Amendment 18A.

**South Atlantic Council's Intent:**
NMFS administratively prohibit transfers of South Atlantic Unlimited Snapper Grouper Permits for the necessary amount of time, not to exceed 45 days, until the new endorsements are required.

**Table S-5.** Number of permits qualifying for an endorsement under each sub-alternative in **Alternative 2.** State-based on homeport as identified on snapper-grouper permit application.

| **Using gutted weight landings** | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **2a** | **2b** | **2c** | **2d** | **2e** | **2f** | **Pref 2g** |
| **North Carolina** | 25 | 21 | 19 | 10 | 6 | 11 | 16 |
| **South Carolina** | 16 | 12 | 9 | 3 | 2 | 5 | 6 |
| **Florida** | 9 | 8 | 6 | 5 | 1 | 5 | 6 |
| **Total** | 50 | 41 | 34 | 18 | 9 | 21 | 28 |
| **Using whole weight landings (Preferred)** | | | | | | | |
| | **2a** | **2b** | **2c** | **2d** | **2e** | **2f** | **Pref 2g** |
| **North Carolina** | 26 | 22 | 21 | 10 | 9 | 14 | 18 |
| **South Carolina** | 17 | 14 | 10 | 5 | 2 | 5 | 7 |
| **Florida** | 9 | 8 | 7 | 5 | 1 | 5 | 6 |
| **Total** | 52 | 44 | 38 | 20 | 12 | 24 | 31 |

**Table S-6.** Number of South Atlantic Unlimited Snapper Grouper Permits per state that are expected to qualify for a Black Sea Bass Pot endorsement under **Preferred Sub-Alternative 2g**.

| **Alternative** | **State** | **Endorsements that would be issued (gw)** | **Endorsements that would be issued (ww)** |
|---|---|---|---|
| **Preferred Sub-Alternative 2g**- 2,500 lbs gw | North Carolina | 16 | 18 |
| | South Carolina | 6 | 7 |
| | Georgia | 0 | 0 |
| | Florida | 6 | 6 |

## Impacts from Action 2:

### Biological Impacts

Any differences in biological impacts of the alternatives would be slight since the commercial sector would close when the commercial ACL is met or projected to be met, and all black sea bass pots would be removed from the water at that time. Release mortality of black sea bass is very low (7% hook and line; 1% black sea bass pots); therefore, an extended closed season imposed by a large number of participants in the black sea bass pot sector is not likely to have a negative effect on the stock. The greater the number of endorsements issued, the earlier the commercial sector would close under the current commercial ACL.

### Socioeconomic Impacts

**Sub-Alternatives 2a** through **Preferred Sub-Alternative 2g** and **Alternative 3** would restrict participation in the black sea bass pot sector to those individuals who historically fished pots for black sea bass. As far fewer individuals fish pots than possess federal snapper grouper commercial permits, these alternatives could constrain participation in the black sea bass pot sector to a level that is more manageable and profitable.

## Action 3: Establishment of an Appeals Process for Fishermen Excluded From the Black Sea bass Pot Endorsement Program

**Alternative 1 (No Action).** Do not specify provisions for an appeals process associated with the black sea bass endorsement program.

**Preferred Alternative 2.** A period of 90 days will be set aside to accept appeals to the black sea bass endorsement program starting on the effective date of the final rule. The Regional Administrator (RA) will review, evaluate, and render final decisions on appeals. Hardship arguments will not be considered. The RA will determine the outcome of appeals based on NMFS logbooks. If NMFS logbooks are not available, the Regional Administrator may use state landings records. Appellants must submit NMFS logbooks or state landings records to support their appeal.

> Because some fishermen may feel their logbook landings histories may have been incorrectly calculated resulting in disqualification for an endorsement, NOAA Fisheries Service intends to establish an appeal process through which fishery participants may challenge their exclusion from the endorsement program.

**Alternative 3.** A period of 90 days will be set aside to accept appeals to the black sea bass endorsement program starting on the effective date of the final rule. The Regional Administrator will review, evaluate, and render final decisions on appeals. Hardship arguments will not be considered. A special board composed of state directors/designees will review, evaluate, and make individual recommendations to the RA on appeals. Hardship arguments will not be considered. The special board and the RA will determine the outcome of appeals based on NMFS logbooks. If NMFS logbooks are not available, the Regional Administrator may use state landings records. Appellants must submit NMFS logbooks or state landings records to support their appeal.

### Impacts from Action 3:

#### Biological Impacts

Although black sea bass pot effort could potentially increase above the expected number of qualifying vessels under Action 2 due to issuance of endorsements by appealing omission from the program, those impacts on the biological environment including target and non-target species, and critical habitat are not likely to be significant. Furthermore, any endorsements issued through the appeals process would not increase black sea bass pot effort over the status quo, and thus would not increase the risk of fishing gear interactions with protected species.

#### Socioeconomic Impacts

Because **Preferred Alternative 2** would establish an appeals process, **Preferred Alternative 2** would be expected to result in greater social benefits than **Alternative 1 (No Action)**. It is assumed that the process would adequately identify appropriate qualifiers and not simply result in an increase in fishermen with endorsements.

## Action 4: Allow for Transferability of Black Sea Bass Endorsements

**Alternative 1 (No Action).** Black sea bass pot endorsements (and tags) would not be allowed to be transferred if such a system were implemented.

**Preferred Alternative 2.** A valid black sea bass pot endorsement can be transferred between any two individuals or entities that hold a valid or simultaneously obtains a valid, meaning not expired, South Atlantic Unlimited Snapper Grouper Permit. The endorsement and associated landings history of black sea bass can be transferred regardless of whether or not the South Atlantic Unlimited Snapper Grouper Permit is transferred.

**Preferred Sub-Alternative 2a.** Transferability allowed upon program implementation.
**Sub-Alternative 2b.** Transferability not allowed during the first 2 years of the program.
**Sub-Alternative 2c.** Transferability not allowed during the first 3 years of the program.
**Sub-Alternative 2d.** Transferability not allowed during the first 5 years of the program.

**Alternative 3.** A valid black sea bass pot endorsement can be transferred between any two individuals or entities that hold a valid or simultaneously obtains a valid, meaning not expired, South Atlantic Unlimited Snapper Grouper Permit. The endorsement and associated landings history of black sea bass will be transferred only if the South Atlantic Unlimited Snapper Grouper Permit is transferred.

**Sub-Alternative 3a.** Transferability allowed upon program implementation.
**Sub-Alternative 3b.** Transferability not allowed during the first 2 years of the program.
**Sub-Alternative 3c.** Transferability not allowed during the first 3 years of the program.
**Sub-Alternative 3d.** Transferability not allowed during the first 5 years of the program.

### Impacts from Action 4:

#### Biological Impacts

Among **Alternatives 1-3**, **Alternative 1 (No Action)** could have the greatest biological benefit for the black sea bass stock if it results in decreased landings of black sea bass due to endorsements becoming inactive because of an inability to transfer those endorsements to active fishery participants. **Preferred Alternative 2** and **Alternative 3**, which would allow transferability of a black sea bass endorsement, would not be expected to negatively impact the black sea bass stock. It is the South Atlantic Council's intent that all black sea bass landings reported using pot gear with an endorsement will be associated with the South Atlantic Unlimited Snapper Grouper Permit rather than the endorsement. Therefore, the endorsement would simply allow the eligible South Atlantic Unlimited Snapper Grouper Permit holders to fish for black sea bass using pot gear, with no landings history attached to it. The biological effects of **Preferred Alternative 2** and **Alternative 3** would be very similar as landings would be constrained by a quota. Therefore, the effects of **Preferred Alternative 2** and **Alternative 3** may be more economic and administrative than biological. **Preferred Sub-Alternative 2a** would allow fishermen to transfer an endorsement immediately upon program implementation.

### Socioeconomic Impacts

Generally, it can be argued that social and economic benefits would be maximized the fewer the constraints placed on the transfer of an asset. Unencumbered transfer allows the largest pool of recipients, which would be expected to result in the payment of the highest price for the asset.

## Action 5: Limit Effort in the Black Sea Bass Pot Segment of the Snapper Grouper Fishery Each Permit Year

**Alternative 1 (No Action).** Do not annually limit the number of black sea bass pots deployed or pot tags issued to holders of South Atlantic Unlimited Snapper Grouper Permits.

**Alternative 2.** Require that each black sea bass pot in the water or at sea on a vessel in the South Atlantic EEZ have an attached valid identification tag issued by NOAA Fisheries Service. Limit the black sea bass pot tags to *100* per vessel each permit year. NOAA Fisheries Service will issue new identification tags each permit year that will replace the tags from the previous permit year.

**Alternative 3.** Require that each black sea bass pot in the water or at sea on a vessel in the South Atlantic EEZ have an attached valid identification tag issued by NOAA Fisheries Service. Limit the black sea bass pot tags to *50* per vessel each permit year. NOAA Fisheries Service will issue new identification tags each permit year that will replace the tags from the previous permit year.

**Alternative 4.** Require that each black sea bass pot in the water or at sea on a vessel in the South Atlantic EEZ have an attached valid identification tag issued by NOAA Fisheries Service. Limit the black sea bass pot tags to *25* per vessel each permit year. NOAA Fisheries Service will issue new identification tags each permit year that will replace the tags from the previous permit year.

**Preferred Alternative 5.** Require that each black sea bass pot in the water or at sea on a vessel in the South Atlantic EEZ have an attached valid identification tag issued by NOAA Fisheries Service. Limit the black sea bass pot tags to *35* per vessel each permit year. NOAA Fisheries Service will issue new identification tags each permit year that will replace the tags from the previous fishing year. Endorsements will be automatically renewed at the same time the snapper grouper permit is renewed.

**Table S-7.** Number of vessels with landings of snapper grouper with pots; number of vessels with landings of snapper grouper who requested tags. Mean, minimum, maximum, median number of tags requested for vessels that fished pots; and mean, minimum, maximum number of pots fished for vessels that requested tags.

| Year | # of Vessels that fished pots | # of Vessels that fished pots with tags | Mean # tags requested | Min # tags requested | Max # tags requested | Median # of tags requested | Mean # pots fished | Min # pots fished | Max # Pots Fished |
|---|---|---|---|---|---|---|---|---|---|
| 2003 | 53 | 49 | 54 | 6 | 200 | 50 | 45 | 1 | 200 |
| 2004 | 59 | 52 | 56 | 6 | 200 | 50 | 43 | 2 | 160 |
| 2005 | 53 | 47 | 50 | 6 | 160 | 40 | 47 | 1 | 120 |
| 2006 | 53 | 46 | 49 | 4 | 150 | 49 | 47 | 1 | 176 |
| 2007 | 54 | 51 | 53 | 10 | 200 | 50 | 48 | 1 | 180 |
| 2008 | 50 | 49 | 54 | 6 | 200 | 50 | 35 | 1 | 150 |
| 2009 | 62 | 62 | 55 | 8 | 200 | 45 | 37 | 1 | 150 |
| 2010 | 51 | 50 | 51 | 7 | 200 | 40 | 62 | 1 | 302 |
| Average | 54 | 51 | 53 | 7 | 189 | 47 | 45 | 1 | 180 |

Source: NMFS permits office and NMFS logbook database 5/12/11.

## Impacts from Action 5:

### Biological Impacts

Limiting the number of pots that may be fished by any one endorsement holder would address the South Atlantic Council's concerns regarding the possibility of fishermen leaving large numbers of pots fishing for multiple days due to vessel or weather problems, which could unnecessarily kill black sea bass. Fishing large numbers of pots also increases the chance that pots could be lost and "ghost fishing" could occur. Furthermore, fishing large numbers of pots increases the chance of entanglement of pot lines with right whales and other protected species. The lower the limit on number of pots is set the more the biological environment will benefit. **Alternative 1 (No Action)** is considered the least biologically beneficial of all the alternatives considered. **Alternative 4** would result in the least number of pots allowed and the greatest biological benefit. **Preferred Alternative 5** falls within the range of these two alternatives.

### Socioeconomic Impacts

In general, it is expected that the short-term economic benefits of **Alternatives 2-5** increases with the larger number of pots allowed per vessel. However, how the total number of pots in the fishery influences the catch per unit effort will ultimately determine the long-term economic impacts of these alternatives. It is possible that even a low number of pots per vessel could have negative economic impacts in the short and long-term if there are large numbers of vessels participating in the fishery. Assuming the catch per unit effort remains stable, **Alternative 2** would offer the greatest short-term economic benefits but probably the smallest long-term economic benefits since the total number of pots in the fishery is high. **Alternative 3** would have the next largest short-term

economic benefits (and next smallest long-term economic benefits) followed by **Alternative 2**, **Alternative 3**, **Preferred Alternative 5,** and **Alternative 4**.

## Action 6. Implement Measures to Reduce Black Sea Bass Bycatch

**Alternative 1 (No Action).** Do not implement additional regulations stipulating when black sea bass pots must be removed from the water. Currently, fishermen are required to remove all pots once the quota has been reached.

**Preferred Alternative 2.** Black sea bass pots must be brought back to shore at the conclusion of each trip. "Brought back to shore" is defined as when the vessel with the pots has "returned to a dock, berth, beach, seawall, or ramp at the conclusion of each trip."

**Alternative 3.** Allow fishermen to leave pots in the water for no more than 72 hours.

**Table S-8.** Number of days away from port, number of trips, total lbs of black sea bass landed (whole weight), and number of pots fished during 2005-2010.

| Away | Trip Freq | % Freq | Tot lbs | % Tot lbs | # Traps | % Traps |
|---|---|---|---|---|---|---|
| 1 | 2,304 | 62.75% | 1,194,358 | 46.72% | 96,832 | 45.61% |
| 2 | 993 | 27.04% | 951,468 | 37.22% | 71,176 | 33.53% |
| 3 | 308 | 8.39% | 341,267 | 13.35% | 36,750 | 17.31% |
| 4 | 49 | 1.33% | 53,445 | 2.09% | 6841 | 3.22% |
| 5 | 9 | 0.25% | 8,090 | 0.32% | 465 | 0.22% |
| 6 | 5 | 0.14% | 4,059 | 0.16% | 140 | 0.07% |
| 7 | 3 | 0.08% | 2,758 | 0.11% | 54 | 0.03% |
| 8 | 1 | 0.03% | 1,146 | 0.04% | 24 | 0.01% |

Source: NMFS logbook database 5/12/11.

### Impacts from Action 6:

#### Biological Impacts

Currently, there are instances where large numbers of pots may be left fishing for multiple days due to vessel or weather problems, which could unnecessarily kill black sea bass. Fishing large numbers of pots also increases the chance that pots could be lost and "ghost fishing" could occur. Therefore, limitations on the length of time pots can be left at sea would reduce the adverse effects of continued fishing by lost gear. Boat propellers and storms are common causes for pots being lost. Fishermen may not be able to retrieve pots during periods of inclement weather or vessel repairs. The longer the pots are in the water, the greater the opportunity for lost pots and entanglement with protected species. The biological benefit of **Preferred Alternative 2** would be greater than **Alternative 3** because most trips last one day. Therefore, under **Preferred Alternative 2**, pots would be in the water for the least amount of time and would have the least amount of risk for ghost fishing or entanglement with protected species.

### Socioeconomic Impacts

**Preferred Alternative 2** would not explicitly limit soak time because the length of a fishing trip would not be limited. However, **Preferred Alternative 2** may functionally limit soak time if fishermen prefer not to stay at sea longer while their pots soak or force them to stay longer at sea to maintain customary soak times. Further, under **Preferred Alternative 2**, a vessel could not return to port without retrieving all pots, even if the expected soak time was short. Only **Alternative 3** would explicitly limit soak time. However, almost all black sea bass pot trips are less than three days, so **Alternative 3** would be expected to have little to no adverse social or economic effects. **Preferred Alternative 2** and **Alternative 3** would be expected to help reduce bycatch, resulting in increased long-term social and economic benefits for affected species, but would restrict fishing flexibility.

## Action 7. Modify Accountability Measures for Black Sea Bass

**Alternative 1 (No Action).**

***Commercial***
If the commercial sector black sea bass ACL is met or is projected to be met, independent of stock status, all subsequent purchase and sale of black sea bass is prohibited and harvest and/or possession is limited to the black sea bass bag limit.

***Recreational***
If black sea bass *is overfished* and the recreational sector ACL is met or is projected to be met, prohibit the harvest and retention of black sea bass. Compare the black sea bass recreational ACL with recreational black sea bass landings over a range of years. For 2010, use only 2010 landings. For 2011, use the average landings of 2010 and 2011. For 2012 and beyond, use the most recent three-year running average. If the recreational sector black sea bass ACL is exceeded, independent of stock status, the Regional Administrator shall publish a notice to reduce the recreational sector black sea bass ACL in the following season by the amount of the overage.

**Alternative 2.** Remove the three-year running average provision used to determine recreational ACL overages. The recreational AM would be: If black sea bass *is overfished* and the recreational sector black sea bass ACL is met or is projected to be met, prohibit the harvest and retention of black sea bass. If the recreational sector black sea bass ACL is exceeded, independent of stock status, the Regional Administrator shall publish a notice to reduce the recreational sector black sea bass ACL in the following season by the amount of the overage.

The South Atlantic Council is proposing revisions to the system of recreational AMs put in place for black sea bass through Amendment 17B in order to eliminate the use of the three-year running average, which is not ideally suited for rebuilding stocks, while still accounting for data and management uncertainty.

**Preferred Alternative 3.** For the recreational sector: Remove the three-year running average provision used to determine recreational ACL overages. The recreational AM would be: If the recreational sector black sea bass ACL is met or is projected to be met, independent of stock status, prohibit the harvest and retention of black sea bass. If the recreational sector black sea bass ACL is exceeded, independent of stock status, the Regional Administrator shall publish a notice to reduce the recreational sector ACL in the following season by the amount of the overage.

For the commercial sector: If the commercial sector black sea bass ACL is met or is projected to be met, independent of stock status, all subsequent purchase and sale of black sea bass is prohibited and harvest and/or possession is limited to the black sea bass bag limit. If the commercial sector black sea bass ACL is exceeded, independent of stock status, the Regional Administrator shall publish a notice to reduce the commercial sector black sea bass ACL in the following season by the amount of the overage.

**Note:** For both the recreational and commercial sectors, ACL paybacks are not required when new projections are adopted that incorporate ACL overages and the ACLs are adjusted in accordance with those projections.

## Impacts of Action 7:

### Biological Impacts

**Alternative 1 (No Action)** would not change the current system of AMs to employ more appropriate methods for determining ACL overages. Because **Preferred Alternative 3** is the most biologically conservative of all options under consideration it is likely to result in the highest level of biological benefit. **Alternative 2** retains the authority of the Regional Administrator to prohibit recreational harvest in-season if the recreational ACL is projected to be met and if the stock is overfished. **Alternative 2** also retains the post-season provision that allows the Regional Administrator to reduce the recreational ACL for the fishing season following an ACL overage, regardless of stock status. The primary modification to the system of recreational AMs for black sea bass under **Alternative 2** is the elimination of the use of the three year running average to determine ACL overages. Variability in recreational data is accounted for under **Alternative 2** because corrective post-season action would ensure that any recreational ACL overage, regardless of cause, is taken into consideration when establishing the ACL for the following season. **Preferred Alternative 3** would benefit the biological environment since it would implement in-season AMs in the commercial and recreational sectors regardless of stock status, which would reduce the risk of exceeding the ACL. **Preferred Alternative 3** would also result in biological benefits because it would provide an opportunity to correct for any commercial ACL overages that did not exist previously.

### Socioeconomic Impacts

Modifying the current suite of AMs for black sea bass would prevent unnecessarily stringent harvest restrictions from being implemented when they are not actually needed to prevent overfishing. Therefore, **Alternative 2** is likely to result in socioeconomic benefits in terms of decreased risk of market disruptions due to seasonal closures, shortened seasons, or reduced ACLs. **Preferred Alternative 3** may result in greater socioeconomic impacts than **Alternative 2** since it would close the recreational sector when the ACL is projected to be met regardless of stock status. Furthermore, **Preferred Alternative 3** could result in negative socioeconomic impacts for the commercial sector if the commercial ACL is exceeded. However, because there is an in-season provision to prevent ACL overages and the ACL is set to increase over the next two years (barring ACL overage), economic losses attributable to an ACL payback may ultimately be canceled out.

## Action 8. Establish a Spawning Season Closure for Black Sea Bass

**Preferred Alternative 1 (No Action).** Do not implement a spawning season closure for black sea bass.

**Alternative 2.** Implement a March 1-April 30th spawning season closure for black sea bass; would apply to commercial and recreational sectors.

**Alternative 3.** Implement an April 1st-May 31st spawning season closure for black sea bass; would apply to commercial and recreational sectors.

**Alternative 4.** Implement a March 1st- May 31st spawning season closure for black sea bass; would apply to commercial and recreational sectors.

Choosing a spawning season closure that coincides with right whale calving season could help prevent black sea bass gear interactions with protected species.

**Alternative 5.** Implement a May 1st- May 31st spawning season closure for black sea bass; would apply to commercial and recreational sectors.

**Table S-9.** Percentage of monthly landings for black sea bass during 2006/2007 through 2009/2010 fishing years.

| Month | MRFSS | HB | Comm | Total |
|---|---|---|---|---|
| June | 15% | 15% | 6% | 11% |
| July | 11% | 15% | 5% | 9% |
| August | 11% | 11% | 6% | 9% |
| September | 4% | 7% | 5% | 5% |
| October | 4% | 6% | 7% | 5% |
| November | 10% | 4% | 13% | 10% |
| December | 10% | 4% | 16% | 11% |
| January | 4% | 3% | 14% | 7% |
| February | 4% | 3% | 12% | 7% |
| March | 8% | 8% | 8% | 8% |
| April | 8% | 12% | 5% | 7% |
| May | 13% | 12% | 3% | 9% |

March-May peak spawning season for black sea bass

**Note**: Data for the January-May 2010 portion of the 2009/2010 fishing year are estimated as the average of the 4 preceding years for MRFSS and Headboat (HB). For the commercial sector, landings were assumed to be 0 because the quota was met and the commercial sector closed on December 20, 2009.

## Impacts of Action 8:

### Biological Impacts

**Preferred Alternative 1 (No Action)** would offer no additional protections to black sea bass over the status quo since it would not implement a spawning season closure. Spawning individuals would not be protected from directed fishing effort, and therefore, **Preferred Alternative 1 (No Action)** is considered the least biologically beneficial alternative under consideration in this action. A spawning season closure could provide black sea bass with more spawning opportunities, which could contribute to recruitment success of a new year-class, help rebuild the stock more quickly, and result in a more stable and sustainable resource. **Alternatives 2-5** would establish various combinations of the peak spawning months reported. **Alternative 2** would establish a March 1-April 30 spawning season closure. This alternative would encompass a larger portion of the March-May peak spawning season for black sea bass than **Alternative 3** and **Alternative 4**. **Alternative 2** would likely have a greater biological benefit for black sea bass off Florida and Georgia than sub-alternatives that would close black sea bass later during the spawning season if spawning occurs earlier in the more southern latitudes. Furthermore, **Alternative 2** could have the additional benefit of minimizing buoy line gear interactions with right whales that migrate through the area during that time. **Alternative 5** would be expected to have the least amount of biological benefit for black sea bass off Florida and Georgia if there is a seasonal progression in spawning from south to north.

### Socioeconomic Impacts

**Preferred Alternative 1 (No Action)** would not force the black sea bass component of the snapper grouper fishery to close on a certain date each year. Therefore, fishing may continue until the sector ACLs are met, and no economic disruption would occur as a result of an annual spawning season closure. However, in recent years, the commercial quota has been met before any of the spawning season closure alternatives, making it unlikely that the fishery would be open during any of the alternatives considered. However, an annual spawning season closure would be less disruptive to markets and would allow fishermen to plan ahead for the reoccurring closure, which may be perceived as a social and economic benefit. **Alternative 4** would result in the largest loss in dockside revenues while **Alternative 5** results in the smallest loss. While the spawning season closures in **Alternatives 2** and **3** are of the same approximate length, **Alternative 2** has a lower loss associated with it due to the lower amount of black sea bass harvested in March compared to May.

## Action 9. Establish a Commercial Trip Limit for Black Sea Bass

**Alternative 1 (No Action).** Do not establish a commercial trip limit for black sea bass.

**Alternative 2.** Establish a 500 lbs gw (590 lbs ww) trip limit.

**Alternative 3.** Establish a 750 lbs gw (885 lbs ww) trip limit.

**Preferred Alternative 4.** Establish a 1,000 lbs gw (1,180 lbs ww) trip limit.

A commercial trip limit could prevent early commercial closures in future fishing seasons.

**Alternative 5.** Establish a 1,250 lbs gw (1,475 lbs ww) trip limit.

**Alternative 6.** Establish a 1,000 lbs gw (1,180 lbs ww) trip limit; reduce to 500 lbs gutted weight (590 lbs ww) when 75% of the commercial ACL (quota) is met.

**Alternative 7.** Establish a 2,000 lbs gw (2,360 lbs ww) trip limit.

**Alternative 8.** Establish a 2,500 lbs gw (2,950 lbs ww) trip limit.

**Alternative 9.** Establish a 250 lbs gw (295 ww) trip limit.

**Table S-10.** Average catch per trip (lbs gutted weight) and percentage of landings from pots during fishing years (June – May) for 2006-2010. The 'Other' category is 99% hook and line gear.

| Year | All Gear | Pots | Other | % Pot Landings |
|---|---|---|---|---|
| 2006 | 214 | 554 | 31 | 90.62% |
| 2007 | 165 | 501 | 25 | 89.15% |
| 2008 | 198 | 621 | 28 | 89.81% |
| 2009 | 188 | 643 | 31 | 87.83% |
| 2010 | 307 | 954 | 57 | 86.79% |

Source: NMFS logbook data, 5/12/2011

**Table S-11.** Number of trips by gear for black sea bass taken during June-December 2008-2010. The 'Other' category is 99% hook and line gear.

| Month | 2008 | | | 2009 | | | 2010 | | |
|---|---|---|---|---|---|---|---|---|---|
| | All gear | Pots | Other | All Gear | Pots | Other | All Gear | Pots | Other |
| June | 197 | 17 | 180 | 274 | 46 | 228 | 310 | 105 | 205 |
| July | 198 | 24 | 174 | 229 | 37 | 192 | 283 | 68 | 215 |
| August | 179 | 22 | 157 | 244 | 47 | 197 | 288 | 61 | 227 |
| September | 88 | 11 | 77 | 241 | 74 | 167 | 255 | 56 | 199 |
| October | 138 | 34 | 104 | 200 | 65 | 135 | 25 | 11 | 14 |
| November | 194 | 58 | 136 | 210 | 73 | 137 | 5 | 0 | 5 |
| December | 172 | 71 | 101 | 108 | 47 | 61 | 101 | 63 | 38 |
| Total | 1,166 | 237 | 929 | 1,506 | 389 | 1,117 | 1,267 | 364 | 903 |

Source: NMFS logbook data, 5/12/2011

**Table S-12.** Trip limit, number of trips, amount of pounds (gutted weight), and percent reduction in harvest provided by a trip limit during the June 2010 - May 2011 fishing year. Includes 31 permits that qualified for endorsements under Action 2 and vessels that caught black sea bass with hook and line gear.

| Trip Limit (ww) | Trip Limit (gw) | 2010 | | | | |
|---|---|---|---|---|---|---|
| | | # Trips | % Trips | Pounds over trip (ww) | Pounds over trip (gw) | % Reduction |
| 0 | 0 | 271 | 100.00% | 272,068 | 230,566 | 100.00% |
| 20 | 17 | 271 | 100.00% | 266,648 | 225,973 | 98.01% |
| 40 | 34 | 271 | 100.00% | 261,228 | 221,380 | 96.02% |
| 60 | 51 | 271 | 100.00% | 255,808 | 216,786 | 94.02% |
| 80 | 68 | 271 | 100.00% | 250,388 | 212,193 | 92.03% |
| 100 | 85 | 270 | 99.63% | 244,968 | 207,600 | 90.04% |
| 115 | 97 | 269 | 99.26% | 240,931 | 204,179 | 88.56% |
| 150 | 127 | 266 | 98.15% | 231,564 | 196,241 | 85.11% |
| 175 | 148 | 264 | 97.42% | 224,960 | 190,644 | 82.69% |
| 200 | 169 | 261 | 96.31% | 218,393 | 185,079 | 80.27% |
| 250 | 212 | 253 | 93.36% | 205,534 | 174,181 | 75.55% |
| 300 | 254 | 240 | 88.56% | 193,188 | 163,719 | 71.01% |
| 400 | 339 | 210 | 77.49% | 170,766 | 144,717 | 62.77% |
| 500 | 424 | 190 | 70.11% | 150,696 | 127,708 | 55.39% |
| 600 | 508 | 162 | 59.78% | 133,087 | 112,785 | 48.92% |
| 700 | 593 | 136 | 50.18% | 118,226 | 100,191 | 43.45% |
| 800 | 678 | 122 | 45.02% | 105,350 | 89,279 | 38.72% |
| 900 | 763 | 106 | 39.11% | 93,916 | 79,589 | 34.52% |
| 1,000 | 847 | 94 | 34.69% | 83,940 | 71,135 | 30.85% |
| 1,100 | 932 | 84 | 31.00% | 74,945 | 63,513 | 27.55% |
| **1,200** | **1,017** | **79** | **29.15%** | **66,805** | **56,614** | **24.55%** |
| 1,300 | 1,102 | 74 | 27.31% | 59,198 | 50,168 | 21.76% |
| 1,400 | 1,186 | 70 | 25.83% | 51,968 | 44,040 | 19.10% |
| 1,500 | 1,271 | 56 | 20.66% | 45,771 | 38,789 | 16.82% |
| 1,600 | 1,356 | 51 | 18.82% | 40,436 | 34,268 | 14.86% |
| 1,700 | 1,441 | 44 | 16.24% | 35,674 | 30,233 | 13.11% |
| 1,800 | 1,525 | 39 | 14.39% | 31,536 | 26,726 | 11.59% |
| 1,900 | 1,610 | 34 | 12.55% | 27,793 | 23,553 | 10.22% |
| 2,000 | 1,695 | 33 | 12.18% | 24,393 | 20,672 | 8.97% |
| 2,250 | 1,907 | 27 | 9.96% | 16,943 | 14,359 | 6.23% |
| 2,500 | 2,119 | 19 | 7.01% | 10,850 | 9,194 | 3.99% |
| 2,750 | 2,331 | 17 | 6.27% | 6,492 | 5,502 | 2.39% |

Source: NMFS logbook data, 5/12/2011

## Impacts of Action 9:

### Biological Impacts

The lower the trip limit the longer the commercial sector would be able to fish into the season. The higher the trip limit the more likely the commercial sector is to reach their ACL early in the season and cause regulatory discards to rise as black sea bass are caught while fishermen target other species still open to fishing. The preferred trip limit of 1,000 pounds gw is expected to extend fishing opportunities during the fishing season since it affects about 30% of trips and it is projected that the endorsement program, along with the preferred trip limit, would result in the fishing season closing in early to mid August during the 2012/2013 and 2013/2014 fishing seasons **(Appendix L**).

### Socioeconomic Impacts

In general, for boats that bring in relatively large landings per trip, ex-vessel revenue losses are expected to occur. If a boat with historically larger landings adheres to the trip limit and does not increase the number of trips made, landings by these vessels would decrease compared to current landings as would ex-vessel revenues. Boats that bring in smaller landings per trip may or may not be impacted by the trip limits proposed. Boats that have not historically landed the proposed trip limits would not experience ex-vessel revenue losses. Others would likely reach the proposed trip limits and either experience revenue losses or make additional trips to increase landings. While additional trips would increase ex-vessel revenues, they would also increase costs and decrease net revenues (or profits). While some vessels may be able to increase their trips and net revenues, others would not be able to do so because they are too far from the fishing grounds to make additional trips worthwhile or costs are high enough to deter additional trips.

## Action 10. Modify Commercial and/or Recreational Black Sea Bass Size Limits

**Alternative 1 (No Action).** Do not modify the current size limits of 12 inches total length (TL) for the recreational sector and 10 inches TL for the commercial sector.

**Alternative 2.** Modify the recreational size limit.

**Preferred Sub-Alternative 2a.** Increase the recreational size limit from 12" TL to 13" TL.

**Alternative 3.** Modify the commercial size limit.

**Preferred Sub-Alternative 3a.** Increase the commercial size limit from 10" TL to 11" TL.

**Sub-Alternative 3b.** Increase the commercial size limit from 10" TL to 12" TL.

**Sub-Alternative 3c.** Increase the commercial size limit from 10" TL to 11" TL in year 1 and then to 12" TL in year 2 onwards.

**Table S-13.** Preliminary estimate of reduction in harvest of black sea bass for **headboat** sector associated with increased size limit. Based on data from 2009-2010 (n = 7,302).

| Release Mortality | Estimated Harvest Reductions 13 Inch (Sub-Alternative 2a) |
|---|---|
| 0% | 22.6 |
| 7% | 20.9 |

**Table S-14.** Preliminary estimate of reduction in harvest of black sea bass for **MRFSS** associated with increased size limit. Based on data from 2009-2010 (n = 3,272).

| Release Mortality | Estimated Harvest Reductions 13 Inch (Sub-Alternative 2a) |
|---|---|
| 0% | 20.3 |
| 7% | 18.8 |

**Table S-15.** Preliminary estimate of reduction in harvest of black sea bass for **commercial** sector associated with increased size limit. Based on data from 2009-2011 (n = 8,767).

| Release Mortality | Estimated Harvest Reductions | |
|---|---|---|
| | 11 Inch (Sub-Alternative 3a) | 12 Inch (Sub-Alternatives 3b and 3c) |
| 0% | 9.4 | 32.4 |
| 1% | 9.3 | 32.1 |

## Impacts of Action 10:

### Biological

Increasing the minimum size limit would further restrict the rate at which black sea bass could be harvested throughout the season and potentially lengthen the amount of time fishermen would have to fish during the fishing season. Conversely, increasing the size limit could increase regulatory discards in both sectors which may contribute to an increase in bycatch mortality.

### Socioeconomic

Increasing the black sea bass size limits is expected to result in greater profitability overall since larger fish would demand a higher price on the market. However, if on a per trip basis, fewer fish are able to be retained the quality of each trip may decrease.

## Action 11. Improvements to Commercial Data Reporting

**Preferred Alternative 1 (No Action).** Retain existing data reporting systems for the commercial sector.

Under this alternative, as implemented by Amendment 15B to the Snapper Grouper FMP, a private recreational vessel that fishes in the EEZ, if selected by NOAA Fisheries Service, is required to maintain and submit fishing records; requires a vessel that fishes in the EEZ, if selected by NOAA Fisheries Service, to carry an observer and install an electronic logbook (ELB) and/or video monitoring equipment provided by NOAA Fisheries Service. Note: Refer to the table in **Section 4.11.1** for a complete list of current data reporting requirements.

**Alternative 2.** Require all vessels with a Federal snapper grouper commercial permit to have an electronic logbook tied to the vessel's GPS onboard the vessel.

(Note: Alternative 2 would require 100% of vessels to have an electronic logbook; whereas, current data reporting programs only require electronic logbooks if selected.)

Standard Atlantic Fisheries Information System (**SAFIS)** is a real-time, web-based reporting system for commercial landings on the Atlantic coast. It is comprised of three applications:

- Electronic Dealer Reports (eDR) - A forms based application collecting information from the dealers (landings, condition and price).
- Electronic Trip Reports (eTRIPS) - A Web-based application collecting data from fisherman (catch and effort) including gear used, fishing areas, and catch disposition.
- SAFIS Management System (SMS) - A Web-based application providing administrative tools to SAFIS administrators for management of user accounts, participants, permits etc.

**Alternative 3.** Provide the option for fishermen to submit their logbook entries electronically via an electronic version of the logbook made available online.

**Alternative 4.** Require that commercial landings and catch/effort data be submitted in accordance with ACCSP standards, using the SAFIS system.

(Note: Alternative 4 would require that 100% of dealers and fishermen report electronically using the SAFIS system.)

## Impacts of Action 11:

### Biological Impacts

**Preferred Alternative 1 (No Action)** would not require any additional reporting for the commercial sector. However, a generic reporting amendment is currently under development and would include reporting provisions for the commercial sector of the snapper grouper fishery. Therefore, in the long run the benefits of improved data reporting requirements would still be realised. There are no direct biological impacts from establishing a standardized reporting methodology. However, indirect impacts resulting from **Alternatives 2-4** would provide a better understanding of the composition and magnitude of catch and bycatch; enhance the quality of data provided for stock assessments; increase the quality of assessment output; provide better estimates of interactions with protected species; better limit commercial catches to the commercial ACL; and lead to better decisions regarding additional measures that might be needed to reduce bycatch. Management measures that affect gear and effort for a target species can influence fishing mortality in other species. Therefore, enhanced catch and bycatch monitoring would provide better data that could be used in multi-species assessments.

### Socioeconomic Impacts

In the near term, **Preferred Alternative 1 (No Action)** would result in the least negative socioeconomic impacts since it would require no modification to the current reporting requirements in the commercial sector. In general, an increase in the quantity and/or quality of data increases long-term economic benefits through improvements to management of the stocks. Electronic logbooks (**Alternative 2**), in particular, are seen as a low cost alternative to video monitoring and observers. While paper logbook submittal is already required, **Alternative 3** would provide fishermen the option to submit their logbooks online. While**Alternative 3** would likely be the least expensive alternative for fishermen, **Alternative 4** would vary by individual.

## Action 12. Improvements to For-Hire Data Reporting

**Alternative 1 (No Action).** Retain existing data reporting systems for the for-hire sector.

Note: Refer to Table 4-13 in Amendment 18A for a complete list of current data reporting requirements.

**Preferred Alternative 2.** Require *selected* vessels with a Federal For-Hire Permit to report landings data electronically; NOAA Fisheries Service is authorized to require weekly or daily reporting as required.

**Alternative 3.** Require vessels operating with a Federal For-Hire permit to maintain a logbook for discard characteristics (e.g., size and reason for discarding), *if selected*.

**Alternative 4.** Require that for-hire landings and catch/effort data be submitted in accordance with the ACCSP standards, using the SAFIS system.

### Impacts of Action 12:

#### Biological Impacts

**Preferred Alternative 2** and **Alternative 3** identify options for monitoring catch and effort, which are more specific than what was specified in Amendment 15B to the Snapper Grouper FMP. There are no direct biological impacts from establishing a standardized reporting methodology. However, indirect impacts resulting from **Preferred Alternative 2** and **Alternative 3** would provide a better understanding of the composition and magnitude of catch and bycatch; enhance the quality of data provided for stock assessments; increase the quality of assessment output; provide better estimates of interactions with protected species; better limit recreational catches to the recreational ACLs; and lead to better decisions regarding additional measures that might be needed to reduce bycatch. **Preferred Alternative 2** would require all vessels with a Federal for-hire permit to report landings electronically if selected. Amendment 15B to the Snapper Grouper FMP also implemented an action that requires commercial, for-hire, and private vessels to install an ELB and/or video monitoring equipment provided by NOAA Fisheries Service, if selected.

**Alternative 3** would differ from the status quo **Alternative 1 (No Action)** by also requiring logbooks for the charter portion of the for-hire fishery. As landings from charterboats often dominate catches in the for-hire sector, **Alternative 3** would provide a better understanding of the composition and magnitude of catch and bycatch, leading to better data for stock assessment and better decisions regarding measures needed manage fish resources and reduce bycatch. **Alternative 4** would require for-hire trip reports to be submitted in accordance with the Atlantic Coastal Cooperative Statistics Program (ACCSP) standards using the Standard Atlantic Fisheries Information System (SAFIS) system. **Alternative 4** would require selected vessels to report electronically (computer or fax) through the SAFIS and require weekly or daily reporting when it is anticipated a quota was going to be met. Beneficial biological impacts would be provided by **Alternative 4** as data are provided more quickly from the fishermen and dealers to

NMFS and fishery managers. In addition to monitoring quotas in a more timely fashion than under the current quota monitoring system, the SAFIS has the potential to improve the quality of data and stock assessments.

### Socioeconomic Impacts

Potentially affected by the various alternatives are 1,690 vessels with for-hire permits and 224 vessels with both commercial and for-hire permits. About 92% of these vessels have homeports in the four states under the jurisdiction of the South Atlantic Council. The rest are located in the Gulf States or other States on the east coast. Most of these vessels (about 66%) are located in Florida. It is worth recalling that only a sample of these vessels would be directly affected by **Preferred Alternative 2** or **Alternative 3** in any one year. **Alternative 4**, on the other hand, would affect practically all these vessels. For **Preferred Alternative 2**, the incremental cost of electronic reporting, especially the weekly frequency option, would likely be minimal and would accrue only to a subset of headboats selected to report. The incremental cost to charterboats would likely be higher for those selected to report as there are currently no federal logbook reporting requirements on charterboats; charterboats are required to complete logbooks in the State of South Carolina. **Alternative 3** would require selected for-hire vessels to maintain a logbook for discard characteristics. Understandably, this alternative cannot be considered as a stand-alone alternative in the sense of replacing **Alternative 1 (No Action)** because of the more limited information covered in this alternative. As a supplement to either **Alternative 1 (No Action)** or **Preferred Alternative 2, Alternative 3** can provide the necessary information regarding incidental mortality of stocks due to the operations of for-hire vessels. However, this alternative could impose some real cost burden on charterboats, although the incremental cost may not be that much when taken relative to the reporting requirement under **Preferred Alternative 2**.

**Alternative 4** is similar to **Preferred Alternative 2** in terms of the extent and quality of data that would be generated. The requirement under this alternative, however, would apply to all for-hire vessels and not just a subset of these vessels as in **Preferred Alternative 2**. Thus, the quality of data would likely be higher under **Alternative 4** than under **Alternative 1 (No Action)** or **Preferred Alternative 2**. Alternatively, **Alternative 4** would likely incur higher costs than either **Alternative 1 (No Action)** or **Preferred Alternative 2**. The higher the frequency of data reporting, the higher would be the compliance and administration costs. Related to administration in general and administration cost in particular, it is to be noted that under **Alternative 4** the SAFIS system would have to be expanded to cover reporting by the for-hire sector. In addition, some administrative controls would have to be instituted so that the data collection objectives of ACCSP, NOAA Fisheries Service, and the South Atlantic Council would be met. These controls could potentially involve requiring strict adherence to SAFIS system reporting as a condition for renewals of federal for-hire permits.

# 1 Introduction

## 1.1 Background

Management of the federal snapper grouper fishery located off the South Atlantic in the 3-200 nautical mile (nm) U.S. Exclusive Economic Zone (EEZ) (**Figure 1-1**) is conducted under the Fishery Management Plan (FMP) for the Snapper Grouper Fishery of the South Atlantic Region (SAFMC 1983). The FMP and its amendments are developed under the Magnuson-Stevens Fishery Conservation and Management Act, other applicable federal laws, and executive orders (E.O.s) and affect the management of 73 species (**Table 1-1**). The purpose of the FMP, as amended, is to manage the snapper grouper fishery for optimum yield (OY) and to allocate harvest among user groups while preventing overfishing and conserving marine resources.

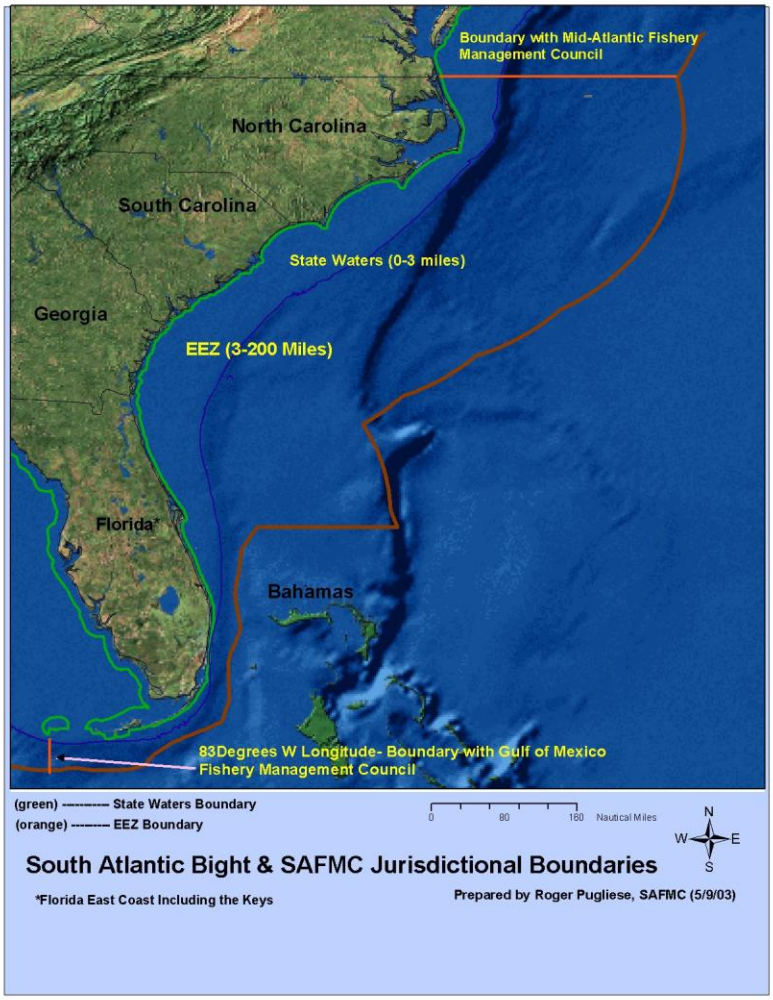



**Figure 1-1.** Jurisdictional boundaries of the South Atlantic Fishery Management Council.

**Table 1-1.** Species in the Snapper Grouper Fishery Management Unit (FMU).

Almaco jack, *Seriola rivoliana*
Atlantic spadefish, *Chaetodipterus faber*
Banded rudderfish, *Seriola zonata*
Bank sea bass, *Centropristis ocyurus*
Bar jack, *Caranx ruber*
Black grouper, *Mycteroperca bonaci*
Black margate, *Anisotremus surinamensis*
Black sea bass, *Centropristis striata*
Black snapper, *Apsilus dentatus*
Blackfin snapper, *Lutjanus buccanella*
Blue runner, *Caranx crysos*
Blueline tilefish, *Caulolatilus microps*
Bluestriped grunt, *Haemulon sciurus*
Coney, *Cephalopholis fulva*
Cottonwick, *Haemulon melanurum*
Crevalle jack, *Caranx hippos*
Cubera snapper, *Lutjanus cyanopterus*
Dog snapper, *Lutjanus jocu*
French grunt, *Haemulon flavolineatum*
Gag, *Mycteroperca microlepis*
Golden tilefish, *Lopholatilus chamaeleonticeps*
Goliath grouper, *Epinephelus itajara*
Grass porgy, *Calamus arctifrons*
Gray (mangrove) snapper, *Lutjanus griseus*
Gray triggerfish, *Balistes capriscus*
Graysby, *Cephalopholis cruentata*
Greater amberjack, *Seriola dumerili*
Hogfish, *Lachnolaimus maximus*
Jolthead porgy, *Calamus bajonado*
Knobbed porgy, *Calamus nodosus*
Lane snapper, *Lutjanus synagris*
Lesser amberjack, *Seriola fasciata*
Longspine porgy, *Stenotomus caprinus*
Mahogany snapper, *Lutjanus mahogoni*
Margate, *Haemulon album*
Misty grouper, *Epinephelus mystacinus*
Mutton snapper, *Lutjanus analis*
Nassau grouper, *Epinephelus striatus*
Ocean triggerfish, *Canthidermis sufflamen*
Porkfish, *Anisotremus virginicus*
Puddingwife, *Halichoeres radiatus*
Queen snapper, *Etelis oculatus*
Queen triggerfish, *Balistes vetula*
Red grouper, *Epinephelus morio*
Red hind, *Epinephelus guttatus*
Red porgy, *Pagrus pagrus*
Red snapper, *Lutjanus campechanus*
Rock hind, *Epinephelus adscensionis*
Rock Sea Bass, *Centropristis philadelphica*
Sailors choice, *Haemulon parra*
Sand tilefish, *Malacanthus plumieri*
Saucereye porgy, *Calamus calamus*
Scamp, *Mycteroperca phenax*
Schoolmaster, *Lutjanus apodus*
Scup, *Stenotomus chrysops*
Sheepshead, *Archosargus probatocephalus*
Silk snapper, *Lutjanus vivanus*
Smallmouth grunt, *Haemulon chrysargyreum*
Snowy grouper, *Epinephelus niveatus*
Spanish grunt, *Haemulon macrostomum*
Speckled hind, *Epinephelus drummondhayi*
Tiger grouper, *Mycteroperca tigris*
Tomtate, *Haemulon aurolineatum*
Yellow jack, *Caranx bartholomaei*
Yellowedge grouper, *Epinephelus flavolimbatus*
Yellowfin grouper, *Mycteroperca venenosa*
Yellowmouth grouper, *Mycteroperca interstitialis*
Yellowtail snapper, *Ocyurus chrysurus*
Vermilion snapper, *Rhomboplites aurorubens*
Warsaw grouper, *Epinephelus nigritus*
White grunt, *Haemulon plumieri*
Whitebone porgy, *Calamus leucosteus*
Wreckfish, *Polyprion americanus*

## 1.2 Purpose of the Proposed Action

The purpose of Amendment 18A to the Fishery Management Plan (FMP) for the Snapper Grouper Fishery of the South Atlantic Region (Amendment 18A) is to limit participation and effort in the black sea bass pot fishery, limit bycatch in the black sea bass pot segment of the snapper grouper fishery, modify the current system of accountability measures, modify the current rebuilding strategy (including the acceptable biological catch (ABC), annual catch limits (ACLs) and annual catch targets (ACTs)) to account for an increasing biomass; consider management measures such as a spawning season closure, a trip limit, and modified size limits; and improve the accuracy, timing, and quantity of fisheries data, while minimizing, to the maximum extent practicable, adverse socioeconomic impacts. These actions will address issues that have arisen as a result of a more stringent regulatory regime in the South Atlantic region.

## 1.3 Need for the Proposed Action

The need for action in Amendment 18A is to reduce overcapacity and reduce the rate of harvest in the black sea bass pot component of the snapper grouper fishery. Recent amendments to the Snapper Grouper FMP have imposed more restrictive harvest limitations on snapper grouper fishermen. In an effort to identify other species to target, a greater number of fishermen may target black sea bass. An increase in effort in the black sea bass pot segment of the snapper grouper fishery would intensify the "race to fish" that already exists, which has resulted in a shortened season for the commercial and recreational sectors. Furthermore, the commercial quota for black sea bass was met in 2009, 2010, and 2011 before fishermen had a chance to fish during the portion of the year (November-February) that has historically been most productive. The South Atlantic Fishery Management Council (South Atlantic Council) is concerned that an increase in effort on these species will deteriorate profits while recognizing that the Magnuson-Steven Act states that economics cannot be the sole reason to take action.

The actions proposed in Amendment 18A are listed below:

1. Modify Rebuilding Strategy, ABC, ACLs, and ACTs for Black Sea Bass
2. Limit Participation in the Black Sea Bass Pot Segment of the Snapper Grouper Fishery Through an Endorsement Program
3. Establishment of an Appeals Process for Fishermen Excluded from the Black Sea Bass Pot Endorsement Program
4. Allow for Transferability of Black Sea Bass Pot Endorsements
5. Limit Effort in the Black Sea Bass Pot Segment of the Snapper Grouper Fishery Each Permit Year
6. Implement Measures to Reduce Black Sea Bass Bycatch
7. Modify Accountability Measures for Black Sea Bass
8. Establish a Spawning Season Closure for Black Sea Bass
9. Establish a Commercial Trip Limit for Black Sea Bass
10. Modify Commercial and/or Recreational Black Sea Bass Size Limits
11. Improvements to Commercial Data Reporting

12. Improvements to For-Hire Data Reporting

## 1.4 History of Management

Below is a summary of the amendments to the Snapper Grouper FMP which contained actions affecting black sea bass and data collection efforts.

The original Snapper Grouper FMP (SAFMC 1983) included size limits for black sea bass (8” total length (TL)). Trawl gear, primarily targeting vermilion snapper, was prohibited starting in January 1989. Fish traps (not including black sea bass pots) and entanglement nets were prohibited starting in January 1992. Bag limits (10 vermilion snapper; 5 groupers) and size limits (10” TL recreational vermilion snapper; 12” TL commercial vermilion snapper; 12” TL recreational & commercial red porgy) were also implemented in January 1992. Quotas and trip limits for snowy grouper and golden tilefish were implemented in July 1994; tilefish were also added to the 5-grouper aggregate bag limit. A controlled access program for the commercial fishery was implemented fully beginning in 1999. In February 1999, red porgy regulations were 14” TL size limit and 5 fish bag limit and commercial closure during March and April; black sea bass size limit increased to 10” TL and a 20-fish bag limit was included. All harvest of red porgy was prohibited from September 8, 1999 until August 28, 2000. Beginning on August 29, 2000 red porgy regulations included a January through April commercial closure, 1 fish bag limit, and 50 pound commercial bycatch allowance May through December.

Snapper Grouper Regulatory Amendment 5 (SAFMC 1992b) modified the definition of black sea bass pots and allowed multi-gear trips; and allowed retention of incidentally caught fish.

Snapper Grouper Amendment 8 (SAFMC 1997) established a limited entry system for the snapper grouper fishery.

Snapper Grouper Amendment 9 (SAFMC 1998) increased the black sea bass minimum size limit from 8" TL to 10" TL for both recreational and commercial fishermen, and established a recreational bag limit of 20 black sea bass per person per day. Required escape vents and escape panels with degradable fasteners in black sea bass pots.

Snapper Grouper Amendment 13C to the Snapper Grouper FMP (SAFMC 2006) implemented actions to end or phase out overfishing of the snowy grouper, golden tilefish, vermilion snapper, and black sea bass stocks, and to increase catches of red porgy to a level consistent with the approved stock rebuilding plan in federal waters of the South Atlantic.

Snapper Grouper Amendment 15A to the Snapper Grouper FMP (SAFMC 2008a) established rebuilding plans and Sustainable Fishery Act parameters for snowy grouper, black sea bass, and red porgy.

Snapper Grouper Amendment 15B (SAFMC 2008b) prohibited the sale of bag limit sales of snapper grouper species, established allocations and adjusted the quotas for red porgy, and snowy grouper, and extended the renewal periods for Federal Commercial Snapper Grouper Permits.

Snapper Grouper Amendment 17B (SAFMC 2010b) established annual catch limits, and accountability measures for species undergoing overfishing.

Snapper Grouper Regulatory Amendment 9 (SAFMC 2011b) reduced the bag limit for black sea bass from 15 fish per person per day to 5 fish per person per day.

Specific details on these and all the other regulations implemented in the snapper grouper fishery can be found in **Appendix C. History of Management**.

*Management Objectives*
The following are the fishery management plan objectives for the snapper grouper fishery as specified by the South Atlantic Council. These were last updated in Snapper Grouper FMP Amendment 17A (SAFMC 2010a).

1. Prevent overfishing.
2. Collect necessary data.
3. Promote orderly utilization of the resource.
4. Provide for a flexible management system.
5. Minimize habitat damage.
6. Promote public compliance and enforcement.
7. Mechanism to vest participants.
8. Promote stability and facilitate long-run planning.
9. Create market-driven harvest pace and increase product continuity.
10. Minimize gear and area conflicts among fishermen.
11. Decrease incentives for overcapitalization.
12. Prevent continual dissipation of returns from fishing through open access.
13. Evaluate and minimize localized depletion.
14. End overfishing of snapper grouper stocks undergoing overfishing.
15. Rebuild stocks declared overfished.

## 1.5 Black Sea Bass Units of Weight (Conversion Details)

During public hearings for Amendment 18A several commenters requested clarification of the use of gutted weight (gw) versus whole weight (ww) for black sea bass in Amendment 18A, since different units of weight are used for different applications. **Table 1-2** summarizes how each unit of weight (gw and ww) is used and by whom. Also

included are examples for converting gw to ww and ww to gw using the established 1.18 conversion factor.

**Table 1-2.** Gutted Weight/Whole Weight Conversion Table for Black Sea Bass.

| Entity | Use of gw vs. ww | Purpose for Reporting in gw or ww |
|---|---|---|
| Southeast Fisheries Science Center | Gutted Weight | Quotas and ACL are in gutted weight. The SEFSC expresses landings in gutted weight for quota monitoring purposes. |
| Fishermen | Whole Weight | Fishermen land and sell harvested black sea bass to dealers whole. |
| Dealers | Whole Weight | Dealers purchase black sea bass from fishermen whole. |
| Regulatory Text | Gutted Weight | Commercial quota/ACLs and recreational ACLs are provided as gw the regulatory text. * |
| **Conversion Factor Calculations**<br>**Conversion Factor = 1.18** | | |
| Example 1: 500 lbs gw → ww | 500 x 1.18 = 590 lbs ww | |
| Example 2: 500 lbs ww → gw | 500/1.18 = 423.73 lbs gw | |

*Recently, there has been an initiative to make the weight units in the regulatory text consistent throughout, and the overall movement has been towards using ww rather than gw. However, this is an ongoing process, and often the gw is included as a parenthetical in the regulations for clarification where necessary.

# 2 Actions and Alternatives

**Section 2.1** outlines alternatives considered by the South Atlantic Fishery Management Council (South Atlantic Council) in this amendment and provides a summary of their environmental consequences (environmental consequences of the alternatives are described in detail in **Section 4.0**). These alternatives were identified and developed through multiple processes, including the scoping process, public hearings and/or comments, interdisciplinary plan team meetings, and meetings of the South Atlantic Council, the South Atlantic Council's Snapper Grouper Committee, Snapper Grouper Advisory Panel, and Scientific and Statistical Committee. Alternatives the South Atlantic Council considered but eliminated from detailed consideration during development of this amendment are described in **Appendix A**.

## 2.1 Action 1: Modify Rebuilding Strategy, ABC, ACLs, and ACTs for Black Sea Bass

### 2.1.1 Action 1a. Modify Rebuilding Strategy and Set ABC for Black Sea Bass

**Alternative 1 (No Action).** Retain rebuilding strategy for black sea bass that maintains a constant catch throughout the remaining years of the rebuilding timeframe. The current ABC for black sea bass is 847,000 lbs whole weight (718,000 lbs gutted weight). Based on the current regulations in place the commercial ACL is 309,000 lbs gutted weight (gw) and the recreational ACL is 409,000 lbs gw for a combined ACL of 718,000 lbs gw.

**Alternative 2.** Establish a new constant catch rebuilding strategy with an ABC from the 2011 assessment and SSC review process.

**Alternative 3.** Define a rebuilding strategy for black sea bass that maintains a constant fishing mortality rate throughout the remaining years of the rebuilding timeframe.

**Sub-Alternative 3a.** $F = 75\%F_{MSY}$

**Sub-Alternative 3b.** $F = F_{rebuild}$ (by 2016)

**Alternative 4.** Define a rebuilding strategy for black sea bass that holds catch constant (847,000 pounds whole weight; recreational ACL = 409,000 lbs gw and commercial ACL = 309,000 lbs gw) in fishing years 2012/2013 and 2013/2014 and then changes to $F_{rebuild}$ fishing mortality rate throughout the remaining fishing seasons of the rebuilding timeframe. After the 2015/2016 fishing season the fishing mortality rate would be held constant until modified.

**Preferred Alternative 5.** Define a rebuilding strategy for black sea bass that holds catch constant (847,000 pounds whole weight; recreational ACL = 409,000 lbs gw and commercial ACL = 309,000 lbs gw) in fishing years 2012/2013 and 2013/2014 and then changes to $F_{rebuild}$ in 2014/2015. ($F_{rebuild}$ is defined as a constant fishing mortality strategy that maintains the 66% probability of recovery rate throughout the remaining fishing seasons of the rebuilding timeframe.) After the 2015/2016 fishing season the fishing mortality rate would be held constant until modified.

*Note: Sector ACLs are based on the allocation formula used in Amendment 13C (SAFMC 2006) whereby the commercial quota is 43% of the TAC and the recreational allocation is 57% of the TAC.

For both the recreational and commercial sectors, ACL paybacks are not required when new projections are adopted that incorporate ACL overages and the ACLs are adjusted in accordance with those projections. Beyond the 2013/2014 fishing season (when the rebuilding strategy switches over to $F_{rebuild}$) for years when there is no assessment, the ACL would not automatically increase if the ACL has been exceeded during the previous fishing year.

**Table 2-1a.** Black sea bass ABCs (lbs gutted weight) for Alternatives 2-5. Based on projections that assume 100% of ACL (commercial and recreational) met in June 2011-May 2012 fishing year. SSC approved projections for 2 years and requested an updated assessment before specifying an ABC beyond 2014.

| Fishing Year | Alternative 1 | Alternative 2 | Sub-Alternative 3a* | Sub-Alternative 3b* | Alternative 4** | Preferred Alternative 5 |
|---|---|---|---|---|---|---|
| 2012/2013 | 718,000 | 1,058,475 | 899,153 | 899,153 | 718,000 | 718,000 |
| 2013/2014 | 718,000 | 1,058,475 | 975,424 | 975,424 | 718,000 | 718,000 |
| 2014/2015 | 718,000 | 1,058,475 | 1,081,356 | 1,081,356 | 1,330,508 | *** |
| 2015/2016 | 718,000 | 1,058,475 | 1,178,814 | 1,178,814 | 1,325,424 | *** |
| 2016/2017 | 718,000 | 1,058,475 | 1,252,542 | 1,252,542 | 1,343,220 | *** |
| Probability of Rebuilding by 2016/2017 | 70% | 50% | <50% | 50% | 50% | 66% |

**Note on values in Table 2-1a, 2-1b and 2-1c:** Values under **Alternative 2** are based on Table 3.22 from SEDAR 25 (2011). Landings under **Sub-Alternative 3a** are assumed to equal those in **Sub-Alternative 3b** because the fishing mortality rate (F) for **Sub-Alternative 3a** (F= 0.48) is very similar to F for **Sub-Alternative 3b** (F = 0.52). It is likely that landings under **Sub-Alternative 3a** would be slightly greater than **Sub-Alternative 3b**. Values under **Sub-Alternative 3b** are based on Table 3.16 from SEDAR 25 (2011). Values under **Alternative 4** based on projection provided by the SEFSC dated November 4, 2011, and are based on $F_{rebuild}$ that allows an increase in harvest for 2012 fishing year. Values for 2014 to 2016 in **Preferred Alternative 5** would be determined from an updated assessment. A conversion factor of 1.18 used to convert whole weight values in assessment to gutted weight.

**Table 2-1b.** Black sea bass ABCs (lbs gutted weight) for Alternatives 2-5. Based on projections that assume 150% of ACL (commercial and recreational) met in June 2011-May 2012 fishing year. SSC approved projections for 2 years and requested an updated assessment before specifying an ABC beyond 2014.

| Fishing Year | Alternative 1 | Alternative 2 | Sub-Alternative 3a | Sub-Alternative 3b | Alternative 4 | Preferred Alternative 5 |
|---|---|---|---|---|---|---|
| 2012/2013 | 718,000 | 973,729 | 746,610 | 746,610 | 718,000 | 718,000 |
| 2013/2014 | 718,000 | 973,729 | 881,356 | 881,356 | 718,000 | 718,000 |
| 2014/2015 | 718,000 | 973,729 | 1,023,729 | 1,023,729 | 1,144,915 | *** |
| 2015/2016 | 718,000 | 973,729 | 1,134,746 | 1,134,746 | 1,212,712 | *** |
| 2016/2017 | 718,000 | 973,729 | 1,215,254 | 1,215,254 | 1,266,102 | *** |
| Probability of Rebuilding by 2016/2017 | 66% | 50% | <50% | 50% | 50% | 66% |

**Table 2-1c.** Black sea bass ABCs (lbs gutted weight) for Alternatives 2-5. Based on projections that assume 200% of ACL (commercial and recreational) met in June 2011-May 2012 fishing year. SSC approved projections for 2 years and requested an updated assessment before specifying an ABC beyond 2014.

| Fishing Year | Alternative 1 | Alternative 2 | Sub-Alternative 3a* | Sub-Alternative 3b* | Alternative 4** | Preferred Alternative 5 |
|---|---|---|---|---|---|---|
| 2012/2013 | 718,000 | 887,288 | 604,237 | 604,237 | 718,000 | 718,000 |
| 2013/2014 | 718,000 | 887,288 | 788,983 | 788,983 | 718,000 | 718,000 |
| 2014/2015 | 718,000 | 887,288 | 963,559 | 963,559 | 951,695 | *** |
| 2015/2016 | 718,000 | 887,288 | 1,088,983 | 1,088,983 | 1,082,203 | *** |
| 2016/2017 | 718,000 | 887,288 | 1,176,271 | 1,176,271 | 1,171,186 | *** |
| Probability of Rebuilding by 2016/2017 | 61% | 50% | <50% | 50% | 50% | 66% |

#### 2.1.1.1 Comparison of Alternatives

**Alternative 1 (No Action)** and **Preferred Alternative 5** could result in unnecessary discards of black sea bass as biomass increases. However, release mortality of black sea bass is very low and actions were taken to reduce bycatch with increased mesh size in pots through Amendment 13C. Beneficial biological effects under **Alternative 1 (No Action)** and **Preferred Alternative 5** include a more rapid rebuilding of the stock and increase in the average age and size structure compared to the other alternatives. **Alternative 2** would hold catch constant for the remaining years of the rebuilding plan and the ABC would not increase as the stock biomass increases. This is based on the assumption that the final 2011/2012 catch level will be approximately 150% of the ACL. The catch level would be higher or lower depending on the level of overage of the ACL in the 2011/2012 fishing year (**Tables 2-1a** and **2-1c**). **Alternative 3** would hold F constant and allow catch of black sea bass to increase as biomass of the stock increases**.** The current estimate of $F_{MSY}$ is F = 0.698. **Sub-Alternative 3a** would hold the fishing mortality rate at 75% of $F_{MSY}$, which is very close to the fishing mortality rate under **Sub-Alternative 3b. Sub-Alternative 3b** would allow a higher level of harvest over the full time period than **Alternative 2**, while still having a 50% chance of rebuilding by 2016. The South Atlantic Council's Scientific and Statistical Committee (SSC) has endorsed the ABC that assumes 150% of the ACL was harvested in the 2011/2012 fishing year with the caveat that ABC is specified for only the 2012/2013 and 2013/2014 fishing years (**Table 2-1b**). **Alternative 4** would use a modified F approach for a black sea bass rebuilding strategy. Biological impacts of **Alternative 4** would be comparable to **Sub-Alternative 3b** since after the first two fishing seasons the allowable harvest would fall into line with what the allowable harvest would be under $F_{rebuild}$.

**Alternative 1 (No Action)** could have the greatest negative economic impact on commercial fishermen. **Preferred Alternative 5** would be no different from the status quo in terms of economic impact for the first two fishing seasons. It is unknown what the economic impacts of **Preferred Alternative 5** would be in subsequent years. As the stock recovers and there are a greater number of larger fish, the current commercial ACL is being caught more quickly each fishing year. The commercial season that began on June 1, 2011, lasted only about 6 weeks. **Alternative 2**, which holds catch at a different constant level during the remainder of the rebuilding period, would have similar effects to **Alternative 1 (No Action)**. Under constant F rebuilding strategy (**Alternative 3**), ACLs would generally increase with a rebuilding stock. The advantage of this strategy is as more fish become available with increased stock size, more fish can be removed from the population. **Alternative 3** would not provide as much of a negative economic impact to commercial fishermen as would **Alternative 1 (No Action)** in that it would adjust the F at a constant level for the remaining years of the rebuilding schedule. **Sub-Alternative 3a** is associated with less than 50 percent probability of rebuilding the stock within the rebuilding timeframe, and so may not be a viable alternative. **Sub-Alternative 3b** has a 50 percent probability of rebuilding the stock, but would provide for an ACL less than that of **Sub-Alternative 2** in the first two years. In the short-run, **Sub-Alternative 3a** and **Sub-Alternative 3b** may provide for better economic scenarios than **Sub-Alternative 2**; the reverse may be expected over the long-run. **Alternative 4** has the

potential to provide the greatest economic benefit to the fishermen as the commercial ACL could increase due to adjustments to F (after the first two years) as the stock rebuilds.

**Table 2-2.** Summary of effects of Action 1a alternatives under consideration.

| | Alternatives | | | | |
|---|---|---|---|---|---|
| | **Alt. 1 (No Action)** | **Alt. 2** | **Alt. 3** | **Alt4.** | **Alt. 5 Preferred** |
| **Biological** | + | + | + | + | + |
| **Economic** | - | + | + | + | - |
| **Social** | - | + | + | + | - |
| **Administrative** | + | - | - | - | + |

(+) beneficial; (++) significantly beneficial; (-) adverse; (--) significantly adverse; (+-) some beneficial and some adverse effect

### 2.1.2 Action 1b. Set an ACL for Black Sea Bass

**Alternative 1 (No Action)**. Do not change the existing ACL for black sea bass.

**Preferred Alternative 2**. Set ACL = ABC = OY. This results in sector ACLs based on the existing allocations. ACLs will not increase automatically in a subsequent year if the present year's projected catch has exceeded the total ACL.

**Alternative 3**. Set ACL = 90%ABC = OY. This results in sector ACLs based on the existing allocations. ACLs will not increase automatically in a subsequent year if the present year's projected catch has exceeded the total ACL.

**Alternative 4**. Set ACL = 80%ABC = OY. This results in sector ACLs based on the existing allocations. ACLs will not increase automatically in a subsequent year if the present year's projected catch has exceeded the total ACL.

**Table 2-3.** Annually increasing ACLs (lbs gutted weight) based on Constant Catch shifting to Constant F rebuilding strategy (Action 1a, Preferred Alternative 5). ACL values after 2014 will be determined from an update assessment.
Note: ACLs will not increase automatically in a subsequent year if the present year's projected catch has exceeded the total ACL.

| Constant Fishing Mortality Rate Options | Fishing Season | Combined ACL | Com. ACL (43%)* | Recreational ACL (57%) |
|---|---|---|---|---|
| **Preferred Alternative 2** ACL=ABC=OY | 2012/2013 | 718,000 | 309,000 | 409,000 |
| | 2013/2014 | 718,000 | 309,000 | 409,000 |
| **Alternative 3** ACL=90%ABC | 2012/2013 | 646,200 | 277,866 | 368,334 |
| | 2013/2014 | 646,200 | 277,866 | 368,334 |
| **Alternative 4** ACL=80%ABC | 2012/2013 | 574,400 | 246,992 | 327,408 |
| | 2013/2014 | 574,400 | 246,992 | 327,408 |

*Sector ACLs are based on the allocation formula used in Amendment 13C (SAFMC 2006) whereby the commercial quota is 43% of the TAC and the recreational allocation is 57% of the TAC.

**Table 2-4a.** ACLs (lbs gutted weight) based on annually modified F (Alternative 4, Action 1). Based on projections that assume 100% of ACL (commercial and recreational) met in June 2011-May 2012 fishing year.

| Fishing Season | Fishing Mortality Rate | Combined ACL | Commercial ACL (43%) | Recreational ACL (57%) |
|---|---|---|---|---|
| 2012/2013 | F = 0.382 $F_{MSY}$ | 718,000 | 309,000 | 409,000 |
| 2013/2014 | F = 0.324 $F_{MSY}$ | 718,000 | 309,000 | 409,000 |
| 2014/2015 | F = 0.55 $F_{MSY}$ | 1,330,508 | 572,118 | 758,390 |
| 2015/2016 | F = 0.55 $F_{MSY}$ | 1,325,424 | 569,932 | 755,492 |
| 2015/2016 | F = 0.55 $F_{MSY}$ | 1,343,220 | 577,585 | 765,635 |

Values based on projections conducted by the SEFSC dated November 4, 2011.

**Table 2-4b.** ACLs (lbs gutted weight) based on annually modified F (Alternative 4, Action 1). Based on projections that assume 150% of ACL (commercial and recreational) met in June 2011-May 2012 fishing year.

| Fishing Season | Fishing Mortality Rate | Combined ACL | Commercial ACL (43%) | Recreational ACL (57%) |
|---|---|---|---|---|
| 2012/2013 | 0.458 | 718,000 | 309,000 | 409,000 |
| 2013/2014 | 0.372 | 718,000 | 309,000 | 409,000 |
| 2014/2015 | 0.51 | 1,144,915 | 492,313 | 652,602 |
| 2015/2016 | 0.51 | 1,212,712 | 521,466 | 691,246 |
| 2016/2017 | 0.51 | 1,266,102 | 544,424 | 721,678 |

Values based on projections conducted by the SEFSC dated November 4, 2011.

**Table 2-4c.** ACLs (lbs gutted weight) based on annually modified F (Alternative 4, Action 1). Based on projections that assume 200% of ACL (commercial and recreational) met in June 2011-May 2012 fishing year.

| Fishing Season | Fishing Mortality Rate | Combined ACL | Commercial ACL (43%) | Recreational ACL (57%) |
|---|---|---|---|---|
| 2012/2013 | 0.567 | 718,000 | 309,000 | 409,000 |
| 2013/2014 | 0.436 | 718,000 | 309,000 | 409,000 |
| 2014/2015 | 0.46 | 951,695 | 409,229 | 542,466 |
| 2015/2016 | 0.46 | 1,082,203 | 465,347 | 616,856 |
| 2016/2017 | 0.46 | 1,171,186 | 503,610 | 667,576 |

Values based on projections conducted by the SEFSC dated November 4, 2011.

### 2.1.2.1 Comparison of Alternatives

**Alternative 1 (No Action)** would not change the existing ACL and OY for black sea bass. Based on a recommendation from the South Atlantic Council's SSC, Amendment 17B indicates that the ABC for overfished stocks is consistent with the value from the rebuilding plan. If approved, the Comprehensive ACL Amendment would adopt this definition of ABC for overfished stocks into the ABC Control Rule. The ABC for black sea bass is 718,000 lbs gw, which is equivalent to the ACL. Amendment 15A specified an OY to equal the average yield associated with fishing at 75% of $F_{MSY}$. If the stock is overfished, Amendment 15A indicates $F_{OY}$ equals the fishing mortality rate specified by the rebuilding plan designed to rebuild the stock to $SSB_{MSY}$ within the approved schedule.

**Preferred Alternative 2**, **Alternative 3** and **Alternative 4** would set OY equal to the ACL. The ACL would be the limit that triggers AMs, and ACT, if specified, would be the management target for a fishery. Management measures for a fishery should, on an annual basis, prevent the ACL from being exceeded. The long-term objective is to achieve OY through annual achievement of an ACL or ACT. The NS1 guidelines state that if OY is set close to the maximum sustainable yield (MSY), the conservation and management measures in the fishery must have very good control of the amount of catch in order to achieve the OY without overfishing. MSY from the new assessment is 1.767 million lbs which is well above the current specification of OY/ACL. Setting OY equal to ACL would provide greater insurance that OY is achieved, overfishing is prevented, and the long-term average biomass is near or above $B_{MSY}$.

Under **Preferred Alternative 2**, **Alternative 3** and **Alternative 4**, the ACL and OY would be based on the ABC for black sea bass from SEDAR 25, which takes into consideration scientific uncertainty to ensure catches are maintained below a MSY/OFL level. **Preferred Alternative 2** is the least conservative option of all the alternatives under consideration in **Action 1b** by setting the ACL/OY equal to the ABC. The ACL would be divided into sector-specific ACLs based on the allocations of 43% commercial/57% recreational established in Amendment 13C to the FMP. **Tables 2-4a - 2-4c** illustrate the sector specific ACLs based on **Alternative 4** in **Action 1a**.

**Preferred Alternative 2** would result in the greatest increase in overall allowable harvest over time while still allowing the stock to rebuild (**Table 2-3**) depending on the results from the updated assessment. **Preferred Alternative 2** would also provide no buffer between the ABC and the ACL; however, scientific uncertainty is taken into account with the specification of the ABC, and the South Atlantic Council has adopted a rebuilding strategy that has a 66% chance of rebuilding the stock by 2016. **Preferred Alternative 2** could result in the lowest biological benefit to right whales when compared to **Alternatives 3** and **4** if the black sea bass fishing season is extended into the right whale calving season. **Preferred Alternative 2** would also be expected to have a lower biological benefit to black sea bass than **Alternatives 3** and **4** since **Preferred Alternative 2** allows for the highest catch. However, **Preferred Alternative 2** identifies a harvest level for black sea bass that is expected to be sustainable and would not negatively impact the stock. **Alternative 3** would establish an ACL based on 90% of the ABC, which would result in a slightly more conservative ACL level and would leave a 10% buffer between ABC and the ACL. Choosing an ACL that is 90% of ABC may also increase the chance that the stock would rebuild within the rebuilding timeframe. **Alternative 4** is the most risk adverse approach to setting a total ACL for black sea bass because it provides the greatest buffer between ABC and ACL, which could reduce the likelihood of an overfishing event in the future.

Since an ACL is a major constraint in the harvest or use of the black sea bass resource, **Preferred Alternative 2**, which provides for the highest ACL, would be expected to impose the least constraint on fishing activities. In principle, **Preferred Alternative 2** would allow the commercial and recreational fishing sectors to generate the largest short-term economic benefits from the use of the resource. Inasmuch as this alternative would still allow for the stock to rebuild within the rebuilding timeframe, benefits due this alternative may be expected to persist over time. Along similar reasoning, **Alternatives 3** and **4** would allow for lower economic benefits than **Preferred Alternative 2**, at least in the short term. Unless the stock rebuilds significantly faster under **Alternatives 3** or **4** so that ACLs could be substantially increased much sooner, long-term economic benefits derivable from these two alternatives would be lower than those from **Preferred Alternative 2**.

**Table 2-5.** Summary of effects of Action 1b alternatives under consideration.

| | **Alternatives** | | | |
|---|---|---|---|---|
| | **Alt. 1 (No Action)** | **Alt. 2 (Preferred)** | **Alt. 3** | **Alt4.** |
| **Biological** | + | +- | + | + |
| **Economic** | - | + | + | + |
| **Social** | - | + | + | + |
| **Administrative** | + | -+ | -+ | -+ |

(+) beneficial; (++) significantly beneficial; (-) adverse; (--) significantly adverse;
(+-) some beneficial and some adverse effect

### 2.1.3 Action 1c. Set Annual Catch Targets (ACTs) for the Commercial Black Sea Bass Sector

**Preferred Alternative 1 (No Action).** Do not set an ACT for the commercial black sea bass sector.

**Alternative 2.** Set the commercial ACT = 90% of the commercial sector ACL

**Alternative 3.** Set the commercial ACT = 80% of the commercial sector ACL.

**Table 2-6.** Values for Commercial ACT based on Preferred Alternative 2 in Action 1b. SSC approved projections for 2 years; an updated assessment would be conducted before specifying an ABC beyond 2014.

| Fishing Year | Commercial ACL | Preferred Alternative 1 | Alternative 2 | Alternative 3 |
|---|---|---|---|---|
| 2012/2013 | 309,000 | 309,000 | 278,100 | 247,200 |
| 2013/2014 | 309,000 | 309,000 | 278,100 | 247,200 |

#### 2.1.3.1 Comparison of Alternatives

**Preferred Alternative 1 (No Action)** would not establish a commercial ACT. The South Atlantic Council determined a commercial ACT for black sea bass was not needed because commercial sector landings are closely tracked in-season through a quota monitoring system. The quota monitoring system is used to project when the ACL is going to be met in order to close the fishery before the ACL is exceeded. For this reason, the South Atlantic Council chose not to establish ACTs for the commercial sector for black sea bass because it is not necessary to the successful management of the commercial sector for black sea bass, and could result in an unnecessary administrative burden. Setting a commercial ACT at either 90% or 80% of the ACL (**Alternatives 2** and **3,** respectively), would establish a reference point that could be used as an indicator that the ACL could be reached or exceeded.

**Table 2-7.** Summary of effects of Action 1c alternatives under consideration.

| | Alternatives | | |
|---|---|---|---|
| | Alt. 1 (No Action) (Preferred) | Alt. 2 | Alt. 3 |
| **Biological** | +- | + | + |
| **Economic** | + | - | - |
| **Social** | + | - | - |
| **Administrative** | + | - | - |

(+) beneficial; (++) significantly beneficial; (-) adverse; (--) significantly adverse;
(+-) some beneficial and some adverse effect

### 2.1.4 Action 1d. Set Annual Catch Targets (ACTs) for the Recreational Black Sea Bass Sector

**Alternative 1 (No Action).** Do not set an ACT for the recreational black sea bass sector.

**Alternative 2.** Set the recreational ACT = 85% of the recreational sector ACL.

**Alternative 3.** Set the recreational ACT = 75% of the recreational sector ACL.

**Preferred Alternative 4**. The recreational ACT equals recreational ACL*(1-PSE) or recreational ACL * 0.5, whichever is greater.

**Table 2-8.** Values for Recreational ACT based on Preferred Alternative 2 in Action 1b. SSC approved projections for 2 years; an updated assessment would be conducted before specifying an ABC beyond 2014.

| Fishing Year | Recreational ACL | Alternative 2 | Alternative 3 | (Preferred) Alternative 4 |
|---|---|---|---|---|
| 2012/2013 | 409,000 | 347,650 | 306,750 | 357,548 |
| 2013/2014 | 409,000 | 347,650 | 306,750 | 357,548 |

#### 2.1.4.1 Comparison of Alternatives

**Alternative 1 (No Action)** would not establish an ACT for the recreational sector; and therefore, would not benefit the biological environment by creating a management reference point more conservative that than of the sector ACL.

**Alternatives 2-4** would establish reduced harvest levels designed to hedge against an ACL overage and therefore, provide a buffer between the ACT and ACL, and account for management uncertainty. **Alternative 2** would establish an ACT that is 85% of the sector ACL, which would create a 15% buffer between the two harvest levels. If the ACT under **Alternative 2** is exceeded repeatedly and the ACL is also exceeded, the South Atlantic Council may consider associating some type of corrective or preventative AM with the ACT in order to prevent continued ACL overages. The same applies to **Alternative 3**, which would establish an ACT at a more conservative level than **Alternative 2** at 75% of the ACL. Under **Alternative 3** the buffer between the ACL and ACT would be greater than that under **Alternative 2**, and theoretically there would be more time to act to prevent the ACL from being exceed if the South Atlantic Council were to link an AM to the ACT in the future. **Preferred Alternative 4** would have the greatest biological benefit of the four alternatives by adjusting the ACL by 50% or one minus the average Percent Standard Error (PSE) from the recreational fishery during 2005-2009, whichever is greater. The lower the value of the PSE the more reliable the landings data. By using PSE in **Preferred Alternative 4**, more precaution is taken in the estimate of the ACL with increasing variability and uncertainty in the landings data.

There is some expectation that ACTs used to trigger control measures would serve as cushions to effectively limit harvests and enable the stock to rebuild within the rebuilding timeframe. Long-term economic benefits would then ensue from a healthy stock. As long as long-term economic benefits outweigh short-term costs, the fishing industry and society in general would be better off. Realization of long-term economic benefits depends on a host of factors, including the type of management regime adopted. These factors render relatively uncertain the long-term economic outcome of ACTs, at least from the standpoint of magnitudes. It appears that a prudent action to take would be to properly manage short-term costs. Relatively large short-term costs, such as those that may occur under more restrictive ACTs (e.g., **Alternative 3**), may not be totally outweighed by long-term benefits. There is therefore weak economic rationale for adopting such type of restrictive control measures.

**Table 2-9.** Summary of effects of Action 1d alternatives under consideration.

| | **Alternatives** | | | |
|---|---|---|---|---|
| | **Alt. 1 (No Action)** | **Alt. 2** | **Alt. 3** | **Alt4. Preferred** |
| **Biological** | - | + | + | + |
| **Economic** | + | - | - | - |
| **Social** | + | - | - | - |
| **Administrative** | + | - | - | - |

(+) beneficial; (++) significantly beneficial; (-) adverse; (--) significantly adverse;
(+-) some beneficial and some adverse effect

## 2.2 Action 2: Limit Participation in the Black Sea Bass Pot Segment of the Snapper Grouper Fishery through an Endorsement Program

**Alternative 1 (No Action).** Do not limit participation in the black sea bass pot segment of the snapper grouper fishery with the establishment of an endorsement program.

**Alternative 2.** Limit endorsements and tag distribution to entities with a valid or renewable South Atlantic Unlimited Snapper Grouper Permits on the effective date of the final rule whose *average* annual black sea bass landings using black sea bass pot gear between 1/1/99 and 12/31/10 were at least:

**Sub-Alternative 2a** - 500 lbs whole weight. Exclude those with no reported commercial landings of black sea bass using black sea bass pot gear between January 1, 2008, and December 31, 2010.

**Sub-Alternative 2b** - 1,000 lbs whole weight. Exclude those with no reported commercial landings of black sea bass using black sea bass pot gear between January 1, 2008, and December 31, 2010.

**Sub-Alternative 2c** - 2,000 lbs whole weight. Exclude those with no reported commercial landings of black sea bass using black sea bass pot gear between January 1, 2008, and December 31, 2010.

**Sub-Alternative 2d** - 5,000 lbs whole weight. Exclude those with no reported commercial landings of black sea bass using black sea bass pot gear between January 1, 2008, and December 31, 2010.

**Sub-Alternative 2e** - 10,000 lbs whole weight. Exclude those with no reported commercial landings of black sea bass using black sea bass pot gear between January 1, 2008, and December 31, 2010.

**Sub-Alternative 2f** - 3,500 lb whole weight. Exclude Unlimited Snapper Grouper Permits with no reported commercial landings of black sea bass using black sea bass pot gear between January 1, 2008, and December 31, 2010.

**Preferred Sub-Alternative 2g -** 2,500 lbs whole weight. Exclude Unlimited Snapper Grouper Permits with no reported commercial landings of black sea bass using black sea bass pot gear between January 1, 2008, and December 31, 2010.

**Alternative 3.** No South Atlantic state shall have less than two entities that qualify for black sea bass pot endorsements, provided that no entity qualifies whose minimum average landings are:

**Sub-Alternative 3a -** 1,000 lbs whole weight

**Sub-Alternative 3b -** 2,000 lbs whole weight

**Table 2-10.** Number of permits qualifying for an endorsement under each sub-alternative in **Alternative 2.** State based on homeport as identified on snapper-grouper permit application.

| **Using gutted weight landings** | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **2a** | **2b** | **2c** | **2d** | **2e** | **2f** | **Preferred 2g** |
| **North Carolina** | 25 | 21 | 19 | 10 | 6 | 11 | 16 |
| **South Carolina** | 16 | 12 | 9 | 3 | 2 | 5 | 6 |
| **Florida** | 9 | 8 | 6 | 5 | 1 | 5 | 6 |
| **Total** | 50 | 41 | 34 | 18 | 9 | 21 | 28 |
| **Using whole weight landings (Preferred)** | | | | | | | |
| | **2a** | **2b** | **2c** | **2d** | **2e** | **2f** | **Preferred 2g** |
| **North Carolina** | 26 | 22 | 21 | 10 | 9 | 14 | 18 |
| **South Carolina** | 17 | 14 | 10 | 5 | 2 | 5 | 7 |
| **Florida** | 9 | 8 | 7 | 5 | 1 | 5 | 6 |
| **Total** | 52 | 44 | 38 | 20 | 12 | 24 | 31 |

**Table 2-11.** Number of South Atlantic Unlimited Snapper Grouper Permits per state that qualify for a Black Sea Bass Pot endorsement under **Preferred Alternative 2g**.

| **Alternative** | **State** | **Endorsements that would be issued (gw)** | **Endorsements that would be issued (ww)** |
|---|---|---|---|
| **Preferred Sub-Alternative 2g** - 2,500 lbs gw. | North Carolina | 16 | 18 |
| | South Carolina | 6 | 7 |
| | Georgia | 0 | 0 |
| | Florida | 6 | 6 |

### 2.2.1 Comparison of Alternatives

**Alternative 1 (No Action)** could have negative effects by perpetuating the current derby fishing conditions as more individuals become involved in the fishery resulting in the quota being met even more quickly. The biological effects of **Alternatives 1-3** could be similar since the fishery would close when the quota is met regardless of the number of participants. **Alternative 1 (No Action)** could have the greatest biological effect because the quota would be met quickly and gear would be removed from the water for the

longest period of time. Conversely, if there were a large number of pots in the water at the same time, this could increase the chance of entanglement with protected species.

**Alternative 2** would restrict participation in the black sea bass pot sector to those individuals who historically fished pots for black sea bass. As far fewer individuals fish pots than possess federal snapper grouper commercial permits, **Alternative 2** would constrain participation in the pot sector to a level that is more manageable and profitable. **Alternative 2** and **Alternatives 2a-Preferred 2g** propose to limit participation in the black sea bass pot sector based on average landings of black sea bass caught with pot gear between January 1, 1999 and December 31, 2010. **Alternatives 2a-Preferred 2g** would specify average landings requirements of 500, 1,000, 2,000, 2,500, 3,500, 5,000, and 10,000 pounds. As the landing requirement increases, the number of qualifying individuals decreases.

The sub-alternative that would result in the fewest number of black sea bass pot endorsements being issued is **Sub-Alternative 2e**, which requires that a minimum of 10,000 pounds ww of black sea bass be harvested using pot gear between January 1, 1999 and December 31, 2010. Under **Sub-Alternative 2e** a total of 12 black sea bass pot endorsements would be issued to South Atlantic Unlimited Snapper Grouper Permit holders. Reducing the number of individuals who are able to harvest black sea bass using pot gear to such a small number could likely extend opportunities to fish for black sea bass well into the fishing year, which begins on June 1. Because overall harvest of black sea bass is controlled by the ACLs implemented in Amendment 17B (SAFMC 2010b) and by the updated rebuilding strategy, if approved, in this amendment, the number of black sea bass pot endorsements issued is not likely to adversely affect the black sea bass stock or jeopardize rebuilding efforts. Currently, 50 to 60 individuals fish for black sea bass with pots each year; therefore, **Preferred Alternative 2g** would reduce the number of fishery participants who currently fish for black sea bass using pot gear by 38-48%. The average catch per year for the 31 South Atlantic Unlimited Snapper Grouper Permits that would qualify for endorsements under **Preferred Sub-Alternative 2g** is 361,788 lbs gw (**Table 4-9)**. It is expected that by reducing the number of entities able to fish with black sea bass pots to 31, proposing the limit on the number of pots allowed to be used to 35, proposing a commercial trip limit of 1,000 pounds gw, the commercial quota should be met later in the fishing season (i.e., later in July or in August as opposed to early July).

**Table 2-12.** Summary of effects of Action 2 alternatives under consideration.

| | **Biological Impacts** | **Economic Impacts** | **Social Impacts** | **Administrative Impacts** |
|---|---|---|---|---|
| **Alternative 1** | + | +- | - | + |
| **Alternative 2** | + | +- | +- | - |
| **Alternative 2a** | + | + | + | + |
| **Alternative 2b** | + | +- | +- | - |
| **Alternative 2c** | + | +- | +- | - |
| **Alternative 2d** | + | +- | +- | - |
| **Alternative 2e** | + | +- | +- | - |
| **Alternative 2f.** | + | +- | +- | - |
| **Preferred Alternative 2g.** | + | +- | +- | - |
| **Alternative 3** | - | +- | +- | - |
| **Alternative 3a** | - | +- | +- | - |
| **Alternative 3b** | - | +- | +- | - |

(+) beneficial; (++) significantly beneficial; (-) adverse; (--) significantly adverse;
(+-) some beneficial and some adverse effects

## 2.3 Action 3: Establishment of an Appeals Process for Fishermen Excluded From the Black Sea Bass Pot Endorsement Program

**Alternative 1 (No Action).** Do not specify provisions for an appeals process associated with the black sea bass endorsement program.

**Preferred Alternative 2.** A period of 90 days will be set aside to accept appeals to the black sea bass endorsement program starting on the effective date of the final rule. The Regional Administrator (RA) will review, evaluate, and render final decisions on appeals. Hardship arguments will not be considered. The Regional Administrator will determine the outcome of appeals based on NMFS logbooks. If NMFS logbooks are not available, the Regional Administrator may use state landings records. Appellants must submit NMFS logbooks or state landings records to support their appeal.

**Alternative 3.** A period of 90 days will be set aside to accept appeals to the black sea bass endorsement program starting on the effective date of the final rule. The Regional Administrator will review, evaluate, and render final decisions on appeals. Hardship arguments will not be considered. A special board composed of state directors/designees will review, evaluate, and make individual recommendations to Regional Administrator on appeals. Hardship arguments will not be considered. The special board and the Regional Administrator will determine the outcome of appeals based on NMFS logbooks. If NMFS logbooks are not available, the Regional Administrator may use state landings records. Appellants must submit NMFS logbooks or state landings records to support their appeal.

### 2.3.1 Comparison of Alternatives

Establishing an appeals process is an administrative action. Therefore, it is not anticipated to directly or indirectly affect the physical, biological or ecological environments in a positive or negative way. Because a black sea bass pot endorsement system is assumed to be an appropriate action and would be expected to result in increased social benefits relative to the absence of an endorsement system, social benefits would be expected to be maximized if all appropriate fishermen, i.e., those fishermen whose receipt of an endorsement will best achieve the objectives of the program, receive an endorsement. The exclusion of any appropriate fishermen would be expected to result in decreased social benefits. The absence of an appeals process, as would occur under **Alternative 1 (No Action)**, would be expected to increase the likelihood that one or more appropriate qualifiers would not receive an endorsement, resulting in less social benefits than would occur if an appeals process is established. Because **Preferred Alternative 2** would establish an appeals process, **Preferred Alternative 2** would be expected to result in greater social benefits than **Alternative 1 (No Action)**.

**Table 2-13.** Summary of effects of Action 3 alternatives under consideration.

| | Establishment of Appeals Process | | |
|---|---|---|---|
| | **Alternative 1 (No Action)** | **Preferred Alternative 2 Preferred** | **Alternative 3** |
| **Biological** | + | - | - |
| **Economic** | - | + | + |
| **Social** | - | + | + |
| **Administrative** | + | - | - |

(+) beneficial; (++) significantly beneficial; (-) adverse; (--) significantly adverse;
(+-) some beneficial and some adverse effects

## 2.4 Action 4: Allow for Transferability of Black Sea Bass Endorsements

**Alternative 1 (No Action).** Black sea bass pot endorsements (and tags) would not be allowed to be transferred if such a system were implemented.

**Preferred Alternative 2.** A valid black sea bass pot endorsement can be transferred between any two individuals or entities that hold a valid or simultaneously obtains a valid, meaning not expired, South Atlantic Unlimited Snapper Grouper Permit. The endorsement and associated landings history of black sea bass can be transferred regardless of whether or not the South Atlantic Unlimited Snapper Grouper Permit is transferred.

**Preferred Sub-Alternative 2a.** Transferability allowed upon program implementation.
**Sub-Alternative 2b.** Transferability not allowed during the first 2 years of the program.
**Sub-Alternative 2c.** Transferability not allowed during the first 3 years of the program.
**Sub-Alternative 2d.** Transferability not allowed during the first 5 years of the program.

**Alternative 3.** A valid black sea bass pot endorsement can be transferred between any two individuals or entities that hold a valid or simultaneously obtains a valid, meaning not expired, South Atlantic Unlimited Snapper Grouper Permit. The endorsement and associated landings history of black sea bass will be transferred only if the South Atlantic Unlimited Snapper Grouper Permit is transferred.

**Sub-Alternative 3a.** Transferability allowed upon program implementation.
**Sub-Alternative 3b.** Transferability not allowed during the first 2 years of the program.
**Sub-Alternative 3c.** Transferability not allowed during the first 3 years of the program.
**Sub-Alternative 3d.** Transferability not allowed during the first 5 years of the program.

### 2.4.1 Comparison of Alternatives

**Alternative 1 (No Action)** would indirectly benefit the biological environment because it would not allow any additional black sea bass pot effort in the fishery after the initial endorsements are distributed to eligible South Atlantic Unlimited Snapper Grouper Permit holders. By limiting the number of endorsements and thus the number of pots to be deployed, risk of bycatch and protected species interactions decreases. There is likely to be no difference between **Preferred Alternative 2** and **Alternative 3** in the level of potential biological impact that could occur as a result of their implementation. It is the South Atlantic Council's intent that all black sea bass landings reported using pot gear with an endorsement will be associated with the South Atlantic Unlimited Snapper Grouper Permit rather than the endorsement. Therefore, the endorsement would simply allow the eligible South Atlantic Unlimited Snapper Grouper Permit holders to fish for black sea bass using pot gear, with no landings history attached to it.

Administratively, allowing for transferability is more burdensome than the no-action alternative since NOAA Fisheries Service Permit Office staff would be responsible for determining how transfers would be handled. NOAA Fisheries Service would be

responsible for notifying endorsement holders of transferability requirements through outreach efforts.

**Table 2-14.** Summary of effects of Action 4 alternatives under consideration.

| | Transferability of Endorsements | | |
|---|---|---|---|
| | **Alternative 1 (No Action)** | **Preferred Alternative 2 Preferred** | **Alternative 3** |
| **Biological** | + | - | - |
| **Economic** | - | + | + |
| **Social** | - | + | + |
| **Administrative** | + | - | - |

(+) beneficial; (++) significantly beneficial; (-) adverse; (--) significantly adverse;
(+-) some beneficial and some adverse effects

## 2.5 Action 5: Limit Effort in the Black Sea Bass Pot Segment of the Snapper Grouper Fishery Each Permit Year

**Alternative 1 (No Action).** Do not annually limit the number of black sea bass pots deployed or pot tags issued to holders of snapper grouper commercial permits.

**Alternative 2.** Require that each black sea bass pot in the water or at sea on a vessel in the South Atlantic EEZ have an attached valid identification tag issued by NOAA Fisheries Service. Limit the black sea bass pot tags to *100* per vessel each permit year. NOAA Fisheries Service will issue new identification tags each permit year that will replace the tags from the previous permit year.

**Alternative 3.** Require that each black sea bass pot in the water or at sea on a vessel in the South Atlantic EEZ have an attached valid identification tag issued by NOAA Fisheries Service. Limit the black sea bass pot tags to *50* per vessel each permit year. NOAA Fisheries Service will issue new identification tags each permit year that will replace the tags from the previous permit year.

**Alternative 4.** Require that each black sea bass pot in the water or at sea on a vessel in the South Atlantic EEZ have an attached valid identification tag issued by NOAA Fisheries Service. Limit the black sea bass pot tags to *25* per vessel each permit year. NOAA Fisheries Service will issue new identification tags each permit year that will replace the tags from the previous permit year.

**Preferred Alternative 5.** Require that each black sea bass pot in the water or at sea on a vessel in the South Atlantic EEZ have an attached valid identification tag issued by NOAA Fisheries Service. Limit the black sea bass pot tags to *35* per vessel each permit year. NOAA Fisheries Service will issue new identification tags each permit year that will replace the tags from the previous permit year. Endorsements will be automatically renewed at the same time the snapper grouper permit is renewed.

### 2.5.1 Comparison of Alternatives

Among **Alternatives 2 – Preferred Alternative 5**, **Alternative 2** would have the least beneficial effects to the biological environment as it would allow fishermen to fish up to 100 pots each year. For the 31 permits that qualify for endorsements, only 9% of the trips during 2008-2010 fished more than 100 pots. **Alternative 4** would have the greatest biological effect since it would allow fishermen to fish a maximum of 25 pots. Based on data from 2008-2010, 69% of the trips taken by those individuals who qualify for endorsements fished more than 25 pots. The biological benefit of **Alternative 3** would be greater than **Alternative 2** but less than **Alternative 4** and **Preferred Alternative 5** as it would allow fishermen to fish up to 50 pots. Twenty-one percent of the trips by individuals who qualify for endorsements under Action 2 fished more than 50 pots during 2008-2010. **Preferred Alternative 5** would allow 35 tags to be issued to each endorsement holder and would reduce the number of bass sea bass pot fished by 52% for those individuals who qualify for endorsements. Therefore, **Preferred Alternative 5**

would result in beneficial biological effects less than **Alternative 4** but greater than **Alternative 3**.

In general, it is expected that the short-term economic benefits of **Alternatives 2 – Preferred Alternative 5** increase with the larger number of traps allowed per vessel. However, how the total number of pots in the black sea bass segment of the snapper grouper fishery influences the catch per unit effort will ultimately determine the long-term economic impacts of these alternatives. It is possible that even a low number of pots per vessel could have negative economic impacts in the short and long-term if there are large numbers of vessels participating in the fishery. Assuming the catch per unit effort remains stable, **Alternative 2** would offer the greatest short-term economic benefits but probably the smallest long-term economic benefits since the total number of traps in the fishery is capped at the highest level.

If we assume that the number of pots carried per vessel is currently optimal for that individual vessel's operation, then any reduction in the number of pots would have a negative impact on the profitability of that operation. **Alternative 2** restricts the number of pots per vessel to 100. While most vessels carry less than 100 pots, those that currently carry more than 100 pots would be negatively impacted since they would be restricted to 100 pots. While the cost of vessel operations remain largely fixed, except crew and food costs, the number of pots, which are used to generate revenue have decreased. The overall economic benefit of any of the alternatives would be a summation of the individual changes in profits. Given that there are only a few vessels fishing greater than 100 pots, the negative economic impacts from alternatives with larger number of pots allowed per vessel would be expected to be less than the negative economic impact of the alternatives with smaller numbers of pots allowed per vessel. Actual estimation of each vessel's profitability requires vessel specific cost data for black sea bass vessels, which is not available at this point in time.

**Table 2-15.** Summary of effects of Action 5 alternatives under consideration.

| | **Alternatives** | | | | |
|---|---|---|---|---|---|
| | **Alt. 1 (No Action).** | **Alt. 2** | **Alt. 3** | **Alt. 4** | **Alt. 5 Preferred** |
| **Biological** | - | + | + | ++ | + |
| **Economic** | + | +- | +- | +- | +- |
| **Social** | + | - | - | - | +- |
| **Administrative** | - | - | - | - | - |

(+) beneficial; (++) significantly beneficial; (-) adverse; (--) significantly adverse;
(+-) some beneficial and some adverse effects

## 2.6 Action 6: Implement Measures to Reduce Black Sea Bass Bycatch

**Alternative 1 (No Action).** Do not implement additional regulations stipulating when black sea bass pots must be removed from the water. Currently, fishermen are required to remove all pots once the quota has been reached.

**Preferred Alternative 2.** Black sea bass pots must be brought back to shore at the conclusion of each trip. "Brought back to shore" is defined as when the vessel with the pots has "returned to a dock, berth, beach, seawall, or ramp at the conclusion of each trip."

**Alternative 3.** Allow fishermen to leave pots in the water for no more than 72 hours.

### 2.6.1 Comparison of Alternatives

**Alternative 1 (No Action)** would perpetuate the biological risks associated with ghost fishing due to lost pots and entanglement with protected species to the extent they occur, particularly when gear is left at sea for long periods of time and therefore would have the least amount of biological benefit for the alternatives considered. The biological benefit of **Preferred Alternative 2** would be greater than **Alternative 3** because most trips last 1 day. Therefore, under **Preferred Alternative 2**, pots would be in the water for the least amount of time and would have the least amount of risk for ghost fishing or entanglement with protected species. The biological benefit of **Alternative 3** would be less than **Preferred Alternative 2** because it would allow fishermen to leave pots in the water for as long as 72 hours and would increase the chance that pots could be lost or could interact with protected species. Furthermore, under **Alternative 3**, fishermen would be able to return to the dock while pots soak decreasing the chance gear could be retrieved during bad weather. Selecting both **Preferred Alternative 2** and **Alternative 3** as preferred would have an intermediate biological effect in that a trip could last for as long as 72 hours but fishermen would not be able to return to the dock without their pots. However, as approximately 99% of the trips were 72 hours or less, a restriction on the length of the trip (**Alternative 3**) is not needed.

Given that **Preferred Alternative 2** and **Alternative 3** protect the biological resource as well as the surrounding ecosystem, the fishery would experience long-term economic benefits from these alternatives.

**Table 2-16.** Summary of effects of Action 6 alternatives under consideration.

| | Alternatives | | |
|---|---|---|---|
| | **Alt. 1 (No Action)** | **Alt. 2 Preferred** | **Alt. 3** |
| **Biological** | - | + | + |
| **Economic** | - | + | + |
| **Social** | + | +- | +- |
| **Administrative** | + | - | - |

(+) beneficial; (++) significantly beneficial; (-) adverse; (--) significantly adverse;
(+-) some beneficial and some adverse effect

## 2.7 Action 7: Modify Accountability Measures for Black Sea Bass

**Alternative 1 (No Action).** Current accountability measures are as follows:

***Commercial***
If the commercial sector black sea bass ACL is met or is projected to be met, independent of stock status, all subsequent purchase and sale of black sea bass is prohibited and harvest and/or possession is limited to the black sea bass bag limit.

***Recreational***
If black sea bass *is overfished* and the recreational sector ACL is met or is projected to be met, prohibit the harvest and retention of black sea bass. Compare the black sea bass recreational ACL with recreational black sea bass landings over a range of years. For 2010, use only 2010 landings. For 2011, use the average landings of 2010 and 2011. For 2012 and beyond, use the most recent three-year running average. If the recreational sector black sea bass ACL is exceeded, independent of stock status, the Regional Administrator shall publish a notice to reduce the recreational sector black sea bass ACL in the following season by the amount of the overage.

**Alternative 2.** Remove the three-year running average provision used to determine recreational ACL overages. The recreational AM would be: If black sea bass *is overfished* and the recreational sector black sea bass ACL is met or is projected to be met, prohibit the harvest and retention of black sea bass. If the recreational sector black sea bass ACL is exceeded, independent of stock status, the Regional Administrator shall publish a notice to reduce the recreational sector black sea bass ACL in the following season by the amount of the overage.

**Preferred Alternative 3.** For the recreational sector: Remove the three-year running average provision used to determine recreational ACL overages. The recreational AM would be: If the recreational sector black sea bass ACL is met or is projected to be met, independent of stock status, prohibit the harvest and retention of black sea bass. If the recreational sector black sea bass ACL is exceeded, independent of stock status, the Regional Administrator shall publish a notice to reduce the recreational sector ACL in the following season by the amount of the overage.

For the commercial sector: If the commercial sector black sea bass ACL is met or is projected to be met, independent of stock status, all subsequent purchase and sale of black sea bass is prohibited and harvest and/or possession is limited to the black sea bass bag limit. If the commercial sector black sea bass ACL is exceeded, independent of stock status, the Regional Administrator shall publish a notice to reduce the commercial sector black sea bass ACL in the following season by the amount of the overage.

**Note:** For both the recreational and commercial sectors, ACL paybacks are not required when new projections are adopted that incorporate ACL overages and the ACLs are adjusted in accordance with those projections. Beyond the 2013/2014 fishing season (when the rebuilding strategy switches over to $F_{rebuild}$) for years when there is no

assessment, the ACL would not automatically increase if the ACL has been exceeded during the previous fishing year.

### 2.7.1 Comparison of Alternatives

**Alternative 1 (No Action)** would not change the current system of AMs to employ more appropriate methods for determining ACL overages and modify the corrective actions taken if the ACL is projected to be met or exceeded.

**Alternative 2** and **Preferred Alternative 3** retain the authority of the Regional Administrator to prohibit recreational harvest in-season if the recreational ACL is projected to be met and if the stock is overfished. **Alternative 2** and **Preferred Alternative 3** also retain the post-season provision that allows the Regional Administrator to reduce the recreational ACL for the fishing season following an ACL overage, regardless of stock status. The primary modification to the system of recreational AMs for black sea bass under **Alternative 2** and **Preferred Alternative 3** is the elimination of the use of the three year running average to determine ACL overages. Eliminating the three year average would result in a reduced risk of implementing overly conservative AMs when they are necessarily needed. As stated previously, the three-year running average could be heavily influenced by a single year's anomalously high or low landings, which may or may not be due to actual increased harvest or statistical variation. Variability in recreational data is accounted for under **Alternative 2** and **Preferred Alternative 3** because corrective post-season action would ensure that any recreational ACL overage, regardless of cause, is taken into consideration when establishing the ACL for the following season.

It is possible that the reduction in the subsequent year's ACL would be smaller under **Alternative 2** and **Preferred Alternative 3** than under **Alternative 1 (No Action)**, because a relatively high harvest in one year would not be carried over into the subsequent years for purposes of triggering the AM.

Under **Alternative 2** and **Preferred Alternative 3**, ACL increases under the rebuilding strategy would be contingent on total commercial and recreational harvest not exceeding the two sectors' combined ACL. While sector AM would still apply once the sector-specific ACL threshold is exceeded, the total ACL may still increase over time as provided in the rebuilding strategy. This would tend to compensate the economic losses to the recreational (or commercial) sector due to the application of AM. One downside of this provision is that relatively large economic benefits would be forgone in future years despite only marginally exceeding the total ACL in the current year. Given the AMs for both the recreational and commercial sectors, the probability of exceeding the total ACL by a small amount would be relatively high. If the sector AMs were timely applied, the probability of exceeding the total ACL would be low.

**Table 2-17.** Summary of effects of Action 7 alternatives under consideration.

| | Alternatives | | |
|---|---|---|---|
| | **Alt. 1 (No Action)** | **Alt. 2** | **Alt. 3 Preferred** |
| **Biological** | + | + | |
| **Economic** | - | + | |
| **Social** | - | + | |
| **Administrative** | - | + | |

(+) beneficial; (++) significantly beneficial; (-) adverse; (--) significantly adverse;
(+-) some beneficial and some adverse effect

## 2.8 Action 8: Establish a Spawning Season Closure for Black Sea Bass

**Preferred Alternative 1 (No Action).** Do not implement a spawning season closure for black sea bass.

**Alternative 2.** Implement a March 1-April 30th spawning season closure for black sea bass; would apply to commercial and recreational sectors.

**Alternative 3.** Implement an April 1st-May 31st spawning season closure for black sea bass; would apply to commercial and recreational sectors.

**Alternative 4.** Implement a March 1st- May 31st spawning season closure for black sea bass; would apply to commercial and recreational sectors.

**Alternative 5.** Implement a May 1st- May 31st spawning season closure for black sea bass; would apply to commercial and recreational sectors.

### 2.8.1 Comparison of Alternatives

**Alternative 1 (No Action)** would not establish a spawning season closure for black sea bass. A spawning season closure could provide black sea bass with more spawning opportunities, which could contribute to recruitment success of a new year-class, help rebuild the stock more quickly, and result in a more stable and sustainable resource. It is noted that the fishing year begins on June 1 and the current regulations implemented through Amendment 13C and the rebuilding plan implemented in Amendment 15A have resulted in the commercial quota being met before the black sea bass spawning season for the last two fishing years.

**Alternative 4**, which would close the months of March through May, would encompass a larger portion of the March-May peak spawning season for black sea bass than **Alternatives 2, 3 and 5**. Furthermore, **Alternativs 2 and 4** would likely have greater biological benefits for black sea bass off Florida and Georgia than sub-alternatives that would close black sea bass later during the spawning season since spawning occurs earlier in the more southern latitudes. March and April accounted for 15% of black sea bass landings during the 2006-2009 fishing years. Additionally, **Alternative 2** could result in ancillary benefits to right whales by minimizing the probability of gear interactions while right whales are migrating through the area during calving season (November 1 – April 1). **Alternative 3**, which would close the months of April and May, would not have as great a biological benefit as **Alternative 2** because it would not include the month of March when a large proportion of the population is in spawning condition. However, **Alternative 3** would likely have a greater biological benefit for black sea bass off North Carolina than **Alternative 2**, which would close the months of March and April. April and May accounted for 16% of the total landings during the 2006-2009 fishing year but only 8% of the commercial sector landings occurred during those months. Most commercial landings have historically occurred during November

through February. The biological benefit of **Alternative 4** would be greatest of all the alternatives considered because it would encompass the March-May period of peak spawning when the slightly different peak spawning periods in the South Atlantic are considered (McGovern et al. 2002). The biological benefit of **Alternative 5** would be least of the action alternatives because it would only close May when a small proportion of the population is in spawning condition relative to March and April. Only a small portion (3%) of the commercial landings occurred during May during the 2006-2009 fishing years. Furthermore, **Alternative 5** would be expected to have the least amount of biological benefit for black sea bass off Florida and Georgia if there is a seasonal progression in spawning from south to north.

The closures proposed in **Alternatives 2** and **4** would likely provide the greatest reduction in potential entanglement threats to large whales because they have the largest overlap with the migration and calving season (November 1-April 1). **Alternative 3** may also reduce entanglement risk, but since the period of overlap between the closure and migration/calving season is less than **Alternatives 2** and **4** it is likely to have fewer biological benefits. Conversely, **Alternative 5** is unlikely to provide any additional reduction in entanglement risks for large whales because the proposed closure would not occur during the period when large whales are present in the South Atlantic.

**Alternative 4** results in the largest loss in dockside revenues while **Alternative 5** results in the smallest loss. While **Alternative 2** and **3** spawning season closures are the same approximate length, **Alternative 2** has the larger loss associated with it due to the relatively large amount of black sea bass harvested in March compared to May. With regard to the recreational fishery, **Alternative 4** is expected to result in the largest short-term economic losses followed by **Alternatives 3, 2,** and **5** in descending order. In general, implementation of a spawning season closure will result in long-term economic benefits for commercial and recreational fisheries with **Alternative 4** having the greatest long-term economic benefit and **Alternative 5** the smallest.

**Table 2-18.** Summary of effects of Action 8 alternatives under consideration.

| | **Alternatives** | | | | |
|---|---|---|---|---|---|
| | **Alt. 1 (No Action) Preferred** | **Alt. 2** | **Alt. 3** | **Alt. 4** | **Alt. 5** |
| **Biological** | - | + | + | + | + |
| **Economic** | + | - | - | - | - |
| **Social** | + | - | - | - | - |
| **Administrative** | + | - | - | - | - |

(+) beneficial; (++) significantly beneficial; (-) adverse; (--) significantly adverse;
(+-) some beneficial and some adverse effect

## 2.9 Action 9: Establish a Commercial Trip Limit for Black Sea bass

**Alternative 1 (No Action).** Do not establish a commercial trip limit for black sea bass.

**Alternative 2.** Establish a 500 pounds gw (590 pounds ww) trip limit.

**Alternative 3.** Establish a 750 pounds gw (885 pounds ww) trip limit.

**Preferred Alternative 4.** Establish a 1,000 pounds gw (1,180 pounds ww) trip limit.

**Alternative 5.** Establish a 1,250 pounds gw (1,475 pounds ww) trip limit.

**Alternative 6.** Establish a 1,000 pounds gw (1,180 pounds ww) trip limit; reduce to 500 pounds gutted weight (590 pounds ww) when 75% of the commercial ACL (quota) is met.

**Alternative 7.** Establish a 2,000 pounds gw (2,360 pounds ww) trip limit.

**Alternative 8.** Establish a 2,500 pounds gw (2,950 pounds ww) trip limit.

**Alternative 9.** Establish a 250 pounds gw (295 ww) trip limit.

### 2.9.1 Comparison of Alternatives

Assuming 31 individuals would qualify for endorsements under the preferred alternative for **Action 2**, a 500-lb gw (590 lbs ww) trip limit (**Alternative 2**) may keep the fishery open into October during the 2012 fishing year, about three months longer than **Alternative 1 (No Action)** (**Table 4-25**) and would be expected to provide a 49% reduction in landings based on data from 2010 (**Table 4-27**). A trip limit of 750 lbs gw (885 lbs ww) would result in an September closure (**Alternative 3**) for the 2012 fishing year, and would be expected to reduce harvest by about 34%. **Preferred Alternative 4** (1,000 lbs gw) would reduce landings by 24% and result in a closure in August. Under **Alternative 5**, a trip limit of 1,000 lbs gw weight (1,250 lbs ww) would be expected to reduce harvest by about 17% resulting in a closure during August for the 2012 fishing year. **Alternative 6**, which would reduce a 1,000 pounds gutted weight trip limit to 500 pounds gutted weight when 75% of the quota is met would result in a closure that is likely to be further into the season compared to the status quo; however, projecting the exact closure months is not possible. The similarities among the alternatives are likely due to an average catch that is lower than the specified trip limits in **Alternatives 3-6**. Therefore, many trips are not constrained by the trip limits.

**Alternative 7**, a trip limit of 2,000 lbs gw (2,360 lbs ww), would only be expected to reduce harvest by 6%. Therefore, under **Alternative 7** the expected quota closure dates would be almost identical to **Alternative 1 (No Action)** and would have little effect on extending the black sea bass pot segment of the snapper grouper fishery. **Alternative 8** would establish a 2,500 lbs gw (2,775 lbs ww) trip limit. As with **Alternative 7**, a 2,500

lbs gw trip limit would provide little effect on extending the fishing season for black sea bass.

**Alternative 9** would specify a 250 lb gw trip limit that would allow the black sea bass fishery to remain open through a large portion of the June-May fishing year, and into right whale calving season.

Trip limits may extend the time commercial fishermen have to fish during the fishing season, but they would also reduce the per trip yield for those who typically harvested more fish than under any one of the alternatives under consideration. Therefore, the benefits of being able to fish longer must be weighed against any reduced level of per-trip harvest. Fishermen may compensate for trip limits set lower than their typical harvest by making several trips in one day; however, this may be cost prohibitive considering some fishermen travel fairly far from shore and the increasing cost of fuel.

**Table 2-19.** Summary of effects of Action 9 alternatives under consideration.

| | **Alternatives** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Alt. 1 (No Action)** | **Alt. 2** | **Alt. 3** | **Alt. 4 Preferred** | **Alt. 5** | **Alt. 6** | **Alt. 7** | **Alt. 8** | **Alt. 9** |
| **Biological** | +- | +- | +- | +- | +- | +- | +- | +- | +- |
| **Economic** | +- | +- | +- | +- | +- | +- | +- | +- | +- |
| **Social** | +- | +- | +- | +- | +- | +- | +- | +- | +- |
| **Administrative** | - | + | + | + | + | - | - | + | + |

(+) beneficial; (++) significantly beneficial; (-) adverse; (--) significantly adverse;
(+-) some beneficial and some adverse effect

## 2.10 Action 10: Modify Commercial and/or Recreational Black Sea Bass Size Limits

**Alternative 1 (No Action).** Do not modify the current size limits of 12 inches total length (TL) for the recreational sector and 10 inches TL for the commercial sector.

**Alternative 2.** Modify the recreational size limit.

**Preferred Sub-Alternative 2a.** Increase the recreational size limit from 12" TL to 13" TL.

**Alternative 3.** Modify the commercial size limit.

**Preferred Sub-Alternative 3a.** Increase the commercial size limit from 10" TL to 11" TL.

**Sub-Alternative 3b.** Increase the commercial size limit from 10" TL to 12" TL.

**Sub-Alternative 3c.** Increase the commercial size limit from 10" TL to 11" TL in year 1 and then to 12" TL in year 2 onwards.

### 2.10.1 Comparison of Alternatives

**Alternatives 2** and **3** differ in that **Alternative 2** would increase the minimum size limit for the recreational sector, whereas, **Alternative 3** would increase the minimum size limit for the commercial sector. Increasing the size limit would theoretically decrease the rate of harvest by reducing the number of legal size fish able to be harvested. However, minimum size limits can have detrimental effects on fish stocks if they do not protect the older year classes. Recruitment problems can occur in a fishery that has fewer age classes than an un-fished population. Additionally, minimum size limits can encourage the harvest of older, larger fish, which have the greatest reproductive potential.

For the recreational sector, increasing the minimum size limit from 12 inches TL to 13 inches TL would result in a 20-22% harvest reduction for the headboat sector and an 19-20 % reduction in harvest for the private recreational/charterboat sector. The greatest reduction in harvest would be achieved by increasing the minimum size limit in the commercial sector to 12 inches TL under **Sub-Alternative 3b** or **3c**. Increasing the minimum size limit in the commercial sector would result in a maximum reduction in commercial harvest of 32.4%; therefore, **Sub-Alternatives 3b** and **3c** could be considered the most biologically beneficial of the size limit modification alternatives considered.

**Alternative 2** has been estimated to reduce headboat harvest by 22.6%, assuming no discard mortality rate, or 20.9% assuming a 7% discard mortality rate. Harvest reduction in the shore, private/rental, and charterboat modes has been estimated at 20.3% under a zero percent discard mortality rate, or 18.8% under a 7% discard mortality rate. In terms of total recreational harvest and given the most recent years' relatively high harvest rate, the AM would likely apply resulting in no additional reduction in recreational harvest from increasing the size limit (**Alternative 2**).

**Table 2-20.** Summary of effects of Action 10 alternatives under consideration.

| | Alternatives | | | | |
|---|---|---|---|---|---|
| | **Alt. 1 (No Action)** | **Sub-Alt. 2a** | **Preferred Sub-Alt. 3a** | **Sub-Alt. 3b** | **Sub-Alt. 3c** |
| **Biological** | + | + | + | + | + |
| **Economic** | +- | - | - | - | - |
| **Social** | +- | - | - | - | - |
| **Administrative** | + | - | - | - | - |

(+) beneficial; (++) significantly beneficial; (-) adverse; (--) significantly adverse;
(+-) some beneficial and some adverse effect

## 2.11 Action 11: Improvements to Commercial Data Reporting

**Preferred Alternative 1 (No Action).** Retain existing data reporting systems for the commercial sector.

*Under this alternative, as implemented by Amendment 15B to the Snapper Grouper FMP, a commercial vessel with a federal permit, if selected by NOAA Fisheries Service, is required to maintain and submit fishing records; requires a vessel that fishes in the EEZ, if selected by NOAA Fisheries Service, to carry an observer and install an electronic logbook (ELB) and/or video monitoring equipment provided by NOAA Fisheries Service. Note: Refer to the table in* ***Section 4.11.1*** *for a complete list of current data reporting requirements.*

**Alternative 2.** Require all vessels with a Federal snapper grouper commercial permit to have an electronic logbook tied to the vessel's GPS onboard the vessel.

(Note: Alternative 2 would require 100% of vessels to have an electronic logbook; whereas, current data reporting programs only require electronic logbooks if selected.)

**Alternative 3.** Provide the option for fishermen to submit their logbook entries electronically via an electronic version of the logbook made available online.

**Alternative 4.** Require that commercial landings and catch/effort data be submitted in accordance with ACCSP standards, using the SAFIS system.

(Note: Alternative 4 would require that 100% of dealers and fishermen report electronically using the SAFIS system.)

### 2.11.1 Comparison of Alternatives

The South Atlantic Council decided to take no action on Action 11 at their December 2011 meeting because they decided to develop a new generic amendment that would address improvements to data reporting in all their Fishery Management Plans. It may be assumed that any alternative other than **Preferred Alternative 1 (No Action)** would contribute to more refined, complete, and timely information that can be used to inform future fishery management decisions, and would therefore, be socially and biologically beneficial. Administratively, however, each of the alternatives (with the exception of **Preferred Alternative 1**) seeks to improve fisheries statistics and may result in negative impacts to greater or lesser degrees**.** The no action includes current data reporting requirements including those implemented through Amendment 15B (SAFMC 2008b) to the Snapper Grouper FMP (74 FR 58902). Current reporting requirements do not include provisions for reporting by dealers, if selected. Under **Alternative 2** all vessels with snapper grouper federal permits would be required to have an electronic logbook tied to the vessel's GPS. It is likely that the economic and social impacts of this alternative would be high as purchasing, installing, and learning to use the equipment will take

significant resources. Furthermore, additional administrative impacts would be expected to collect and process data from electronic logbooks. **Alternative 3** is likely the least costly alternative and would likely result in timely and accurate data from the fishermen who chose to participate. **Alternative 4** would require dealers and fishermen to report through the SAFIS system. This alternative would result in reliable data at a cost to NOAA Fisheries Service. The SAFIS system has already been implemented in other regions with great success. Upon examination of overarching data needs and feasibility of the various alternatives, one may conclude that a combination of one or more these methods would provide the most well-rounded data collection program.

Economic effects resulting from **Alternatives 2-4** depend partially on whether fishermen or government pay for equipment needed to implement and maintain these alternatives. **Alternative 3** is expected to be least expensive to fishermen. **Alternative 2**, while less costly than observers and electronic monitoring, could be prohibitive for some fishermen depending on whether fishermen or government are expected to pay for implementation and upkeep. **Alternative 4** could be costly to those fishermen and dealers without access to a computer and internet service. **Alternatives 2-4** are expected to provide long-term economic and social benefits through improved fisheries management.

**Table 2-21.** Summary of effects of Action 11 alternatives under consideration.

| | **Alt. 1 (No Action) Preferred** | **Alt. 2** | **Alt. 3** | **Alt. 4** |
|---|---|---|---|---|
| **Biological** | - | + | + | + |
| **Economic** | - | +- | + | +- |
| **Social** | - | +- | + | +- |
| **Administrative** | + | - | - | - |

(+) beneficial; (++) significantly beneficial; (-) adverse; (--) significantly adverse;
(+-) some beneficial and some adverse effects

## 2.12 Action 12. Improvements to For-Hire Data Reporting

**Alternative 1 (No Action).** Retain existing data reporting systems for the for-hire sector.

Note: Refer to Table 4-13 in Amendment 18A for a complete list of current data reporting requirements.

**Preferred Alternative 2.** Require *selected* vessels with a Federal For-Hire Permit to report landings data electronically; NOAA Fisheries Service is authorized to require weekly or daily reporting as required.

**Alternative 3.** Require vessels operating with a Federal For-Hire permit to maintain a logbook for discard characteristics (e.g., size and reason for discarding), *if selected*.

**Alternative 4.** Require that for-hire landings and catch/effort data be submitted in accordance with the ACCSP standards, using the SAFIS system.

### 2.12.1 Comparison of Alternatives

It may be assumed that any alternative other than **Alternative 1 (No Action)** would contribute to more refined, complete, and timely information that can be used to inform future fishery management decisions, and would therefore, be socially and biologically beneficial. However, each of the alternatives differs in the amount and quality of data collected from the for-hire sector. Administratively, each of the alternatives to improve fishery statistics in the for-hire sector could result in negative impacts to greater or lesser degrees relative to one another**. Preferred Alternative 2** would require selected federally permitted for-hire snapper grouper vessels to report electronically. Under **Preferred Alternative 2**, the agency could select 100% of the fishery for reporting which would result in negative economic and social impacts to participants. **Alternative 3** would require fishermen to maintain a logbook for discard characteristics. This alternative would provide useful information on bycatch and discards but would not increase the overall data collection for the retained species. **Alternative 3** would be the least intrusive and most cost effective means of gathering discard information. However, it would not collect the amount or quality of information as **Preferred Alternative 2**, and would likely not contribute greatly to improving the current data collection program. **Alternative 3** would be most effective if combined with **Preferred Alternative 2** or **Alternative 4**. **Alternative 4** would implement the electronic reporting module through the SAFIS system, as developed by the ACCSP. This system has been implemented in other fisheries with success. The agency would specify the frequency of reporting and would incur the cost of implementation.

**Preferred Alternative 2** and **Alternatives 3** and **4** are expected to provide long-term economic and social benefits through improved fisheries management. However, **Preferred Alternative 2** and **Alternative 4** might result in additional costs for some

fishermen without a computer or internet access. **Preferred Alternative 2** and **Alternatives 3** and **4** would all result in an additional administrative burden.

**Table 2-22.** Summary of effects of Action 12 alternatives under consideration.

| | **Alternatives** | | | |
|---|---|---|---|---|
| | **Alt. 1 (No Action)** | **Alt. 2 Preferred** | **Alt. 3** | **Alt. 4** |
| **Biological** | - | + | + | + |
| **Economic** | + | +- | + | +- |
| **Social** | - | +- | + | +- |
| **Administrative** | + | - | - | - |

(+) beneficial; (++) significantly beneficial; (-) adverse; (--) significantly adverse;
(+-) some beneficial and some adverse effects

# 3 Affected Environment

## 3.1 Habitat for Snapper Grouper Species

Information on the habitat utilized by species in the Snapper Grouper Complex is included in Volume II of the Fishery Ecosystem Plan (FEP) (SAFMC 2009b) and incorporated here by reference. Additional details are included in **Appendix M** and the FEP can be found at: http://www.safmc.net/ecosystem/Home/EcosystemHome/tabid/435/Default.aspx.

### 3.1.1 Essential Fish Habitat

Essential fish habitat (EFH) is defined in the Reauthorized Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) as "those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity" (16 U.S. C. 1802(10)). Specific categories of EFH identified in the South Atlantic Bight, which are utilized by federally-managed fish and invertebrate species, include both estuarine/inshore and marine/offshore areas. Specifically, estuarine/inshore EFH includes: Estuarine emergent and mangrove wetlands, submerged aquatic vegetation, oyster reefs and shell banks, intertidal flats, palustrine emergent and forested systems, aquatic beds, and estuarine water column. Additionally, marine/offshore EFH includes: Live/hard bottom habitats, coral and coral reefs, artificial and manmade reefs, *Sargassum* species, and marine water column.

EFH utilized by snapper grouper species in this region includes coral reefs, live/hard bottom, submerged aquatic vegetation, artificial reefs and medium to high profile outcroppings on and around the shelf break zone from shore to at least 183 meters [600 feet (but to at least 2,000 feet for wreckfish)] where the annual water temperature range is sufficiently warm to maintain adult populations of members of this largely tropical fish complex. EFH includes the spawning area in the water column above the adult habitat and the additional pelagic environment, including *Sargassum*, required for survival of larvae and growth up to and including settlement. In addition, the Gulf of Mexico Stream is also EFH because it provides a mechanism to disperse snapper grouper larvae.

For specific life stages of estuarine dependent and near shore snapper grouper species, EFH includes areas inshore of the 30-meter (100-foot) contour, such as attached macroalgae; submerged rooted vascular plants (seagrasses); estuarine emergent vegetated wetlands (saltmarshes, brackish marsh); tidal creeks; estuarine scrub/shrub (mangrove fringe); oyster reefs and shell banks; unconsolidated bottom (soft sediments); artificial reefs; and coral reefs and live/hard bottom habitats.

### 3.1.2 Habitat Areas of Particular Concern

Areas which meet the criteria for Essential Fish Habitat-Habitat Areas of Particular Concern (EFH-HAPCs) for species in the snapper grouper management unit include medium to high profile offshore hard bottoms where spawning normally occurs; localities of known or likely

periodic spawning aggregations; near shore hard bottom areas; The Point, The Ten Fathom Ledge, and Big Rock (North Carolina); The Charleston Bump (South Carolina); mangrove habitat; seagrass habitat; oyster/shell habitat; all coastal inlets; all state-designated nursery habitats of particular importance to snapper grouper (e.g., Primary and Secondary Nursery Areas designated in North Carolina); pelagic and benthic *Sargassum*; Hoyt Hills for wreckfish; the *Oculina* Bank Habitat Area of Particular Concern; all hermatypic coral habitats and reefs; manganese outcroppings on the Blake Plateau; and South Atlantic Council-designated Artificial Reef Special Management Zones (SMZs).

Areas that meet the criteria for EFH-HAPCs include habitats required during each life stage (including egg, larval, postlarval, juvenile, and adult stages).

In addition to protecting habitat from fishing related degradation though FMP regulations, the South Atlantic Council in cooperation with NOAA Fisheries Service actively comments on non-fishing projects or policies that may impact essential fish habitat. The South Atlantic Council adopted a habitat policy and procedure document that established a four-state Habitat Advisory Panel and adopted a comment and policy development process. With guidance from the Advisory Panel, the South Atlantic Council has developed and approved habitat policies on: energy exploration, development, transportation and hydropower re-licensing; beach dredging and filling and large-scale coastal engineering; protection and enhancement of submerged aquatic vegetation; and alterations to riverine, estuarine and near shore flows, offshore aquaculture, invasive estuarine species, and invasive marine species (available at www.safmc.net).

## 3.2 Biological and Ecological Environment

### 3.2.1 Species Most Impacted By This FMP Amendment

The species most likely to be impacted by actions in Amendment 18A to the Fishery Management Plan (FMP) for the Snapper Grouper Fishery of the South Atlantic Region is black sea bass. Actions in Amendment 18A to the Snapper Grouper FMP could limit participation and effort for the black sea bass portion of the snapper grouper fishery.

**Black Sea Bass, *Centropristis striata***

Black sea bass occur in the Western Atlantic, from Maine to southeastern Florida, and in the eastern Gulf of Mexico (McGovern et al. 2002). Separate populations were reported to exist to the north and south of Cape Hatteras, North Carolina (Wenner et al. 1986). However, genetic similarities suggest this is one stock (McGovern et al. 2002). This species is common around rock jetties and on rocky bottoms in shallow water (Robins and Ray 1986) at depths from 2-120 meters (7-394 feet). Most adults occur at depths from 20-60 meters (66-197 feet) (Vaughan et al. 1995).

Maximum reported size is 66.0 centimeters (26.1”) total length and 3.6 kilograms (7.9 lbs) (McGovern et al. 2002). Maximum reported age is 10 years (McGovern et al. 2002);

however, ages as great as 20 years have been recorded in the Mid Atlantic region (Lavenda 1949). Natural mortality is estimated to be 0.30 (SEDAR 2 2003). The minimum size and age of maturity for females reported off the southeastern U.S. coast is 10.0 centimeters (3.6") standard length and age 0. All females are mature by 18.0 centimeters (7.1") standard length and age 3 (McGovern et al. 2002; **Table 3-1).** Wenner et al. (1986) report peak spawning occurs from March through May in the South Atlantic Bight. McGovern et al. (2002) indicate black sea bass females are in spawning condition during March-July, with a peak during March through May (McGovern et al. 2002). Some spawning also occurs during September and November. Spawning takes place in the evening. Black sea bass change sex from female to male (protogyny). Females dominate the first 5 year classes and individuals over the age of 5 are more commonly males. The size at maturity and the size at transition of black sea bass was smaller in the 1990s than during the early 1980s off the southeast U.S. Black sea bass appear to compensate for the loss of larger males by changing sex at smaller sizes and younger ages (McGovern et al. 2002).

The diet of black sea bass is generally composed of shrimp, crab, and fish (Sedberry 1988). Smaller black sea bass eat small crustaceans and larger individuals feed on decapods and fishes.

### 3.2.2 Science Underlying the Management of Snapper Grouper Species Most Impacted By this FMP Amendment

The status of black sea bass has been assessed through the Southeast Data, Assessment, and Review (SEDAR) process.

The SEDAR process consists of a series of workshops aimed at ensuring that each assessment is based on the best available scientific information. First, representatives from NOAA Fisheries Service, state agencies, and the South Atlantic Council, as well as experts from non-governmental organizations and academia, participate in a data workshop. The purpose of a data workshop is to assemble and review available fishery-dependent and fishery-independent data and information on a stock, and to develop consensus about what constitutes the best available scientific information on the stock, how that information should be used in an assessment, and what type of stock assessment model should be employed.

Second, assessment biologists from these agencies and organizations participate in a stock assessment workshop, where data from the data workshop are input into one or more stock assessment models (e.g., production, age-structured, length structured, etc.) to generate estimates of stock status and fishery status. Generally, multiple runs of each model are conducted: base runs and a number of additional runs to examine sensitivity of results to various assumptions (e.g., different natural mortality rates, different data sets/catch periods, etc.).

Finally, a stock assessment review workshop is convened to provide representatives from the Center for Independent Experts the opportunity to peer review the results of the stock assessment workshop. Representatives from NOAA Fisheries Service, the South Atlantic Council, and constituent groups may attend and observe the review but the actual review is conducted by the Center for Independent Experts. The South Atlantic Council's Scientific and Statistical Committee (SSC) then reviews the report of the stock assessment review workshop.

The review portion of the SEDAR process has helped improve the acceptance of stock assessments. However, continued lack of basic fishery data has resulted in uncertainty in the assessment results. Each SEDAR Review Panel has identified significant shortcomings in data and research (see Section 4.3 for a detailed list of research and data needs). In addition, not all of the reviews have been completed with 100% consensus.

**3.2.2.1** Black sea bass assessment and stock status

SEDAR Assessments Past and PresentAssessment

Black Sea Bass was assessed at the second SEDAR (SEDAR 2 2003). Data for the SEDAR assessment were assembled and reviewed at a data workshop held during the week of October 7, 2002 in Charleston, South Carolina. The assessment utilized commercial and recreational landings, as well as abundance indices and life history information from fishery-independent and fishery-dependent sources. Six abundance indices were developed by the data workshop. Two CPUE indices were used from the NMFS headboat survey (1978-2001) and the MRFSS recreational survey (1992-1998). Four indices were derived from CPUE observed by the South Carolina MARMAP fishery-independent monitoring program ("Florida" trap index, 1981-1987; blackfish trap index, 1981-1987; hook and line index, 1981-1987; and chevron trap index, 1990-2001) (SEDAR 2 2003).

Age-structured and age-aggregated production models were applied to available data at the assessment workshop. The age-structured model was considered the primary model, as recommended by participants in the data workshop. The stock assessment indicated black sea bass was overfished and overfishing was occurring.

At the request of the South Atlantic Council, the SEDAR panel convened to update the 2003 black sea bass stock assessment, using data through 2003, and to conduct stock projections based on possible management scenarios (SEDAR Update #1 2005). The update indicated the stock was still overfished and overfishing was still occurring but results showed the stock was much more productive that previously indicated. The stock could be rebuilt to the biomass level capable of producing the maximum sustainable yield in 5 years if all fishing mortality were eliminated; previously this was estimated to take 11 years (SEDAR 2 2003).

SEDAR 25 (SEDAR 25 2011), completed in 2011 with data through 2010, updated the stock status of black sea bass. The South Atlantic Council's Scientific and Statistical Committee (SSC) certified the results during their November 8-10, 2011 meeting. The parameter results are as follows:

- MSY = 1.767 million pounds whole weight
- $F_{MSY}$ = 0.698
- $B_{MSY}$ = 5,399 mt = 11.9 million pounds whole weight
- $SSB_{MSY}$ = 2.48 trillion eggs
- MSST = 1.54 trillion eggs

Stock Status

A new stock assessment for black sea bass (SEDAR 25 2011), completed in 2011 with data through 2010, indicates the stock is experiencing overfishing to a small extent. However, black sea bass are no longer overfished but the stock is not yet fully rebuilt and is still rebuilding towards the spawning stock biomass capable of producing MSY ($SSB_{MSY}$). The complete results of this new assessment may be found in SEDAR 25.

For black sea bass the most recent estimate of $F_{current}$ is from 2010 and is = 0.747 and $F_{MSY}$ = 0.698 as the maximum fishing mortality threshold. Comparing these two numbers:

- $F_{current}$/MFMT = 0.747/0.698 = 1.070

This comparison is referred to as the **overfishing ratio**. If the ratio is greater than 1, then overfishing is occurring.

The black sea bass stock in the Atlantic is no longer **overfished**. For black sea bass, the estimated level of spawning stock biomass in 2010 was 1.73 trillion eggs. The Minimum stock size threshold (MSST) = 1.54 trillion eggs. Comparing these two numbers:

- $SSB_{2010}$/MSST = 1.123

This comparison is referred to as the **overfished ratio**. If the ratio is less than 1, then the stock is overfished.

## 3.3 Other Affected Council-Managed Species

Black sea bass are commonly taken on hook and line trips with species such as white grunt, vermilion snapper, gray triggerfish, red snapper, and red porgy. However, most black sea bass are taken with pots where the species makes up 90% of the catch. Other affected species in black sea bass pots include gray triggerfish and white grunt.

### 3.3.1 Protected Species

There are 31 different species of marine mammals that may occur in the exclusive economic zone (EEZ) of the South Atlantic region. All 31 species are protected under the Marine Mammal Protection Act (MMPA) and six are also listed as endangered under the Endangered Species Act (ESA) (i.e., sperm, sei, fin, blue, humpback, and North Atlantic right whales). There are only three known interactions between the South Atlantic snapper grouper fishery and marine mammals. All three marine mammals were likely dolphins, all were caught in Florida on handline gear, and all three animals were released alive.

Recent scientific information suggests that large whales are potentially more vulnerable to entanglements in Mid-Atlantic fisheries (including black sea bass pots) than previously thought. New sighting data from 2008 and 2009 suggest the coastal waters of South Carolina, North Carolina, and possibly even Virginia may be used as birthing and calving areas for right whales. Data also suggest that some North Atlantic right whales make multiple intra-season trips between the Northeast and Southeast regions, instead of a single migration south in the winter and a return trip north in the spring and summer. Humpback and North Atlantic right whales are considered the most coastal of the large whale species, and it is these species that are most are risk of a potential interaction with the black sea bass pot fishery. Information on these large whales is provided below.

Other species protected under the ESA occurring in the South Atlantic include five species of sea turtle (green, hawksbill, Kemp's ridley, leatherback, and loggerhead); the smalltooth sawfish; and two *Acropora* coral species (elkhorn [*Acropora palmata*] and staghorn [*A. cervicornis*]). A discussion of these species is included below. Designated critical habitat for the *Acropora* corals and the North Atlantic right whale also occurs within the South Atlantic region.

#### 3.3.1.1 Humpback and North Atlantic Right Whales

**Humpback whales** have relatively long pectoral fins that can reach up to 33% of their body length (Clapham 2002). The dorsal fin is small but highly variable in shape. Humpbacks are rorqual whales with ventral pleats. Adult females are generally longer than males. Adults average 45-50 ft in length; calves are 13-14 ft on average at birth (Clapham 2002). Humpbacks have between 270-400 baleen plates (Clapham 2002) and feed on a number of species of small schooling fishes, particularly sand lance and Atlantic herring, targeting fish schools and filtering large amounts of water for their associated prey. It is hypothesized humpback whales may also feed on euphausiids (krill) as well as capelin (Waring et al. 2009, Stevick et al. 2006).

Humpback whales from most Atlantic feeding areas calve and mate in the West Indies and migrate to feeding areas in the northwestern Atlantic during the summer months. Sightings are most frequent from mid-March through November between 41$^{o}$N and 43$^{o}$N, from the Great South Channel north along the outside of Cape Cod to Stellwagen Bank and Jeffrey's Ledge (CeTAP 1982), and peak in May and August. Small numbers of individuals may be present in this area year-round, including the waters of Stellwagen Bank.

In winter, whales from waters off New England, Canada, Greenland, Iceland, and Norway migrate to mate and calve, primarily in the West Indies, where spatial and genetic mixing among these groups does occur (Waring et al. 2009). Humpback whales use the Mid-Atlantic as a migratory pathway to and from the calving/mating grounds, but it may also be an important winter feeding area for juveniles. Since 1989, observations of juvenile humpbacks in the Mid-Atlantic have been increasing during the winter months, peaking January through March (Swingle et al. 1993). Biologists theorize that non-reproductive animals may be establishing a winter feeding range in the Mid-Atlantic since they are not participating in

reproductive behavior in the Caribbean. Strandings of humpback whales have increased between New Jersey and Florida since 1985, consistent with the increase in Mid-Atlantic whale sightings. Strandings were most frequent during September through April in North Carolina and Virginia waters, and were composed primarily of juvenile humpback whales of no more than 11 meters in length (Wiley et al. 1995).

Entanglements in fishing gear are a threat to humpback whales. Between 2003 and 2007, humpback whales were the most commonly observed entangled whale species (Glass et al. 2009). Photographs taken between 2000 and 2002 indicate that approximately half (48-57%) of photographed individuals (187 animals) appeared to show signs of prior entanglement in fishing gear (Robbins and Mattila 2004). Evidence suggests that entanglements have occurred at a minimum rate of 8-10% per year (Robbins and Mattila 2004).

**North Atlantic right whales** are likely to occur in the action area, from approximately November 1 through April 1. Historically, North Atlantic right whales have occurred in all the world's oceans from temperate to subarctic latitudes (Perry et al. 1999). North Atlantic right whales generally occur from the southeast United States to Canada (e.g., Bay of Fundy and Scotian Shelf) (Kenney 2002, Waring et al. 2009). They follow an annual pattern of migration between low latitude winter calving grounds and high latitude summer foraging grounds (Perry et al. 1999, Kenney 2002). Calving is known to occur in the winter months in coastal waters off of Georgia and Florida (Kraus et al. 1988). Limited surveys conducted along the mid-Atlantic suggest some mother-calf pairs use the area from Virginia to South Carolina as a wintering/calving area as well (NMFS 2005).

North Atlantic right whales are robust, with their girth at time exceeding 60% of total body length, and no dorsal fin. Their heads are relatively large, comprising approximately 25-33% of their entire body length. The upper jaw is somewhat arched with 200-270 baleen plates on each side of the upper jaw. Baleen plates are usually narrow and 7-9 ft long. North Atlantic right whales feed primarily on zooplankton but also feed on copepods, krill, and pterodpods. Right whales feed by skimming forward with mouths open, straining prey from the water. Feeding can occur anywhere in the water column and dives are typically 10-20 minutes (Kenney 2002).

North Atlantic right whales are vulnerable to ship strikes and entanglement in fishing gear. Fixed fishing gear, including sink gillnets, drift nets, and trap/pot gear are all known to entangle right whales (Kenney 2002). Entanglements in fishing gear are very common in right whales with approximately 73% of North Atlantic right whales some indications of being entangled in fishing gear at least once (Knowlton et al. 2008).

#### 3.3.1.2 ESA-Listed Sea Turtles

Green, hawksbill, Kemp's ridley, leatherback, and loggerhead sea turtles are all highly migratory and travel widely throughout the South Atlantic. The following sections are a brief overview of the general life history characteristics of the sea turtles found in the South

Atlantic region. Several volumes exist that cover the biology and ecology of these species more thoroughly (i.e., Lutz and Musick (eds.) 1997, Lutz et al. (eds.) 2002).

**Green** sea turtle hatchlings are thought to occupy pelagic areas of the open ocean and are often associated with *Sargassum* rafts (Carr 1987, Walker 1994). Pelagic stage green sea turtles are thought to be carnivorous. Stomach samples of these animals found ctenophores and pelagic snails (Frick 1976, Hughes 1974). At approximately 20 to 25 cm carapace length, juveniles migrate from pelagic habitats to benthic foraging areas (Bjorndal 1997). As juveniles move into benthic foraging areas a diet shift towards herbivory occurs. They consume primarily seagrasses and algae, but are also know to consume jellyfish, salps, and sponges (Bjorndal 1980, 1997; Paredes 1969; Mortimer 1981, 1982). The diving abilities of all sea turtles species vary by their life stages. The maximum diving range of green sea turtles is estimated at 110 m (360 ft) (Frick 1976), but they are most frequently making dives of less than 20 m (65 ft.) (Walker 1994). The time of these dives also varies by life stage. The maximum dive length is estimated at 66 minutes with most dives lasting from 9 to 23 minutes (Walker 1994).

The **hawksbill's** pelagic stage lasts from the time they leave the nesting beach as hatchlings until they are approximately 22-25 cm in straight carapace length (Meylan 1988, Meylan and Donnelly 1999). The pelagic stage is followed by residency in developmental habitats (foraging areas where juveniles reside and grow) in coastal waters. Little is known about the diet of pelagic stage hawksbills. Adult foraging typically occurs over coral reefs, although other hard-bottom communities and mangrove-fringed areas are occupied occasionally. Hawksbills show fidelity to their foraging areas over several years (Van Dam and Diéz 1998). The hawksbill's diet is highly specialized and consists primarily of sponges (Meylan 1988). Gravid females have been noted ingesting coralline substrate (Meylan 1984) and calcareous algae (Anderes Alvarez and Uchida 1994), which are believed to be possible sources of calcium to aid in eggshell production. The maximum diving depths of these animals are not known, but the maximum length of dives is estimated at 73.5 minutes. More routinely, dives last about 56 minutes (Hughes 1974).

**Kemp's ridley** hatchlings are also pelagic during the early stages of life and feed in surface waters (Carr 1987, Ogren 1989). Once the juveniles reach approximately 20 cm carapace length they move to relatively shallow (less than 50m) benthic foraging habitat over unconsolidated substrates (Márquez-M. 1994). They have also been observed transiting long distances between foraging habitats (Ogren 1989). Kemp's ridleys feeding in these nearshore areas primarily prey on crabs, though they are also known to ingest mollusks, fish, marine vegetation, and shrimp (Shaver 1991). The fish and shrimp Kemp's ridleys ingest are not thought to be a primary prey item but instead may be scavenged opportunistically from bycatch discards or from discarded bait (Shaver 1991). Given their predilection for shallower water, Kemp's ridleys most routinely make dives of 50 m or less (Soma 1985, Byles 1988). Their maximum diving range is unknown. Depending on the life stage a Kemp's ridleys may be able to stay submerged anywhere from 167 minutes to 300 minutes, though dives of 12.7 minutes to 16.7 minutes are much more common (Soma 1985, Mendonca and Pritchard 1986,

Byles 1988). Kemp's ridleys may also spend as much as 96% of their time underwater (Soma 1985, Byles 1988).

**Leatherbacks** are the most pelagic of all ESA-listed sea turtles and spend most of their time in the open ocean, although they will enter coastal waters and are seen over the continental shelf on a seasonal basis to feed in areas where jellyfish are concentrated. Leatherbacks feed primarily on cnidarians (medusae, siphonophores) and tunicates. Unlike other sea turtles, leatherbacks' diets do not shift during their life cycles. Because leatherbacks' ability to capture and eat jellyfish is not constrained by size or age, they continue to feed on these species regardless of life stage (Bjorndal 1997). Leatherbacks are the deepest diving of all sea turtles. It is estimated that these species can dive in excess of 1000 m (Eckert et al. 1989) but more frequently dive to depths of 50 m to 84 m (Eckert et al. 1986). Dive times range from a maximum of 37 minutes to more routines dives of 4 to 14.5 minutes (Standora et al. 1984, Eckert et al. 1986, Eckert et al. 1989, Keinath and Musick 1993). Leatherbacks may spend 74% to 91% of their time submerged (Standora et al. 1984).

**Loggerhead** hatchlings forage in the open ocean and are often associated with *Sargassum* rafts (Hughes 1974, Carr 1987, Walker 1994, Bolten and Balazs 1995). The pelagic stage of these sea turtles are known to eat a wide range of things including salps, jellyfish, amphipods, crabs, syngnathid fish, squid, and pelagic snails (Brongersma 1972). Stranding records indicate that when pelagic immature loggerheads reach 40-60 cm straight-line carapace length they begin to live in coastal inshore and nearshore waters of the continental shelf throughout the U.S. Atlantic (Witzell 2002). Here they forage over hard- and soft-bottom habitats (Carr 1986). Benthic foraging loggerheads eat a variety of invertebrates with crabs and mollusks being an important prey source (Burke et al. 1993). Estimates of the maximum diving depths of loggerheads range from 211 m to 233 m (692-764ft.) (Thayer et al. 1984, Limpus and Nichols 1988). The lengths of loggerhead dives are frequently between 17 and 30 minutes (Thayer et al. 1984, Limpus and Nichols 1988, Limpus and Nichols 1994, Lanyan et al. 1989) and they may spend anywhere from 80 to 94% of their time submerged (Limpus and Nichols 1994, Lanyan et al. 1989).

#### 3.3.1.3 ESA-Listed Marine Fish

Historically the **smalltooth sawfish** in the U.S. ranged from New York to the Mexico border. Their current range is poorly understood but believed to have contracted from these historical areas. In the South Atlantic region, they are most commonly found in Florida, primarily off the Florida Keys (Simpfendorfer and Wiley 2004). Only two smalltooth sawfish have been recorded north of Florida since 1963 [the first was captured off North Carolina in 1963 and the other off Georgia in 2002 (National Smalltooth Sawfish Database, Florida Museum of Natural History)]. Historical accounts and recent encounter data suggest that immature individuals are most common in shallow coastal waters less than 25 meters (Bigelow and Schroeder 1953, Adams and Wilson 1995), while mature animals occur in waters in excess of 100 meters (Simpfendorfer pers. comm. 2006). Smalltooth sawfish feed primarily on fish. Mullet, jacks, and ladyfish are believed to be their primary food resources (Simpfendorfer

2001). Smalltooth sawfish also prey on crustaceans (mostly shrimp and crabs) by disturbing bottom sediment with their saw (Norman and Fraser 1938, Bigelow and Schroeder 1953).

3.3.1.4 ESA-Listed Marine Invertebrates

Elkhorn (*Acropora palmata)* and staghorn (*A. cervicornis*) coral were listed as threatened under the ESA on May 9, 2006. The Atlantic *Acropora* Status Review (*Acropora* Biological Review Team 2005) presents a summary of published literature and other currently available scientific information regarding the biology and status of both these species.

**Elkhorn** and **staghorn** corals are two of the major reef-building corals in the wider Caribbean. In the South Atlantic region, they are found most commonly in the Florida Keys; staghorn coral occurs the furthest north with colonies documented off Palm Beach, Florida (26º3'N). The depth range for these species ranges from <1 m to 60 m. The optimal depth range for elkhorn is considered to be 1 to 5 m depth (Goreau and Wells 1967), while staghorn corals are found slightly deeper, 5 to 15 m (Goreau and Goreau 1973).

All Atlantic *Acropora* species (including elkhorn and staghorn coral) are considered to be environmentally sensitive, requiring relatively clear, well-circulated water (Jaap et al. 1989). Optimal water temperatures for elkhorn and staghorn coral range from 25° to 29°C (Ghiold and Smith 1990, Williams and Bunkley-Williams 1990). Both species are almost entirely dependent upon sunlight for nourishment, contrasting the massive, boulder-shaped species in the region (Porter 1976, Lewis 1977) that are more dependent on zooplankton. Thus, Atlantic *Acropora* species are much more susceptible to increases in water turbidity than some other coral species.

Fertilization and development of elkhorn and staghorn corals is exclusively external. Embryonic development culminates with the development of planktonic larvae called planulae (Bak et al. 1977, Sammarco 1980, Rylaarsdam 1983). Unlike most other coral larvae, elkhorn and staghorn planulae appear to prefer to settle on upper, exposed surfaces, rather than in dark or cryptic ones (Szmant and Miller 2006), at least in a laboratory setting. Studies of elkhorn and staghorn corals indicated that larger colonies of both species had higher fertility rates than smaller colonies (Soong and Lang 1992).

### 3.3.2 South Atlantic Snapper grouper Fishery Interactions with ESA-Listed Species

Sea turtles and smalltooth sawfish are vulnerable to entanglement in the hook-and-line and trap gears used in the black sea bass fishery. The impacts of the fishery on sea turtles were evaluated in the previous biological opinion on the entire South Atlantic snapper-grouper fishery. The biological opinion concluded the entire South Atlantic snapper-grouper fishery (including the black sea bass sector) was likely to adversely affect sea turtles and smalltooth sawfish, but not jeopardize their continued existence. **Table 3-1** illustrates the number of interactions estimated for South Atlantic snapper-grouper fishery and the type of interaction anticipated (i.e., lethal or non-lethal). Entanglement in the hook-and-line gear is the primary

route of effect to sea turtles from the snapper-grouper fishery as a whole. See Appendix I for a more detailed discussion of the ESA section 7 consultations on the South Atlantic snapper-grouper fishery.

**Table 3-1.** Annual anticipated takes of ESA-listed species by the snapper-grouper fishery.

| Fishery | Sea Turtle Species | | | | | |
|---|---|---|---|---|---|---|
| | **Loggerhead** | **Leatherback** | **Kemp's Ridley** | **Green** | **Hawksbill** | **Smalltooth Sawfish** |
| South Atlantic Snapper Grouper | 68-No more than 23 lethal | 9-No more than 5 lethal | 7-No more than 3 lethal | 13-No more than 5 lethal | 2-No more than 1 lethal | 3 – All Non-Lethal |

### 3.3.3 Designated Critical Habitat for ESA-Listed Species in the South Atlantic

In the South Atlantic, critical habitat has been designated for elkhorn and staghorn corals, and the North Atlantic right whale.

Four areas of critical habitat were designated for elkhorn and staghorn coral in Florida, Puerto Rico, St. Thomas/St. John, U.S.V.I, and St. Croix, U.S.V.I. Only the Florida area overlaps with the SAFMC's jurisdiction. The Florida unit contains three sub-areas: (1) The shoreward boundary for Florida sub-area A begins at the 6-ft (1.8 m) contour at the south side of Boynton Inlet, Palm Beach County at 26°32'42.5"N; then runs due east to the point of intersection with the 98-ft (30 m) contour; then follows the 98-ft (30 m) contour to the point of intersection with latitude 25°45'55"N, Government Cut, Miami-Dade County; then runs due west to the point of intersection with the 6-ft (1.8 m) contour, then follows the 6-ft (1.8 m) contour to the beginning point; (2) The shoreward boundary of Florida sub-area B begins at the MLW line at 25°45'55"N, Government Cut, Miami-Dade County; then runs due east to the point of intersection with the 98-ft (30 m) contour; then follows the 98-ft (30 m) contour to the point of intersection with longitude 82°W; then runs due north to the point of intersection with the South Atlantic Fishery Management Council (SAFMC) boundary at 24°31'35.75" N; then follows the SAFMC boundary to a point of intersection with the MLW line at Key West, Monroe County; then follows the MLW line, the SAFMC boundary (see 50 CFR 600.105(c)), and the COLREGS line (see 33 CFR 80.727. 730, 735, and 740) to the beginning point; and (3) The seaward boundary of Florida sub-area C (the Dry Tortugas) begins at the northern intersection of the 98-ft (30 m) contour and longitude 82°45'W; then follows the 98-ft (30 m) contour west around the Dry Tortugas, to the southern point of intersection with longitude 82°45'W; then runs due north to the beginning point.

The physical or biological feature of elkhorn and staghorn coral critical habitat essential to their conservation is substrate of suitable quality and availability to support larval settlement

and recruitment, and reattachment and recruitment of asexual fragments. Substrate of suitable quality and availability is defined as consolidated hardbottom or dead coral skeleton that is free from fleshy macroalgae cover and sediment cover, occurring in water depths from the mean high water (MHW) line to 30 meters (98 feet).

Critical habitat for the **North Atlantic right whale** has been designated off coastal Florida and Georgia; a small portion of which occurs overlaps SAFMC's jurisdiction. The unit is defined from the mouth of the Altamaha River, Georgia, to Jacksonville, Florida, out 15 nautical miles and from Jacksonville, Florida, to Sebastian Inlet, Florida, out five nautical miles. The area was designated because of its importance as a calving area. The physical or biological feature of the critical habitat essential to the conservation of North Atlantic right whales are related to water depth, water temperature, and bathymetry.

## 3.4 Federal Fishery Management

Federal fishery management is conducted under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) (16 U.S.C. 1801 et seq.), originally enacted in 1976 as the Fishery Conservation and Management Act. The Magnuson-Stevens Act claims sovereign rights and exclusive fishery management authority over most fishery resources within EEZ , an area extending 200 nautical miles from the seaward boundary of each of the coastal states, and authority over U.S. anadromous species and continental shelf resources that occur beyond the U.S. EEZ.

Responsibility for Federal fishery management decision-making is divided between the U.S. Secretary of Commerce and eight regional fishery management councils that represent the expertise and interests of constituent states. Regional councils are responsible for preparing, monitoring, and revising management plans for fisheries needing management within their jurisdiction. The Secretary of Commerce (Secretary) is responsible for collecting and providing the data necessary for the councils to prepare fishery management plans and for promulgating regulations to implement proposed plans and amendments after ensuring that management measures are consistent with the Magnuson-Stevens Act and with other applicable laws summarized in **Appendix I**. In most cases, the Secretary has delegated this authority to NOAA Fisheries Service.

The South Atlantic Council is responsible for conservation and management of fishery resources in Federal waters of the U.S. South Atlantic. These waters extend from 3 to 200 miles offshore from the seaward boundary of the States of North Carolina, South Carolina, Georgia, and east Florida to Key West. The Council has thirteen voting members: one from NOAA Fisheries Service; one each from the state fishery agencies of North Carolina, South Carolina, Georgia, and Florida; and eight public members appointed by the Secretary. On the South Atlantic Council, there are two public members from each of the four South Atlantic States. Non-voting members include representatives of the U.S. Fish and Wildlife Service, U.S. Coast Guard, State Department, and Atlantic States Marine Fisheries Commission

(ASMFC). The South Atlantic Council has adopted procedures whereby the non-voting members serving on the Council Committees have full voting rights at the Committee level but not at the full Council level. Council members serve three-year terms and are recommended by State Governors and appointed by the Secretary of Commerce from lists of nominees submitted by State governors. Appointed members may serve a maximum of three consecutive terms.

Public interests also are involved in the fishery management process through participation on Advisory Panels and through council meetings, which, with few exceptions for discussing personnel matters, are open to the public. The South Atlantic Council uses a Science and Statistical Committee to review the data and science being used in assessments and fishery management plans/amendments. In addition, the regulatory process is in accordance with the Administrative Procedures Act, in the form of "notice and comment" rulemaking.

## 3.5 State Fishery Management

The state governments of North Carolina, South Carolina, Georgia, and Florida have the authority to manage fisheries that occur in waters extending three nautical miles from their respective shorelines. North Carolina's marine fisheries are managed by the Marine Fisheries Division of the North Carolina Department of Environment and Natural Resources. The Marine Resources Division of the South Carolina Department of Natural Resources regulates South Carolina's marine fisheries. Georgia's marine fisheries are managed by the Coastal Resources Division of the Department of Natural Resources. The Marine Fisheries Division of the Florida Fish and Wildlife Conservation Commission is responsible for managing Florida's marine fisheries. Each state fishery management agency has a designated seat on the South Atlantic Council. The purpose of state representation at the South Atlantic Council level is to ensure state participation in Federal fishery management decision-making and to promote the development of compatible regulations in state and Federal waters.

The South Atlantic States are also involved through the Atlantic States Marine Fisheries Commission (ASMFC) in management of marine fisheries. This commission was created to coordinate state regulations and develop management plans for interstate fisheries. It has significant authority, through the Atlantic Striped Bass Conservation Act and the Atlantic Coastal Fisheries Cooperative Management Act, to compel adoption of consistent state regulations to conserve coastal species. The ASFMC also is represented at the Council level, but does not have voting authority at the Council level.

NOAA Fisheries Service State-Federal Fisheries Division is responsible for building cooperative partnerships to strengthen marine fisheries management and conservation at the state, inter-regional, and national levels. This division implements and oversees the distribution of grants for two national (Inter-jurisdictional Fisheries Act and Anadromous Fish Conservation Act) and two regional (Atlantic Coastal Fisheries Cooperative Management Act and Atlantic Striped Bass Conservation Act) programs. Additionally, it works with the ASMFC to develop and implement cooperative State-Federal fisheries regulations.

## 3.6 Enforcement

Both the NOAA Fisheries Service Office for Enforcement (NOAA/OLE) and the United States Coast Guard (USCG) have the authority and the responsibility to enforce South Atlantic Council regulations. NOAA/OLE agents, who specialize in living marine resource violations, provide fisheries expertise and investigative support for the overall fisheries mission. The USCG is a multi-mission agency, which provides at sea patrol services for the fisheries mission.

Neither NOAA/OLE nor the USCG can provide a continuous law enforcement presence in all areas due to the limited resources of NOAA/OLE and the priority tasking of the USCG. To supplement at sea and dockside inspections of fishing vessels, NOAA entered into Cooperative Enforcement Agreements with all but one of the States in the Southeast Region (North Carolina), which granted authority to State officers to enforce the laws for which NOAA/OLE has jurisdiction. In recent years, the level of involvement by the States has increased through Joint Enforcement Agreements, whereby States conduct patrols that focus on Federal priorities and, in some circumstances, prosecute resultant violators through the State when a state violation has occurred.

NOAA General Counsel issued a revised Southeast Region Magnuson-Stevens Act Penalty Schedule in June 2003, which addresses all Magnuson-Stevens Act violations in the Southeast Region. In general, this Penalty Schedule increases the amount of civil administrative penalties that a violator may be subject to up to the current statutory maximum of $120,000 per violation.

## 3.7 Economic Environment

### 3.7.1 Economic Description of the Commercial Fishery

Additional information on the commercial snapper grouper fishery is contained in previous amendments [Amendment 13C (SAFMC 2006), Amendment 15A (SAFMC 2008a), Amendment 15B (SAFMC 2008b), Amendment 16 (SAFMC 2009a), Regulatory Amendment 9 (SAFMC 2011b), and Comprehensive ACL Amendment for the South Atlantic Region (SAFMC 2011c)] and are incorporated herein by reference.

3.7.1.1 Number of Vessels, Harvest, and Revenue

Additional information on the commercial snapper grouper fishery is contained in Amendment 13C (SAFMC 2006), Amendment 15A (SAFMC 2008a), Amendment 15B (SAFMC 2008b), Amendment 16 (SAFMC 2009a), Regulatory Amendment 9 (SAFMC 2011b), and the Comprehensive Annual Catch Limit Amendment (SAFMC 2011c) and is incorporated herein by reference. Select updated statistics are provided in **Tables 3-2** to **3-4**.

**Table 3-2.** Black sea bass sector performance statistics, logbook data, 2005-2010.

| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | Average |
|---|---|---|---|---|---|---|---|
| Trips with at least one lb of BSB | 2,055 | 2,172 | 1,962 | 1,961 | 2,395 | 1,357 | 1,984 |
| Number of vessels that landed BSB | 240 | 220 | 260 | 259 | 286 | 214 | 247 |
| Number of dealers that purchased BSB | 87 | 102 | 128 | 116 | 112 | 107 | 109 |
| BSB lbs, whole weight | 460,425 | 526,828 | 410,151 | 438,795 | 635,468 | 449,591 | 486,876 |
| Dockside BSB price (nominal $) | $2.03 | $2.22 | $2.41 | $2.18 | $2.12 | $2.07 | $2.17 |
| Dockside BSB price (2010 $) | $2.27 | $2.40 | $2.53 | $2.21 | $2.15 | $2.07 | $2.27 |
| BSB revenue (nominal $) | $934,929 | $1,170,729 | $988,610 | $958,468 | $1,346,063 | $928,952 | $1,054,625 |
| BSB revenue (2010 $) | $1,043,865 | $1,266,292 | $1,039,695 | $970,724 | $1,368,142 | $928,952 | $1,102,945 |

Source: NMFS SEFSC Coastal Fisheries Logbook and Accumulated Landings Data Base Systems

### 3.7.1.2 Economic Activity

Estimates of the average annual economic activity (impacts) associated with the commercial harvest of black sea bass were derived using the model developed for and applied in NMFS (2010) and are provided in **Table 3-3**. Business activity for the commercial sector is characterized in the form of full-time equivalent jobs, income impacts (wages, salaries, and self-employed income), and output (sales) impacts (gross business sales). Income impacts should not be added to output (sales) impacts because this would result in double counting.

The estimates of economic activity include the direct effects (effects in the sector where an expenditure is actually made), indirect effects (effects in sectors providing goods and services to directly affected sectors), and induced effects (effects induced by the personal consumption expenditures of employees in the direct and indirectly affected sectors). The estimate of ex-vessel value is replicated from **Table 3-2**.

**Table 3-3.** Average annual economic activity associated with black sea bass harvest, 2005-2010.

| Species | Average Revenue (millions)[1] | Total Jobs | Harvester Jobs | Output (Sales) Impacts (millions)[1] | Income Impacts (millions)[1] |
|---|---|---|---|---|---|
| Black Sea Bass | $1.103 | 205 | 27 | $14.339 | $6.189 |

[1]2010 dollars.
Source: NMFS SERO

### 3.7.1.3 Permits

A commercial permit is required to harvest or possess commercial quantities of snapper grouper from the EEZ. Black sea bass harvest is included in this permit requirement. There are two types of commercial snapper grouper permits, an unlimited permit, which is a transferable (subject to restrictions) that allows unlimited harvest of snapper grouper species, subject to trip limits or seasonal restrictions, and a non-transferable trip-limited permit that limits the owner to 225 lbs of snapper grouper harvest per trip. Both permits are limited access permits. The number of commercial snapper grouper permits for 2005-2010 are provided in **Table 3-4**. As seen in **Table 3-2**, data on the number of vessels landing black sea bass indicate that less than one-third of the snapper grouper permits have been used, on average, to harvest black sea bass over the period 2005-2010 (247 average vessels per year from **Table 3-2** divided by 846 average permits per year from **Table 3-4** equals a 29 percent average annual "participation rate"). While permits and vessels need not have one-to-one correspondence (a permit can be used on multiple vessels at different times during a year or across multiple years) and a vessel count from year-to-year may remain stable, yet different vessels may enter and exit a fishery from one year to another (for example, the 260 vessels in 2007 may not have included all of the 220 vessels from 2006). Potentially, though unlikely, every snapper grouper permit could have been associated with a vessel harvesting black sea bass at some point during 2005-2010. However, the data suggests that actual permit/vessel participation in black sea bass harvest is substantially less than potential participation.

**Table 3-4.** Number of commercial snapper grouper permits.

| | Unlimited | Limited | Total |
|---|---|---|---|
| 2005 | 748 | 198 | 946 |
| 2006 | 722 | 183 | 905 |
| 2007 | 695 | 165 | 860 |
| 2008 | 665 | 151 | 816 |
| 2009 | 640 | 144 | 784 |
| 2010 | 624 | 139 | 763 |
| Average | 682 | 163 | 846 |

Source: NMFS SERO Permits Data Base

### 3.7.2 Economic Description of the Recreational Sector of the Snapper Grouper Fishery

Additional information on the recreational sector of the snapper grouper fishery contained in previous or concurrent amendments is incorporated herein by reference [see Amendment 13C (SAFMC 2006), Amendment 15A (SAFMC 2008a), Amendment 15B (SAFMC 2008b), Amendment 16 (SAFMC 2009a), Amendment 17A (SAFMC 2010a), Amendment 17B (SAFMC 2010b), Regulatory Amendment 9 (SAFMC 2011b), Regulatory Amendment 11 (SAFMC 2011a), Comprehensive ACL Amendment for the South Atlantic Region (SAFMC 2011c), and Amendment 24 (SAFMC 2011d)].

The proposed actions on the black sea bass segment of the snapper grouper fishery includes alternatives that would affect the recreational sector. As a result, the following discussion mainly addresses recreational fishing for black sea bass.

The recreational fishery is comprised of the private sector and for-hire sector. The private sector includes anglers fishing from shore (all land-based structures) and private/rental boats. The for-hire sector is composed of the charterboat and headboat (also called partyboat) sectors. Charterboats generally carry fewer passengers and charge a fee on an entire vessel basis, whereas headboats carry more passengers and payment is per person.

#### 3.7.2.1 Harvest

Recreational black sea bass harvest in the South Atlantic was variable during the 2005/2006 - 2009/2010 fishing years, averaging approximately 698,000 pounds (**Table 3-5**). On average the private/shore mode of fishing accounted for the largest harvests at approximately 454,000 pounds. Charter and headboat harvests were approximately 85,000 pounds and 159,000 pounds, respectively. Harvests by state also fluctuated during the same period (**Table 3-6**). On average, South Carolina accounted for most of the black sea bass harvest in the South Atlantic at approximately 235,000 pounds, followed closely by Florida at 223,000 pounds, North Carolina at 167,000 pounds, and Georgia at 73,000 pounds.

**Table 3-5.** Harvest (pounds whole weight) of black sea bass in the South Atlantic, by mode, 2005-2010.

| Fishing Year | Charterboat | Headboat | Shore and Private/Rental Boat | Total |
|---|---|---|---|---|
| 2005-06 | 99,744 | 150,342 | 565,101 | 815,187 |
| 2006-07 | 94,283 | 208,303 | 526,277 | 828,863 |
| 2007-08 | 68,834 | 120,436 | 466,383 | 655,653 |
| 2008-09 | 48,134 | 104,666 | 367,570 | 520,371 |
| 2009-10 | 116,121 | 209,513 | 343,245 | 668,879 |
| Average | 85,423 | 158,652 | 453,715 | 697,791 |

**Table 3-6.** Harvest (pounds whole weight) of black sea bass in the South Atlantic, by state, 2005-2010.

| Fishing Year | Florida | Georgia | South Carolina | North Carolina |
|---|---|---|---|---|
| 2005-06 | 281,894 | 67,451 | 258,031 | 207,811 |
| 2006-07 | 233,722 | 82,307 | 349,960 | 162,874 |
| 2007-08 | 215,361 | 74,392 | 192,136 | 173,764 |
| 2008-09 | 146,227 | 91,964 | 166,652 | 115,528 |
| 2009-10 | 238,394 | 47,869 | 205,902 | 176,713 |
| Average | 223,120 | 72,797 | 234,536 | 167,338 |

Source: The Headboat Survey, NOAA Fisheries, SEFSC, Beaufort Lab and MRFSS database, NOAA Fisheries, NMFS, SERO.

On average, overall harvest of black sea bass peaked in June and troughed in October (**Table 3-7** and **Table 3-8**). June was the peak month for black sea bass harvest by headboats and private/shore modes while May was the peak month for charterboats. The lowest harvest occurred in January/February for charterboats, January for headboats, and September/October for the private/shore mode. In general, relatively large harvest occurred in the period March through August for all fishing modes. For the shore/private mode, however, November and December also recorded relatively large harvest (**Table 3-7**).

There are observable differences across the various states on the specific months with recorded highest and lowest harvest of black sea bass (**Table 3-8**). North Carolina had the highest harvest in June and lowest in September; South Carolina had the highest harvest in April and lowest in January; Georgia had the highest harvest in June and lowest in January; and, Florida had the highest harvest in July and lowest in October.

**Table 3-7.** Average monthly distribution of black sea bass harvest (pounds ww) in the South Atlantic, by mode across all states, 2005-2010. The black sea bass fishing year starts in June.

| | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Charter | 10,196 | 9,816 | 9,816 | 4,344 | 4,344 | 2,976 | 2,976 | 598 | 598 | 6,381 | 6,381 | 19,270 |
| Headboat | 22,480 | 19,264 | 13,611 | 9,081 | 8,279 | 5,162 | 5,130 | 3,542 | 4,681 | 11,834 | 20,303 | 21,506 |
| Shore/Priv. | 45,917 | 45,299 | 45,299 | 11,257 | 11,257 | 40,873 | 40,873 | 24,632 | 24,632 | 34,349 | 34,349 | 33,662 |
| Total | 78,593 | 74,380 | 68,727 | 24,681 | 23,880 | 49,011 | 48,979 | 28,771 | 29,910 | 52,564 | 61,033 | 74,438 |

**Table 3-8.** Average monthly distribution of black sea bass harvest (pounds whole weight) in the South Atlantic, by state across all modes, 2005-2010. The black sea bass fishing year starts in June.

| | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NC | 27,131 | 15,986 | 14,962 | 6,051 | 6,280 | 10,677 | 10,203 | 12,916 | 12,770 | 6,608 | 9,872 | 21,879 |
| SC | 21,816 | 19,754 | 17,193 | 8,372 | 8,337 | 20,173 | 19,216 | 132 | 389 | 23,275 | 28,246 | 21,328 |
| GA | 13,174 | 5,985 | 5,604 | 926 | 914 | 8,063 | 7,803 | 45 | 113 | 7,767 | 8,345 | 12,670 |
| FL | 16,472 | 32,655 | 30,968 | 9,333 | 8,350 | 10,098 | 11,758 | 15,677 | 16,638 | 14,914 | 14,570 | 18,561 |
| Total | 78,593 | 74,380 | 68,727 | 24,681 | 23,880 | 49,011 | 48,979 | 28,771 | 29,910 | 52,564 | 61,033 | 74,438 |

### 3.7.2.2 Recreational Black Sea Bass Effort

Recreational effort derived from the MRFSS database can be characterized in terms of the number of trips as follows:

1. Target effort - The number of individual angler trips, regardless of trip duration, where the intercepted angler indicated that the species was targeted as either the first or the second primary target for the trip. The species did not have to be caught.
2. Catch effort - The number of individual angler trips, regardless of trip duration and target intent, where the individual species was caught. The fish caught did not have to be kept.
3. All recreational trips - The total estimated number of recreational trips taken, regardless of target intent or catch success.

Estimates of annual black sea bass recreational effort in terms of target and catch trips are provided in **Tables 3-9** to **3-12**. Noticeable in these tables is the substantial difference between target and catch trips, with target trips being about 10 percent of catch trips. While many angler trips recorded harvest of black sea bass, much fewer angler trips recorded black sea bass as a target species.

The private/rental mode dominated all other fishing modes in both target and catch trips. The charter mode was the second dominant mode for target trips, but came in below the shore mode for catch trips. Total target trips declined over the years, particularly after the 2006-2007 fishing season. The decline in total catch trips started after the 2007-2008 fishing season (**Table 3-9**).

On average, there were more target trips recorded for South Carolina than any other states. Florida came in next, followed by North Carolina and Georgia. In terms of catch trips, North Carolina dominated all other states, followed by Florida, South Carolina, and Georgia (**Table 3-10**).

**Table 3-9.** Recreational effort (trips) for black sea bass in the South Atlantic, by mode across all states, 2005-2010.

| Fishing Year | Charterboat | Private/Rental Boat | Shore | Total |
|---|---|---|---|---|
| **Target Trips** | | | | |
| 2005-06 | 2,944 | 36,304 | 1,319 | 40,567 |
| 2006-07 | 3,177 | 62,143 | 0 | 65,320 |
| 2007-08 | 6,220 | 54,798 | 2,773 | 63,790 |
| 2008-09 | 4,109 | 32,406 | 0 | 36,515 |
| 2009-10 | 2,881 | 30,884 | 0 | 33,766 |
| Average | 3,866 | 43,307 | 818 | 47,992 |
| **Catch Trips** | | | | |
| 2005-06 | 39,681 | 501,546 | 109,018 | 650,245 |
| 2006-07 | 39,782 | 560,194 | 81,018 | 680,994 |
| 2007-08 | 41,339 | 606,233 | 72,075 | 719,648 |
| 2008-09 | 22,331 | 524,298 | 105,172 | 651,802 |
| 2009-10 | 38,944 | 384,316 | 89,622 | 512,882 |
| Average | 36,416 | 515,318 | 91,381 | 643,114 |

Source: MRFSS, NOAA Fisheries, NMFS, SERO.

**Table 3-10.** Recreational effort (trips) for black sea bass in the South Atlantic, by state across all modes, 2005-2010.

| Fishing Year | Florida | Georgia | South Carolina | North Carolina |
|---|---|---|---|---|
| **Target Trips** | | | | |
| 2005-06 | 6,987 | 3,018 | 18,858 | 11,704 |
| 2006-07 | 11,505 | 3,561 | 45,641 | 4,613 |
| 2007-08 | 13,923 | 10,868 | 33,025 | 5,974 |
| 2008-09 | 7,027 | 3,743 | 19,209 | 6,537 |
| 2009-10 | 7,232 | 5,716 | 10,139 | 10,678 |
| Average | 9,335 | 5,381 | 25,375 | 7,901 |
| **Catch Trips** | | | | |
| 2005-06 | 174,685 | 33,821 | 137,991 | 303,748 |
| 2006-07 | 226,828 | 34,079 | 177,610 | 242,477 |
| 2007-08 | 253,733 | 62,340 | 170,559 | 233,017 |
| 2008-09 | 199,150 | 85,145 | 177,511 | 189,995 |
| 2009-10 | 163,313 | 38,237 | 120,050 | 191,283 |
| Average | 203,542 | 50,724 | 156,744 | 232,104 |

Source: MRFSS, NOAA Fisheries, NMFS, SERO.

On average, target trips for black sea bass peaked in March, although April, May and June also registered some of the highest target trip levels. For catch trips, July and August were the peak months. February was the lowest month for both target trips and catch trips (**Table 3-11** and **Table 3-12**).

Charter target trips and catch trips peaked in May and troughed in January/February. Private target trips peaked in March/April and reached bottom in February. On the other hand, private catch trips peaked in July/August and reached their lowest levels in February. Shore mode target trips were relatively low; shore mode catch trips reached their highest levels in July/August and their lowest levels in February (**Table 3-11**).

Target trips in North Carolina were somewhat spread out evenly across the months, with the exception of September/October and January/February which registered low target trips. Target trips in South Carolina were even more spread out across the months, except for January/February which registered zero target trips. The distribution of target trips in Georgia closely mimics that of North Carolina. In Florida, target trips were high for the months of March through August. The distribution of catch trips in North Carolina did not follow the pattern of target trips. Catch trips were high in July and August, about mid-level in May, June, September and October, and relatively low in other months. The pattern of catch trips in South Carolina closely followed that of North Carolina. Catch trips in Georgia were relatively high in May and June and relatively low in other months, with January and February recording no catch trips. In Florida, catch trips were high in May through August and relatively low in other months (**Table 3-12**).

**Table 3-11.** Average monthly distribution of recreational effort (trips) for black sea bass in the South Atlantic, by mode across all states, 2005-2010. The black sea bass fishing year starts in June.

| | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Target Trips** | | | | | | | | | | | | |
| Charter | 785 | 526 | 526 | 228 | 235 | 67 | 70 | 3 | 3 | 253 | 245 | 925 |
| Private | 4,838 | 3,945 | 3,945 | 2,863 | 2,959 | 3,641 | 3,762 | 897 | 821 | 5,423 | 5,248 | 4,963 |
| Shore | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 139 | 125 | 282 | 273 | 0 |
| Total | 5,624 | 4,471 | 4,471 | 3,091 | 3,194 | 3,708 | 3,832 | 1,039 | 950 | 5,958 | 5,766 | 5,888 |
| **Catch Trips** | | | | | | | | | | | | |
| Charter | 5,580 | 6,985 | 6,985 | 1,731 | 1,788 | 845 | 873 | 428 | 390 | 2,091 | 2,024 | 6,697 |
| Private | 62,572 | 67,637 | 67,637 | 45,941 | 47,472 | 32,750 | 33,841 | 16,018 | 14,581 | 30,225 | 29,250 | 67,393 |
| Shore | 10,545 | 18,613 | 18,613 | 7,685 | 7,942 | 2,167 | 2,239 | 1,852 | 1,676 | 4,404 | 4,262 | 11,383 |
| Total | 78,697 | 93,235 | 93,235 | 55,357 | 57,202 | 35,761 | 36,953 | 18,298 | 16,647 | 36,720 | 35,536 | 85,473 |

Source: MRFSS, NOAA Fisheries, NMFS, SERO.

**Table 3-12.** Average monthly distribution of recreational effort (trips) for black sea bass in the South Atlantic, by state across all modes, 2005-2010. The black sea bass fishing year starts in June.

| | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Target Trips** | | | | | | | | | | | | |
| NC | 806 | 869 | 869 | 233 | 241 | 737 | 762 | 430 | 391 | 874 | 846 | 841 |
| SC | 3,423 | 2,240 | 2,240 | 2,111 | 2,181 | 2,157 | 2,229 | 0 | 0 | 2,767 | 2,678 | 3,349 |
| GA | 586 | 110 | 110 | 534 | 551 | 344 | 356 | 0 | 0 | 1,133 | 1,096 | 562 |
| FL | 808 | 1,253 | 1,253 | 214 | 221 | 469 | 485 | 609 | 558 | 1,184 | 1,146 | 1,135 |
| Total | 5,624 | 4,471 | 4,471 | 3,091 | 3,194 | 3,708 | 3,832 | 1,039 | 950 | 5,958 | 5,766 | 5,888 |
| **Catch Trips** | | | | | | | | | | | | |
| NC | 27,147 | 42,749 | 42,749 | 26,410 | 27,291 | 9,984 | 10,317 | 2,672 | 2,431 | 5,674 | 5,491 | 29,189 |
| SC | 19,838 | 21,320 | 21,320 | 14,725 | 15,216 | 11,541 | 11,926 | 0 | 0 | 10,678 | 10,334 | 19,846 |
| GA | 8,612 | 5,511 | 5,511 | 3,403 | 3,517 | 2,142 | 2,214 | 0 | 0 | 5,077 | 4,913 | 9,825 |
| FL | 23,100 | 23,655 | 23,655 | 10,819 | 11,179 | 12,094 | 12,497 | 15,625 | 14,216 | 15,291 | 14,798 | 26,613 |
| Total | 78,697 | 93,235 | 93,235 | 55,357 | 57,202 | 35,761 | 36,953 | 18,298 | 16,647 | 36,720 | 35,536 | 85,473 |

Source: MRFSS, NOAA Fisheries, NMFS, SERO.

Similar analysis of recreational effort is not possible for the headboat sector because the headboat data are not collected at the angler level. Estimates of effort in the headboat sector are provided in terms of angler days, or the number of standardized 12-hour fishing days that account for the different half-, three-quarter-, and full-day fishing trips by headboats.
The average annual (2005-2010) number of headboat angler days is presented in **Table 3-13**. Due to confidentiality issues, Georgia estimates are combined with those of Florida. As shown in **Table 3-13**, the total (across all states) average number of headboat angler days has been variable but generally declining since 2007. Even if angler days in Florida were

separated from those in Georgia, Florida would still come out with the highest number of headboat angler days.

**Table 3-13.** Southeast headboat angler days, 2005-06 through 2009-10.

| | South Atlantic | | | |
|---|---|---|---|---|
| | **Florida/ Georgia** | **North Carolina** | **South Carolina** | **Total** |
| 2005-2006 | 170,871 | 32,526 | 44,248 | 247,645 |
| 2006-2007 | 154,802 | 27,327 | 57,474 | 239,603 |
| 2007-2008 | 152,320 | 28,094 | 60,538 | 240,952 |
| 2008-2009 | 121,631 | 16,543 | 42,982 | 181,156 |
| 2009-2010 | 128,565 | 19,353 | 40,703 | 188,621 |
| Average | 145,638 | 24,769 | 49,189 | 219,595 |

Source: The Headboat Survey, NOAA Fisheries, SEFSC, Beaufort Lab.

### 3.7.2.3 Permits

For-hire vessels are required to have a for-hire snapper grouper permit to fish for or possess snapper grouper species in the South Atlantic EEZ. The number of vessels with for-hire snapper grouper permits for the period 2005-2010 is provided in **Table 3-14**. This sector operates as an open access fishery and not all permitted vessels are necessarily active in the fishery. Some vessel owners obtain open access permits as insurance for uncertainties in the fisheries in which they currently operate.

The number of for-hire permits issued for the South Atlantic snapper grouper fishery increased from 1,904 permits in 2005 to 2,104 permits in 2008, but subsequently decreased to 2,091 in 2009 and 1,815 in 2010. The majority of snapper grouper for-hire permitted vessels were home-ported in Florida; a relatively high proportion of these permitted vessels were also home-ported in North Carolina and South Carolina. Many vessels with South Atlantic for-hire snapper-grouper permits were homeported in states outside of SAFMC's area of jurisdiction, particularly in the Gulf states of Alabama through Texas. Although the number of vessels with South Atlantic for-hire snapper-grouper permits homeported in states outside of SAFMC's area of jurisdiction increased from 2005 to 2009, they still account for approximately the same proportion (9-10%) of the total number of permits. For-hire snapper-grouper permits in these other areas fell in 2010.

**Table 3-14.** Number of South Atlantic for-hire snapper-grouper vessel permits, 2005-2010.

| Home Port State | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | Avg. |
|---|---|---|---|---|---|---|---|
| North Carolina | 294 | 317 | 353 | 399 | 391 | 333 | 348 |
| South Carolina | 136 | 142 | 152 | 160 | 167 | 147 | 151 |
| Georgia | 37 | 36 | 37 | 35 | 36 | 28 | 35 |
| Florida | 1,267 | 1,304 | 1,312 | 1,310 | 1,280 | 1,110 | 1,264 |
| Gulf States (AL-TX) | 102 | 84 | 79 | 84 | 87 | 84 | 87 |
| Other States | 68 | 84 | 93 | 116 | 130 | 113 | 101 |
| **Total** | 1,904 | 1,967 | 2,026 | 2,104 | 2,091 | 1,815 | 1,985 |

For-hire permits do not distinguish charterboats from headboats. Based on a 1997 survey, Holland et al. (1999) estimated that a total of 1,080 charter vessels and 96 headboats supplied for-hire services in all South Atlantic fisheries during 1997. By 2010, the estimated number of headboats supplying for-hire services in all South Atlantic fisheries had fallen to 85, indicating a decrease in fleet size of approximately 11% between 1997 and 2010 (K. Brennan, Beaufort Laboratory, SEFSC, personal communication, Feb. 2011).

There are no specific permitting requirements for recreational anglers to harvest snapper grouper. Instead, anglers are required to possess either a state recreational fishing permit that authorizes saltwater fishing in general, or be registered in the federal National Saltwater Angler Registry system, subject to appropriate exemptions.

#### 3.7.2.4 Economic Value and Expenditures

Participation, effort, and harvest are indicators of the value of saltwater recreational fishing. However, a more specific indicator of value is the satisfaction that anglers experience over and above their costs of fishing. The monetary value of this satisfaction is referred to as consumer surplus. The value or benefit derived from the recreational experience is dependent on several quality determinants, which include fish size, catch success rate, and the number of fish kept. These variables help determine the value of a fishing trip and influence total demand for recreational fishing trips.

While anglers receive economic value as measured by the consumer surplus associated with fishing, for-hire businesses receive value from the services they provide. Producer surplus is the measure of the economic value these operations receive. Producer surplus is the difference between the revenue a business receives for a good or service, such as a charter or headboat trip, and the cost the business incurs to provide that good or service. Estimates of the producer surplus associated with for-hire trips are not available. However, proxy values in the form of net operating revenues are available (David Carter, NMFS SEFSC, personal communication, August 2010). These estimates were culled from several studies – Liese et al. (2009), Dumas et al. (2009), Holland et al. (1999), and Sutton et al. (1999). Estimates of net operating revenue per angler trip (2009 dollars) on representative charter trips (average charter trip regardless of area fished) are $146 for Louisiana through east Florida, $135 for

east Florida, $156 for northeast Florida, and $128 for North Carolina. For charter trips into the EEZ only, net operating revenues are $141 in east Florida and $148 in northeast Florida. For full-day and overnight trips only, net operating revenues are estimated to be $155-$160 in North Carolina. Comparable estimates are not available for Georgia, South Carolina, or Texas.

Net operating revenues per angler trip are lower for headboats than for charterboats. Net operating revenue estimates for a representative headboat trip are $48 in the Gulf of Mexico (all states and all of Florida), and $63-$68 in North Carolina. For full-day and overnight headboat trips, net operating revenues are estimated to be $74-$77 in North Carolina. Comparable estimates are not available for Georgia and South Carolina.

These value estimates should not be confused with angler expenditures or the economic activity (impacts) associated with these expenditures. While expenditures for a specific good or service may represent a proxy or lower bound of value (a person would not logically pay more for something than it was worth to them), they do not represent the net value (benefits minus cost), nor the change in value associated with a change in the fishing experience.

Estimates of the economic activity (impacts) associated with recreational fishing for black sea bass were derived using average coefficients for recreational angling across all fisheries (species), as derived by an economic add-on to the MRFSS, and described and utilized in NMFS (2010). Business activity is characterized in the form of FTE jobs, income impacts (wages, salaries, and self-employed income), output (sales) impacts (gross business sales), and value-added impacts (difference between the value of goods and the cost of materials or supplies). Job and output (sales) impacts are equivalent metrics across both the commercial and recreational sectors. Income and value-added impacts are not equivalent, though similarity in the magnitude of multipliers may result in roughly equivalent values. Neither income nor value-added impacts should be added to output (sales) impacts because this would result in double counting. Job and output (sales) impacts, however, may be added across sectors.

Estimates of the average expenditures by recreational anglers are provided in NMFS (2010) and are incorporated herein by reference. Estimates of the average black sea bass recreational effort (2005-2010) and associated economic impacts (2008 dollars) are provided in **Table 3-15**. Target trips were used as the measure of recreational effort. As previously discussed, more trips may catch a species than target the species. Where such occurs, estimates of the economic activity associated with the average number of catch trips can be calculated based on the ratio of catch trips to target trips because the average output impact and jobs per trip cannot be differentiated by trip intent. For example, if the number of catch trips is about ten times the number of target trips for a particular state and mode, the estimate of the associated business activity would approximately equal ten times the estimate associated with target trips. **Tables 3-12** to **3-15** contain estimates of the average annual (2005-2010) black sea bass target trips and catch trips for each state and mode.

It should be noted that output impacts and value added impacts are not additive and the impacts for individual species should not be added because of possible duplication (some trips may target multiple species). Also, the estimates of economic activity should not be added across states to generate a regional total because state-level impacts reflect the economic activity expected to occur within the state before the revenues or expenditures "leak" outside the state, possibly to another state within the region. Under a regional model, economic activity that "leaks" from, for example, Florida into Georgia would still occur within the region and continue to be tabulated. As a result, regional totals would be expected to be greater than the sum of the individual state totals. Regional estimates of the economic activity associated with black sea bass recreational fishing are unavailable at this time.

The distribution of the estimates of economic activity by state and mode are consistent with the effort distribution with the exception that charter anglers, on average, spend considerably more money per trip than anglers in other modes. As a result, the number of charter trips can be a fraction of the number of private trips, yet generate similar estimates of the amount of economic activity. For example, as derived from **Table 3-15**, the average number of black sea bass charter target trips in South Carolina (3,346 trips) was only approximately 15% of the number of private trips (22,028), whereas the estimated output (sales) impacts by the charter anglers (approximately $1.1 million) was approximately 113% of the output impacts of the private trips (approximately $970,000).

As previously noted, the values provided in **Tables 3-12** to **3-15** only reflect effort derived from the MRFSS. Because the headboat sector in the Southeast is not covered by the MRFSS, the results in **Table 3-15** do not include estimates of the economic activity associated with headboat anglers. While estimates of headboat effort are available (see **Table 3-13**), species target information is not collected in the Headboat Survey, which prevents the generation of estimates of the number of headboat target trips for individual species. Further, because the model developed for NMFS (2011) was based on expenditure data collected through the MRFSS, expenditure data from headboat anglers was not available and appropriate economic expenditure coefficients have not been estimated. As a result, estimates of the economic activity associated with the headboat sector comparable to those of the other recreational sector modes cannot be provided.

**Table 3-15.** Summary of black sea bass target trips (2005-2010 average) and associated economic activity (2008 dollars). Output and value added impacts are not additive.

| | North Carolina | South Carolina | Georgia | East Florida |
|---|---|---|---|---|
| | **Shore Mode** | | | |
| Target Trips | 0 | 0 | 0 | 818 |
| Output Impact | $0 | $0 | $0 | $23,368 |
| Value Added Impact | $0 | $0 | $0 | $13,567 |
| Jobs | 0 | 0 | 0 | 0 |
| | **Private/Rental Mode** | | | |
| Target Trips | 7,770 | 22,028 | 5,091 | 8,418 |
| Output Impact | $424,114 | $969,189 | $79,540 | $318,328 |
| Value Added Impact | $239,145 | $565,509 | $48,248 | $190,218 |
| Jobs | 5 | 11 | 1 | 3 |
| | **Charter Mode** | | | |
| Target Trips | 131 | 3,346 | 291 | 99 |
| Output Impact | $50,996 | $1,128,363 | $18,293 | $38,798 |
| Value Added Impact | $28,619 | $637,479 | $10,677 | $22,842 |
| Jobs | 1 | 14 | 0 | 0 |
| | **All Modes** | | | |
| Target Trips | 7,901 | 25,374 | 5,382 | 9,335 |
| Output Impact | $475,110 | $2,097,553 | $97,834 | $380,494 |
| Value Added Impact | $267,764 | $1,202,988 | $58,925 | $226,626 |
| Jobs | 5 | 25 | 1 | 4 |

Source: Effort data from the MRFSS, economic activity results calculated by NMFS SERO using the model developed for NMFS (2010).

### 3.7.2.5 Financial Operations of the Charter and Headboat Sectors

Holland et al. (1999) estimated that the charterboat fee in the South Atlantic ranged from $292 to $2,000. The actual cost depended on state, trip length, and the variety of services offered by the charter operation. Depending on the state, the average fee for a half-day trip ranged from $296 to $360, for a full day trip the range was $575 to $710, and for an overnight trip the range was $1,000 to $2,000. Most (>90 percent) Florida charter operators offered half-day and full-day trips and about 15 percent of the fleet offered overnight trips. In comparison, only about 3 percent of operations in the other South Atlantic states offered overnight trips.

For headboats, the average fee in Florida was $29 for a half-day trip and $45 for a full day trip. For North and South Carolina, the average base fee was $34 per person for a half-day

trip and $61 per person for a full day trip. Most of these headboat trips operated in Federal waters in the South Atlantic (Holland et al. 1999).

Capital investment in charter vessels averaged $109,301 in Florida, $79,868 for North Carolina, $38,150 for South Carolina and $51,554 for Georgia (Holland et al. 1999). Charterboat owners incur expenses for inputs such as fuel, ice, and tackle in order to offer the services required by their passengers. Most expenses incurred in 1997 by charter vessel owners were on crew wages and salaries and fuel. The average annual charterboat business expenditures incurred was $68,816 for Florida vessels, $46,888 for North Carolina vessels, $23,235 for South Carolina vessels, and $41,688 for vessels in Georgia in 1997. The average capital investment for headboats in the South Atlantic was approximately $220,000 in 1997. Total annual business expenditures averaged $135,737 for headboats in Florida and $105,045 for headboats in other states in the South Atlantic.

The 1999 study on the for-hire sector in the Southeastern U.S. presented two sets of average gross revenue estimates for the charter and headboat sectors in the South Atlantic (Holland et al. 1999). The first set of estimates were those reported by survey respondents and were as follows: $51,000 for charterboats on the Atlantic coast of Florida; $60,135 for charterboats in North Carolina; $26,304 for charterboats in South Carolina; $56,551 for charterboats in Georgia; $140,714 for headboats in Florida; and $123,000 for headboats in the other South Atlantic states (Holland et al. 1999). The authors generated a second set of estimates using the reported average trip fee, average number of trips per year, and average number of passengers per trip (for the headboat sector) for each vessel category for Florida vessels. Using this method, the resultant average gross revenue figures were $69,268 for charterboats and $299,551 for headboats. Since the calculated estimates were considerably higher than the reported estimates (22 percent higher for charterboats and 113 percent higher for headboats), the authors surmised that this was due to sensitivity associated with reporting gross receipts, and subsequent under reporting. Alternatively, the respondents could have overestimated individual components of the calculated estimates. Although the authors only applied this methodology to Florida vessels, assuming the same degree of under reporting in the other states results in the following estimates in average gross revenues: $73,365 for charterboats in North Carolina, $32,091 for charterboats in South Carolina; $68,992 for charterboats in Georgia; and $261,990 for headboats in the other South Atlantic states.

It should be noted that the study's authors were concerned that while the reported gross revenue figures may be underestimates of true vessel income, the calculated values could overestimate gross income per vessel from for-hire activity (Holland et al. 1999). Some of these vessels are also used in commercial fishing activities and that income is not reflected in these estimates.

A more recent study of the North Carolina for-hire fishery provides some updated information on the financial status of the for-hire fishery in the state (Dumas et al. 2009). Depending on vessel length, regional location, and season, charter fees per passenger per trip ranged from $168.14 to $251.59 for a full-day trip and from $93.63 to $123.95 for a half-day trip; headboat

fees ranged from $72.50 to $81.78 for a full-day trip and from $38.08 to $45 for a half-day trip. Charterboats generated a total of $55.7 million in passenger fees, $3.2 million in other vessel income (e.g., food and beverages), and $4.8 million in tips. The corresponding figures for headboats were $9.8 million in passenger fees, $0.2 million in other vessel income, and $0.9 million in tips. Non-labor expenditures (e.g., boat insurance, dockage fees, bait, ice, fuel) amounted to $43.6 million for charterboats and $5.3 million for headboats. Summing across vessel lengths and regions, charter vessels had an aggregate value (depreciated) of $120.4 million and headboats had an aggregate value (depreciated) of $10.2 million.

## 3.8 Social Environment

Descriptions of the social and cultural environment of the snapper grouper fishery are contained in Jepson et al. (2005) and Amendment 17B (SAFMC 2010b), and are incorporated herein by reference. Because so many communities in the South Atlantic benefit from snapper-grouper fishing, discussion of affected communities focuses on "indicator communities," defined as communities thought to be most heavily impacted by snapper-grouper regulations.

Indicator communities were identified primarily based on permit and employment activity using data obtained from the U.S. Bureau of the Census (Census) and from state and federal permitting agencies. Census data must be used with caution because it is collected every ten years and may not reflect shifting community demographics or key changes in business activity. Further, census estimates do not include seasonal visitors and tourists, those that live less than half the year in the surveyed area, and some types of labor, such as day laborers, undocumented crew members, or family members that help with bookkeeping responsibilities.

To help fill information gaps, members of the South Atlantic Council's Snapper-grouper Advisory Panel, Council members, and representatives from the angling public identified communities they believed would be most impacted by the management measures proposed in Amendment 13C on the species addressed by this amendment. Details of their designation of particular communities, and the factors considered in this designation, can be found in Amendment 13C (SAFMC 2006).

### 3.8.1 Communities in the South Atlantic

#### 3.8.1.1 North Carolina

*Overview*

Of the four states in the South Atlantic region, North Carolina (**Figure 3-1**) is often recognized as possessing the most "intact" commercial fishing industry; that is, it is more robust in terms of viable fishing communities and fishing industry activity than the other three South Atlantic states. North Carolina offers a wide variety of fishing opportunities, including sound fishing, trolling for tuna, bottom fishing, and shrimping. Perhaps because of the wide variety of fishing opportunities, fishermen have been better able to adapt to regulations and coastal development pressures, adjusting their annual fishing patterns as times have changed. More detailed information on North Carolina fishing communities can be found in Amendment 17B (SAFMC 2010b).

Many fishermen in North Carolina work under the dual jurisdiction of the Mid-Atlantic Fishery Management Council and the South Atlantic Fishery Management Council.

**Figure 3-1.** North Carolina communities with substantial fishing activity, as identified by South Atlantic Advisory Panels.

*Commercial Fishing*

There has been a steady decline in the number of federal commercial snapper grouper permits for North Carolina since 1999, with 194 unlimited commercial permits in 1999, but only 157 in 2010. Limited permits similarly declined from 36 to10 over the same period. Brunswick County and Carteret County have the largest number of permits, making up about half of all federal permits in North Carolina. The counties of New Hanover, Dare, Onslow, Pender, Beaufort, and Hyde are also home ports for vessels with snapper grouper permits in 2010 (**Table 3-16**).

**Table 3-16.** Federal commercial snapper grouper permits in North Carolina (2010).

| Home Port (County) | Unlimited SG Permits | 225 lb limit SG Permits | Total SG permits |
|---|---|---|---|
| Beaufort | 6 | 0 | 6 |
| Brunswick | 43 | 2 | 45 |
| Carteret | 32 | 0 | 32 |
| Dare | 17 | 4 | 21 |
| Hyde | 2 | 1 | 3 |
| New Hanover | 19 | 1 | 20 |
| Onslow | 16 | 1 | 17 |
| Pender | 11 | 1 | 12 |
| Total | 147 | 10 | 157 |

North Carolina fishermen demographics are detailed in Cheuvront and Neal (2004). Ninety-eight percent of surveyed fishermen were white and 58% had completed some college or had graduated from college. Of those who chose to answer the question, 27% of respondents reported a household income of less than $30,000 per year, and 21% made at least $75,000 per year. On average, respondents had been fishing for 18 years, and had lived in their communities for 27 years.

Cheuvront and Neal (2004) also provided an overview of how North Carolina commercial snapper grouper fishermen carry out their fishery. Approximately 65% of surveyed fishermen indicated year-round fishing. Black sea bass was the second most targeted species after vermilion snapper. Fishermen also target gag grouper, king mackerel, red grouper, scamp, snowy grouper, grunts , triggerfish, and golden tilefish. Non-snapper/grouper complex species landed by at least 5% of the fishermen in any given month included Atlantic croaker, yellowfin tuna, bluefin tuna, dolphin, and shrimp.

In North Carolina, there are 52 SG permits with landings of black sea bass with pots from 2008-2010 (Source: 2010 ALS Data). Landings are the highest in Onslow County, particularly from vessels with the home port of the community of Sneads Ferry (**Table 3-17**). Pender County has the next highest landings during this time period, and most of these are from the communities of Hampstead and Topsail Beach.

**Table 3-17.** Cumulative black sea bass landings with pots in North Carolina counties.

| County | Cumulative Landings 2008-2010 (lbs ww) |
|---|---|
| Brunswick County | 29,085 |
| Carteret County | 97,815 |
| New Hanover County | 84,804 |
| Onslow County | 335,836 |
| Pender County | 157,462 |

Note: This information is based on the home port recorded for the vessel associated with the permit.

*Recreational Fishing*

Recreational fishing is well developed in North Carolina and, due to natural geography, is not limited to areas along the coast. Until more recently, black sea bass was not a highly targeted recreational species but was frequently caught, particularly by private anglers (see **Section 3.7.2.1** for more detail on recreational landings). Due to closings of other fisheries, it is likely that there is increased recreational pressure on black sea bass in North Carolina.

North Carolina offers several types of private recreational licenses for residents and visitors, and for different durations (10-day, annual, and lifetime). Non-resident recreational license sales are high, indicating how coastal recreational fishing is tied to coastal tourism in the state. In general recreational license sales have remained stable or increased, with the exception of annual non-resident license sales, which have declined in recent years (**Table 3-18**).

**Table 3-18.** Coastal recreational fishing license sales by year and type (Data source: NC Division of Marine Fisheries).

| License Type | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|
| Annual Resident | 23,793 | 19,222 | 19,398 | 20,254 |
| Annual non-Resident | 179,923 | 143,810 | 142,569 | 141,475 |
| 10-day Resident | 40,255 | 39,110 | 45,724 | 47,619 |
| 10-day Non-Resident | 131,105 | 125,564 | 132,193 | 137,066 |

Black sea bass are also important to the for-hire recreational sector, and are targeted along with other deepwater snapper grouper species on headboat trips. In 2010 there were 335 South Atlantic federal charter permits for snapper grouper registered to vessels home ported in North Carolina (**Table 3-19**). A majority of the charter permits are from Dare County, Brunswick County, and Carteret County, while a lesser quantity are in New Hanover and Onslow counties.

**Table 3-19.** Federal charter permits for snapper grouper in North Carolina (2010).

| Home Port (County) | Charter SG Permits |
|---|---|
| Beaufort | 5 |
| Brunswick | 72 |
| Carteret | 64 |
| Chowan | 1 |
| Currituck | 1 |
| Dare | 118 |
| Guilford | 1 |
| Hyde | 4 |
| Mecklenburg | 1 |
| NA | 1 |
| New Hanover | 35 |
| Onslow | 20 |
| Pender | 7 |
| Rockingham | 1 |
| Rowan | 1 |
| Wake | 3 |
| **Total** | **335** |

3.8.1.2 South Carolina

*Overview*

South Carolina communities with substantial fishing activity are less developed than those in North Carolina and, over the past 20 to 30 years, the state has seen much more tourist-oriented development along its coasts than Georgia or North Carolina. In Horry County, the urban area of Myrtle Beach has expanded greatly in the past few decades, and much of the coastal area has been developed as vacation homes, condominiums, and golf courses. The communities most impacted by this development are Little River, Murrells Inlet, Pawleys Island, and Georgetown, although the latter three are located in Georgetown County (**Figure 3-2**). The same is true of rapid developing Charleston County, and the cities and communities of McClellanville, Mt. Pleasant, Sullivans Island, Wadmalaw and Edisto Islands feel the impact of urban sprawl from the city of Charleston. Further south along the coast, the Hilton Head Island resort development has been the impetus for changing coastal landscapes in the small towns of Port Royal, Beaufort, St. Helena Island, and Bluffton. More information about South Carolina fishing communities can be found in Amendment 17B (SAFMC 2010b).

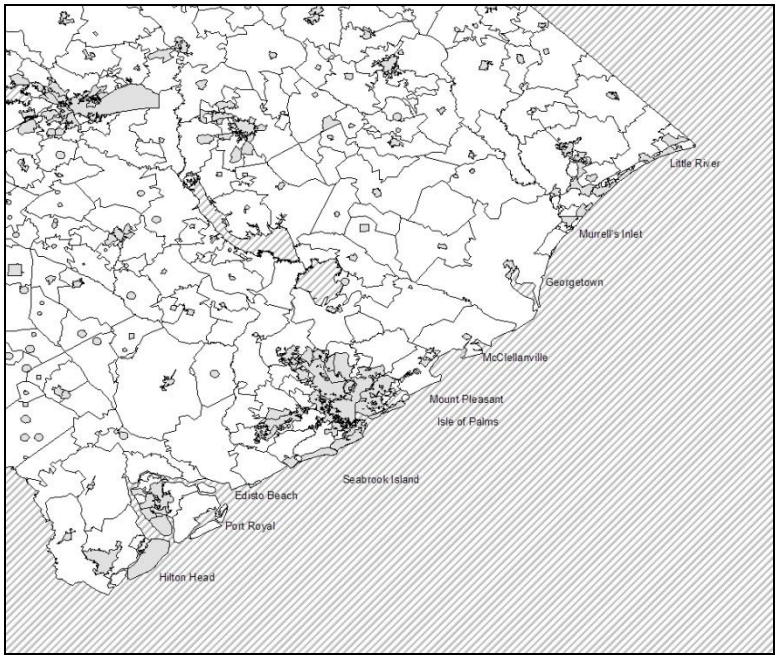



**Figure 3-2.** South Carolina communities with substantial fishing activity, as identified by South Atlantic Advisory Panels.

*Commercial Fishing*

While pockets of commercial fishing activities remain in the state, most are being displaced by the development forces and associated changes in demographics. The number of unlimited commercial permits, however, increased from 74 in 1999 to 87 in 2004, but declined to 71 in 2010. The number of limited commercial permits decreased by over 75% from 12 to 3 since 1999 (**Table 3-20**).

**Table 3-20.** Federal commercial snapper grouper permits in South Carolina (2010).

| Home Port (County) | Unlimited SG Permits | 225 lb limit SG Permits | Total SG permits |
|---|---|---|---|
| Beaufort | 2 | 1 | 3 |
| Berkeley | 1 | 0 | 1 |
| Charleston | 8 | 1 | 9 |
| Georgetown | 31 | 0 | 31 |
| Hampton | 1 | 0 | 1 |
| Horry | 28 | 1 | 29 |
| **Total** | **71** | **3** | **74** |

Horry County has the highest landings in South Carolina (**Table 3-30**), with most landings in the community of Little River. In Georgetown County, most landings are associated with the communities of Georgetown and Murrell's Inlet, while in Charleston County most landings are reported from the community of McClellanville.

**Table 3-21.** Cumulative black sea bass landings with pots in South Carolina counties.

| County | Cumulative Landings 2008-2010 (lbs ww) |
|---|---|
| Charleston County | 26,119 |
| Georgetown County | 85,675 |
| Horry | 170,790 |

Note: This information is based on the home port recorded for the vessel associated with the permit.

*Recreational Fishing*

Many areas that used to be dedicated to commercial fishing endeavors are now geared towards the private recreational angler and for-hire sector. The number of federal charter/headboat permits held by South Carolina residents increased from 41 in 1999 to 111 in 2004, and in 2010 there were 144 charter permits registered to vessels with home ports in South Carolina (**Table 3-22**). Most of the permits were based in Charleston or Georgetown County, with some permits also in the counties of Horry and Beaufort.

**Table 3-22.** Federal charter permits for snapper grouper in South Carolina (2010).

| Home Port (County) | Charter SG Permits |
|---|---|
| Beaufort | 18 |
| Charleston | 44 |
| Georgetown | 42 |
| Horry | 36 |
| Other | 4 |
| Total | 144 |

The majority of saltwater anglers fish for coastal pelagic species such as king mackerel, Spanish mackerel, tunas, dolphins, and billfish. A lesser number focus primarily on bottom fish such as snapper and groupers and often these species are the specialty of the headboats that run out of Little River, Murrells Inlet, and Charleston. There are 35 coastal marinas in the state and 34 sportfishing tournaments. South Carolina offers private recreational licenses for residents and visitors, and sales of all license types has nearly doubled since 2006 (**Table 3-23**).

**Table 3-23.** Sales of all saltwater recreational license types in South Carolina (Data Source: SC DNR).

| Year | Number of Licenses Sold |
|---|---|
| 2006 | 106,385 |
| 2007 | 119,255 |
| 2008 | 132,324 |
| 2009 | 124,193 |
| 2010 | 208,204 |

**3.8.1.3 Georgia**

*Overview*

Only one community in Georgia (Townsend) lands a substantial amount of snapper grouper species but in general black sea bass is not a significant part of the commercial harvest. Other parts of the state involved in the commercial harvest of seafood are focused on penaeid shrimp, blue crabs, and other finfish such as flounder, shad, croaker, and mullet. For more detailed information on Georgia fishing communities, see Amendment 17B (SAFMC 2010b).

*Commercial Fishing*

Unlike the pattern observed in many other areas, the number of unlimited commercial permits and limited commercial permits held by Georgia residents did not decrease from 1999 to 2004, with eight permits and one permit, respectively. In 2010, there were no limited commercial permits registered to Georgia vessels, and only 8 unlimited permits (**Table 3-24**). Many Georgia fishermen target shrimp or hold state commercial fishing permits. Landings of black sea bass by pot are minimal in Georgia, with a small quantity reported from McIntosh County.

**Table 3-24.** Federal commercial snapper grouper permits in Georgia (2010).

| Home Port (County) | Unlimited SG Permits |
|---|---|
| Chatham | 2 |
| Dodge | 1 |
| McIntosh | 5 |
| **Total** | **8** |

*Recreational Fishing*
As observed in other areas, the number of charter/headboat permits held by Georgia residents increase markedly from five permits in 1999 to 28 permits in 2010 (**Table 3-25**). However, the number of charter vessels is small relative to other states in the South Atlantic. Most of the charter operations are based in Savannah, Tybee Island, and around St Simons. For-hire fishing services and private recreational fishing are tied to coastal tourism in Georgia.

**Table 3-25.** Federal charter permits for snapper grouper in Georgia (2010).

| Home Port (County) | Charter SG Permits |
|---|---|
| Bryan | 4 |
| Chatham | 12 |
| Clinch | 1 |
| Glynn | 9 |
| McIntosh | 2 |
| **Total** | **28** |

3.8.1.4 Florida
*Overview*
Florida stands apart from other states in the South Atlantic region in fishing behaviors, history, and demographics. Florida has one of the fastest growing populations in the United States, estimated to increase each day by 750 to 1,000 new immigrants. Twenty-five percent of all vacation homes in the United States are located in Florida's coastal counties (Coastal Ocean Resource Economics 2005).

Along with being heavily populated on land, coastal waters off Florida are also heavily used by recreational users of all kinds. This growth of a leisured class occupying coastal areas has led, in part, to conflicts over natural resource access and use-rights. One example of this type of struggle was the conflict over the use of gillnets in state waters. The conflict culminated in a state-wide ban on the use of gillnets, which dealt a resounding blow to many Florida fishermen, ending in the loss of many commercial fishing properties and the displacement of many fishermen. There have also been conflicts between the "environmental community" and commercial fishermen over the closing of the *Oculina* Bank off of Florida's central coast, and the creation of both the Florida Keys National Marine Sanctuary and the Tortugas Sanctuary, both in the Florida Keys.

The natural geography of Florida also sets it apart from other South Atlantic states, particularly in the area from central Florida through the Keys. The weather is amenable to fishing almost year round, though hurricanes in 2004 and 2005 were particularly devastating and took a toll on all fisheries in the state, both east and west coast. There was also a cold water event that started near West Palm Beach in 2003, which moved up the east coast

causing a substantial decline in snapper grouper fishing that year. The continental shelf is much narrower in Florida than elsewhere in the region, allowing fishermen to access deep waters quickly and return the same day. Finally, the species of snapper grouper available to fishermen in southern Florida are different than further north, with yellowtail snapper, gag and black grouper, and other alternative species such as stone crab, spiny lobster, dolphin, kingfish, and billfish allow a greater variety of both commercial and recreational fishing opportunities. These fisheries are important to many Florida communities identified by the Snapper grouper Advisory Panel as shown in **Figure 3-3**.

Commercial and recreational fishermen in the Florida Keys commonly fish both Gulf and Atlantic sides, and work under dual jurisdiction of the South Atlantic Fishery Management Council and the Gulf of Mexico Fishery Management Council.

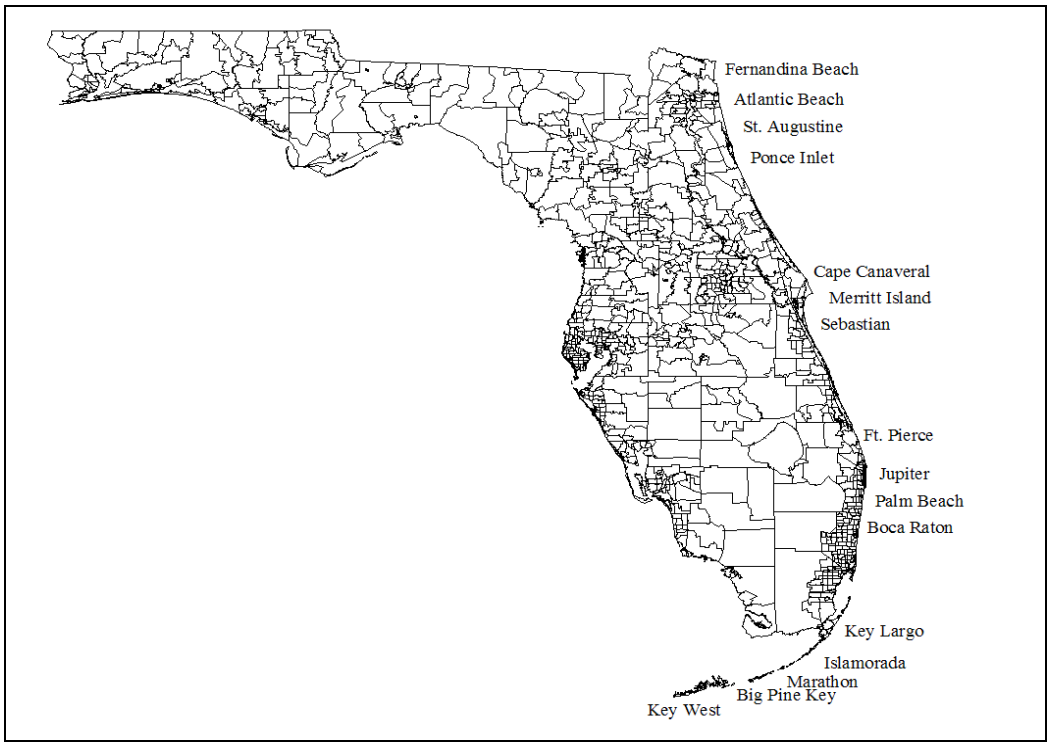



**Figure 3-3.** Florida communities with substantial fishing activity, as identified by South Atlantic Advisory Panels.

*Commercial Sector*

Despite the high population growth rates and emphasis on a tourism economy in Florida, the commercial fishing sector in Florida is still robust in some areas. There are several important communities that target snapper grouper species such as Mayport, Jacksonville, and Cocoa Beach, along with Key West and Tavernier in the Florida Keys. Additional detailed information about Florida fishing communities can be found in Amendment 17B (SAFMC 2010b).

In 2010, 589 federal snapper grouper commercial permits were registered to vessels with home ports in Florida (**Table 3-26**). Monroe County (Florida Keys) has the most unlimited and limited permits. Miami-Dade, Palm Beach, Duval, Volusia and Brevard Counties are also home ports for snapper grouper vessels in the state.

**Table 3-26.** Federal commercial snapper grouper permits in Florida (2010).

| Home Port (County) | Unlimited SG Permits | 225 lb limit SG Permits | Total SG permits |
|---|---|---|---|
| Brevard | 23 | 4 | 27 |
| Broward | 6 | 7 | 13 |
| Duval | 35 | 1 | 36 |
| Indian River | 9 | 5 | 14 |
| Martin | 10 | 1 | 11 |
| Miami-Dade | 56 | 11 | 67 |
| Monroe | 244 | 68 | 312 |
| Nassau | 2 | 0 | 2 |
| Palm Beach | 38 | 18 | 56 |
| St Johns | 12 | 3 | 15 |
| St Lucie | 8 | 5 | 13 |
| Volusia | 23 | 0 | 23 |
| **Total** | **466** | **123** | **589** |

Commercial harvest of black sea bass is not as prominent in Florida as in North Carolina and South Carolina, but Florida fishermen report that there is more interest in the fishery in more recent years and there are some commercial landings. Monroe County has the highest landings in Florida, followed by Miami-Dade County and Volusia County (**Table 3-27**). It should be noted that while these landings are associated with the listed home ports, the vessels may fish in other areas or states.

**Table 3-27.** Cumulative black sea bass landings with pots in Florida counties.

| County | Cumulative Landings 2008-2010 (lbs WW) |
|---|---|
| Brevard County | Confidential |
| Duval County | 2,191 |
| Martin County | Confidential |
| Miami-Dade County | 25,086 |
| Monroe County | 83,370 |
| St. Johns County | Confidential |
| Volusia | 22,335 |

Note: This information is based on the home port recorded for the vessel associated with the permit.

*Recreational Sector*
In 2010 there were 813 federal charter permits for snapper grouper issued to vessels with home ports in Florida (**Table 3-28**). Similar to federal commercial permits, Monroe County held the majority on charter permits, followed by Brevard, Palm Beach, Miami-Dade, Broward, and Volusia Counties.

**Table 3-28.** Federal charter permits for snapper grouper in Florida (2010).

| Home Port (County) | Charter SG Permits |
|---|---|
| Brevard | 85 |
| Broward | 52 |
| Duval | 20 |
| Flagler | 1 |
| Indian River | 26 |
| Martin | 20 |
| Miami-Dade | 63 |
| Monroe | 373 |
| Nassau | 11 |
| Palm Beach | 78 |
| Putnam | 2 |
| Seminole | 1 |
| St Johns | 24 |
| St Lucie | 16 |
| Volusia | 41 |
| **Total** | **813** |

In 2009, sales of marine recreational fishing license included 646,000 resident licenses and 384,000 non-resident licenses, totaling over $29 million in revenue (Florida Fish and Wildlife Conservation Commission 2011). Florida Fish and Wildlife Conservation Commission also reports that in 2008, eastern Florida recreational anglers took 11 million fishing trips: 6.4 million by private/rental boats, 4.6 million from shore, and 161,000 by party/charter boat.

### 3.8.2 Environmental Justice Considerations

Executive Order 12898 requires federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. This executive order is generally referred to as environmental justice (EJ).

To evaluate EJ considerations for the proposed actions, information on poverty and minority rates is examined at the county level. Information on the race and income status for groups at the different participation levels (vessel owners, crew, dealers, processors, employees, employees of associated support industries, etc.) is not available. Because the proposed actions would be expected to affect fishermen and associated industries in several communities along the South Atlantic coast and not just those profiled, it is possible that other counties or communities have poverty or minority rates that exceed the EJ thresholds.

In order to identify the potential for EJ concern, the rates of minority populations (non-white, including Hispanic) and the percentage of the population that was below the poverty line were examined. The threshold for comparison that was used was 1.2 times the state average for minority population rate and percentage of the population below the poverty line. If the value for the community or county was greater than or equal to 1.2 times the state average, then the community or county was considered an area of potential EJ concern. Census data for the year 2000 were used. Estimates of the state minority and poverty rates, associated thresholds, and community rates are provided in **Table 3-29.**

**Table 3-29**. Environmental Justice thresholds (2010 U.S. Census data) for counties in the South Atlantic region. Only coastal counties (east coast for Florida) with minority and/or poverty rates that exceed the state threshold are listed.

| State | County | Minority Rate | Minority Threshold* | Poverty Rate | Poverty Threshold* |
|---|---|---|---|---|---|
| **Florida** | | **47.4** | **56.88** | **13.18** | **15.81** |
| | Broward | 52.0 | -4.6 | 11.7 | 4.11 |
| | Miami-Dade | 81.9 | -34.5 | 16.9 | -1.09 |
| | Orange County | 50.3 | -2.9 | 12.7 | 3.11 |
| | Osceola | 54.1 | -6.7 | 13.3 | 2.51 |
| **Georgia** | | **50.0** | **60.0** | **15.0** | **18.0** |
| | Liberty | 53.2 | -3.2 | 17.5 | 0.5 |
| **South Carolina** | | **41.9** | **50.28** | **15.82** | **18.98** |
| | Colleton | 44.4 | -2.5 | 21.4 | -2.42 |
| | Georgetown | 37.6 | 4.3 | 19.3 | -0.32 |
| | Hampton | 59.0 | -17.1 | 20.2 | -1.22 |
| | Jasper | 61.8 | -19.9 | 9.9 | -0.92 |
| **North Carolina** | | **39.1** | **46.92** | **15.07** | **18.08** |
| | Bertie | 64.6 | -25.50 | 22.5 | -4.42 |
| | Chowan | 39.2 | -0.1 | 18.6 | -0.52 |
| | Gates | 38.8 | 0.3 | 18.3 | -0.22 |
| | Hertford | 65.3 | -26.2 | 23.5 | -5.42 |
| | Hyde | 44.5 | -5.4 | 16.2 | 1.88 |
| | Martin | 48.4 | -9.3 | 23.9 | -5.82 |
| | Pasquotank | 43.4 | -4.3 | 16.3 | 1.78 |
| | Perquimans | 27.7 | 11.4 | 18.6 | -0.52 |
| | Tyrrell | 43.3 | -4.2 | 19.9 | -1.82 |
| | Washington | 54.7 | -15.6 | 25.8 | -7.72 |

*The county minority and poverty thresholds are calculated by comparing the county minority rate and poverty estimate to 1.2 times the state minority and poverty rates. A negative value for a county indicates that the threshold has been exceeded.

Among the communities examined, based on available demographic information, there are no EJ concerns. As noted above, however, there may be additional communities beyond those profiled that could be affected by the actions in this proposed amendment. Because these communities have not been profiled, the absence of additional potential EJ concerns cannot be assumed and the total number of communities that exceed the thresholds is unknown.

However, while some communities expected to be affected by this proposed amendment may have minority or economic profiles that exceed the EJ thresholds and, therefore, may constitute areas of concern, significant EJ issues are not expected to arise as a result of this proposed amendment. No adverse human health or environmental effects are expected to accrue to this proposed amendment, nor are these measures expected to result in increased risk

of exposure of affected individuals to adverse health hazards. The proposed management measures would apply to all participants in the affected area, regardless of minority status or income level, and information is not available to suggest that minorities or lower income persons are, on average, more dependent on the affected species than non-minority or higher income persons.

Black sea bass is an important commercial and recreational fishery throughout the South Atlantic region. The actions in this proposed amendment are expected to incur social and economic benefits to users and communities by implementing management measures that would contribute to rebuilding the black sea bass stock and to maintaining the commercial and recreational sectors of the fishery. Although there will be some short-term impacts due to limitation of participation, and implementation of catch limits and other management measures, the overall long-term benefits of rebuilding the black sea bass stock is expected to contribute to the social and economic health of South Atlantic communities.

Finally, the general participatory process used in the development of fishery management measures (e.g., scoping meetings, public hearings, and open South Atlantic Council meetings) is expected to provide sufficient opportunity for meaningful involvement by potentially affected individuals to participate in the development process of this amendment and have their concerns factored into the decision process. Specifically for the black sea bass fishery, public input has been considered

# 4 Environmental Consequences

## 4.1 Action 1: Modify Rebuilding Strategy, ABC, ACLs, and ACTs for Black Sea Bass

Overfishing Determination Criteria for Black Sea Bass

The 2007 Reauthorized Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) National Standard 1 Guidelines provide a definition of overfishing that allows overfishing to be determined in two ways, by a fishing mortality rate or by a level of catch:

> § 600.310(e)(2)(i)(B)
>
> *"Overfishing (to overfish) occurs whenever a stock or stock complex is subjected to a level of fishing mortality or annual total catch that jeopardizes the capacity of a stock or stock complex to produce maximum sustainable yield (MSY) on a continuing basis."*

The National Standard 1 Guidelines provide more detail about these two methods, and require that FMPs describe which method will be used to determine an overfishing status:

> § 600.310(e)(2)(ii)(A)
>
> *Status Determination Criteria to determine overfishing status. Each fishery management plan (FMP) must describe which of the following two methods will be used for each stock or stock complex to determine an overfishing status.*
>
> *(1) Fishing mortality rate exceeds maximum fishing mortality threshold (MFMT). Exceeding the MFMT for a period of 1 year or more constitutes overfishing. The MFMT or reasonable proxy may be expressed either as a single number (a fishing mortality rate or F value), or as a function of spawning biomass or other measure of reproductive potential.*
>
> *(2) Catch exceeds the overfishing limit (OFL). Should the annual catch exceed the annual OFL for 1 year or more, the stock or stock complex is considered subject to overfishing.*

The OFL is defined as an annual level of catch that corresponds directly to the MFMT, and is the best estimate of the catch level above which overfishing is occurring. As the black sea bass stock rebuilds, the SSC has indicated OFL would be equal to the yield at $F_{MSY}$ (F = 0.698). After the stock is rebuilt in 2016, the OFL would equal 1,497,000 lbs gw (1,767,000 lbs ww).

*MFMT Method - Overfishing is occurring if fishing mortality exceeds the MFMT*

Currently, the MFMT method is being used to determine if the black sea bass stock is undergoing overfishing. This method is a more direct way of comparing the current fishing rate to the maximum allowed rate of fishing, and it is less sensitive to recent fluctuations in

recruitment than the OFL method. The estimates of fishing mortality are based on the maximum annual fishing mortality at any age. However, fishing mortality rates cannot be directly measured. They must be calculated as part of a stock assessment or assessment update, thus fishing mortality rates are only available for years when assessments are conducted. The current fishing mortality reported in a Southeast data, assessment, and review (SEDAR) assessment has a lag time of one or more years. The most recent data used in assessments are usually the year prior to the year in which the analysis is conducted, and sometimes two years prior. The current fishing mortality rate for black sea bass in SEDAR 25 (2011) is the average of the most recent years (2009-2010) in the SEDAR assessment. Therefore, use of the "current fishing mortality" rate from a SEDAR stock assessment may not reflect the true status of the stock in years following a stock assessment, particularly if actions are taken to constrain effort and harvest.

*OFL Method – Overfishing occurring if annual landings exceed the OFL*

The OFL method is based on catch levels that are more easily understood by constituents than fishing mortality. Unlike fishing mortality rates, a determination can be made on an annual basis as soon as catch totals are available. However, the use of the OFL method might not be appropriate for stocks with highly variable recruitment that cannot be predicted and therefore incorporated into the forecast of stock condition on which the OFL is based.

*Overfishing Definition for Black Sea Bass*

Each of the two methods for determining overfishing has its benefits and drawbacks with MFMT being a better estimate of overfishing status in a year in which a stock is assessed and OFL a better estimate of overfishing status in years when a current estimate of fishing mortality is not available. Therefore, the South Atlantic Council proposes the use of both the MFMT and OFL as a metric to determine the overfishing status of black sea bass.

> **For black sea bass, overfishing will be determined on an annual basis by the MFMT and OFL. The estimate of $F_{MSY}$ (MFMT) for black sea bass from SEDAR 25 is 0.698, while the corresponding OFL values increase as the stock rebuilds through the 2015/2016 fishing year. If either the MFMT (during an assessment year) or the OFL method (during a non-assessment year) is exceeded, the stock will be considered to be undergoing overfishing.**

Listed below are the OFL values for the 2012-2016 fishing years (**Table 4-1**). In the 2011 fishing year, the overfishing status of black sea bass is based on the MFMT.

**Table 4-1.** OFL values for South Atlantic black sea bass for the 2011 through 2016 fishing years.

| Fishing year | Whole weight | Gutted weight |
|---|---|---|
| 2011/2012 | Based on MFMT | |
| 2012/2013 | 1,529,000 | 1,295,763 |
| 2013/2014 | 1,644,000 | 1,393,220 |
| 2014/2015 | 1,830,000 | 1,550,847 |
| 2015/2016 | 1,947,000 | 1,650,000 |
| 2016/2017 | 2,021,000 | 1,712,712 |

### 4.1.1 Action 1a. Modify Rebuilding Strategy and Set ABC for Black Sea Bass

**Alternative 1 (No Action).** Retain rebuilding strategy for black sea bass that maintains a constant catch throughout the remaining years of the rebuilding timeframe. Currently, the ABC for black sea bass = 847,000 pounds whole weight or 717,797 pounds gutted weight. Based on the current regulations in place the commercial ACL is 309,000 pounds gutted weight (gw) and the recreational ACL is 409,000 pounds gw for a combined ACL of 718,000 pounds gw.

**Alternative 2.** Establish a new constant catch rebuilding strategy with an ABC from the 2011 assessment and SSC review process.

**Alternative 3.** Define a rebuilding strategy for black sea bass that maintains a constant fishing mortality rate throughout the remaining years of the rebuilding timeframe.

**Sub-Alternative 3a.** $F = 75\%F_{MSY}$

**Sub-Alternative 3b.** $F = F_{rebuild}$ (by 2016)

**Alternative 4.** Define a rebuilding strategy for black sea bass that holds catch constant (847,000 pounds whole weight; recreational ACL = 409,000 lbs gw and commercial ACL = 309,000 lbs gw) in fishing years 2012/2013 and 2013/2014 and then changes to $F_{rebuild}$ fishing mortality rate throughout the remaining fishing seasons of the rebuilding timeframe. After the 2015/2016 fishing season the fishing mortality rate would be held constant until modified.

**Preferred Alternative 5.** Define a rebuilding strategy for black sea bass that holds catch constant (847,000 pounds whole weight; recreational ACL = 409,000 lbs gw and commercial ACL = 309,000 lbs gw) in fishing years 2012/2013 and 2013/2014 and then changes to $F_{rebuild}$ in 2014/2015. ($F_{rebuild}$ is defined as a constant fishing mortality strategy that maintains the 66% probability of recovery rate throughout the remaining fishing seasons of the rebuilding timeframe.) After the 2015/2016 fishing season the fishing mortality rate would be held constant until modified.

**Note**: Sector ACLs are based on the allocation formula used in Amendment 13C (SAFMC 2006) whereby the commercial quota is 43% of the TAC and the recreational allocation is 57% of the TAC.

For both the recreational and commercial sectors, ACL paybacks are not required when new projections are adopted that incorporate ACL overages and the ACLs are adjusted in accordance with those projections. Beyond the 2013/2014 fishing season (when the rebuilding strategy switches over to $F_{rebuild}$) for years when there is no assessment, the ACL would not automatically increase if the ACL has been exceeded during the previous fishing year.

**Table 4-1a.** Black sea bass ABCs (lbs gutted weight) for Alternatives 2-5. Based on projections that assume 100% of ACL (commercial and recreational) met in June 2011-May 2012 fishing year. SSC approved projections for 2 years and requested an updated assessment before specifying an ABC beyond 2014.

| Fishing Year | Alternative 1 | Alternative 2 | Sub-Alternative 3a | Sub-Alternative 3b | Alternative 4** | Preferred Alternative 5 |
|---|---|---|---|---|---|---|
| 2012/2013 | 718,000 | 1,058,475 | 899,153 | 899,153 | 718,000 | 718,000 |
| 2013/2014 | 718,000 | 1,058,475 | 975,424 | 975,424 | 718,000 | 718,000 |
| 2014/2015 | 718,000 | 1,058,475 | 1,081,356 | 1,081,356 | 1,330,508 | *** |
| 2015/2016 | 718,000 | 1,058,475 | 1,178,814 | 1,178,814 | 1,325,424 | *** |
| 2016/2017 | 718,000 | 1,058,475 | 1,252,542 | 1,252,542 | 1,343,220 | *** |
| Probability of Rebuilding by 2016/2017 | 70% | 50% | <50% | 50% | 50% | 66% |

**Note on values in Table 4-1a, 4-1b and 4-1c:** Values under **Alternative 2** are based on Table 3.22 from SEDAR 25 (2011). Landings under **Sub-Alternative 3a** are assumed to equal those in **Sub-Alternative 3b** because the fishing mortality rate (F) for **Sub-Alternative 3a** (F= 0.48) is very similar to F for Sub-**Alternative 3b** (F = 0.52). It is likely that landings under **Sub-Alternative 3a** would be slightly greater than **Sub-Alternative 3b**. Values under **Sub-Alternative 3b** are based on Table 3.16 from SEDAR 25 (2011). Values under **Alternative 4** based on projection provided by the SEFSC dated November 4, 2011, and are based on $F_{rebuild}$ that allows an increase in harvest for 2012 fishing year. Values for 2014 to 2016 in **Preferred Alternative 5** would be determined from an updated assessment. A conversion factor of 1.18 used to convert whole weight values in assessment to gutted weight.

**Table 4-1b.** Black sea bass ABCs (lbs gutted weight) for Alternatives 2-5. Based on projections that assume 150% of ACL (commercial and recreational) met in June 2011-May 2012 fishing year. SSC approved projections for 2 years and requested an updated assessment before specifying an ABC beyond 2014.

| Fishing Year | Alternative 1 | Alternative 2 | Sub-Alternative 3a | Sub-Alternative 3b | Alternative 4 | Preferred Alternative 5 |
|---|---|---|---|---|---|---|
| 2012/2013 | 718,000 | 973,729 | 746,610 | 746,610 | 718,000 | 718,000 |
| 2013/2014 | 718,000 | 973,729 | 881,356 | 881,356 | 718,000 | 718,000 |
| 2014/2015 | 718,000 | 973,729 | 1,023,729 | 1,023,729 | 1,144,915 | *** |
| 2015/2016 | 718,000 | 973,729 | 1,134,746 | 1,134,746 | 1,212,712 | *** |
| 2016/2017 | 718,000 | 973,729 | 1,215,254 | 1,215,254 | 1,266,102 | *** |
| Probability of Rebuilding by 2016/2017 | 66% | 50% | <50% | 50% | 50% | 66% |

**Table 4-1c.** Black sea bass ABCs (lbs gutted weight) for Alternatives 2-5. Based on projections that assume 200% of ACL (commercial and recreational) met in June 2011-May 2012 fishing year. SSC approved projections for 2 years and requested an updated assessment before specifying an ABC beyond 2014.

| Fishing Year | Alternative 1 | Alternative 2 | Sub-Alternative 3a* | Sub-Alternative 3b* | Alternative 4** | Preferred Alternative 5 |
|---|---|---|---|---|---|---|
| 2012/2013 | 718,000 | 887,288 | 604,237 | 604,237 | 718,000 | 718,000 |
| 2013/2014 | 718,000 | 887,288 | 788,983 | 788,983 | 718,000 | 718,000 |
| 2014/2015 | 718,000 | 887,288 | 963,559 | 963,559 | 951,695 | *** |
| 2015/2016 | 718,000 | 887,288 | 1,088,983 | 1,088,983 | 1,082,203 | *** |
| 2016/2017 | 718,000 | 887,288 | 1,176,271 | 1,176,271 | 1,171,186 | *** |
| Probability of Rebuilding by 2016/2017 | 61% | 50% | <50% | 50% | 50% | 66% |

#### 4.1.1.1 Biological Effects

*Southeast Data, Assessment and Review (SEDAR) 25 (2011 Black Sea Bass Stock Assessment)*

The following workshops were held for SEDAR 25 to assess black sea bass: April 26-28, 2011, data workshop in Charleston, South Carolina; June 21-23, 2011, assessment workshop in Beaufort, North Carolina; and October 11-13, 2011, review workshop in Charleston, South Carolina. The black sea bass stock assessment was conducted using 70,000 age samples that became available after the 2005 assessment update. Data used in the assessment includes life history data (age, sex, fecundity), discard mortality, natural mortality, and discards. Also used were multiple types of landings data including headboat landings from 1978-2010, Marine Recreational Fisheries Statistics Survey (MRFSS) landings from 1981-2010, commercial landings with handline gear from 1978-2010, commercial black sea bass pot landings from 1983-2010, and commercial trawl landings from 1978-1990. Discards were calculated using data from MRFSS, headboat and commercial logbooks. Indices of abundance were calculated based on the MARMAP survey, headboat landings, headboat at-sea observer discard data, and commercial logbook. Results of the 2011 black sea bass SEDAR 25 stock assessment indicate the stock is no longer overfished but is not rebuilt. The biomass of the stock is above the minimum stock size threshold (MSST), which is the level at which an overfished determination is triggered; however, stock size of black sea bass is below the biomass level at which the stock is considered to be rebuilt ($B_{MSY}$). Furthermore, the stock is undergoing overfishing to a minor degree according to 2009 and 2010 data ($F_{2009-2010}/F_{MSY} = 1.07$). The projection results, found in **Tables 4-1a-1c** come from SEDAR 25 (2011) and assume that 2011 fishing year landings equal 100% (**Table 4-1a**), 150% (**Table 4-1b**), and 200% (**Table 4-1c**) of the ACL, and the rebuilding probability is 50% by 2016.

The South Atlantic Council's Scientific and Statistical Committee (SSC) met in November 2011 to review SEDAR 25 (2011). The SSC indicated that it was satisfied with data used in the assessment and that uncertainties in the data were sufficiently explored. The SSC endorsed the use of this assessment as representing the best scientific information available.

Information provided to the SSC indicated that the commercial ACL of 309,000 lbs gw had been exceeded by about 5%, and the recreational ACL had been exceeded by at least 10%. Since two months of recreational data had not been provided, the SSC supported an ABC which assumes 150% of the allowable catch will be met in the 2011/2012 fishing year. Furthermore, the SSC stated the ABC should be specified for only the 2012/2013 and 2013/2014 fishing seasons. The SSC indicated an assessment update should be conducted before any adjustments are made to the ACL after the 2013/2014 fishing seasons. The SSC also endorsed the ABC based on a SEDAR projection that has a 50% probability of rebuilding by 2016.

*Potential Impacts of Rebuilding Strategy Alternatives*

Amendment 17B to the FMP set ABC Scientific and Statistical Committee (SSC) levels for snowy grouper, black sea bass, and red snapper consistent with the rebuilding plans. The Comprehensive ACL Amendment establishes a mechanism for setting ABC commonly referred to as an "ABC control rule" . The ABC for black sea bass is currently 847,000 lbs ww (718,000

lbs gw). Based on the outcome of SEDAR 25, under **Preferred Alternative 5** the ABC would remain at 718,000 lbs gw (847,000 lbs ww) for the 2012/2013 and 2013/204 fishing seasons (**Table 4-1b**).

The current rebuilding strategy **Alternative 1 (No Action)** for black sea bass was specified in Amendment 15A to the FMP (SAFMC 2008a). **Alternative 1 (No Action)** for black sea bass would maintain a constant catch throughout the rebuilding timeframe of 309,000 lbs gw and 409,000 gw for the commercial and recreational sectors, respectively without increasing allowable catch as the stock rebuilds. Like **Alternative 1 (No Action)**, **Preferred Alternative 5** would maintain the constant catch ACL 718,000 lbs gw (847,000 lbs ww) for the commercial and recreational sectors in the 2012/2013 and 2013/2014 fishing years. However, in contrast to **Alternative 1 (No Action)**, **Preferred Alternative 5** would allow catch to move to a constant fishing mortality strategy beginning in the 2014/2015 fishing year, which has a 66% chance of rebuilding the stock by the end of the 2015/2016 fishing year. However, based on the SSC's recommendation, the values for 2014/2015 and beyond would be specified from a future updated assessment. For fishing seasons following the 2013/2014 fishing year, the ACL would not automatically increase in fishing years following an ACL overage when no assessment has been completed.

Because **Alternative 1 (No Action)** and **Preferred Alternative 5** would not allow harvest to increase as the stock improves over the next two fishing seasons these are the most biologically preferable alternatives among the alternatives being considered. Based on 100% harvest of the 2011/2012 quota the black sea bass would have a 70% chance of rebuilding by the end of the 2015/2016 fishing year, based on 150% harvest of the 2011/2012 quota black sea bass would have a 66% chance of rebuilding, and if 200% of the 2011/2012 quota were harvested, black sea bass would have a 61% chance of rebuilding under **Alternative 1 (No Action) (Table 4-1a-1c)**. **Alternative 1 (No Action)** could result in unnecessary discards of black sea bass if harvest can increase while still allowing the stock to rebuild to $B_{MSY}$ by the end of the 2015/2016 fishing year. However, release mortality of black sea bass is low, and actions were taken to reduce bycatch with increased mesh size in pots through Amendment 13C (SAFMC 2006). The recommended discard mortality for the black sea bass being used in SEDAR 25 is 7% for hook-and-line gear, 5% for 1 ½ inch panel black sea bass pots, and 1% for 2 inch panel black sea bass pots. **Preferred Alternative 5** would allow harvest to increase after 2014 if a future update assessment indicates the stock continues to rebuild. Beneficial biological effects include a more rapid rebuilding of the stock and increase in the average age and size structure compared to the other alternatives. Fishing at a lower fishing mortality rate may increase population robustness to environmental perturbations (Rothschild 1986). Also, older and larger females have greater reproductive potential because fecundity increases exponentially with size. Therefore, there is greater potential to more rapidly increase the number of young each year (recruitment) under **Alternative 1 (No Action)**.

**Alternative 2** would hold catch constant for the remaining years of the rebuilding plan and the ABC would not increase as the stock biomass increases. The constant catch level under **Alternative 2** would be greater than **Alternative 1 (No Action);** based on projections from SEDAR 25, the catch level could be increased from 718,000 lbs gw (847,000 lbs ww) in the 2011/2012 fishing year to 1,058,475 lbs gw (1,249,000 lbs ww) in 2012/2013 and then held

steady through the remainder of the rebuilding period assuming that 2011/12 fishing year landings equal 100% of the ACL (**Table 4-1a**); values assuming 150% and 200% of the ACL being landed are shown in **Tables 4-1b** and **4-1c** respectively. **Alternative 2** is more conservative than **Alternative 3**, which would allow ABC to increase as the stock rebuilds. However, **Alternative 2** could allow for a greater initial increase in the ABC than would **Alternative 3**. Under **Alternative 2** there is 50% chance the stock could rebuild by the end of the rebuilding schedule. In theory, the net ecological effects of the choice of **Alternatives 1 (No Action)** through **3** would be positive, as the reef community would more closely represent that which would persist in a natural, or undisturbed state and the possibility of ecosystem overfishing would be reduced. As fishing pressure is reduced on the protected stock(s), fishermen may target other members of the reef fish ecosystem, which have fewer fishing restrictions. This displacement of effort may further disrupt community structure. The natural balance of an ecosystem cannot be fully restored as long as the ecosystem is subjected to fishing-related mortality. Additionally, there is some speculation that a disrupted community cannot be restored to pre-existing conditions, because it may change to a new climax community in a post-disturbed condition with a different suite of species.

**Alternative 3** would hold the fishing mortality rate constant and allow the catch of black sea bass to increase as biomass increases**.** The current estimate of $F_{MSY}$ is F = 0.698. **Sub-Alternative 3a** would hold the fishing mortality rate at 75% of $F_{MSY}$, which is very close to the fishing mortality rate under **Sub-Alternative 3b.** The estimate of 75%$F_{MSY}$ is 0.52, which is slightly greater than $F_{rebuild}$ (0.46 to 0.50). There is a 50% probability the stock would rebuild to $B_{MSY}$ under $F_{rebuild}$. Since the fishing mortality rate is slightly greater under F = 75%$F_{MSY}$ than F = $F_{rebuild}$, the probability the stock would rebuild at F = 75%$F_{MSY}$ would be slightly less than 50%. The Magnuson-Stevens Act requires that a rebuilding plan have a least a 50% chance of rebuilding the stock to $B_{MSY}$ in the specified timeframe. Furthermore, the allowable harvest under **Sub-Alternative 3a** would only be slightly greater than **Sub-Alternative 3b**.

The South Atlantic Council had originally chosen **Sub-Alternative 3b** as their preferred rebuilding strategy alternative, which appeared in the draft environmental impact statement, published for public comment on December 9, 2012. **Sub-Alternative 3b** would allow the greatest amount of harvest possible, while still having a 50% chance of rebuilding by 2016. Assuming the allowable catch for the 2011/2012 fishing year is 150% of the ACL, the ABC specified in **Sub-Alternative 3b** would increase each fishing year from the current ABC of 718,000 gw (847,000 ww) to 1,215,254 lbs gw (1,434,000 lbs ww) at the start of the 2016/2017 fishing year when the stock is expected to be rebuilt (**Table 4-1b**). The ABC would not increase automatically in a subsequent year if the present year's projected catch has exceeded the total ACL specified for the commercial and recreational sectors (Action 1b). **Sub-Alternative 3b** would reduce the number of dead discards slightly relative to the status quo (**Alternative 1 (No Action)**), since there would likely be increased opportunities to retain black sea bass. This option may also extend the fishing season slightly for the commercial and recreational sectors since it would increase the current level of harvest by approximately 28,610 pounds gw (~33,760 ww) in 20122013 based on estimates from SEDAR 25. The South Atlantic Council's SSC endorsed the ABC associated with **Sub-Alternative 3b**, which assumes 150% of the ACL was met in the 2011/2012 fishing year, with the caveat that ABC is specified for only the 2012/2013 and 2013/2014 fishing seasons. However, at their December 2011 meeting the South Atlantic

Council determined a more conservative rebuilding strategy alternative that incorporates a higher probability of rebuilding by the start of the 2016/2017 fishing year is more appropriate for the stock. Therefore, the preferred rebuilding strategy alternative was changed from **Sub-Alternative 3b** to **Preferred Alternative 5**, which would hold catch at the current level for the 2012/2013 and 2013/2014 fishing years, and would have a 66% chance of rebuilding the stock to $B_{MSY}$ by 2016**.** An updated stock assessment would need to be conducted to identify the ABC and ACL levels in years following the 2013 fishing year**.**

**Alternative 4** would use a modified F approach for a black sea bass rebuilding strategy, and would have a 50% chance of rebuilding stock by the end of the rebuilding schedule in 2016. This alternative would maintain the status quo landings level for 2 years and then move to the $F_{rebuild}$ level for the remainder of the rebuilding period (**Table 4-1a-1c**). Landings would gradually increase for the remaining years of the rebuilding schedule and would be held constant until modified. Biological impacts of **Alternative 4** would be comparable to **Sub-Alternative 3b** since after the first two fishing seasons the allowable harvest would fall into line with what the allowable harvest would be under $F_{rebuild}$**.**

**Preferred Alternative 5** would have a 66% probability of rebuilding and is more biologically conservative than the other alternatives. The values for the 2014/2015 fishing years and beyond would be specified from an updated assessment.

Environmental factors such as weather, currents, and water temperature may affect the survival of eggs and larvae, causing poor recruitment even when large numbers of offspring are produced. Thus, alternatives, which allow the population to more rapidly attain a greater number of older, larger fishes in the population, also provides additional protections against recruitment failure due to several years of poor environmental conditions for eggs and larvae, creating a more robust population. 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.

Rebuilding strategy alternatives that do not allow increased harvest as the stock rebuilds could be more beneficial to endangered and threatened species than those alternatives that would allow harvest to increase as the stock rebuilds. In the last two years, the commercial quota for the June-May fishing year has ended prior to the North Atlantic right whale migration and calving season thus reducing the risk to critically endangered right whales from entanglement in black seas bass pot vertical lines. Right whale calving season off North Carolina is November 1 - April 30, and November 15 - April 15 off South Carolina, Georgia, and Florida. Furthermore, it is likely the recreational ACL for black sea bass for the June 1, 2012 to May 31, 2013 would be met in October 2012 given the preferred alternative for the reduced number of endorsements in Action 2 and the preferred trip limit alternative in Action 9. Increasing harvest over time could extend the fishing seasons for the commercial and recreational sectors so that they overlap with the timing of the North Atlantic right whale migration and calving season. Allowing a higher level of harvest, especially in the black sea bass pot sector, could eventually lead to the presence of pot gear along the right whale migration and in calving grounds. The co-occurrence of large whales and vertical lines associated with black sea bass pot gear could increase the risk of entanglement. The risk of vertical line interactions with endangered large whales could be

reduced if trap pot lines in the water column were significantly reduced. Some of the actions proposed in this amendment (i.e., seasonal closures, trap retrieval requirements, etc.), if implemented, could potentially reduce the risk of entanglement to large whales. However, it is currently unclear how great a reduction in entanglement risk would be achieved by these actions.

#### 4.1.1.2 Economic Effects

Modifying the rebuilding strategy for black sea bass would not directly alter the current harvest or use of the resource. Since there would be no direct effects on resource harvest or use, there would be no direct economic effects on fishery participants, associated industries or communities. Direct economic effects only accrue to actions that alter harvest or other use of the resource. Specifying a rebuilding strategy, however, would establish a course of action that would condition future management adjustments. In this sense, specifying or modifying a rebuilding strategy may be considered to have indirect economic effects on fishery participants.

Although the economic impacts of management adjustments due to any of the rebuilding strategy alternatives will be evaluated at the time they are proposed, there are some general economic statements that may be made about the various alternatives. Under a constant catch strategy (**Alternative 1** (**No Action**)) and **Preferred Alternative 5**, the ACL would likely be reached sooner when the stock starts to rebuild. This would likely trigger AM applications that would have adverse short-term economic consequences. What would baffle many fishing participants in this case is the application of stringent regulatory measures when more fish are observed in the waters and the rate of harvest has been increasing.harvested. In general, however, ACLs would be increased over time when scientifically justified.

**Alternative 1 (No Action)** potentially would have the greatest negative economic impact for commercial fishermen. As the stock recovers and there are a greater number of larger fish, the current commercial ACL is being caught more quickly each year. The commercial season that began on June 1, 2011, lasted only about 6 weeks. When fishermen land the entire ACL in such a short period of time it tends to result in depressed ex-vessel prices paid to the fishermen. If the commercial ACL remains at the current level and actions are not taken to reduce the number of individuals who fish with black sea bass pots, future seasons could be as short or shorter resulting in more derby-style fishing, which could result in lower ex-vessel price at the dock. **Preferred Alternative 5**, which would hold catch at current levels for the 2012-2013 and 2013-2014 fishing years, and **Alternative 2**, which holds catch at a different constant level during the remainder of the rebuilding period, would have similar effects to **Alternative 1 (No Action**.

Under constant F rebuilding strategy (**Alternative 3**), ACLs would generally increase with a rebuilding stock. The advantage of this strategy is as more fish become available with increased stock size, more fish can be removed from the population. Of course, some uncertainties remain especially if results from more recent stock assessments differ significantly from those of the previous ones. A rebuilding strategy based on constant fishing mortality could provide relatively more stable ACL configuration over the rebuilding period. This could allow fishing participants to plan their fishing operations/activities over a longer time horizon.

**Alternative 3** would not provide as much of a negative economic impact to commercial fishermen as would **Alternative 1 (No Action)** in that it would adjust the F at a constant level for the remaining years of the rebuilding schedule. As long as the stock status is improving, this alternative would result in allowing the fishermen to catch more fish as the stock rebuilds, resulting in increased catch levels, and presumably greater profit. However, any increase in profit realized from a larger commercial ACL that could result from this alternative could be offset if the derby fishery continues as it did in 2011. The provision for the ACL not to automatically increase in the year following one where the total ACL is exceeded would provide some cushion for the rebuilding to remainbe on track. There is a possibility that this cushion may be excessive, since rebuilding the stock would still be on track so long as the ACL overage is less than the planned increase. It may be noted, however, that the provision pertains only to an automatic increase and so would not necessarily preclude the South Atlantic Council and NOAA Fisheries Service from implementing an ACL increase, possibly equal to the planned ACL increase in the current year less than the ACL overage in the previous year. **Sub-Alternative 3a** is associated with less than 50 percent probability of rebuilding the stock within the rebuilding timeframe, and so may not be a viable alternative due to requirements of the Magnuson-Stevens Act. **Sub-Alternative 3b** has a 50 percent probability of rebuilding the stock, but would provide for an ACL less than that of **Sub-Alternative 3a**. In the short-run, **Sub-Alternative 3a** may provide for better economic scenario than **Sub-Alternative 3b**; the reverse may be expected over the long-run.

**Alternative 4** has the potential to provide the greatest economic benefit to the fishermen as the commercial ACL could increase due to adjustments to F as the stock rebuilds. Like with **Alternative 3**, the potential economic benefits of **Alternative 4** could be offset by other fishery characteristics such as continued short derby-style seasons. The potential advantage of **Alternative 4** over **Alternative 3** is the possibility of allowing for an increasing fishing mortality over time to the extent the rebuilding target is met at the end of the rebuilding period. Thus, ACLs could also increase over time under **Alternative 4** more than under **Alternative 3**. Given the current conditions of relatively low ACLs and fishery closures, a higher ACL may be expected to provide more economic benefits.

**Preferred Alternative 5** would have impacts equal to **Alternative 1 (no action)** and **4** for the first two years. The value for 2014/2015 and beyond is expected to be similar to **Alternatives 3** and **4. Preferred Alternative 5** has a 66% probability of rebuilding and would have the highest long term economic benefits.

Based on past discussions/actions of the South Atlantic Council and NOAA Fisheries Service, a constant catch strategy would generally start with a higher ACL than a constant fishing mortality strategy (**Alternative 2**). Hence, in the short-term the economic implications of a constant catch strategy would be better than those of the constant fishing mortality strategy (**Alternative 3**). Over time ACLs under a constant fishing mortality strategy would increase and may eventually be higher than those under a constant catch strategy. This becomes then a classic case of comparing the economic benefits over time of a constant catch strategy to those of a constant fishing mortality strategy. At present, dataare not available to make the comparison.

#### 4.1.1.3 Social Effects

The rebuilding strategies for overfished stocks, such as black sea bass, require trade-offs of long-term and short-term biological benefits, which are directly tied to long-term and short-term social benefits. A more conservative rebuilding strategy would likely result in short-term negative social impacts such as loss of income and decreased fishing opportunities due to lower target fishing mortality. However, the resulting larger sustainable biomass once the stock is rebuilt is expected to produce long-term social benefits, including stable and sustainable livelihoods for commercial fishermen and the for-hire sector; consistent product for fish houses and restaurants; and private recreational fishing opportunities.

**Alternative 1 (No Action)** would maintain the current constant catch rebuilding strategy and not allow harvest to increase during the rebuilding period, which with the expected long-term biological benefits would also likely result in the most substantial long-term social benefits. Conversely, the most substantial short-term social effects that could negatively impact fishermen due to limited harvest are most likely with **Alternative 1 (No Action)**. **Alternative 2** would establish a new constant catch rebuilding strategy with an ABC that is lower or higher than the current ABC, based on SEDAR 25 projections.

**Alternatives 3** and **4** both incorporate flexibility into the rebuilding plan for black sea bass. Although **Alternatives 1 (No Action)** and **2** are expected to result in long-term social and biological benefits from rebuilding black sea bass, there is a possibility that the harvest limit is more restrictive than necessary. By allowing adjustments as the stock increases under **Alternatives 3** and **4**, there would likely be more fishing opportunities, employment opportunities, and sustained participation in the black sea bass fishery. **Sub-Alternative 3a** and **Sub-Alternative 3b** use different fishing mortality rates, but result in similar harvest limits, and would have similar social effects. **Preferred Alternative 5** would use a similar method as **Alternative 4** except with a fishing mortality that would allow the 66% probability of rebuild to be met, and would be expected to produce similar effects on the fishermen.

#### 4.1.1.4 Administrative Effects

**Alternative 1 (No Action)** would not adjust the current rebuilding strategy according to the outcome of the new SEDAR 25 assessment. There would be no change to the current ABC, which is the harvest level defined under the current rebuilding plan, and the total ACL would not increase to allow more harvest between now and when the rebuilding schedule ends in 2016. The progressive shortening of the commercial and recreational fishing seasons would likely continue and require the continued distribution of closure notices for each sector as their ACLs are met before the end of the fishing season. **Preferred Alternative 5** would allow for changes to the ACL after the 2014 fishing year; therefore, the administrative effects of **Preferred Alternative 5** would be greater than **Alternative 1 (No Action)**. **Alternative 2** would hold catch constant, but that catch level would likely be higher than the current catch level based on preliminary results from the draft assessment report for SEDAR 25. Both sectors may still harvest the ACL, though higher it may be, before the end of the fishing season; and thus would result in the same administrative tasks needed to notify the fishery of subsequent in-season closures as identified under **Alternative 1 (No Action)**. **Alternative 3** and its sub-alternatives

could result in administrative impacts associated with notifying the fishery of annual increases to the ACLs as well as in-season closure notices if the ACLs continue to be harvested before the end of the fishing season. Therefore, **Alternative 3** is likely to result in the greatest administrative cost and time burden when compared to the other two alternatives under consideration.

### 4.1.2 Action 1b. Set an ACL for the Black Sea Bass

**Alternative 1 (No Action)**. Do not change the existing ACL for black sea bass.

**Preferred Alternative 2**. Set ACL = ABC = OY. This results in sector ACLs based on the existing allocations. ACLs will not increase automatically in a subsequent year if the present year's projected catch has exceeded the total ACL.

**Alternative 3**. Set ACL = 90%ABC = OY. This results in sector ACLs based on the existing allocations. ACLs will not increase automatically in a subsequent year if the present year's projected catch has exceeded the total ACL.

**Alternative 4**. Set ACL = 80%ABC = OY. This results in sector ACLs based on the existing allocations. ACLs will not increase automatically in a subsequent year if the present year's projected catch has exceeded the total ACL.

**Table 4-2.** Annually increasing ACLs (lbs gutted weight) based on Constant Catch shifting to Constant F rebuilding strategy (Action 1a, Preferred Alternative 5). ACL values after 2014 will be determined from an update assessment.
Note: ACLs will not increase automatically in a subsequent year if the present year's projected catch has exceeded the total ACL.

| Constant Fishing Mortality Rate Options | Fishing Season | Combined ACL | Com. ACL (43%)[1] | Recreational ACL (57%) |
|---|---|---|---|---|
| **Preferred Alternative 2** ACL=ABC=OY | 2012/2013 | 718,000 | 309,000 | 409,000 |
| | 2013/2014 | 718,000 | 309,000 | 409,000 |
| **Alternative 3** ACL=90%ABC | 2012/2013 | 646,200 | 277,866 | 368,334 |
| | 2013/2014 | 646,200 | 277,866 | 368,334 |
| **Alternative 4** ACL=80%ABC | 2012/2013 | 574,400 | 246,992 | 327,408 |
| | 2013/2014 | 574,400 | 246,992 | 327,408 |

[1]Sector ACLs are based on the allocation formula used in Amendment 13C (SAFMC 2006) whereby the commercial quota is 43% of the TAC and the recreational allocation is 57% of the TAC.
* Values for 2014/2015 to 2016/2017 in **Preferred Alternative 2** would be determined from an updated assessment.

**Table 4-3a.** ACLs (lbs gutted weight) based on annually modified F (Alternative 4, Action 1a). Based on projections that assume 100% of ACL (commercial and recreational) met in June 2011-May 2012 fishing year.

| Fishing Season | Fishing Mortality Rate | Combined ACL | Commercial ACL (43%) | Recreational ACL (57%) |
|---|---|---|---|---|
| 2012/2013 | 0.382 | 718,000 | 309,000 | 409,000 |
| 2013/2014 | 0.324 | 718,000 | 309,000 | 409,000 |
| 2014/2015 | 0.55 | 1,330,508 | 572,118 | 758,390 |
| 2015/2016 | 0.55 | 1,325,424 | 569,932 | 755,492 |
| 2016/2017 | 0.55 | 1,343,220 | 577,585 | 765,635 |

Values based on projection conducted by the SEFSC dated November 4, 2011.

**Table 4-3b.** ACLs (lbs gutted weight) based on annually modified F (Alternative 4, Action 1a). Based on projections that assume 150% of ACL (commercial and recreational) met in June 2011-May 2012 fishing year.

| Fishing Season | Fishing Mortality Rate | Combined ACL | Commercial ACL (43%) | Recreational ACL (57%) |
|---|---|---|---|---|
| 2012/2013 | 0.458 | 718,000 | 309,000 | 409,000 |
| 2013/2014 | 0.372 | 718,000 | 309,000 | 409,000 |
| 2014/2015 | 0.51 | 1,144,915 | 492,313 | 652,602 |
| 2015/2016 | 0.51 | 1,212,712 | 521,466 | 691,246 |
| 2016/2017 | 0.51 | 1,266,102 | 544,424 | 721,678 |

Values based on projection conducted by the SEFSC dated November 4, 2011.

**Table 4-3c.** ACLs (lbs gutted weight) based on annually modified F (Alternative 4, Action 1a). Based on projections that assume 200% of ACL (commercial and recreational) met in June 2011-May 2012 fishing year.

| Fishing Season | Fishing Mortality Rate | Combined ACL | Commercial ACL (43%) | Recreational ACL (57%) |
|---|---|---|---|---|
| 2012/2013 | 0.567 | 718,000 | 309,000 | 409,000 |
| 2013/2014 | 0.436 | 718,000 | 309,000 | 409,000 |
| 2014/2015 | 0.46 | 951,695 | 409,229 | 542,466 |
| 2015/2016 | 0.46 | 1,082,203 | 465,347 | 616,856 |
| 2016/2017 | 0.46 | 1,171,186 | 503,610 | 667,576 |

Values based on projection conducted by the SEFSC dated November 4, 2011.

#### 4.1.2.1 Biological Effects

**Alternative 1 (No Action)** would not change the existing ACL and OY for black sea bass. Based on a recommendation from the South Atlantic Council's SSC, Amendment 17B indicates that the ABC for overfished stocks is consistent with the value from the rebuilding plan. The Comprehensive ACL Amendment adopted this definition of ABC for overfished stocks into the ABC Control Rule. The ABC for black sea bass is 718,000 lbs gw, which is equivalent to the ACL. Currently, the ACL for black sea bass is equal to the ABC. Amendment 15A specified an OY to equal the average yield associated with fishing at 75% of $F_{MSY}$. If the stock is overfished,

Amendment 15A indicates $F_{OY}$ equals the fishing mortality rate specified by the rebuilding plan designed to rebuild the stock to $SSB_{MSY}$ within the approved schedule.

**Alternatives 2 (Preferred)-4** would set OY equal to the ACL. National Standard 1 (NS1) establishes the relationship between conservation and management measures, preventing overfishing, and achieving OY from each stock, stock complex or fishery. The NS1 guidelines discuss the relationship of the overfishing limit (OFL) to maximum sustainable yield (MSY) and annual catch target (ACT) or ACL to OY. The OFL is an annual amount of catch that corresponds to the estimate of maximum fishing mortality threshold (MFMT) applied to a stock or complex's abundance; MSY is the long-term average of such catches. The ACL would be the limit that triggers accountability measures (AMs), and ACT, if specified, would be the management target for a fishery. Management measures for a fishery should, on an annual basis, prevent the ACL from being exceeded. The long-term objective is to achieve OY through annual achievement of an ACL or ACT. The NS1 guidelines state that if OY is set close to MSY, the conservation and management measures in the fishery must have very good control of the amount of catch in order to achieve the OY without overfishing. Setting OY equal to ACL would provide greater insurance that OY is achieved, overfishing is prevented, and the long-term average biomass is near or above $B_{MSY}$.

Under **Alternative 2 (Preferred)**, the ACL and OY would be based on the ABC for black sea bass from SEDAR 25, which takes into consideration scientific uncertainty to ensure catch is maintained below a MSY/OFL level. **Preferred Alternative 2** is the least conservative option of all the alternatives under consideration in **Action 1b** by setting the ACL/OY equal to the ABC. The ACL would be divided into sector-specific ACLs based on the allocations of 43% commercial/57% recreational established in Amendment 13C to the FMP (**Table 4-2**). **Tables 4-3a-3c** illustrate the sector specific ACLs based on **Alternative 4** in **Action 1a**.

**Preferred Alternative 2** would result in the greatest increase in overall allowable harvest over time while still allowing the stock to rebuild (**Table 4-3a-3c**). **Preferred Alternative 2** would also provide no buffer between the ABC and the ACL. Creating a buffer between the ACL/OY and ABC would provide greater assurance that overfishing is prevented and the long-term average biomass is near or above $B_{MSY}$. However, the ABC is based on the preferred rebuilding strategy alternative in Action 1a, which has a 66% chance of rebuilding the stock to $SSB_{MSY}$ by the end of the 2015/2016 fishing year, and takes into account scientific uncertainty from the assessment. The NS1 guidelines indicate ACLs may be set very close to the ABC. Setting a buffer between the ACL and ABC would be appropriate in situations where there is uncertainty in whether or not management measures are constraining fishing mortality to target levels. ACTs, which are not required, can also be set below the ACLs to account for management uncertainty and provide greater assurance overfishing does not occur. The preferred alternative in **Action 1d** would establish an ACT for the recreational sector.

The higher the overall ACL is each year the greater the chance of the fishing season being extended beyond the time it has taken the fishery to harvest the ACLs in the past. Along with the preferred trip limit of 1,000 pounds gw (1,180 lbs ww; **Action 9**) and the proposed endorsement program (**Action 2**), the fishing season could potentially be extended enough to overlap with the North Atlantic right whale calving season. The greater the probability that vertical lines

associated with black sea bass pot gear is present at the same time as migrating right whales off the east coast, the greater the risk of entanglement for right whales, or other large whales in the area. Therefore, **Preferred Alternative 2** could result in the lowest biological benefit to right whales when compared to **Alternatives 3** and **4** if the black sea bass fishing season is extended into the right whale calving season. **Preferred Alternative 2** would also be expected to have a lower biological benefit to black sea bass than **Alternatives 3** and **4** since **Preferred Alternative 2** allows for the highest catch. However, **Preferred Alternative 2** identifies a harvest level for black sea bass that is expected to be sustainable and would not negatively impact the stock.

**Alternative 3** would establish an ACL based on 90% of the ABC, which would result in a slightly more conservative ACL level and would leave a 10% buffer between ABC and the ACL. Choosing an ACL that is 90% of ABC may also increase the chance that the stock would rebuild within the required timeframe. **Alternative 4** is the most risk adverse approach to setting a total ACL for black sea bass. **Alternative 4** would result in 80% of the ABC being designated as the ACL. This alternative is the most likely to rebuild the stock before the end of the 2015/2016 fishing year rebuilding schedule end date, and is therefore, considered the most biologically beneficial. **Alternative 4** would also increase the ACL by the least amount over time, and would ultimately be responsible for extending the fishing season by the least amount of time compared to other alternatives under consideration. As the length of the fishing season is reduced, the potential for large whale entanglements also decreases. Conversely, the more the fishing season over laps the period of the year that large whales are more prevalent in the South Atlantic region, the greater the potential increase in entanglements.

#### 4.1.2.2 Economic Effects

Since an ACL is a major constraint in the harvest or use of the black sea bass resource, **Preferred Alternative 2**, which provides for the highest ACL, would be expected to impose the least constraint on fishing activities. In principle, **Preferred Alternative 2** would allow the commercial and recreational fishing sectors to generate the largest short-term economic benefits from the use of the resource. Inasmuch as this alternative would still allow for the stock to rebuild within the rebuilding timeframe, benefits due this alternative may be expected to persist over time. Along similar reasoning, **Alternatives 3** and **4** would allow for lower economic benefits than **Preferred Alternative 2**, at least in the short term. Unless the stock rebuilds significantly faster under **Alternatives 3** or **4** so that ACLs could be substantially increased much sooner, long-term economic benefits derivable from these two alternatives would be lower than those from **Preferred Alternative 2**.

There exist certain issues which may tend to limit the economic benefits from higher and increasing ACLs over time, particularly in conjunction with other restrictions on the fishery such as trip limits and size limits. If higher ACLs were able to effectively extend the fishing season for black sea bass, gear interactions with whales during the calving season may occur. If such events transpire, additional restrictions may be imposed on the fishery. If higher ACLs were maintained and, for example, seasonal/area closures were imposed, trip limits may be adjusted higher and size limits may be decreased to allow the commercial and recreational sectors to harvest their respective ACLs. Possibly, more fish would be harvested by the commercial sector over a short period of time, which may in turn lead to lower ex-vessel prices for black sea bass,

lower vessel revenues, and likely lower profits over time. A management system that could effectively rationalize effort in the sense of being redirected to the open season/area at the same or lower cost and with minimal market disruption would be necessary to allow higher ACLs to result in larger economic benefits over the long term.

#### 4.1.2.3 Social Effects

Although an administrative action, defining the OY for a species or species complex establishes a management target for allowable harvests. If defined as a percentage (less than one) of the maximum sustainable yield, the target would incorporate a protective buffer to help ensure the biological health of the resource is not threatened, thereby helping support stable environmental, economic, and social benefit streams. The larger the buffer, the greater the certainty of biological protection. However, an excessively large buffer (i.e., a buffer that exceeds the biological variability of the resource, environmental challenges, and potential for fishery-induced problems) would result in overly restrictive harvest allowances, leading to foregone social benefits. While none of the relevant biological parameters are ever likely known with certainty, the best OY specification would be expected to balance the risk and costs of being insufficiently conservative against the costs of potentially unnecessarily "leaving fish in the water", all decisions on which incorporate best available knowledge of the biology of the resource, environmental challenges, and the harvest capabilities of the fishing sectors. **Preferred Alternative 2** sets the OY equal to the ACL, which establishes a buffer between the ACL/OY and the MSY/OFL level and could result in underutilized resource. In regard to the ACL, in general the higher the ACL, the greater the short-term social and economic benefits that would be expected to accrue, assuming long-term recovery and rebuilding goals are met. Adhering to stock recovery and rebuilding goals is assumed to result in net long-term positive social and economic benefits. **Alternative 1 (No Action)** would retain the current ACL for black sea bass, and likely would lead to foregoing long-term social benefits. **Preferred Alternative 2** sets the ACL equal to the ABC, the highest possible ACL, and would result in fewer short-term social impacts than under **Alternatives 3** and **4**, which each set the ACL at a percentage of the ABC.

#### 4.1.2.4 Administrative Effects

**Alternative 1 (No Action)** would not modify the current ABC, ACL, or OY for black sea bass, and the current situation of progressively shortened fishing seasons would be perpetuated. Under this scenario, there would be no change in administrative burden from the status quo since notices would continue to be required to inform fishery participants of in-season closures. Administrative impacts of **Alternatives 2 (Preferred)**, **3,** and **4**, would be the same since each would modify the current ABC, ACLs, and OY by varying degrees of biological conservativeness. The same administrative tasks such as in-season closure notices, and notification of increased ACLs would be required for each alternative. The only difference between the three alternatives is poundage associated with each ACL increase. Therefore, no single alternative under **Action 1b** would incur a greater or lesser administrative impact than the other alternatives under consideration.

### 4.1.3 Action 1c. Set Annual Catch Targets (ACTs) for the Commercial Black Sea Bass Sector

**Preferred Alternative 1 (No action).** Do not set an ACT for the commercial black sea bass sector.

**Alternative 2.** Set the commercial ACT = 90% of the commercial sector ACL.

**Alternative 3.** Set the commercial ACT = 80% of the commercial sector ACL.

**Table 4-4.** Values for Commercial ACT based on Preferred Alternative 2 in Action 1b. SSC approved projections for 2 years; an updated assessment would be conducted before specifying an ABC beyond 2014.

| Fishing Year | Commercial ACL | Preferred Alternative 1 | Alternative 2 | Alternative 3 |
|---|---|---|---|---|
| 2012/2013 | 309,000 | 309,000 | 278,100 | 247,200 |
| 2013/2014 | 309,000 | 309,000 | 278,100 | 247,200 |

* Values for 2014/2015 to 2016/2017 would be determined from an updated assessment

#### 4.1.3.1 Biological Effects

**Preferred Alternative 1 (No Action)** would not establish a commercial ACT. The South Atlantic Council felt a commercial ACT for black sea bass was not needed because commercial sector landings are closely tracked in-season through a quota monitoring system and project when the ACL is going to be met in order to close the fishery before the ACL is exceeded. For this reason, the South Atlantic Council chose not to establish ACTs for the commercial sector of other snapper grouper species in the Comprehensive ACL Amendment. Therefore, a commercial ACT for black sea bass is not necessary for the successful management of the commercial sector for black sea bass, and could result in an unnecessary administrative burden. Setting a commercial ACT at either 90% or 80% of the ACL (**Alternatives 2** and **3,** respectively), would establish a reference point that could be used as an indicator that the ACL could be reached or exceeded.

Establishing an ACT that is 80% of the ACL may be perceived as a more conservative target level of harvest than an ACT that is 90% of the ACL. However, because no corrective or preventive action would be triggered once an ACT is met or projected to be met; no direct biological impact would be expected. Alternately, if tracking the ACT through time reveals a trend in ACT and ACL overages, the entire system of ACTs and ACLs would be reevaluated and some corrective action may be linked to the ACT in the future to prevent the ACL from being exceeded. The NS1 guidelines recommend a performance standard by which the efficacy of any system of ACLs and AMs can be measured and evaluated. According to the guidelines:

> *…if catch exceeds the ACL for a given stock or stock complex more than once in the last four years, the system of ACLs and AMs should be re-evaluated, and modified if necessary, to improve its performance*

*and effectiveness (74 FR 3178).*

If an evaluation concludes that the ACL is being chronically exceeded, and post-season AMs are repeatedly needed to correct for ACL overages, any changes to the system of ACTs, ACLs, and associated AMs could be done through a regulatory amendment based on the framework procedures for the snapper grouper fishery. The updated framework procedure implemented through Amendment 17B (SAFMC 2010b) could be utilized to modify management measures such as bag limits, trip limits, seasonal closures, and gear prohibitions in a timely manner. Using the regulatory amendment process to implement such changes, if needed, is the most timely method of addressing issues associated with repeated ACL overages through permanent regulations.

Establishing a commercial ACT is not expected to negatively impact any species listed under the Endangered Species Act (ESA). Because the ACT alternatives would be used as management reference points rather than actionable limits on fishing, no biological benefit on endangered or threatened species or the habitats thereof are expected from this action.

#### 4.1.3.2 Economic Effects

The greatest economic benefit for commercial fishermen would be to set an ACT as close to the ACL as possible. If an ACT was exceeded and accountability measures were triggered, any gains from the excess landings in one year would be offset by potential reductions in the next. It is in the commercial fishermen's best economic interest to catch the total landings allowed by an ACT, or the ACL if ACT = ACL. Setting an ACT lower than the ACL may prevent future overage paybacks, but will limit potential economic gains in each fishing year.

#### 4.1.3.3 Social Effects

It is the setting of an ACT where social and economic considerations might enter the equation as management uncertainty is evaluated. Setting ACTs is utilized in fisheries where there may be management uncertainty that adds risk to reaching target harvest levels beyond the biological risks. It usually entails a further reduction in harvest levels to ensure catch remains at or below the ACL and does not wildly fluctuate. For fisheries where information is scarce and management is uncertain, it becomes a real possibility that there can be negative short term impacts that may not have been necessary if thresholds are too restrictive. In other fisheries, which have more certainty in management and monitoring of catch, a more precise harvest level can be set with certainty and reduce volatility in the fishery. Additionally, the ACT is associated with the AMs, which can have significant impacts on the social environment if the AMs include restrictions or closures.

**Preferred Alternative 1** would not impose that buffer through the ACT and is less restrictive than **Alternatives 2** or **3**. With **Alternatives 2** and **3,** a buffer could be imposed which would reduce the harvest threshold further from the ACL. Therefore there is an increasing possibility of negative short-term social effects going from **Preferred Alternative 1** to **Alternative 3**. Some of those effects are similar to other thresholds being met and may involve switching to other species or discontinuing fishing altogether. Although these are common responses to

closures, it is not known how fishermen may respond if closures are anticipated for several different species or groups. There could be a domino effect as one closure forces them to switch to another species which closes as thresholds are met with the added fishing pressure. However, under **Preferred Alternative 1** there may be long-term social impacts due to an overage that would not result in an increase in the subsequent year's ACL for black sea bass.

#### 4.1.3.4 Administrative Effects

**Preferred Alternative 1 (No Action)** would not establish an ACT for the commercial sector. Because the commercial sector for the black sea bass segment of the snapper grouper fishery is already tracked through the quota monitoring system, in-season management for the commercial sector is feasible without the use of an ACT. Establishing an ACT for the commercial sector as would be done under **Alternatives 2** and **3**, would result in an increased administrative burden beyond the status quo, since an additional reference point would need to be monitored. Because the commercial sector is monitored through the quota monitoring system, the use of an ACT would result in a currently unnecessary administrative burden. If the South Atlantic Council should determine the use of an ACT is appropriate in the future, they may choose in implement a commercial ACT through a framework action/regulatory amendment based in the updated framework procedures for the snapper grouper fishery included in Amendment 17B (SAFMC 2010b).

### 4.1.4 Action 1d. Set Annual Catch Targets (ACTs) for the Recreational Black Sea Bass Sector

**Alternative 1. No action.** Do not set an ACT for the recreational black sea bass sector.

**Alternative 2.** Set the recreational ACT = 85% of the recreational sector ACL.

**Alternative 3.** Set the recreational ACT = 75% of the recreational sector ACL.

**Preferred Alternative 4.** The ACT equals recreational ACL*(1-PSE) or recreational ACL*0.5, whichever is greater.

**Table 4-5.** Values for Recreational ACT based on Preferred Alternative 2 in Action 1b. SSC approved projections for 2 years; an updated assessment would be conducted before specifying an ABC beyond 2014.

| Fishing Year | Recreational ACL | Alternative 2 | Alternative 3 | Alternative 4 |
|---|---|---|---|---|
| 2012/2013 | 409,000 | 347,650 | 306,750 | 357,548 |
| 2013/2014 | 409,000 | 347,650 | 306,750 | 357,548 |

#### 4.1.4.1 Biological Effects

Tracking landings in the recreational sector can be a difficult task given the level of uncertainty associated with recreational landings data. An ACT for the recreational sector could be used as a management reference point to track performance of recreational management measures. Though none of the ACT alternatives are associated with a corrective or preventative action, they could be used to trigger such harvest control actions in the future when recreational data can be used for in-season management, if the South Atlantic Council feels it is appropriate. **Alternative 1 (No Action)** would not establish an ACT for the recreational sector, and therefore, would not benefit the biological environment by creating a management reference point more conservative that than of the sector ACL.

**Alternatives 2 – Preferred Alternative 4** would establish reduced harvest levels designed to hedge against an ACL overage and therefore, provide a buffer between the ACT and ACL, and account for management uncertainty. **Alternative 2** would establish an ACT that is 85% of the sector ACL, which would create a 15% buffer between the two harvest levels. If the ACT under **Alternative 2** is exceeded repeatedly and the ACL is also exceeded, the South Atlantic Council may consider associating some type of AM with the ACT in order to prevent continued ACL overages for the sector. The same applies to **Alternative 3**, which would establish an ACT at a more conservative level than **Alternative 2** at 75% of the ACL. Under **Alternative 3** the buffer between the ACL and ACT would be greater than that under **Alternative 2**, and theoretically there would be more time to act to prevent the ACL from being exceed if the South Atlantic Council were to link an AM to the ACT in the future. As stated previously, tracking recreational landings in-season is currently extremely difficult given variables such as the time between reporting and processing of landings data, and data collection methods under the MRFSS. Improvements are being made to the recreational landings tracking system in the new Marine Recreational Information Program (MRIP).

**Preferred Alternative 4** would have the greatest biological benefit of the four alternatives by adjusting the ACL by 50% or one minus the average Percent Standard Error (PSE) from the recreational fishery for 2005-2009, whichever is greater. Annual values of PSE for black sea bass during 2005-2009 were: 11.7; 13.2; 11.9; 13.5; and 12.6 for an average of 12.58. The lower the value of the PSE the more reliable the landings data. By using PSE in **Preferred Alternative 4**, more precaution is taken in the estimate of the ACL with increasing variability and uncertainty in the landings data. If preventative AMs are linked to an ACT, establishing an ACT below the recreational ACL could also reduce the need to close or implement post-season AMs that are meant to correct for an ACL overage if management measures are specified to limit expected catches to the ACT.

The ACT would serve as a performance measure. If the ACT is continually exceeded, additional AMs may need to be implemented to reduce harvest pursuant to National Standard 1 guidelines for performance standards. If it was determined by the South Atlantic Council and its SSC that the management measures in place are not constraining catch to a target level, adjustments could be made through a future regulatory amendment.

#### 4.1.4.2 Economic Effects

At present, ACTs are mainly used as a management reference point to track performance of the management measures imposed on the recreational sector. In the event they are used to trigger certain control measures on the recreational sector, they would in effect act like ACLs though in a more restrictive way. Their economic effects then would be similar in nature, not necessarily in magnitude, to those of the ACL alternatives. Under such condition, **Alternative 1 (no action)** would have the same effects as any of the ACL alternatives. If ACL were equal to ABC, **Alternative 2** would be less restrictive than some of the ACL alternatives while **Alternative 3** and possibly **Preferred Alternative 4** would be more restrictive. If ACL were lower than ABC, then **Alternatives 2, 3,** and **Preferred Alternative 4** would be more restrictive than any of the ACL alternatives. The short-run positive (negative) economic effects of ACTs would generally be smaller (larger) than those of the ACL alternatives.

There is some expectation that ACTs used to trigger control measures would serve as cushions to effectively limit harvests and enable the stock to rebuild within the rebuilding timeframe. Long-term economic benefits would then ensue from a healthy stock. So long as long-term economic benefits outweigh short-term costs, the fishing industry and society in general would be better off. Realization of long-term economic benefits depends on a host of factors, including the type of management regime adopted. These factors render relatively uncertain the long-term economic outcome of ACTs, at least from the standpoint of magnitudes. It appears that a prudent action to take would be to properly manage short-term costs. Relatively large short-term costs, such as those that may occur under more restrictive ACTs (e.g., **Alternative 3**), may not be totally outweighed by long-term benefits. There is therefore weak economic rationale for adopting such type of restrictive control measures.

#### 4.1.4.3 Social Effects

The general effects on the social environment of an ACT for the recreational sector would be similar to the effects described in **Section 4.1.3.3**. **Alternative 1 (No Action)** would not implement a recreational ACT and there would be no additional social impact on the recreational sector. The variations in **Alternatives 2 – Preferred Alternative 4** impose a buffer, as a certain percentage of the ACL, and it would be expected that short-term negative social effects would accrue as the buffer increased in **Alternatives 2 – Preferred Alternative 4**. **Preferred Alternative 4** would provide flexibility but the relative social effects are unknown.

#### 4.1.4.4 Administrative Effects

**Alternative 1 (No Action)** would not establish an ACT for the recreational sector of the black sea bass segment of the snapper grouper fishery. Potential administrative impacts of **Alternatives 2 - Preferred Alternative 4** would likely be minimal since no direct action is triggered if the ACT is met or exceeded. As applied to black sea bass, the recreational ACT would act as a reference point by which performance of associated management actions may be measured. If the South Atlantic Council determined the recreational ACT should be linked to some type of corrective or preventative action in the future, the AM could be modified through a

framework action/Regulatory amendment based in the updated framework procedures for snapper grouper contained in Amendment 17B (SAFMC 2010b).

## 4.2 Action 2: Limit Participation in the Black Sea Bass Pot Segment of the Snapper Grouper Fishery through an Endorsement Program

**Alternative 1 (No Action).** Do not limit participation in the black sea bass pot segment of the snapper grouper fishery with the establishment of an endorsement program.

**Alternative 2.** Limit endorsements and tag distribution to entities with a valid or renewable South Atlantic Unlimited Snapper Grouper Permit on the effective date of the final rule whose *average* annual black sea bass landings using black sea bass pot gear between 1/1/99 and 12/31/10 were at least:

**Sub-Alternative 2a -** 500 lbs whole weight. Exclude those with no reported commercial landings of black sea bass using black sea bass pot gear between January 1, 2008, and December 31, 2010.

**Sub-Alternative 2b -** 1,000 lbs whole weight. Exclude those with no reported commercial landings of black sea bass using black sea bass pot gear between January 1, 2008, and December 31, 2010.

**Sub-Alternative 2c -** 2,000 lbs whole weight. Exclude those with no reported commercial landings of black sea bass using black sea bass pot gear between January 1, 2008, and December 31, 2010.

**Sub-Alternative 2d -** 5,000 lbs whole weight. Exclude those with no reported commercial landings of black sea bass using black sea bass pot gear between January 1, 2008, and December 31, 2010.

**Sub-Alternative 2e -** 10,000 lbs whole weight. Exclude those with no reported commercial landings of black sea bass using black sea bass pot gear between January 1, 2008, and December 31, 2010.

**Sub-Alternative 2f -** 3,500 lb whole weight. Exclude Unlimited Snapper Grouper Permits with no reported commercial landings of black sea bass using black sea bass pot gear between January 1, 2008, and December 31, 2010.

**Preferred Sub-Alternative 2g -** 2,500 lbs whole weight. Exclude Unlimited Snapper Grouper Permits with no reported commercial landings of black sea bass using black sea bass pot gear between January 1, 2008, and December 31, 2010.

**Alternative 3.** No South Atlantic state shall have less than two entities that qualify for black sea bass pot endorsements, provided that no entity qualifies whose minimum average landings are:

**Sub-Alternative 3a -** 1,000 lbs whole weight

**Sub-Alternative 3b -** 2,000 lbs whole weight

### 4.2.1 Biological Effects

The number of permits qualifying for an endorsement under **Alternative** 2 is shown in **Table 4-**6. Qualifying permits by state are shown in **Table 4-**7.

**Table 4-6.** Number of permits qualifying for an endorsement under each sub-alternative in **Alternative 2.** State based on homeport as identified on snapper-grouper permit application.

| **Using gutted weight landings** | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **2a** | **2b** | **2c** | **2d** | **2e** | **2f** | **Preferred 2g** |
| **North Carolina** | 25 | 21 | 19 | 10 | 6 | 11 | 16 |
| **South Carolina** | 16 | 12 | 9 | 3 | 2 | 5 | 6 |
| **Florida** | 9 | 8 | 6 | 5 | 1 | 5 | 6 |
| **Total** | 50 | 41 | 34 | 18 | 9 | 21 | 28 |
| **Using whole weight landings (Preferred)** | | | | | | | |
| | **2a** | **2b** | **2c** | **2d** | **2e** | **2f** | **Preferred 2g** |
| **North Carolina** | 26 | 22 | 21 | 10 | 9 | 14 | 18 |
| **South Carolina** | 17 | 14 | 10 | 5 | 2 | 5 | 7 |
| **Florida** | 9 | 8 | 7 | 5 | 1 | 5 | 6 |
| **Total** | 52 | 44 | 38 | 20 | 12 | 24 | 31 |

**Table 4-7.** Number of South Atlantic Unlimited Snapper Grouper Permits per state that qualify for a Black Sea Bass Pot endorsement under **Preferred Alternative 2g**.

| **Alternative** | **State** | **Endorsements that would be issued (gw)** | **Endorsements that would be issued (ww)** |
|---|---|---|---|
| **Preferred Sub-Alternative 2g** - 2,500 lbs gw. | North Carolina | 16 | 18 |
| | South Carolina | 6 | 7 |
| | Georgia | 0 | 0 |
| | Florida | 6 | 6 |

The South Atlantic Council is concerned increased restrictions imposed through Amendments 13C, 16, 17A, and 17B to the Snapper Grouper FMP including a commercial quota for black sea bass, commercial quota for vermilion snapper, and seasonal closure for shallow water groupers could serve as an incentive for a greater number of fishermen with federal snapper grouper

commercial permits to fish pots for black sea bass. Currently, tags for black sea bass pots can be issued to any fisherman who possesses an Unlimited or 225-pound trip-limited Snapper Grouper Permit. Most black sea bass commercial landings (89%) during 2005-2010 were caught with pots, with the remainder taken with hook-and-line gear. The number of vessels that fished pots and caught black sea bass has varied during 1992 to 2008 from 50 in 2008 to 92 in 1997 (**Table 4-8**); however, not all of these vessels currently have active South Atlantic Unlimited Snapper Grouper Permits. The number of vessels fishing black sea bass pots with active South Atlantic Unlimited Snapper Grouper Permits increased from 50 in 2008 to 62 in 2009. In 2010, there were 598 fishermen who possessed South Atlantic Unlimited Snapper Grouper Permits; however, only 51 of these individuals fished black sea bass pots that year. Some of these vessels fished pots but did not request tags. Therefore, the potential exists for increased participation in pot fishing for black sea bass.

An increase in the number of individuals who fish black sea bass pots could increase the rate at which the quota is met and deteriorate profits for current participants in that segment of the snapper grouper fishery. During the June 2009 to May 2010 fishing year, the 309,000 pound gutted weight (gw) commercial quota was met in December 2009, and in October 2010 during the June 2010 to May 2011 fishing year. The quota was met and black sea bass closed July 15, 2011, during the June 2011 to May 2012 fishing year. Therefore, the fishery does not have the capacity to support any increased participation in the black sea bass pot sector without earlier closures of the fishery.

In December 2008, the South Atlantic Council requested NOAA Fisheries Service issue a control date of December 4, 2008. The control date may be used as a benchmark date for participation in a fishery by the South Atlantic Council to limit participation in the future; anyone entering the black sea bass pot segment of the snapper grouper fishery after the specified date may not be guaranteed continued participation. Previously, control dates were also established in 2005 and 1997. The South Atlantic Council requested these control dates be used as alternatives to possibly limit participation in the black sea bass segment of the snapper grouper fishery.

A limited access system was imposed on the snapper grouper fishery in December 1998. Currently, the only valid commercial vessel permits for South Atlantic snapper grouper are those that have been issued under the limited access criteria specified in the Snapper Grouper FMP. A commercial vessel permit for South Atlantic snapper grouper is either a transferable South Atlantic Unlimited Snapper Grouper Permit or a 225 pound trip-limited commercial permit. A continuous permit number (cpnum) was assigned to each limited access snapper grouper permit, which did not exist during the federal open access snapper grouper permit period (1992-1998). Therefore, landings can be associated with the limited access permit through the cpnum and the vessel identification number beginning in December 1998. However, it is more difficult to determine landings associated with a permit without a cpnum and associated vessel identification number prior to December 1998, especially with regard to determining which of those permits remains active today.

At their March 2009 meeting, the South Atlantic Council recognized the difficulty in tracking landings without a cpnum and indicated an alternative, which considered the 1997 control date, be moved to Appendix A as an alternative eliminated from detailed consideration. The South

Atlantic Council also indicated this control date is old and did not adequately consider present participation in the black sea bass pot portion of the snapper grouper fishery.

**Alternative 1 (No Action)** would result in the greatest biological benefit for black sea bass, when compared to the other alternatives under consideration, because the quota would be met quickly and gear would be removed from the water for the longest period of time. Conversely, if **Alternative 1 (No Action)** resulted in a large number of pots in the water at the same time, this could increase the chance of entanglement with protected species. However, the early closure of black sea bass in 2009, 2010, and 2011 along with the requirement that pots be removed from the water when the quota is met provides protection to endangered large whales from entanglement in black sea bass pot lines during their annual migration and calving season. Right whale calving season off North Carolina is November 1 - April 30, and November 15 - April 15 off South Carolina, Georgia, and Florida.

**Table 4-8.** Number of vessels that fished pots and caught black sea bass during 1992-2010, and the number of vessels that currently have South Atlantic Unlimited Snapper Grouper Permits.

| Year | # vessels* | # active permits |
|---|---|---|
| 1992 | 52 | |
| 1993 | 71 | |
| 1994 | 86 | |
| 1995 | 68 | |
| 1996 | 80 | |
| 1997 | 92 | |
| 1998 | 76 | |
| 1999 | 71 | 54 |
| 2000 | 70 | 54 |
| 2001 | 59 | 50 |
| 2002 | 53 | 46 |
| 2003 | 52 | 50 |
| 2004 | 56 | 54 |
| 2005 | 51 | 49 |
| 2006 | 50 | 45 |
| 2007 | 55 | 53 |
| 2008 | 50 | 49 |
| 2009 | 62 | 56 |
| 2010 | 51 | 51 |

*Source: NMFS logbook data 5-12-2011

**Alternatives 2** and **3** would limit participation in the commercial sector for black sea bass by establishing endorsements and tag distribution to black sea bass pot fishermen with valid or renewable South Atlantic Unlimited Snapper Grouper Permits who met specific landings criteria between January 1, 1999 and December 31, 2010. **Alternatives 2** and **3** would restrict participation in the black sea bass pot sector to those individuals who have demonstrated past and present participation in the black sea bass pot portion of the snapper grouper fishery. As far

fewer individuals fish pots than possess South Atlantic Unlimited Snapper Grouper Permits, these alternatives could constrain participation in the black sea bass pot sector to a level that is more manageable and profitable under the current harvest limits.

**Sub-Alternatives 2a-2g** would establish qualifying criteria based on a range of average harvest levels of 500 to 10,000 lbs ww of black sea bass with pots, which South Atlantic Unlimited Snapper Grouper Permit holders would have needed to harvest between January 1, 1999 and December 31, 2010 to qualify for a black sea bass pot endorsement. All of the **Alternative 2** sub-alternatives exclude those permit holders who had no reported commercial landings of black sea bass with pot gear between January 1, 2008 and December 31, 2010. The sub-alternatives under **Alternative 2** would result in issuance of 12-52 black sea bass pot endorsements, depending on the qualifying poundage chosen by the South Atlantic Council under their preferred sub-alternative. The lowest qualifying poundage is 500 lbs ww, (**Sub-Alternative 2a**), which would allow the most black sea bass pot endorsements to be issued (52 endorsements) to qualifying South Atlantic Unlimited Snapper Grouper Permit holders. Allowing 52 endorsements to be issued to South Atlantic Unlimited Snapper Grouper Permit holders would not decrease the rate at which the commercial quota is harvested since approximately 52 fishery participants are using pot gear to harvest black sea bass under the status quo.

The sub-alternative that would result in the fewest number of black sea bass pot endorsements being issued is **Sub-Alternative 2e**, which requires that a minimum of 10,000 lbs ww of black sea bass be harvested using pot gear between January 1, 1999 and December 31, 2010. Under **Sub-Alternative 2e** a total of 12 black sea bass pot endorsements would be issued to South Atlantic Unlimited Snapper Grouper Permit holders. Reducing the number of individuals who are able to harvest black sea bass using pot gear to such a small number would likely extend opportunities to fish for black sea bass for those who qualify for endorsements further into the fishing year, which begins on June 1. Because overall harvest of black sea bass is controlled by the ACLs implemented in Amendment 17B (SAFMC 2010b) and by the updated rebuilding strategy, if approved, in this amendment, the number of black sea bass pot endorsements issued is not likely to adversely affect the black sea bass stock or jeopardize rebuilding efforts. Therefore, reducing the number of entities allowed to fish for black sea bass using pot gear to 12, is not biologically necessary.

It is estimated that a level between the lowest and highest number of endorsements that would be issued under the **Alternative 2** sub-alternatives is likely the most appropriate choice to slow the rate of harvest enough to extend opportunities to fish further into the fishing year without excluding a significant number of entities that have historically landing large quantities of black sea bass using pot gear. Prior to the South Atlantic Council finalizing Amendment 18A at their December 2011 meeting, the preferred endorsement action alternative was **Sub-Alternative 2f**, which required that fishermen have average annual historical landings greater than 3,500 pounds ww between January 1, 1999 and December 31, 2010, which also appeared as the preferred sub-alternative in the draft environmental impact statement (DEIS) published on December 9, 2011. Subsequent to the publication of the DEIS, the South Atlantic Council determined that limiting the number of black sea bass pot endorsement to 24 (using ww) would eliminate too many fishermen from the pot segment of the fishery who had historically fished large quantities of black sea bass with pot gear. Therefore, at their December 2011 meeting, the South Atlantic

Council chose to change their preferred sub-alternative from **Sub-Alternative 2f** to **Preferred Sub-Alternative 2g**.

**Preferred Sub-Alternative 2g** would limit participation in the black sea bass pot sector to individuals with active South Atlantic Unlimited Snapper Grouper Permits who had average annual landings of 2,500 lbs ww of black sea bass in pots between January 1, 1999 and December 31, 2010. Based on data from January 1999, when the 2-for-1 limited entry system was enacted until December 31, 2010, 31 vessels would meet this criterion (**Table 4-6**). Currently, 50 to 60 individuals fish for black sea bass with pots each year; therefore, **Preferred Sub-Alternative 2g** would reduce the number of fishery participants who currently fish for black sea bass using pot gear by half. The average catch per year for the 31 South Atlantic Unlimited Snapper Grouper Permits that would qualify for endorsements under **Preferred Sub-Alternative 2g** is 361,788 lbs gw (426,909 lbs ww) (**Table 4-9**). It is expected that by reducing the number of entities able to fish with black sea bass pots to 31, proposing the limit on the number of pots allowed to be used to 35, proposing a commercial trip limit of 1,000 lbs gw (1,180 lbs ww), the commercial quota should be met later in the fishing season (i.e., August as opposed to July).

**Table 4-9.** Average catch per year, for years with positive landings, for active permits during 1999-2010, which also had landings during 2008, 2009, or 2010, and the number of permits that would not qualify that had landings every year from 1999 to 2010.

| Vessels with Highest Landings | Ave. Landings per Year (ww) | Ave. Landings per Year (gw) | Number of Vessels that Would Not qualify for an Endorsement but Had Landings Every Year from 1999-2010 |
|---|---|---|---|
| Top 52 | 510,290 | 432,449 | 0 |
| Top 44 | 484,125 | 410,275 | 0 |
| Top 38 | 460,934 | 390,622 | 0 |
| Top 31 | 426,909 | 361,788 | 1 |
| Top 24 | 369,106 | 312,802 | 1 |
| Top 20 | 343,419 | 291,033 | 2 |
| Top 12 | 279,651 | 236,992 | 6 |

Using the average of landings over the 12 year time span allows years with no landings or exceptionally low landings to influence the average resulting in lower numbers of fishery participants that would meet the landings criteria under each of the sub-alternatives. The South Atlantic Council also considered using total pounds landed during the same 12 year time period for the eligibility criteria (**Appendix A**); however, total landings results in consistently higher numbers of individuals that would qualify for an endorsement that would be issued.

As stated previously, this action does not increase the overall level of allowable harvest, but rather modifies fishing behavior in such a way as to slow the rate of harvest in order for fishermen to be able to fish for a longer period time during the fishing season. Biologically, establishing an endorsement program in addition to limiting the number of black sea bass pot

tags that each endorsement holder may receive and implementing a 1,000 lb gw (1,180 lbs ww) trip limit, is not likely to negatively impact target or non-target species. For the black sea bass stock, issuance of a controlled number of black sea bass pot endorsements alone could be considered a biologically neutral action with no adverse or beneficial effects on the species or its habitat.

**Alternative 3** was designed to ensure the endorsement program would not discriminate between residents of different states by allowing South Atlantic Unlimited Snapper Grouper Permit holders with qualifying landings histories in each South Atlantic State to participate. A resident of a state can be defined in several ways: by the mailing address associated with the permit; by the home port associated with the permit; or by where fish are landed. For the purposes of this analysis the home port and mailing address are used to determine eligible permits for each state under **Alternative 3**. Location where fish are landed was not used since permits can be transferred between individuals from different states. Examination of the number of permits by state for qualifying permits was determined to be the same for mailing address and home port. As illustrated in **Table 4-7**, under **Preferred Alternative 2g** all states that would have qualifying holders of South Atlantic Unlimited Snapper Grouper Permits would have the same number of qualifying permit holders under both **Alternative 3** sub-alternatives. Therefore, if the South Atlantic Council maintains its choice of **Preferred Alternative 2g** for this action, choosing a sub-alternative under **Alternative 3** is not necessary. Only if the South Atlantic Council were to choose **Alternative 2e** would it be necessary to also select an **Alternative 3** sub-alternative to ensure that at least two permit holders in Florida would be included in the endorsement program based on the **Alternative 3** qualifying criteria. Georgia has no qualifying South Atlantic Unlimited Snapper Grouper Permits holders regardless of the qualifying criteria chosen under either **Alternative 2** or **Alternative 3**.

Because the commercial sector is managed with a sector ACL that if exceeded, would trigger corrective management action, biological impacts on the black sea bass stock are expected to be negligible under **Alternative 3**. Alternately, if the establishment of an endorsement program significantly extends the fishing season, black sea bass pot fishing may occur during the spawning season. Increased fishing pressure during the spawning season could potentially disrupt spawning activity and deplete the spawning stock. It is unlikely; however, given the significant reduction in fishing effort that would result from the endorsement program, that black sea bass pot fishing during spawning season would jeopardize the rebuilding efforts for the stock.

The overall effect of this action on protected species is currently unknown. If reducing the number of participants in the fishery reduces the overall effort, then potential entanglements risks to sea turtles would likely also be reduced. However, if a reduction in participants causes more effort or more traps to be fished by the remaining participants, the potential for interactions with sea turtles could increase. Likewise, if reducing the number of participants extends the fishing season from the time of year it currently operates (i.e., outside large whale migration and calving seasons) into the time when large whales are migrating and calving, there may be an increased risk of large whale entanglements. Some of the actions proposed in this amendment (i.e., seasonal closures, trap retrieval requirements, etc.), if implemented, could potentially reduce the

risk of entanglement to large whales. However, it is currently unclear how great a reduction in entanglement risk will be achieved by these actions.

### 4.2.2 Economic Effects

In the 2008/2009 fishing year, the last year in which the fishery remained open almost an entire calendar year, 50 vessels fished for black sea bass with pot gear (**Table 4-8**. The 2010/2011 fishing season lasted approximately five months and 51 vessels participated in the fishery before the ACL was met. Under **Alternative 1 (No Action)**, over time, this number could be much greater due to the restricted landings and seasons allowed for other stocks. **Alternative 1 (No Action)** is expected to reduce profits for current participants and possibly reduce aggregate profitability of the fishery. The rationale for considering **Alternatives 2 (Sub-Alternatives 2a-2g)** was to limit participation to some level lower than would occur under **Alternative 1 (No Action)**. However, since the level of participation under **Alternative 1 (No Action)**, while expected to increase, is unknown, the difference in profitability between the alternatives is also largely unknown. Since the maximum number of participants under alternatives are capped at different levels, the opportunities for long-term profits are predictable and do differ among alternatives. As stated above, **Alternatives 2a-2g**, which would result in 12-12-52 vessels able to fish for black sea bass with pot gear, depending on the sub-alternative chosen. In general, an average minimum poundage requirement yields a lower number of participants for all sub-alternatives. **Sub-Alternatives 3a-3b** impacts are the same as **Sub-Alternatives 2b-2c**; no Georgia participants meet any of the requirements under **Alternatives 2** or **3**.

Distributional changes between alternatives deal with who benefits and who does not benefit as the result of the various alternatives, sub-alternatives, and options. In general, choosing an alternative that allows for a smaller number of vessels than currently fish for black sea bass to continue fishing, could increase average vessel profitability. Choosing an alternative that allows for a larger number of vessels than currently fish for black sea bass to fish for black sea bass, could decrease average vessel profitability. It should be noted, however, that a higher average vessel profitability associated with fewer participants would not necessarily ensure higherhigher industry profitability unless some form of rationalization of effort among the remaining participants is adopted.

### 4.2.3 Social Effects

Although this proposed action would not limit total black sea bass harvest, restricting participation may affect the total amount of black sea bass harvested as well as change product flow through communities and dealers. If the harvesters with traditionally higher landings receive tags and endorsements, as may be expected, total black sea bass harvest and the landing patterns through communities where most black sea bass is landed should not be affected. It is possible; however, that smaller harvests of black sea bass by some fishermen make up a larger portion of total harvests by these fishermen or sales activity in some communities by some dealers. As a result, while a limit on tag and endorsement distribution should preserve and possibly increase the social benefits for the more active producers and dealers, and associated communities, absent fishermen who receive tags and endorsements, landing black sea bass in

multiple ports and selling to multiple dealers in the same city, reduced social and economic benefits may be experienced by some communities and dealers in addition to the losses experienced by fishermen who do not qualify for tags and endorsements.

**Alternative 1 (No Action)** would not make any changes to the current participation level in the black sea bass segment of the snapper grouper fishery. As a result, all current fishing participants would be allowed to continue and no changes in status quo social benefits would be expected. However, increased target effort by fishermen in response to increased restrictions on other species could create excessive pressure on the black sea bass resource as well as displace traditional harvesters. While ACLs and AMs should be effective in protecting the biological health of the resource, from the perspective that traditional fishing participation and patterns results in greater social benefits, changes in harvest participation and patterns away from these traditional users, businesses, and communities would be expected to result in lower social benefits than protection and preservation of the more traditional participation and harvest patterns.

The following discussion first describes the expected differences between the sub-alternatives under **Alternative 2** and without consideration of the options under each alternative that establish alternative qualification based on amount of harvests (500-10,000 lbs; **Sub-Alternatives 2a-2g**).

**Alternative 2** would establish an endorsement to harvest black sea bass with pots, and would be expected to help preserve the social and economic benefits that accrue to harvests by traditional participants. Some of the fishing effort by new entrants may be due to speculation (exploring fishing success for a new species), while some new effort may be a response to reduced harvests or harvest opportunities for other species in an attempt to recover benefits lost in other fisheries (mitigation effort). While **Alternative 2** would result in a reduction in social and economic benefits to these fishermen, the elimination of mitigation effort may carry a greater social and economic weight due to its cumulative implications; these fishermen have experienced reduced harvest opportunities for other species and would be prevented from mitigating these losses by harvesting alternative species. Preservation or protection of harvest rights by “more” historic participants is presumed however, to result in increased social and economic benefits, though no quantitative dependence criteria are factored into the presumption.

**Sub-Alternatives 2a-2g** attempt to address the issue of dependency on black sea bass and consistent participation. The higher the minimum poundage qualification threshold, the fewer the number of tag and endorsement qualifiers. As a result, because the minimum poundage thresholds increase through the variations, the number of qualifiers would be expected to progressively decrease within each alternative “group”. It is possible; however, that the same number of qualifiers, though not the same individual vessels, could qualify under different minimum poundage thresholds across different alternatives.

North Carolina is the dominant state with the largest commercial black sea bass landings and most permit holders. **Figure 4-1** shows the number of permit holders in each county that are expected to qualify under each sub-alternative compared to the number of permits with landings since 1999 (gray bar), and the number of permits with landings in 2008-2010 (red bar). The

number of permits estimated to qualify under **Preferred Sub-Alternative 2g** is shown with a yellow bar for each county. Carteret County and Onslow County have the highest numbers of permits with long-term (gray bar) and recent (red bar) landings. Relative to other counties, more Onslow County permit holders are expected to qualify for an endorsement under **Sub-Alternatives 2a-2c** and **Preferred Sub-Alternative 2g**, but when the landings requirements are 3,500 lbs (**Sub-Alternative 2f)** or higher (**Sub-Alternatives 2d** and **2e)**, the number drops to four or less qualifying permits. In Carteret County, the number of qualifying permits drops as the landings requirement increases, and even with **Preferred Sub-Alternative 2g**, only five permits would be expected to receive endorsements. Pender, New Hanover and Brunswick Counties have fewer permits with recent black sea bass landings than Carteret County or Onslow County with only 1-3 permits qualifying for endorsements under **Sub-Alternatives 2a-2g (Preferred).** Overall, the lower the minimum average pounds required under the sub-alternatives, the higher the number of permits that qualify.

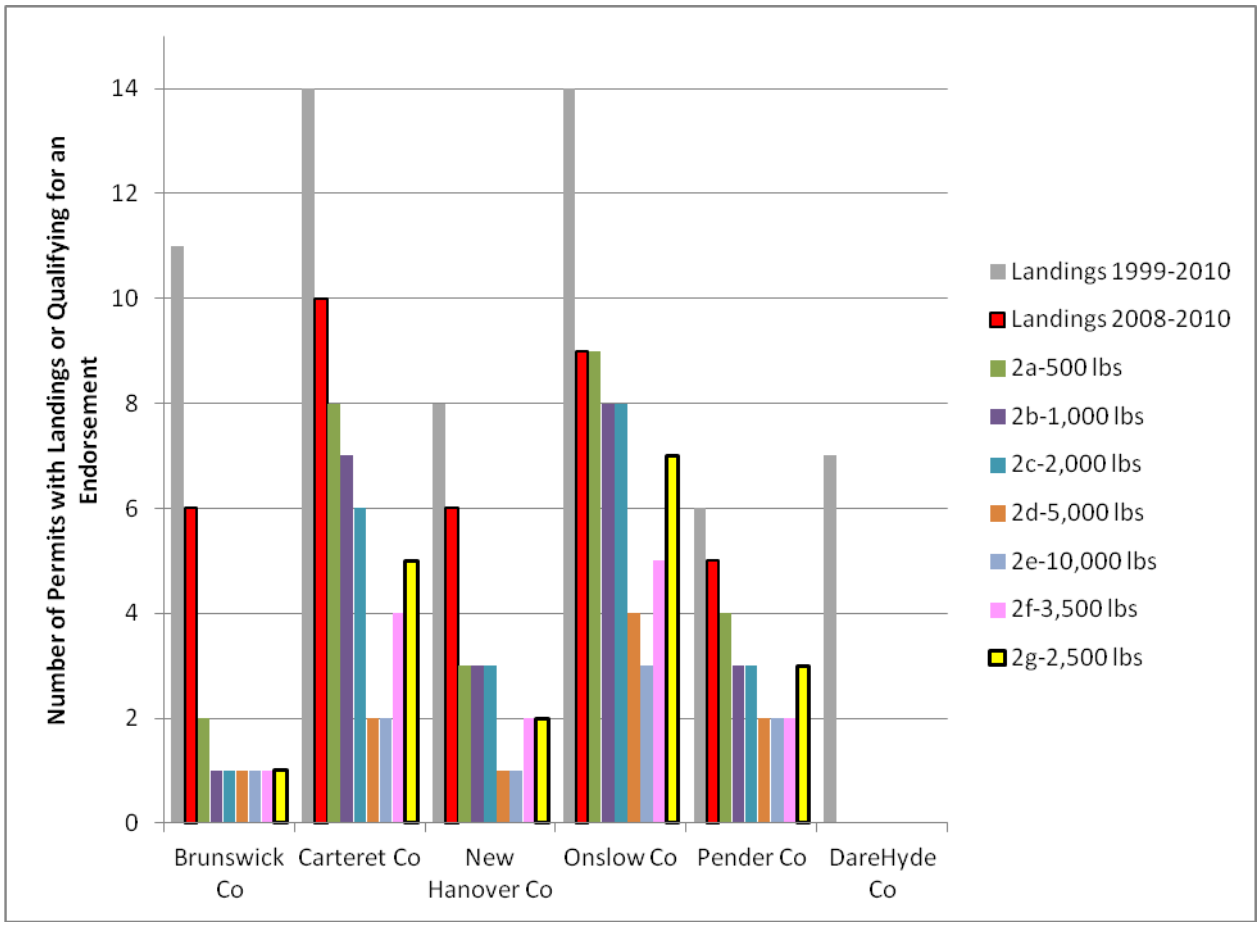



**Figure 4-1**. Number of permits with black sea bass landings and estimated number of permits in North Carolina counties that qualify for an endorsement. Note: this information is based on home port recorded for the vessel associated with the permit. Weights are in ww.

South Carolina has the second highest black sea bass pot landings. **Figure 4-2** shows the number of permit holders in each community that may qualify under each sub-alternative

compared to the number of permits with landings since 1999 (gray bar), and the number of permits with landings in 2008-2010 (red bar). The number of permits estimated to qualify under **Preferred Sub-Alternative 2g** is shown with a yellow bar for each county. Charleston County fishermen are not expected to qualify under **Sub-Alternatives 2d-2g (Preferred)**, and Murrell's Inlet may not receive endorsements under **Sub-Alternatives 2c-2g (Preferred)**. Georgetown and Little River would receive endorsements for the most eligible permits, but it is expected that three or four permits, respectively, would qualify in either community under **Preferred Sub-Alternative 2g**.

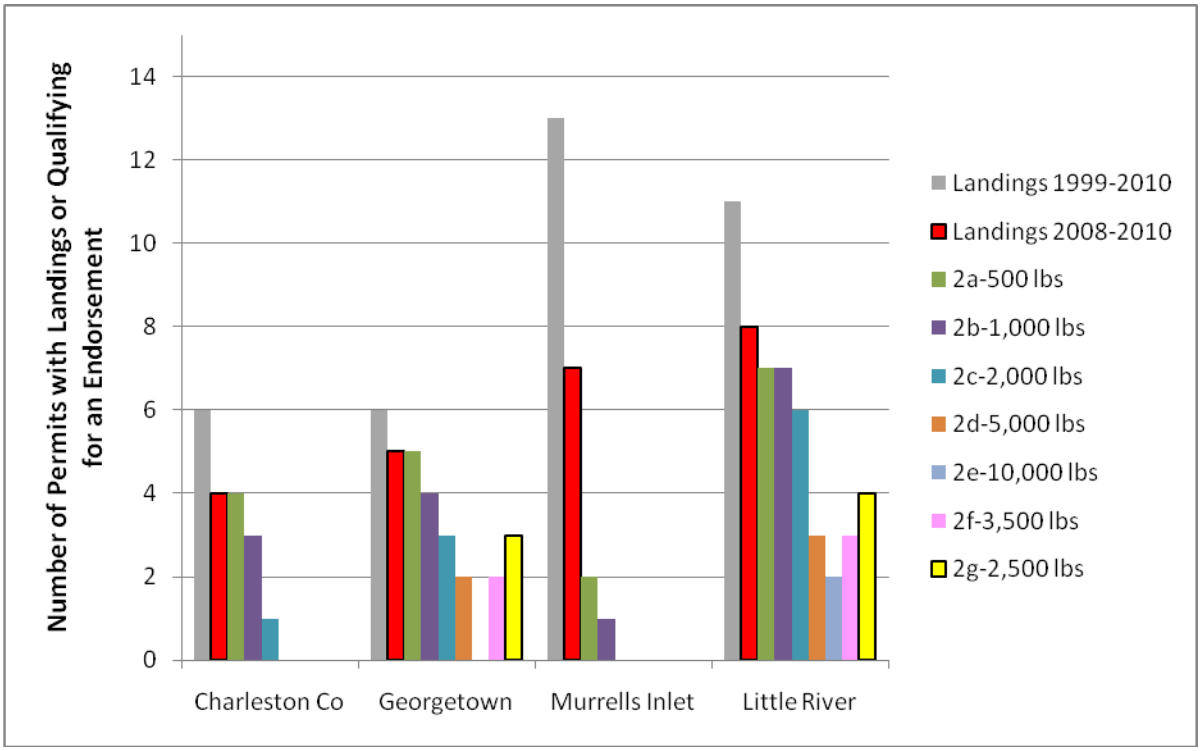



**Figure 4-2**. Number of permits with black sea bass landings and estimated number of permits in South Carolina communities that qualify for an endorsement. Note: this information is based on home port recorded for the vessel associated with the permit. Weights are in ww.

Florida has low landings compared to North Carolina and South Carolina, but there has been an increase in black sea bass landings for the state. **Figure 4-3** displays community-level analysis for Florida counties similar to **Figures 4-1** and **4-2**, with the yellow bar indicating **Preferred Sub-Alternative 2g**. Miami and Monroe County have the highest percentage of eligible permits that would qualify under most sub-alternatives, and for **Sub-Alternatives 2c-2f** and **Preferred Sub-Alternative 2g** there would be the same proportion (4 permit holders) that wouldl qualify for an endorsement. Volusia County, which has the highest number of eligible permit holders (permits with landings in 2008-2010) for Florida, would have a very small proportion of eligible permits qualify under **Sub-Alternatives 2a-2c** and **2g (Preferred)**, and none would receive an endorsement under **Sub-Alternatives 2d-2f**.

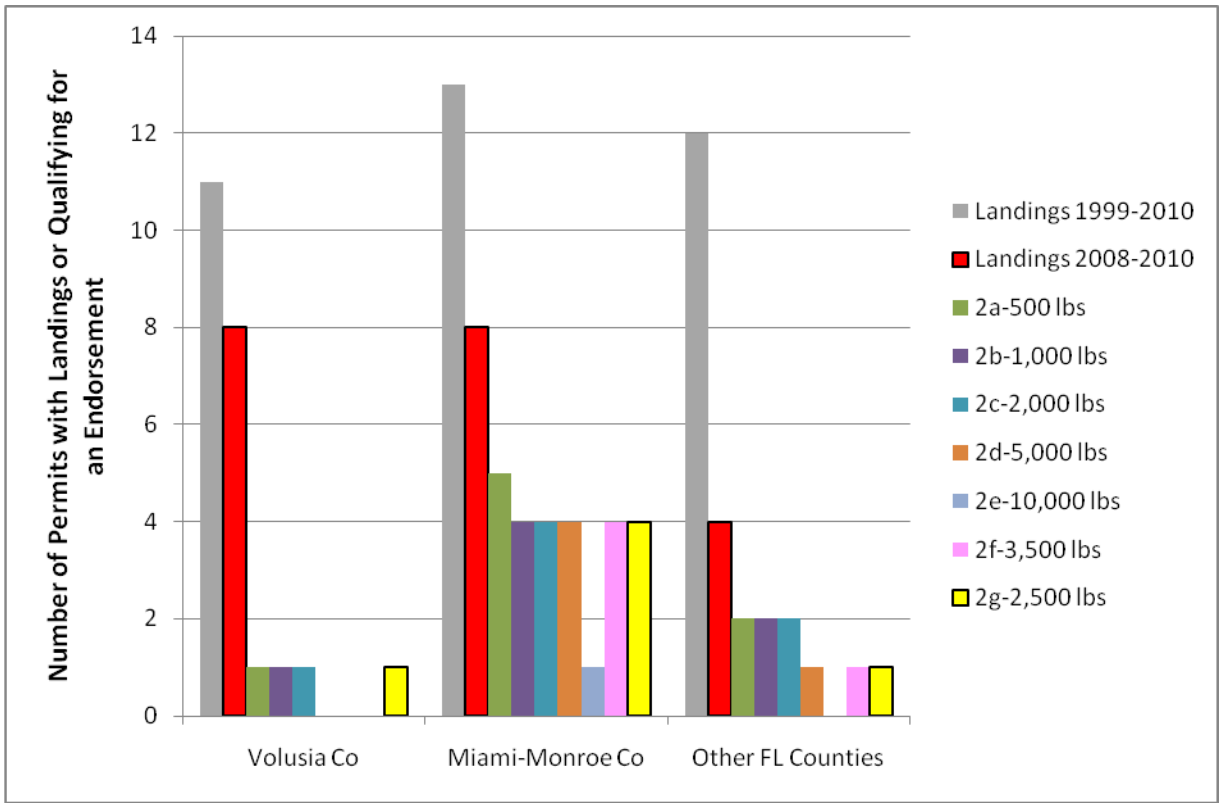



**Figure 4-3**. Number of permits with black sea bass landings and estimated number of permits in Florida counties that qualify for an endorsement. Note: this information is based on home port recorded for the vessel associated with the permit. Weights are in ww.

Georgia is not expected to receive an endorsement under any sub-alternative.

Under **Alternative 3**, each state would receive at least two endorsements, if the requirements of **Sub-Alternative 3a** or **3b** were met. **Table 4-10** shows the number of permits in each state that qualifies under **Sub-Alternatives 2a-2g (Preferred)**. There are at least two permits qualifying in each state under each sub-alternative except for Florida under **Alternative 2e**. Additionally, Georgia does not qualify for an endorsement under any sub-alternative, nor do Georgia permit holders meet the criteria under **Sub-Alternatives 3a** or **3b.**

**Table 4-10**. Number of permits qualifying for an endorsement under each sub-alternative in **Alternative 2.**

| | **2a** | **2b** | **2c** | **2d** | **2e** | **2f** | **Preferred 2g** |
|---|---|---|---|---|---|---|---|
| **North Carolina** | 26 | 22 | 21 | 10 | 9 | 14 | 18 |
| **South Carolina** | 18 | 15 | 10 | 5 | 2 | 5 | 7 |
| **Florida** | 8 | 7 | 7 | 5 | 1 | 5 | 6 |

Regardless of the minimum poundage threshold adopted, the more flexible the method of harvest tabulation, the more vessels would be expected to qualify. As a result, a fisherman could have substantive landings several years ago (or in a single year), but subsequently ceased harvesting black sea bass with pot gear, and still qualify to receive tags and endorsements. This could lead to a fisherman who has ceased harvesting black sea bass with pot gear being allowed to resume participation when others who may have more recently recorded harvests are excluded. This situation may raise equity concerns, along with **Alternative 3**, because while fishermen in one state may qualify for an endorsement, fishermen in another state with the same or more landings may not receive an endorsement.

Additionally, if endorsements are transferable (Action 4), it is expected that endorsements will flow to individuals who place the most value on the privilege to harvest black sea bass with pots. In this way, the market will determine distribution of the endorsements regardless of initial allocation (Knapp 2011), and this may or may not result in a specific number of endorsements in each state. Therefore, the proposed allocation of endorsements under **Alternative 3** would likely not produce the intended social benefits.

### 4.2.4 Administrative Effects

**Alternative 1 (No Action)**, would result in the least administrative impact as it would not change the level of participation or the distribution of black sea bass pot tags and endorsements. **Sub-Alternatives 2a-2g** would limit participation in the black sea bass fishery to individuals with active federal snapper grouper commercial permits who caught black sea bass in pots between January 1, 1999, and December 31, 2010 with some minimum level of average annual landings between 500 and 10,000 lbs ww. The administrative impacts for this action would primarily be borne by the NOAA Fisheries Service Permits Office and the Sustainable Fisheries Division.

If approved, Sustainable Fisheries Division staff would identify the 31 qualifying South Atlantic Snapper Grouper Unlimited Snapper Grouper Permit holders that would receive an endorsement. The Permits Office would then notify each permit holder of their eligibility and issue the endorsement. The administrative time and cost burden associated with this action and **Preferred Sub-alternative 2g** is likely to be moderate. The difference between the administrative burdens associated with each alternative differs only in the number of endorsements needed to be issued under each sub-alternative. This difference is not expected to result in any large disparity between the administrative impacts of **Sub-Alternatives 2a-2g** and **Alternatives 3**. However, it is likely that the lower the number of endorsements issued the lower the administrative burden will be in the short-term for initial issuance, and in the long-term for future endorsement transfers.

*General characteristics of the black sea bass pot endorsement*

Black sea bass pot endorsements would be limited entry and independently transferable under the preferred transferability alternative under Action 4, though fishery participants would not be allowed to fish for black sea bass with pot gear without also having a valid (not expired) South

Atlantic South Atlantic Unlimited Snapper Grouper Permit. In other words, the black sea bass pot endorsement must be associated with a valid South Atlantic South Atlantic Unlimited Snapper Grouper Permit in order for it to be effective. Each black sea bass pot endorsement would be assigned a unique number and endorsements would be issued with an expiration date to coincide with the expiration date of the South Atlantic South Atlantic Unlimited Snapper Grouper Permit issued to the same vessel. The black sea bass pot endorsements would be renewed automatically with the associated South Atlantic South Atlantic Unlimited Snapper Grouper Permit. The endorsement must be valid in order to fish legally with black sea bass pots.

*Initial issuance of black sea bass pot endorsements*
list of qualified vessels would be established as of the publication date of the final rule. . NOAA Fisheries Service Permits Office would then determine which of those vessels would still have valid South Atlantic South Atlantic Unlimited Snapper Grouper Permit at the start date of the fishing season, June 1, 2012. This may require prioritizing renewal or transfer requests for qualified South Atlantic Unlimited Snapper Grouper Permits in advance of the effective date of the final rule. Upon publication of the final rule in the *Federal Register*, all transfers of South Atlantic South Atlantic Unlimited Snapper Grouper Permits among qualifying vessels would be frozen for a period of time in order to establish a stable universe of qualified vessels and permits to which black sea bass pot endorsements would automatically be issued via United States Postal Service. The freeze on transfers for this group of vessels would not exceed a 45-day time period, until endorsements are issued to all qualified vessels. NOAA Fisheries Service Permits Office would automatically issue black sea bass pot endorsements to the qualified South Atlantic Unlimited Snapper Grouper Permit holders along with a letter of explanation prior to the endorsements becoming effective. South Atlantic Unlimited Snapper Grouper permit holders of qualified but expired permits would be issued a letter notify them of the need to renew their South Atlantic Unlimited Snapper Grouper Permit in order to receive the black sea bass pot endorsement. The Office of Sustainable Fisheries would conduct some form of outreach, possibly in the form of letters, to non-qualifying South Atlantic Unlimited Snapper Grouper Permit holders with black sea bass landings using pot gear to notify them of their ineligibility for the endorsement program. Instructions for the appeals process, outlined under Action 3 of this document, would be included in the non-eligibility outreach materials. Those individuals who hold South Atlantic Unlimited Snapper Grouper Permits that do not qualify for a black sea bass pot endorsement would also be notified that any black sea bass pot tags they have are no longer valid for use with their South Atlantic Unlimited Snapper Grouper Permit.

*Renewal details for black sea bass pot endorsements*

In order to renew a black sea bass pot endorsement, the vessel owner requesting such renewal must already possess or simultaneously obtain a valid South Atlantic Unlimited Snapper Grouper Permit. Black sea bass pot endorsements would be renewed automatically with their associated South Atlantic Unlimited Snapper Grouper Permit with matching expiration dates. If the vessel owner renews the South Atlantic Unlimited Snapper Grouper Permit at the same time they obtain a black sea bass pot endorsement, the endorsement will be issued with the same expiration date as the South Atlantic Unlimited Snapper Grouper Permit. An endorsement may not be renewed if the vessel does not have or will not simultaneously obtain a South Atlantic Unlimited Snapper Grouper Permit.

## 4.3 Action 3: Establishment of an Appeals Process for Fishermen Excluded From th Black Sea Bass Pot Endorsement Program

**Alternative 1 (No Action).** Do not specify provisions for an appeals process associated with the black sea bass endorsement program.

**Preferred Alternative 2.** A period of 90 days will be set aside to accept appeals to the black sea bass endorsement program starting on the effective date of the final rule. The Regional Administrator (RA) will review, evaluate, and render final decisions on appeals. Hardship arguments will not be considered. The RA will determine the outcome of appeals based on NMFS logbooks. If NMFS logbooks are not available, the Regional Administrator may use state landings records. Appellants must submit NMFS logbooks or state landings records to support their appeal.

**Alternative 3.** A period of 90 days will be set aside to accept appeals to the black sea bass endorsement program starting on the effective date of the final rule. The Regional Administrator will review, evaluate, and render final decisions on appeals. Hardship arguments will not be considered. A special board composed of state directors/designees will review, evaluate, and make individual recommendations to the RA on appeals. Hardship arguments will not be considered. The special board and the RA will determine the outcome of appeals based on NMFS logbooks. If NMFS logbooks are not available, the Regional Administrator may use state landings records. Appellants must submit NMFS logbooks or state landings records to support their appeal.

### 4.3.1 Biological Effects

Establishing an appeals process is largely an administrative action. Therefore, it is not anticipated to directly affect the physical, biological or ecological environments in a positive or negative manner. **Alternative 1 (No Action)** would indirectly benefit the biological environment because it would not allow any additional black sea bass pot effort in that portion of the snapper grouper fishery after the initial endorsements are distributed to eligible South Atlantic Unlimited Snapper Grouper Permit holders. By limiting the number of endorsements and thus the number of pots to be deployed, risk of bycatch and protected species interactions decreases. There is likely to be no difference between **Preferred Alternative 2** and **Alternative 3** in the level of potential biological impact that could occur as a result of their implementation. In theory, the RA would reach the same conclusion regardless of how the appeals process is executed because both alternatives do not allow for consideration of hardship claims and the decision to issue an endorsement would be based on logbook data and landings records.

Indirect effects on the biological environment may be caused if additional South Atlantic Unlimited Snapper Grouper Permit holders are issued black sea bass pot endorsements as a result of implementing an appeals process. Though black sea bass pot effort could potentially increase above the expected number of qualifying vessels (31) due to issuance of endorsements through appeals, those impacts on the biological environment including target and non-target species, and critical habitat are not likely to be significant. Furthermore, overall harvest of black sea bass

would be constrained by the sector ACLs and AMs contained in this amendment, if approved and implemented through rulemaking. Therefore, regardless of how many endorsements are issued through appeals, the only discernable biological impact could be reaching the commercial quota earlier in the fishing season, which could help protect spawning individuals, and protected species. The more endorsements that are issued through the appeals process the earlier the commercial season is likely to close.

### 4.3.2 Economic Effects

The adoption of **Alternative 1 (No Action)** would not include establishment of an appeals process for the endorsement program. **Preferred Alternative 2** serves to provide a mechanism to appeal exclusion from initial inclusion in the endorsement program.

Economic impacts of an appeals program are largely determined by the number of appeals received. Fishermen excluded from the endorsement program who decide to appeal may incur costs associated with trying to prove their case. However, access to NMFS logbook landings or state trip tickets should be at little or no cost to a fisherman. But some complications may arise in the case of transferred permits for then the new permit owner may not have access to NMFS logbook landings for landings contributed by the previous owner. Access to state trip tickets in this situation would depend on the respective state's rule on access to trip ticket information.

### 4.3.3 Social Effects

Because a black sea bass endorsement system is assumed appropriate and would be expected to result in increased social benefits relative to the absence of an endorsement system, social benefits would be expected to be maximized if all appropriate fishermen, i.e., those fishermen whose receipt of an endorsement will best achieve the objectives of the program, receive an endorsement. The exclusion of any appropriate fishermen would be expected to result in decreased social benefits. The absence of an appeals process, as would occur under **Alternative 1 (No Action)**, would be expected to increase the likelihood that one or more appropriate qualifiers would not receive an endorsement, resulting in less social benefits than would occur if an appeals process is established. Because **Preferred Alternative 2** and **Alternative 3** would establish an appeals process, both alternatives would be expected to result in greater social benefits than **Alternative 1 (No Action)**. It is assumed that the process will adequately identify appropriate qualifiers and not simply result in an increase in fishermen with endorsements. The issuance of endorsements to non-qualified fishermen would be expected to reduce the benefits of the endorsement system.

### 4.3.4 Administrative Effects

**Alternative 1 (No Action)** could cause administrative difficulties by failing to provide a formal process to use in resolving the complaints of those who challenge eligibility or initial allocation decisions. The appeals processes, described in **Preferred Alternative 2** would be developed by NOAA Fisheries Service and would be similar to appeals processes developed for other limited

access privilege programs. It is expected that any appeals process would be somewhat burdensome to administer. Directions on how potential appellants should peruse requesting an appeal consideration by the RA would need to be disclosed to fishery participants via fishery bulletin on in a letter issued to those fishery participants who had previously landed black sea bass but did not qualify for an endorsement, which would be distributed by the Office of Sustainable Fisheries. When an application for an appeal is received by the agency, a certain amount of staff time, dependent upon the nature of the appeal, would be required to review logbook records and verify the eligibility of applicant. Additional time would be required by the RA for making the final determination as to whether or not each appeal applicant should or should not be issued a black sea bass endorsement. Overall, a moderate short-term impact may be expected as a result of this action depending upon the number of appeals received by NOAA Fisheries Service. Because the appeals process is limited to 90-days, any administrative burden associated with the review of appeals applications would be limited to a finite amount of time that is not likely to extend far beyond the 90-day time period.

## 4.4 Action 4: Allow for Transferability of Black Sea Bass Pot Endorsements

**Alternative 1 (No Action).** Black sea bass pot endorsements (and tags) would not be allowed to be transferred if such a system were implemented.

**Preferred Alternative 2.** A valid black sea bass pot endorsement can be transferred between any two individuals or entities that hold a valid or simultaneously obtains a valid, meaning not expired, South Atlantic Unlimited Snapper Grouper Permit. The endorsement and associated landings history of black sea bass can be transferred regardless of whether or not the South Atlantic Unlimited Snapper Grouper Permit is transferred.

**Preferred Sub-Alternative 2a.** Transferability allowed upon program implementation.
**Sub-Alternative 2b.** Transferability not allowed during the first 2 years of the program.
**Sub-Alternative 2c.** Transferability not allowed during the first 3 years of the program.
**Sub-Alternative 2d.** Transferability not allowed during the first 5 years of the program.

**Alternative 3.** A valid black sea bass pot endorsement can be transferred between any two individuals or entities that hold a valid or simultaneously obtains a valid, meaning not expired, South Atlantic Unlimited Snapper Grouper Permit. The endorsement and associated landings history of black sea bass will be transferred only if the South Atlantic Unlimited Snapper Grouper Permit is transferred.

**Sub-Alternative 3a.** Transferability allowed upon program implementation.
**Sub-Alternative 3b.** Transferability not allowed during the first 2 years of the program.
**Sub-Alternative 3c.** Transferability not allowed during the first 3 years of the program.
**Sub-Alternative 3d.** Transferability not allowed during the first 5 years of the program.

### 4.4.1 Biological Effects

**Alternative 1 (No Action)** would not allow for transferability of black sea bass endorsements and could result in decreased participation in the black sea bass commercial sector over time as fishermen with endorsements exit the fishery permanently. Decreased participation could result in a corresponding decrease in effort and landings of black sea bass, and could extend fishing opportunities further into the fishing season. However, it is also possible that effort would not decrease with decreased participation and the same amount of black sea bass would be caught, albeit with fewer participants. Therefore, among **Alternatives 1-3**, **Alternative 1 (No Action)** could have the greatest biological benefit for the black sea bass stock if it results in decreased landings of black sea bass. However, actions have been taken to end overfishing of black sea bass in Amendments 13C and 17B to the Snapper Grouper FMP. A new benchmark assessment (SEDAR 25), has been completed and determined the stock is no longer overfished, and is rebuilding but is not yet fully rebuilt. Since this action is administrative and does not establish immediate harvest objectives, it will not directly affect the protected species.

**Preferred Alternative 2** and **Alternative 3**, which would allow transferability of a black sea bass endorsement, would not be expected to negatively impact the black sea bass stock. The biological effects of **Preferred Alternative 2** and **Alternative 3**would be very similar as

landings would be constrained by a quota. Therefore, the effects of **Preferred Alternative 2** and **Alternative 3** may be more economic and administrative than biological.

**Preferred Alternative 2** would allow transfer of valid black sea bass endorsements among individuals who hold South Atlantic Snapper Grouper South Atlantic Unlimited Snapper Grouper Permits independent of each other. For example, the endorsement could be transferred to another person holding a valid (not expired) South Atlantic Unlimited Snapper Grouper Permit without also transferring the permit, and vice versa. **Alternative 3** would allow transfer of a valid endorsement *only* if the South Atlantic Snapper Grouper South Atlantic Unlimited Snapper Grouper Permit is *also* being transferred, and both must be transferred to the *same* entity. The permit could not be transferred to one entity while the endorsement is transferred to another. Under **Alternative 3**, the permit and the endorsement would be linked indefinitely.

Under both alternatives, it is the South Atlantic Council's intent that all landings of black sea bass with pot gear be associated with the South Atlantic Unlimited Snapper Grouper Permit, rather than the endorsement. The subject endorsement would simply entitle its holder to harvest black sea bass using black sea bass pot gear. Those without the endorsement would not be allowed to do so. Any landings of black sea bass using pot gear by individuals who hold an endorsement would be added to the landings of the South Atlantic Snapper Grouper Permit to which the endorsement is linked. If the endorsement is transferred the landings of black sea bass that were made using the endorsement would not transfer with the endorsement. The endorsement would have no associated landings value.

**Sub-Alternatives (Preferred) 2a-2d** and **3a-3d** would place a time constraint on when transfer of endorsements could begin. **Sub-Alternatives (Preferred) 2a** and **3a** would allow for transferability of permits to take place immediately upon implementation and this is expected to maximize economic benefits but have the least amount of biological benefit for black sea bass since endorsements would most likely be transferred to entities planning to fish them as opposed to the endorsement possibly not being fished for two or more years after implementation. **Sub-Alternatives 2d** and **3d** could have the greatest positive biological effect because it would involve the longest time period before an endorsement could be transferred, and may result in several endorsements not being used until the transfer time limit has been reached. It is possible an individual might not be able to go fishing in a particular year and since fishermen would not be able to transfer an endorsement, there could be a resulting benefit to the resource. However, as stated under **Alternative 1 (No Action)**, effort might not show a corresponding decrease with the number of participants in the fishery. Allowing black sea bass pot endorsements to be transferred under conditions outlined for each of the action alternatives would not be expected to increase or decrease black sea bass pot gear interactions with protected species.

### 4.4.2 Economic Effects

**Alternative 1 (No Action)** would not allow for transferability of black sea bass endorsements and would therefore result in decreased participation in the black sea bass fishery over time as fishermen with endorsements exit the fishery permanently. While they will be able to sell their federal commercial snapper grouper permit, they would not be able to sell their black sea bass

endorsement which could result in difficultly selling their permit, vessel, and gear since permits are often sold with the vessel and gear.

**Preferred Alternative 2** and **Alternative 3** would provide the opportunity for new entrants without an increase in the overall number of participants. **Preferred Alternative 2** would allow transfer of black sea bass endorsements among individuals who hold federal commercial snapper grouper permits. **Preferred Sub-Alternatives 2a-2d** under **Preferred Alternative 2** would put a time constraint on when transfer of endorsements could begin. The rationale behind delaying transferability of catch privilege assets, like endorsements, is to allow people time to develop an understanding of the value of the endorsements before selling them. In general, the value of an asset under a catch share program increases over time as people come to understand the possibilities for improved management of the fishery and the impact that might have on the asset. That is, if catch shares appear to be resulting in better stock management or greater ex-vessel prices, quota share tends to increase. However, an endorsement program does not have the same characteristics as quota share and therefore a two year or more delay in transferability allowances might not be necessary. An endorsement program would decrease the race to fish that is expected to occur under **Alternative 1 (No Action)**. Therefore, there could be an increase in ex-vessel price (and therefore the value of an endorsement) if loss of quality has been a result of the race to fish occurring in recent years and ex-vessel prices have declined. Increases in the precision of stock management are possible due to a cap on the number of participants but not to the same degree as that expected under a catch share program which is often accompanied by increases in monitoring and enforcement that enable better stock management.

Conceptually, the degree of transfer flexibility influences the aggregate profitability of the fishery and the average individual profitability. The greater the degree of transferability allowed, the greater the value of the permit is expected. Also, the greater the degree of transferability allowed, the greater the profitability of the individual who owns the permit because they have the ability to sell their permit when they need to switch to more profitable fisheries or when they are unable to fish. However, lack of participation could benefit the fishermen remaining in the fishery. Considering the above, **Preferred Alternative 2** and **Alternative 3** would enhance profitability for fishermen who qualify for black sea bass endorsements. However, **Sub-Preferred Alternatives 2a-2d** and **Sub-Alternatives 3a-3d** will likely influence the degree of enhancement to profitability possible. **Preferred Sub-Alternative 2a** and **Sub-Alternative 3a** would allow for transferability of permits to take place immediately upon implementation and this is expected to maximize economic benefits. **Sub-Alternatives 2d** and **3d** would allow for the longest delay in transferability allowances. While this might allow for people to best assess the value of the gear endorsements and make more accurate permit market transactions, it would delay transfers that could benefit fishermen. **Sub-Alternatives 2b, 2c, 3b,** and **3c** would fall in between **Sub-Alternatives 2a (Preferred)/3a** and **2d/3d** with regard to expected economic benefits.

The major economic impact differences between **Preferred Alternative 2** and **Alternative 3** lie in the decision whether to require transfer of the South Atlantic Unlimited Snapper Grouper Permit and landings history for black sea bass along with the black sea bass pot endorsement. **Preferred Alternative 2** is the more lenient of the two alternatives. It would not require a transfer of the South Atlantic Unlimited Snapper Grouper Permit. Theoretically, a fisherman

under the **Preferred Alternative 2** scenarios could continue to fish for species other than black sea bass, in the snapper grouper complex should the black sea bass pot endorsement be transferred. Under **Alternative 3**, the South Atlantic Unlimited Snapper Grouper Permit associated with the black sea bass pot endorsement must be transferred at the same time. **Alternative 3** limits the flexibility of fishermen to continue fishing should they decide to transfer the black sea bass pot endorsement. Such an action could cause some fishermen to be less willing to transfer the endorsement as such transfers may primarily occur as they leave commercial fishing altogether. However, as long as the black sea bass fishery remains lucrative, the combination of the permit and the endorsement transferred together might bring a higher price on the open market than either would separately. Conversely, it would cost a new entrant into the fishery even more to buy into the fishery. **Alternative 3** would prevent a current South Atlantic Unlimited Snapper Grouper Permit holder from augmenting his current permit with a black sea bass pot endorsement because of the requirement to purchase of another South Atlantic Unlimited Snapper Grouper Permit along with the endorsement.

If participation remains steady over the years of the program during which transferability is not allowed under some sub-alternatives in **Preferred Alternative 2** and **Alternative 3**, aggregate profitability of the fishery could remain steady. If, however, landings drop due to people leaving the fishery and not transferring the endorsement due to restrictions, aggregate profitability would decline. However, at the same time, individual average profitability could increase because there would be less people sharing the same amount of landings as under **Alternative 1 (No Action)**.

### 4.4.3 Social Effects

The trade-off of social benefits associated with transferability options relate to considerations of whether social benefits would be enhanced if participation in this component of the snapper grouper fishery can only decrease over time (**Alternative 1 (No Action)**) and how delay in allowing transfer may affect the social benefit stream (**Preferred Sub-Alternatives 2a -2d** and **3a-3d)**. An underlying assumption for the proposed endorsement requirement to harvest commercial quantities of black sea bass and the proposed change in the fishing year is that social benefits will increase relative to the current management system. None of the endorsement qualification alternatives encompass eliminating all participation and harvest. As such, the implied conclusion is that some level of non-zero participation (and harvest) would maximize social and economic benefits (as long as the resource is not overfished). Although it would take time for such to occur, an inability to transfer black sea bass endorsements, as would be the case under **Alternative 1 (No Action)**, would mean that, absent subsequent action, the number of entities harvesting black sea bass would decrease over time as fishermen retire or cease harvesting black sea bass for other reasons, eventually ending in no participants or legal commercial harvest using pot gear. This would be inconsistent with the expectation that active participation, at some unspecified level, and harvest would be expected to result in greater social and economic benefits. As a result, **Alternative 1 (No Action)** would be expected to result in reduced social benefits relative to the other alternatives. In all likelihood, however, the adoption of **Alternative 1 (No Action)** would result in subsequent future management action to allow new participation in this segment of the snapper grouper fishery.

Generally, social benefits that are tied to economic outcomes would be maximized the fewer the constraints placed on the transfer of an asset. Unencumbered transfer allows the largest pool of recipients, which would be expected to result in the payment of the highest price for the asset. As previously stated, **Preferred Alternative 2** and **Alternative 3** require the recipient hold a valid commercial South Atlantic Unlimited Snapper grouper permit. This restriction would be expected to reduce social benefits by an indeterminate amount relative to placing no restrictions on transfer by not allowing anyone to purchase an endorsement. Although allowing an entity that could not use (harvest fish with) the endorsement may seem illogical because, absent fixed associated harvest rights (catch or quota shares), removing an endorsement from active use would not affect the amount of available harvest, an entity that did not possess a valid commercial snapper grouper permit would only acquire an endorsement if positive benefits were expected to accrue. These benefits could be associated with the possibility of simply reducing effort or "taking" a boat off the water. Regardless of the nature of benefits, these benefits would be expected to be equal to or greater than the benefits of continuing to harvest black sea bass under the endorsement, otherwise the endorsement would be sold/transferred to someone who expected to harvest black sea bass with pot gear.

**Preferred Alternative 2** would not require a black sea bass endorsement be transferred with a snapper grouper permit, but **Alternative 3** ties the endorsement to the initial permit. As a result, the total number of participants (across both endorsement categories) would not be affected, because of the potential change in performance (distribution on harvests across vessels and gear sectors) and associated product flow through dealers and communities would not change.

Any ability to transfer endorsements may result in equity criticisms, similar to complaints associated with transferable catch share programs. Although the black sea bass endorsement would not contain an entitlement to a specific harvest quantity, it would bestow asset rights to the recipient because endorsement possession would enable harvest, and the recipient would possess a new marketable asset. The value of this asset (the endorsement) would represent a windfall profit for the endorsement recipient, in addition to any benefits from actual harvests, a circumstance that may seem inequitable to entities denied an endorsement upon their initial issuance. While transferability would allow those denied an endorsement, or others in the snapper grouper fishery who previously did not harvest black sea bass by pot gear, an opportunity to acquire an endorsement and harvest black sea bass, they could do so only if they purchased the endorsement, the value of which is unknown at this time. The market price would be expected to increase the lower the total number of endorsements and the higher the total value of harvests. The absence of specific harvest entitlements (catch shares) may keep transfer prices lower than they otherwise may be, even if the harvest history is also transferred, while speculation on the potential development of a catch share program may increase transfer prices (if the transfer includes the harvest history).

The magnitude of equity criticisms would be expected to increase with the value of the windfall and could increase with the immediacy of the windfall. Allowing someone to receive and immediately sell an endorsement could be considered more unfair than requiring they keep it, whether fished or not, for a period of time before transfer is allowed. Further, because the intent of the endorsement program is to return harvests to historic patterns, delayed transfer rights increases the likelihood that endorsement recipients actually use the endorsement (i.e., harvest

black sea bass) and help achieve the expected social and economic benefits of a return to historic harvest patterns. These considerations are relevant to examination of **Sub-Alternatives 2a (Preferred) - 2d** and **Sub-Alternatives 3a-3d**. The determination of which option is preferable hinges on a comparison of the benefits of maximum flexibility (**Sub-Alternative 2a (Preferred)** and **Sub-Alternative 3a**) with the benefits of "stability" (presumed to accrue to allowing this segment of the snapper grouper fishery to adjust to operation under the new endorsement system), as would occur under **Sub-Alternatives 2b-2d** and **3b-3d,** and how long of a period of stability is sufficient. As previously stated, generally, social and economic benefits are expected to be greater the broader the freedom to manage one's assets (freedom to sell the endorsement without time constraints), notwithstanding the previous discussion on equity concerns. This is particularly true as situations can arise where a decision to stop fishing is not discretionary, as may be the case should an adverse health situation or personal financial crisis arise. So, to the extent that reduced ability to transfer the endorsements results in reduced benefits, the longer the restriction applies, the greater the expected reduction in social benefits. To the extent that benefits are increased with stability, and in this case stability refers to who the participants are and not their number, the appropriate question is at what point do the benefits of allowing transfer exceed the benefits of stability.

### 4.4.4 Administrative Effects

Establishing an endorsement program (Action 2) will have some level of administrative burden on the agency related to developing and administering the program as well as providing information to the fishing community on the program. Adding transferability allowances to the endorsements (Action 4) will increase the administrative burden, requiring processing of transfer requests. The least administratively burdensome alternative would be **Alternative 1 (No action)** which would not allow endorsement transferability. **Alternatives 2** and **3** would allow some form of transferability between users. These alternatives are expected to have similar administrative impacts. **Preferred Alternative 2** would allow endorsements to be transferred *independent* of the South Atlantic Unlimited Snapper Grouper Permit with which they are associated, where **Alternative 3** would link the endorsement to the associated South Atlantic Unlimited Snapper Grouper Permit in such a way as to only allow the endorsement to be transferred if the South Atlantic Unlimited Snapper Grouper Permit is also being transferred. Under **Alternative 3**, the South Atlantic Unlimited Snapper Grouper Permit and the endorsement would need to be transferred to the same entity. In other words, the South Atlantic Unlimited Snapper Grouper Permit could not be transferred to one entity while the associated endorsement is transferred to another entity holding a valid South Atlantic Unlimited Snapper Grouper Permit.

It is difficult to anticipate the number of endorsement transfers that would occur under either **Alternative 2** or **Alternative 3**. Because **Alternative 3** would require the transfer of an South Atlantic Unlimited Snapper Grouper Permit in addition to the endorsement, some additional administrative burden may be associated with that alternative. **Sub-Alternatives 2b-2d** and **Sub-Alternatives 3b-3d** specify waiting periods before transferability will be allowed. **Preferred Sub-Alternative 2a** and **Sub-Alternative 3a** would allow for endorsement transferability immediately and could result in a moderate increase in administrative burden due to the fact that transfers may happen immediately after implementation rather than 2, 3, or 5 years after implementation. The addition of the waiting periods as described in **Sub-**

**Alternatives 2b-2d,** and **3b-3d** would not increase or decrease the administrative burden in the long term (beyond 5 years). **Sub-Alternatives 2b-2d** and **3b-3d** allow for a period of time in which transferability is not allowed, which may alleviate some of the administrative burden in the short term. However, once the waiting period is over, the administrative burden related to endorsement transfers would be same as under **Sub-Alternatives 2a** and **3a**.

*Details of black sea bass endorsement transfers*

Under **Preferred Alternative 2** and **Alternative 3**, the vessel owner must already possess or simultaneously obtain a valid (not expired) South Atlantic Unlimited Snapper Grouper Permit in order to get a black sea bass pot endorsement. Under **Preferred Alternative 2**, a black sea bass pot endorsement that is issued to a vessel that has a South Atlantic Unlimited Snapper Grouper Permit, and then transfers the South Atlantic Unlimited Snapper Grouper Permit without the endorsement will automatically be void, i.e., an endorsement held by a vessel with no South Atlantic Unlimited Snapper Grouper Permit is not valid. If a South Atlantic Snapper Grouper Permit is transferred away from a vessel also holding a black sea bass pot endorsement, and then a new South Atlantic Unlimited Snapper Grouper Permit is obtained, the new South Atlantic Unlimited Snapper Grouper Permit would get the expiration date of the black sea bass pot endorsement. A black sea bass pot endorsement issued to a vessel that already has an Unlimited South Atlantic Permit would be issued with an expiration date to match the South Atlantic Unlimited Snapper Grouper Permit. It is important to note that under **Preferred Alternative 2**, expired endorsements for vessels that do not have a valid South Atlantic Unlimited Snapper Grouper Permit are not allowed to be transferred to another vessel with a South Atlantic Unlimited Snapper Grouper Permit or be renewed; thus, those expired endorsements would be orphaned and unable to be fished.

## 4.5 Action 5: Limit Effort in the Black Sea Bass Pot Segment of the Snapper Grouper Fishery Each Permit Year

**Alternative 1 (No Action).** Do not annually limit the number of black sea bass pots deployed or pot tags issued to holders of snapper grouper commercial permits.

**Alternative 2.** Require that each black sea bass pot in the water or at sea on a vessel in the South Atlantic EEZ have an attached valid identification tag issued by NOAA Fisheries Service. Limit the black sea bass pot tags to *100* per vessel each permit year. NOAA Fisheries Service will issue new identification tags each permit year that will replace the tags from the previous permit year.

**Alternative 3.** Require that each black sea bass pot in the water or at sea on a vessel in the South Atlantic EEZ have an attached valid identification tag issued by NOAA Fisheries Service. Limit the black sea bass pot tags to *50* per vessel each permit year. NOAA Fisheries Service will issue new identification tags each permit year that will replace the tags from the previous permit year.

**Alternative 4.** Require that each black sea bass pot in the water or at sea on a vessel in the South Atlantic EEZ have an attached valid identification tag issued by NOAA Fisheries Service. Limit the black sea bass pot tags to *25* per vessel each permit year. NOAA Fisheries Service will issue new identification tags each permit year that will replace the tags from the previous permit year.

**Preferred Alternative 5.** Require that each black sea bass pot in the water or at sea on a vessel in the South Atlantic EEZ have an attached valid identification tag issued by NOAA Fisheries Service. Limit the black sea bass pot tags to *35* per vessel each permit year. NOAA Fisheries Service will issue new identification tags each permit year that will replace the tags from the previous fishing year. Endorsements will be automatically renewed at the same time the snapper grouper permit is renewed.

### 4.5.1 Biological Effects

The South Atlantic Council is concerned increased restrictions imposed through Amendments 13C, 16, 17A, and 17B to the Snapper Grouper FMP including a commercial quota for black sea bass, commercial quota for vermilion snapper, and spawning season closure for shallow water grouper species could increase the incentive to fish more black sea bass pots per trip. Currently, there is no limit on the number of tags issued to fishermen who target black sea bass or the number of pots that can be fished. The South Atlantic Council is further concerned about the possibility of fishermen leaving large numbers of pots fishing for multiple days due to vessel or weather problems, which could unnecessarily kill black sea bass. Fishing large numbers of pots also increases the chance that pots could be lost and “ghost fishing” could occur. Furthermore, increases in vertical lines especially during November - April, either as a result of no limit on pots fished or a fishing season extension, increases the chance of mortality or serious injury from entanglement of pot lines with right whales and other protected species.

Without a limitation on the annual number of pot tags distributed to a fisherman, any number of pots could be deployed. During 2003 to 2010, the average number of vessels requesting tags for pots was 139 and the average number of tags requested per vessel per year was 40 (**Table 4-11**). The number of vessels requesting tags increased in 2008 and again in 2010. Although some

fishermen requested as many as 200 tags per year, the number of vessels with recorded landings of black sea bass with pots was much less that the number of vessels requesting tags (**Table 4-12**).

**Alternative 1 (No Action)**, by not limiting the number of black sea bass pots deployed or pot tags issued to holders of federal commercial snapper grouper vessel permits, could result in adverse impacts to protected species. Under all alternatives, including **Alternative 1 (No Action)**, the restrictions mandated by the Atlantic Large Whale Take Reduction Plan (ALWTRP) final rule (72 FR 57104) would still apply to black sea bass fishermen in the South Atlantic. The ALWTRP is designed reduce the risk of serious injury to or mortality of large whales due to incidental entanglement in commercial fishing gear. ATWTRP regulations pertain to the universal regulations (no floating buoy lines, no wet storage of gear), gear marking requirements, sinking ground-lines, floatation, and buoy lines with a weak link, etc. The black sea bass pot fishery already adheres to all regulations stipulated in the ALWTRP. Currently, the goal of the Atlantic Large Whale Take Reduction Team is to update the ALWTRP to further reduce risk from co-occurrence of whales and vertical line (i.e., trap lines). For specifics of the ATWTRP regulations as they apply to the South Atlantic black sea bass fishery, see **Appendix D** or the whale take reduction website: http://www.nero.noaa.gov/whaletrp/

**Table 4-11.** Number of vessels requesting tags; mean, minimum, maximum, and median number of tags/vessel requested.

| Year | Number of Vessels Requesting tags | Mean # Tags Requested | Min # tags requested | Max # tags requested |
|---|---|---|---|---|
| 2003 | 133 | 36 | 4 | 200 |
| 2004 | 133 | 40 | 4 | 200 |
| 2005 | 132 | 36 | 4 | 200 |
| 2006 | 133 | 35 | 4 | 150 |
| 2007 | 134 | 39 | 5 | 200 |
| 2008 | 147 | 41 | 1 | 500 |
| 2009 | 141 | 45 | 2 | 500 |
| 2010 | 159 | 44 | 7 | 500 |
| Average | 139 | 40 | 4 | 306 |

Source: NMFS permits office.

**Table 4-12.** Number of vessels with landings of black sea bass with pots; number of vessels with landings of black sea bass who requested tags. Mean, minimum, maximum, median number of tags requested for vessels that fished pots; and mean, minimum, maximum number of pots fished for vessels that requested tags.

| Year | # of Vessels that fished pots | # of Vessels that fished pots with tags | Mean # tags requested | Min # tags requested | Max # tags requested | Median # of tags requested | Mean # pots fished | Min # pots fished | Max # Pots Fished |
|---|---|---|---|---|---|---|---|---|---|
| 2003 | 53 | 49 | 54 | 6 | 200 | 50 | 45 | 1 | 200 |
| 2004 | 59 | 52 | 56 | 6 | 200 | 50 | 43 | 2 | 160 |
| 2005 | 53 | 47 | 50 | 6 | 160 | 40 | 47 | 1 | 120 |
| 2006 | 53 | 46 | 49 | 4 | 150 | 49 | 47 | 1 | 176 |
| 2007 | 54 | 51 | 53 | 10 | 200 | 50 | 48 | 1 | 180 |
| 2008 | 50 | 49 | 54 | 6 | 200 | 50 | 35 | 1 | 150 |
| 2009 | 62 | 62 | 55 | 8 | 200 | 45 | 37 | 1 | 150 |
| 2010 | 51 | 50 | 51 | 7 | 200 | 40 | 62 | 1 | 302 |
| Average | 54 | 51 | 53 | 7 | 189 | 47 | 45 | 1 | 180 |

Source: NMFS permits office and NMFS logbook database 5/12/11.

The South Atlantic Council's preferred alternative under Action 2 of this document would issue black sea bass pot tags to 31 entities that qualify for the black sea bass endorsement (**Table 4-6**). No tags would be issued to an entity unless they hold a valid black sea bass pot endorsement. **Alternatives 2** and **3** are not likely to result in substantial biological benefit since the mean number of pots fished for the 31 individuals who would qualify under Action 2 ranged between 39 and 45 for the 2008-2010 fishing years (**Table 4-13**). Though the maximum number of pots fished per vessel in recent years well exceeds 100, the average number of pots fished per vessel rarely exceeds 50. Therefore, limiting the number of tags that each permit holder may obtain per season to 100 or 50 is likely to do little to reduce effort the pot sector of the fishery. Based on the number of mean pots fished in recent years (**Table 4-12**), **Alternatives 4** and **5 (Preferred Alternative 5)** would have beneficial impacts to the biological environment by reducing the number of pots fished per trip. **Alternatives 4** and **5 (Preferred Alternative 5)** could decrease the adverse impact of pots fishing for multiple days if a fisherman was unable to retrieve large numbers of pots due to inclement weather or vessel difficulties, reduce the number of lost pots and ghost fishing, and reduce the potential for entanglement of pot lines with protected species, particularly right whales.

**Table 4-13.** Number of endorsements that would qualify under different landings level from Action 2, number of tags requested during 2008-2010, mean number of pots fished, and median number of pots fished.

| Landings (ww) | # Endorsements | Avg # Tags Requested | | | Mean # Pots Fished | | | Median # Pots Fished | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 2008 | 2009 | 2010 | 2008 | 2009 | 2010 | 2008 | 2009 | 2010 |
| 500 lbs | 52 | 54 | 53 | 55 | 37 | 41 | 43 | 30 | 30 | 30 |
| 1,000 lbs | 44 | 57 | 59 | 60 | 35 | 40 | 43 | 24 | 25 | 29 |
| 2,000 lbs | 38 | 63 | 65 | 66 | 39 | 44 | 44 | 32 | 40 | 40 |
| (Preferred) 2,500 lbs | 31 | 69 | 72 | 72 | 39 | 45 | 45 | 32 | 40 | 40 |
| 3,000 lbs | 27 | 69 | 73 | 71 | 40 | 48 | 49 | 32 | 40 | 46 |
| 3,500 lbs | 24 | 72 | 73 | 69 | 40 | 48 | 49 | 32 | 40 | 48 |
| 5,000 lbs | 20 | 73 | 77 | 71 | 40 | 48 | 50 | 32 | 40 | 48 |
| 10,000 lbs | 12 | 80 | 86 | 74 | 47 | 57 | 58 | 40 | 50 | 48 |

Among **Alternatives 2 – 5 (Preferred)**, **Alternative 2** would have the least beneficial effects to the biological environment as it would allow fishermen to fish up to 100 pots each year. For the 31 permits that qualify for endorsements, only 9% of the trips during 2008-2010 fished more than 100 pots (**Table 4-14**). **Alternative 4** would have the greatest biological effect since it would allow fishermen to fish a maximum of 25 pots. Based on data from 2008-2010, 69% of the trips taken by those individuals who qualify for endorsements fished more than 25 pots. The biological benefit of **Alternative 3** would be greater than **Alternative 2** but less than **Alternatives 4** and **5 (Preferred)** as it would allow fishermen to fish up to 50 pots. Twenty-one percent of the trips by individuals who qualify for endorsements under Action 2 fished more than 50 pots during 2008-2010. **Preferred Alternative 5** would allow 35 tags to be issued to each endorsement holder and would reduce the number of bass sea bass pot fished by 52% for those individuals who qualify for endorsements. Therefore, **Preferred Alternative 5** would result in beneficial biological effects less than **Alternative 4** but greater than **Alternative 3**.

**Alternative 1 (No Action)** would perpetuate the existing level of risk for interactions between ESA-listed species and the fishery. **Alternatives 2 – 5 (Preferred)** are unlikely to have adverse effects on ESA-listed *Acropora* species. Previous ESA consultations determined the snapper grouper fishery was not likely to adversely affect these species. These alternatives are unlikely to alter fishing behavior in a way that would cause new adverse effects to *Acropora*. The impacts from **Alternatives 2 – 5 (Preferred)** on sea turtles and smalltooth sawfish are unclear. If these alternatives reduce the overall amount of fishing effort in the fishery, the risk of interaction between sea turtles and smalltooth sawfish will likely decrease. The same reasoning holds true for large whale entanglements. If the action does result in a decrease in the number of pots fished than the likelihood of large whale entanglements is likely to decrease also. However, as noted above, if more fishing effort occurs during a time of year when whales are more common in the South Atlantic, even a decrease in the number of pots fished may not result in an actual decreased risk of entanglement.

**Table 4-14.** Number of pots fished per trip during 2008-2010 for 31 permits that would qualify for endorsements under Action 2.

| Number of Pots | Number of Trips | Cumulative Freq | Percent Freq | Cumulative Percent |
|---|---|---|---|---|
| <11 | 123 | 123 | 10% | 10% |
| 11 to 15 | 46 | 169 | 4% | 14% |
| 16-20 | 142 | 311 | 11% | 25% |
| 21-25 | 75 | 386 | 6% | 31% |
| 26-30 | 181 | 567 | 14% | 45% |
| 31-35 | 32 | 599 | 3% | 48% |
| 36-40 | 203 | 802 | 16% | 64% |
| 41-50 | 186 | 988 | 15% | 79% |
| 51-60 | 106 | 1,094 | 8% | 88% |
| 61-70 | 4 | 1,098 | 0% | 88% |
| 71-80 | 11 | 1,109 | 1% | 89% |
| 81-90 | 13 | 1,122 | 1% | 90% |
| 91-100 | 9 | 1,131 | 1% | 91% |
| >100 | 118 | 1,249 | 9% | 100% |

Source: NMFS logbook database 5/12/11.

### 4.5.2 Economic Effects

In general, it is expected that the short-term economic benefits of **Alternatives 2-5 (Preferred)** would increase with the larger number of pots allowed per vessel. However, how the total number of pots in the fishery influences the catch per unit effort would ultimately determine the long-term economic impacts of these alternatives. It is possible that even a low number of pots per vessel could have negative economic impacts in the short and long-term if there are large numbers of vessels participating in the fishery. Assuming the catch per unit effort remains stable, **Alternative 2** would offer the greatest short-term economic benefits but probably the smallest long-term economic benefits since the total number of pots in the fishery has the lowest cap at 100 pots. **Alternative 3** would have the next largest short-term economic benefits (and next smallest long-term economic benefits) followed by **Preferred Alternative 5**, and **Alternative 4**, in that order.

If we assume that the number of pots carried per vessel is currently optimal for that individual vessel's operation, then any reduction in the number of pots would have a negative impact on the profitability of that operation. **Alternative 2** restricts the number of pots per vessel to 100. While most vessels carry less than 100 pots, those that currently carry more than 100 pots would be negatively impacted since they will be restricted to 100 pots. Although the cost of vessel operations remain largely fixed, except crew and food costs, the number of pots, which are used to generate revenue have decreased. The overall economic benefit of any of the alternatives will be a summation of the individual changes in profits. Given that there are only a few vessels fishing greater than 100 pots, the negative economic impacts from alternatives with larger number of pots allowed per vessel are expected to be less than the negative economic impact of

the alternatives with smaller numbers of pots allowed per vessel. Actual estimation of each vessel's profitability requires vessel specific cost data, which are not available at this point in time.

Had the 100 black sea bass pot cap of **Alternative** 2 been in effect during the years 2008 to 2010, approximately 9% of all black sea bass trips taken would have had to reduce the number of pots they fished (**Table 4-14)**. Similarly according to **Table 4-14**, under **Alternative 3** (50 pot cap), 21% of trips would have been affected; **Alternative 4** (25 pot cap) would have reduced the number of pots on 69% of the trips; and **Preferred Alternative 5** (35 pot cap) would have reduced the number of pots on 52% of the trips taken from 2008 to 2010.

### 4.5.3 Social Effects

Social effects would be expected to accrue to changes in the amount of gear allowed or the manner in which it is allowed to be used if the changes affect normal fishing practices (behavior) and subsequent harvests. The intent of this action is to limit effort and prevent an increase in the number of pots used by black sea bass pot fishermen in response to increased restrictions on other species and reduce the potential adverse effects of lost pots and long soak times. While the proposed measures may indirectly result in the reduction in harvests for some vessels, as well as limit the potential for harvest increases by fishermen, no specific harvest reductions or limits are proposed. Thus, no direct adverse social effects associated with explicit harvest reductions would be expected on average (across all current participants) and the primary social effects of the alternative limits may be largely due to reduced fishing flexibility and interference with personal fishing or business practices. These effects may take the form of reduced independence, lower job satisfaction, reduced time to engage in other activities, or increased costs, among other effects. The latter two potential effects might accrue if the proposed limits induce alteration of the normal fishing patterns, such as the frequency and duration of trips, as well as the time pattern of pot deployment, soak time, and retrieval.

**Alternative 1 (No Action)** would not impose any new restrictions on the number of black sea bass pots fished or tags issued and, as a result, would not be expected to result in any short-term social effects on fishermen, associated businesses, or communities.

**Alternatives 2-5 (Preferred)** would limit the number of pots fished (deployed) or at sea (on the vessel) by requiring each pot have an identification tag and limit the number of tags issued per vessel per year. **Alternatives 2-4** and **Preferred Alternative 5** would establish immediate tag limits (100, 50, 25, or 35 tags). Among **Alternatives 2-4** and **Preferred Alternative 5**, the short-term adverse social effects would be expected to vary directly with the severity of the limit. **Table 4-15** shows the lowest and highest pot-per-trips averages from 1999-2010, and also in the three most recent years (2008-2010). Additionally, a county average during the different periods is shown. There is a wide range of pots/trip for black sea bass fishermen and large differences between the county averages.

In North Carolina, the highest county average is in New Hanover County, with 86 pots/trip from 1999-2010, and 89 pots/trip in the most recent three years. This area would be the most impacted by the limits in **Alternatives 3, 4**, and **Preferred Alternative 5**. Based on the county

average, Pender County would likely experience impacts from **Alternative 4** or **Preferred Alternative 5**, but would not be as affected by **Alternatives 2-3**, since the more recent county average is 56 pots/trip. Brunswick, Carteret, and Onslow Counties each have a lower county average (24, 23, and 30 pots/trip, respectively). In general, black sea bass fishermen in these areas would be expected to experience minimal social impacts from **Alternatives 2-4**, and **Preferred Alternative 5.**

**Table 4-15.** Range of black sea bass pots-per-trip averages by county and overall county average from 1999-2010 and 2008-2010. This information was based on data on average pots per trip for permits that will at least qualify for an endorsement under **Action 2, Alternative 2a**.

| | **1999-2010** | | | **22008-2010** | | |
|---|---|---|---|---|---|---|
| | **Lowest Pots/Trip Average** | **Highest Pots/Trip Average** | **Average # of Pots/Trip** | **Lowest of Pots/Trip Average** | **Highest Pots/Trip Average** | **Average # of Pots/Trip** |
| **North Carolina** | | | | | | |
| Brunswick Co | 20 | 34 | 27 | 20 | 28 | 24 |
| Carteret Co | 7 | 47 | 24 | 6 | 67 | 23 |
| New Hanover Co | 67 | 101 | 86 | 60 | 128 | 89 |
| Onslow Co | 18 | 42 | 28 | 7 | 49 | 30 |
| Pender Co | 19 | 81 | 45 | 16 | 110 | 56 |
| **South Carolina** | | | | | | |
| Charleston Co | 5 | 18 | 12 | 6 | 12 | 9 |
| Georgetown Co | 6 | 14 | 8 | 7 | 20 | 10 |
| Horry Co | 6 | 29 | 20 | 8 | 29 | 20 |
| **Florida** | | | | | | |
| Miami/Monroe | 10 | 117 | 51 | 5 | 56 | 25 |
| Other Counties | 10 | 16 | 13 | 14 | 25 | 20 |

In South Carolina, the more recent county averages for pots/trips are relatively low when compared to North Carolina counties. For Charleston, Georgetown, and Horry Counties, the fishermen would be expected to experience minimal social impacts from **Alternatives 2-4**, and **Preferred Alternative 5** due to the low averages of pots per trip. In Florida, there would likely be minimal social impacts from **Alternatives 2-4**, and **Preferred Alternative 5.** No permits with home ports in Georgia are expected to qualify for a black sea bass pot endorsement; no impacts on Georgia fishermen or communities will result from this action.

### 4.5.4 Administrative Effects

**Alternative 1 (No Action)** would maintain the status quo where each person holding a federal commercial snapper grouper permit holder could request as many black sea bass tags as they desire. Because the number of tags allowed to be requested would remain unbounded by a specific limit, **Alternative 1 (No Action)** could potentially be the most administratively burdensome alternative under consideration. It is assumed that the lower the tag limit is set, the fewer tags may be requested and lower the administrative burden. Therefore, **Alternative 4** is likely to result in the lowest cost and time requirement for processing tag request transaction. Conversely, **Alternative 2** (100 tags per vessel) would be the most administratively burdensome of all the alternatives; however, the increased burden is likely to be small since the majority of fishery request less than 100 tags per fishing season. **Alternatives 2 – 5 (Preferred)** could constitute an increased burden to law enforcement since they would need to ensure that each pot deployed was within the legal limit. The burden to law enforcement would increase under the South Atlantic Council choice of **Preferred Alternative 5** because the number of traps allowed to be deployed was not previously limited, and this action would constitute a new regulation for the pot sector of the fishery.

## 4.6 Action 6: Implement Measures to Reduce Black Sea Bass Bycatch

**Alternative 1 (No Action).** Do not implement additional regulations stipulating when black sea bass pots must be removed from the water. Currently, fishermen are required to remove all pots once the quota has been reached.

**Preferred Alternative 2.** Black sea bass pots must be brought back to shore at the conclusion of each trip. "Brought back to shore" is defined as when the vessel with the pots has "returned to a dock, berth, beach, seawall, or ramp at the conclusion of each trip."

**Alternative 3.** Allow fishermen to leave pots in the water for no more than 72 hours.

### 4.6.1 Biological Effects

The "soak-time" is determined through the method of fishing. Black sea bass pot fishermen deploy gear in three primary manners (Tom Burgess pers. comm.). The most common form of fishing (63% of all trips; **Table 4-16**) is to deploy pots in the morning and retrieve them later in the day after a soak time of about 7 hours. Most of the remaining trips are for multiple days (37%; **Table 4-16**). A few fishermen leave 100-150 pots out all season and collect them at the conclusion of the fishing season. However, most fishermen on multi-day trips deploy pots at night and retrieve them the next morning for a soak time of about 17 hours. During 2005-2010, only 24 fishermen deployed more than 55 pots for an average of 99 pots deployed per trip (**Table 4-17**).

**Table 4-16.** Number of days away from port, number of trips, total lbs of black sea bass landed (whole weight), and number of pots fished during 2005-2010.

| Away | Trip Freq | % Freq | Total lbs | % Total lbs | # Traps | % Traps |
|---|---|---|---|---|---|---|
| 1 | 2,304 | 62.75% | 1,194,358 | 46.72% | 96,832 | 45.61% |
| 2 | 993 | 27.04% | 951,468 | 37.22% | 71,176 | 33.53% |
| 3 | 308 | 8.39% | 341,267 | 13.35% | 36,750 | 17.31% |
| 4 | 49 | 1.33% | 53,445 | 2.09% | 6841 | 3.22% |
| 5 | 9 | 0.25% | 8,090 | 0.32% | 465 | 0.22% |
| 6 | 5 | 0.14% | 4,059 | 0.16% | 140 | 0.07% |
| 7 | 3 | 0.08% | 2,758 | 0.11% | 54 | 0.03% |
| 8 | 1 | 0.03% | 1,146 | 0.04% | 24 | 0.01% |

Source: NMFS logbook database 5-12-11.

**Table 4-17.** Total number of pots per trip fished for the period 1/1/05-12/31/10.

| | **Average pots < 55** | **Average pots ≥ 55** |
|---|---|---|
| No. of vessels | 97 | 24 |
| Average pots/trip | 32 | 99 |

Source: NMFS logbook database 5-12-11.

Currently, there are instances where large numbers of pots may be left fishing for multiple days due to vessel or weather problems, which could unnecessarily kill black sea bass. Fishing large numbers of pots also increases the chance that pots could be lost and "ghost fishing" could occur. Therefore, limitations on the length of time pots can be left at sea would reduce the adverse effects of continued fishing by lost gear. Boat propellers and storms are common agents causing pots to be lost. Fishermen may not be able to retrieve pots during periods of inclement weather or vessel repairs. Furthermore, fishing large numbers of pots increases the chance of entanglement of pot lines with right whales and other protected species. The longer the pots are in the water, the greater the opportunity for lost pots and entanglement with protected species.

**Preferred Alternative 2** would require that black sea bass pots be brought back to shore at the conclusion of a trip but would place no time limit on the length of the trip. Because fishermen may not be able to retrieve their pots during bouts of inclement weather, it is the South Atlantic Council's intent that fishermen be allowed to leave their pots in the water in order to return to port safely during foul weather situations. **Alternative 3** would put a time limit of 72 hours for how long a pot could remain in the water. **Alternative 1 (No Action)** would continue the risks of ghost fishing due to lost pots and entanglement with protected species, particularly when gear is left at sea for long periods of time and therefore would have the least amount of biological benefit for the alternatives considered. The biological benefit of **Preferred Alternative 2** would be greater than **Alternative 3** because most trips last one day. Therefore, under **Preferred Alternative 2**, pots would be in the water for the least amount of time and would have the least amount of risk for ghost fishing or entanglement with protected species.

The biological benefit of **Alternative 3** would be less than **Preferred Alternative 2** because it would allow fishermen to leave pots in the water for as long as 72 hours and would increase the chance pots could be lost or could interact with protected species. Furthermore, under **Alternative 3** fishermen would be able to return to the dock, while pots soak decreasing the chance gear could be retrieved during bad weather. Selecting both **Preferred Alternative 2** and **Alternative 3** as preferred would have an intermediate biological effect in that a trip could last for no longer than 72 hours but fishermen would not be able to return to the dock without their pots. However, as approximately 98% of the trips were 72 hours or less (**Table 4-16**), a restriction on the length of the trip (**Alternative 3**) is not needed. **Alternative 1 (No Action)** would perpetuate the existing level of risk for interactions between ESA-listed species and the fishery. **Preferred Alternative 2** and **Alternative 3** are unlikely to have adverse effects on ESA-listed *Acropora* species. Previous ESA consultations determined the snapper grouper fishery was not likely to adversely affect these species. These alternatives are unlikely to alter fishing behavior in a way that would cause new adverse effects to *Acropora*. Reductions in the amount of time vertical lines (i.e., buoy lines) remain in the water, especially from November 1 - April 11, is likely to reduce the risk of whale entanglements in black sea bass pots.

### 4.6.2 Economic Effects

**Alternative 1 (No Action)** would not implement new regulations that limit the soak time of black sea bass pots and thus would not reduce bycatch in the fishery. **Preferred Alternative 2** and **Alternative 3** would further restrict fishing flexibility by limiting pot soak time. **Preferred Alternative 2** would not explicitly limit soak time because the length of a fishing trip would not be limited. However, **Preferred Alternative 2** may functionally limit soak time if fishermen prefer not to stay at sea longer while their pots soak or force them to stay longer at sea to maintain customary soak times. Further, under **Preferred Alternative 2**, a vessel could not return to port without retrieving all pots, even if the expected soak time was still expected to be short. Only **Alternative 3** would explicitly limit soak time. However, almost all black sea bass pot trips are less than three days, so **Alternative 3** would be expected to have little to no adverse social or economic effects. While notice of the suspension of these requirements would be logical in the event of pending severe weather, such as a tropical depression or hurricane, the absence of specific procedures in the event of engine problems may create additional problems for fishermen.

Given that **Preferred Alternative 2** and **Alternative 3** protect the biological resource as well as the surrounding ecosystem, by helping to reduce bycatch, the fishery would experience long-term economic benefits from these alternatives.

### 4.6.3 Social Effects

**Alternative 1 (No Action)** would not impose any new restrictions on the black sea bass pot fishery and, as a result, would not be expected to result in any short-term adverse social effects on fishermen, associated businesses, or communities. In the long term, however, the absence of new restrictions on pot fishing would be expected to result in continued bycatch problems for other species, potential resource problems for these stocks, and associated decreased social and economic benefits associated with the fisheries for these species.

**Preferred Alternative 2** and **Alternative 3** would be expected to help reduce bycatch, resulting in increased long-term social and economic benefits for affected species, but would restrict fishing flexibility. **Preferred Alternative 2** would not explicitly limit soak time because the length of a fishing trip would not be defined or limited. However, **Preferred Alternative 2** may functionally limit soak time if fishermen prefer not to stay at sea while their pots soak for extensive periods of time or force them to stay longer at sea to maintain customary soak times. Further, under **Preferred Alternative 2** a vessel could not return to port without retrieving all pots, even if the soak time was still expected to be short. Only **Alternative 3** would explicitly limit soak time. However, almost all black sea bass pot trips are less than three days, so **Alternative 3** would be expected to have little to no adverse social effects associated with alteration of normal fishing behavior. Absent suspension of the pot recovery requirement under certain conditions, both alternatives could result in hardship or safety issues in the event of engine problems or severe weather requiring the vessel to return to port prior to retrieving all pots. While notice of the suspension of these requirements would be logical in the event of

pending severe weather, such as a tropical storm or hurricane, the absence of specific procedures in the event of engine problems may create additional operational problems for fishermen.

### 4.6.4 Administrative Effects

**Alternative 1 (No Action)** would not implement new regulations that limit the soak time of black sea bass pots and thus would not reduce bycatch in pot segment of the fishery. **Alternative 1 (No Action)** would not impose any new administrative burden on the agency or the industry, and thus would not require increased enforcement efforts for monitoring when pots are pulled from the water. **Preferred Alternative 2** and **Alternative 3** would require a minimal administrative burden on Southeast Regional Office staff through the development of fishery bulletins and announcements. However, these alternatives would increase enforcement responsibilities in this fishery. **Alternative 3** would be difficult to enforce as the Office of Law Enforcement has stated that limitation on gear soak time is almost impossible to enforce. **Preferred Alternative 2** would be the easiest alternative to enforce given that the term "brought back to shore" is clearly defined in the regulations.

## 4.7 Action 7: Modify Accountability Measures for Black Sea Bass

**Alternative 1 (No Action).** Current accountability measures are as follows:

***Commercial***
If the commercial sector black sea bass ACL is met or is projected to be met, independent of stock status, all subsequent purchase and sale of black sea bass is prohibited and harvest and/or possession is limited to the black sea bass bag limit.

***Recreational***
If black sea bass *is overfished* and the recreational sector ACL is met or is projected to be met, prohibit the harvest and retention of black sea bass. Compare the black sea bass recreational ACL with recreational black sea bass landings over a range of years. For 2010, use only 2010 landings. For 2011, use the average landings of 2010 and 2011. For 2012 and beyond, use the most recent three-year running average. If the recreational sector black sea bass ACL is exceeded, independent of stock status, the Regional Administrator shall publish a notice to reduce the recreational sector black sea bass ACL in the following season by the amount of the overage.

**Alternative 2.** Remove the three-year running average provision used to determine recreational ACL overages. The recreational AM would be: If black sea bass *is overfished* and the recreational sector black sea bass ACL is met or is projected to be met, prohibit the harvest and retention of black sea bass. If the recreational sector black sea bass ACL is exceeded, independent of stock status, the Regional Administrator shall publish a notice to reduce the recreational sector black sea bass ACL in the following season by the amount of the overage.

**Preferred Alternative 3.** For the recreational sector: Remove the three-year running average provision used to determine recreational ACL overages. The recreational AM would be: If the recreational sector black sea bass ACL is met or is projected to be met, independent of stock status, prohibit the harvest and retention of black sea bass. If the recreational sector black sea bass ACL is exceeded, independent of stock status, the Regional Administrator shall publish a notice to reduce the recreational sector ACL in the following season by the amount of the overage.

For the commercial sector: If the commercial sector black sea bass ACL is met or is projected to be met, independent of stock status, all subsequent purchase and sale of black sea bass is prohibited and harvest and/or possession is limited to the black sea bass bag limit. If the commercial sector black sea bass ACL is exceeded, independent of stock status, the Regional Administrator shall publish a notice to reduce the commercial sector black sea bass ACL in the following season by the amount of the overage.

**Note:** For both the recreational and commercial sectors, ACL paybacks are not required when new projections are adopted that incorporate ACL overages and the ACLs are adjusted in accordance with those projections. Beyond the 2013/2014 fishing season (when the rebuilding strategy switches over to $F_{rebuild}$) for years when there is no assessment, the ACL would not automatically increase if the ACL has been exceeded during the previous fishing year.

### 4.7.1 Biological Effects

Snapper Grouper Amendment 17B (Amendment 17B) (SAFMC 2010b) implemented commercial and recreational AMs for black sea bass. Subsequent to the implementation of Amendment 17B, the South Atlantic Council determined the methodology employed by the system of AMs under Amendment 17B may not be the most appropriate way to constrain harvest at or below the sector ACLs and it could unnecessarily penalize the participants in the commercial and recreational sectors of the black sea bass segment of the snapper grouper fishery. Therefore, at their June 2011 meeting, the South Atlantic Council requested that AMs for black sea bass be re-examined in this amendment to incorporate more flexibility into the current AMs as is appropriate for this rebuilding fishery.

The recreational black sea bass AMs outlined in Amendment 17B employed the use of a three year running average whereby the recreational landings from the first year (2010) would be compared to the recreational ACL of 409,000 pounds gw to determine if the ACL was exceeded for that year. In the second year (2011), the average landings of 2010 and 2011 would be compared to the ACL to determine if an overage had occurred for that year. In year three (2012), the average recreational landings for 2010, 2011, and 2012 would be compared to the ACL to determine if the recreational ACL for that year had been exceeded. For every year thereafter, recreational landings from the most recent three years would be compared to the ACL to determine if the ACL has been exceed. Additionally, if the recreational ACL is exceeded, and black sea bass are overfished, recreational harvest would be prohibited and if the ACL is exceeded, regardless of stock status, the ACL for the season following an ACL overage shall be reduced by the amount of the overage.

Using a three year running average of recreational landings to determine if the recreational ACL has been exceeded in any given year is not likely to be the most appropriate means of determining such overages. As Amendment 17B states, the three year running average was intended to account for variability in the recreational data collection and associated data uncertainty. However, exceptionally high recreational landings in a single year could significantly influence the running average for several years into the future in addition to reducing the ACL in the season following an overage. Therefore, using the three year running average has the potential to penalize the recreational sector once when the ACL is met or is projected to be met and in subsequent years when the the average value is calculated. This situation could result in the possible triggering of unnecessary AMs creating unintended socioeconomic consequences and lowered ACLs that are not biologically needed. Because of the issues presented by the use of a three year average, the South Atlantic Council proposed new AM alternatives that do not include this method of determining whether or not the recreational ACL has been exceeded. Since this action will only change the methods used to determine if AMs are required, and does not establish immediate harvest objectives, it will not directly affect the protected species.

**Alternative 1 (No Action)** would not change the current system of AMs to employ more appropriate methods for determining ACL overages and modify the corrective actions taken if the ACL is projected to be met or exceeded. **Alternative 2** retains the ability of the Regional Administrator to prohibit recreational harvest in-season if the recreational ACL is projected to be

met and if the stock is overfished. Under **Alternative 2**, if the stock is not overfished and there is a large overage of the recreational ACL, there would be a reduction in the ACL the following year. If the stock is not overfished, however, no in-season action would be taken to prevent the ACL from being exceeded, which could have adverse biological consequences if the ACL is repeatedly exceeded. Alternately, **Alternative 2** does include a post-season payback if the ACL is exceeded regardless of the stock's status. This payback provision would help to correct for ACL overages should they occur, but it is biologically preferable to also have an in-season provision in place to prevent the ACL from being exceeded in the first place. An in-season closure for the recreational sector could help prevent significant reductions of the following year's ACL. The biological effects of **Preferred Alternative 3** would be expected to be more beneficial than **Alternative 2** since **Preferred Alternative 3** would prohibit recreational harvest in-season regardless of the overfished status if the ACL is projected to be met. As a result, the magnitude of an overage of the recreational ACL under **Preferred Alternative 3** would be expected to be less than **Alternative 2**, and less of a post-season correction would be needed in the following year.

**Alternative 2** and **Preferred Alternative 3** also retain the recreational post-season provision that allows the Regional Administrator to reduce the recreational ACL for the fishing season following an ACL overage, regardless of stock status. The primary modification to the system of recreational AMs for black sea bass under **Alternative 2** and **Preferred Alternative 3** is the elimination of the use of the three year running average to determine ACL overages. Eliminating the three year average would result in a reduced risk of implementing overly conservative AMs. As stated previously, the three year running average could be heavily influenced by a single year's anomalously high or low landings, which may or may not be due to actual increased harvest or statistical variation.

**Preferred Alternative 3** would also implement a payback provision if the commercial ACL is exceeded, regardless of stock status. Under **Alternative 1 (No Action)**, there is no payback if the ACL is exceeded. Therefore, biological effects of **Preferred Alternative 3** would be greater than **Alternative 1 (No Action)** because **Preferred Alternative 3** would reduce the commercial ACL in the fishing year following an ACL overage regardless of stock status. However, since a quota monitoring system is in place, any overage of the commercial ACL is expected to be small. Therefore, if the stock is not overfished, a small overage of the ACL would not be expected to have large negative biological effects. However, if the stock is overfished, a large overage of the commercial ACL could affect stock rebuilding if there were no payback the following fishing year.

At their December 2011 meeting, the South Atlantic Council clarified when the use of payback provisions in the commercial and recreational sectors would and would not be utilized. It is the South Atlantic Council's intent to not require post-season ACL paybacks in years when new projections, such as those created for stock assessments, are adopted that incorporate ACL overages and the ACLs are adjusted based on those projections. Therefore, because the projections done for the most recent stock assessment for black sea bass (SEDAR 25) accounted for the ACL overage from the 2011/2012 fishing year, no payback is necessary in either the recreational or commercial sectors for the 2012/2013 fishing year. If the 2012/2013 sector

ACL(s) are exceeded, then sector-specific paybacks in the form of reduced sector ACLs for the 2013/2014 fishing year would be implemented.

### 4.7.2 Economic Effects

Accountability measures would have direct economic effects on fishing participants, because they would affect the allowed harvest or fishing opportunities for black sea bass. These economic effects would generally be immediate with in-season AMs and would be delayed if only post-season AMs were implemented. The no action alternative (**Alternative 1**) may be generally characterized as a mix of in-season and post-season AMs. If the stock is overfished, this AM would have immediate economic effects on the offending sector in the first year, i.e., 2010-2011 fishing year, if the sector's ACL were exceeded or projected to be exceeded. This just happened with the recreational closure on February 12, 2011. In subsequent years, the AM measure would be modified, since the ACL would be compared to the average 2 or 3 years of recreational landings. Regardless of stock status, exceeding the ACL would trigger an AM that would reduce the subsequent year's recreational ACL by the amount of overage. Considering the relatively high recreational landings of black sea bass in the most recent years, the averaging method would tend to result in relatively high landings that could trigger an AM application even if the ACL were not exceeded in the current year. In essence, the near-term expectations under **Alternative 1 (No Action)** would be an increasing level of economic losses. Over time, if the stock were rebuilt and the ACL were not adjusted upward, the expectation under **Alternative 1 (No Action)** would also be an increasing level of economic losses. However, if the ACL were adjusted upward in the future, the averaging feature would provide some level of stability in the application of AMs.

**Alternative 2** would differ from **Alternative 1 (No Action)** only by dropping the averaging method in evaluating whether or not the recreational is exceeded. Noting that the recreational sector harvested over its ACL in the most recent year, the near-term expectation under this alternative would be short-term economic losses even without the averaging feature. It is possible that the reduction in the subsequent year's ACL would be smaller under **Alternative 2** than under **Alternative 1 (No Action)**, because a relatively high harvest in one year would not be carried over into the subsequent years for purposes of triggering the AM.

**Preferred Alternative 3** may result in slightly higher economic losses for the recreational sector since in-season AMs would be triggered regardless of the overfished status of the stock. **Preferred Alternatives 3** also includes a payback provision for the commercial sector, which does not exist under the status quo. **Preferred Alternative 3** would trigger a post-season AM if the commercial or recreational sector ACL is exceeded regardless of the overfished status of black sea bass. Economic losses that may result from **Preferred Alternative 3** would take the form of diminished fishing opportunities caused by potential early in-season closures in the recreational sector, and lowered ACLs following a season in which the ACL was exceeded.

Under all the AM alternatives, ACL increases under the rebuilding strategy would be contingent on total commercial and recreational harvest not exceeding the two sectors' combined ACL. While sector AMs would still apply once the sector-specific ACL threshold is exceeded, the total

ACL may still increase over time as provided in the rebuilding strategy. This would tend to compensate for the economic losses to the recreational (or commercial) sector due to the application of AMs. One downside of this provision is that relatively large economic benefits would be forgone in future years despite only marginally exceeding the total ACL in the current year. Given the AMs for both the recreational and commercial sectors, the probability of exceeding the total ACL by a small amount would be relatively high. If the sector AMs were timely applied, the probability of exceeding the total ACL would be low.

### 4.7.3 Social Effects

The setting of AMs can have significant direct and indirect effects on the social environment as they usually impose some restriction on harvest. The long-term effects should be beneficial as they provide protection from further negative impacts on the stock. While the negative effects are usually short-term, they may at times induce other indirect effects through changes in fishing behavior that can extend beyond the fishery.

**Alternative 1 (No Action)** would maintain AMs implemented in Amendment 17B, which would provide less flexibility in management of black sea bass harvest in order to meet rebuilding goals for the fishery, and maintain the three-year average method for the recreational AMs. In general, this method could produce long-term social impacts, specifically in that the recreational harvest in one year could continue to affect AMs in subsequent years, and reduce recreational effort and fishing opportunities.

**Alternative 2** would implement recreational AMs that reduce the subsequent season if the ACL is exceeded, which would reduce recreational fishing opportunities. An early closure could reduce employment opportunities for the for-hire sectors, and reduced social benefits from recreational fishing. However, as the black sea bass stock rebuilds and when the stock is no longer overfished through establishment of AMs, there will be long-term social benefits. Overall, any reduced fishing opportunities may produce negative social effects, while closures will contribute to rebuilding the black sea bass resource, which is expected to result in positive long-term social effects.

**Preferred Alternative 3** would have similar social impacts as **Alternative 2** in regards to outcomes associated with early closures. However, **Preferred Alternative 3** incorporates the overages into the quota projections and ACLs. This removes the possibility that the recreational and/or commercial sector will be penalized twice for an overage, which is expected to generate more social benefits than **Alternative 2** because this method would be more likely to allow fishing opportunities and maximized season length.

### 4.7.4 Administrative Effects

**Alternative 1 (No Action)** is likely to be the most administratively burdensome alternative of the two AM alternatives considered because it would require ongoing recalculations of the three year average recreational landings. However, **Alternative 2** would result in only a slightly lower

staff time burden when compared to **Alternative 1 (No Action)** since all other provisions of the status quo recreational AM would still apply. The time associated with averaging the most recent three years recreational landings of black sea bass is not considered an overly burdensome administrative task. **Preferred Alternative 3** incorporates two new provisions, an in-season closure for the recreational sector when the ACL is projected to be met regardless of the overfished status of black sea bass, and a post-season ACL payback for the commercial sector to be implemented in fishing years following an ACL overage. Since **Preferred Alternative 3** adds two provisions but eliminates the use of the three year running average for the recreational sector, the administrative impacts of **Preferred Alternative 3** may be very similar to those under **Alternative 1 (No Action)**. In the future, there will likely be years when the post-season payback is not necessary even if there is an overrun, since stock assessments are completed periodically and the associated projections would take into account any ACL overages during a given fishing year. Administrative impacts would be greatest in fishing years where both an in-season closure and a post-season payback is required. The administrative burden would be compounded if both of these events were to take place for both sectors.

## 4.8 Action 8: Establish a Spawning Season Closure for Black Sea Bass

**Preferred Alternative 1 (No Action).** Do not implement a spawning season closure for black sea bass.

**Alternative 2.** Implement a March 1-April 30th spawning season closure for black sea bass; would apply to commercial and recreational sectors.

**Alternative 3.** Implement an April 1st-May 31st spawning season closure for black sea bass; would apply to commercial and recreational sectors.

**Alternative 4.** Implement a March 1st- May 31st spawning season closure for black sea bass; would apply to commercial and recreational sectors.

**Alternative 5.** Implement a May 1st- May 31st spawning season closure for black sea bass; would apply to commercial and recreational sectors.

**Note**: The following impact analyses were conducted using data from the 2006/2007 through 2009/2010 fishing years when fishing did occur during the months considered for closure (**Table 4-18**). Data for the January-May 2010 portion of the 2009/2010 fishing year are estimated as the average of the 4 preceding years for MRFSS and Headboat (HB). For the commercial sector, landings were assumed to be zero because the commercial quota was met and the commercial sector closed on December 20, 2009. These analyses indicate the level of impacts anticipated if fishing occurs during the months considered for the spawning season closure.

In the short term, there will be no impacts from any of these alternatives because of early closures. The commercial sector closed on December 20, 2009 in the 2009/2010 fishing year, on October 7, 2010 in the 2010/2011 fishing year, and on July 15, 2011 in the 2011/2012 fishing year. The recreational sector closed on February 12, 2011 in the 2010/2011 fishing year and on October 17, 2011 in the 2011/2012 fishing year. The South Atlantic Council is considering changes to the AMs for the recreational sector that may continue to close the recreational sector when their ACL is taken; since black sea bass are no longer overfished, this is not currently required for the 2012/2013 fishing year.

### 4.8.1 Biological Effects

Snapper Grouper Regulatory Amendment 9 (SAFMC 2011b) included an alternative to implement a spawning season closure for black sea bass. The South Atlantic Council did not choose a spawning season closure as a preferred alternative at that time; however, the South Atlantic Council requested that the issue be revisited in this amendment. A spawning season closure could provide black sea bass with more spawning opportunities, which could contribute to recruitment success of a new year-class, help rebuild the stock more quickly, and result in a more stable and sustainable resource. It is noted that the current regulations implemented through Amendment 13C have resulted in a commercial closure of black sea bass prior to the peak spawning season as the commercial quota for the June 1 2009-May 31 2010 fishing year was met in December 2009; the commercial quota for the June 1 2010-May 31 2011 fishing year

was met in October 2010, and the commercial quota for the June 2011-May 31, 2012 was met in July 2011. During the June 2010-May 2011 fishing year, the commercial sector opened back up for two weeks in December 2009 because the commercial quota had not been met when the commercial sector closed in October 2010.

**Preferred Alternative 1 (No Action)** would provide no additional protections for black sea bass, bycatch species, or protected species. Compared to the other spawning season alternatives under consideration **Preferred Alternative 1 (No Action)** is considered the least biologically beneficial. However, as noted previously, in the past three fishing seasons the fishery has closed early, and in most cases a spawning season closure would not have been needed because the commercial fishery had been closed by the proposed start dates. However, in the future, if the ACL is increased and efforts to control effort and harvest rates in the fishery are successful, there is a chance the fishery would be open longer into the fishing season and fishing could occur during the spawning season closures included in the Action 8 alternatives. If this were to occur, the South Atlantic Council could consider a spawning season closure again at a future time through another FMP amendment or framework action. There is nothing that would preclude the South Atlantic Council from revisiting the possibility of implementing a spawning season closure in the future if needed.

**Alternatives 2-5** would consider alternatives for various spawning season closures for the commercial and recreational sectors. However, in consideration of **Alternatives 2-5**, it should be noted that there is evidence of a change in peak spawning of black sea bass with spawning occurring earlier in the year in the more southern latitudes. Hood et al. (1994) reported that black sea bass females in the Gulf of Mexico spawn during December through April with highest incidence of hydrated oocytes occurring during January and March. Further north in the South Atlantic, McGovern et al. (2002) indicate black sea bass females spawn during January to June with peak spawning occurring during March-April (**Figure 4-4**). Sedberry et al. (2006) stated that in the South Atlantic spawning females occur during most months of the year with a major spawning period of February through April. In the Mid-Atlantic Bight, spawning progresses seasonally from south to north, and starts as early as April off the coast of North Carolina and Virginia (Able et al. 1995). Spawning continues from June through October, peaking in August. Steimle et al. (1999) states spawning in the Middle Atlantic Bight population occurs from May to July during inshore migrations, but can extend to October-November.

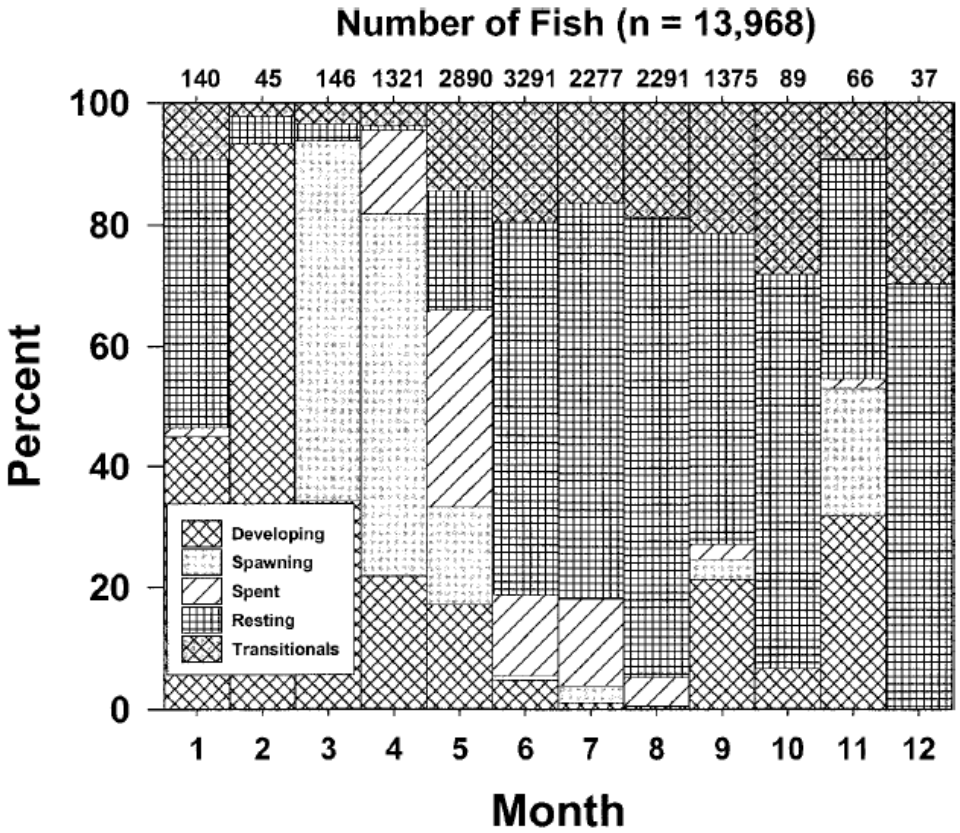



**Figure 4-4.** Black sea bass spawning information from McGovern et al. (2002). The figure shows monthly gonadal stage percentages for 13,969 female black sea bass captured between 31°20´N and 34°00´N, 1978-1998. The number collected and examined each month is given at the top of the bar.

McGovern et al. (2002) did not report spawning season by state; however, sample size for October through March was small (**Figure 4-4**) and most black sea bass during those months were obtained through fishery-dependent sampling in South Carolina. Given the evidence provided by the literature of a south to north progression in spawning, it is likely that peak spawning of black sea bass off Florida and Georgia may occur earlier than during March-May. Furthermore, peak spawning of black sea bass off North Carolina may occur later than March-May.

**Alternatives 2-5** would establish various combinations of the peak spawning months reported by McGovern et al. (2002). **Alternative 2** would establish a March 1-April 30 spawning season closure. This alternative would encompass a larger portion of the March-May peak spawning season for black sea bass than **Alternative 3** and **Alternative 5**. Furthermore, **Alternative 2** would likely have a greater biological benefit for black sea bass off Florida and Georgia than sub-alternatives that would close black sea bass later during the spawning season since spawning occurs earlier in the more southern latitudes. March and April accounted for 15% of black sea bass landings during the 2006-2009 fishing years. **Alternative 3**, which would close the months of April and May, would not have as great a biological benefit as **Alternative 2** because it would not include the month of March when a large proportion of the population is in spawning

condition. However, **Alternative 3** would likely have a greater biological benefit for black sea bass off North Carolina than **Alternative 2**, which would close the months of March and April. April and May accounted for 16% of the total landings during the 2006-2009 fishing year but only 8% of the commercial sector occurred during those months (**Table 4-18**). Most commercial landings have historically occurred during November through February. The biological benefit of **Alternative 4** would be greatest of all the alternatives considered because it would encompass the March-May period of peak spawning when all information for the South Atlantic is considered (McGovern et al. 2002). The biological benefit of **Alternative 5** would be least of the action alternatives because it would only close May when a small proportion of the population is in spawning condition relative to March and April. Only a small portion (3%) of the commercial landings occurred during May during the 2006-2009 fishing years (**Table 4-18**). Furthermore, **Alternative 5** would be expected to have the least amount of biological benefit for black sea bass off Florida and Georgia since there is a seasonal progression in spawning from south to north. Thus, in terms of biological benefit to black sea bass, the order of sub-alternatives from greatest benefit to least is: **Alternative 4**; **Alternative 2**; **Alternative 3**; and **Alternative 5**.

**Table 4-18.** Percentage of monthly landings for black sea bass during 2006/2007 through 2009/2010 fishing years.

| Month | MRFSS | HB | Comm | Total |
|---|---|---|---|---|
| 6 | 15% | 15% | 6% | 11% |
| 7 | 11% | 15% | 5% | 9% |
| 8 | 11% | 11% | 6% | 9% |
| 9 | 4% | 7% | 5% | 5% |
| 10 | 4% | 6% | 7% | 5% |
| 11 | 10% | 4% | 13% | 10% |
| 12 | 10% | 4% | 16% | 11% |
| 1 | 4% | 3% | 14% | 7% |
| 2 | 4% | 3% | 12% | 7% |
| 3 | 8% | 8% | 8% | 8% |
| 4 | 8% | 12% | 5% | 7% |
| 5 | 13% | 12% | 3% | 9% |

**Note**: Data for the January-May 2010 portion of the 2009/2010 fishing year are estimated as the average of the 4 preceding years for MRFSS and Headboat (HB). For the commercial sector, landings were assumed to be 0 because the quota was met and the commercial sector closed on December 20, 2009.

**Preferred Alternative 1 (No Action)** will likely perpetuate the existing level of risk for interactions between ESA-listed species and the fishery. **Alternatives 2-5** are unlikely to have adverse effects on listed *Acropora* species. Black sea bass pots are prohibited south of St. Lucie Inlet, Florida. The northern extent of the range of *Acropora* in Florida is West Palm Beach, south of the black sea bass trapping boundary. Because the range of *Acropora* and the black sea bass pot fishery do not overlap, black sea bass pots will not interact with *Acropora* colonies. Previous ESA consultations determined the hook-and-line sector of the snapper grouper fishery

was not likely to adversely affect *Acropora* species. These alternatives are unlikely to alter fishing behavior in a way that would cause new adverse effects to these species. If **Alternatives 2-5** reduce the total amount of black sea bass fishing effort, then the likelihood of interactions between that sector of the fishery and sea turtles is likely to decrease. However, if the alternatives simply displace effort to other months and do not actually reduce the fishing effort, they will likely perpetuate the existing level of entanglement risks.

The closures proposed in **Alternatives 2** and **4** would likely provide the greatest reduction in potential entanglement threats to large whales because they have the largest overlap with the migration and calving season (November 1-April 1). **Alternative 3** may also reduce entanglement risk, but since the period of overlap between the closure and migration/calving season is less than **Alternatives 2** and **4** it is likely to have fewer biological benefits. Conversely, **Alternative 5** is unlikely to provide any additional reduction in entanglement risks for large whales because the proposed closure would not occur during the period when large whales are present in the South Atlantic.

### 4.8.2 Economic Effects

Commercial Sector

**Alternatives 2-5** propose a spawning season closure for commercial and recreational sectors. **Table 4-19** shows the commercial short-term economic effects in the form of foregone dockside revenues of each sub-alternative. **Alternative 4** results in the largest loss in dockside revenues while **Alternative 5** results in the smallest loss. While the spawning season closures in **Alternatives 2** and **3** are of the same approximate length, **Alternative 2** has the larger loss associated with it due to the relatively large amount of black sea bass harvested in March compared to May. On average, 2007-09 dockside revenues amounted to about $1.6 million for black sea bass. Revenue reductions may also be expected to result in profit reductions but the magnitude of effects cannot be estimated with available information.

**Preferred Action 1 (No Action)** will not have an economic impact in the foreseeable future because the fishing year is unlikely to extend into the spawning season. There could be economic impacts in the future should the commercial black sea bass ACL increase in future years to an extent that the fishing year extends into the spawning season. **Table 4-19** shows the impacts for the last fishing season that did extend into the spawning season had there been a spawning season closure in place at the time.

**Table 4-19.** Dockside revenues foregone as a result of Alternatives 2-5 based on 2007-2009 average landings data.

| Alternative | Total revenue loss in 2009 dollars (ex-vessel revenue) |
|---|---|
| 2 (March 1 - April 30) | $182,000 |
| 3 (April 1 - May 31) | $96,000 |
| 4 (March 1 - May 31) | $212,000 |
| 5 (May 1 – May 31) | $47,000 |

In general, implementation of a spawning season closure will result in long-term economic benefits for the commercial sector with **Alternative 4** having the greatest long-term economic benefit and **Alternative 5** the smallest. However, as mentioned above in the Biological Effects section, biological benefits will vary by state and the economic benefits could follow that same pattern depending on how much movement of black sea bass there is between states.

Recreational Sector

The short-term effects on net operating revenues of for-hire vessels are shown in **Table 4-20**. Based on total effects, **Alternative 4** would result in the largest forgone net operating revenues and **Alternative 5**, the lowest. This result is almost as expected since **Alternative 4** would impose a three-month closure and **Alternative 5**, a one-month closure. **Alternatives 2** and **3** would impose a two-month closure. The same pattern of effects can be observed for headboats but not quite for charterboats. For headboats, **Alternative 4** would result in the largest forgone net operating profits and **Alternative 5**, the lowest. For charterboats, **Alternative 4** would result in the largest effects and **Alternative 2**, the lowest. Based on 2007-2009 data, charterboat anglers indicated higher target trips for black sea bass in May than in March and April combined.

The estimated effects presented in **Table 4-20** may overestimate actual effects if the for-hire fishing vessels are able to shift their effort (trips) to the open season. It is possible, though, that those re-scheduled trips would not totally recoup losses incurred from being unable to fish for black sea bass during the closed months.

**Preferred Action 1 (No Action)** will not have an economic impact in the foreseeable future because the recreational fishing year is unlikely to extend into the spawning season. There could be economic impacts in the future should the recreational black sea bass ACL increase in future years to an extent that the fishing year extends into the spawning season. **Table 4-20** shows the impacts for one of the last fishing seasons that did extend into the spawning season had there been a spawning season closure in place at the time.

**Table 4-20.** Forgone net operating revenues (2009 dollars) due to the spawning closure alternatives.

| Alternative | Charterboat | Headboat | Total |
|---|---|---|---|
| 2 (March 1 - April 30) | $112,640 | $134,109 | $246,749 |
| 3 (April 1 - May 31) | $189,138 | $151,989 | $341,127 |
| 4 (March 1 - May 31) | $246,381 | $210,950 | $457,331 |
| 5 (May 1 – May 31) | $133,741 | $76,841 | $210,582 |

Based on 2007-2009 MRFSS data, **Alternative 2** would result in a loss of approximately 70,000 black sea bass. Using a CS value of $31 per fish, this calculates to a loss of approximately $2.17 million. A loss of 80,000 black sea bass $(2.48 million) is expected under **Alternative 3** while 115,000 black sea bass ($3.57 million) and 45,000 sea bass ($1.4 million) would not be caught under **Alternatives 4** and **5**, respectively.

The economic effects of the alternatives for spawning closure are examined by evaluating their resulting expected changes in consumer surplus (CS) to anglers and net operating revenue

(NOR) to the for-hire sector. A constant CS value of $32 per fish (Haab et al. 2009) and constant NOR value of $128 per angler trip for charterboats and $68 per angler trip (day) for headboats (Dumas et al. 2009) are used. These values, expressed this time in constant 2010 dollars, are the same values used in analyzing the economic effects of this amendment's spawning closure alternatives on the recreational sector. This is the same methodology employed in, among others, Amendment 17A (SAFMC 2010a), Amendment 17B (SAFMC 2010b), Regulatory Amendment 9 (SAFMC 2011b), and Amendment 24 (SAFMC 2011d). The basic sources of data are MRFSS for harvest and target trip data for the shore, charter, and private modes and the Headboat Survey for harvest and trips for headboats.

There are at least four important limitations that need to be recognized in the current analysis. First, the baseline years considered are the fishing years 2007-2008 through 2009-2010, since complete data for the 2010-2011 fishing season are not yet available. This baseline then would not take into account the recreational closure that occurred from February 12, 2011 through the end of the fishing season on May 31, 2011 (ACL-based closure). The spawning closures considered in this amendment may or may not fully replace the ACL-based closure, and no comparison of the effects of the spawning closure alternatives against those of the ACL-based closure is attempted in the current analysis. Second, the effects of the various alternatives are estimated without consideration of the potential change in angler behavior in response to new regulations. This behavioral change can potentially reduce some of the negative effects of the various alternatives. For example, anglers may target other species or shift effort to the open months to target black sea bass and other available species. Third, there are uncertainties in the CS and NOR values as well as in some variables (e.g., harvests, target trips) that are not incorporated into the quantitative estimates. When combined, these uncertainties would have relatively unknown consequences on the resulting estimates of economic effects. Fourth, the current analysis focuses solely on short-term effects, and thus makes comparison of alternatives based on the short-term effects on CS and NOR.

Relative to the baseline, the spawning closure alternatives may be expected to result in short-term reductions in CS to recreational anglers and NOR to the for-hire sector. Results for each alternative presented in **Table 4-21** are all reductions in CS and NOR. On the assumption that anglers would not compensate reductions in black sea bass harvest by targeting other species or increasing their effort to target black sea bass during the open months, the tabulated reductions in CS and NOR may be overestimates of actual impacts.

The overall magnitude of economic effects would directly correlate with the length of the closure. **Alternative 4**, which would impose a three-month spawning closure, would result in the largest reduction at approximately $5.7 million (CS+NOR). On the other end is **Alternative 5**, which would impose a one-month spawning closure that would result in total effects of approximately $2.3 million (CS+NOR). This finding would also hold true whether only either CS or NOR were used for comparison. Of the two alternatives that would impose a two-month closure, **Alternative 3** would result in larger effects than **Alternative 2**. Again, this result would hold true whether only either CS or NOR were considered. In all alternatives, CS reductions would account for most of the effects, with NOR effects being but a small fraction of their corresponding CS effects.

Based on overall economic effects (CS+NOR), all alternatives would result in the largest negative effects on the private/shore mode and least on the charterboat sector. Although the alternatives would affect both the charter and headboat sectors twice, one for CS reduction and another for NOR reduction, the private/shore mode would still bear the largest effects. This result is mainly driven by the far larger harvest level of the private/shore mode than any other modes.

The pattern of effects of the alternatives across the states would slightly differ from that of the overall effects (**Table 4-22**). **Alternative 4** would still result in the largest effects for all states. In addition, **Alternative 5** would result in the smallest effects for all states, except North Carolina. For this particular state, the smallest effects would come from **Alternative 2.**

There are some variations in the effects of the various alternatives across the states. **Alternative 2** would result in the largest CS effects on South Carolina and smallest CS effects on North Carolina. In terms of NOR effects, **Alternative 2** would have the largest effects on Georgia/Northeast Florida and smallest on North Carolina. For **Alternative 3**, the largest CS effects would fall on South Carolina and smallest on Georgia/Northeast Florida. NOR effects of this alternative would be largest on South Carolina and smallest on Georgia/Northeast Florida. The CS effects of **Alternative 4** would be largest on South Carolina and smallest on Georgia/Northeast Florida while the NOR effects would be largest on South Carolina and smallest on North Carolina.

Considering both CS and NOR effects, **Alternative 2** would have the largest effects on South Carolina and smallest on North Carolina; **Alternative 3** would have the largest effects on South Carolina and smallest on Georgia/Northeast Florida; **Alternative 4** would have the largest effects on South Carolina and smallest on Georgia/Northeast Florida; and, **Alternative 5** would have its largest effects on South Carolina and smallest on Georgia/Northeast Florida. In sum, all alternatives would have their largest effects on South Carolina and, with the exception of **Alternative 3**, least on Georgia/Northeast Florida.

In general, implementation of a spawning season closure would result in long-term economic benefits for the recreational (and commercial) sector with **Alternative 4** having the greatest long-term economic benefit and **Alternative 5** the smallest. However, as mentioned above in the Biological Effects section, biological benefits will vary by state and the long-term economic benefits could follow that same pattern.

In addition to the economic effects discussed above, spawning closures would also affect the economic activities in the affected areas. **Table 4-22** presents these impacts in terms of output, value added, and full-time employment for the four states in the South Atlantic. These reductions were derived using expected reductions in target trips due to the spawning closure alternatives. Due to the limitation of the economic activities model used, these effects exclude the effects from the reductions in headboat trips. All the numbers represent reductions in economic activities.

Although the estimation of effects on economic activities share some of the same variables as the estimation of CS and NOR effects, there are some differences in the relative magnitude of

effects. Reductions in output and value added would be largest with **Alternative 4** and smallest with **Alternative 5**, except for South Carolina, which would have the smallest reduction with **Alternative 2**. These relative magnitudes of effects would be the same for all states.

For all alternatives, South Carolina would be expected to experience the largest reduction in economic activities and Georgia/Northeast Florida, the smallest.

**Table 4-21.** Reductions in CS and NOR due to spawning closure alternatives, 2010 dollars.

| FISHING MODE | Consumer Surplus (CS) | | | | Net Operating Revenue (NOR) | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| | NC | SC | GA/ NEFL | FL | NC | SC | GA/ NEFL | FL | |
| **Alternative 2: March 1-April 30 Closure** | | | | | | | | | |
| Priv/Sh. | $126,806 | $1,018,690 | $267,266 | $580,539 | | | | | $1,993,300 |
| ChartB | $86,050 | $94,328 | $141,332 | $6,482 | $0 | $33,152 | $9,515 | $21,077 | $391,936 |
| HeadB | $180,661 | $274,112 | $80,651 | $387,147 | $11,083 | $44,915 | $69,888 | $15,288 | $1,063,744 |
| TOTAL | $393,517 | $1,387,130 | $489,249 | $974,167 | $11,083 | $78,067 | $79,403 | $36,365 | $3,448,980 |
| **Alternative 3: April 1-May 31 Closure** | | | | | | | | | |
| Priv/Sh. | $257,223 | $579,383 | $389,655 | $743,013 | | | | | $1,969,275 |
| ChartB | $219,727 | $291,754 | $100,417 | $33,965 | $4,575 | $121,033 | $4,679 | $10,366 | $786,517 |
| HeadB | $281,472 | $480,469 | $97,440 | $357,163 | $21,718 | $57,739 | $72,618 | $12,207 | $1,380,827 |
| TOTAL | $758,422 | $1,351,607 | $587,512 | $1,134,141 | $26,293 | $178,773 | $77,297 | $22,573 | $4,136,619 |
| **Alternative 4: March 1-May 31 Closure** | | | | | | | | | |
| Priv/Sh. | $320,626 | $1,088,728 | $523,289 | $1,033,283 | | | | | $2,965,925 |
| ChartB | $262,752 | $338,918 | $171,083 | $37,206 | $4,575 | $137,881 | $9,515 | $21,077 | $983,007 |
| HeadB | $334,293 | $555,957 | $129,984 | $550,123 | $24,518 | $72,134 | $105,548 | $20,165 | $1,792,722 |
| TOTAL | $917,671 | $1,983,603 | $824,355 | $1,620,611 | $29,093 | $210,015 | $115,063 | $41,242 | $5,741,654 |
| **Alternative 5: May 1-May 31 Closure** | | | | | | | | | |
| Priv/Sh. | $193,820 | $70,038 | $256,022 | $452,744 | | | | | $972,625 |
| ChartB | $176,702 | $244,590 | $29,750 | $30,725 | $4,575 | $104,729 | $0 | $0 | $591,071 |
| HeadB | $153,632 | $281,845 | $49,333 | $162,976 | $13,435 | $27,219 | $35,660 | $4,877 | $728,978 |
| TOTAL | $524,154 | $596,474 | $335,106 | $646,445 | $18,010 | $131,948 | $35,660 | $4,877 | $2,292,674 |

**Table 4-22.** Reductions in economic activities due to the spawning closure alternatives (2008 dollars). Output and value added impacts are not additive.

| | North Carolina | South Carolina | Georgia/ Northeast Florida | East Florida |
|---|---|---|---|---|
| | **Alternative 2: March 1-April 30 Closure** | | | |
| Target Trips | 1,782 | 5,028 | 3,611 | 941 |
| Output Impact | $97,268 | $297,169 | $59,913 | $94,008 |
| Value Added Impact | $54,846 | $171,776 | $36,236 | $55,604 |
| Jobs | 1 | 4 | 1 | 1 |
| | **Alternative 3: April 1-May 31 Closure** | | | |
| Target Trips | 2,057 | 4,670 | 1,964 | 1,398 |
| Output Impact | $124,327 | $482,866 | $32,433 | $81,547 |
| Value Added Impact | $70,067 | $275,835 | $19,620 | $48,448 |
| Jobs | 1 | 6 | 0 | 1 |
| | **Alternative 4: March 1-May 31 Closure** | | | |
| Target Trips | 2,962 | 7,225 | 3,798 | 1,877 |
| Output Impact | $173,725 | $633,694 | $62,835 | $129,403 |
| Value Added Impact | $97,921 | $363,023 | $38,008 | $76,755 |
| Jobs | 2 | 8 | 1 | 1 |
| | **Alternative 5: May 1-May 31 Closure** | | | |
| Target Trips | 1,180 | 2,197 | 187 | 936 |
| Output Impact | $76,458 | $336,525 | $2,922 | $35,395 |
| Value Added Impact | $43,075 | $191,247 | $1,772 | $21,150 |
| Jobs | 1 | 4 | 0 | 0 |

Source: Effort data from the MRFSS, economic activity results calculated by NMFS SERO using the model developed for NMFS (2010).

### 4.8.3 Social Effects

In general, season closures would affect fishermen by changing fishing behavior and seasonal patterns, and overall reducing effort during the closed period. Because a spawning season closure would be expected to result in better protection of the reproduction capabilities of a resource, the health and sustainability of the resource would be expected to be enhanced. As a result of the enhanced resource protection and a healthier sustainable resource, long-term social and economic benefits would be expected to increase.

The proposed black sea bass spawning closure is intended to enhance the opportunity for mature fish to spawn and is not intended to affect (reduce) total mortality; fishermen would be expected to change their fishing patterns, resulting in shifted black sea bass effort and harvests to the remaining open period, to the extent such is possible/practical, and normal total harvests. While

such behavioral change would not be expected to have a substantive effect on total benefits associated with black sea bass harvests, some distributional effects may occur if the effort shift results in changes in activity (including species mix of commercial landings and recreational service demand) across ports, communities, dealers, or associated businesses. However, because total harvest and activity is not expected to be substantively affected, no significant direct effects on social benefits associated with black sea bass harvests would be expected.

However, total black sea bass harvests, and associated social and economic benefits, could be reduced if the length or timing of the closure makes it difficult to fully compensate or shift harvests to another period, or concurrent closures for other species severely limit substitution opportunities during the closed period. Some fishermen may prefer to have closures for multiple species overlap, allowing them to take scheduled breaks, concentrate more on vessel/gear maintenance, or engage in other activities. Other fishermen may need or prefer to fish every month and prefer closures for primary target or revenue species not overlap so that one or more alternative key species are available year-round. The longer the closure, the larger the amount of harvest that likely will need to be shifted to remaining open months. Similarly, the longer the closure, the greater the potential overlap with closures for other key species. If the black sea bass spawning closure results in an inability for the full quota to be harvested, or occurs when opportunities to harvest other species are limited, increased jeopardy to fishing businesses could occur, with the associated loss of social and economic benefits that accrues to increased personal stress and business failure.

Other factors to consider in the decision to establish a spawning closure are whether a spawning closure is appropriate from a biological perspective for the resource (i.e., is spawning sufficiently seasonal that protection is warranted), or appropriate from a management perspective (spawning may be seasonal, but the species may spawn, on average, at a smaller size than is harvested, such that sufficient spawning occurs prior to harvest and a closure may not be necessary from this perspective; however, spawning closure benefits could still accrue if the current fishery is affecting sex ratios), and identifying the appropriate period. Selecting the appropriate period to close from a biological perspective increases the likelihood that the long-term biological benefits, and associated social and economic benefits, will be realized. As discussed in **Section 3.2.1.1**, seasonal spawning does appear to occur for black sea bass, a spawning closure is appropriate from a management perspective, and peak black sea bass spawning is believed to occur in March through May, with most spawning occurring in March and April.

The alternative proposed spawning closures will be discussed from the perspective of the potential effects discussed above and it is assumed that a spawning closure is appropriate for black sea bass. Because **Alternative 1 (No Action)** would not establish a spawning closure, no change in fishing activity or patterns, or associated social and economic benefits, would precipitate. However, black sea bass would not receive the stock benefits that a spawning closure may provide and, assuming these would translate into a more stable and sustainable resource, **Alternative 1 (No Action)** would be expected to result in reduced long-term social benefits than an appropriate spawning closure.

Because **Alternative 2** would close the fishery during the two months when most spawning is expected to occur, March and April, most of the potential spawning protection benefits would be

expected to be realized. Among the alternatives considered, only **Alternative 4** would be expected to result in greater spawning protection. Based on 2006-2009 fishing-year data (**Table 4-18** and **Figure 4-4**), on average, approximately 15% of the total recreational and commercial ACL is harvested in March-April, and would have to be shifted to open months. Recreational anglers would be expected to bear a greater proportionate burden of affected harvest than commercial fishermen under all scenarios considered (**Alternatives 2-5**) as can be seen by comparing the commercial dockside revenue (**Table 4-19**) to the recreational forgone net operating revenue (**Table 4-20**). For example, **Alternative 2** (March 1-April 30$^{th}$) would result in a commercial loss of $182,000 versus a recreational loss of $246,749. Corresponding closures during this period would be shallow water grouper and red snapper for both months and both sectors, vermilion snapper for the recreational sector in March, greater amberjack for the commercial sector in April, and red porgy for the commercial sector in January - April (the harvest of goliath grouper and Nassau grouper is also prohibited year-round for both sectors, but neither species has been subject to recent harvest activity and, therefore, are not considered relevant to further consideration). Harvest of speckled hind and warsaw grouper is also prohibited through actions taken through Amendment 17B.

**Alternative 3** would be expected to result in reduced spawning protection, and associated long-term social benefits, than **Alternative 2**, while slightly increasing the amount of black sea bass harvest needed to be shifted, approximately 16% of the total recreational and commercial ACL, increasing the possibility of foregone harvests and reduced social and economic benefits. However, the vermilion snapper closure for the recreational sector would no longer overlap the black sea bass closure, increasing substitution opportunities.

As previously stated, of the alternatives considered, **Alternative 4** would be expected to result in the greatest spawning protection, but the 3-month closure would require the largest shift of harvests, approximately 24% of the total recreational and commercial ACL to the remaining months to maintain total harvest, and the largest possibility of foregone harvests and reduced associated social and economic benefits. No additional overlapping closures would be encountered by extension of the closure into May, and access to the shallow water grouper fishery would be available in May, increasing substitution opportunities, and associated benefits, for both sectors.

**Alternative 5** would be expected to result in the least spawning protection and associated social and economic benefits. Less than 10% of the commercial and recreational black sea bass average annual harvests would have to be shifted to open months, increasing the likelihood that benefits associated with harvesting the ACL would not be foregone. The only potentially significant overlapping closure under **Alternative 5** would be red snapper for both sectors.

It should be noted that in the previous discussion, unharvested ACL is assumed to result in foregone social and economic benefits. While there may be stock benefits associated with not harvesting the ACL, this assessment assumes that the assigned ACL sufficiently accounts for the biological needs of the resource, with appropriate harvest buffer, such that any unharvested portion of the ACL will not result in increased long-term harvests or associated social and economic benefits. As a result, not allowing the fishery to harvest the full ACL will only result in reduced benefits.

In summary, each of **Alternatives 2-5** would be expected to result in increased spawning protection relative to **Alternative 1 (No Action)** and associated long-term social and economic benefits. **Alternative 2** would be expected to result in greater social benefits than **Alternative 3** because it would close what appear to be the more appropriate spawning months, even though the amount of transferred black sea bass harvest would be similar and **Alternative 3** would result in less closure overlap with other species. **Alternative 4** would be expected to result in the greatest social benefits associated with resource protection, but may result in the highest likelihood of the full ACL not being harvested, resulting in foregone short-term social and economic benefits. **Alternative 5** would require the least behavioral changes by black sea bass fishermen and the least potential shore-side adjustments by associated businesses and communities, but would be expected to result in the least spawning protection and associated long-term social benefits.

### 4.8.4 Administrative Effects

Because there was not previously a spawning season closure in place for black sea bass, additional law enforcement efforts may be required to compel fishery participants to comply with a new mandate. No other administrative impacts are expected to result from the implementation of any of pawning season closures included under **Alternatives 2-5.**

## 4.9 Action 9: Establish a Commercial Trip Limit for Black Sea Bass

**Alternative 1 (No Action).** Do not establish a commercial trip limit for black sea bass.

**Alternative 2.** Establish a 500 pounds gw (590 pounds ww) trip limit.

**Alternative 3.** Establish a 750 pounds gw (885 pounds ww) trip limit.

**Preferred Alternative 4.** Establish a 1,000 pounds gw (1,180 pounds ww) trip limit.

**Alternative 5.** Establish a 1,250 pounds gw (1,475 pounds ww) trip limit.

**Alternative 6.** Establish a 1,000 pounds gw (1,180 pounds ww) trip limit; reduce to 500 pounds gutted weight (590 pounds ww) when 75% of the commercial ACL (quota) is met.

**Alternative 7.** Establish a 2,000 pounds gw (2,360 pounds ww) trip limit.

**Alternative 8.** Establish a 2,500 pounds gw (2,950 pounds ww) trip limit.

**Alternative 9.** Establish a 250 pounds gw (295 ww) trip limit.

### 4.9.1 Biological Effects

In part due to effort shifts as a result of Amendments 13C and 16, the black sea bass 309,000 pound gw commercial quota for the June 1, 2009-May 31, 2010 fishing year was met in December 2009, October 2010 for the June 1, 2010-May 31, 2011 fishing year; and July for the June 1, 2011-May 31, 2012 fishing year. **Alternative 1 (No Action)** would not implement any regulations to slow down the rate at which the quota is being met for black sea bass. However, measures that reduce the number of individuals who can fish with pots (**Action 2**), and a restriction on the number of black sea bass pots that can be fished (**Action 5**) could reduce the rate the quota is met. The increase in landings during recent fishing years appears to be the result of increased effort and increased catch per trip in 2010. The average catch per pot was similar during 2008 and 2009 (**Table 4-23**). Furthermore, the number of trips that fished black sea bass pots increased in the 2009 and 2010 fishing years (**Table 4-24**). There was also an increase in the number of trips that caught black sea bass with other gear types (predominantly hook and line).

**Table 4-23.** Average catch per trip (pounds gutted weight) and percentage of landings from pots during fishing years (June – May) for 2006-2010.
Other category is 99% hook and line gear. NMFS logbook data (05/12/11).

| Year | All Gear | Pots | Other | % Pot Landings |
|---|---|---|---|---|
| 2006 | 214 | 554 | 31 | 90.62% |
| 2007 | 165 | 501 | 25 | 89.15% |
| 2008 | 198 | 621 | 28 | 89.81% |
| 2009 | 188 | 643 | 31 | 87.83% |
| 2010 | 307 | 954 | 57 | 86.79% |

**Table 4-24.** Number of trips by gear for black sea bass taken during June-December 2008-2010.
Other category is 99% hook and line gear. NMFS logbook data (05/12/11).

| | 2008 | | | 2009 | | | 2010 | | |
|---|---|---|---|---|---|---|---|---|---|
| Month | All gear | Pots | Other | All Gear | Pots | Other | All Gear | Pots | Other |
| 6 | 197 | 17 | 180 | 274 | 46 | 228 | 310 | 105 | 205 |
| 7 | 198 | 24 | 174 | 229 | 37 | 192 | 283 | 68 | 215 |
| 8 | 179 | 22 | 157 | 244 | 47 | 197 | 288 | 61 | 227 |
| 9 | 88 | 11 | 77 | 241 | 74 | 167 | 255 | 56 | 199 |
| 10 | 138 | 34 | 104 | 200 | 65 | 135 | 25 | 11 | 14 |
| 11 | 194 | 58 | 136 | 210 | 73 | 137 | 5 | 0 | 5 |
| 12 | 172 | 71 | 101 | 108 | 47 | 61 | 101 | 63 | 38 |
| Total | 1,166 | 237 | 929 | 1,506 | 389 | 1,117 | 1,267 | 364 | 903 |

Action 9 would consider a single trip limit for black sea bass harvested with black sea bass pot and hook and line gear. Assuming 31 individuals would qualify for endorsements under **Action 2**, a 500-lbs gw (590 lbs ww) trip limit (**Alternative 2**) would keep the fishery open into October during the 2012/2013 fishing year and about three months longer than **Alternative 1 (No Action)** (**Table 4-25**) and would be expected to provide a 49% reduction in landings based on data from 2010 (**Table 4-27**). A trip limit of 750 lbs gw (885 lbs ww) (**Alternative 3**) would result in a September closure for the 2012/2013 fishing year, and would be expected to reduce harvest by about 34%. Under **Preferred Alternative 4**, a trip limit of 1,000 lbs gw weight (1,180 lbs ww) would be expected to reduce harvest by about 24% resulting in a closure during August for the 2012/2013 fishing year. Under **Alternative 5**, a trip limit of 1,000 lbs gw weight (1,250 lbs ww) would be expected to reduce harvest by about 17% resulting in a closure during August for the 2012 fishing year. **Alternative 6**, which would reduce a 1,000 pounds gw trip limit to 500 pounds gw when 75% of the quota is met would result in a closure that is later in the fishing season compared to the status quo; however, projecting the approximate months of a possible closure under this alternative is not possible. The similarities among the alternatives are likely due to an average catch that is lower than the specified trip limits in **Alternatives 3-6**. Therefore, many trips are not constrained by the trip limits. **Table 4-26** shows when a seasonal closure would occur if the trip limit was 1,000 lbs gw (1,180 lbs ww) and if the number of endorsements was changed to the preferred alternative under **Action 2**.

**Alternative 7**, a trip limit of 2,000 lbs gw (2,360 lbs ww), would only be expected to reduce harvest by 6%. Therefore, under **Alternative 7** the expected quota closure dates would be almost identical to **Alternative 1 (No Action)** and would have little effect of extending the black sea bass fishery. **Alternative 8** would establish a 2,500 lbs gw (2,775 lbs ww) trip limit. As with **Alternative 7**, a 2,500 lbs gw trip limit would provide little effect on extending the fishing season for black sea bass.

**Table 4-25.** Projected month of black sea bass commercial closure is estimated to occur for the 2011 and 2012 fishing year based on various trip limit alternatives assuming 31 individuals qualify for endorsements under Action 1. Assumes 2,500 lb ww qualification level. Trip limits in gutted weight.

| Fishing Year | **Alternative 1** No trip limit. | **Alternative 2** 500 pounds trip limit. | **Alternative 3** 750 pounds trip limit. | **Preferred Alternative 4** 1,000 pounds trip limit. | **Alternative 5** 1,250 pounds trip limit. | **Alternative 6** 1,000 pounds trip limit reduce to 500 pounds trip limit when 75% quota met. |
|---|---|---|---|---|---|---|
| June 2012-May 2013 | July (July-Sept) | Oct (Aug-Feb) | Sept (July-Dec) | Aug (July-Oct) | Aug (July-Oct) | X |
| June 2013-May 2014 | July (June-Aug) | Oct (Aug-Feb) | Aug (July-Dec) | July (July-Oct) | July (July-Sept) | X |

**Table 4-26.** Number of endorsements that qualify under Action 2, and estimated date commercial quota is met if the trip limit is 1,000 lbs gw (1,180 lbs ww).

| | | **2012-2013 Fishing Season** | | **2013-2014 Fishing Season** | |
|---|---|---|---|---|---|
| **Landings (ww)** | **# Endorsements** | **UCL** | **Mean** | **UCL** | **Mean** |
| 500 lbs | 52 | July | Aug | July | July |
| 1,000 lbs | 44 | July | Aug | July | July |
| 2,000 lbs | 38 | July | Aug | July | July |
| **(Preferred) 2,500 lbs** | 31 | July | Aug | July | July |
| 3,000 lbs | 27 | July | Aug | July | Aug |
| 3,500 lbs | 24 | July | Aug | July | Aug |
| 5,000 lbs | 20 | July | Sept | July | Sept |
| 10,000 lbs | 12 | Sept | Nov | Sept | Nov |

**Alternative 7** would establish a 2,000 lbs gw (2,360 lbs ww) trip limit. **Table 4-27** reveals that less than 4% of trips for those who qualify endorsements or caught black sea bass with hook and line gear during 2001 had catches at or greater than this trip level. Therefore, under **Alternative 7** the expected quota closure dates would be almost identical to **Alternative 1 (No Action)** and would have little effect of extending the black sea bass fishery. **Alternative 8** would establish a 2,500 lbs gwweight (2,775 lbs wwweight) trip limit. As with **Alternative 7**, a 2,500 lbs gw trip limit would provide little effect on extending the fishing season for black sea bass.

**Alternative 9** would specify a 250 lb gw trip limit that would allow the black sea bass fishery to remain open through a large portion the June-May fishing year, and into right whale calving season. **Action 2** includes alternatives that would limit the number of fishermen who can fish black sea bass pots. If the number of participants in the fishery were lowered, the trip limit required to keep the commercial black sea bass sector open all year would be lower (**Table 4-27**).

**Action 5** includes alternatives to limit the number of pots that can be fished and **Action 6** includes an alternative that would require fishermen return pots to shore at the conclusion of a trip. There is a possibility that fishermen would exceed the trip limit when retrieving pots and fishermen would have to empty the catch from the pots. Although release mortality of black sea bass from pots is considered to be very low, some mortality would be expected if fishermen were to release fish from pots after a trip limit is met.

The biological effects of the different trip limit alternatives on the black sea bass stock would be very similar. Fishing for black sea bass would stop when a quota is met. Incidental catch and mortality of black sea bass after a quota was met would be expected to be minor since all pots must be removed from the water when a quota is met, catch of black sea bass with hook and line gear is small with respect to black sea bass pot gear, and release mortality is very low. However, low trip limits could have negative impacts on right whales if it resulted in an extension of the June-May fishing season into November-April; thereby, increasing the chance of entanglement of right whales with lines from pot gear. **Alternatives 2** and **9** could result in a year-round fishery for black sea bass and therefore have the greatest negative biological effect on right whales. Higher trip limits alternatives including **Preferred Alternative 5**, would have less of a negative biological effect on right whales since they provide little extension to the length of the fishing season.

**Alternative 1 (No Action), 7,** and **8** would likely perpetuate the existing level of risk for interactions between ESA-listed species and the fishery. **Alternatives 2-9** are unlikely to have adverse effects on listed *Acropora* species. Black sea bass pots are prohibited south of St. Lucie Inlet, Florida. The northern extent of the range of *Acropora* in Florida is West Palm Beach, south of the black sea bass trapping boundary. Because the range of *Acropora* and the black sea bass pot fishery do not overlap, black sea bass pots will not interact with *Acropora* colonies. Previous ESA consultations determined the hook-and-line sector of the snapper grouper fishery (including effort targeting black sea bass) was not likely to adversely affect *Acropora* species. These alternatives are unlikely to alter fishing behavior in a way that would cause new adverse effects to these species.

The impacts of the remaining alternatives on sea turtles and smalltooth sawfish will likely depend on how overall fishing effort changes. If smaller trip limits simply mean less effort is used for each trip but the total number of trips increases, then changes in the likelihood of interactions between the species and the fishery are unlikely to occur. Conversely, if greater trip limits means more effort is exerted during a given trip, but fewer trips occur each year, the likelihood of interactions may also remain the same. If the alternatives reduce the overall levels of effort in the fishery, then potential of interactions is likely to decrease.

**Table 4-27.** Trip limit, number of trips, amount of pounds (gutted weight), and percent reduction in harvest provided by a trip limit during June 2010 - May 2011 fishing year. Includes 31 permits that qualified for endorsements under Action 2 and vessels that caught black sea bass with potline gear.

| Trip Limit (ww) | Trip Limit (gw) | 2010 | | | | |
|---|---|---|---|---|---|---|
| | | # Trips | % Trips | Pounds over trip (ww) | Pounds over trip (gw) | % Reduction |
| 0 | 0 | 271 | 100.00% | 272,068 | 230,566 | 100.00% |
| 20 | 17 | 271 | 100.00% | 266,648 | 225,973 | 98.01% |
| 40 | 34 | 271 | 100.00% | 261,228 | 221,380 | 96.02% |
| 60 | 51 | 271 | 100.00% | 255,808 | 216,786 | 94.02% |
| 80 | 68 | 271 | 100.00% | 250,388 | 212,193 | 92.03% |
| 100 | 85 | 270 | 99.63% | 244,968 | 207,600 | 90.04% |
| 115 | 97 | 269 | 99.26% | 240,931 | 204,179 | 88.56% |
| 150 | 127 | 266 | 98.15% | 231,564 | 196,241 | 85.11% |
| 175 | 148 | 264 | 97.42% | 224,960 | 190,644 | 82.69% |
| 200 | 169 | 261 | 96.31% | 218,393 | 185,079 | 80.27% |
| 250 | 212 | 253 | 93.36% | 205,534 | 174,181 | 75.55% |
| 300 | 254 | 240 | 88.56% | 193,188 | 163,719 | 71.01% |
| 400 | 339 | 210 | 77.49% | 170,766 | 144,717 | 62.77% |
| 500 | 424 | 190 | 70.11% | 150,696 | 127,708 | 55.39% |
| 600 | 508 | 162 | 59.78% | 133,087 | 112,785 | 48.92% |
| 700 | 593 | 136 | 50.18% | 118,226 | 100,191 | 43.45% |
| 800 | 678 | 122 | 45.02% | 105,350 | 89,279 | 38.72% |
| 900 | 763 | 106 | 39.11% | 93,916 | 79,589 | 34.52% |
| 1,000 | 847 | 94 | 34.69% | 83,940 | 71,135 | 30.85% |
| 1,100 | 932 | 84 | 31.00% | 74,945 | 63,513 | 27.55% |
| 1,200 | 1,017 | 79 | 29.15% | 66,805 | 56,614 | 24.55% |
| 1,300 | 1,102 | 74 | 27.31% | 59,198 | 50,168 | 21.76% |
| 1,400 | 1,186 | 70 | 25.83% | 51,968 | 44,040 | 19.10% |
| 1,500 | 1,271 | 56 | 20.66% | 45,771 | 38,789 | 16.82% |
| 1,600 | 1,356 | 51 | 18.82% | 40,436 | 34,268 | 14.86% |
| 1,700 | 1,441 | 44 | 16.24% | 35,674 | 30,233 | 13.11% |
| 1,800 | 1,525 | 39 | 14.39% | 31,536 | 26,726 | 11.59% |
| 1,900 | 1,610 | 34 | 12.55% | 27,793 | 23,553 | 10.22% |
| 2,000 | 1,695 | 33 | 12.18% | 24,393 | 20,672 | 8.97% |
| 2,250 | 1,907 | 27 | 9.96% | 16,943 | 14,359 | 6.23% |
| 2,500 | 2,119 | 19 | 7.01% | 10,850 | 9,194 | 3.99% |
| 2,750 | 2,331 | 17 | 6.27% | 6,492 | 5,502 | 2.39% |

Currently, the black sea bass fishing season is closing before large whale migration/calving season begins, and no whale entanglement risk is present. **Alternatives 3-6** are projected to extend the current fishing season into August or September at the latest. These alternatives are not likely to result in fishing during the migration/calving season (right whale calving season off North Carolina is November 1 - April 30, and November 15 - April 15 off South Carolina, Georgia, and Florida.) the potential for whale entanglements is unlikely to increase relative to the existing season. If under **Alternatives 7-8** the fishery continues to close before the migration/calving season, these alternatives are likely to have most benefit to large whale by completely reducing the risk of entanglement. **Alternative 9** is likely to lead to the greatest risk of large whale entanglement simply because the fishery would remain open during the entire migration/calving season. Some of the actions proposed in this amendment (i.e., seasonal closures, trap retrieval requirements, etc.), if implemented, could potentially reduce the risk of entanglement to large whales that may result from **Alternative 9**. However, it is currently unclear how great a reduction in entanglement risk would be achieved by these actions.

### 4.9.2 Economic Effects

**Table 4-27** shows the approximate number of pounds in excess landed for trips in the 2010/2011 season for the different alternatives in **Action 9**. Using the data from **Table 4-27** and from **Table 3-2**, showing the average price of $2.17 per pound, one can estimate the amount of revenue commercial black sea bass pot fishermen would have forfeited on those trips and are shown in **Table 4-28**. However, the numbers in **Table 4-28** only represent the amount they would have lost on those trips. Had trip limits been in place, it is likely the season would have been extended and the fishermen would have recouped the amount they would have forfeited on the earlier trips. In addition, it is possible some trip limits would be low enough to make it unprofitable for vessels to undertake more trips to totally recoup landings and revenues forgone per trip. Further, even if those additional trips are taken so as to totally recoup revenue losses, it is likely total costs would be higher since it is likely the cost per trip would remain about the same but more trips taken would mean more additional costs.

**Alternative 6** is unlike the rest of the alternatives in that it allows the trip limit to remain at 1,000 lbs gw and then drop to 500 lbs gw once 75% of the commercial ACL is projected to be taken. In practice, this will be difficult to accomplish due to the time lag between landings, reporting, and federal notice requirements to let fishermen know when the trip limit will drop to 500 lbs gw. Because of this added uncertainty, dollar value estimates are less certain for **Alternative 6** than they are for other alternatives in this action. Had **Alternative 6** been the management method in place during the 2010/2011 season, approximately 200 more trips with a 500 lb gw trip limit could have taken place.

In early October 2010, the ACL was projected to be met and the commercial season was closed. Evaluation of dealer data indicated that the quota had not been met. Commercial fishing for black sea bass reopened for a two week period in December 2010 to allow fishermen to catch the remaining commercial ACL. Calculations for **Alternative 6** are based on the trips that took place in 2010. Had the 1,000 lb gw trip limit been in place in 2010, 75% of the ACL would have

been landed at about the time of the October closure. The projections in **Tables 4-28** through **4-30** assume that all trips taken after the October closure would have been limited to 500 lbs gw.

**Table 4-28.** Dockside Revenue foregone as a result of Alternatives 2-9 based on 2010 average landings data. Values are in 2010 dollars.

| | **June 2010 - May 2011 Fishing Year** | | | | | |
|---|---|---|---|---|---|---|
| | **Trip Limit (in pounds gutted weight)** | **# Trips Over the Limit** | **% Trips Over the Limit** | **Pounds over the Limit** | **% Pounds Over the Limit** | **Approximate Revenue Lost on Trips Over** |
| Alternative 2 | 500 | 255 | 18.79% | 166,372 | 43.67% | $361,027 |
| Alternative 3 | 750 | 156 | 11.50% | 116,514 | 30.58% | $252,835 |
| **Preferred Alternative 4** | 1,000 | 114 | 8.40% | 83,133 | 21.82% | $191,249 |
| Alternative 5 | 1,250 | 85 | 6.26% | 57,607 | 15.12% | $125,007 |
| Alternative 6 | 1,000, then reduced to 500 once 75% of ACL is taken | 137 | 10.10% | 108,270 | 35.04% | $234,946 |
| Alternative 7 | 2,000 | 34 | 2.51% | 17,789 | 4.67% | $38,602 |
| Alternative 8 | 2,500 | 14 | 1.03% | 6,389 | 1.68% | $13,864 |
| Alternative 9 | 250 | 383 | 28.22% | 245,507 | 64.44% | $532,750 |

Source: NMFS Logbook Data, 10/14/2011

Using this methodology, short-term economic effects of the trip limits were made in the form of ex-vessel revenues. This analysis cannot account for the fact that vessels may make more trips as a result of a smaller trip limit. However, fishermen, who are able to, are likely to make more trips in order to maintain current landings and profit levels. Therefore, the results listed in **Table 4-28** could be an overestimation of ex-vessel revenue losses.

In general, for boats that bring in relatively larger landings per trip, ex-vessel revenue losses are expected to occur. If a boat with historically larger landings adheres to the trip limit and does not increase the number of trips made, landings by these vessels would decrease compared to current landings as will ex-vessel revenues. Boats that bring in smaller landings per trip may or may not be impacted by the trip limits proposed. Most trips that land black sea bass as part of their total trip landings are not specifically targeting that species. Black sea bass are frequently caught commercially with other reef species, most notably with vermilion snapper and gag (NMFS Logbook Data, 10/14/2011). The total pounds of those two species landed on trips where black sea bass were also caught was 381,234 pounds, compared to 381,009 pounds of black sea bass.

The majority of commercial vessels that land black sea bass have not historically landed the proposed trip limits and will not experience ex-vessel revenue losses. Others, primarily those who target black sea bass with pots will likely reach the proposed trip limits and either experience revenue losses or make additional trips to increase landings. While additional trips will increase ex-vessel revenues, they will also increase costs and decrease net revenues (or profits). Some vessels may be able to increase their trips and net revenues; however, others will not be able to do so because they are too far from the fishing grounds to make additional trips worthwhile or costs are high enough to deter additional trips. It should be noted that trip limit regulations apply per day so any potential increase in trips would have to be on other days since multiple trips in the same day are prohibited (50CRF622.44).

**Alternative 9** (250 lbs gw trip limit) has the largest short-term negative economic effects in the form of foregone dockside revenues while **Alternative 2** has the second largest negative effect. **Alternatives 3, 6, 4 (Preferred), 5, 7,** and **8** have the next largest economic losses in descending order (**Table 4-28**). In general, the smaller the trip limit, the larger the economic losses. However, smaller trip limits could have some economic benefit in that fish houses and dealers would possibly be able to maintain some supply for a longer period of the season and could possibly receive higher prices for their product since the market would not be flooded with an excess of black sea bass over a short period of time. Without making additional trips, fishery wide ex-vessel revenues will decrease, as will profit levels. If fishermen who are able to, make additional trips, their costs will increase making increasing profit levels harder than under **Alternative 1 (No Action)**. If we assume that fishermen under current conditions are maximizing their profitability, then trip limits will certainly lead to profit losses for the fishery as a whole. These profit losses cannot be estimated unfortunately because cost data exists for the snapper grouper fishery as a whole and does not exist for vessels that target specific species, like black sea bass.

**Alternatives 2-9** would impact different gear groups differently. **Table 4-29** shows the dockside revenues foregone as a result of **Alternatives 2-9** for pot and hook and line gear users. As the trip limit increases, dockside revenue losses decrease. No hook and line trips were over the trip limit in **Alternative 6** until 75% of the ACL had been reached and the trip limit dropped from 1,000 to 500 pounds.

**Table 4-29.** Dockside revenues foregone as a result of Alternatives 2-9 based on 2010 average landings data by gear for black sea bass. All values are in 2010 dollars.

| Alternative | Pot Gear - Total revenue loss in 2009 dollars (ex-vessel revenue) | Hook and Line - Total revenue loss in 2009 dollars (ex-vessel revenue) |
|---|---|---|
| Alternative 1 (No Action) | $0 | $0 |
| Alternative 2 (500 pounds gw) | $400,000 | $6,000 |
| Alternative 3 (750 pounds gw) | $281,000 | $3,000 |
| **Preferred Alternative 4** (1,000 pounds gw) | $201,000 | $2,000 |
| Alternative 5 (1,250 pounds gw) | $139,000 | $1,000 |
| Alternative 6 (1,000 pounds gw reduced to 500 pounds gw when 75% of quota met) | $260,000 | $4,000 |
| Alternative 7 (2,000 pounds gw) | $43,000 | $0 |
| Alternative 8 (2,500 pounds gw) | $16,000 | $0 |
| Alternative 9 (250 pounds gw) | $581,000 | $18,000 |

Source: NMFS Logbook Data (10/14/2011).

With regard to short-term economic effects by state, **Table 4-30** shows dockside revenue losses by state. The table indicates that revenue losses will be experienced primarily by North Carolina with significant impacts to South Carolina and to Florida/Georgia. As expected, in general, the higher the trip limit, the smaller the revenue loss.

**Table 4-30.** Dockside revenues foregone as a result of Alternatives 2-9 based on 2007-2010 average landings data, by state for black sea bass. All values are in 2010 dollars.

| Alternative | North Carolina | South Carolina | Georgia and East Florida |
|---|---|---|---|
| Alternative 1 (No Action) | $0 | $0 | $0 |
| Sub-Alternative 2 (500 pounds gw) | $223,000 | $92,000 | $90,000 |
| Alternative 3 (750 pounds gw) | $152,000 | $62,000 | $70,000 |
| **Preferred Alternative 4** (1,000 pounds gw) | $104,000 | $44,000 | $54,000 |
| Alternative 5 (1,250 pounds gw) | $69,000 | $32,000 | $39,000 |
| Alternative 6 (1,000 pounds gw reduced to 500 pounds gw when 75% of quota met) | $141,000 | $63,000 | $60,000 |
| Alternative 7 (2,000 pounds gw) | $23,000 | $10,000 | $10,000 |
| Alternative 8 (2,500 pounds gw) | $10,000 | $4,000 | $2,000 |
| Alternative 9 (250 pounds gw) | $344,000 | $136,000 | $119,000 |

(Source: NMFS Logbook Data, 10/14/2011).

### 4.9.3 Social Effects

The social costs of a trip limit would be associated with the economic costs of this type of management, but social benefits would be tied to a longer fishing season by extending the time it takes to reach the ACL. Overall, **Alternative 1 (No Action)** would not be expected to generate negative short-term social impacts due to economic costs associated with trip limits, but the shortened season that the black sea bass fishery has experienced in recent years would continue. Limiting harvests per trip, as would occur under **Alternatives 2-9**, would be expected to alter the profitability of some trips. In order for a trip limit to be effective in reducing the pace of harvest, it must reduce the harvest of that species on some trips. This could result in increased harvest of this species on other trips by the same or other vessels, or increased harvest of other species as compensation, with potentially deleterious effects on these species or other fishermen who typically harvest these species. Normally, however, even with compensation, the expectation is that total trip revenues are reduced for some fishermen, jeopardizing normal fishing behavior, revenues, and social benefits. The potential economic effects of the proposed black sea bass trip limits are described in **Section 4.9.2**, noting that these estimates do not incorporate potential compensating effort or harvest behavior. In general, it is assumed for the purposes of this discussion that the greater the economic losses, the greater the social losses. Beyond this assumption, available data do not support a definitive determination of which alternative trip limit would be expected to result in greater social benefits. In general, the lowest proposed trip limit of 250 lbs gw (**Alternative 9**) would have the least significant short-term impact on the fishermen, but also be the least likely to contribute to a longer fishing season. The highest proposed trip limit 2,500 lbs gw (**Alternative 8**) would be least likely to require fishermen to change harvest patterns, but also least likely to lengthen the season. Additionally, lower trip limits would impact larger operations more than the smaller vessels in terms of economic efficiency of the trips. The trip limit of 1,000 lbs gw under **Preferred Alternative 4** would have more impacts on the larger vessels than **Alternatives 5, 7** and **8,** but also will be more likely to contribute to a longer fishing season than the trip limits under **Alternatives 2, 3,** and **9**.

### 4.9.4 Administrative Effects

**Alternative 1 (No Action)** would require no additional time or cost beyond the status quo and would therefore, result in the lowest impact on the administrative environment. **Alternatives 2-5** and **7-9** only differ in the number of pounds associated with the trip limit, and therefore, would likely result in equal administrative burdens associated with notifying fishery participants and enforcement. If **Alternative 6** were chosen as a preferred alternative, a trip limit reduction notice would need to be distributed when monitoring efforts indicate 75% of the commercial ACL is projected to be met. Therefore, **Alternative 6** is considered the most administratively burdensome of the trip limit alternatives considered. Because the commercial sector of the black sea bass segment of the snapper grouper fishery did not previously have a trip limit, establishing a trip limit would constitute an additional enforcement burden beyond the status quo alternative. Enforcement efforts associated with trip limits may entail minimum to moderate staff time and cost carry out based on the additional layer of compliance trip limit present during dockside and at-sea inspections.

## 4.10 Action 10: Modify Commercial and/or Recreational Black Sea Bass Size Limits

**Alternative 1 (No Action).** Do not modify the current size limits of 12 inches total length (TL) for the recreational sector and 10 inches TL for the commercial sector.

**Alternative 2.** Modify the recreational size limit.

**Preferred Sub-Alternative 2a.** Increase the recreational size limit from 12" TL to 13" TL.

**Alternative 3.** Modify the commercial size limit.

**Preferred Sub-Alternative 3a.** Increase the commercial size limit from 10" TL to 11" TL.

**Sub-Alternative 3b.** Increase the commercial size limit from 10" TL to 12" TL.

**Sub-Alternative 3c.** Increase the commercial size limit from 10" TL to 11" TL in year 1 and then to 12" TL in year 2 onwards.

### 4.10.1 Biological Effects

**Alternative 1 (No Action)** would not modify the current black sea bass size limits of 12 inches total length (TL) for the recreational sector, which was implemented through Amendment 13C to the Snapper Grouper FMP (SAFMC 2006), or the 10 inches TL black sea bass minimum size limit for the commercial sector. A new stock assessment was recently completed for black sea bass (SEDAR 25) and results indicate the stock is no longer overfished but is still undergoing overfishing and is still rebuilding to the biomass at MSY. **Alternatives 2** and **3** differ in that **Alternative 2** would increase the minimum size limit for the recreational sector, whereas, **Alternative 3** would increase the minimum size limit for the commercial sector.

Increasing the minimum size limit would theoretically decrease the rate of harvest by reducing the number of legal size fish able to be harvested. However, minimum size limits can have detrimental effects on fish stocks if they do not protect the older year classes. Recruitment problems can occur in a fishery that has fewer age classes than an un-fished population. Additionally, minimum size limits can encourage the harvest of older, larger fish, which have the greatest reproductive potential. The update of the black sea bass SEDAR assessment (SEDAR Assessment Update #1 2005) shows that the 10 inch minimum size limit instituted in 1999 allowed biomass of the stock to persist in a heavily fished environment because the minimum size limit was large enough to protect several year classes of spawning fish. The age and size at 50% maturity for female black sea bass is 7 inches TL and 1 year, respectively. Black sea bass are 3 years old when they reach a size of 10 inches TL.

Discard mortality can also limit the effectiveness of specific management measures if fishermen catch and discard black sea bass when targeting co-occurring species. However, SEDAR 25 indicates release mortality of black sea bass is very low (7% hook and line; 1% black sea bass pot), suggesting minimum size limits and other management measures that create regulatory discards can be an effective management tool for black sea bass. McGovern and Meister (1999) report a recapture rate of 10.2% for 10,462 that were tagged during 1993-1998 suggesting

survival of released black sea bass is high. The South Atlantic Council's Scientific and Statistical Committee (SSC) has supported the use of minimum size limits for black sea bass.

There would be little difference in the biological effects of adjusting the minimum size limit for the alternatives being considered because ACLs are in place for the commercial and recreational sectors, which would prevent overfishing from occurring. An AM is enacted if the ACL is met or is projected to be met. Furthermore, release mortality is estimated to be very low for black sea bass. Therefore, incidental catch of black sea bass when fishermen target co-occurring species would not be expected to have negative biological effects.

**Table 4-31.** Preliminary estimate of reduction in harvest of black sea bass for headboat sector associated with increased size limit. Based on data from 2009-2010 (n = 7,302).

| Release Mortality | Estimated Harvest Reductions |
|---|---|
| | 13 Inch (Sub-Alternative 2a) |
| 0% | 22.6 |
| 7% | 20.9 |

**Table 4-32.** Preliminary estimate of reduction in harvest of black sea bass for MRFSS associated with increased size limit. Based on data from 2009-2010 (n = 3,272).

| Release Mortality | Estimated Harvest Reductions |
|---|---|
| | 13 Inch (Sub-Alternative 2a) |
| 0% | 20.3 |
| 7% | 18.8 |

**Table 4-33.** Preliminary estimate of reduction in harvest of black sea bass for commercial sector associated with increased size limit. Based on data from 2009-2011 (n = 8,767).

| Release Mortality | Estimated Harvest Reductions | |
|---|---|---|
| | 11 Inch (Sub-Alternative 3a) | 12 Inch (Sub-Alternative 3b and 3c) |
| 0% | 9.4 | 32.4 |
| 1% | 9.3 | 32.1 |

For the recreational sector, increasing the minimum size limit from 12 inches TL to 13 inches TL would result in a 20-22 percent21-23% harvest reduction for the for-hire sector and an 19-20 percent% reduction in harvest for the private recreational sector (**Tables 4-31** and **4-32**). The greatest reduction in harvest would be achieved by increasing the minimum size limit in the commercial sector to 12 inches TL under **Sub-Alternative 3b** or **3c**. Increasing the minimum size limit in the commercial sector would result in a maximum reduction in commercial harvest of 32.4 percent;%; therefore, **Sub-Alternatives 3b** and **3c** could be considered the most biologically beneficial of the size limit modification alternatives considered. **Preferred Alternative** 3a would reduce the commercial harvest by 9%Though increasing the minimum size limit would result in increased regulatory discards, bycatch mortality in the black sea bass

segment of the snapper grouper fishery is very low, and regulatory discards are unlikely to contribute to overfishing or jeopardize rebuilding efforts.

**Alternative 1 (No Action)** would likely perpetuate the existing level of risk for interactions between ESA-listed species and the fishery. **Alternatives 2-3** and their sub-alternatives are unlikely to have adverse effects on listed *Acropora* species. Black sea bass pots are prohibited south of St. Lucie Inlet, Florida. The northern extent of the range of *Acropora* in Florida is West Palm Beach, south of the black sea bass trapping boundary. Because the range of *Acropora* and the black sea bass pot fishery do not overlap, black sea bass pots will not interact with *Acropora* colonies. Previous ESA consultations determined the hook-and-line sector of the snapper grouper fishery (including effort targeting black sea bass) was not likely to adversely affect *Acropora* species. These alternatives are unlikely to alter fishing behavior in a way that would cause new adverse effects to these species.

The impacts of **Alternatives 2-3** and their sub-alternatives on sea turtles, smalltooth sawfish, and large whales will likely depending on changes to overall fishing effort. If smaller size limits actually lead to a reduction in overall effort, then the potential of interactions between protected species and the fishery is likely to decrease. However, if changes in the overall size limits does not change the overall amount of effort, then the current levels of interactions between protected species and the fishery on a whole are unlikely to change.

### 4.10.2 Economic Effects

Commercial Sector Effects

**Alternative 1 (no action)** would not have any additional impact on the fishery. **Alternative 2** may have some impacts on the commercial fishery. **Sub-Alternative 3** was chosen to raise the size limit in the commercial fishery. The size of the impact of such an action would be difficult to measure. However, the larger the difference between the allowable size limit between sectors, the greater would be the advantage to the sector that had the smaller size limit.

In general, short term economic losses are experienced in a fishery like black sea bass when the size limit is increased. The length of the short term loss is dependent on the growth rate of the fish and the size of the increase. The size of the short term economic impact increases as you go from **Sub-Alternative 3a, 3c**, to **3b**, respectively. Conversely, in the black sea bass fishery, fishermen are usually paid a higher price per pound for larger fish. Allowing fish to become larger before they are harvested would allow the fishermen to receive a higher price. If the size limit is increased, the fish will get larger and weigh more; therefore, it will take fewer fish to meet the ACL. Increasing the size limit and not putting trip limits into place as in **Action 9, Alternative 1 (no action)**, would likely exacerbate the recent trend towards shorter and shorter seasons, leading to a derby fishery and depressed prices.

Recreational Sector Effects

In principle, **Alternative 1 (no action)** would not entail any changes to the economic status of the recreational sector. **Alternative 2** has been estimated to reduce headboat harvest by 22.6 percent, assuming no discard mortality rate, or 20.9 percent, assuming a 7 percent discard mortality rate. Harvest reduction in the shore, private/rental, and charterboat modes has been estimated at 20.3 percent under a zero percent discard mortality rate, or 18.8 percent under a 7 percent discard mortality rate. In terms of total recreational harvest and given the most recent years' relatively high harvest rate, the AM would likely apply resulting in no additional reduction in recreational harvest from increasing the size limit (**Alternative 2**). It is possible, though, that the harvest reduction due to the size limit increase would extend the recreational fishing season. Whether this would result in net economic benefits to the recreational sector depends largely on the interplay of benefits from additional fishing days and the cost of fishing during the regular season (fishing days without the size limit increase) and extended seasons (additional fishing days due to the size limit increase).

An extended fishing season would allow more fishing trips to be undertaken by recreational anglers through the various fishing platforms. Additional trips would generate more revenues and likely profits to the for-hire sector and more consumer surplus to anglers fishing in private and for-hire boats. On the other hand, the quality of the fishing experience may decrease from being compelled to throw back undersize fish. If the reduction in the quality of the fishing experience were substantial enough to result in some trip cancellations, for-hire revenues and profits may be impaired. In addition, reduction in the quality of the fishing experience would result in lower angler consumer surplus per fishing trip. The net effects of such an increase in benefits and costs due to the size limit change cannot be ascertained given current information.

### 4.10.3 Social Effects

Similar to regulations that could restrict harvest, such as ACLs, bag limits and trip limits, an increase in the minimum size for black sea bass is expected to produce negative social effects in the short term, but positive social effects in the long term. The negative social effects for the commercial sector will generally be associated with the economic impacts of the change in minimum size limit, as there may be fewer fish that can be retained for sale. For the recreational sector, the size limit will also reduce the number of fish that can be kept, which may impact recreational fishing experiences and have an economic impact on the for-hire sector. The long-term social benefits would be associated with the biological benefits of a larger minimum size, as the black sea bass stock rebuilds.

**Alternative 1 (No Action)** would likely have few or no social effects, because the current size limits would not be changed. **Alternative 2** and **Preferred Sub-Alternative 2a** would affect only the recreational sector. **Tables 4-31** and **4-32** show that harvest is estimated to be reduced between 24% for the headboat and private recreational sectors, and this may impact for-hire vessels and other businesses associated with recreational fishing. Overall, the increase in minimum size may have some impacts on recreational fishing opportunities by limiting the number of fish that can be retained, but is expected to produce long-term social benefits by contributing to the health of the black sea bass stock.

**Alternative 3** and **Sub-Alternatives 3a (Preferred)-3c** would increase the minimum size limit for commercial fishermen, and is expected to reduce harvest by about 9 % for an 11-inch TL minimum and 32 % for a 12-inch TL minimum size limit (see (**Table 4-30**). **Sub-Alternative 3b** would have more impact on commercial fishermen than **Preferred Sub-Alternative 3a**. Although **Sub-Alternative 3c** allows for a two-year process to a 12-inch TL minimum size limit, at the second year the social effects on the commercial sector would be similar to those produced by **Sub-Alternative 3b.** Overall, it is expected that a change in the minimum size requirement would result in long-term social benefits associated with the health of the black sea bass stock.

### 4.10.4 Administrative Effects

Modifying the current recreational and/or commercial minimum size limits for black sea bass would not require any additional time or cost to implement. Because there is already a size limit in place for each sector no additional enforcement effort would be required beyond the status quo; the minimum size measurement would simply change. Therefore, all alternatives considered under this action, including **Action 1 (No Action),** would result in similar, yet negligible, impacts on the administrative environment.

## 4.11 Action 11: Improvements to Commercial Vessel Data Reporting

**Preferred Alternative 1 (No Action).** Retain existing data reporting systems for the commercial sector.

*Under this alternative, as implemented by Amendment 15B to the Snapper Grouper FMP, a commercial vessel with a federal permit, if selected by NOAA Fisheries Service, is required to maintain and submit fishing records; requires a vessel that fishes in the EEZ, if selected by NOAA Fisheries Service, to carry an observer and install an electronic logbook (ELB) and/or video monitoring equipment provided by NOAA Fisheries Service. Note: Refer to the table in* ***Section 4.11.1*** *for a complete list of current data reporting requirements.*

**Alternative 2.** Require all vessels with a Federal snapper grouper commercial permit to have an electronic logbook tied to the vessel's GPS onboard the vessel.

(Note: Alternative 2 would require 100% of vessels to have an electronic logbook; whereas, current data reporting programs only require electronic logbooks if selected.)

**Alternative 3.** Provide the option for fishermen to submit their logbook entries electronically via an electronic version of the logbook made available online.

**Alternative 4.** Require that commercial landings and catch/effort data be submitted in accordance with ACCSP standards, using the SAFIS system.

**Note:** Alternative 4 would require that 100% of dealers and fishermen report electronically using the Standard Atlantic Fisheries Information System (**SAFIS).** SAFIS is a real-time, web-based reporting system for commercial landings on the Atlantic coast (http://www.accsp.org/safis.htm). It is comprised of three applications:

- Electronic Dealer Reports (eDR) - A forms based application collecting information from the dealers (landings, condition and price).
- Electronic Trip Reports (eTRIPS) - A Web-based application collecting data from fisherman (catch and effort) including gear used, fishing areas, and catch disposition.
- SAFIS Management System (SMS) - A Web-based application providing administrative tools to SAFIS administrators for management of user accounts, participants, permits etc.

The partners (States, Councils, USFWS, NMFS, Commissions, DC Fisheries and Wildlife Division) of the Atlantic Coastal Cooperative Statistics Program (ACCSP) created SAFIS to meet the increasing need for real-time commercial landings data. Through a cooperative, consensus driven process, ACCSP developed a set of data collection standards. All program partners have agreed to these standards and have been adopted for almost all aspects of fisheries dependant data collection. A process has been put into place to fund research and implementation of these standards in the partner agencies.

Since its creation in 2003, SAFIS has been used to report data for the majority of states in the Northeast (North Carolina north participate in the program). The State of Rhode Island first adopted SAFIS in February 2003. SAFIS was then adopted by Maryland for landings data and

quota monitoring of important finfish and shellfish species. NOAA Fisheries Northeast Region launched SAFIS for federally permitted seafood dealers in May 2004. Connecticut, Massachusetts, New Hampshire and Maine now use SAFIS. ACCSP continues to work with New York, Delaware, New Jersey to accommodate specific industry needs.

- SAFIS provides up-to-date information on species caught and their impact on fisheries and quotas
- SAFIS allows confidential access to data-of-record by fisherman and dealers
- SAFIS fulfills State and Federal reporting requirements through online data entry and reporting
- SAFIS management tools facilitate maintenance of partner-owned data such as participants, online permits, and vessels.

SAFIS management tools facilitate maintenance of partner-owned data such as participants, online permits, and vessels.

Program Partner SAFIS Implementation

Electronic Dealer Reporting (eDR): A web based application that collects landings data from dealers. This includes species, disposition and price.

Electronic Trip Reporting (eTRIPS): A web based application that compiles catch and effort data from fishers. Trip reports, or logbooks in some fisheries, provide catch and effort data from a permitted fishing entity (fisher of a vessel) or a single vessel. A trip is any single event where fishing was attempted, regardless of catch. Trips may be categorized as commercial, party/charter or recreational.

Voluntary Angler Logbooks (eLOGBOOK): A web based application that collects data from private recreational anglers on a voluntary basis.

Electronic One Trip Ticket (e-1Ticket): A web based application providing the ability to collect trip/effort/catch data and simultaneously create a dealer report. This application was released into production in January 2011.

### 4.11.1 Biological Effects

The South Atlantic Council decided to take no action on Action 11 at their December 2011 meeting because they decided to develop a new generic amendment that would address improvements to data reporting in all their FMPs. **Preferred Alternative 1 (No Action)** would retain existing data reporting systems for the commercial sector including new regulations implemented through Amendment 15B to the Snapper Grouper FMP, which include a requirement for private recreational vessels that fish in the exclusive economic zone (EEZ), if selected by NOAA Fisheries Service, to maintain and submit fishing records; and requires a vessel that fishes in the EEZ, if selected by NOAA Fisheries Service, to carry an observer and install an electronic logbook (ELB) and/or video monitoring equipment provided by NOAA Fisheries Service (**Table 4-34**). For the South Atlantic snapper grouper commercial fishery, current regulations (50CFR § 622.5) require commercial and recreational for-hire participants in

the South Atlantic snapper grouper fishery, who are selected by the Southeast Science and Research Director (SRD), to maintain and submit a fishing record on forms provided by the SRD. Bycatch data on protected species are currently collected in the commercial snapper grouper fishery through the supplementary discard form. In 1990, the Southeast Fisheries Science Center (SEFSC) initiated a logbook program for vessels with federal permits in the snapper grouper fishery from the Gulf of Mexico and South Atlantic. **Preferred Alternative 1 (No Action)** would continue to obtain fishing effort information as well as protected species interactions via a logbook.

In 2001, a separate bycatch reporting logbook was added to include numbers on the average size of discarded fish by species. Discard data are collected using a supplemental form that is sent to a 20% stratified random sample of the active permit holders. The sample selections are made in July of each year and the selected fishermen/vessels are required to complete and submit the form for the trips they make during August through July of the following year. Fishermen are not selected for the next four years after they submit a discard form for a year. However, over a five-year period, 100% of snapper grouper permit holders will have been required to report in one of the five years. In addition, information is collected on protected species interactions. The key advantage of logbooks is the ability to use them to cover all fishing activity relatively inexpensively. However, in the absence of any observer data, there are concerns about the accuracy of logbook data in collecting bycatch information. Biases associated with logbooks primarily result from inaccuracy in reporting of species that are caught in large numbers or are of little economic interest (particularly of bycatch species), and from low compliance rates. Many fishermen may perceive that accurate reporting will result in restricted fishing effort or access. This results in a disincentive for reporting accurate bycatch data and an incentive to under-report or not report. Therefore, logbook programs are more useful in recording information on infrequently caught species and providing estimates of total effort by area and season that can then be combined with observer data to estimate total bycatch.

Commercial quotas are monitored by the SEFSC. Landings data are obtained from dealers. Dealer selections are made for a calendar year based on the production for the previous year. Selected dealers are notified that they must report landings by the 5$^{th}$ of a following month, even if no purchases were made. The SEFSC provides periodic reports to NOAA Fisheries Service SERO and the South Atlantic Council (at least prior to each South Atlantic Council meeting). In addition, timing of possible closures is estimated. Periodically, quota monitoring data are compared to general canvas landings data for the same dealers. The purpose is to determine if selected dealers provide an acceptable percentage of total reported landings. The review of the general canvass landings data are also used to identify new dealers handling quota species. If new dealers are identified or if the percentage of landings accounted for by selected dealers drops below a specified percentage, additional dealers would be required to report landings.

Dealers have two options for submitting data: (1) a paper form faxed to SEFSC or (2) online reporting. To enter and use the online system, the dealer uses a valid user login ID and password. This system is secure and only users with valid user IDs and passwords can access it. Furthermore, the user ID and password is unique for each dealer and will only allow access to the data entered by an individual using that password. All entries are logged on a tracking database and each time a user enters the system and makes a change to the data, that entry, and

the changes are recorded, along with the date and time the changes were made. Instructions are provided to the dealers on how to use the online system.

Some data are also collected through cooperative research projects. Cooperative research with the commercial and recreational sectors on bycatch was identified as a high priority item at the Southeast Bycatch Workshop during May 2006. There is clearly a need to characterize the entire catch of commercial fishermen and compare differences in abundance and species diversity to what is caught in fishery-independent gear. As we move towards a multi-species management approach, these types of data are essential. In addition, estimates of release mortality are needed for stock assessments but currently this is not being measured for fishery-dependent data. It is anticipated that additional cooperative research projects will be funded in the future to enhance the database on bycatch in the snapper grouper fishery in the South Atlantic.

Cooperative research projects between science and industry are being used to a limited extent to collect bycatch information on the snapper grouper fishery in the South Atlantic. For example, Harris and Stephen (2005) characterized the entire (retained and discarded) catch of reef fishes from a selected commercial fisherman in the South Atlantic including total catch composition and disposition of fishes that were released. The Gulf and South Atlantic Fisheries Foundation, Inc. obtained funding to conduct a fishery observer program within the snapper grouper vertical hook-and-line (bandit rig) fishery of the South Atlantic United States. Through contractors they randomly placed observers on cooperating vessels to collect a variety of data quantifying the participation, gear, effort, catch, and discards within the fishery.

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. A condition of funding for these projects is that data are made available to the Councils and NOAA Fisheries Service upon completion of a study.

Included in **Preferred Alternative 1 (No Action)** would be the measures implemented through AmendmentthroughAmendment 15B (SAFMC 2008b) (**Table 4-34**). The South Atlantic Council's preferred alternative in Amendment 15B to the Snapper Grouper FMP allows for the implementation of interim programs to monitor and assess bycatch in the South Atlantic snapper grouper fishery until the Atlantic Coastal Cooperative Statistical Program (ACCSP) Release, Discard and Protected Species (Bycatch) Module can be fully implemented. Funding shortfall prevent full implementation by the SEFSC). The interim programs or first phase of the alternative would allow for the collection of bycatch information utilizing a variety of methods and sources when Amendment 15B to the Snapper Grouper FMP was implemented as follows:

1. Require that selected vessels carry observers (It is the South Atlantic Council's intent that NOAA Fisheries Service and grant-funded programs would cover the cost of observers on snapper grouper vessels.)

2. Require selected vessels to employ electronic logbooks or video monitoring (It is the Council's intent that NOAA Fisheries Service and grant-funded programs cover the cost of purchase and installation of these units.)
3. Utilize bycatch information collected in conjunction with grant-funded programs such as MARFIN and Cooperative Research Program (CRP). Require that raw data are provided to NOAA Fisheries Service and the Council.
4. Request that bycatch data collected by states are provided to NOAA Fisheries Service and the Council. Many states may have collected data on snapper grouper bycatch in the past. Furthermore, some states may be currently collecting bycatch data through studies that are conducted in state waters.
5. Develop outreach and training programs to improve reporting accuracy by fishermen.

**Table 4-34.** Summary of current data collection programs under Alternative 1.

| Sector | Submit SRD Reporting Forms if Selected | Must Submit SRD Reporting Form for Each Trip | Carry Observers if Selected | Maintain Electronic Logbook if Selected | Must Provide Offloading, Purchase, and Sales Records if Selected | Carry Video Monitoring System if Selected | MRFFS Participation if Selected |
|---|---|---|---|---|---|---|---|
| **Commercial** | Yes | Yes | Yes | Yes | | Yes | N/A |
| **For-hire** | Yes | Yes | Yes | Yes | | Yes | Yes |

**Preferred Alternative 1 (No Action)** would not require that commercial vessels with a snapper grouper permit use the SAFIS system or vessel monitoring systems (VMS). Previously, the South Atlantic Council had selected **Alternative 3** as its preferred alternative under this action. However, at their December 2011 meeting, the South Atlantic Council was presented with information from Southeast Fisheries Science Center staff indicating than an omnibus data reporting system is currently being explored, and would soon be under development. This new system would include detailed reporting requirements for the commercial sector of the snapper grouper fishery, as well as improved dealer reporting provisions. In light of this information the South Atlantic Council determined that an omnibus data reporting amendment would be a more appropriate vehicle for addressing improvements to commercial data reporting in the snapper grouper fishery, and changed their preferred alternative from **Alternative 3** to **Alternative 1(No Action)**.

**Alternatives 2-4** identify options for monitoring catch and effort, which are more specific than what was specified in Amendment 15B to the Snapper Grouper FMP. There are no direct biological impacts from establishing a standardized reporting methodology. However, indirect impacts resulting from **Alternatives 2-4** would provide a better understanding of the composition and magnitude of catch and bycatch; enhance the quality of data provided for stock assessments; increase the quality of assessment output; provide better estimates of interactions with protected species; better limit commercial catches to the commercial ACL; and lead to

better decisions regarding additional measures that might be needed to reduce bycatch. Management measures that affect gear and effort for a target species can influence fishing mortality in other species. Therefore, enhanced catch and bycatch monitoring would provide better data that could be used in multi-species assessments.

**Alternatives 2-4** differ in type, amount, and quality of data they would provide. **Alternative 2** would require all vessels with a federal snapper grouper commercial permit to have an electronic logbook tied to the vessel's GPS onboard the vessel. This alternative differs from **Preferred Alternative 1 (No Action)** in that currently a vessel would only be required to use an electronic logbook if it were selected.

The South Atlantic Council tested the use of electronic logbook reporting using the Thistle Marine HMS-110 unit to examine the magnitude and spatial distribution of fishing effort and species composition (O'Malley 2003). The project was implemented on two commercial snapper grouper vessels in South Carolina and North Carolina from May 2002 through November 2002. Over 4,000 high spatial and temporal resolution data points on commercial catch and effort representing 19 fishing trips were captured. The Thistle box allows fishermen to record all species encountered as well as the disposition of released specimens. A comparison of electronic versus paper reporting for a single trip indicates more than twice the number of species than recorded on the trip ticket (O'Malley 2003). Catch per unit of effort (CPUE) can be expressed in different ways for this fishery and the Thistle logbook device can be configured to record all of the parameters necessary to calculate different types of CPUE. These could include catch per trip/day/hour fished, catch per hook/line/reel fished, or catch per man-trip/man-day/man-hour. The Thistle electronic logbook is also set up to record fish lengths. Electronic logbooks have the potential to automatically collect information on date, time, location, and fishing times. Detailed location information would be very useful as more area closures are considered. The current logbook grids are not very usable given the large area and lack of detailed location data. Information (species, length, and disposition) of released species can be manually entered into the system at the end of a fishing event. If the electronic format prompts a fisherman to record data as bycatch occurs, an electronic logbook may provide better estimates of bycatch than a paper logbook. However, for electronic logbooks, like paper logbooks, biases may result from inaccuracy in reporting of species that are caught in large numbers or are of little economic interest.

**Alternative 3** would provide the option for fishermen to submit their logbook entries electronically through an electronic version of the logbook made available online. Paper logbooks have been required for vessels with federal permits in the snapper grouper fishery from the Gulf of Mexico and South Atlantic since 1990. In 2001, a separate bycatch reporting logbook was added to include numbers on the average size of discarded fish by species. However, in the absence of any observer data, there are concerns about the accuracy of these logbook data. Biases associated with paper logbooks primarily result from inaccuracy in reporting of species that are caught in large numbers or are of little economic interest. There is also a delay in the time in which logbook data are provided via mail to the SEFSC. Electronic logbooks could be completed more easily than paper logbooks and allow for quicker delivery of data to the SEFSC). Therefore, **Alternative 3** has the potential to increase the accuracy of logbook data and speed with which it could delivered to the SEFSC. However, since data would

usually not be entered until the end of a fishing trip, some bias from inaccuracy would be expected. Therefore, **Alternative 3** would be expected to provide data with increased accuracy relative to **Preferred Alternative 1 (No Action)** but with less accuracy than **Alternative 2**, which would allow information to be recorded at the end of a fishing event. Furthermore, like paper logbooks, biases could still be expected due to inaccuracy in reporting of species that are caught in large numbers or are of little economic interest.

**Alternative 4** would require commercial landings and catch/effort data to be submitted in accordance with the ACCSP standards weekly or daily as required, using the Standard Atlantic Fisheries Information System (SAFIS) system. SAFIS is a real-time, web-based reporting system for commercial landings on the Atlantic coast and is currently being used from North Carolina northwards to track quotas. It is comprised of three applications:

- Electronic Dealer Reports (eDR) - A forms based application collecting data from the dealers (landings including condition and price).
- Electronic Trip Reports (eTRIPS) - A Web-based application collecting data from fisherman (catch and effort) including gears used, fishing areas, and catch disposition.
- SAFIS Management System (SMS) - A Web-based application providing administrative tools to SAFIS administrators for management of user accounts, participants, permits etc.

Data reported through SAFIS is fed into the ACCSP Data Warehouse. Daily reports can be automatically provided tracking landings; these data can be made available to the public so they have a real-time estimate of quota remaining. This becomes increasingly important as the number of quota-managed species increases. Beneficial biological impacts would be provided by **Alternatives 4** as data are provided more quickly from the fishermen and dealers to NOAA Fisheries Service and fishery managers. In addition to monitoring quotas in a more timely fashion than under the current quota monitoring system, the SAFIS has the potential to improve the quality of data and stock assessments.

**Alternatives 1-4** are unlikely to have adverse effects on ESA-listed species. These alternatives are unlikely to alter fishing behavior in a way that would cause new adverse effects to ESA-listed species. Data collected under **Alternatives 2-4** may indirectly benefit ESA-listed species by improving the quality and quantity of data available for evaluating the impacts of the fishery on protected species.

### 4.11.2 Economic Effects

In general, an increase in the quantity and/or quality of data increases long-term economic benefits through improvements to management of the stocks. Electronic logbooks (**Alternative 2**), in particular, are seen as a low cost alternative to video monitoring and observers. While paper logbook submittal is already required, **Alternative 3** would provide fishermen the option to submit their logbooks online. While **Alternative 3** would likely be the least expensive alternative for fishermen, **Alternative 4** would vary by individual. **Alternative 4** would require dealers and fishermen to enter landings data on a daily, weekly, or monthly basis to an online site. If a dealer or fisherman does not have access to a computer, he would have to buy one or

borrow one. This could be prohibitive for some dealers and fishermen if borrowing through the library, fish house, or a friend is not an option. However, the cost of a computer might total only $500. The cost to fishermen of **Alternative 2** is somewhat unknown. While pilot electronic logbook programs have provided fishermen with electronic logbook equipment, it is unknown if there are available funds to provide electronic logbooks to the entire fishery. Some costs may be passed on to the fishermen.

**Alternative 2** would provide a small amount of additional data in the form of detailed location information and could provide length and condition information on discards. **Alternative 3** would provide no additional data, although, the data may be ready for usage quicker than under **Preferred Alternative 1 (No Action)**. Compared to the other alternatives, **Alternative 4** provides the greatest increase in the quantity of data collected and therefore expected improvement in management of the fishery. Therefore, there are greater long-term economic benefits associated with this alternative. As stated above, **Alternative 4** would improve the quality of data available over **Alternatives 1, 2** and **3**. This would result in higher economic benefits under **Alternative 4** compared to **Alternatives 1, 2,** and **3**.

Implementation of AMs with pay-back for quota overages makes accurate reporting more important. If a quota is exceeded, that amount of harvest could be reduced from the following year's commercial quota. This would have a negative economic impact on fishermen. The current quota monitoring system continues to result in overages and as the number of species under quota management increases, it will be more difficult to accurately track commercial quotas under **Preferred Alternative 1 (No Action)**.

### 4.11.3 Social Effects

In general terms, it is assumed that while data collections programs or obligations may be individually burdensome on fishery participants, better data reporting is assumed to support better management through improved stewardship of the biological resource and the timely development and implementation of management action that meet resource targets while minimizing adverse social and economic consequences. In sum, better management, from both the resource and fishery perspective, is assumed to result in greater long-term social and economic benefits. It is not possible to state with any certainty when the amount and type of available data is sufficient for optimal assessment and management purposes so, for the purposes of this discussion, it is assumed that continued improvements in resource stewardship and fishery management will continue to be made with more data. All alternatives under consideration, with the exception of **Preferred Alternative 1 (No Action)**, are assumed to constitute improvements to current data collection requirements. Because each of these alternatives would improve data collection relative to **Preferred Alternative 1 (No Action)**, it is assumed that each would result in greater long-term social benefits than **Preferred Alternative 1 (No Action)**.

**Alternative 2** and **Alternative 3** apply to snapper grouper fishermen, whereas **Alternative 4** also applies to snapper grouper dealers. As a result, effects comparison should be limited to comparisons within the two sub-groups.

All vessels with a Federal snapper grouper permit are required to submit trip logbooks, with electronic reporting required if the vessel is selected. As a result, all vessels could be selected and required to submit electronic logbooks, though such has not occurred to date. Under **Alternative 2,** all logbooks would have to be submitted electronically. **Alternative 3** would give fishermen the discretion to choose the reporting method that they prefer, paper or electronic. At this time, while it is assumed that it is the intent of the Council that the responsibility for the financial burden of the cost and installation of the electronic logbook lie with grant or government funds, such is not certain, and long-term subscription or maintenance costs may still likely be the responsibility of the vessel. However, given the current mandatory logbook (paper) reporting for this fishery, other than learning how to operate an electronic logbook, the use and submission of the required information may be less burdensome than the current paper logbooks. Electronic reporting may also support both more timely and accurate reporting though, for the purpose of this discussion, it is assumed both methods accurately reflect actual harvest (and both require mandatory reporting of all trips by all vessels) and the primary benefit of electronic reporting is the data is submitted as the trip occurs rather than as part of monthly submissions. As a result of these considerations, **Alternative 2** would be expected to place a greater operational burden on more entities than **Alternative 3**, while resulting in better total data and management due to the more inclusive scope of data collection. Because the Science Center could still select a vessel for required electronic reporting, **Alternative 3** would not be expected to reduce the reporting burden to fishermen who are selected. However, the establishment of an electronic reporting system may result in adequate choice behavior to submit logbooks via this method sufficient to decrease the need for vessel selection for mandatory reporting via electronic logbooks.

Although **Alternative 4** would place an increased operational burden on more entities, the individual burden from a work-load perspective may be minimal. Because computers have become more mainstream in both private and business life, it is expected that virtually all dealers currently have, or have easy access to, most of the necessary hardware, internet accessibility, and skills to provide the required information. Use of these tools has become normal in today's business world. With the provision of access to the appropriate internet interface (i.e., the ability to sign into the web-based reporting site), compliance with any new requirements should result in minimal to no additional burden on these entities, resulting in no to minimal adverse social, or economic, impacts on these entities. It should also be noted that the difference between the two alternatives may be illusory as, operationally, all dealers could be selected for reporting under **Preferred Alternative 1 (No Action)**, a decision that would be at the discretion of NMFS. Thus, the functional outcome of **Alternative 4** relative to **Preferred Alternative 1 (No Action)** on dealers, similar to **Alternative 2** for fishermen, could be identical.

### 4.11.4 Administrative Effects

Under **Preferred Alternative 1 (No Action)** no administrative impacts would be incurred outside of the status-quo. Though the newly proposed data reporting amendment is likely to be a large undertaking administratively, it will prevent inconsistencies between what may have been

implemented through this amendment and what would be implemented through the omnibus amendment in the future. Additionally, because the data reporting amendment would be dedicated solely to data improvement actions across fisheries, a much more detailed outline of what data would be gathered, by whom, and how it would be obtained would be included in that amendment. **Alternatives 2** and **3** would result in a significant administrative burden to the agency as it would require the development of an electronic reporting system. Under all of the action alternatives**,** the agency would develop the electronic reporting system and receive compliance from the Paperwork Reduction Act Office, which requires significant effort. **Alternative 3** would be the least administratively burdensome on the agency and fishermen in that it would be a voluntary program and it is assumed that those that participate have some familiarity with a computer and electronic logbook programs. NOAA Fisheries Service would need compliance with the Paperwork Reduction Act and would produce educational materials explaining the program. **Alternative 4** would rely on the ACCSP to collect data through the SAFIS system. This system is currently operating in the Northeast Region (North Carolina northwards) and has been tested. The administrative burden on the agency is unknown at this time as it is not clear how the agency would be involved in the program. **Alternative 4** would require compliance with the Paperwork Reduction Act and would result in an economic cost to the Southeast Regional Office. However, there would be economic savings to the SEFSC because they would no longer be tracking the commercial quotas.

## 4.12 Action 12: Improvement to For-Hire Data Reporting

**Alternative 1 (No Action).** Retain existing data reporting systems for the for-hire sector.

Note: Refer to **Table 4-34** for a complete list of current data reporting requirements.

**Preferred Alternative 2.** Require *selected* vessels with a Federal For-Hire Permit to report landings data electronically; NOAA Fisheries Service is authorized to require weekly or daily reporting as required.

**Alternative 3.** Require vessels operating with a Federal For-Hire permit to maintain a logbook for discard characteristics (e.g., size and reason for discarding), *if selected*.

**Alternative 4.** Require that for-hire landings and catch/effort data be submitted in accordance with the ACCSP standards, using the SAFIS system.

**Note:** See Action 11 for a description of the SAFIS system.

### 4.12.1 Biological Effects

**Alternative 1 (No Action)** would retain existing data reporting systems for the for-hire sector. This would include those data collection measures implemented by Amendment 15B to the Snapper Grouper FMP including a requirement for a vessel, if selected, that fishes in the exclusive economic zone (EEZ), to maintain and submit fishing records; and to carry observers and install an electronic logbook (ELB) and/or video monitoring equipment provided by NOAA Fisheries Service. Harvest and bycatch in the private and for-hire charter vessel sector has been consistently monitored by Marine Recreational Fishery Statistics Survey (MRFSS) since its inception. The survey uses a combination of random digit dialed telephone intercepts of coastal households for effort information and dock-side intercepts for individual trips for catch information to statistically estimate total catch and discards by species for each sub-region, state, mode, primary area, and wave. Bycatch is enumerated by disposition code for each fish caught but not kept (B2). Prior to 2000, sampling of the charter vessel sector resulted in highly variable estimates of catch. However, since 2000, a new sampling methodology has been implemented. A 10 percent sample of charter vessel captains is called weekly to obtain trip level information. In addition, the standard dockside intercept data are collected from charter vessels and charter vessel clients are sampled through the standard random digital dialing of coastal households. Precision of charter vessel effort estimates has improved by more than 50% due to these changes (Van Voorhees et al. 2000). Additional improvements are scheduled for MRFSS in the next few years:

**<u>Program Overview</u>**

The Marine Recreational Information Program, or MRIP, is the new way NOAA Fisheries Service is counting and reporting marine recreational catch and effort. It is a customer-driven initiative that will not only produce better estimates, but will do so through a process grounded in

the principles of transparency, accountability and engagement. MRIP replaces the Marine Recreational Fisheries Statistics Survey, or MRFSS, which has been in place since the 1970s.

MRIP is designed to meet two critical needs.

- Provide the detailed, timely, scientifically sound estimates that fisheries managers, stock assessors and marine scientists need to ensure the sustainability of ocean resources.
- Address head-on stakeholder concerns about the reliability and credibility of recreational fishing catch and effort estimates.

MRIP explicitly recognizes that the numbers produced do not exist in a vacuum, that they have real impacts on the lives and livelihoods of millions of Americans.

**What will MRIP Do?**

MRIP will reduce potential bias and increase the accuracy, timeliness and spatial resolution of recreational catch and effort estimates. MRIP is also intended to increase customer and stakeholder confidence in those estimates. MRIP will not be a fisheries management "silver bullet"; it is the commitment to a process in which end users' needs are a top consideration. We can't predict how much different individual estimates for any given stock or wave may be under MRIP, but we do know that the **quality of the estimates** will be significantly enhanced because the numbers are generated through a newly refined, more statistically robust process.

**Improved system of surveys**

MRIP is a system of coordinated data collection programs designed to address specific regional needs for recreational fishing information. This regional approach based on a nationally consistent standard will ensure that the appropriate, targeted, place-based information is being collected to best meet the needs of managers and stakeholders, and that it is being done in a scientifically rigorous way.

Although NOAA Fisheries Service is ultimately responsible for making MRIP work, the program's design has relied extensively on input and commitment from independent scientists, partner agencies, fishing groups, conservation organizations and individuals who served on MRIP working groups. Their efforts were heavily informed by dozens of meetings NOAA Fisheries Service held over an 18-month period with fishermen, data partners and other stakeholders from every region of the country.

**Looking Forward**

NOAA Fisheries Service envisions MRIP as a program that is part of the best and most trusted marine data collection system available. One in which people are confident in the integrity of the information they receive, managers have the appropriate tools in hand to effectively do their critical work, and stakeholders are engaged and empowered partners in the data collection process.

At its core, MRIP is built on the recognition that no single agency can effectively safeguard our ocean resources. Rather, the effort requires the buy-in, cooperation and engagement of a broad network of stakeholders.

Harvest from headboats is monitored by NOAA Fisheries Service at SEFSC's Beaufort Laboratory. Collection of discard data began in 2004. Daily catch records (trip records) are filled out by the headboat operators or in some cases by NOAA Fisheries Service approved headboat samplers based on personal communication with the captain or crew. Headboat trips are sub-sampled for data on species lengths and weights. Biological samples (scales, otoliths, spines, reproductive tissues, stomachs) are obtained as time permits. Lengths of discarded fish are occasionally obtained but these data are not part of the headboat database.

Included in **Alternative 1 (No Action)** would be the measures established in Amendment 15B to the Snapper Grouper FMP (**Table 4-34**). The South Atlantic Council's preferred alternative in Amendment 15B to the Snapper Grouper FMP allows for the implementation of interim programs to monitor and assess bycatch in the South Atlantic snapper grouper fishery until the Atlantic Coastal Cooperative Statistics Program (ACCSP) Release, Discard and Protected Species (Bycatch) Module can be fully funded. The interim programs or first phase of the alternative would allow for the collection of bycatch information utilizing a variety of methods and sources through Amendment 15B to the Snapper Grouper as follows:

1. Require that selected vessels carry observers funded by the agency.
2. Require selected vessels to employ electronic logbooks or video monitoring funded by the agency.
3. Utilize bycatch information collected in conjunction with grant-funded programs such as MARFIN and Cooperative Research Program (CRP). Require that raw data are provided to NOAA Fisheries Service and the Council.
4. Request that bycatch data collected by states are provided to NOAA Fisheries Service and the South Atlantic Council. Many states may have collected data on snapper grouper bycatch in the past. Furthermore, some states may be currently collecting bycatch data through studies that are conducted in state waters.
5. Develop outreach and training programs to improve reporting accuracy by fishermen.

**Alternative 1 (No Action)** would not require that for-hire vessels use the Standard Atlantic Fisheries Information System (SAFIS) system or vessel monitoring systems (VMS). This would include those data collection measures in place as well as those implemented by Amendment 15B that includes all vessels, if selected, that fish in the EEZ, be required to maintain and submit fishing records; and to carry observers and install an electronic logbook ELB and/or video monitoring equipment provided by NOAA Fisheries Service.

**Preferred Alternative 2** and **Alternative 3** identify options for monitoring catch and effort, which are more specific than what was specified in Amendment 15B to the Snapper Grouper FMP. There are no direct biological impacts from establishing a standardized reporting methodology. However, indirect impacts resulting from **Preferred Alternative 2** and **Alternative 3** would provide a better understanding of the composition and magnitude of catch and bycatch; enhance the quality of data provided for stock assessments; increase the quality of assessment output; provide better estimates of interactions with protected species; better track recreational ACLs; and lead to better decisions regarding additional measures that might be needed to reduce bycatch. Management measures that affect gear and effort for a target species

can influence fishing mortality in other species. Therefore, enhanced catch and bycatch monitoring would provide better data that could be used in multi-species assessments.

**Preferred Alternative 2** would require all vessels with a Federal for-hire permit to report landings electronically if selected. Amendment 15B to the Snapper Grouper FMP also implemented an action that requires commercial, for-hire, and private vessels to install an ELB and/or video monitoring equipment provided by NOAA Fisheries Service, if selected. Therefore, **Preferred Alternative 2** only differs from what was implemented through Amendment 15B to the Snapper Grouper FMP by not specifying the type of electronic equipment that would be used to report landings.

The South Atlantic Council tested the use of electronic logbook reporting using the Thistle Marine HMS-110 unit to examine the magnitude and spatial distribution of fishing effort and species composition (O'Malley 2003). The project was implemented on two commercial snapper/grouper vessels in South Carolina and North Carolina from May 2002 through November 2002. Over 4,000 high spatial and temporal resolution data points on commercial catch and effort representing 19 fishing trips were captured. The Thistle box allows fishermen to record all species encountered as well as the disposition of released specimens. A comparison of electronic versus paper reporting for a single trip indicates more than twice the number of species than recorded on the trip ticket (O'Malley 2003). Catch per unit of effort (CPUE) can be expressed in different ways for this fishery and the Thistle logbook device can be configured to record all of the parameters necessary to calculate different types of CPUE. These could include catch per trip/day/hour fished, catch per hook/line/reel fished, or catch per man-trip/man-day/man-hour. The Thistle electronic logbook is also set up to record fish lengths. Electronic logbooks have the potential to automatically collect information on date, time, location, and fishing times. Information (species, length, and disposition) of released species can be manually entered into the system at the end of a fishing event. If the electronic format prompts a fisherman to record data as bycatch occurs, an electronic logbook may provide better estimates of bycatch than a paper logbook. However, for electronic logbooks, like paper logbooks, biases may result from inaccuracy in reporting of species that are caught in large numbers or are of little economic interest.

**Alternative 3** would require vessels operating with a for-hire permit to maintain a logbook for discard characteristics (e.g., the size and reason for discarding), if selected. Harvest from headboats has been monitored by NOAA Fisheries Service at SEFCS's Beaufort Laboratory since 2004. Daily catch records (trip records) are filled out by the headboat operators or in some cases by NOAA Fisheries Service approved headboat samplers based on personal communication with the captain or crew. Fish lengths and biological samples are also collected. **Alternative 3** would differ from the status quo **Alternative 1** by also requiring logbooks for the charter portion of the for-hire fishery. As landings from charter boat often dominate catches in the for-hire sector, **Alternatives 3** would provide a better understanding of the composition and magnitude of catch and bycatch, leading to better data for stock assessment and better decisions regarding measures needed manage fish resources and reduce bycatch.

**Alternative 4** would require for-hire trip reports to be submitted in accordance with the ACCSP standards using the SAFIS system. **Alternative 4** would require selected vessels to report

electronically (computer or fax) through the SAFIS and require weekly or daily reporting when it is anticipated a quota was going to be met. SAFIS is a real-time, web-based reporting system for commercial landings on the Atlantic coast. It is comprised of three applications:

- Electronic Dealer Reports (eDR) - A forms based application collecting information from the dealers (landings, condition and price).
- Electronic Trip Reports (eTRIPS) - A Web-based application collecting data from fisherman (catch and effort) including gear used, fishing areas, and catch disposition.
- SAFIS Management System (SMS) - A Web-based application providing administrative tools to SAFIS administrators for management of user accounts, participants, permits etc.

Data reported through SAFIS is fed into the ACCSP Data Warehouse. Beneficial biological impacts would be provided by **Alternative 4** as data are provided more quickly from the fishermen and dealers to NMFS and fishery managers. In addition to monitoring quotas in a more timely fashion than under the current quota monitoring system, the SAFIS has the potential to improve the quality of data and stock assessments.

The impacts on ESA-listed species from **Alternatives 1-4** for the for-hire sector will be the same as those noted in Section 4.11.1

### 4.12.2 Economic Effects

**Section 4.12.1** above provides, among others, a description of the data that would be generated under **Alternative 1 (no action)** and the additional data that could be generated under the other alternatives. In general, an increase in the quantity and/or quality of data offers the potential to increase economic benefits, particularly in the long term.

The various alternatives differ in the type and quality of information that can be collected. Generally, collecting more and better information may be associated with the more costly alternative, regardless of who bears the actual cost burden, i.e., the government or the industry. **Alternative 1 (No Action)** requires many data, as described in **Table 4-34**, to be provided by for-hire vessels. Each of the other alternatives would require additional data or similar data of relatively higher quality. **Preferred Alternative 2** would require selected for-hire vessels to electronically report data on a weekly or daily basis. A weekly reporting frequency is likely to affect charterboats more than headboats as the latter are already subject to more frequent reporting requirement. It may be noted, though, that 10% of charter captains are contacted weekly to obtain trip level information. A daily reporting requirement, however, would introduce an additional burden on both charterboats and headboats. The electronic method of reporting would be an added requirement on both charterboats and headboats. Together, the electronic and the higher frequency reporting may be expected to generate data that are of higher quality than what is currently done. To the extent that headboats are already subject to paper logbook reporting, the incremental cost of electronic reporting, especially the weekly frequency option, would likely be minimal and would accrue only to a subset of headboats selected to report. On the other hand, the incremental cost to charterboats would likely be higher for those selected to report as there are currently no logbook reporting requirements on charterboats.

**Alternative 3** would require selected for-hire vessels to maintain a logbook for discard characteristics. Understandably, this alternative cannot be considered as a stand-alone alternative in the sense of replacing **Alternative 1 (No Action)** because of the more limited information covered in this alternative. As a supplement to either **Alternative 1 (No Action)** or **Preferred Alternative 2, Alternative 3** can provide the necessary information regarding incidental mortality of stocks due to the operations of for-hire vessels. Such information would be vital as an input to stock assessments and as input to the development of better management measures. The incremental cost of this alternative would be relatively low to headboats, which are already subject to logbook reporting. On the other hand, this alternative could impose some real cost burden on charterboats, although the incremental cost may not be that much when taken relative to the reporting requirement under **Preferred Alternative 2**.

**Alternative 4** is similar to **Preferred Alternative 2** in terms of the extent and quality of data that would be generated. The requirement under this alternative, however, would apply to all for-hire vessels and not just a subset of these vessels as in **Preferred Alternative 2**. Thus, the quality of data would likely be higher under **Alternative 4** than under **Alternative 1 (No Action)** or **Preferred Alternative 2**. Alternatively, **Alternative 4** would likely incur higher costs than either **Alternative 1 (No Action)** or **Preferred Alternative 2**. The higher the frequency of data reporting, the higher would be the compliance and administration costs. Related to administration in general and administration cost in particular, it is to be noted that under **Alternative 4** the SAFIS system would have to be expanded to cover reporting by the for-hire sector. In addition, some administrative controls would have to be instituted so that the data collection objectives of ACCSP, NOAA Fisheries Service and the South Atlantic Council would be met. These controls could potentially involve requiring strict adherence to SAFIS system reporting as a condition for renewals of federal for-hire permits.

Potentially affected by the various alternatives are 1,690 vessels with for-hire permits and 224 vessels with both commercial and for-hire permits. About 92% of these vessels have homeports in the four states under the jurisdiction of the South Atlantic Council. The rest are located in the Gulf States or other States on the east coast. Most of these vessels (about 66%) are located in Florida. It is worth recalling that only a sample of these vessels would be directly affected by **Preferred Alternative 2** or **Alternative 3** in any one year. **Alternative 4**, on the other hand, would affect practically all these vessels.

Noting that the data generated by the various alternatives would specifically address the needed data about the stock and the way the for-hire sector impacts the stocks, economic benefits that can be expected from the various alternatives would be realized through improvement in the management of the stocks. Eventually, however, the data collection programs under any of the alternatives could be utilized to generate economic information about the for-hire sector. Such information would greatly aid in devising management measures that could achieve a better balance between the need to manage the recovery and sustainability of the stocks and the adverse economic effects on the for-hire sector they would entail. In addition, such information could be utilized to enhance the economic benefits the for-hire sector derives from the snapper-grouper fishery through the development of better management systems. Given the description of the various alternatives, this economic information is unlikely to be collected on a routine basis but

can nevertheless be added to the required data the for-hire vessels have to provide on a periodic basis

### 4.12.3 Social Effects

The general effects of improved data reporting, as well as the expected effects of **Alternative 1 (No Action)**, are discussed in **Section 4.12.1**.

**Preferred Alternative 2** would place an increased operational burden on entities selected and required to submit electronic reports. However, it is assumed that the individual burden would be minimal, as discussed in **Section 4.12.2.** It has not been determined who would pay for the necessary systems, though it might be assumed, similar to the alternatives for the commercial sector, that it is the intent of the South Atlantic Council that the responsibility for the financial burden of the cost and installation of the electronic logbook lie with grant or government funds. Long-term subscription or maintenance costs would still likely be the responsibility of the vessel. Because the headboat sector is currently required to submit paper logbooks, the incremental burden of an electronic logbook would not be as great for this sector compared to the charter sector, as any required electronic reporting would replace existing requirements. The data collected via electronic logbook may still, however, be more accurate and received more quickly, resulting in greater management benefits, with associated social benefits, than the current system.

**Alternative 3** would limit the collection of new information to discard data. As a result, the burden associated with the documentation of this information would not be as great as under **Preferred Alternative 2** and **Alternative 4;** however, in general, the amount of information collected would be less than the information collected under **Preferred Alternative 2** and **Alternative 4**, even if all vessels are selected for reporting. Specifically, **Alternative 3** would not result in improvement of harvest information relative to either alternative. While **Alternative 3** might adequately complement the existing mandatory data requirements for the headboat sector (logbook harvest and effort data), **Alternative 3** would only improve the collection of bycatch information for the charter sector. As a result, the social benefits of improved data collection and fishery management would be expected to be less under **Alternative 3** relative to **Preferred Alternative 2** (the ACCSP standards, which would apply under **Alternative 4**, include bycatch). While **Alternative 3** could be combined (adopted in tandem) with **Preferred Alternative 2**, **Preferred Alternative 2** deals with the form or manner and frequency of reporting and not content. As a result, bycatch information could be included in the data elements required to be reported under **Preferred Alternative 2** and the adoption of **Preferred Alternative 2** with **Alternative 3** should not be necessary to have both electronic reporting and the collection of bycatch data.

**Alternative 4** would be expected to increase the reporting burden on for-hire vessels, while increasing the quality and utility of data. As such, the effects of **Alternative 4** would be expected to be similar to those of **Preferred Alternative 2,** while possibly imposing a greater burden because the requirements of **Preferred Alternative 2** would be imposed only on selected vessels. While the increased reporting burden would be expected to result in reduced social benefits to affected entities, the improved data quality and utility would be expected to result in

improved management (better and more timely fishery and impact assessments resulting in improved regulations) relative to **Alternative 1 (No Action)**. Overall, the social benefits of improved management would be expected to exceed the reduced benefits associated with increased reporting burden. The actual magnitude of effects would, however, be dependent upon the as yet unspecified reporting frequency, with more frequent reporting increasing the reporting burden, while improving the quality and utility of the data, and subsequent management decisions.

It should also be noted that the adoption of **Alternative 4** could be viewed by some as inappropriate as it would require the use of a program over which neither the South Atlantic Council nor NOAA Fisheries Service has direct control and which currently lacks an interface designed for the for-hire sector. However, NOAA Fisheries Service and the Councils are partners in ACCSP and sit as Coordinating Council members. While the adoption of **Preferred Alternative 2** would similarly require the development of an appropriate interface, the expected burden would fall on NOAA Fisheries Service or could be provided by ACCSP. Requiring the use of SAFIS for reporting by for-hire vessels would both expand its use to a sector not currently covered (and for which no appropriate user interface exists), and would, essentially impose the burden of program expansion on the ACCSP. While both the South Atlantic Council and NOAA Fisheries Service are participants in the ACCSP development process, due to its' cooperative design, direct control is lacking. As a result, the selection of **Alternative 4** could result in the adoption of a management requirement that cannot be implemented with any certainty. While this could be described as an administrative concern, adverse social effects accrue to management decisions viewed as inappropriate or impractical.

### 4.12.4 Administrative Effects

**Alternative 1 (No Action)** would result in no new administrative impacts that were not considered in Amendment 15B to the Snapper Grouper FMP. **Preferred Alternative 2** would select vessels to report electronically which would be administratively burdensome on the agency and fishermen. The agency could select 100% of the vessels for reporting which would be administratively burdensome on the fishermen and the agency. **Alternative 3** would require vessels to maintain a logbook for discard characteristics, (e.g., size and reason for discarding). As with the other reporting alternatives, **Alternative 3** would require compliance with the Paperwork Reduction Act. **Preferred Alternative 2** and **Alternative 3** would result in a significant administrative burden to the agency as it would require the development of an electronic reporting system and discard logbook. Under these alternatives**,** the agency would develop the electronic reporting system and receive compliance from the Paperwork Reduction Act Office, which requires significant effort. **Alternative 4** is functionally the same as **Preferred Alternative 2**, in that the electronic reporting will be done through the SAFIS system which has been tested and used in other regions.

## 4.13 Research Recommendations

- Age sampling from commercial, headboat, and MRFSS.
- Increased fishery independent sampling.
- Update fecundity information by age and length.
- Age structured models that will take into consideration historical landings.
- Estimates of release mortality by depth and fishery.
- Determine if changes in fishing operations, including species composition of the landings, might reflect catch ability of black sea bass that has not been taken into account by the assessment.
- Index of recruitment.
- Estimate the magnitude, direction, geographic extent, timing, and management implications of mixing north and south of Cape Hatteras.
- Behavioral dynamics associated with reproduction should be investigated with respect to the effects of size selective harvesting.

## 4.14 Socio-Cultural Research Needs

Socio-cultural research needs that have been identified by the South Atlantic Council's Scientific and Statistical Committee are as follows:

1. Identification, definition and standardization of existing datasets to meet short-term social analysis needs (e.g. behavioral networks based on annual rounds). Centrally locate these datasets so they are accessible to researchers and managers (realizing the constraints imposed by confidentiality);

2. Development of new variables to meet long-term social analytical needs (e.g., community health, individual health, decision-making patterns, cumulative impacts of endogenous, exogenous, and regulatory factors);

3. Longitudinal Data – monitoring needs, including historical, ethnographic, and quantitative data over time;

4. Traditional ecological knowledge/local fisheries knowledge (TEK/LFK) constructions along with scientific ecological knowledge (SEK);

5. State data (license/permit data; social survey type data) and coordination between agencies/levels;

6. Better integration of social, biological and economic variables in modeling efforts; and

7. Better efforts to include humans and human behavior in the ecosystem-based framework (e.g., representation of humans as keystone predators in the system);

Economic research needs that have been identified by the South Atlantic Council's Scientific and Statistical Committee are as follows:

The following issues were identified as being impediments to conducting economic research:

- Confidentiality of state data and data collected through federal research projects.
- Data collected through certain agency grants cannot be distributed without dealing with confidentiality issues.
- The inability to display confidential data.

**Commercial**

1. Explore the feasibility of developing computable general equilibrium models, which can incorporate the entire economy and important ecosystem components (medium priority, high cost).
2. Develop an input output model for the South Atlantic commercial fisheries. This model should be similar to the NOAA Fisheries Service model for other regions on shore-based communities (medium priority, high cost).
3. Consider alternative ways to collect data on both a social and economic basis e.g. partnerships to develop projects (high priority, medium cost).
4. Ensure availability, improve upon and collect basic data: catch, employment, effort, price, cost/earnings (very high priority, high cost).
5. Opportunity costs - rely on the studies completed in the past on the next best jobs. Include collection of data to estimate worker satisfaction bonus.
6. Integrated biological, social and economic models including dynamic optimization models.
7. Demand analysis – include the effects of imports. Studies of value added product e.g. branding and marketing strategies.
8. Include data collection and analysis on the processing sector, retail sector.
9. Research on the economic and social effects of capacity reduction.
10. Employment in the primary and secondary sectors of the fishing industry that also includes research on household budgets.
11. Cumulative impacts – economic and social.
12. Models to predict fishing behavior in the face of fishing regulations. This would include description of fishing rounds on a seasonal basis and fishing behavioral networks.
13. Non-consumptive and non-use benefits of marine protected species and essential fish habitat/habitat areas of particular concern. Also, measure the socio-cultural benefits of these species.
14. Research on live product/whole weight conversion factors on a seasonal basis possibly through the TIP program or through other biological sampling programs.

**Recreational**

1. Assess the feasibility of developing benefits transfer models from existing data and the MRFSS. Complete recreational demand models that are more relevant for fisheries management. These models should focus on policy relevant variables (bag, size limits, individual species and species groups). (high priority, low/medium cost)
2. Develop random utility models for predicting participation changes, economic value and behavior of recreational fishermen. (high priority, high cost for data collection).
3. Develop targeted input-output model to estimate the effects of policy changes on the economic impacts of recreational fishing. Will provide information on jobs, wages,

income on affected sectors such as lodging, restaurants, bait and tackle shops, marinas, boats (medium priority, high cost).

4. Include categories/motivations of recreational anglers in models outlined in items 1 and 2 (medium priority, high cost).
5. Collect data on motivations/behavioral patterns of recreational fishermen. (medium priority, high cost).
6. Characterize participants in subsistence fisheries. (low priority, high cost).
7. Develop Valuation models and I/O models for tournament fishing. (medium priority, high cost).
8. Develop cost-earnings model for the for-hire sector (charter and headboat). (high priority, high cost). NOAA Fisheries Service is currently conducting a study.

### 4.15 Ecosystem based management

1. Conduct analyses to facilitate the economic valuation of ecosystem services (very high priority, high cost).
2. Explore the use of Ecopath and Ecosim (very high priority, high cost).

## 5 Cumulative Effects

As directed by the National Environmental Policy Act (NEPA), federal agencies are mandated to assess not only the indirect and direct impacts, but the cumulative impacts of proposed actions as well. NEPA defines a cumulative impact as *"the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time"* (40 C.F.R. 1508.7). Cumulative effects can either be additive or synergistic. A synergistic effect is when the combined effects are greater than the sum of the individual effects.

Various approaches for assessing cumulative effects have been identified, including checklists, matrices, indices, and detailed models (MacDonald 2000). The Council on Environmental Quality (CEQ) offers guidance on conducting a Cumulative Effects Analysis (CEA) in a report titled "Considering Cumulative Effects under the National Environmental Policy Act." (CEQ 1997). The report outlines 11 items for consideration in drafting a CEA for a proposed action.

1. Identify the significant cumulative effects issues associated with the proposed action and define the assessment goals.
2. Establish the geographic scope of the analysis.
3. Establish the timeframe for the analysis.
4. Identify the other actions affecting the resources, ecosystems, and human communities of concern.
5. Characterize the resources, ecosystems, and human communities identified in scoping in terms of their response to change and capacity to withstand stress.
6. Characterize the stresses affecting these resources, ecosystems, and human communities and their relation to regulatory thresholds.
7. Define a baseline condition for the resources, ecosystems, and human communities.
8. Identify the important cause-and-effect relationships between human activities and resources, ecosystems, and human communities.
9. Determine the magnitude and significance of cumulative effects.
10. Modify or add alternatives to avoid, minimize, or mitigate significant cumulative effects.
11. Monitor the cumulative effects of the selected alternative and adapt management.

This CEA for the biophysical environment will follow a modified version of the 11 steps. Cumulative effects for the socio-economic environment will be analyzed separately.

## 5.1 Biological

SCOPING FOR CUMULATIVE EFFECTS

**1. Identify the significant cumulative effects issues associated with the proposed action and define the assessment goals.**

The CEQ cumulative effects guidance states that this step is done through three activities. The three activities and the location in the document are as follows:

I. The direct and indirect effects of the proposed actions **(Section 4)**;
II. Which resources, ecosystems, and human communities are affected **(Section 3)**; and
III. Which effects are important from a cumulative effects perspective **(information revealed in this cumulative Effects Analysis (CEA)**).

**2. Establish the geographic scope of the analysis.**

The immediate impact area would be the federal 200-mile limit of the Atlantic off the coasts of North Carolina, South Carolina, Georgia, and east Florida to Key West, which is also the South Atlantic Council's area of jurisdiction. The extent of boundaries also would depend upon the degree of fish immigration/emigration and larval transport, whichever has the greatest geographical range. The ranges of affected species are described in **Section 3.2.1**. **Section 3.1** describes the essential fish habitat designation and requirements for species affected by this amendment.

**3. Establish the timeframe for the analysis.**

The snapper grouper fishery was first federally managed when the FMP was implemented in 1983. Since that time many management measures for black sea bass and data collection efforts have been promulgated through the rulemaking process. Socioeconomic and biological data in this amendment goes through the 2010 calendar year. Subsequent impacts of actions implemented through Amendment 18A, if approved, will continually be monitored for effectiveness in the future.

**4. Identify the other actions affecting the resources, ecosystems, and human communities of concern (the cumulative effects to the human communities are discussed in Section 4).**

Listed are other past, present, and reasonably foreseeable actions occurring in the South Atlantic region. These actions, when added to the proposed management measures, may result in cumulative effects on the biophysical environment.

## I. Fishery-related actions affecting snapper grouper species:

### A. Past

The reader is referred to **Appendix C. History of Management of the Snapper Grouper Fishery** for past regulatory activity for the fish species being impacted by this amendment. These include bag and size limits, spawning season closures, commercial quotas, gear prohibitions and limitations, area closures, and a commercial limited access system. A brief summary of the recent past amendments follows.

Amendment 13C (SAFMC 2006) addressed overfishing of black sea bass and implemented several management measures to limit harvest of the species in commercial and recreational sectors. Amendment 13C specified a commercial quota of 477,000 lbs gutted weight (563,000 lbs whole weight) in year 1; 423,000 lbs gutted weight (gw) (499,000 lbs whole weight (ww)) in year 2; and 309,000 lbs gutted weight (364,000 lbs whole weight) in year 3 onwards until modified. This was based on a Total Allowable Catch (TAC) of 1,110,000 lbs gw (1,310,000 lbs ww) in year 1; 983,000 lbs gw(1,160,000 lbs gw) in year 2; and 718,000 lbs gutted weight (847,000lbs ww) in year 3 onwards until modified. After the commercial quota is met, all purchase and sale is prohibited and harvest and/or possession is limited to the bag limit. Amendment 13C also required use of at least 2 inch mesh for the entire back panel of black sea bass pots, and changed the fishing year from the calendar year to June 1 through May 31. Additionally, Amendment 13C required that black sea bass pots be removed from the water when the quota is met.

Amendment 15A (SAFMC 2008a) to the Snapper Grouper Fishery Management Plan was approved by the South Atlantic Fishery Management Council (South Atlantic Council) during its December 2007 meeting submitted to NOAA Fisheries Service for approval by the Secretary of Commerce. The amendment was developed by the South Atlantic Council to: 1) update management reference points for snowy grouper, black sea bass, and red porgy; 2) modify rebuilding schedules for snowy grouper and black sea bass; 3) define rebuilding strategies for snowy grouper, black sea bass, and red porgy; and 4) redefine the minimum stock size threshold for the snowy grouper stock. The amendment was approved March 14, 2008.

Amendment 15B (SAFMC 2008b) to the Snapper Grouper FMP became effective on December 16, 2009. Management measures in Amendment 15B include: prohibition of the sale of bag limit caught snapper grouper species for fishermen not holding a federal commercial permit for South Atlantic snapper grouper; an action to adopt, when implemented, the ACCSP release, discard and protected species module to assess and monitor bycatch; allocations for snowy grouper; and management reference points for golden tilefish. Biological benefits from Amendment 15B are not expected to result in a significant cumulativebiological effect when added to anticipated biological impacts under Amendment 18A.

Amendment 16 (SAFMC 2009a) to the Snapper Grouper FMP was implemented on July 29, 2009 and established a: January-April spawning season closure for gag and shallow water

groupers; quota for gag that shuts down shallow water groupers when quota is met; reduction of 5 grouper aggregate to 3 fish per person per day; reduction of 2 gag or black grouper combined to 1 gag or black grouper combined; reduction in vermilion snapper quota; November-March recreational closure for vermilion snapper; and a reduction in vermilion snapper bag limit from 10 to 5 fish per person per day. The expected effects of these measures include significant reductions in landings and overall mortality of several shallow water snapper grouper species including, gag, black grouper, red grouper, and vermilion snapper. Management measures in Amendment 16 do not apply to black sea bass therefore the management measures proposed by Amendment 16 will not add to the management burden for this species. However, the snapper grouper fishery as a whole has been subject to increased regulation and the measures proposed in Amendment 18A will add to the overall regulatory burden of the fishery.

Amendment 17B SAFMC 2010b), which was implemented on January 31, 2011, includes action that: Establish ACLs, annual catch targets, and AMs for 8 species experiencing overfishing; modify management measures to limit total mortality to the ACL; and update the framework procedure for specification of total allowable catch. One of the management measures prohibited the harvest and possession of deep water snapper-grouper species (snowy grouper, blueline tilefish, yellowedge grouper, misty grouper, queen snapper, and silk snapper) at depths greater than 240 feet. The intent was to reduce bycatch of speckled hind and warsaw grouper.

Regulatory Amendment 9 (SAFMC 2011b) reduced the recreational bag limit for black sea bass from 15 fish per person per day to 5 fish per person per day, implemented a trip limit of 1,000 lbs gw for gag, a trip limit of 1,500 lbs gw for vermilion snapper, and increased the trip limit for greater amberjack from 1,000 lbs to 1,200 lbs gw. These measures were intended to prevent the progressive shortening of fishing seasons for black sea bass, gag, and vermilion snapper, and increase per trip yield for greater amberjack.

Regulatory Amendment 11 (SAFMC 2011a) is currently under review by the Secretary of Commerce. The amendment eliminates a current restriction on the possession or harvest of some deepwater snapper grouper species in waters greater than 240 feet deep. The regulation was originally implemented in January 2011 to help protect speckled hind and warsaw grouper; however, data indicate that the closure may not significantly reduce bycatch of these species while the socioeconomic impacts of the closure are significant in some areas. The South Atlantic Council will re-address measures to reduce bycatch of speckled hind and warsaw grouper in Comprehensive Ecosystem-Based Amendment 3.

### B. Present

Amendment18B to the Snapper Grouper FMP is currently under development. This amendment would limit effort in the golden tilefish fishery through an endorsement program.

The Comprehensive ACL Amendment (SAFMC 2011c, currently under review, was developed to specify ACLs and AMs for species in the FMPs for Snapper Grouper, Dolphin Wahoo, *Sargassum*, and Golden Crab that are not undergoing overfishing. The Comprehensive ACL Amendment would also remove some species from South Atlantic snapper grouper fishery management unit, consider multi-species groupings, establish ABC control rules , specify allocations among the commercial, recreational, and for-hire sectors for species not undergoing overfishing, and modify management measures to limit total mortality to the ACL. The South Atlantic Council approved the document for review by the Secretary of Commerce at their September 2011 meeting and submitted the document for formal review on October 14, 2011. The Notice of Availability of the Amendment was published on October 20, 2011 with comments due no later than 5 pm EST on December 19, 2011.

### C. Reasonably Foreseeable Future

Though several amendments to the snapper grouper FMP are under development or review, such as Amendments 22 (long-term red snapper management) and 24 (SAFMC 2011d; red grouper rebuilding plan), none are likely to contribute to or reduce the cumulative impacts of actions contained in Amendment 18A.

## II. Non-Council and other non-fishery related actions, including natural events affecting snapper grouper species.

### A. Past
### B. Present
### C. Reasonably foreseeable future

In terms of natural disturbances, it is difficult to determine the effect of non-Council and non-fishery related actions on stocks of snapper grouper species. Annual variability in natural conditions such as water temperature, currents, food availability, predator abundance, etc. can affect the abundance of young fish, which survive the egg and larval stages each year to become juveniles (i.e., recruitment). This natural variability in year class strength is difficult to predict as it is a function of many interactive and synergistic factors that cannot all be measured (Rothschild 1986). Furthermore, natural factors such as storms, red tide, cold water upwelling, etc. can affect the survival of juvenile and adult fishes; however, it is very difficult to quantify the magnitude of mortality these factors may have on a stock. Alteration of preferred habitats for snapper grouper species could affect survival of fish at any stage in their life cycles. However, estimates of the abundance of fish, which utilize any number of preferred habitats, as well as, determining the impact habitat alteration may have on snapper grouper species, is problematic.

The snapper grouper ecosystem includes many species, which occupy the same habitat at the same time. For example, black sea bass co-occur with vermilion snapper, tomtate, scup, red porgy, white grunt, red snapper, red grouper, scamp, gag, and others. Therefore, many snapper grouper species are likely to be caught and suffer some mortality when regulated since they will be incidentally caught when fishermen target other co-occurring species. Other natural events such as spawning seasons, and aggregations of fish in spawning

condition can make some species especially vulnerable to targeted fishing pressure. Such natural behaviors are discussed in further detail in **Section 3.2** of this document, and are hereby incorporated by reference.

As noted in **Section 4** of this document, actions to reduce effort in the commercial sector of the black sea bass fishery could inadvertently lead to black sea bass pots being fished during right whale calving season, November 1 through April 15. It is difficult to predict changes in fishing behavior and in the black sea bass pot sector well into the future. Under the current preferred rebuilding strategy alternative, the ACL would increase after the 2014/2015 fishing season until 2016 if the previous season's ACL was not exceeded and if an updates stock assessment is conducted as required by the SSC. Subsequent increases in the commercial ACL could potentially lengthen the fishing season to the point where black sea bass pots could co-occur with migrating right whales, increasing the risk of entanglement over the status quo. In addition to this risk, right whales are also susceptible to ship strikes along the east coast since they often travel through busy shipping lanes. Furthermore, vertical line gear interactions in the northeast region of their migration route are also known to cause several right whale entanglements but not from the black sea bass pot sector. The 2011 Atlantic Large Whale Take Reduction Team Scoping Document lists a total of five right whale entanglements in fishing gear in 2010 and eight entanglements since June 2011 (NMFS 2011). Ship strikes, and gear interactions in the northeast region and in the southeast regions, individually, have the potential to cause harm to right whales; if combined, the cumulative impact could be considered serious given the extremely small population estimates for the species.

AFFECTED ENVIRONMENT

**5. Characterize the resources, ecosystems, and human communities identified in scoping in terms of their response to change and capacity to withstand stress.**

In terms of the biophysical environment, the resources/ecosystems identified in earlier steps of the CEA are the fish populations directly or indirectly affected by the regulations. This step should identify the trends, existing conditions, and the ability to withstand stresses of the environmental components.

The species most likely to be impacted by actions in Amendment 18A is black sea bass. Actions in Amendment 18A could limit participation and effort in the black sea bass portion of the snapper grouper fishery. A description of the communities identified through scoping for this amendment and their ability to adapt to and withstand stress resulting from the cumulative impacts of this and other fishery management actions are discussed in **Section 3.8** of this document. In the long-term, actions in this amendment and others mentioned in this CIA are likely to benefit the affected communities by promoting sustainable harvests levels, which would support steady market conditions and allow fishermen who are heavily vested in the snapper grouper fishery to continue fishing into the future.

The trends in condition of black sea bass are determined through the Southeast Data, Assessment and Review (SEDAR) process. As of 2004 (the last year of data used in the previous stock assessment), the black sea bass stock in the South Atlantic was undergoing

**overfishing** and was **overfished**. Actions were taken in Amendments 13C and 17B to the Snapper Grouper FMP to end overfishing of black sea bass. More information on the SEDAR Assessments for these species can be found in **Section 3.2.2**. A new stock assessment for black sea bass (SEDAR 25) indicates black sea bass are no longer overfished but are still rebuilding to the biomass capable of producing MSY and are undergoing overfishing to a minor degree.

**6. Characterize the stresses affecting these resources, ecosystems, and human communities and their relation to regulatory thresholds.**

This step is important in outlining the current and probable stress factors on snapper grouper species identified in the previous steps. The goal is to determine whether these species are approaching conditions where additional stresses could have an important cumulative effect beyond any current plan, regulatory, or sustainability threshold (CEQ 1997). Sustainability thresholds can be identified for some resources, which are levels of impact beyond which the resources cannot be sustained in a stable state. Other thresholds are established through numerical standards, qualitative standards, or management goals. The CEA should address whether thresholds could be exceeded because of the contribution of the proposed action to other cumulative activities affecting resources.

Fish populations

Quantitative definitions of overfishing and overfished for black sea bass were identified in Amendments 11 (SAFMC 1998a) and 12 (SAFMC 2000) to the Snapper Grouper FMP; numeric values of thresholds for overfishing and overfished for black sea bass were updated/modified in Amendment 15A (SAFMC 2008a). These values includes maximum sustainable yield (MSY), the fishing mortality rate that produces MSY ($F_{MSY}$), the biomass or biomass proxy that supports MSY ($B_{MSY}$), the minimum stock size threshold below which a stock is considered to be overfished (MSST), the maximum fishing mortality threshold above which a stock is considered to be undergoing overfishing (MFMT), and optimum yield (OY). Amendment 18A to the Snapper Grouper FMP updates thresholds for black sea bass based on the most recent assessment, SEDAR 25 (2011).

Climate change

Global climate changes could have significant effects on Atlantic fisheries. However, the extent of these effects is not known at this time, specifically for the Atlantic. Possible impacts include temperature changes in coastal and marine ecosystems that can influence organism metabolism and alter ecological processes such as productivity and species interactions; changes in precipitation patterns and a rise in sea level which could change the water balance of coastal ecosystems; altering patterns of wind and water circulation in the ocean environment; and influencing the productivity of critical coastal ecosystems such as wetlands, estuaries, and coral reefs (IPCC 2007; Kennedy et al. 2002).

Actions from this amendment could decrease the carbon footprint from fishing if some fishermen stop or reduce their number and duration of trips due to the establishment of catch limits and other measures that could restrict fishing effort to ensure overfishing does not occur. It is unclear how climate change would affect species in the Atlantic. Climate change

can affect factors such as migration, range, larval and juvenile survival, prey availability, and susceptibility to predators. In addition, the distribution of native and exotic species may change with increased water temperature, as may the prevalence of disease in keystone animals such as corals and the occurrence and intensity of toxic algae blooms. Climate change may significantly impact species in the future, but the level of impacts cannot be quantified at this time, nor is the timeframe known in which these impacts will occur. Actions in this document are expected to reduce or cap harvest of species managed by the Council; thus these actions may partially mitigate the negative impacts of global climate change on these species.

The Snapper Grouper fishery is heavily regulated which impacts the human communities. The social and cultural environment is described in **Section 3.8**. It is expected that short-term losses resulting from the cumulative impacts of this and the other snapper grouper regulatory actions mentioned in this CIA will result in long-term benefits to the communities that are heavily dependent upon the snapper grouper fishery for revenue and infrastructure support.

**7. Define a baseline condition for the resources, ecosystems, and human communities.**

The purpose of defining a baseline condition for the resource, ecosystems, and human communities in the area of the proposed action is to establish a point of reference for evaluating the extent and significance of expected cumulative effects. The Southeast Data Assessment and Review (SEDAR) assessments show trends in biomass, fishing mortality, fish weight, and fish length going back to the earliest periods of data collection. For some species such as snowy grouper, assessments reflect initial periods when the stock was above $B_{MSY}$ and fishing mortality was fairly low. However, some species such as black sea bass were heavily exploited or possibly overfished when data were first collected. As a result, the assessment must make an assumption of the biomass at the start of the assessment period thus modeling the baseline reference points for the species. The baseline condition of the communities most impacted by this and other snapper grouper regulatory actions is contained in **Section 3.8** of this document.

DETERMINING THE ENVIRONMENTAL CONSEQUENCES OF CUMULATIVE EFFECTS

**8. Identify the important cause-and-effect relationships between human activities and resources, ecosystems, and human communities.**

**Table 5-1.** The cause and effect relationship of fishing and regulatory actions for the snapper grouper fishery in the South Atlantic, within the time period of the Cumulative Effects Analysis (CEA) is shown below.

| Time period/dates | Cause | Observed and/or Expected Effects |
|---|---|---|
| 1960s-1983 | Growth overfishing of many reef fish species. | Declines in mean size and weight of many species including black sea bass. |
| August 1983 | 4" trawl mesh size to achieve a 12" TL commercial vermilion snapper minimum size limit (SAFMC 1983). | Protected youngest spawning age classes. |
| Pre-January 12, 1989 | Habitat destruction, growth overfishing of vermilion snapper. | Damage to snapper grouper habitat, decreased yield per recruit of vermilion snapper. |
| January 1989 | Trawl prohibition to harvest fish (SAFMC 1988). | Increase yield per recruit of vermilion snapper; eliminate trawl damage to live bottom habitat. |
| Pre-January 1, 1992 | Overfishing of many reef species including vermilion snapper, and gag. | Spawning stock ratio of these species is estimated to be less than 30% indicating that they are overfished. |
| January 1992 | Prohibited gear: fish traps south of Cape Canaveral, FL; entanglement nets; longline gear inside of 50 fathoms; powerheads and bangsticks in designated SMZs off SC.<br>Size/Bag limits: 10" TL vermilion snapper (recreational only); 12" TL vermilion snapper (commercial only); 10 vermilion snapper/person/day; aggregate grouper bag limit of 5/person/day; and 20" TL gag, red, black, scamp, yellowfin, and yellowmouth grouper size limit (SAFMC 1991a). | Protected smaller spawning age classes of vermilion snapper. |
| Pre-June 27, 1994 | Damage to *Oculina* habitat. | Noticeable decrease in numbers and species diversity in areas of *Oculina* off FL |
| July 1994 | Commercial quotas and trip limits for snowy grouper and golden tilefish. Prohibition of fishing for and retention of snapper grouper species (HAPC renamed OECA; | Put limit on fishing mortality of snowy grouper and golden tilefish. Initiated the recovery of snapper grouper species in OECA. |

| Time period/dates | Cause | Observed and/or Expected Effects |
|---|---|---|
| | SAFMC 1993) | |
| 1992-1999 | Declining trends in biomass and overfishing continue for a number of snapper grouper species including vermilion snapper and gag. | Spawning potential ratio for vermilion snapper and gag is less than 30% indicating that they are overfished. |
| February 24, 1999 | Gag and black: 24" total length (recreational and commercial); 2 gag or black grouper bag limit within 5 grouper aggregate; March-April commercial closure. Vermilion snapper: 11" total length (recreational). Aggregate bag limit of no more than 20 fish/person/day for all snapper grouper species without a bag limit (1998a). | F for gag vermilion snapper remains declines but is still above $F_{MSY}$. |
| October 23, 2006 | Snapper grouper FMP Amendment 13C (SAFMC 2006) | Commercial vermilion snapper quota set at 1.1 million lbs gutted weight; recreational vermilion snapper size limit increased to 12" TL to prevent vermilion snapper overfishing |
| Effective February 12, 2009 | Snapper grouper FMP Amendment 14 (SAFMC 2007) | Use marine protected areas (MPAs) as a management tool to promote the optimum size, age, and genetic structure of slow growing, long-lived deepwater snapper grouper species (e.g., speckled hind, snowy grouper, warsaw grouper, yellowedge grouper, misty grouper, golden tilefish, blueline tilefish, and sand tilefish). Gagand vermilion snapper occur in some of these areas. |
| Effective March 20, 2008 | Snapper grouper FMP Amendment 15A (SAFMC 2008a) | Establish rebuilding plans and SFA parameters for snowy grouper, black sea bass, and red porgy. |
| Effective Dates Dec 16, 2009, to Feb 16, 2010. | Snapper grouper FMP Amendment 15B (SAFMC 2008b) | End double counting in the commercial and recreational reporting systems by prohibiting the sale of bag-limit caught snapper grouper, and minimize impacts on sea turtles and smalltooth sawfish. |
| Effective Date July 29, 2009 | Snapper grouper FMP Amendment 16 (SAFMC 2009a) | Protect spawning aggregations and snapper grouper in spawning condition by increasing the length of the spawning season closure, decrease discard mortality by requiring the use |

| Time period/dates | Cause | Observed and/or Expected Effects |
|---|---|---|
| | | of dehooking tools, reduce overall harvest of gag and vermilion snapper to end overfishing. |
| Effective Date January 4, 2010 | Red Snapper Interim Rule | Prohibit commercial and recreational harvest of red snapper from January 4, 2010, to June 2, 2010 with a possible 186-day extension. Reduce overfishing of red snapper while long-term measures to end overfishing are addressed in Amendment 17A. |
| Effective Date December 3, 2010 | Snapper Grouper FMP Amendment 17A (SAFMC 2010a) | SFA parameters for red snapper; ACLs and ACTs ; management measures to limit recreational and commercial sectors to their ACTs; accountability measures. Establish rebuilding plan for red snapper. |
| Effective Date May 31, 2011 | Snapper Grouper FMP Regulatory Amendment 10 (SAFMC 2011a) | Eliminate snapper grouper closed area approved in Amendment 17A |
| Effective Date January 31, 2011 | Snapper Grouper FMP Amendment 17B (SAFMC 2010b) | ACLs and ACTs; management measures to limit recreational and commercial sectors to their ACTs; accountability measures, for species undergoing overfishing; deepwater species closure (> 240 feet) to reduce bycatch of speckled hind and warsaw grouper. |
| Target 2012 | Snapper Grouper FMP Regulatory Amendment 11 (SAFMC 2011a) | Modify closure for deepwater species approved in Amendment 17B. |
| Target June 2012 | Snapper Grouper FMP Amendment 18A (SAFMC 2011e) | Prevent overcapitalization in the black sea bass, modify the rebuilding strategy and AMs, and improve data collection timeliness and data quality. |
| Target 2012 | Amendment 18B (under development) | Establish an endorsement program for golden tilefish. |
| Target 2011/2012 | Comprehensive ACL Amendment (SAFMC 2011c) | ACLs, ACTs, and accountability measures for species not experiencing overfishing; accountability measures; remove species from the fishery management unit as appropriate; and management measures to limit recreational and commercial sectors to their ACTs. |
| Target 2012 | Snapper Grouper FMP Amendment 20A (SAFMC 2011f) and 20B (Wreckfish; under development) | Review the current ITQ program and update the ITQ program as necessary to comply with MSA LAPP requirements. |
| Effective July 15, 2011 | Snapper Grouper FMP Regulatory Amendment 9 (SAFMC 2011b | Establish or modify trip limits for vermilion snapper, gag, and greater amberjack; and reduce bag limit for black sea bass. |

| Time period/dates | Cause | Observed and/or Expected Effects |
|---|---|---|
| Target 2013 | Snapper Grouper FMP Amendment 22 | Modify management measures for red snapper as the stock rebuilds. |
| Target June 2012 | Snapper Grouper FMP Amendment 24 (SAFMC 2011d) | Establish a rebuilding plan for red grouper. |

**Right whale Background:**

- The North Atlantic right whale is one of the world's most endangered large whales, with an estimated population of less than 400 individuals. NMFS has previously stated that the "loss of even a single individual may contribute to the extinction of the species".
- NMFS has cited entanglements in commercial fishing gear as one of the most significant threats to the right whale's survival and recovery. Yet, almost every year since 2002, at least one entangled right whale has been found dead or so gravely injured that death is deemed likely.
- In addition to right whales, fishing gear used by the American lobster, northeast multispecies, monkfish, and spiny dogfish fisheries continues to injure and kill endangered humpback, fin, and sei whales.
- Northeast Region is under suit by Defenders of Wildlife, the Humane Society of the United States and the Whale and Dolphin Conservation Society in the federal district court for Massachusetts.

The threat from ship strikes in particular has escalated and appears to be jeopardizing the continued existence of the species. In 18 months between 2004 and 2006, 8 right whale deaths were reported, at least 4 of which were confirmed or suspected to be the result of ship strikes. The loss of 8 whales in less than a year and a half represents nearly 3 times the annual average. Even more disturbing, 6 of these 8 whales were reproductively mature females, 3 of which were carrying near-term fetuses at the time they were killed.

As noted in **Section 4** of this document, actions to reduce effort in the commercial sector of the black sea bass fishery could inadvertently, at some point in the future, possibly lead to black sea bass pots being fished during right whale calving season, which starts November 1 off North Carolina each year, and November 15 off South Carolina, Georgia, and Florida each year. It is difficult to predict changes in fishing behavior and in the pot segment of the black sea bass fishery as a whole well into the future. Under the current preferred rebuilding strategy alternative, the ACL would increase each fishing season until 2016 if the previous season's ACL was not exceeded. Subsequent increases in the commercial ACL could potentially lengthen the fishing season to the point where black sea bass pots could co-occur with migrating right whales, increasing the risk of entanglement over the status quo. However, the commercial fishery closed on July 15$^{th}$ after beginning on June 1$^{st}$ this year. Remaining effort in the fishery is expected to be more than sufficient to harvest the available commercial ACL before November.

In addition to this risk, right whales are also susceptible to ship strikes along the east coast since they often travel through busy shipping lanes. Furthermore, vertical line gear interactions in the northeast region of their migration route are also suspected of causing several right whale entanglements. The 2011 Atlantic Large Whale Take Reduction Team Scoping Document lists a total of five right whale entanglements in fishing gear in 2010 and eight entanglements since June 2011 (NMFS 2011). Ship strikes, and gear interactions in the northeast region and in the southeast regions, individually, have the potential to cause harm to right whales; if combined, the cumulative impact could be considered serious given the extremely small population estimates for the species.

**9. Determine the magnitude and significance of cumulative effects.**

Proposed management actions, as summarized in **Section 2** of this document, would limit participation, effort and reduce bycatch in the black sea bass fishery, modify the black sea bass rebuilding strategy, modify the black sea bass system of AMs, and improve fishery statistics and data collection in the commercial and for hire fisheries. These management actions in Amendment 18A to the Snapper Grouper FMP are intended to address issues that have remained after the implementation of previous amendments. Species in the snapper grouper fishery management unit (FMU) are assessed on a routine basis and stock status may change as new information becomes available. In addition, changes in management regulations, fishing techniques, social/economic structure, etc. can result in shifts in the percentage of harvest between user groups over time. As such, the South Atlantic Council has determined that certain aspects of the current management system remain inappropriate and should be restructured. Detailed discussions of the magnitude and significance of the preferred alternatives appear in **Section 4** of this consolidated document. Below is a short summary of the biological significance and magnitude of each of the preferred alternatives chosen, and a brief discussion of their combined effect on the snapper grouper FMU and the ecosystem. When viewed in totality, the actions in this amendment would benefit black sea bass by reducing participation through development of limiting the number of black sea bass pot tag limits/vessel at 35, requiring black sea bass pots be returned at the end of each trip, and the endorsement program. These measures will reduce bycatch and ghost fishing which will benefit the black sea bass resource.

**10. Modify or add alternatives to avoid, minimize, or mitigate significant cumulative effects.**

The cumulative effects on the biophysical environment are expected to be positive. Avoidance, minimization, and mitigation are not applicable.

**11. Monitor the cumulative effects of the selected alternative and adopt management.**

The effects of the proposed action are, and will continue to be, monitored through collection of data by NOAA Fisheries Service, states, stock assessments and stock assessment updates, life history studies, and other scientific observations.

## 5.2 Socioeconomic Cumulative Impacts

A description of the human environment, including a description of commercial and recreational snapper grouper fisheries and associated key fishing communities is contained in **Section 3**. A description of the history of management of the snapper grouper fishery is contained in **Appendix C** and is incorporated herein by reference. Participation in and the economic performance of the black sea bass sector of the snapper grouper fishery have been affected by a combination of regulatory, biological, social, and external economic factors. Regulatory measures have obviously affected the quantity and composition of harvests, through the various size limits, seasonal restrictions, trip or bag limits, and quotas. Gear restrictions, notably fish trap and longline restrictions, have also affected harvests and economic performance. The limited access program implemented in 1998/1999 substantially affected the number of participants in the fishery. Biological forces that either motivate certain regulations or simply influence the natural variability in fish stocks have played a role in determining the changing composition of the fishery. Additional factors, such as changing career or lifestyle preferences, stagnant to declining ex-vessel fish prices due to imports, increased operating costs (e.g., gas, ice, insurance, dockage fees, etc.), and increased waterfront/coastal value leading to development pressure for non-fishery uses have impacted both the commercial and recreational fishing sectors.

Given the variety of factors that affect fisheries, persistent data issues, and the complexity of trying to identify cause-and-effect relationships, it is not possible to differentiate actual or cumulative regulatory effects from external cause-induced effects. In general, it can be stated, however, that the regulatory environment for all fisheries has become progressively more complex and burdensome, increasing, in tandem with other adverse influences, the likelihood of economic losses, business failure, occupational changes, and associated adverse pressures on associated families, communities, and industries. Some reverse of this trend is possible and expected. The establishment of an endorsement program for black sea bass and modification to the rebuilding strategy are expected to result in long-term positive impacts on the fishery and associated fishing communities. By limiting the number of participants in the fishery, limiting the effort in the fishery, and increasing allowable harvest as the stock rebuilds, overcapitalization may be avoided and derby conditions which have recently developed in the fishery may diminish.

A detailed description of the expected social and economic impacts of the actions in this amendment are contained elsewhere in **Section 4**, the Initial Regulatory Impact Review Analysis, the Regulatory Impact Review, and the Fishery Impact Statement, which are incorporated herein by reference. Current and future amendments are expected to add to this cumulative effect. Namely, the Comprehensive ACL Amendment is expected to further reduce harvest for commercial and recreational fishermen through management measures in that document.

Finally, the space industry in Florida centered on Cape Canaveral is experiencing severe difficulties due to the ramping down and cancellation of the Space Shuttle Program. This program's loss coupled with additional fishery closures will negatively impact this region. However, declining economic conditions due to decline in the space industry may lessen the pace of waterfront development and associated adverse socialand economic pressures on fishery infrastructure.

# 6 Council Conclusions

## 6.1 Modify Rebuilding Strategy, ABC, ACLs, and ACTs for Black Sea Bass

### 6.1.1 Modify Rebuilding Strategy and Set ABC for Black Sea Bass

The acceptable biological catch for black sea bass was specified by the South Atlantic Fishery Management Council's (South Atlantic Council) Science and Statistical Committee (SSC) for fishing years 2012/2013 and 2013/2014 at 746,610 lbs gutted weight (gw) and 881,356 lbs gw, respectively, using the Council's approved ABC Control Rule and latest assessment results. The SSC reviewed Amendment 18A and SEDAR 25 at their November 8-10, 2011 meeting in Charleston, SC. This was based on the results of SEDAR 25 which showed the stock of black sea bass was no longer overfished;, however, there remains some overfishing, and the stock still is rebuilding to the biomass at MSY. The SSC based it's ABCs on a 50% probability of recovering the stock by the end of the 2015/2016 fishing year. The SSC was willing to make recommendations for only two fishing years based on the available data. They expressed a desire to see an updated assessment prior to making ABC recommendations for the 2014/2015 season and beyond. The South Atlantic Council cannot exceed the catch level recommendation of its SSC.

The South Atlantic Council chose to specify a lower ABC that would have an increased probability of rebuilding equal to 66%, and hold constant the value of ABC from the previous stock assessment of 718,000 lbs gw for the 2012/2103 and 2013/2014 fishing years (**Preferred Alternative 5**). Further refinements to the ABC will be considered after the SSC makes recommendations for fishing years beyond 2013/214 pending an updated stock assessment. The South Atlantic Council chose a precautionary approach to increase the probability the stock would be recovered by the end of the ten year rebuilding timeframe specified in Amendment 15A to the Snapper Grouper FMP and avoid having to take even more drastic measures in the final three years of the rebuilding schedule.

The Snapper Grouper Advisory Panel (AP) met prior to the completion of SEDAR 25, but recommended that the Council choose the alternative which would give the fishermen the greatest amount of fish possible over time that would lead to rebuilding of the stock by 2016.

The SSC recommended that the Council be more conservative in setting the ABC, ACL or ACTs as necessary because they determined that more precaution was needed somewhere in the setting of values to help protect against landings which might exceed an ABC based on a 50% probability of success.

The South Atlantic Council concluded that **Preferred Alternative 5** best meets the purpose and need to implement measures expected to prevent overfishing and achieve optimum yield (OY) while minimizing, to the extent practicable, adverse social and economic effects. The preferred alternative also best meets the objectives of the Snapper Grouper Fishery Management Plan, as amended, while complying with the requirements of the Magnuson-Stevens Act and other applicable law.

### 6.1.2 Set an ACL for Black Sea Bass

The South Atlantic Council chose **Preferred Alternative 2** that set ACL = ABC = OY. They concluded that choosing a more conservative ABC in **Action 1a** would provide the additional protection necessary to ensure rebuilding would occur on time. Furthermore, the South Atlantic Council chose a rebuilding strategy that would have a 66% chance of rebuilding the stock by the end of the rebuilding timeframe. Therefore, by choosing **Preferred Alternative 2** for this action, they could be as liberal as possible.

The Snapper Grouper Advisory Panel recommended the South Atlantic Council select **Alternative 2** as its **preferred**.

The Council's SSC warned the Council that they needed to select a buffer among the ABC, ACL, and ACTs that would provide protection to the stock knowing the Council's **Preferred Alternative 2** would set the ACL equal to the ABC.

The South Atlantic Council concluded that **Preferred Alternative 2** best meets the purpose and need to implement measures expected to prevent overfishing and achieve optimum yield (OY) while minimizing, to the extent practicable, adverse social and economic effects. The preferred alternative also best meets the objectives of the Snapper Grouper Fishery Management Plan, as amended, while complying with the requirements of the Magnuson-Stevens Act and other applicable law.

### 6.1.3 Set Annual Catch Targets (ACTs) for Commercial Black Sea Bass

No ACT was set for the commercial sector of the black sea bass fishery (**Preferred Alternative 1 – No Action**). The Council concluded that improvements are being implemented such that the commercial sector landings will be more closely tracked in-season through a quota monitoring system and the process exists to project when the ACL is going to be met in order to close the fishery before the ACL is exceeded. To impose an ACT on this sector of the fishery could cause undue hardship among fishermen and was considered an unnecessary administrative burden.

The Snapper Grouper Advisory Panel recommended the South Atlantic Council select **Alternative 1 – No Action** as its **preferred**.

The SSC's comments on **Action 1b**, setting an ACL, regarding establishing a buffer apply to this action, as well.

The South Atlantic Council concluded that **Preferred Alternative 1 (No Action)** best meets the purpose and need to implement measures expected to prevent overfishing and achieve OY while minimizing, to the extent practicable, adverse social and economic effects. The preferred alternative also best meets the objectives of the Snapper Grouper Fishery Management Plan, as amended, while complying with the requirements of the Magnuson-Stevens Act and other applicable law.

### 6.1.4 Set Annual Catch Targets (ACTs) for Recreational Black Sea Bass

Tracking landings in the recreational sector can be a difficult task given the level of uncertainty associated with recreational landings data. An ACT for the recreational sector could be used as a management reference point to track performance of recreational management measures. Though none of the ACT alternatives are associated with a corrective or preventative action, they could be used to trigger such harvest control actions in the future when recreational data can be used for in-season management, if the South Atlantic Council concludes it is appropriate. Therefore, the South Atlantic Council chose **Preferred Alternative 4** which in effect would reduce the landings target for the recreational sector from 409,000 lbs gw to 359,229 gw in an attempt to reduce the likelihood that the ACL overages which have occurred in the past in the recreational sector would not continue into the future. The Council concluded that improvements are being implemented such that the recreational sector landings will be more closely tracked through MRIP and the process exists to project when the ACL is going to be met in order to close the fishery before the ACL is exceeded.

The Snapper Grouper Advisory Panel expressed support for the South Atlantic Council's selected **Preferred Alternative 4**.

The SSC's comments on **Action 1b**, setting an ACL, regarding establishing a buffer apply to this action, as well.

The South Atlantic Council concluded that **Preferred Alternative 4** best meets the purpose and need to implement measures expected to prevent overfishing and achieve optimum yield (OY) while minimizing, to the extent practicable, adverse social and economic effects. The preferred alternative also best meets the objectives of the Snapper Grouper Fishery Management Plan, as amended, while complying with the requirements of the Magnuson-Stevens Act and other applicable law.

## 6.2 Limit Participation in the Black Sea Bass Pot Segment of the Snapper Grouper Fishery through an Endorsement Program

The South Atlantic Council is concerned increased restrictions imposed through Amendments 13C, 16, 17A, and 17B to the Snapper Grouper FMP including a commercial quota for black sea bass, commercial quota for vermilion snapper, and seasonal closure for shallow water groupers could serve as an incentive for a greater number of fishermen with federal snapper grouper commercial permits to fish pots for black sea bass. Yet at the same time, the South Atlantic Council wished to allow those fishermen who were currently participating in the fishery to remain doing so. The South Atlantic Council also had a strong desire to attempt to increase the length of the commercial fishing season, which in 2011/2012 lasted approximately 45 days. The South Atlantic Council concluded that reducing participation through implementing an endorsement program would help reach the goal of extending the season.

The South Atlantic Council concluded the fishery could sustain about 30 fishermen participating in the black sea bass pot sector, given the further restrictions they approved. Therefore, the South Atlantic Council chose **Preferred Sub-Alternative 2g** as its preferred alternative. The choice of **Preferred Sub-Alternative 2g** guaranteed inclusion of fishermen from North Carolina, South Carolina, and Florida, but not from Georgia. The State of Georgia did not have any fishermen who would have qualified for an endorsement under any of the alternatives considered for this action.

The Snapper Grouper AP did not support the establishment of an endorsement program. They felt that other management measures in the amendment should be used to slow down the harvest of black sea bass and extend the season.

The SSC preferred that the South Atlantic Council take action that would allow virtually all fishermen who participated in the black sea bass pot sector to continue to do so, while prohibiting new entrants. They would have preferred the South Atlantic Council chose a variation of **Sub-Alternative 2a** as their preferred alternative.

The South Atlantic Council concluded that **Preferred Sub-Alternative 2g** best meets the purpose and need to implement measures expected to limit participation in the black sea bass pot sector and extend the fishing season while minimizing, to the extent practicable, adverse biological, social and economic effects. The preferred alternative also best meets the objectives of the Snapper Grouper Fishery Management Plan, as amended, while complying with the requirements of the Magnuson-Stevens Act and other applicable law.

### 6.3 Establishment of an Appeals Process for Fishermen Excluded from the Black Sea Bass Pot Endorsement Program

The South Atlantic Council chose **Preferred Alternative 2** for establishing an appeals process for fishermen who might have been incorrectly excluded from receiving an endorsement. The chosen alternative represents an administrative action that is consistent with other appeals processes currently administered by the Southeast Regional Office of NOAA Fisheries Service.

The Snapper Grouper Advisory Panel supported the Council's **Preferred Alternative 2** for establishing an appeals process for appeals. The Science and Statistical Committee chose not to comment on this action as they saw it as primarily administrative in nature.

The South Atlantic Council concluded that **Preferred Alternative 2** best meets the purpose and need to implement measures expected to limit participation in the black sea bass pot sector and extend the fishing season while minimizing, to the extent practicable, adverse biological, social and economic effects. The preferred alternative also best meets the objectives of the Snapper Grouper Fishery Management Plan, as amended, while complying with the requirements of the Magnuson-Stevens Act and other applicable law.

## 6.4 Allow for Transferability of Black Sea Bass Pot Endorsements

The South Atlantic Council's choice of **Preferred Sub-Alternative 2a** would allow transfer of valid black sea bass endorsements among individuals who hold South Atlantic Unlimited Snapper Grouper Permits independent of each other. It is the South Atlantic Council's intent that all landings of black sea bass with pot gear be associated with the South Atlantic Unlimited Snapper Grouper Permit, rather than the endorsement. The subject endorsement would simply entitle its holder to harvest black sea bass using black sea bass pot gear. Those without the endorsement would not be allowed to do so. Any landings of black sea bass using pot gear by individuals who hold an endorsement would be added to the landings of the South Atlantic Snapper Grouper Permit to which the endorsement is linked. If the endorsement is transferred the landings of black sea bass that were made using the endorsement would not transfer with the endorsement. The endorsement would have no associated landings value. .

The Snapper Grouper Advisory Panel chose **Alternative 1 (No Action)** as their recommendation to the Council.

The Science and Statistical Committee did not specifically endorse one alternative over any others in this action. The Socioeconomic Panel of the Science and Statistical Committee felt that as long as the endorsements had monetary value the fishermen ought to be allowed to treat them as a commodity and be allowed to transfer or sell them.

The South Atlantic Council concluded that **Preferred Sub-Alternative 2a** best meets the purpose and need to implement measures expected to limit participation in the black sea bass pot sector and extend the fishing season while minimizing, to the extent practicable, adverse biological, social and economic effects. The preferred alternative also best meets the objectives of the Snapper Grouper Fishery Management Plan, as amended, while complying with the requirements of the Magnuson-Stevens Act and other applicable law.

## 6.5 Limit Effort in the Black Sea Bass Pot Segment of the Snapper Grouper Fishery Each Permit Year

Currently, there is no limit on the number of tags issued to fishermen who target black sea bass or the number of pots that can be fished. The South Atlantic Council is concerned about the possibility of fishermen leaving large numbers of pots fishing for multiple days due to vessel or weather problems, which could unnecessarily kill black sea bass. Fishing large numbers of pots also increases the chance that pots could be lost and "ghost fishing" could occur. Furthermore, increases in vertical lines especially during November - April, either as a result of no limit on pots fished or a fishing season extension, increases the chance of mortality or serious injury from entanglement of pot lines with right whales and other protected species. The South Atlantic Council's **Preferred Alternative 5** would limit the number of pot tags that would be issued to fishermen holding black sea bass pot endorsements each permit year. to 35. Under this alternative, about half of the trips will require fishermen to use fewer pots.

The Snapper Grouper Advisory Panel supported the South Atlantic Council's chosen **Preferred Alternative 5**.

The SSC stated the regulation that requires all traps to be brought in after every trip may take care of the issue of how many traps a fisherman can have at any time. Other than reducing right whale interactions, there is no reason for implementing this regulation, especially in light of the regulation requiring all traps being brought in after each trip. In the context of the other regulations being considered, this one may not help the Council reach its intended goal of extending the length of the fishing season. Requiring fishermen to bring traps back after a trip may be very difficult to enforce.

The South Atlantic Council concluded that **Preferred Alternative 5** best meets the purpose and need to implement measures expected to limit participation in the black sea bass pot sector and extend the fishing season while minimizing, to the extent practicable, adverse biological, social and economic effects. The preferred alternative also best meets the objectives of the Snapper Grouper Fishery Management Plan, as amended, while complying with the requirements of the Magnuson-Stevens Act and other applicable law.

### 6.6 Implement Measures to Reduce Black Sea Bass Bycatch

The South Atlantic Council considered alternatives that would limit the amount of soak time black sea bass pots would be allowed. By choosing **Preferred Alternative 2**, the South Atlantic Council chose the method currently used on the majority of fishing trips (roughly 63%) which is to bring back all pots at the end of each trip. Without this limitation on soak time fishermen could leave pots in the water indefinitely as long as the commercial season for black sea bass remained open. The South Atlantic Council had concerns that not restricting soak time increases the chance that pots could be lost and "ghost fishing" could occur. Also a reduction in the number of vertical pot lines in the water would decrease any possibility of interactions with endangered marine mammals such as the right whale.

The Snapper Grouper Advisory Panel supported the South Atlantic Council's selection of **Preferred Alternative 2.**

The SSC did not comment on this action.

The South Atlantic Council concluded that **Preferred Alternative 2** best meets the purpose and need to implement measures expected to reduce bycatch in the black sea bass pot sector and extend the fishing season while minimizing, to the extent practicable, adverse biological, social and economic effects. The preferred alternative also best meets the objectives of the Snapper Grouper Fishery Management Plan, as amended, while complying with the requirements of the Magnuson-Stevens Act and other applicable law.

### 6.7 Modify Accountability Measures for Black Sea Bass

The South Atlantic Council chose to modify its accountability measures (AMs) for black sea bass that had been set in Amendment 17B (SAFMC 2010b). Subsequent to the

implementation of Amendment 17B, the South Atlantic Council determined the methodology employed by the system of AMs under Amendment 17B may not be the most appropriate way to constrain harvest at or below the sector ACLs and it could unnecessarily penalize the participants in the commercial and recreational sectors of the black sea bass component of the snapper grouper fishery.

The South Atlantic Council's **Preferred Alternative 3** adjusts the AMs by eliminating the use of the three year running average for determining whether the recreational ACL had been exceeded, specifies that payback of overages occur regardless of stock status for both the recreational and commercial sectors, and stipulates that ACL paybacks would not be required when new projections are adopted that incorporate ACL overages and the ACLs are adjusted in accordance with those projections. The modified AM also includes a payback provision for the commercial sector, and gives the Regional Administrator the authority to close the recreational sector when the recreational ACL is projected to be met.

The Snapper Grouper Advisory Panel and the majority of public comments supported **Preferred Alternative 3**.

The South Atlantic Council concluded that **Preferred Alternative 3** best meets the purpose and need to implement measures expected to prevent overfishing and achieve optimum yield (OY) while minimizing, to the extent practicable, adverse social and economic effects. The preferred alternative also best meets the objectives of the Snapper Grouper Fishery Management Plan, as amended, while complying with the requirements of the Magnuson-Stevens Act and other applicable law.

### 6.8 Establish a Spawning Season Closure for Black Sea Bass

The South Atlantic Council chose **Preferred Alternative 1 (No Action)** based on information that indicated that black sea bass do not form large spawning aggregations like many other snapper grouper species are known to do (McGovern et al. 2002; Sedberry et al. 2006). It was also noted that the peak of the spawning for black sea bass occurred at different times of the year, in late winter/early spring off of Georgia and Florida and primarily in spring off of the Carolinas.

Not setting a spawning season closure should not have an impact on spawning of black sea bass, nor the potential for right whale interactions as early closures of the fishery are expected for at least the next several years.

The Snapper Grouper AP supported the notion of having a spawning season closure if it would protect the stock until it was rebuilt.

The South Atlantic Council's SSC as well as many public hearing comments indicated support for a spawning season closure at least until the stock has been rebuilt.

The South Atlantic Council concluded that **Preferred Alternative 1 (No Action)** best meets the purpose and need to implement measures expected to prevent overfishing and achieve

optimum yield (OY) while minimizing, to the extent practicable, adverse social and economic effects. The preferred alternative also best meets the objectives of the Snapper Grouper Fishery Management Plan, as amended, while complying with the requirements of the Magnuson-Stevens Act and other applicable law.

### 6.9 Establish a Commercial Trip Limit for Black Sea Bass

**Alternative 4 (Preferred)** allows for fishermen to land no more than 1,000 lbs gw weight (1,180 lbs ww). The South Atlantic Council preferred this alternative as a way to balance out the desire to extend the commercial fishing year and yet allow commercial black sea bass pot fishermen to have economically profitable trips. Had this trip limit been in place during the 2011/2012 fishing year, the season would have been extended by a few weeks.

In general, the Snapper Grouper Advisory Panel and public hearing comment did support some version of trip limits as a way to extend the season.

The South Atlantic Council's SSC did not endorse the use of trip limits because they are not economically efficient. Fishermen would have to stop fishing once the 1,000 lbs gw trip limit was met and return to port. If they were allowed to continue fishing, they could economize on trip costs which could offset any ex-vessel price reductions that would have been encountered from larger landings.

The South Atlantic Council concluded that **Preferred Alternative 4** best meets the purpose and need to implement measures expected to extend the fishing season while minimizing, to the extent practicable, adverse biological, social and economic effects. The preferred alternative also best meets the objectives of the Snapper Grouper Fishery Management Plan, as amended, while complying with the requirements of the Magnuson-Stevens Act and other applicable law.

### 6.10 Modify Commercial and/or Recreational Black Sea Bass Size Limits

Increasing the minimum size limit would theoretically decrease the rate of harvest by reducing the number of legal size fish able to be harvested, and thus potentially extend the length of the fishing season. Black sea bass have a relatively low regulatory discard mortality rate (1-7%). The vast majority of any undersized fish returned to the water would survive. However, as the stock continues to recover, the benefits of lengthening the season would be reduced as greater number of larger fish become available. The South Atlantic Council's chosen **Preferred Sub-Alternative 2a** and **Sub-Alternative 3a** increases the both the recreational and commercial minimum size limits by one inch each.

While public hearing comments were divided on the usefulness of increasing size limits for black sea bass, the Snapper Grouper Advisory Panel supported increasing the minimum size limit.

The SSC stated that it does support increasing the size limit because larger fish are more valuable. Due to the extent of rebuilding and availability of BSB, however, increasing the

size limit may not extend the season. Also, larger fish may have higher discard mortality. Increasing the minimum size may increase discards and the size of discarded fish.

The South Atlantic Council concluded that **Preferred Sub-Alternatives 2a** and **3a** best meet the purpose and need to implement measures expected to extend the fishing season while minimizing, to the extent practicable, adverse biological, social and economic effects. The preferred alternative also best meets the objectives of the Snapper Grouper Fishery Management Plan, as amended, while complying with the requirements of the Magnuson-Stevens Act and other applicable law.

## 6.11 Improvements to Commercial Vessel Data Reporting

The South Atlantic Council considered various approaches to improving commercial data reporting in the snapper grouper fishery. The Council's **Preferred Action 1 (No Action)** is not an indication the Council does not want to work towards improving commercial data collection. On the contrary, the South Atlantic Council has instructed staff to begin work on the development of a more comprehensive fishery management plan amendment to work towards improvements in data collection across all fisheries. The South Atlantic Council preferred to wait until this later amendment to address these issues.

There was significant support from the South Atlantic Council's SSC, Snapper Grouper Advisory Panel and public hearing comments for the South Atlantic Council to find ways to improve commercial data collection, particularly in the timeliness of gathering and reporting the data.

The South Atlantic Council concluded that **Preferred Alternative 1 (No Action)** best meets the purpose and need to implement measures expected to prevent overfishing and achieve optimum yield (OY) while minimizing, to the extent practicable, adverse biological, social and economic effects. The preferred alternative also best meets the objectives of the Snapper Grouper Fishery Management Plan, as amended, while complying with the requirements of the Magnuson-Stevens Act and other applicable law.

## 6.12 Improvement to For-Hire Data Reporting

The South Atlantic Council considered several approaches to help improve for-hire data reporting. **Preferred Alternative 2** slightly differs from an action in Snapper Grouper Amendment 15B (SAFMC 2008b) in that it does not require any specific type of electronic equipment to report landings. The South Atlantic Council preferred to allow the new Marine Recreational Information Program for gathering recreational angling data to have time to determine whether it will be sufficient for reporting for-hire landings data.

There was significant support from the South Atlantic Council's SSC, Snapper Grouper Advisory Panel and public hearing comments for the South Atlantic Council to find ways to improve recreational data collection, particularly in the timeliness of gathering and reporting the data.

The South Atlantic Council concluded that **Preferred Alternative 2** best meets the purpose and need to implement measures expected to prevent overfishing and achieve optimum yield (OY) while minimizing, to the extent practicable, adverse biological, social and economic effects. The preferred alternative also best meets the objectives of the Snapper Grouper Fishery Management Plan, as amended, while complying with the requirements of the Magnuson-Stevens Act and other applicable law.

# 7 List of Preparers

| Name | Title | Agency | Division | Location |
|---|---|---|---|---|
| Myra Brouwer | Fishery Scientist | SAFMC | N/A | SAFMC |
| David Dale | EFH Specialist | NMFS | HC | SERO |
| Rick DeVictor | Environmental Impact Scientist | SAFMC | N/A | SAFMC |
| Otha Easley | Enforcement Specialist | NMFS | LE | SERO |
| Karla Gore | Natural Resource Management Specialist | NMFS | SF | SERO |
| David Keys | Regional NEPA Coordinator | NMFS | F/SER | SERO |
| Andy Herndon | Biologist | NMFS | PR | SERO |
| Stephen Holiman | Economist | NMFS | SF | SERO |
| Tony Lamberte | Economist | NMFS | SF | SERO |
| Andrew Herndon | Fishery Biologist | NMFS | PR | SERO |
| Jack McGovern | Fishery Biologist | NMFS | SF | SERO |
| Carolyn Sramek | Permits | NMFS | SF | SERO |
| Kari MacLauchlin | Social Scientist | SAFMC | N/A | SAFMC |
| Brian Cheuvront | Economist | SAFMC | N/A | SAFMC |
| Monica Smit-Brunello | Attorney Advisor | NOAA | GC | SERO |
| Jim Waters | Economist | NMFS | Economics | SEFSC |
| Kate Michie | Plan Coordinator | NMFS | SF | SERO |
| Gregg Waugh | Deputy Director | SAFMC | N/A | SAFMC |
| Erik Williams | Stock Assessment Biologist | NMFS | SF | SEFSC |

## 8 List of Agencies, Organizations, and Persons to Whom Copies of the Statement Were Sent

Responsible Agency

**Amendment 18A:**
South Atlantic Fishery Management Council
4055 Faber Place Drive, Suite 201
Charleston, South Carolina 29405
(843) 571-4366 (TEL)
Toll Free: 866-SAFMC-10
(843) 769-4520 (FAX)
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**Environmental Impact Statement:**
NMFS, Southeast Region
263 13th Avenue South
St. Petersburg, Florida 33701
(727) 824-5301 (TEL)
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List of Agencies, Organizations, and Persons Consulted

SAFMC Law Enforcement Advisory Panel
SAFMC Snapper grouper Advisory Panel
SAFMC Scientific and Statistical Committee
North Carolina Coastal Zone Management Program
South Carolina Coastal Zone Management Program
Georgia Coastal Zone Management Program
Florida Coastal Zone Management Program
Florida Fish and Wildlife Conservation Commission
Georgia Department of Natural Resources
South Carolina Department of Natural Resources
North Carolina Division of Marine Fisheries
North Carolina Sea Grant
South Carolina Sea Grant
Georgia Sea Grant
Florida Sea Grant
Atlantic States Marine Fisheries Commission
Gulf and South Atlantic Fisheries Development Foundation
Gulf of Mexico Fishery Management Council
National Marine Fisheries Service
- Washington Office
- Office of Ecology and Conservation
- Southeast Regional Office
- Southeast Fisheries Science Center

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# Appendix A. Alternatives the South Atlantic Fishery Management Council (South Atlantic Council) Considered But Eliminated From Detailed Study, and a Brief Discussion of the Reasons For Their Elimination.

This section describes alternatives to the proposed actions that the South Atlantic Council considered in developing this document, but decided not to pursue. The description of each alternative is followed by a summary statement of why it was eliminated from more detailed summary.

**Rejected Alternative 1. Require that each black sea bass pot in the water or at sea on a vessel in the South Atlantic EEZ have an attached valid identification tag issued by NMFS. Limit the number of black sea bass pots fished annually to 50 per holder of Federal snapper grouper vessel permits for (a) any fishermen that is currently using an average of less than 55 pots (based on average number of pots fished on trips between 1/1/05 and 12/31/06) and (b) and fishermen entering the fishery after 1/1/07. For any fishermen currently using an average of 55 or more pots (based on average number of pots fished on trips between 1/1/05 and 12/31/06), limit the number of black sea bass pots annually to their average less as reduced by 10%. Limit the maximum number of pots allowed per holder of Federal snapper-grouper vessel permits to 125. Limit the number of black sea bass pot tags issued annually each holder of Federal snapper-grouper vessel permits to the number of pots allowed plus 10% for damage and loss; however, each permit holder may only fish the number of pots allowed. The number of pots fished will be determined from snapper-grouper logbooks that have been submitted to NMFS on or before 3/8/07.**

***Rationale for elimination:*** *This alternative was proposed as a method of limiting the number of black sea bass pots used in the snapper grouper fishery. At the March 2009 meeting the South Atlantic Council removed this alternative from detailed analysis because it was considered too complex and because under this alternative, the limitations were not restrictive enough to achieve the South Atlantic Council desired outcome.*

**Rejected Alternative 2. Require vessels with a state recreational fishing license to have an electronic logbook tied to the vessel's GPS onboard the vessel, if selected.**

***Rationale for elimination:*** *The South Atlantic Council eliminated this alternative from detailed analysis because it was not considered financially feasible or realistic to assume that all vessels with recreational fishing licenses have a GPS onboard the vessel.*

**Rejected Alternative 3. Require vessels with a state recreational fishing license to carry a NMFS approved observer when on a trip in the South Atlantic.**

***Rationale for elimination:*** *The South Atlantic Council eliminated this alternative from detailed analysis because it was not considered practical for observers to be carried on vessels with a state recreational fishing license due to the size of many of the vessels participating in recreational fishing.*

**Rejected Alternative 4. Require all permitted snapper grouper dealers to report electronically; NOAA Fisheries Service is authorized to require weekly or daily reporting as required.**

***Rationale for elimination:*** *Current regulations state that dealers must report, if selected. The agency could select 100% of the dealers to report. The alternative is also covered in Alternative 4, as the SAFIS program requires 100% dealer reporting.*

**Rejected Alternative 5. Require all vessels with a Federal For-Hire Permit to report electronically; NOAA Fisheries Service is authorized to require weekly or daily reporting as required.**

***Rationale for elimination:*** *Current regulations state that fishermen must report, if selected. The agency could select 100% of the for-hire fishermen to report. The alternative is also covered in Alternative 4, as the SAFIS program requires 100% for-hire reporting.*

**Rejected Alternatives 6-24. Limit endorsement and tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 1 pound of black sea bass caught with pot gear between 12/8/98 and the control date of 12/04/08.**

**Sub-Alternative 1. Qualification based on average landings.**

**Sub-Alternative 2. Qualification based on aggregate landings.**

**Sub-Alternative 3. Qualification based on landings in one year.**

**Limit endorsement and tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 500 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 12/04/08.**

**Sub-Alternative 1. Qualification based on average landings.**

**Sub-Alternative 2. Qualification based on aggregate landings.**

**Sub-Alternative 3. Qualification based on landings in one year.**

**Limit endorsement and tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 1,000 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 12/04/08.**

**Preferred Sub-Alternative 1. Qualification based on average landings.**

**Sub-Alternative 2. Qualification based on aggregate landings.**

**Sub-Alternative 3. Qualification based on landings in one year.**

**Limit endorsement and tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 2,000 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 12/04/08.**

**Sub-Alternative 1. Qualification based on average landings.**

**Sub-Alternative 2. Qualification based on aggregate landings.**

**Sub-Alternative 3. Qualification based on landings in one year.**

**Limit endorsement and tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 5,000 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 12/04/08.**

**Sub-Alternative 1. Qualification based on average landings.**

**Sub-Alternative 2. Qualification based on aggregate landings.**

**Sub-Alternative 3. Qualification based on landings in one year.**

**Limit endorsement and tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 10,000 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 12/04/08.**

**Sub-Alternative 1. Qualification based on average landings.**

**Sub-Alternative 2. Qualification based on aggregate landings.**

**Sub-Alternative 3. Qualification based on landings in one year.**

**Limit endorsement and tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 1 pound of black sea bass caught with pot gear between 12/8/98 and the control date of 10/14/05.**

**Sub-Alternative 1. Qualification based on average landings.**

**Sub-Alternative 2. Qualification based on aggregate landings.**

**Sub-Alternative 3. Qualification based on landings in one year.**

**Limit endorsement and tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 500 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 10/14/05.**

**Sub-Alternative 1. Qualification based on average landings.**

**Sub-Alternative 2. Qualification based on aggregate landings.**

**Sub-Alternative 3. Qualification based on landings in one year.**

**Limit endorsement and tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 1,000 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 10/14/05.**

**Sub-Alternative 1. Qualification based on average landings.**

**Sub-Alternative 2. Qualification based on aggregate landings.**

**Sub-Alternative 3. Qualification based on landings in one year.**

**Limit endorsement and tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 2,000 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 10/14/05.**

**Sub-Alternative 1. Qualification based on average landings.**

**Sub-Alternative 2. Qualification based on aggregate landings.**

**Sub-Alternative 3. Qualification based on landings in one year.**

**Limit endorsement and tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 5,000 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 10/14/05.**

**Sub-Alternative 1. Qualification based on average landings.**

**Sub-Alternative 2. Qualification based on aggregate landings.**

**Sub-Alternative 3. Qualification based on landings in one year.**

**Limit endorsement and tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 10,000 pounds of black sea bass caught with pot gear between 12/8/98 and the control date of 10/14/05.**

**Sub-Alternative 1. Qualification based on average landings.**

**Sub-Alternative 2. Qualification based on aggregate landings.**

**Sub-Alternative 3. Qualification based on landings in one year.**

**Limit endorsement and tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 1 pound of black sea bass caught with pot gear by the date of 12/31/09.**

**Sub-Alternative 1. Qualification based on average landings.**

**Sub-Alternative 2. Qualification based on aggregate landings.**

**Sub-Alternative 3. Qualification based on landings in one year.**

**Limit endorsement and tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 500 pounds of black sea bass caught with pot gear by the date of 12/31/09.**

**Sub-Alternative 1. Qualification based on average landings.**

**Sub-Alternative 2. Qualification based on aggregate landings.**

**Sub-Alternative 3. Qualification based on landings in one year.**

**Limit endorsement and tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 1,000 pounds of black sea bass caught with pot gear by the date of 12/31/09.**

**Sub-Alternative 1. Qualification based on average landings.**

**Sub-Alternative 2. Qualification based on aggregate landings.**

**Sub-Alternative 3. Qualification based on landings in one year.**

**Limit endorsement and tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 2,000 pounds of black sea bass caught with pot gear by the date of 12/31/09.**

**Sub-Alternative 1. Qualification based on average landings.**

**Sub-Alternative 2. Qualification based on aggregate landings.**

**Sub-Alternative 3. Qualification based on landings in one year.**

**Limit endorsement and tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 5,000 pounds of black sea bass caught with pot gear by the date of 12/31/09.**

**Sub-Alternative 1. Qualification based on average landings.**

**Sub-Alternative 2. Qualification based on aggregate landings.**

**Sub-Alternative 3. Qualification based on landings in one year.**

**Limit endorsement and tag distribution to black sea bass pot fishermen with valid commercial snapper grouper permits that landed at least 10,000 pounds of black sea bass caught with pot gear by the date of 12/31/09.**

**Sub-Alternative 1. Qualification based on average landings.**

**Sub-Alternative 2. Qualification based on aggregate landings.**

**Sub-Alternative 3. Qualification based on landings in one year.**

***Rationale for elimination:*** *The suite of endorsement program alternatives for black sea bass listed above was replaced with a more streamlined set of two alternatives. The South Atlantic Council determined these options should be consolidated into alternatives that used average landings between December 8, 1998 and December 31, 2009, and alternatives that used total landings December 8, 1998 and December 31, 2009 as the qualifying criteria. The South Atlantic Council later rejected the suite of alternatives that used total landings December 8, 1998 and December 31, 2009 as the qualifying criteria (see Rejected Alternative 6). Therefore, no further analysis of alternatives listed above is required.*

**Rejected Alternative 6. Limit endorsement and tag distribution to black sea bass pot fishermen with valid or renewable commercial snapper grouper permits whose *total* black sea bass landings, using black sea bass pot gear, between 12/8/98 and 12/31/10 were at least:**

**Sub-Alternative 3a - 500 lbs whole weight. Exclude fishermen who had no reported commercial landings of black sea bass using black sea bass pot gear between December 8, 1998, and December 31, 2010.**
**Sub-Alternative 3b - 1,000 lbs whole weight. Exclude fishermen who had no reported commercial landings of black sea bass using black sea bass pot gear between December 8, 1998, and December 31, 2010.**
**Sub-Alternative 3c - 2,000 lbs whole weight. Exclude fishermen who had no reported commercial landings of black sea bass using black sea bass pot gear between December 8, 1998, and December 31, 2010.**
**Sub-Alternative 3d - 5,000 lbs whole weight. Exclude fishermen who had no reported commercial landings of black sea bass using black sea bass pot gear between December 8, 1998, and December 31, 2010.**
**Preferred Sub-Alternative 3e - 10,000 lbs whole weight. Exclude fishermen who had no reported commercial landings of black sea bass using black sea bass pot gear between December 8, 1998, and December 31, 2010.**

***Rationale for Elimination:*** *The South Atlantic Council considered using total landings rather than average landings; however, total landings results in consistently higher numbers of individual who would qualify for endorsements. In order for the fishery to remain open for a*

*longer portion of the fishing season and enhance economic benefits for those who qualify for endorsements, the number of endorsements issued would need to be less than what would be issued if total landings were to be used as the eligibility criteria. Therefore, the South Atlantic Council chose not to pursue additional analysis of an alternative based on total landings for this action.*

**Rejected Alternative 7. Black sea bass pot endorsements with associated landings histories can be transferred only when an individual's federal commercial snapper grouper permit is transferred.**

***Rationale for Elimination:*** *This alternative was eliminated for further consideration because it was encompassed in the new Alternative 3 for Action 4 of this document. The New Alternative 3 includes this provision with a re-worded concept and several sub-alternatives attached.*

**Rejected Alternative 7.** Require that each black sea bass pot in the water or at sea on a vessel in the South Atlantic EEZ have an attached valid identification tag issued by NOAA Fisheries Service. Limit the black sea bass pot tags to *100* per vessel in year 2011, *50* in year 2012, and *25* in year 2013. NOAA Fisheries Service will issue new identification tags each fishing year that will replace the tags from the previous fishing year.

**Rejected Alternative 8.** Require that each black sea bass pot in the water or at sea on a vessel in the South Atlantic EEZ have an attached valid identification tag issued by NOAA Fisheries Service. Limit the black sea bass pot tags to *100* per vessel in year 2011 and *50* in year 2012. NOAA Fisheries Service will issue new identification tags each fishing year that will replace the tags from the previous fishing year.

***Rationale for Elimination:*** *Rejected Alternatives 7 and 8 were eliminated from further consideration because the step-down in the number of tags issued in 2012 and 2013 because the ultimate limit on tags of 25 and 50 are included in other alternatives under consideration. Therefore, additional alternatives that would result in the same number of tags being issued are not necessary.*

**Rejected Alternative 9.** Each permit year issue tags to individuals based on a 10% reduction in the number of tags issued as of 12/04/08

**Rejected Alternative 10.** Each permit year issue tags to individuals based on a 25% reduction in the number of tags issued as of 12/04/08.

***Rationale for Elimination:*** *Rejected Alternatives 9 and 10 would have little effect on the reduction in the number of pots that are fished because fishermen request far more tags than they actually fish. Therefore, these alternatives would not reduce potential impacts to protected species or "ghost fishing" of lost pots. These alternatives do not meet the purpose and need and; therefore, they were eliminated from further analysis.*

**Rejected Alternative 11.** If the combined commercial and recreational ACL is exceeded, the Regional Administrator shall publish a notice to reduce length of the following season for both sectors. The current commercial quota closure provision would not be affected under this alternative.

**Rejected Alternative 12.** If black sea bass *is overfished* and the combined commercial and recreational ACL is exceeded, the Regional Administrator shall publish a notice to reduce each sector's ACL in the following season by the amount of the relevant sector's overage. The current commercial quota closure provision would not be affected under this alternative.

**Rejected Alternative 13.** If the recreational ACL is exceeded, the following year's landings will be monitored for persistence in increased landings. The Regional Administrator will publish a notice to reduce the length of the fishing season as necessary.

**Rejected Alternative 14.** If black sea bass is overfished and the recreational ACL is exceeded, the Regional Administrator shall publish a notice to reduce the ACL in the following season by the amount of the recreational sector's overage.

***Rationale for Elimination:*** *Rejected Alternatives 11-14 were eliminated from further analysis because the South Atlantic Council determined only the recreational sector AM needed to be addressed in the accountability measure (AM)modification action, and the only portion of the status quo recreational AM in need to modification was the use of the three year running average. Therefore, analysis of alternatives beyond the action needed are not necessary.*

**Rejected Alternative 15. Modify the Recreational Bag Limit for Black Sea bass**

**Alternative 1 (No Action).** Do not modify the current recreational 5-fish bag limit for black sea bass.

**Alternative 2.** Reduce the recreational bag limit

- Sub-Alternative 2a. 5 to 3 black sea bass per person per day.
- Sub-Alternative 2b. 5 to 2 black sea bass per person per day.
- Sub-Alternative 2c. 5 to 1 black sea bass per person per day.

**Alternative 3.** Increase the recreational bag limit

- Sub-Alternative 2a. 5 to 8 black sea bass per person per day.
- Sub-Alternative 2b. 5 to 10 black sea bass per person per day.
- Sub-Alternative 2c. 5 to 15 black sea bass per person per day.

***Rationale for Elimination:*** *The action to modify the recreational bag limit was removed from consideration because the South Atlantic Council noted that the bag limit had recently been decreased to 5 fish per person per day from 15 fish per person per day. The South Atlantic Council felt further modifications to the bag limit would have been unnecessary to meet the purpose and need of this amendment.*

**Rejected Alternative 16.** Decrease the minimum size limit for the recreational sector from 12 inches TL to 11 inches TL.

***Rationale for Elimination:*** *This alternative was eliminated from the document because it could increase the rate of harvest and result in a more abbreviated recreational fishing season, which is contrary to the purpose and need of this amendment. Therefore, the South Atlantic Council determined it was not necessary to consider further analysis of a minimum size limit decrease.*

# Appendix B. Glossary

**Allowable Biological Catch (ABC):** Maximum amount of fish stock than can be harvested without adversely affecting recruitment of other components of the stock. The ABC level is typically higher than the total allowable catch, leaving a buffer between the two.

**ALS:** Accumulative Landings System. NMFS database which contains commercial landings reported by dealers.

**Biomass:** Amount or mass of some organism, such as fish.

**$B_{MSY}$:** Biomass of population achieved in long-term by fishing at $F_{MSY}$.

**Bycatch:** Fish harvested in a fishery, but not sold or kept for personal use. Bycatch includes economic discards and regulatory discards, but not fish released alive under a recreational catch and release fishery management program.

**Caribbean Fishery Management Council (CFMC):** One of eight regional councils mandated in the Magnuson-Stevens Fishery Conservation and Management Act to develop management plans for fisheries in federal waters. The CFMC develops fishery management plans for fisheries off the coast of the U.S. Virgin Islands and the Commonwealth of Puerto Rico.

**Catch Per Unit Effort (CPUE):** The amount of fish captured with an amount of effort. CPUE can be expressed as weight of fish captured per fishing trip, per hour spent at sea, or through other standardized measures.

**Charter Boat:** A fishing boat available for hire by recreational anglers, normally by a group of anglers for a short time period.

**Cohort:** Fish born in a given year. (See year class.)

**Control Date:** Date established for defining the pool of potential participants in a given management program. Control dates can establish a range of years during which a potential participant must have been active in a fishery to qualify for a quota share.

**Constant Catch Rebuilding Strategy:** A rebuilding strategy where the allowable biological catch of an overfished species is held constant until stock biomass reaches $B_{MSY}$ at the end of the rebuilding period.

**Constant F Rebuilding Strategy:** A rebuilding strategy where the fishing mortality of an overfished species is held constant until stock biomass reached BMSY at the end of the rebuilding period.

**Directed Fishery:** Fishing directed at a certain species or species group.

**Discards:** Fish captured, but released at sea.

**Discard Mortality Rate:** The percent of total fish discarded that do not survive being captured and released at sea.

**Derby:** Fishery in which the TAC is fixed and participants in the fishery do not have individual quotas. The fishery is closed once the TAC is reached, and participants attempt to maximize their harvests as quickly as possible. Derby fisheries can result in capital stuffing and a race for fish.

**Effort:** The amount of time and fishing power (i.e., gear size, boat size, horsepower) used to harvest fish.

**Exclusive Economic Zone (EEZ):** Zone extending from the shoreline out to 200 nautical miles in which the country owning the shoreline has the exclusive right to conduct certain activities such as fishing. In the United States, the EEZ is split into state waters (typically from the shoreline out to 3 nautical miles) and federal waters (typically from 3 to 200 nautical miles).

**Exploitation Rate:** Amount of fish harvested from a stock relative to the size of the stock, often expressed as a percentage.

**F:** Fishing mortality.

**Fecundity:** A measurement of the egg-producing ability of fish at certain sizes and ages.

**Fishery Dependent Data:** Fishery data collected and reported by fishermen and dealers.

**Fishery Independent Data:** Fishery data collected and reported by scientists who catch the fish themselves.

**Fishery Management Plan:** Management plan for fisheries operating in the federal produced by regional fishery management councils and submitted to the Secretary of Commerce for approval.

**Fishing Effort:** Usually refers to the amount of fishing. May refer to the number of fishing vessels, amount of fishing gear (nets, traps, hooks), or total amount of time vessels and gear are actively engaged in fishing.

**Fishing Mortality:** A measurement of the rate at which fish are removed from a population by fishing. Fishing mortality can be reported as either annual or instantaneous. Annual mortality is the percentage of fish dying in one year. Instantaneous is that percentage of fish dying at any one time.

**Fishing Power:** Measure of the relative ability of a fishing vessel, its gear, and its crew to catch fishes, in reference to some standard vessel, given both vessels are under identical conditions.

**$F_{30\%SPR}$:** Fishing mortality that will produce a static SPR = 30%.

**$F_{45\%SPR}$:** Fishing mortality that will produce a static SPR = 45%.

**$F_{OY}$:** Fishing mortality that will produce OY under equilibrium conditions and a corresponding biomass of $B_{OY}$. Usually expressed as the yield at 85% of $F_{MSY}$, yield at 75% of $F_{MSY}$, or yield at 65% of $F_{MSY}$.

**$F_{MSY}$:** Fishing mortality that if applied constantly, would achieve MSY under equilibrium conditions and a corresponding biomass of $B_{MSY}$

**Fork Length (FL):** The length of a fish as measured from the tip of its snout to the fork in its tail.

**Gear restrictions:** Limits placed on the type, amount, number, or techniques allowed for a given type of fishing gear.

**Growth Overfishing:** When fishing pressure on small fish prevents the fishery from producing the maximum poundage. Condition in which the total weight of the harvest from a fishery is improved when fishing effort is reduced, due to an increase in the average weight of fishes.

**Gulf of Mexico Fishery Management Council (GMFMC):** One of eight regional councils mandated in the Magnuson-Stevens Fishery Conservation and Management Act to develop management plans for fisheries in federal waters. The GFMC develops fishery management plans for fisheries off the coast of Texas, Louisiana, Mississippi, Alabama, and the west coast of Florida.

**Head Boat:** A fishing boat that charges individual fees per recreational angler onboard.

**Highgrading:** Form of selective sorting of fishes in which higher value, more marketable fishes are retained, and less marketable fishes, which could legally be retained are discarded.

**Individual Fishing Quota (IFQ):** Fishery management tool that allocates a certain portion of the TAC to individual vessels, fishermen, or other eligible recipients.

**Longline:** Fishing method using a horizontal mainline to which weights and baited hooks are attached at regular intervals. Gear is either fished on the bottom or in the water column.

**Magnuson-Stevens Fishery Conservation and Management Act:** Federal legislation responsible for establishing the fishery management councils and the mandatory and discretionary guidelines for federal fishery management plans.

**Marine Recreational Fisheries Statistics Survey (MRFSS):** Survey operated by NMFS in cooperation with states that collects marine recreational data.

**Maximum Fishing Mortality Threshold (MFMT):** The rate of fishing mortality above which a stock's capacity to produce MSY would be jeopardized.

**Maximum Sustainable Yield (MSY):** The largest long-term average catch that can be taken continuously (sustained) from a stock or stock complex under average environmental conditions.

**Minimum Stock Size Threshold (MSST):** The biomass level below which a stock would be considered overfished.

**Modified F Rebuilding Strategy:** A rebuilding strategy where fishing mortality is changed as stock biomass increases during the rebuilding period.

**Multispecies fishery:** Fishery in which more than one species is caught at the same time and location with a particular gear type.

**National Marine Fisheries Service (NMFS):** Federal agency within NOAA responsible for overseeing fisheries science and regulation.

**National Oceanic and Atmospheric Administration:** Agency within the Department of Commerce responsible for ocean and coastal management.

**Natural Mortality (M):** A measurement of the rate at which fish are removed from a population by natural causes. Natural mortality can be reported as either annual or instantaneous. Annual mortality is the percentage of fish dying in one year. Instantaneous is that percentage of fish dying at any one time.

**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.

**Overfished:** A stock or stock complex is considered overfished when stock biomass falls below the minimum stock size threshold (MSST) (e.g., current biomass < MSST = overfished).

**Overfishing:** Overfishing occurs when a stock or stock complex is subjected to a rate of fishing mortality that exceeds the maximum fishing mortality threshold (e.g., current fishing mortality rate > MFMT = overfishing) or when fishing mortality exceeds the ACL.

**Quota:** Percent or annual amount of fish that can be harvested.

**Recruitment (R):** Number or percentage of fish that survives from hatching to a specific size or age.

**Recruitment Overfishing:** The rate of fishing above which the recruitment to the exploitable stock becomes significantly reduced. This is characterized by a greatly reduced spawning stock, a decreasing proportion of older fish in the catch, and generally very low recruitment year after year.

**Scientific and Statistical Committee (SSC):** Fishery management advisory body composed of federal, state, and academic scientists, which provides scientific advise to a fishery management council.

**Selectivity:** The ability of a type of gear to catch a certain size or species of fish.

**South Atlantic Fisheries Management Council (SAFMC):** One of eight regional councils mandated in the Magnuson-Stevens Fishery Conservation and Management Act to develop management plans for fisheries in federal waters. The SAFMC develops fishery management plans for fisheries off North Carolina, South Carolina, Georgia, and the east coast of Florida.

**Spawning Potential Ratio (Transitional SPR):** Formerly used in overfished definition. The number of eggs that could be produced by an average recruit in a fished stock divided by the number of eggs that could be produced by an average recruit in an unfished stock. SPR can also be expressed as the spawning stock biomass per recruit (SSBR) of a fished stock divided by the SSBR of the stock before it was fished.

**% Spawning Per Recruit (Static SPR):** Formerly used in overfishing determination. The maximum spawning per recruit produced in a fished stock divided by the maximum spawning per recruit, which occurs under the conditions of no fishing. Commonly abbreviated as %SPR.

**Spawning Stock Biomass (SSB):** The total weight of those fish in a stock which are old enough to spawn.

**Spawning Stock Biomass Per Recruit (SSBR):** The spawning stock biomass divided by the number of recruits to the stock or how much spawning biomass an average recruit would be expected to produce.

**Total Allowable Catch (TAC):** The total amount of fish to be taken annually from a stock or stock complex. This may be a portion of the Allowable Biological Catch (ABC) that takes into consideration factors such as bycatch.

**Total Length (TL):** The length of a fish as measured from the tip of the snout to the tip of the tail.

Appendix C. History of Management

Table 1-2. History of management for the Snapper Grouper Fishery.

| **Document** | **All Actions Effective By:** | **Proposed Rule Final Rule** | **Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.** |
|---|---|---|---|
| FMP (1983) | 08/31/83 | PR: 48 FR 26843<br>FR: 48 FR 39463 | -12" limit – red snapper, yellowtail snapper, red grouper, Nassau grouper<br>-8" limit – black sea bass<br>-4" trawl mesh size<br>-Gear limitations – poisons, explosives, fish traps, trawls<br>-Designated modified habitats or artificial reefs as Special Management Zones (SMZs) |
| Regulatory Amendment #1 (1986) | 03/27/87 | PR: 51 FR 43937<br>FR: 52 FR 9864 | -Prohibited fishing in SMZs except with hand-held hook-and-line and spearfishing gear.<br>-Prohibited harvest of goliath grouper in SMZs. |
| Amendment #1 (1988) | 01/12/89 | PR: 53 FR 42985<br>FR: 54 FR 1720 | -Prohibited trawl gear to harvest fish south of Cape Hatteras, NC and north of Cape Canaveral, FL.<br>-Directed fishery defined as vessel with trawl gear and ≥200 lbs s-g on board.<br>-Established rebuttable assumption that vessel with s-g on board had harvested such fish in EEZ. |
| Regulatory Amendment #2 (1988) | 03/30/89 | PR: 53 FR 32412<br>FR: 54 FR 8342 | -Established 2 artificial reefs off Ft. Pierce, FL as SMZs. |
| Notice of Control Date | 09/24/90 | 55 FR 39039 | -Anyone entering federal wreckfish fishery in the EEZ off S. Atlantic states after 09/24/90 was not assured of future access if limited entry program developed. |
| Regulatory Amendment #3 (1989) | 11/02/90 | PR: 55 FR 28066<br>FR: 55 FR 40394 | -Established artificial reef at Key Biscayne, FL as SMZ. Fish trapping, bottom longlining, spear fishing, and harvesting of Goliath grouper prohibited in SMZ. |
| Amendment #2 (1990) | 10/30/90 | PR: 55 FR 31406<br>FR: 55 FR 46213 | -Prohibited harvest/possession of goliath grouper in or from the EEZ<br>-Defined overfishing for goliath grouper and other species |

Table 1-2. Continued. History of management for the Snapper Grouper Fishery.

| Document | All Actions Effective By: | Proposed Rule Final Rule | Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents. |
|---|---|---|---|
| Emergency Rule | 8/3/90 | 55 FR 32257 | -added wreckfish to the FM<br>-fishing year beginning 4/16/90<br>-commercial quota of 2 million pounds<br>-commercial trip limit of 10,000 pounds per trip |
| Fishery Closure Notice | 8/8/90 | 55 FR 32635 | -the fishery was closed because the commercial quota of 2 million pounds was reached |
| Emergency Rule Extension | 11/1/90 | 55 FR 40181 | -extended the measures implemented via emergency rule on 8/3/90 |
| Amendment #3 (1990) | 01/31/91 | PR: 55 FR 39023<br>FR: 56 FR 2443 | -Add wreckfish to the FMU;<br>-Defined optimum yield and overfishing<br>-Required permit to fish for, land or sell wreckfish;<br>-Required catch and effort reports from selected, permitted vessels;<br>-Established control date of 03/28/90;<br>-Established a fishing year for wreckfish starting April 16;<br>-Established a process to set annual quota, with initial quota of 2 million pounds; provisions for closure;<br>-Established 10,000 pound trip limit;<br>-Established a spawning season closure for wreckfish from January 15 to April 15; and<br>-Provided for annual adjustments of wreckfish management measures; |
| Notice of Control Date | 07/30/91 | 56 FR 36052 | -Anyone entering federal snapper grouper fishery (other than for wreckfish) in the EEZ off S. Atlantic states after 07/30/91 was not assured of future access if limited entry program developed. |

Table 1-2. Continued. History of management for the Snapper Grouper Fishery.

| Document | All Actions Effective By: | Proposed Rule Final Rule | Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents. |
|---|---|---|---|
| Amendment #4 (1991) | 01/01/92 | PR: 56 FR 29922<br>FR: 56 FR 56016 | -Prohibited gear: fish traps except black sea bass traps north of Cape Canaveral, FL; entanglement nets; longline gear inside 50 fathoms; bottom longlines to harvest wreckfish**; powerheads and bangsticks in designated SMZs off S. Carolina.<br>-defined overfishing/overfished and established rebuilding timeframe: red snapper and groupers ≤ 15 years (year 1 = 1991); other snappers, greater amberjack, black sea bass, red porgy ≤ 10 years (year 1 = 1991)<br>-Required permits (commercial & for-hire) and specified data collection regulations<br>-Established an assessment group and annual adjustment procedure (framework)<br>-Permit, gear, and vessel id requirements specified for black sea bass traps.<br>-No retention of snapper grouper spp. caught in other fisheries with gear prohibited in snapper grouper fishery if captured snapper grouper had no bag limit or harvest was prohibited. If had a bag limit, could retain only the bag limit.<br>-8” limit – lane snapper<br>-10” limit – vermilion snapper (recreational only)<br>-12” limit – red porgy, vermilion snapper (commercial only), gray, yellowtail, mutton, schoolmaster, queen, blackfin, cubera, dog, mahogany, and silk snappers<br>-20” limit – red snapper, gag, and red, black, scamp, yellowfin, and yellowmouth groupers.<br>-28” FL limit – greater amberjack (recreational only)<br>-36” FL or 28” core length – greater amberjack (commercial only)<br>-bag limits – 10 vermilion snapper, 3 greater amberjack<br>-aggregate snapper bag limit – 10/person/day, excluding vermilion snapper and allowing no more than 2 red snappers<br>-aggregate grouper bag limit – 5/person/day, excluding Nassau and goliath grouper, for which no retention (recreational & commercial) is allowed<br>-spawning season closure – commercial harvest greater amberjack > 3 fish bag prohibited in April south of Cape Canaveral, FL<br>-spawning season closure – commercial harvest mutton snapper >snapper aggregate prohibited during May and June<br>-charter/headboats and excursion boat possession limits extended |

Table 1-2. Continued. History of management for the Snapper Grouper Fishery.

| Document | All Actions Effective By: | Proposed Rule Final Rule | Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents. |
|---|---|---|---|
| Amendment #5 (1991) | 04/06/92 | PR: 56 FR 57302<br>FR: 57 FR 7886 | -Wreckfish: established limited entry system with ITQs; required dealer to have permit; rescinded 10,000 lb. trip limit; required off-loading between 8 am and 5 pm; reduced occasions when 24-hour advance notice of offloading required for off-loading; established procedure for initial distribution of percentage shares of TAC |
| Emergency Rule | 8/31/92 | 57 FR 39365 | -Black Sea Bass (bsb): modified definition of bsb pot; allowed multi-gear trips for bsb; allowed retention of incidentally-caught fish on bsb trips |
| Emergency Rule Extension | 11/30/92 | 57 FR 56522 | -Black Sea Bass: modified definition of bsb pot; allowed multi-gear trips for bsb; allowed retention of incidentally-caught fish on bsb trips |
| Regulatory Amendment #4 (1992) | 07/06/93 | FR: 58 FR 36155 | -Black Sea Bass: modified definition of bsb pot; allowed multi-gear trips for bsb; allowed retention of incidentally-caught fish on bsb trips |
| Regulatory Amendment #5 (1992) | 07/31/93 | PR: 58 FR 13732<br>FR: 58 FR 35895 | -Established 8 SMZs off S. Carolina, where only hand-held, hook-and-line gear and spearfishing (excluding powerheads) was allowed. |
| Amendment #6 (1993) | 07/27/94 | PR: 59 FR 9721<br>FR: 59 FR 27242 | -commercial quotas for snowy grouper, golden tilefish<br>-commercial trip limits for snowy grouper, golden tilefish, speckled hind, and warsaw grouper<br>-include golden tilefish in grouper recreational aggregate bag limits<br>-prohibited sale of warsaw grouper and speckled hind<br>-100% logbook coverage upon renewal of permit<br>-creation of the *Oculina* Experimental Closed Area<br>-data collection needs specified for evaluation of possible future IFQ system |
| Amendment #7 (1994) | 01/23/95 | PR: 59 FR 47833<br>FR: 59 FR 66270 | -12” FL – hogfish<br>-16” TL – mutton snapper<br>-required dealer, charter and headboat federal permits<br>-allowed sale under specified conditions<br>-specified allowable gear and made allowance for experimental gear<br>-allowed multi-gear trips in N. Carolina<br>-added localized overfishing to list of problems and objectives<br>-adjusted bag limit and crew specs. for charter and head boats<br>-modified management unit for scup to apply south of Cape Hatteras, NC<br>-modified framework procedure |
| Regulatory Amendment #6 (1994) | 05/22/95 | PR: 60 FR 8620<br>FR: 60 FR 19683 | Established actions which applied only to EEZ off Atlantic coast of FL: Bag limits – 5 hogfish/person/day (recreational only), 2 cubera snapper/person/day > 30” TL; 12” TL – gray triggerfish |

Table 1-2. Continued. History of management for the Snapper Grouper Fishery.

| Document | All Actions Effective By: | Proposed Rule Final Rule | Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents. |
|---|---|---|---|
| Notice of Control Date | 04/23/97 | 62 FR 22995 | -Anyone entering federal bsb pot fishery off S. Atlantic states after 04/23/97 was not assured of future access if limited entry program developed. |
| Amendment #8 (1997) | 12/14/98 | PR: 63 FR 1813<br>FR: 63 FR 38298 | -established program to limit initial eligibility for snapper grouper fishery: Must demonstrate landings of any species in SG FMU in 1993, 1994, 1995 or 1996; and have held valid SG permit between 02/11/96 and 02/11/97.<br>-granted transferable permit with unlimited landings if vessel landed ≥ 1,000 lbs. of snapper grouper spp. in any of the years<br>-granted non-transferable permit with 225 lb. trip limit to all other vessels<br>-modified problems, objectives, OY, and overfishing definitions<br>-expanded Council's habitat responsibility<br>-allowed retention of snapper grouper spp. in excess of bag limit on permitted vessel with a single bait net or cast nets on board<br>-allowed permitted vessels to possess filleted fish harvested in the Bahamas under certain conditions. |
| Regulatory Amendment #7 (1998) | 01/29/99 | PR: 63 FR 43656<br>FR: 63 FR 71793 | -Established 10 SMZs at artificial reefs off South Carolina. |
| Interim Rule Request | 1/16/98 | | -Council requested all Amendment 9 measures except black sea bass pot construction changes be implemented as an interim request under MSA |
| Action Suspended | 5/14/98 | | -NMFS informed the Council that action on the interim rule request was suspended |
| Emergency Rule Request | 9/24/98 | | -Council requested Amendment 9 be implemented via emergency rule |
| Request not Implemented | 1/22/99 | | -NMFS informed the Council that the final rule for Amendment 9 would be effective 2/24/99; therefore they did not implement the emergency rule |

Table 1-2. Continued. History of management for the Snapper Grouper Fishery.

| Document | All Actions Effective By: | Proposed Rule Final Rule | Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents. |
|---|---|---|---|
| Amendment #9 (1998) | 2/24/99 | PR: 63 FR 63276<br>FR: 64 FR 3624 | -Red porgy: 14" length (recreational and commercial); 5 fish rec. bag limit; no harvest or possession > bag limit, and no purchase or sale, in March and April.<br>-Black sea bass: 10" length (recreational and commercial); 20 fish rec. bag limit; required escape vents and escape panels with degradable fasteners in bsb pots<br>-Greater amberjack: 1 fish rec. bag limit; no harvest or possession > bag limit, and no purchase or sale, during April; quota = 1,169,931 lbs; began fishing year May 1; prohibited coring.<br>-Vermilion snapper: 11" length (recreational)<br>Gag: 24" length (recreational); no commercial harvest or possession > bag limit, and no purchase or sale, during March and April<br>-Black grouper: 24" length (recreational and commercial); no harvest or possession > bag limit, and no purchase or sale, during March and April.<br>-Gag and Black grouper: within 5 fish aggregate grouper bag limit, no more than 2 fish may be gag or black grouper (individually or in combination)<br>-All SG without a bag limit: aggregate recreational bag limit 20 fish/person/day, excluding tomtate and blue runners<br>-Vessels with longline gear aboard may only possess snowy, warsaw, yellowedge, and misty grouper, and golden, blueline and sand tilefish. |
| Amendment #9 (1998) resubmitted | 10/13/00 | PR: 63 FR 63276<br>FR: 65 FR 55203 | -Commercial trip limit for greater amberjack |
| Regulatory Amendment #8 (2000) | 11/15/00 | PR: 65 FR 41041<br>FR: 65 FR 61114 | -Established 12 SMZs at artificial reefs off Georgia; revised boundaries of 7 existing SMZs off Georgia to meet CG permit specs; restricted fishing in new and revised SMZs |
| Emergency Interim Rule | 09/08/99, expired 08/28/00 | 64 FR 48324<br>and<br>65 FR 10040 | -Prohibited harvest or possession of red porgy. |
| Emergency Action | 9/3/99 | 64 FR 48326 | -Reopened the Snapper grouper Amendment 8 permit application process |
| Amendment #10 (1998) | 07/14/00 | PR: 64 FR 37082 and 64 FR 59152<br>FR: 65 FR 37292 | -Identified EFH and established HAPCs for species in the SG FMU. |

Table 1-2. Continued. History of management for the Snapper Grouper Fishery.

| Document | All Actions Effective By: | Proposed Rule Final Rule | Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents. |
|---|---|---|---|
| Amendment #11 (1998d) | 12/02/99 | PR: 64 FR 27952<br>FR: 64 FR 59126 | -MSY proxy: goliath and Nassau grouper = 40% static SPR; all other species = 30% static SPR<br>-OY: hermaphroditic groupers = 45% static SPR; goliath and Nassau grouper = 50% static SPR; all other species = 40% static SPR<br>-Overfished/overfishing evaluations:<br>BSB: overfished (MSST=3.72 mp, 1995 biomass=1.33 mp); undergoing overfishing (MFMT=0.72, F1991-1995=0.95)<br>Vermilion snapper: overfished (static SPR = 21-27%).<br>Red porgy: overfished (static SPR = 14-19%).<br>Red snapper: overfished (static SPR = 24-32%)<br>Gag: overfished (static SPR = 27%)<br>Scamp: no longer overfished (static SPR = 35%)<br>Speckled hind: overfished (static SPR = 8-13%)<br>Warsaw grouper: overfished (static SPR = 6-14%)<br>Snowy grouper: overfished (static SPR = 5=15%)<br>White grunt: no longer overfished (static SPR = 29-39%)<br>Golden tilefish: overfished (couldn't estimate static SPR)<br>Nassau grouper: overfished (couldn't estimate static SPR)<br>Goliath grouper: overfished (couldn't estimate static SPR)<br>-overfishing level: goliath and Nassau grouper = F>F40% static SPR; all other species: = F>F30% static SPR<br>Approved definitions for overfished and overfishing. MSST = [(1-M) or 0.5 whichever is greater]*Bmsy. MFMT = Fmsy |
| Amendment #12 (2000) | 09/22/00 | PR: 65 FR 35877<br>FR: 65 FR 51248 | -Red porgy: MSY=4.38 mp; OY=45% static SPR; MFMT=0.43; MSST=7.34 mp; rebuilding timeframe=18 years (1999=year 1); no sale during Jan-April; 1 fish bag limit; 50 lb. bycatch comm. trip limit May-December; modified management options and list of possible framework actions. |
| Amendment #13A (2003) | 04/26/04 | PR: 68 FR 66069<br>FR: 69 FR 15731 | -Extended for an indefinite period the regulation prohibiting fishing for and possessing snapper grouper spp. within the *Oculina* Experimental Closed Area. |
| Notice of Control Date | 10/14/05 | 70 FR 60058 | -The Council is considering management measures to further limit participation or effort in the commercial fishery for snapper grouper species (excluding Wreckfish). |

Table 1-2. Continued. History of management for the Snapper Grouper Fishery.

| Document | All Actions Effective By: | Proposed Rule Final Rule | Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents. |
|---|---|---|---|
| Amendment #13C (2006) | 10/23/06 | PR: 71 FR 28841<br>FR: 71 FR 55096 | - End overfishing of snowy grouper, vermilion snapper, black sea bass, and golden tilefish. Increase allowable catch of red porgy. Year 1 = 2006.<br>1. Snowy Grouper Commercial: Quota (gutted weight) = 151,000 lbs gw in year 1, 118,000 lbs gw in year 2, and 84,000 lbs gw in year 3 onwards. Trip limit = 275 lbs gw in year 1, 175 lbs gw in year 2, and 100 lbs gw in year 3 onwards.<br>Recreational: Limit possession to one snowy grouper in 5 grouper per person/day aggregate bag limit.<br>2. Golden Tilefish Commercial: Quota of 295,000 lbs gw, 4,000 lbs gw trip limit until 75% of the quota is taken when the trip limit is reduced to 300 lbs gw. Do not adjust the trip limit downwards unless 75% is captured on or before September 1.<br>Recreational: Limit possession to 1 golden tilefish in 5 grouper per person/day aggregate bag limit.<br>3. Vermilion Snapper Commercial: Quota of 1,100,000 lbs gw.<br>Recreational: 12" size limit.<br>4. Black Sea Bass Commercial: Commercial quota (gutted weight) of 477,000 lbs gw in year 1, 423,000 lbs gw in year 2, and 309,000 lbs gw in year 3 onwards. Require use of at least 2" mesh for the entire back panel of black sea bass pots effective 6 months after publication of the final rule. Require black sea bass pots be removed from the water when the quota is met. Change fishing year from calendar year to June 1 – May 31.<br>Recreational: Recreational allocation of 633,000 lbs gw in year 1, 560,000 lbs gw in year 2, and 409,000 lbs gw in year 3 onwards. Increase minimum size limit from 10" to 11" in year 1 and to 12" in year 2. Reduce recreational bag limit from 20 to 15 per person per day. Change fishing year from the calendar year to June 1 through May 31.<br>5. Red Porgy Commercial and recreational<br>1. Retain 14" TL size limit and seasonal closure (retention limited to the bag limit);<br>2. Specify a commercial quota of 127,000 lbs gw and prohibit sale/purchase and prohibit harvest and/or possession beyond the bag limit when quota is taken and/or during January through April;<br>3. Increase commercial trip limit from 50 lbs ww to 120 red porgy (210 lbs gw) during May through December;<br>4. Increase recreational bag limit from one to three red porgy per person per day. |

Table 1-2. Continued. History of management for the Snapper Grouper Fishery.

| Document | All Actions Effective By: | Proposed Rule Final Rule | Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents. |
|---|---|---|---|
| Notice of Control Date | 3/8/07 | 72 FR 60794 | -The Council may consider measures to limit participation in the snapper grouper for-hire fishery |
| Amendment #14 (2007) | 2/12/09 | PR: 73 FR 32281<br>FR: 74 FR 1621 | -Establish eight deepwater Type II marine protected areas (MPAs) to protect a portion of the population and habitat of long-lived deepwater snapper grouper species. |
| Amendment #15A (2007) | 3/14/08 | 73 FR 14942 | - Establish rebuilding plans and SFA parameters for snowy grouper, black sea bass, and red porgy. |
| Amendment #15B (2008b) | February 15, 2010 | PR: 74 FR 30569<br>FR:74 FR 58902 | - Prohibit the sale of bag-limit caught snapper grouper species.<br>-Reduce the effects of incidental hooking on sea turtles and smalltooth sawfish.<br>- Adjust commercial renewal periods and transferability requirements.<br>- Implement plan to monitor and assess bycatch,<br>- Establish reference points for golden tilefish.<br>- Establish allocations for snowy grouper (95% com & 5% rec) and red porgy (50% com & 50% rec). |
| Amendment #16 (SAFMC 2008c) | July 29, 2009 | PR: 74 FR 6257<br>FR: 74 FR 30964 | -Specify SFA parameters for gag and vermilion snapper.<br>-For gag grouper: Specify interim allocations 51%com & 49%rec; rec & com spawning closure January through April; directed com quota=348,440 pounds gutted weight; reduce 5-grouper aggregate to 3-grouper and 2 gag/black to 1 gag/black and exclude captain & crew from possessing bag limit.<br>-For vermilion snapper: Specify interim allocations 68%com & 32%rec; directed com quota split Jan-June=168,501 pounds gutted weight and 155,501 pounds July-Dec; reduce bag limit from 10 to 4 and a rec closed season October through May 15. In addition, the NMFS RA will set new regulations based on new stock assessment.<br>-Require de-hooking tools. |
| Notice of Control Date | December 4, 2008 | 74 FR 7849 | Establishes a control date for the golden tilefish fishery of the South Atlantic. |
| Notice of Control Date | December 4, 2008 | 74 FR 7848 | Establishes control date for black sea bass pot fishery of the South Atlantic. |
| Amendment #17A (SAFMC 2010b) | December 3, 2010 | PR: 75 FR 49947<br>FR: 75FR 76874 | -Specify an ACL and an AM for red snapper with management measures to reduce the probability that catches will exceed the stocks' ACL.<br>-Specify a rebuilding plan for red snapper.<br>-Specify status determination criteria for red snapper.<br>-Specify a monitoring program for red snapper.<br>-Require non-stainless steel circle hooks north of 28$^{o}$ north latitude. |
| Amendment #17B (SAFMC 2010a) | January 31, 2011 | PR: 75 FR 62488<br>FR: 75FR 82280 | -Specify ACLs, ACTs, and AMs, where necessary, for 8 species undergoing overfishing.<br>-Modify management measures as needed to limit harvest to the ACL or ACT. |

| Document | All Actions Effective By: | Proposed Rule Final Rule | Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents. |
|---|---|---|---|
| | | | -Update the framework procedure for specification of total allowable catch. |

Table 1-2. Continued. History of management for the Snapper Grouper Fishery.

| Document | All Actions Effective By: | Proposed Rule Final Rule | Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents. |
|---|---|---|---|
| Amendment 18A (SAFMC 2010c) | TBD | TBD | -Limit participation in the golden tilefish fishery; allow for transferability o endorsements; change the golden tilefish fishing year; change the golden tilefish trip limit; modifications to management of the black sea bass pot fishery; and improve the accuracy, timing, and quantity of fisheries statistics |
| Amendment 18B (TBD) | TBD | TBD | Extend the range of the snapper grouper FMP north and designate EFH in new areas |
| Amendment 20 (TBD) | TBD | TBD | -Update wreckfish ITQ program |
| Amendment 21 | TBD | TBD | -Catch Share Programs for the Snapper Grouper Fishery |
| Amendment 22 | TBD | TBD | -Long term management for red snapper |
| Amendment 24 | TBD | TBD | -End overfishing and rebuild red grouper stocks |
| Comprehensive ACL Amendment | TBD | TBD | -Establish ABC control rules, establish ABCs, ACTs, and AMs for species not undergoing overfishing<br>-Remove some species from South Atlantic FMUs<br>-Specify allocations among the commercial, recreational, and for-hire sectors for species not undergoing overfishing -Limit the total mortality for federally managed species in the South Atlantic to the ACTs<br>. |
| Regulatory Amendment 9 | TBD | PR: 76 FR 23930 | -Establish trip limits for gag and vermilion snapper; modify trip limit for greater amberjack; establish split commercial season for black sea bass; and reduce bag limit for black sea bass. |
| Regulatory Amendment 10 | June 1, 2011 | PR: 76 FR 9530<br>FR: 76 FR 23728 | -Removal of snapper grouper area closure approved in Amendment 17A. |

Guide To

# The Atlantic Large Whale Take Reduction Plan

An evolving plan to reduce the risk to North Atlantic large whales (right, humpback, and fin) posed by commercial trap/pot and gillnet fishing gear in the U.S. Atlantic Ocean

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## December 2010

This document is intended as a guide to measures required under the ALWTRP and is not the legal document detailing the regulations.

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This document is intended as a guide to measures required under the Atlantic Large Whale Take Reduction Plan. This document is not the legal document detailing the regulations. Interested and affected parties can find the regulations at 50CFR229.32 or at the whale plan website www.nero.noaa.gov/whaletrp/

# Overview of the ALWTRP

The Atlantic Large Whale Take Reduction Plan (ALWTRP) is a program to reduce the risk of serious injury to or mortality of large whales due to incidental entanglement in U.S. commercial fishing gear. The plan is required by the Marine Mammal Protection Act (MMPA) and has been developed by NOAA's National Marine Fisheries Service (NMFS).

The ALWTRP focuses on the critically endangered North Atlantic right whale, but is also intended to reduce entanglements of endangered humpback and fin whales and to benefit non-endangered minke whales. Under the protection of the Endangered Species Act (ESA), Federal agencies are required to ensure that permitted activities (such as fishing) do not jeopardize the continued existence of any endangered species. Since the ALWTRP measures are intended to reduce entanglements of right, humpback, and fin whales in fishing gear, these measures also help to avoid the likelihood that Federally permitted fishing activities will cause harm to or jeopardize the continued existence of these whales.

The ALWTRP affects specific Category I and Category II fisheries, as described in the MMPA List of Fisheries, and includes the following:

- Northeast/Mid-Atlantic American lobster trap/pot;
- Atlantic blue crab trap/pot;
- Atlantic mixed species trap/pot which includes, but is not limited to: crab (red, Jonah, and rock), hagfish, finfish (black sea bass, scup, tautog, cod, haddock, pollock, redfish (ocean perch), and white hake), conch/whelk, and shrimp;
- Northeast sink gillnet;
- Northeast anchored float gillnet;
- Northeast drift gillnet;
- Mid-Atlantic gillnet;
- Southeastern US Atlantic shark gillnet; and
- Southeast Atlantic gillnet.

The plan was developed with the help of the Atlantic Large Whale Take Reduction Team (ALWTRT), which consists of fishing industry representatives, environmentalists, state and federal officials, and other interested parties. Information about the process and the ALWTRT is available on the Whale TRP website (http://www.nero.noaa.gov/whaletrp/).

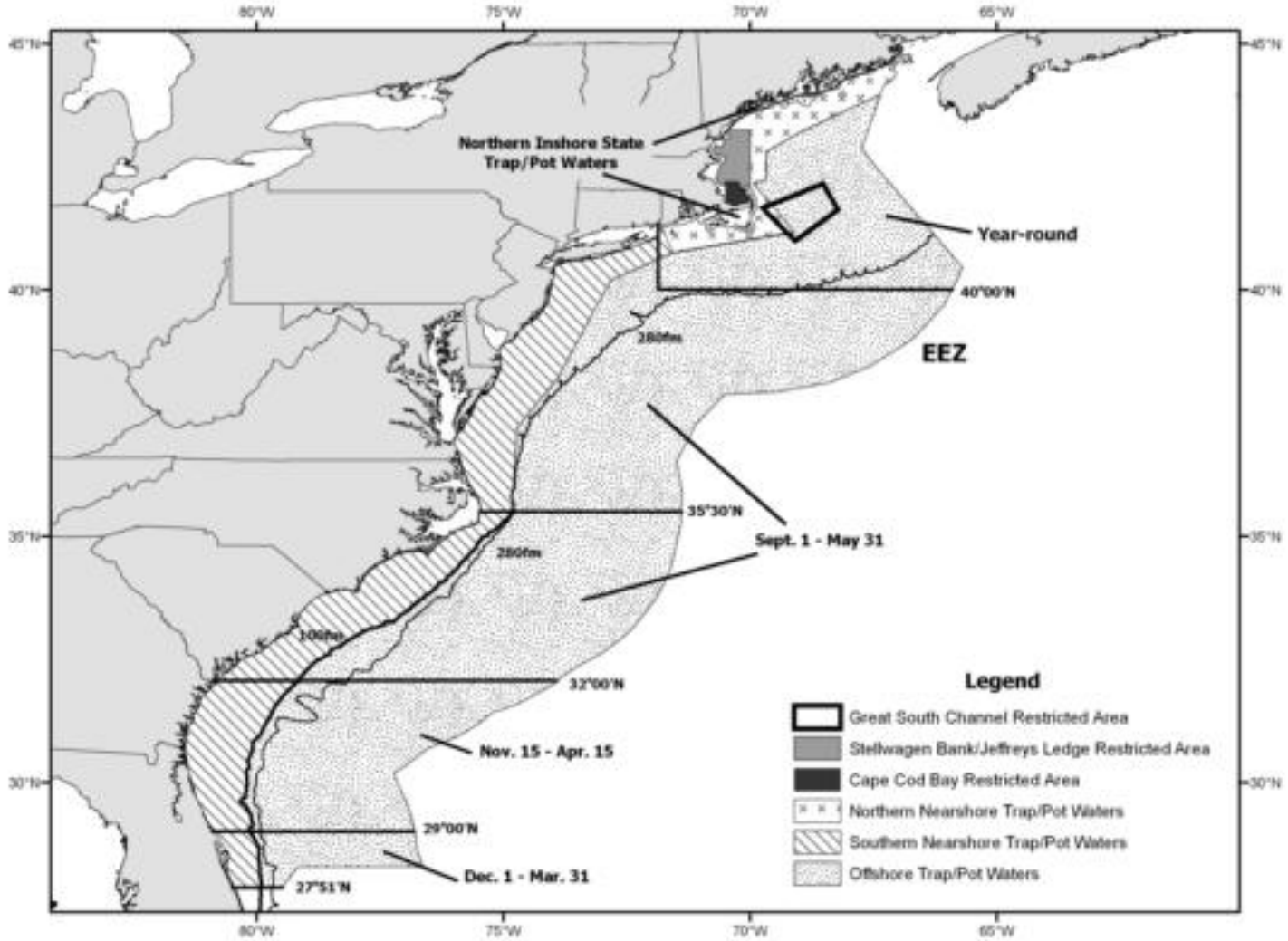
The ALWTRP is an evolving plan that changes as NMFS and the ALWTRT learn more about why whales become entangled and how fishing practices might be modified to reduce the risk of entanglement. It has several components including restrictions on where and how gear can be set; research into whale populations and whale behavior, as well as fishing gear interactions and modifications; outreach to inform and collaborate with fishermen; and a disentanglement program. The first ALWTRP went into effect in 1997, published in the *Federal Register* as an Interim Final Rule. The regulations contained in that rule were updated in February 1999, and again in December of 2000. In January 2002, NMFS published three rules that (1) made further modifications to commercial fishing gear, (2) established a system for restricting fishing in areas where unexpected aggregations of right whales are observed, and (3) established restricted areas based on the annual, predictable aggregations of right whales. In June 2007, NMFS published a final rule expanding the Southeast U.S. Restricted Area and prohibiting gillnet fishing or possession during the right whale calving season, with some exceptions.

In October 2007, NMFS issued a final rule which implements broad-based gear modifications to replace the programs described in numbers (2) and (3) above. This broad-based gear modification strategy includes expanded weak link and sinking groundline requirements; additional gear marking requirements; changes in boundaries; seasonal restrictions for gear modifications; expanded exempted areas; and regulatory language changes for the purposes of clarification and consistency.

This document is a summary of ALWTRP regulations as they effect where, when and how gear can be set. Please also refer to the ALWTRP Gear Compliance Guide and its supplement to review acceptable techniques on how to accurately mark lines and surface buoys, create and configure weak links, as well as how to appropriately anchor gillnet gear. Note, this guide includes federal requirements only for state and federal waters; contact your state fishery office for any additional requirements for state waters. Should any regulations overlap with the ALWTRP regulations, the more restrictive regulations will apply.

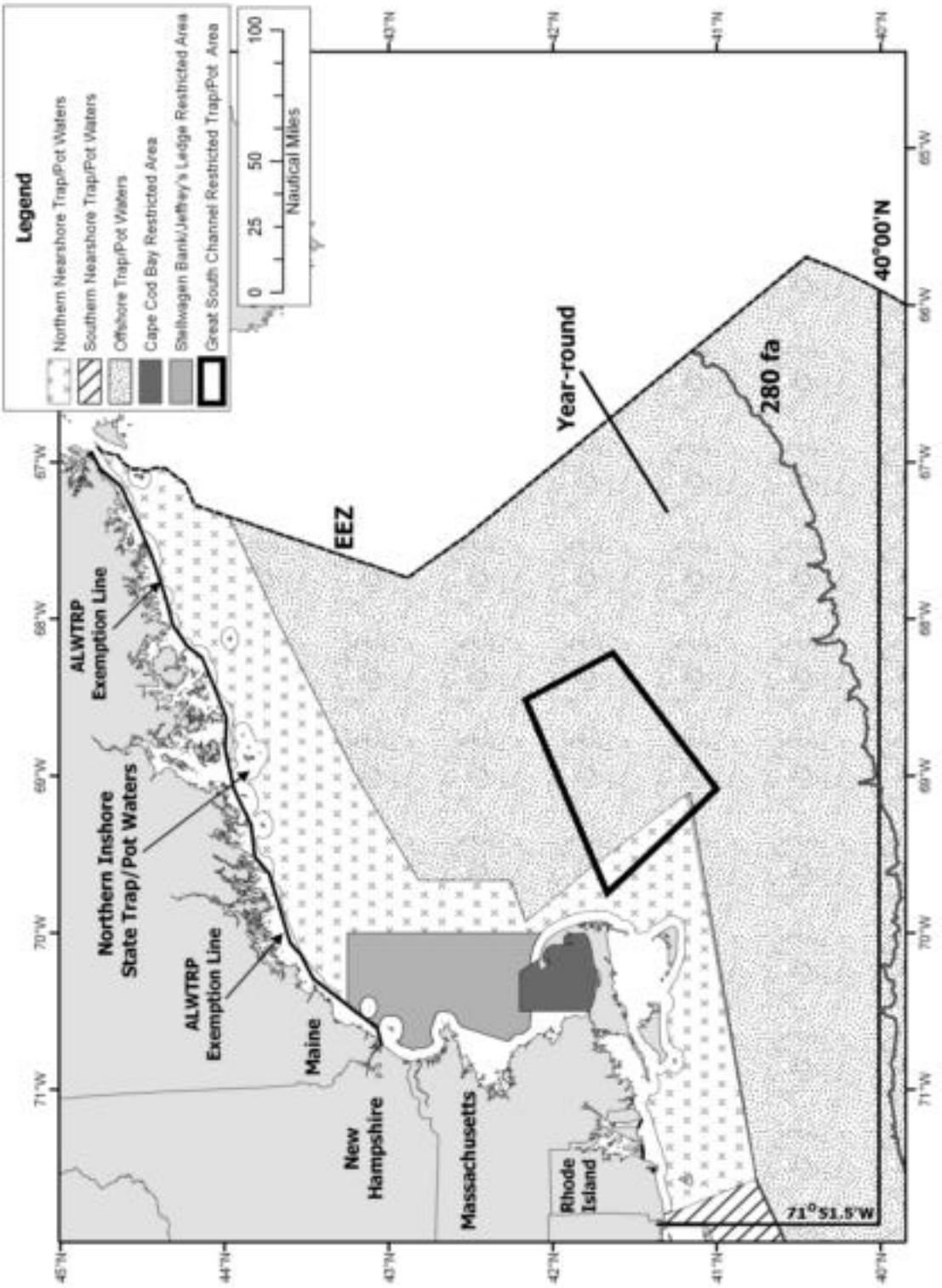
# Regulated Trap/Pot Areas

The trap/pot gear requirements in the ALWTRP vary by geographic area. The Plan currently recognizes seven trap/pot areas: Cape Cod Bay Restricted Area, Great South Channel Restricted Area, Stellwagen Bank/Jeffreys Ledge Restricted Area, Northern Inshore State Trap/Pot Waters, Northern Nearshore Trap/Pot Waters, Southern Nearshore Trap/Pot Waters, and Offshore Trap/Pot Waters. Many of these areas overlap the Lobster Management Areas (LMA) described in the Federal American lobster regulations found at 50 CFR Part 697 Subpart B. An outreach document, including specific area coordinates, can be found at www.nero.noaa.gov/nero/fishermen/chartslobster.html.



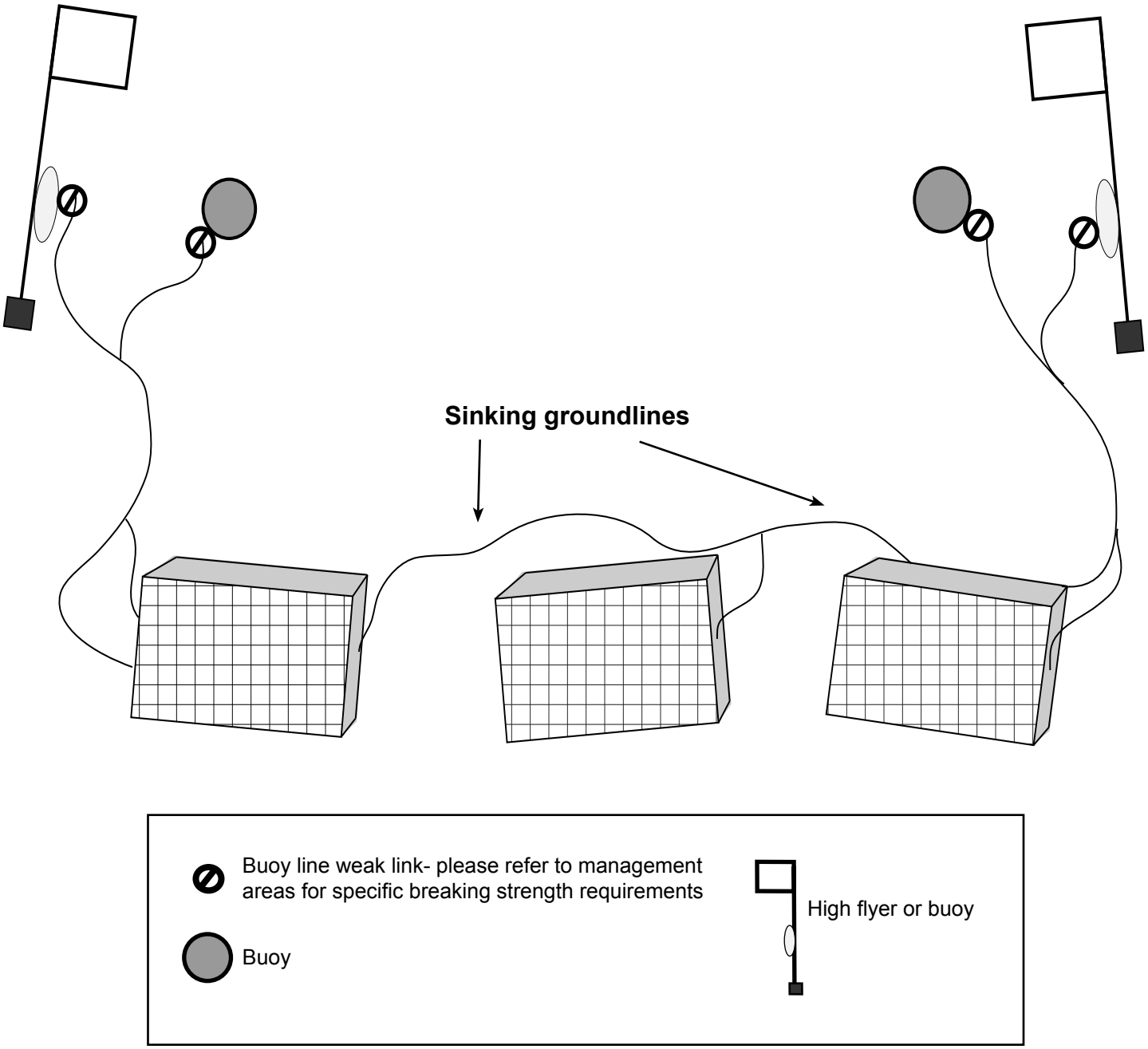

| ALWTRP Regulations | American Lobster Fishery Regulations |
|---|---|
| - Northern Nearshore Trap/Pot Waters<br>- Northern Inshore Trap/Pot Waters | • Lobster Management Area 1 (except Stellwagen Bank/Jeffreys Ledge, and Cape Cod Bay)<br>• Lobster Management Area 2<br>• Outer Cape Lobster Management Area |
| - Southern Nearshore Trap/Pot Waters | • Lobster Management Area 4<br>• Lobster Management Area 5<br>• Lobster Management Area 6 (only near the mouth of Long Island Sound) |
| - Offshore Trap/Pot Waters | • Lobster Management Area 3<br>• Lobster Management Area 2/3 Overlap<br>• Lobster Management Area 3/5 Overlap |

# Northeast Region: Trap/Pot Fisheries




Cape Cod Bay Restricted Area, Stellwagen Bank/Jeffreys Ledge Restricted Area, Great South Channel Restricted Area, Northern Inshore State Trap/Pot Waters, Northern Nearshore Trap/Pot Waters, Southern Nearshore Trap/Pot Waters, and Offshore Trap/Pot Waters

# Trap/Pot Gear Diagram




**This graphic depicts a general trap/pot gear configuration, which may vary. Please see individual ALWTRP Management Areas for information regarding specific weak link, gear marking and/or any other ALWTRP requirements.**

Northeast Region- Trap/Pot Fisheries

# Northern Inshore State Trap/Pot Waters

Northern Inshore State Trap/Pot Waters includes the state waters of Rhode Island, Massachusetts, New Hampshire, and Maine, with the exception of the Cape Cod Bay Restricted Area and the exempted waters as described on page 61.

**Year-round:**

- Compliance with the **Universal Requirements:**
  - » No buoy line floating at the surface.
  - » No wet storage of gear (all gear must be hauled out of the water at least once every 30 days).
  - » Fishermen are encouraged, but not required, to maintain knot-free buoy lines.
- Trap/pot surface buoys to be marked to identify the vessel or fishery with one of the following: the owner's motorboat registration number and/or U.S. vessel documentation number; the federal commercial fishing permit number; or whatever positive identification marking is required by the vessel's home-port state.
  - » When marking is not already required by state or federal regulations, the letters and numbers to mark gear must be at least 1 inch (2.5cm) in height, block letters or Arabic numbers, in a color that contrasts with the color of the buoy.
- Buoy lines to be marked with one 4-inch (10.2 cm), **RED**, mark midway along the buoy line.
- All buoys, flotation devices and/or weights must be attached to the buoy line with a weak link having a breaking strength of no greater than 600 lb*;
- All groundlines must be made of sinking line.

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✶ Weak links must be chosen from the list of NMFS approved gear, which includes: off the shelf weak links, rope of appropriate breaking strength, hog rings, and other materials or devices approved in writing.

✶ Weak links must be designed in such a way that the bitter end of the buoy line is clean and free of any knots when the weak link breaks.

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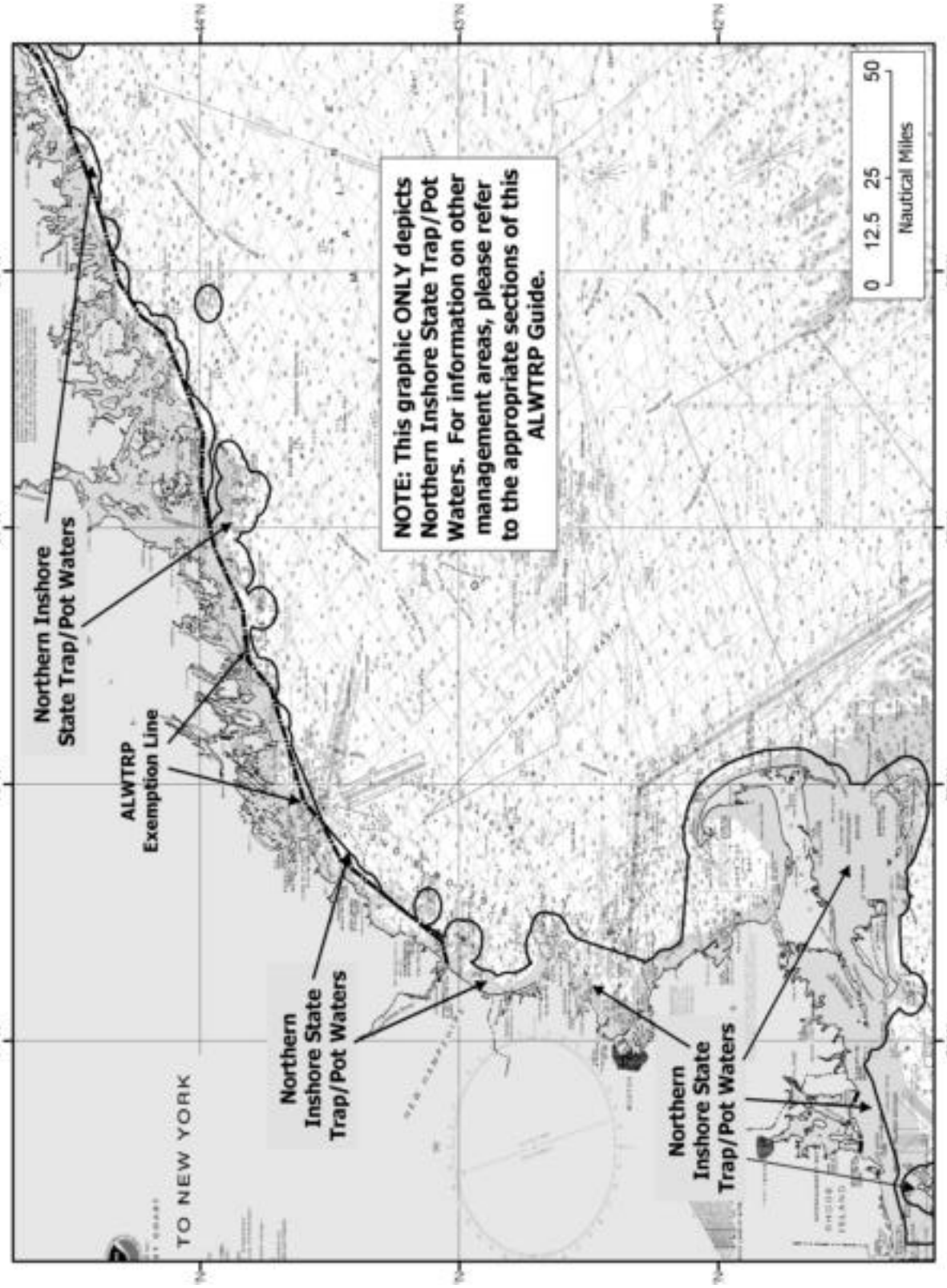
# Northeast Region: Northern Inshore State Trap/Pot Waters




NOAA Nautical Chart Name: West Quoddy Head to New York
Chart ID: 13006_1

Northeast Region- Trap/Pot Fisheries

# Cape Cod Bay Restricted Area

The Cape Cod Bay Restricted Area includes the area bounded by: 42°04.8'N / 70°10'W; 42°12'N / 70°15'W; 42°12'N / 70°30'W; 41°46.8'N / 70°30'W; and on the south and east by the interior shoreline of Cape Cod, MA.

**January 1-May 15 (State and Federal waters):**

- Compliance with the **Universal Requirements:**
  - » No buoy line floating at the surface.
  - » No wet storage of gear (all gear must be hauled out of the water at least once every 30 days)
  - » Fishermen are encouraged, but not required, to maintain knot-free buoy lines.
- Compliance with **Gear Marking Requirements**:
  - » Trap/pot surface buoys to be marked to identify the vessel or fishery with one of the following: the owner's motorboat registration number and/or U.S. vessel documentation number; the federal commercial fishing permit number; or whatever positive identification marking is required by the vessel's home-port state.
    - When marking is not already required by state or federal regulations, the letters and numbers to mark gear must be at least 1 inch (2.5cm) in height, block letters or Arabic numbers, in a color that contrasts with the color of the buoy.
  - » Buoy lines to be marked with one 4-inch (10.2 cm), **RED**, mark midway along the buoy line.
- All buoys, flotation devices and/or weights must be attached to the buoy line with a weak link having a breaking strength of no greater than 500 lb*;
- All buoy lines must be made of sinking line, except for the bottom 1/3 which may be floating line;
- Only multiple traps will be permitted (no single traps or 3-trap trawls) where trawls are to be set in a 2-trap string or a trawl of 4 or more traps (2-trap strings can have only one buoy line);
- All groundlines must be made of sinking line.

**May 16-December 31 (*State waters only*):**

- Compliance with the **Universal and Gear Marking Requirements** (see above).
- All buoys, flotation devices and/or weights must be attached to the buoy line with a weak link having a breaking strength of no greater than 600 lb*;
- All groundlines must be made of sinking line.

**May 16-December 31 (*Federal waters only*):**

- Compliance with the **Universal and Gear Marking Requirements** (see above).
- All buoys, flotation devices and/or weights must be attached to the buoy line with a weak link having a breaking strength of no greater than 600 lb*;
- Only multiple traps will be permitted (no single traps) where all traps are to be set in trawls of 2 or more traps (trawls up to and including 5 or fewer traps can have only one buoy line);
- All groundlines must be made of sinking line.

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✶ Weak links must be chosen from the list of NMFS approved gear, which includes: off the shelf weak links, rope of appropriate breaking strength, hog rings, and other materials or devices approved in writing.

✶ Weak links must be designed in such a way that the bitter end of the buoy line is clean and free of any knots when the weak link breaks.

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# Northeast Region: Cape Cod Bay Restricted Area

NOAA Nautical Chart Name: West Quoddy Head to New York
Chart ID: 13006_1

Northeast Region- Trap/Pot Fisheries

# Stellwagen Bank Jeffrey's Ledge Restricted Area

The Stellwagen Bank/Jeffreys Ledge Restricted Area includes all federal waters of the Gulf of Maine (except those designated as the Cape Cod Bay Restricted Area) that lie south of 43°15'N and west of 70°00'W.

**Year-round:**

- Compliance with the **Universal Requirements:**
  - » No buoy line floating at the surface.
  - » No wet storage of gear (all gear must be hauled out of the water at least once every 30 days).
  - » Fishermen are encouraged, but not required, to maintain knot-free buoy lines.
- Trap/pot surface buoys to be marked to identify the vessel or fishery with one of the following: the owner's motorboat registration number and/or U.S. vessel documentation number; the federal commercial fishing permit number; or whatever positive identification marking is required by the vessel's home-port state.
  - » When marking is not already required by state or federal regulations, the letters and numbers to mark gear must be at least 1 inch (2.5cm) in height, block letters or Arabic numbers, in a color that contrasts with the color of the buoy.
- Buoy lines to be marked with one 4-inch (10.2 cm), **RED**, mark midway along the buoy line.
- All buoys, flotation devices, and/or weights must be attached to the buoy line with a weak link having a breaking strength of no greater than 600 lb*;
- Only multiple traps will be permitted (no single traps) where all traps are to be set in trawls of 2 or more traps (trawls up to and including 5 or fewer traps can have only one buoy line);
- All groundlines must be made of sinking line.

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✶ Weak links must be chosen from the list of NMFS approved gear, which includes: off the shelf weak links, rope of appropriate breaking strength, hog rings, and other materials or devices approved in writing.

✶ Weak links must be designed in such a way that the bitter end of the buoy line is clean and free of any knots when the weak link breaks.

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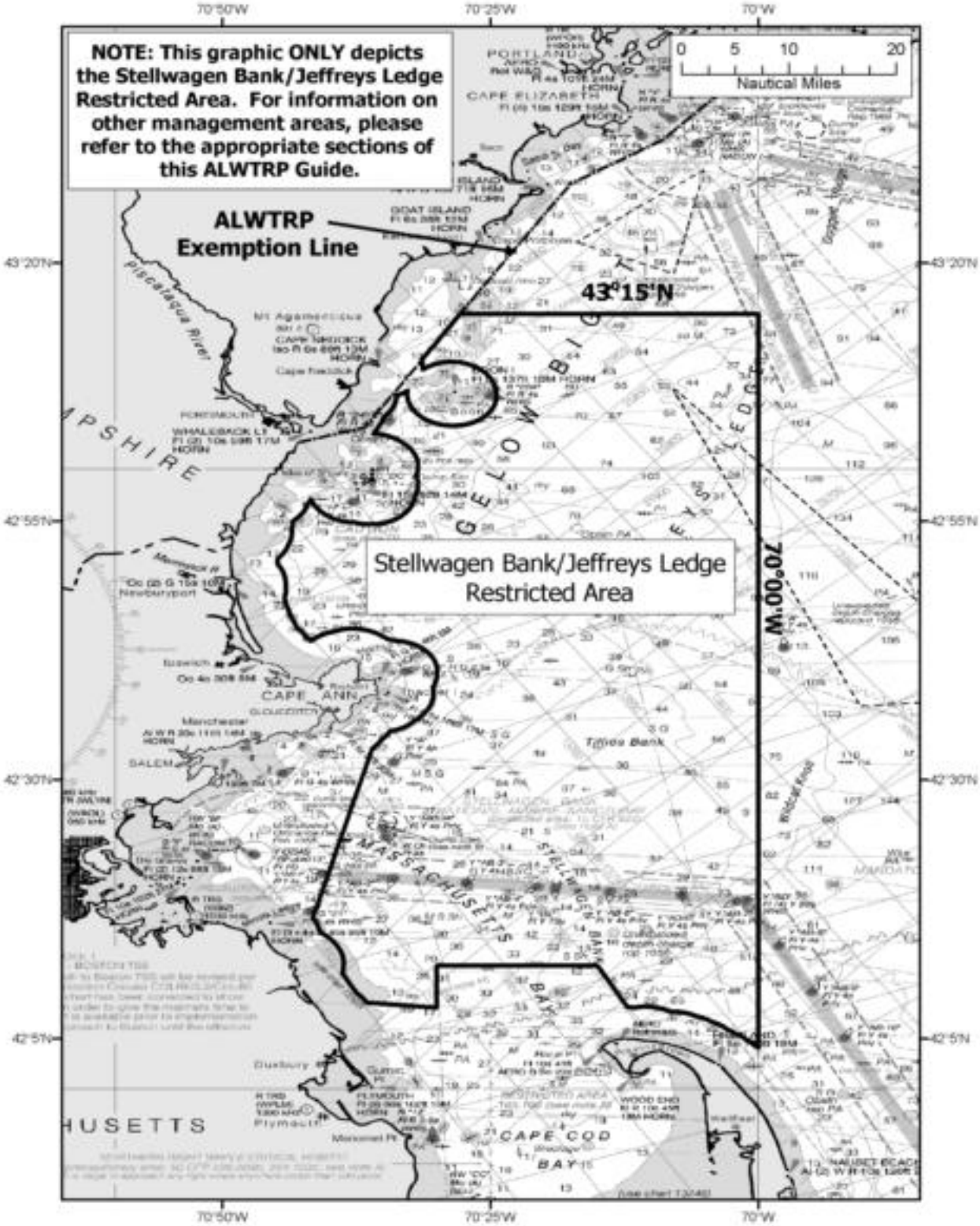
# Northeast Region: Stellwagen Bank/ Jeffreys Ledge Restricted Area




NOAA Nautical Chart Name: West Quoddy Head to New York
Chart ID: 13006_1

Northeast Region- Trap/Pot Fisheries

# Great South Channel Restricted Trap/Pot Area

The Great South Channel Restricted Trap/Pot Area includes the area bounded by: 41°40'N/ 69°45'W; 41°00'N / 69°05'W; 41°38'N / 68°13'W; and 42°10'N / 68°31'W.

**April 1- June 30:**

The Great South Channel Restricted Area is **closed** to **all** trap/pot fishing.

**July 1- March 31:**

- Compliance with the **Universal Requirements:**
  - » No buoy line floating at the surface.
  - » No wet storage of gear (all gear must be hauled out of the water at least once every 30 days).
  - » Fishermen are encouraged, but not required, to maintain knot-free buoy lines.
- Trap/pot surface buoys to be marked to identify the vessel or fishery with one of the following: the owner's motorboat registration number and/or U.S. vessel documentation number; the federal commercial fishing permit number; or whatever positive identification marking is required by the vessel's home-port state.
  - » When marking is not already required by state or federal regulations, the letters and numbers to mark gear must be at least 1 inch (2.5cm) in height, block letters or Arabic numbers, in a color that contrasts with the color of the buoy.
- Buoy lines to be marked with one 4-inch (10.2 cm), **RED**, mark midway along the buoy line (overlapping with Lobster Management Area (LMA) 2 and/or the Outer Cape LMA), or **BLACK** (overlapping with the LMA 2/3 Overlap and/or LMA 3).
- All buoys, flotation devices and/or weights must be attached to the buoy line with a weak link having a breaking strength of:
  - » no greater than 600 lb* in areas that overlap with LMA 2 and/or the Outer Cape LMA;
  - » no greater than 1,500 lb* in areas that overlap with the LMA 2/3 Overlap and/or LMA 3.
- Only multiple traps will be permitted (no single traps) where all traps are to be set in trawls of 2 or more traps (trawls up to and including 5 or fewer traps can have only 1 buoy line) in areas overlapping with LMA 2 and/or the Outer Cape LMA.
- All groundlines must be made of sinking line.

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✶ Weak links must be chosen from the list of NMFS approved gear, which includes: off the shelf weak links, rope of appropriate breaking strength, hog rings, and other materials or devices approved in writing.

✶ Weak links must be designed in such a way that the bitter end of the buoy line is clean and free of any knots when the weak link breaks.

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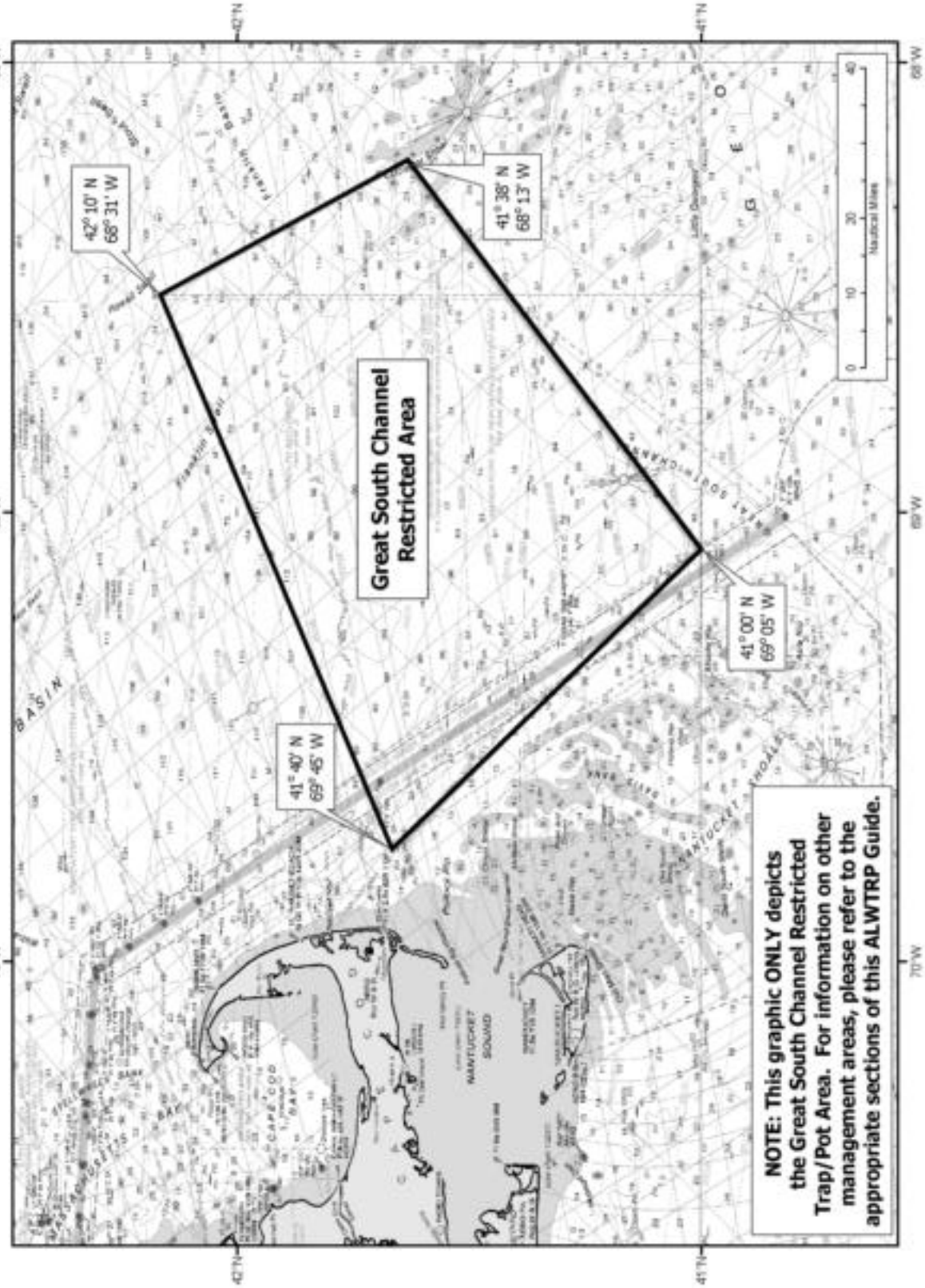
# Northeast Region: Great South Channel Restricted Trap/Pot Area




NOAA Nautical Chart Name: West Quoddy Head to New York
Chart ID: 13006_1

Northeast Region- Trap/Pot Fisheries

# Northern Nearshore Trap/Pot Waters

Northern Nearshore Lobster Waters includes all Federal waters of EEZ Nearshore Management Area 1, Area 2, and the Outer Cape Lobster Management Area (as defined in the American Lobster Fishery regulations at 50 CFR 697.18), with the exception of the Great South Channel Restricted Trap/Pot Area, Cape Cod Bay Restricted Area, Stellwagen Bank/Jeffreys Ledge Restricted Area, and exempted waters as described on page 61.

**Year-round (see following map for corresponding area):**

- Compliance with the **Universal Requirements:**
  - » No buoy line floating at the surface.
  - » No wet storage of gear (all gear must be hauled out of the water at least once every 30 days).
  - » Fishermen are encouraged, but not required, to maintain knot-free buoy lines.
- Trap/pot surface buoys to be marked to identify the vessel or fishery with one of the following: the owner's motorboat registration number and/or U.S. vessel documentation number; the federal commercial fishing permit number; or whatever positive identification marking is required by the vessel's home-port state.
  - » When marking is not already required by state or federal regulations, the letters and numbers to mark gear must be at least 1 inch (2.5cm) in height, block letters or Arabic numbers, in a color that contrasts with the color of the buoy.
- Buoy lines to be marked with one 4-inch (10.2 cm), **RED**, mark midway along the buoy line.
- All buoys, flotation devices, and/or weights must be attached to the buoy line with a weak link having a breaking strength of no greater than 600 lb*;
- Only multiple traps will be permitted (no single traps) where all traps are to be set in trawls of 2 or more traps (trawls up to and including 5 or fewer traps can have only one buoy line);
- All groundlines must be made of sinking line.

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✶ Weak links must be chosen from the list of NMFS approved gear, which includes: off the shelf weak links, rope of appropriate breaking strength, hog rings, and other materials or devices approved in writing.

✶ Weak links must be designed in such a way that the bitter end of the buoy line is clean and free of any knots when the weak link breaks.

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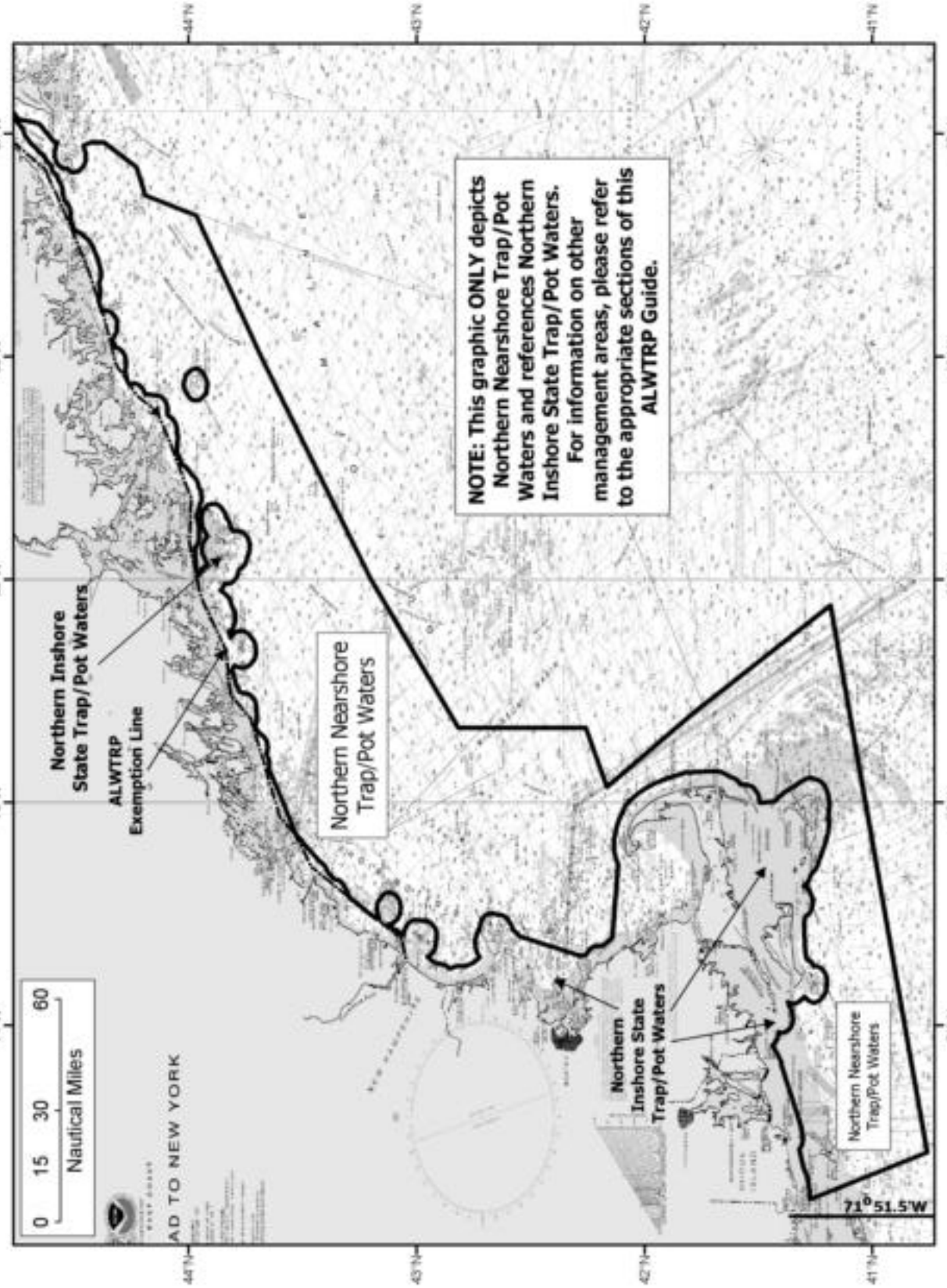
# Northeast Region: Northern Nearshore Trap/Pot Waters




NOAA Nautical Chart Name: West Quoddy Head to New York
Chart ID: 13006_1

Northeast Region- Trap/Pot Fisheries

# Southern Nearshore Trap/Pot Waters

Southern Nearshore Trap/Pot Waters includes all state and Federal waters which fall within EEZ Nearshore Management Area 4, EEZ Nearshore Management Area 5, and EEZ Nearshore Management Area 6 (as defined in the American Lobster Fishery regulations in 50 CFR 697.18), and inside the 100fa contour line from 35°30' N. lat. south to 27°51' N. lat. and extending inshore to the shoreline or exemption line, with the exception of the exempted waters as described on page 61.

A small portion of these waters includes portions of LMA 6 (near the mouth of Long Island Sound), and hence, have year-round requirements, as noted here. **The remaining waters of the Southern Nearshore Trap/Pot Waters management area will have seasonal requirements as noted in the "Mid-Atlantic" and "Southeast Region Trap/Pot Regulations" to follow.**

**Year-round (see following map for corresponding area):**

- Compliance with the **Universal Requirements:**
  - » No buoy line floating at the surface.
  - » No wet storage of gear (all gear must be hauled out of the water at least once every 30 days).
  - » Fishermen are encouraged, but not required, to maintain knot-free buoy lines.
- Trap/pot surface buoys to be marked to identify the vessel or fishery with one of the following: the owner's motorboat registration number and/or U.S. vessel documentation number; the federal commercial fishing permit number; or whatever positive identification marking is required by the vessel's home-port state.
  - » When marking is not already required by state or federal regulations, the letters and numbers to mark gear must be at least 1 inch (2.5cm) in height, block letters or Arabic numbers, in a color that contrasts with the color of the buoy.
- Buoy lines to be marked with one 4-inch (10.2 cm), **ORANGE**, mark midway along the buoy line;
- All buoys, flotation devices and/or weights must be attached to the buoy line with a weak link having a breaking strength of no greater than 600 lb*;
- All groundlines must be made of sinking line.

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✶ Weak links must be chosen from the list of NMFS approved gear, which includes: off the shelf weak links, rope of appropriate breaking strength, hog rings, and other materials or devices approved in writing.

✶ Weak links must be designed in such a way that the bitter end of the buoy line is clean and free of any knots when the weak link breaks.

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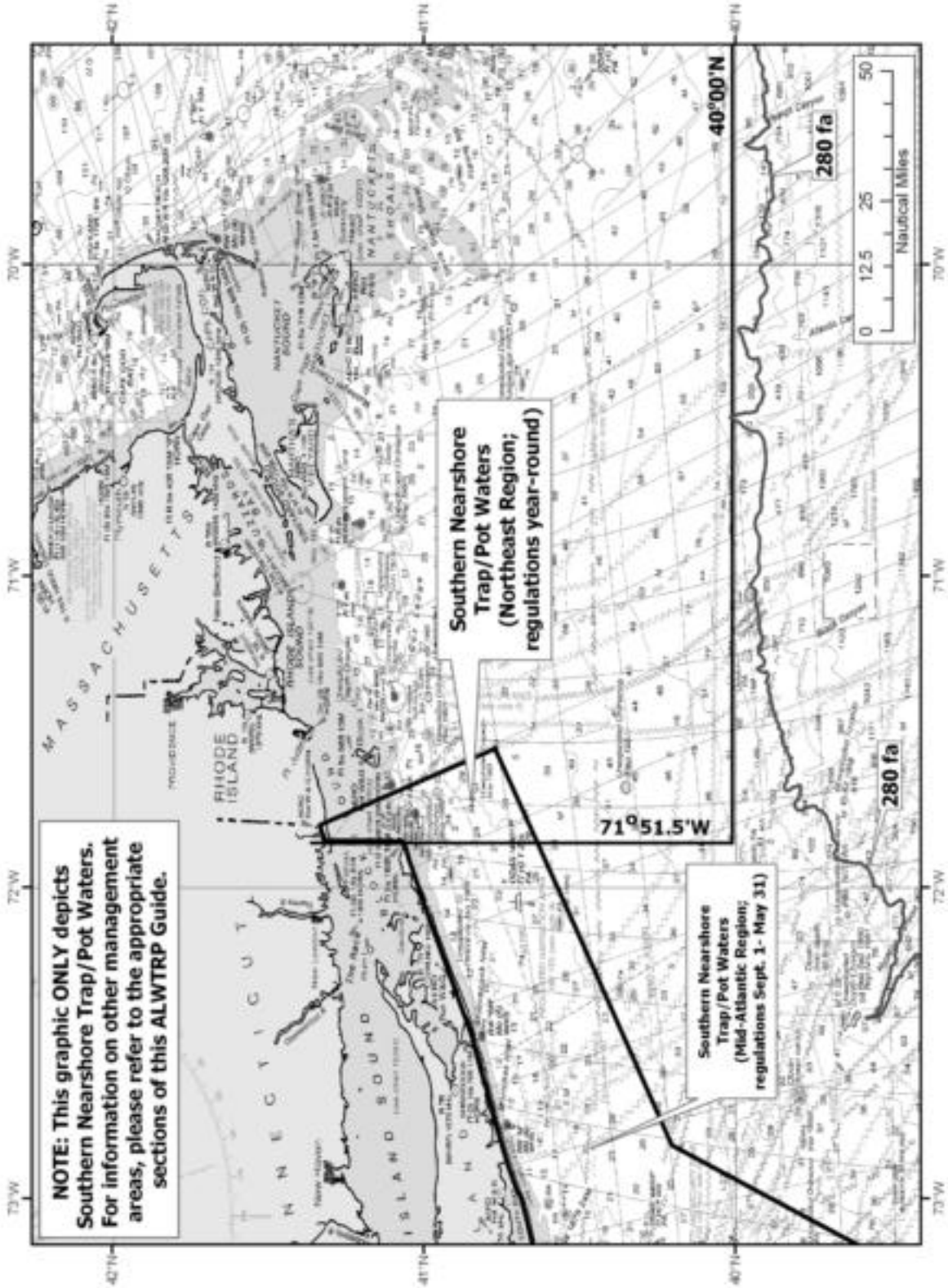
# Northeast Region: Southern Nearshore Trap/Pot Waters




NOAA Nautical Chart Name: Cape Sable to Cape Hatteras
Chart ID: 13003_1

Northeast Region- Trap/Pot Fisheries

# Offshore Trap/Pot Waters

Offshore Trap/Pot Waters includes all Federal waters of the EEZ Offshore Management Area 3 (including the areas known as the Area 2/3 Overlap and 3/5 Overlap, as defined in the American Lobster Fishery regulations found at 50 CFR 697.18), with the exception of the Great South Channel Restricted Trap/Pot Area, and extending south along the 100fa contour line from 35°30' N. lat. south to 27°51' N. lat., and east to the eastern edge of the EEZ.

**Year-round (see following map for corresponding area)**:

- Compliance with the **Universal Requirements:**
  - » No buoy line floating at the surface.
  - » No wet storage of gear (all gear must be hauled out of the water at least once every 30 days).
  - » Fishermen are encouraged, but not required, to maintain knot-free buoy lines.
- Trap/pot surface buoys to be marked to identify the vessel or fishery with one of the following: the owner's motorboat registration number and/or U.S. vessel documentation number; the federal commercial fishing permit number; or whatever positive identification marking is required by the vessel's home-port state.
  - » When marking is not already required by state or federal regulations, the letters and numbers to mark gear must be at least 1 inch (2.5cm) in height, block letters or Arabic numbers, in a color that contrasts with the color of the buoy.
- Buoy lines to be marked with one 4-inch (10.2 cm), **BLACK**, mark midway along the buoy line.
- All buoys, flotation devices and/or weights must be attached to the buoy line with a weak link having a breaking strength of no greater than 1,500 lb*;
  - » For the red crab trap/pot fishery, weak links with a maximum breaking strength of 2,000 lb* are required;
- All groundlines must be made of sinking line.

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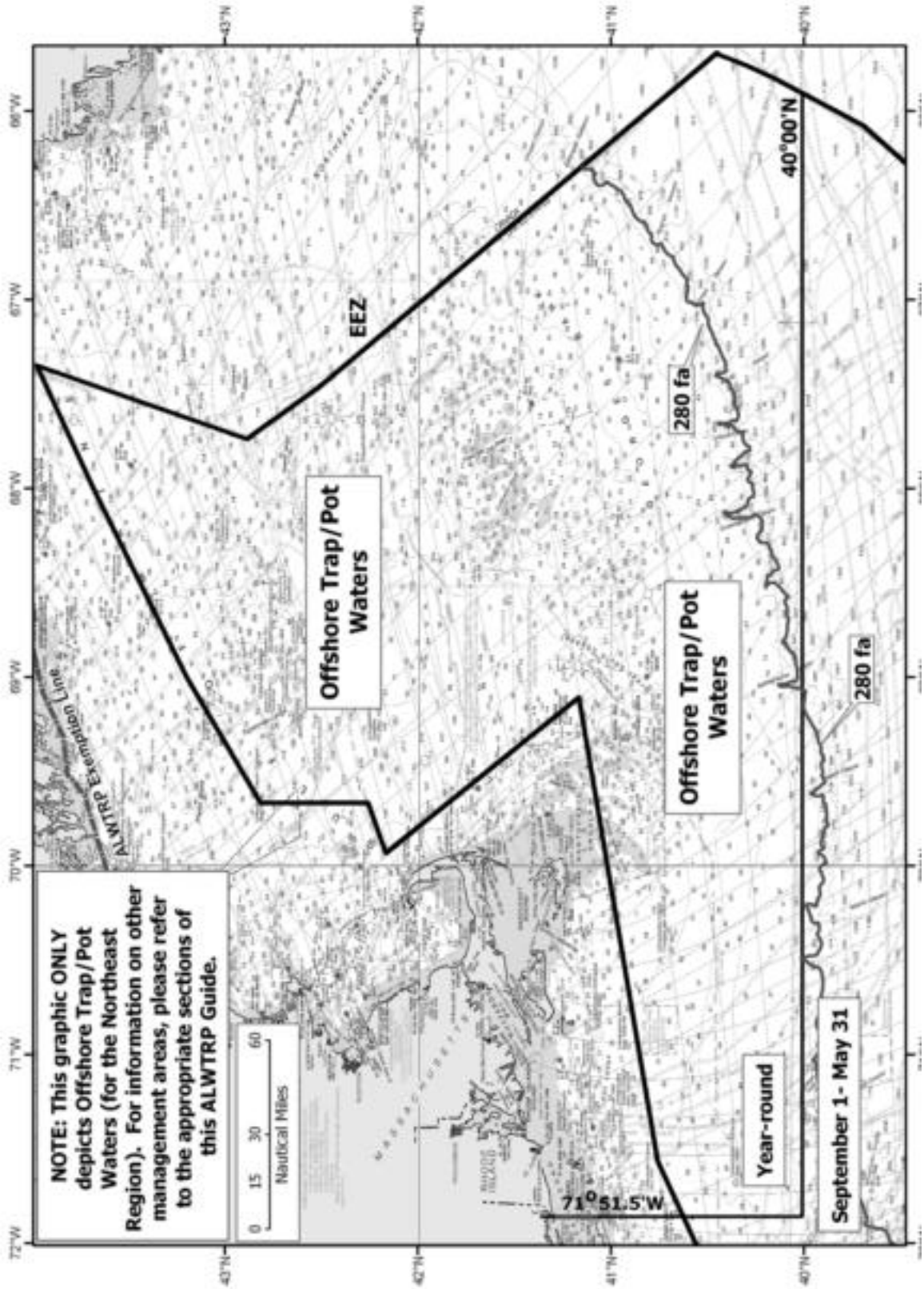
✶ Weak links must be chosen from the list of NMFS approved gear, which includes: off the shelf weak links, rope of appropriate breaking strength, hog rings, and other materials or devices approved in writing.

✶ Weak links must be designed in such a way that the bitter end of the buoy line is clean and free of any knots when the weak link breaks.

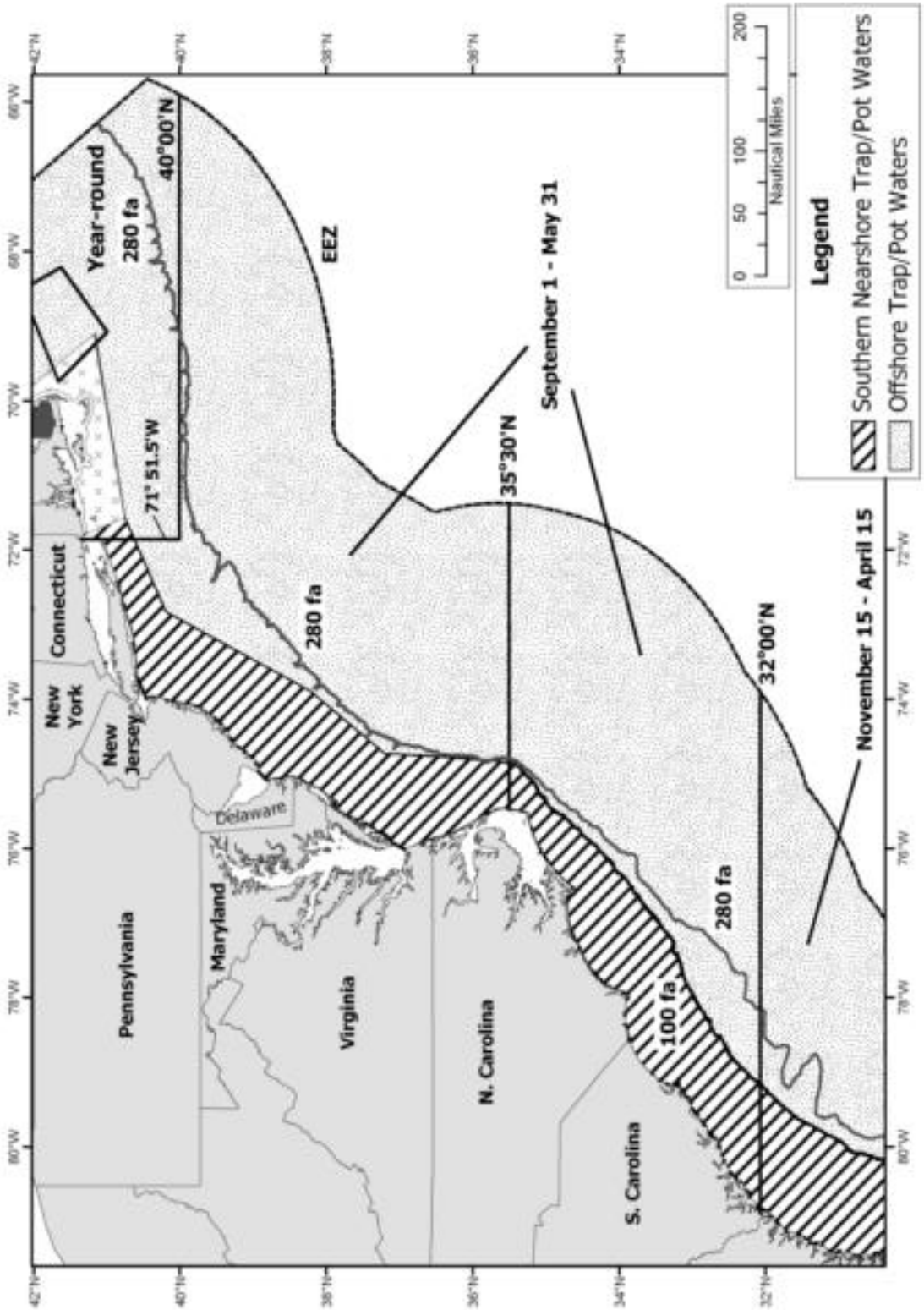
This document is intended as a guide to measures required under the Atlantic Large Whale Take Reduction Plan. This document is not the legal document detailing the regulations. Interested and affected parties can find the regulations at 50CFR229.32 or at the whale plan website www.nero.noaa.gov/whaletrp/

# Northeast Region: Offshore Trap/Pot Waters



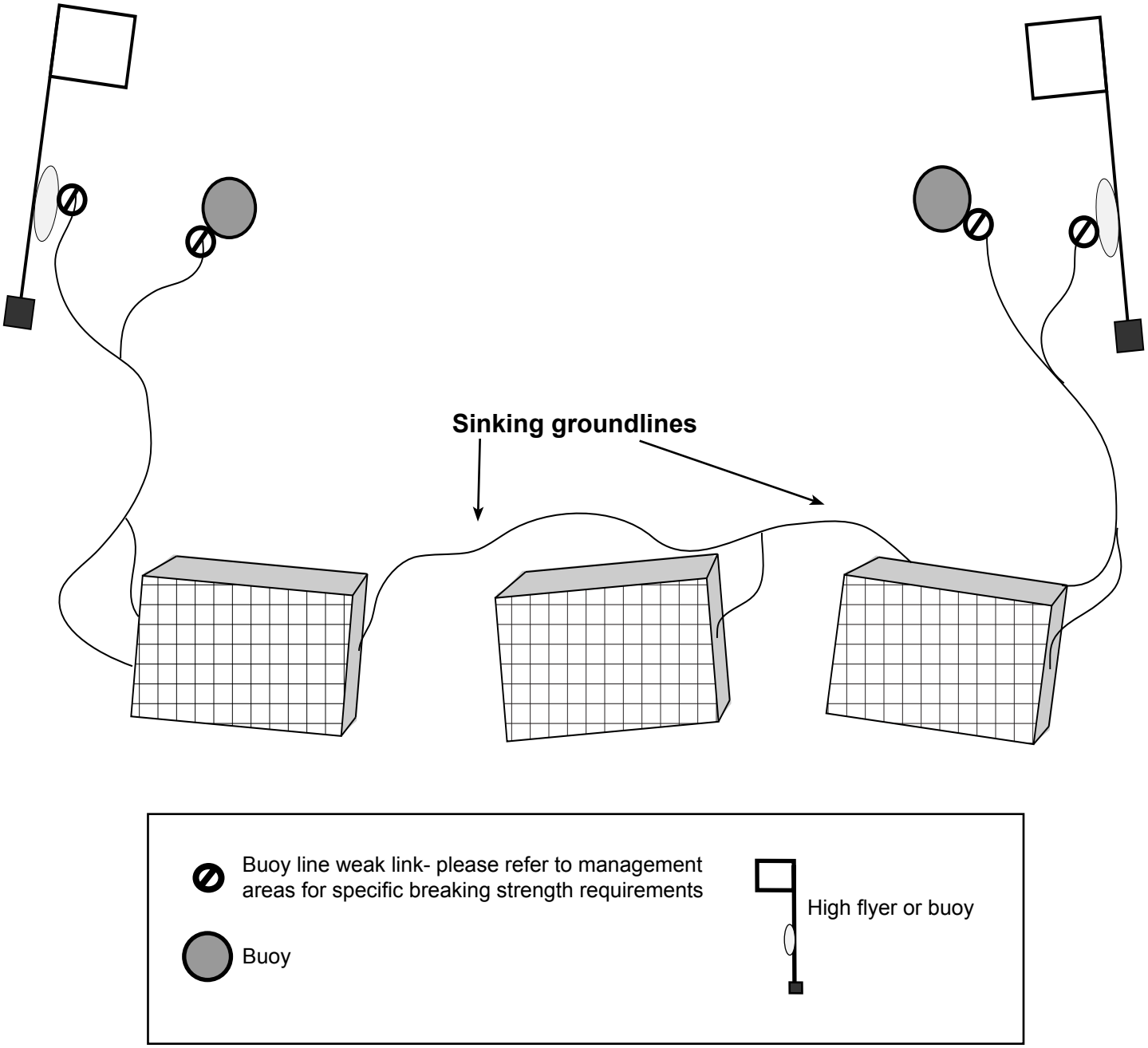

NOAA Nautical Chart Name: Cape Sable to Cape Hatteras
Chart ID: 13003_1

# Mid-Atlantic Region: Trap/Pot Fisheries




Southern Nearshore Trap/Pot Waters and Offshore Trap/Pot Waters

# Trap/Pot Gear Diagram




**This graphic depicts a general trap/pot gear configuration, which may vary. Please see individual ALWTRP Management Areas for information regarding specific weak link, gear marking and/or any other ALWTRP requirements.**

Mid-Atlantic Region- Trap/Pot Fisheries

# Southern Nearshore Trap/Pot Waters

Southern Nearshore Trap/Pot Waters includes all state and Federal waters which fall within EEZ Nearshore Management Area 4, EEZ Nearshore Management Area 5, and EEZ Nearshore Management Area 6 (as defined in the American Lobster Fishery regulations in 50 CFR 697.18), and inside the 100fa contour line from 35°30' N. lat. south to 27°51' N. lat. and extending inshore to the shoreline or exemption line, with the exception of the exempted waters as described on page 61.

**September 1-May 31 (see following map for seasonal boundaries):**

- Compliance with the **Universal Requirements:**
  - » No buoy line floating at the surface.
  - » No wet storage of gear (all gear must be hauled out of the water at least once every 30 days).
  - » Fishermen are encouraged, but not required, to maintain knot-free buoy lines.
- Trap/pot surface buoys to be marked to identify the vessel or fishery with one of the following: the owner's motorboat registration number and/or U.S. vessel documentation number; the federal commercial fishing permit number; or whatever positive identification marking is required by the vessel's home-port state.
  - » When marking is not already required by state or federal regulations, the letters and numbers to mark gear must be at least 1 inch (2.5cm) in height, block letters or Arabic numbers, in a color that contrasts with the color of the buoy.
- Buoy lines to be marked with one 4-inch (10.2 cm), **ORANGE**, mark midway along the buoy line.
- All buoys, flotation devices and/or weights must be attached to the buoy line with a weak link having a breaking strength of no greater than 600 lb*;
- All groundlines must be made of sinking line.

➔ Note: a small portion of these waters includes portions of LMA 6 (near the mouth of Long Island Sound). These waters follow year-round regulations as described in the "Northeast Trap/Pot Fisheries Regulations" section of this guide.

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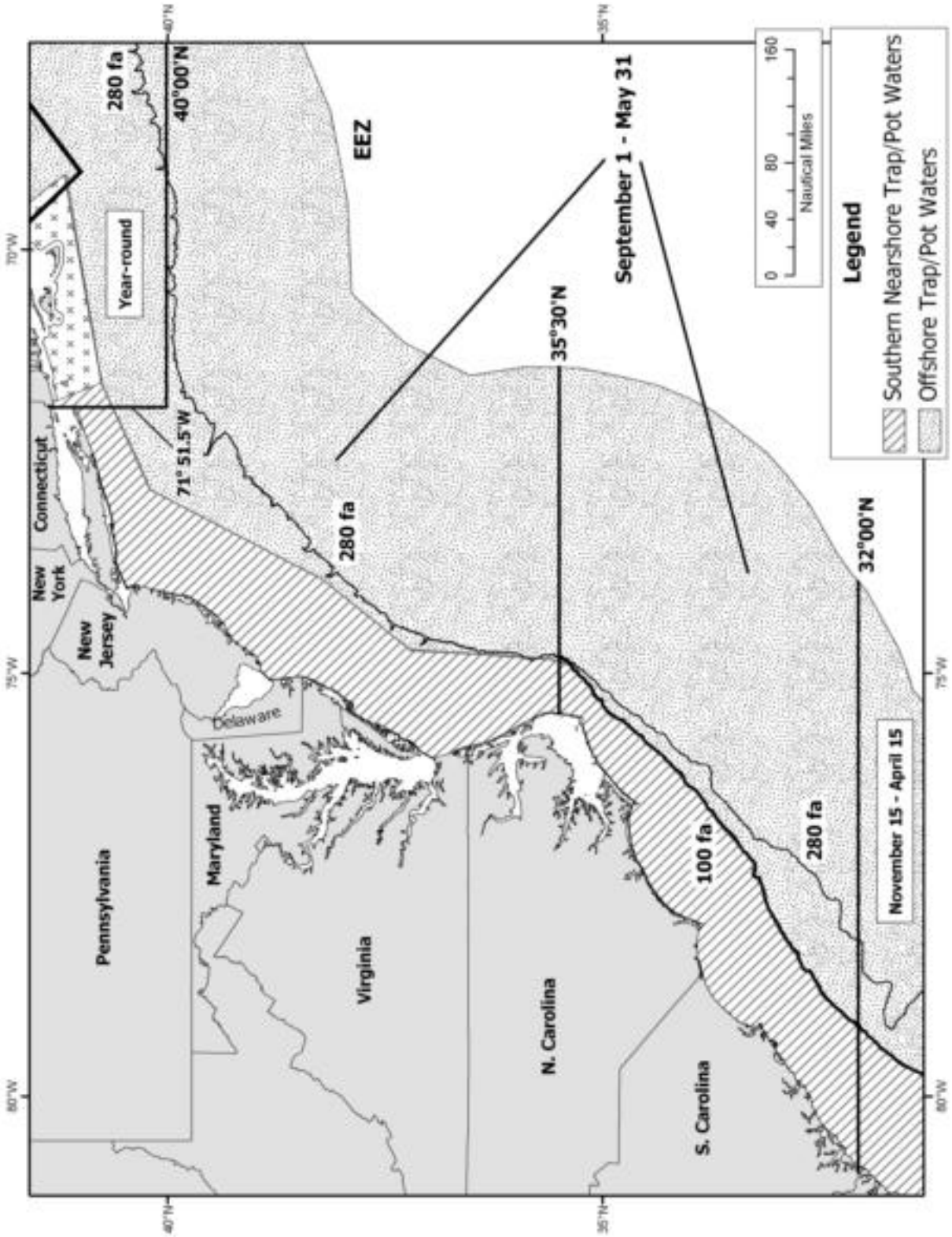
✶ Weak links must be chosen from the list of NMFS approved gear, which includes: off the shelf wea links, rope of appropriate breaking strength, hog rings, and other materials or devices approved in writing.

✶ Weak links must be designed in such a way that the bitter end of the buoy line is clean and free of any knots when the weak link breaks.

# Mid-Atlantic Region: Southern Nearshore Trap/Pot Waters*




* Nautical charts could not be effectively applied to the expansive mid-Atlantic region shown here. Thus, nautical charts are not displayed for this region.

Mid-Atlantic Region- Trap/Pot Fisheries

# Offshore Trap/Pot Waters

Offshore Trap/Pot Waters includes all Federal waters of the EEZ Offshore Management Area 3 (including the areas known as the Area 2/3 Overlap and 3/5 Overlap, as defined in the American Lobster Fishery regulations found at 50 CFR 697.18), with the exception of the Great South Channel Restricted Trap/Pot Area, and extending south along the 100fa contour line from 35°30' N. lat. south to 27°51' N. lat., and east to the eastern edge of the EEZ.

**September 1-May 31 (see following map for seasonal boundaries)**:

- Compliance with the **Universal Requirements:**
  - » No buoy line floating at the surface.
  - » No wet storage of gear (all gear must be hauled out of the water at least once every 30 days).
  - » Fishermen are encouraged, but not required, to maintain knot-free buoy lines.
- Trap/pot surface buoys to be marked to identify the vessel or fishery with one of the following: the owner's motorboat registration number and/or U.S. vessel documentation number; the federal commercial fishing permit number; or whatever positive identification marking is required by the vessel's home-port state.
  - » When marking is not already required by state or federal regulations, the letters and numbers to mark gear must be at least 1 inch (2.5cm) in height, block letters or Arabic numbers, in a color that contrasts with the color of the buoy.
- Buoy lines to be marked with one 4-inch (10.2 cm), **BLACK**, mark midway along the buoy line.
- All buoys, flotation devices and/or weights must be attached to the buoy line with a weak link having a breaking strength of no greater than 1,500 lb*;
  - » For the red crab trap/pot fishery, weak links with a maximum breaking strength of 2,000 lb* are required;
- All groundlines must be made of sinking line.

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✶ Weak links must be chosen from the list of NMFS approved gear, which includes: off the shelf weak links, rope of appropriate breaking strength, hog rings, and other materials or devices approved in writing.

✶ Weak links must be designed in such a way that the bitter end of the buoy line is clean and free of any knots when the weak link breaks.

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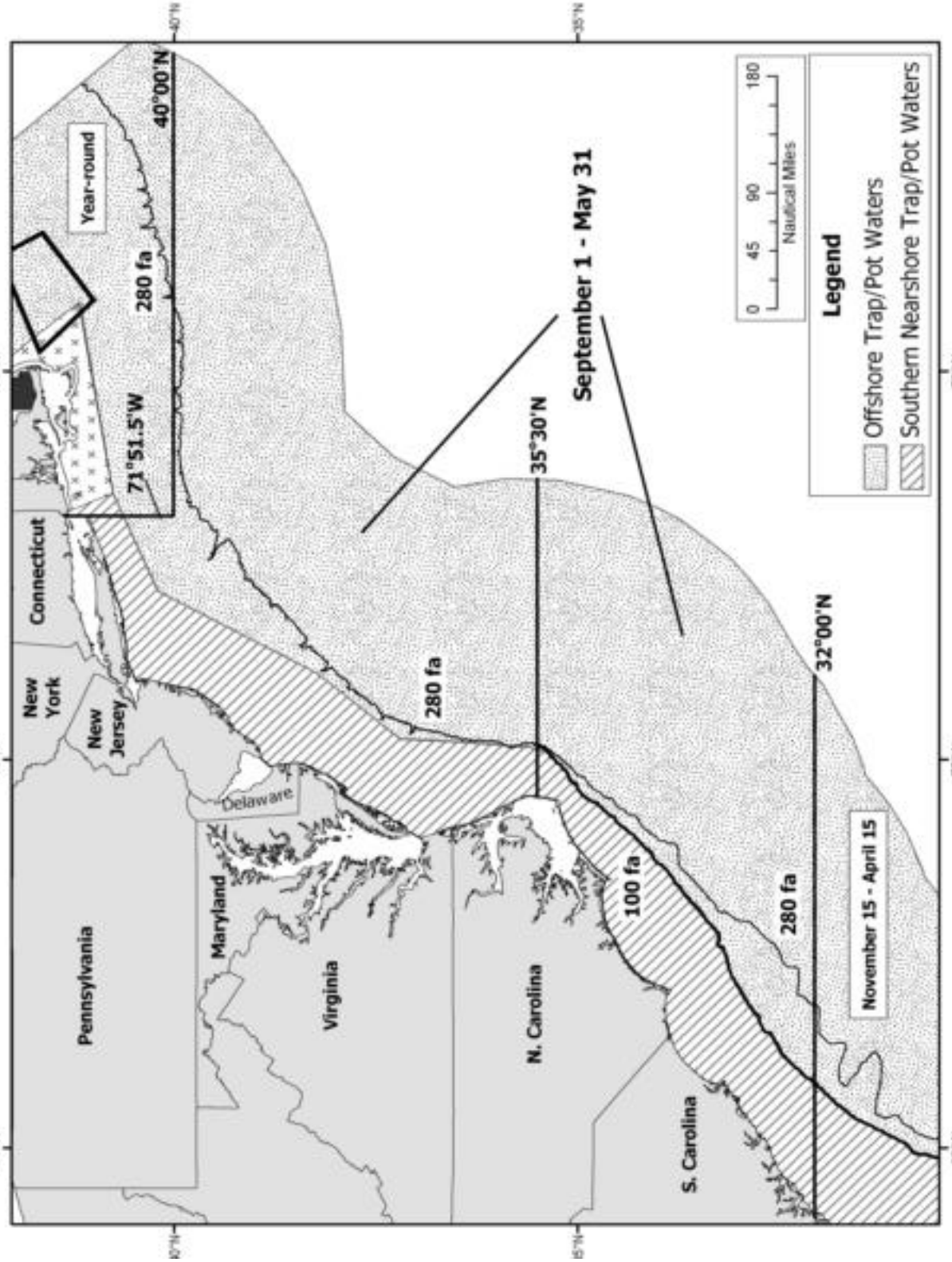
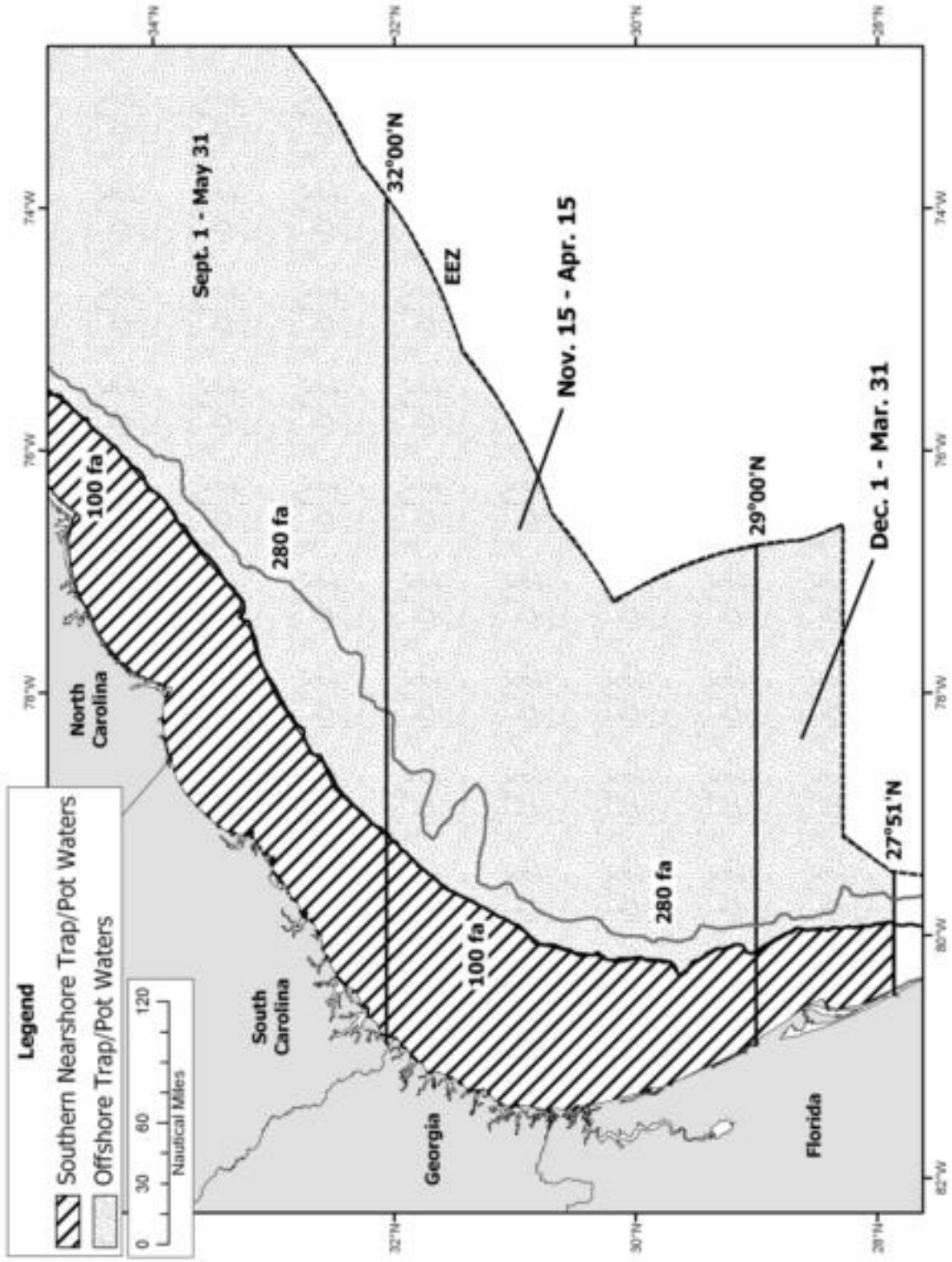
# Mid-Atlantic Region: Offshore Trap/Pot Waters*



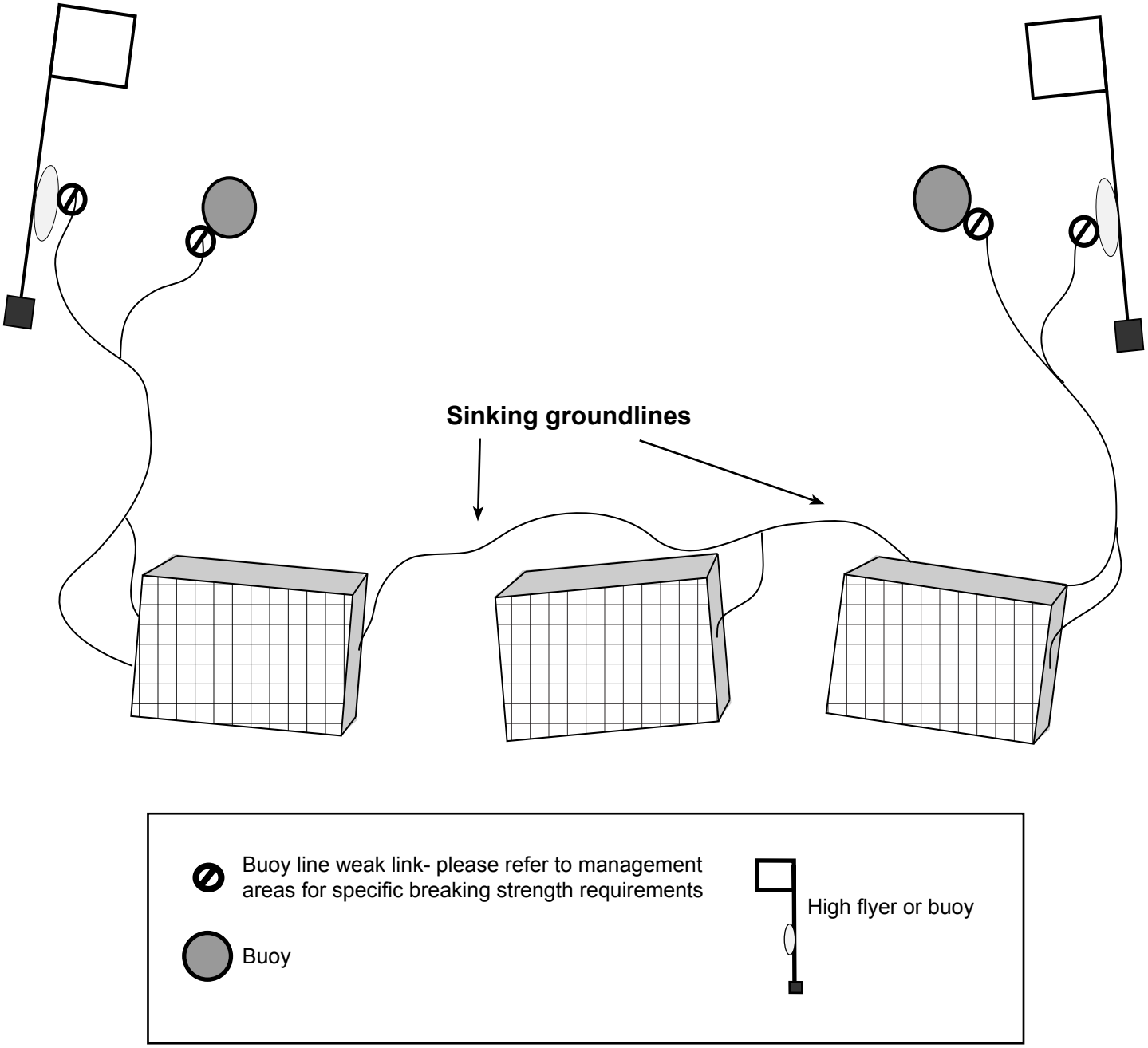

* Nautical charts could not be effectively applied to the expansive mid-Atlantic region shown here. Thus, nautical charts are not displayed for this region.

# Southeast Region: Trap/Pot Fisheries




Southern Nearshore Trap/Pot Waters and Offshore Trap/Pot Waters

# Trap/Pot Gear Diagram




**This graphic depicts a general trap/pot gear configuration, which may vary. Please see individual ALWTRP Management Areas for information regarding specific weak link, gear marking and/or any other ALWTRP requirements.**

Southeast Region- Trap/Pot Fisheries

# Southern Nearshore Trap/Pot Waters

Southern Nearshore Trap/Pot Waters includes all state and Federal waters which fall within EEZ Nearshore Management Area 4, EEZ Nearshore Management Area 5, and EEZ Nearshore Management Area 6 (as defined in the American Lobster Fishery regulations in 50 CFR 697.18), and inside the100fa contour line from 35°30' N. lat. south to 27°51' N. lat. and extending inshore to the shoreline or exemption line, with the exception of the exempted waters as described on page 66.

**November 15-April 15 (between 29° N. lat and 32° N. lat):**

- Compliance with the **Universal Requirements:**
  - » No buoy line floating at the surface.
  - » No wet storage of gear (all gear must be hauled out of the water at least once every 30 days).
  - » Fishermen are encouraged, but not required, to maintain knot-free buoy lines.
- Compliance with **Gear Marking Requirements**:
  - » Trap/pot surface buoys to be marked to identify the vessel or fishery with one of the following: the owner's motorboat registration number and/or U.S. vessel documentation number; the federal commercial fishing permit number; or whatever positive identification marking is required by the vessel's home-port state.
    - When marking is not already required by state or federal regulations, the letters and numbers to mark gear must be at least 1 inch (2.5cm) in height, block letters or Arabic numbers, in a color that contrasts with the color of the buoy.
  - » Buoy lines to be marked with one 4-inch (10.2 cm), **ORANGE**, mark midway along the buoy line.
- All buoys, flotation devices and/or weights must be attached to the buoy line with a weak link having a breaking strength of no greater than 600 lb*;and
- All groundlines must be made of sinking line.

**December 1-March 31 (between 29°N. lat and 27° 51' N. lat):**

- Compliance with the **Universal and Gear Marking Requirements** (see above).
- All buoys, flotation devices and/or weights must be attached to the buoy line with a weak link having a breaking strength of no greater than 600 lb*;
- All groundlines must be made of sinking line.

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✶ Weak links must be chosen from the list of NMFS approved gear, which includes: off the shelf weak links, rope of appropriate breaking strength, hog rings, and other materials or devices approved in writing.

✶ Weak links must be designed in such a way that the bitter end of the buoy line is clean and free of any knots when the weak link breaks.

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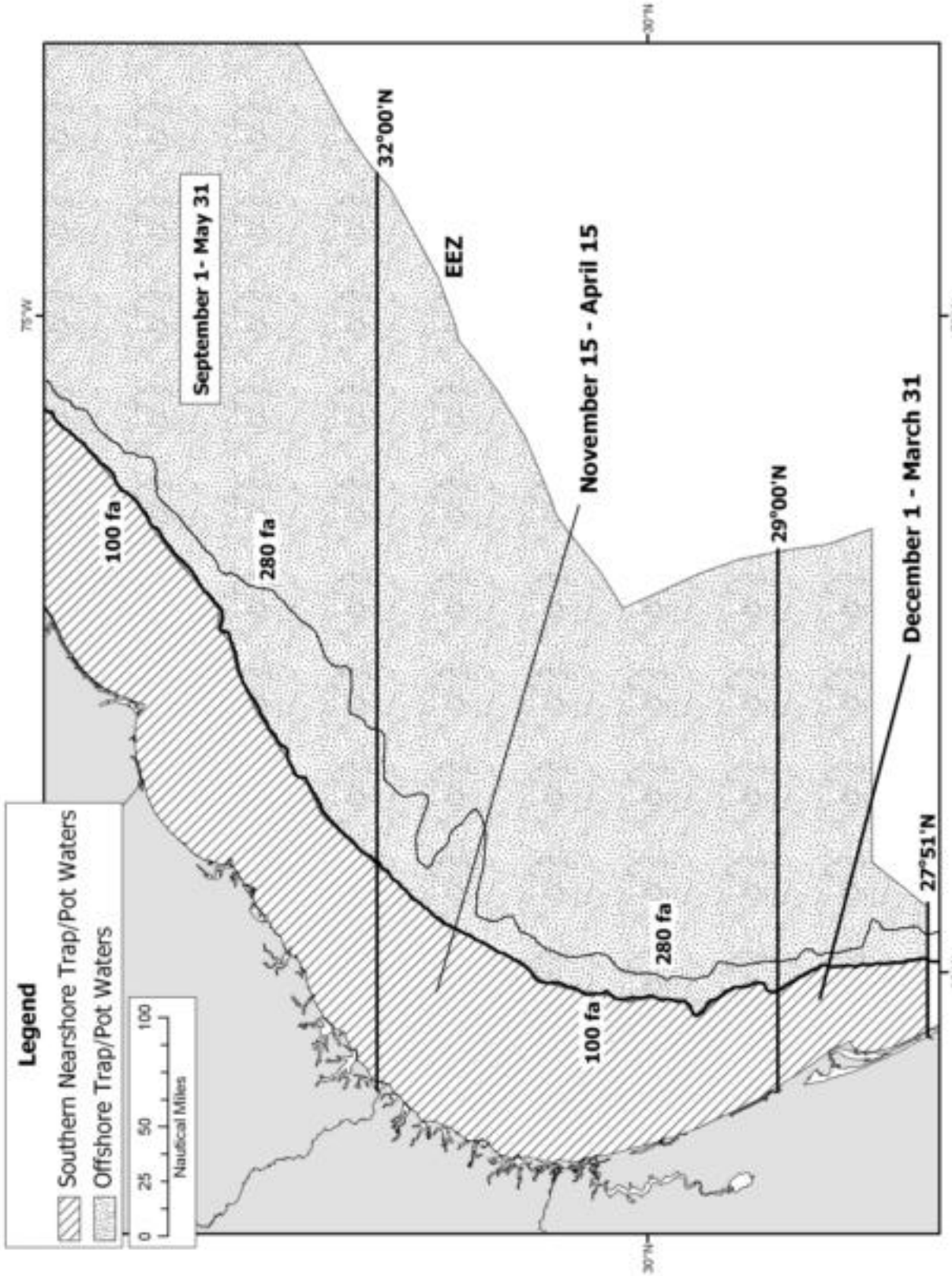
# Southeast Region: Southern Nearshore Trap/Pot Waters*




* Nautical charts could not be effectively applied to the expansive Southeast Atlantic region shown here. Thus, nautical charts are not displayed for this region.

Southeast Region- Trap/Pot Fisheries

# Offshore Trap/Pot Waters

Offshore Trap/Pot Waters includes all Federal waters of the EEZ Offshore Management Area 3 (including the areas known as the Area 2/3 overlap and 3/5 Overlap, as defined in the American Lobster Fishery regulations found at 50 CFR 697.18), with the exception of the Great South Channel Restricted Trap/Pot Area, and extending south along the 100fa contour line from 35°30' N. lat. south to 27°51' N. lat., and east to the eastern edge of the EEZ.

**November 15-April 15 (between 29° N. lat and 32° N. lat):**

- Compliance with the **Universal Requirements:**
  - » No buoy line floating at the surface.
  - » No wet storage of gear (all gear must be hauled out of the water at least once every 30 days)
  - » Fishermen are encouraged, but not required, to maintain knot-free buoy lines.
- Compliance with **Gear Marking Requirements**:
  - » Trap/pot surface buoys to be marked to identify the vessel or fishery with one of the following: the owner's motorboat registration number and/or U.S. vessel documentation number; the federal commercial fishing permit number; or whatever positive identification marking is required by the vessel's home-port state.
    - When marking is not already required by state or federal regulations, the letters and numbers to mark gear must be at least 1 inch (2.5cm) in height, block letters or Arabic numbers, in a color that contrasts with the color of the buoy.
  - » Buoy lines to be marked with one 4-inch (10.2 cm), **BLACK**, mark midway along the buoy line.
- All buoys, flotation devices and/or weights must be attached to the buoy line with a weak link having a breaking strength of no greater than 1,500 lb*;
  - » For the red crab trap/pot fishery, weak links with a maximum breaking strength of 2,000 lb* are required;
- All groundlines must be made of sinking line.

**December 1-March 31 (between 29°N. lat and 27° 51' N. lat):**

- Compliance with the **Universal and Gear Marking Requirements** (see above).
- All buoys, flotation devices and/or weights must be attached to the buoy line with a weak link having a breaking strength of no greater than 1,500 lb*;
  - » For the red crab trap/pot fishery, weak links with a maximum breaking strength of 2,000 lb* are required;
- All groundlines must be made of sinking line.

---

✶ Weak links must be chosen from the list of NMFS approved gear, which includes: off the shelf weak links, rope of appropriate breaking strength, hog rings, and other materials or devices approved in writing.

✶ Weak links must be designed in such a way that the bitter end of the buoy line is clean and free of any knots when the weak link breaks.

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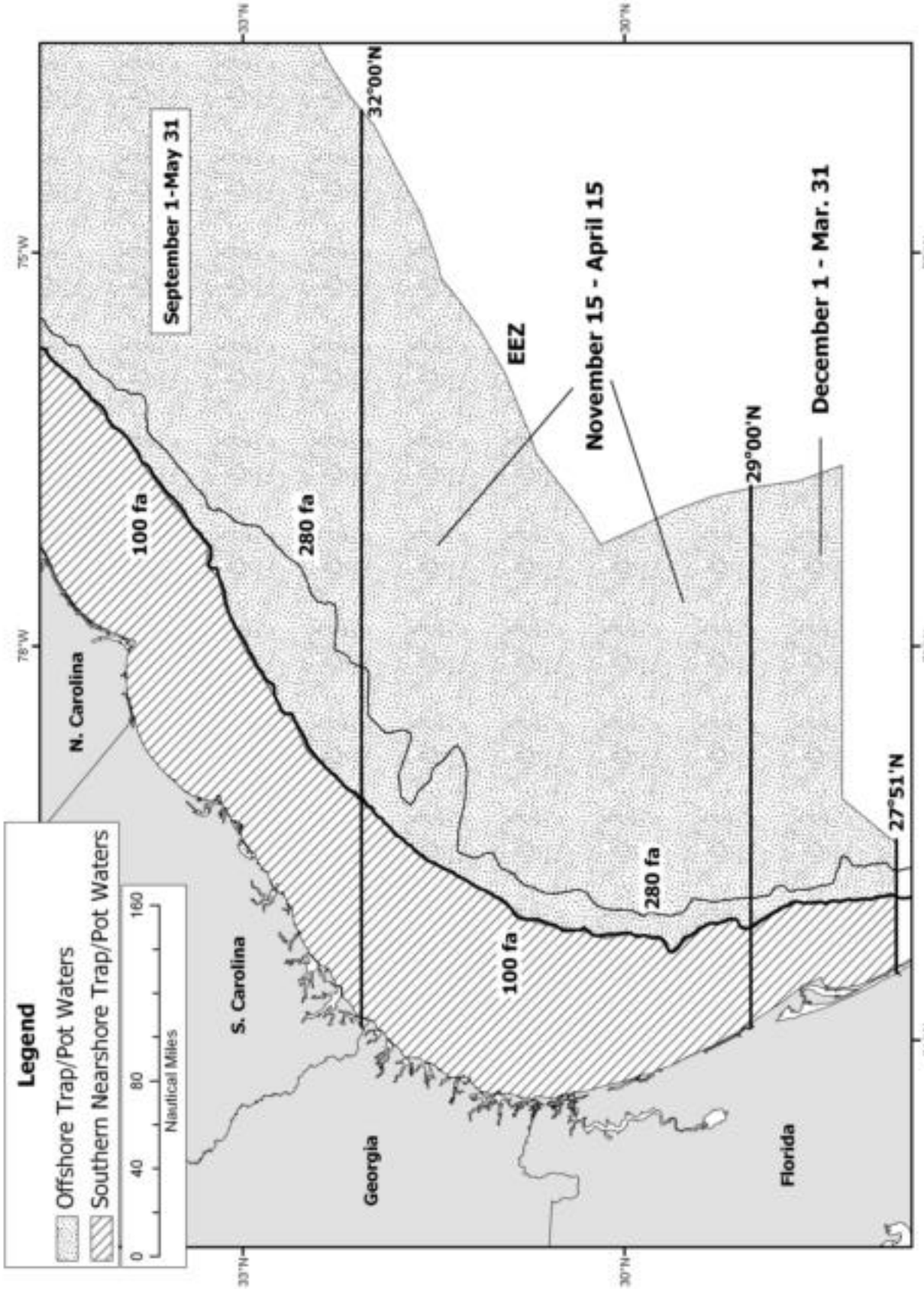
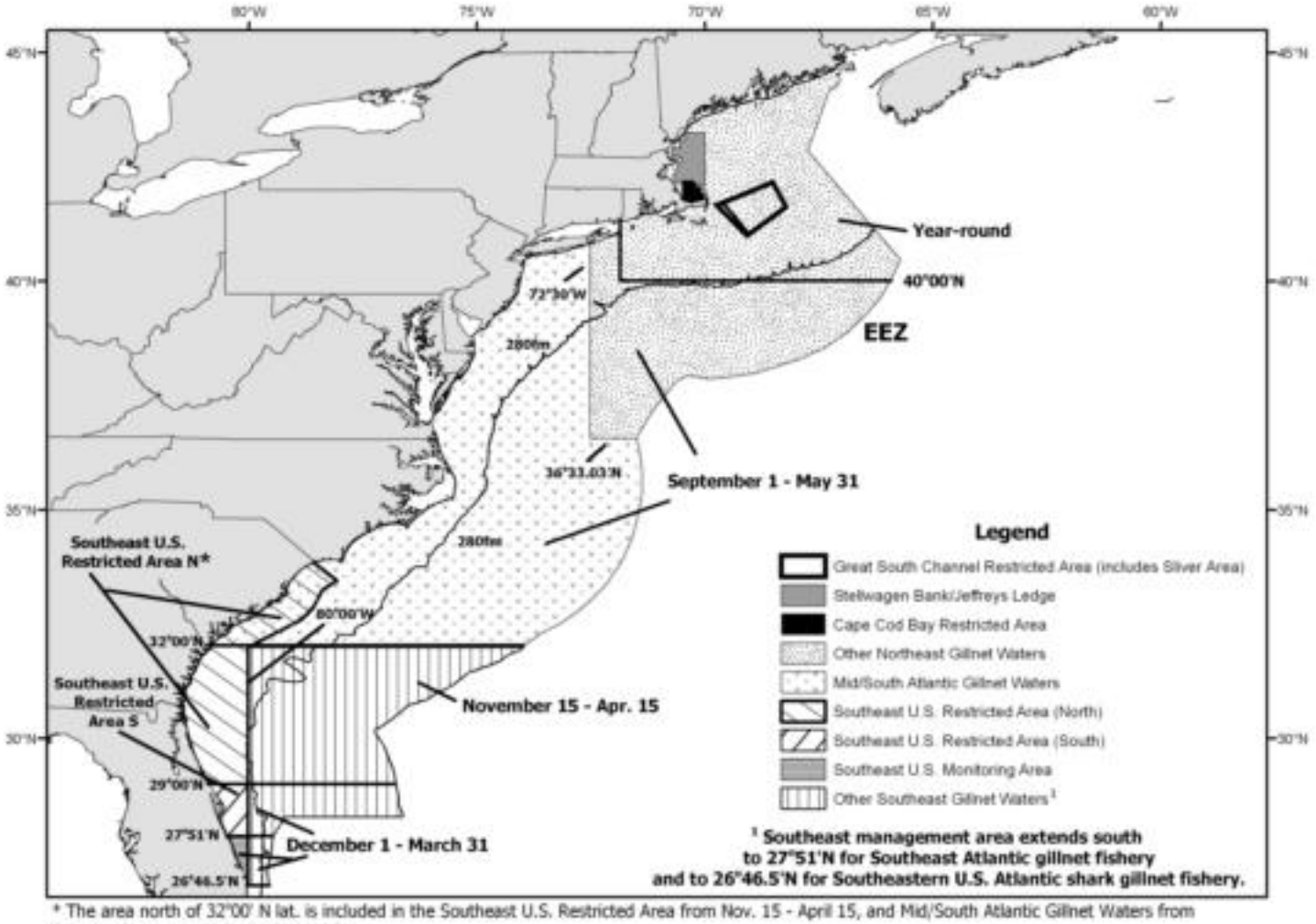
# Southeast Region: Offshore Trap/Pot Waters




* Nautical charts could not be effectively applied to the expansive Southeast region shown here. Thus, nautical charts are not displayed for this region.

# Regulated Gillnet Areas

The gillnet gear requirements in the ALWTRP vary by geographic area. The Plan currently recognizes seven gillnet areas: Cape Cod Bay Restricted Area, Great South Channel Restricted Gillnet Area, Great South Channel Sliver Restricted Gillnet Area, Stellwagen Bank/Jeffreys Ledge Restricted Area, Other Northeast Gillnet Waters, Mid/South Atlantic Gillnet Waters, Southeast U.S. Restricted Area (North and South), Southeast U.S. Monitoring Area, and Other Southeast Gillnet Waters.

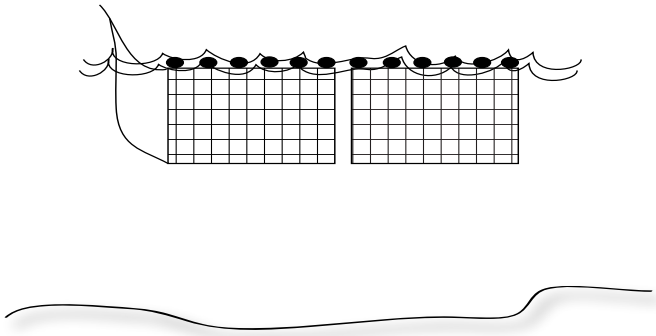


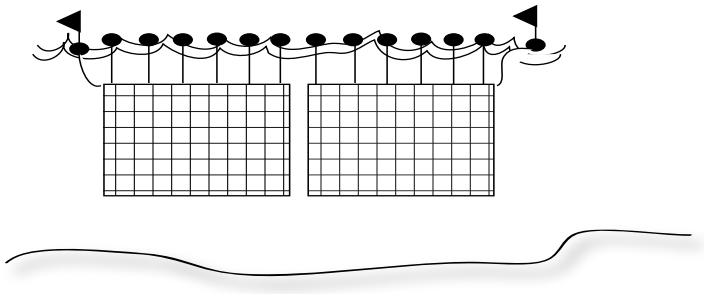

* The area north of 32°00' N lat. is included in the Southeast U.S. Restricted Area from Nov. 15 - April 15, and Mid/South Atlantic Gillnet Waters from Sept. 1 - Nov. 14 and April 16 - May 31.

# Drift and Anchored Gillnet Diagrams

The below depict examples of gillnet gear that correspond to the drift and anchored gillnet definitions listed below. These depictions show general gillnet gear configurations, which may vary.

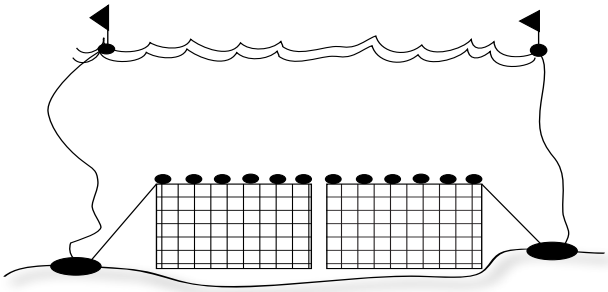
**Drift Gillnet Gear:** Gillnet(s) that is/are not anchored, secured, or weighted to the bottom at either end, regardless of whether attached to a vessel.

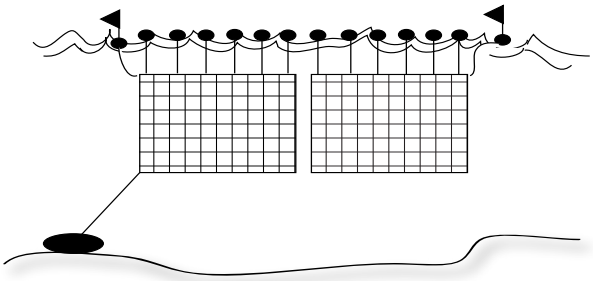


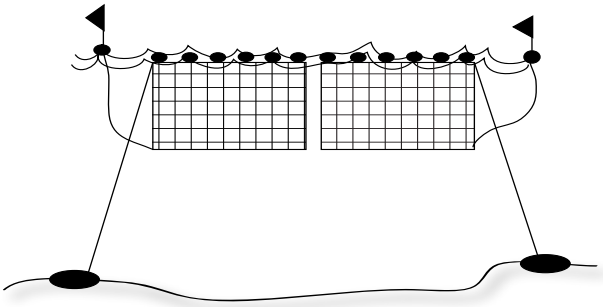


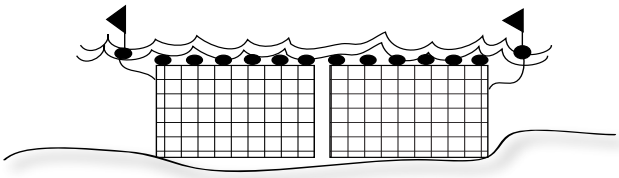
**Note:** The gear displayed above **is** attached to the vessel in this example

**Anchored Gillnet Gear:** Any gillnet gear, including a sink gillnet or stab net, that is set anywhere in the water column and which is anchored, secured, or weighted to the bottom of the sea on at least one end.

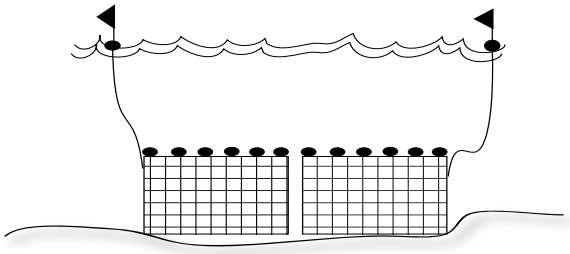






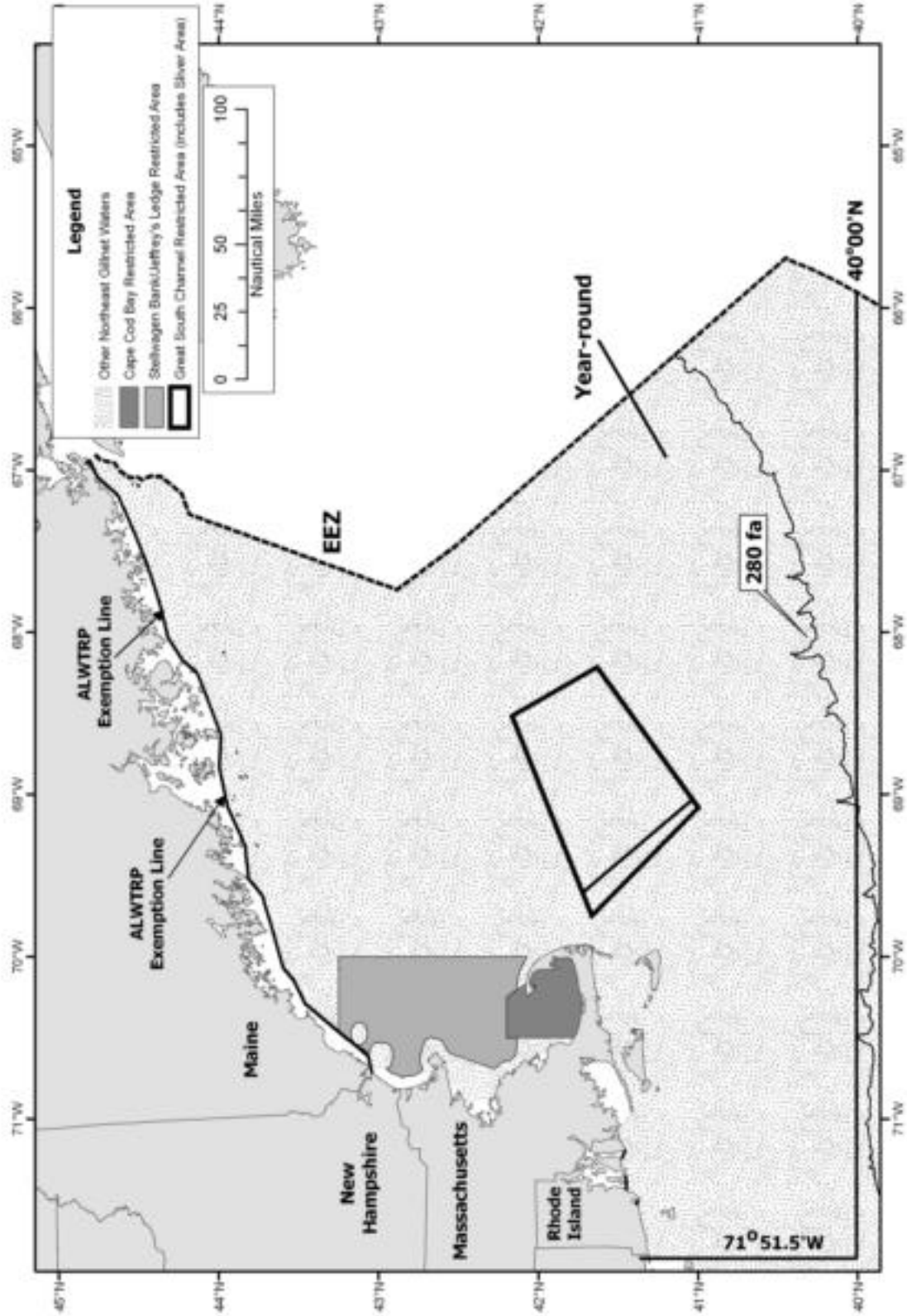


**Note:** Although the net strings shown immediately above and below do not have anchors attached, they are attached to the ocean bottom and by definition are characterized as anchored gillnet gear.



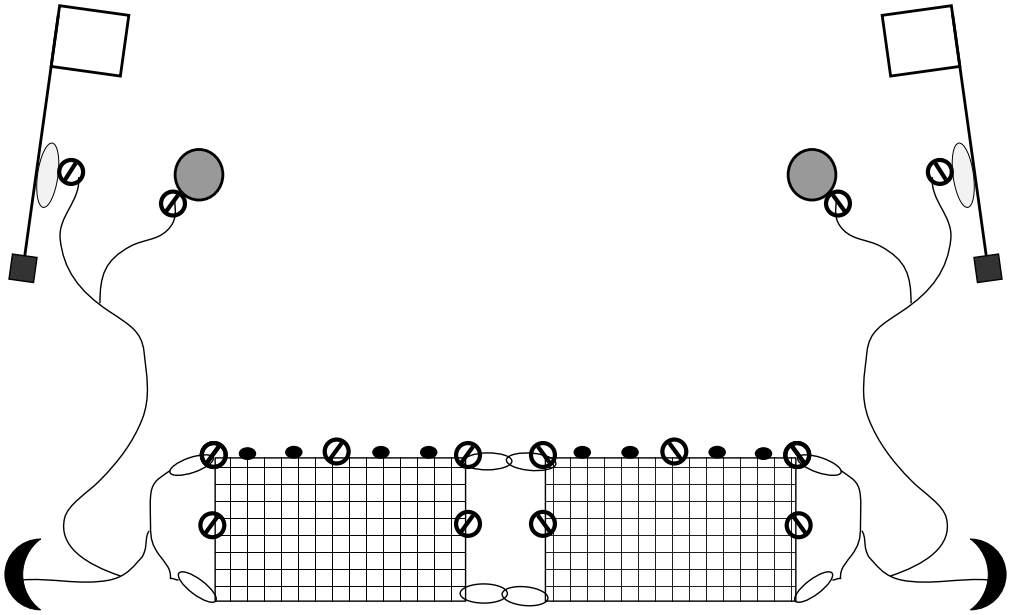
*These graphics depict general gillnet gear configurations, which may vary. Please see individual ALWTRP Management Areas for information regarding specific weak link, anchoring, gear marking and/or any other ALWTRP requirements.*

# Northeast Region: Gillnet Fisheries




Cape Cod Bay Restricted Area, Stellwagen Bank/Jeffreys Ledge Restricted Area, Great South Channel Restricted Gillnet Area, Great South Channel Sliver Restricted Gillnet Area, and Other Northeast Gillnet Waters

# Gillnet Options for Net Panel Weak Links (Northeast Region)



**Configuration 1:**

**For all variations in panel size:**

- One weak link must be placed in the center of each of the up and down lines at both ends of the net panel; and
- One weak link must be placed as close as possible to each end of the net panels on the floatline.

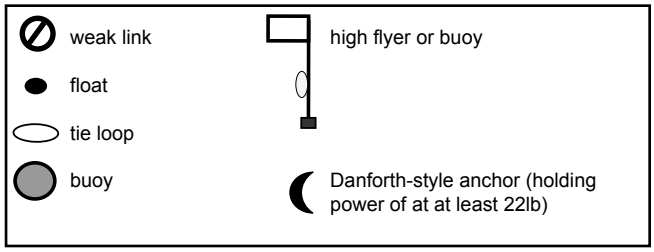
**For net panels 50 fathoms or less in length:**

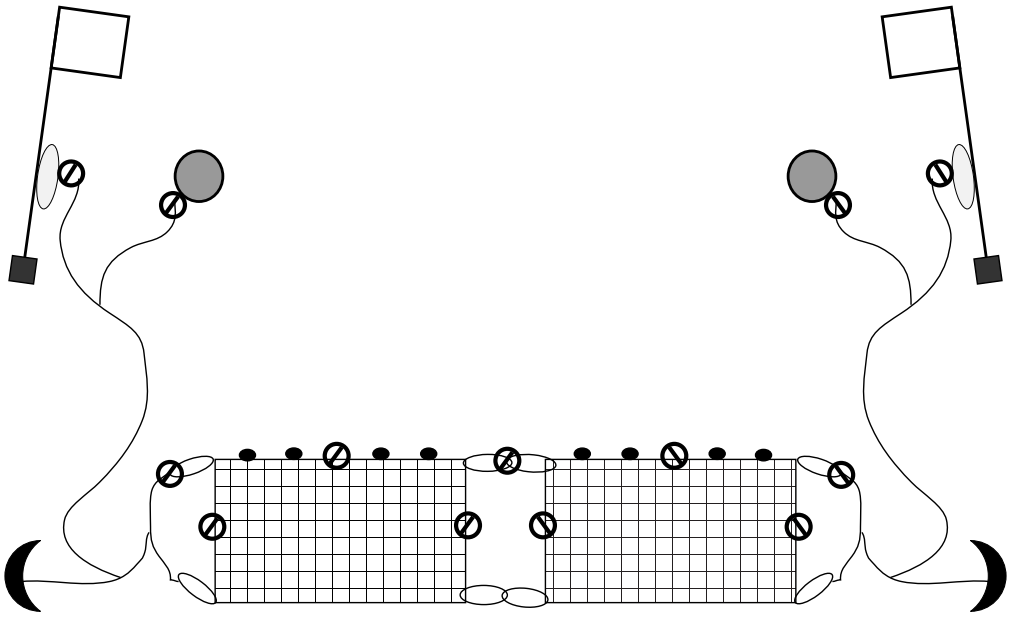
- One weak link must be placed in the center of the floatline.

**For net panels greater than 50 fathoms:**

- One weak link must be placed at least every 25 fathoms along the float line.

****NOTE: Individual weak links are not required in locations where rope of appropriate breaking strength is used. Additionally, if no up and down line is present, then weak links are not required at that location. This graphic depicts a general anchored gillnet gear configuration, which may vary. Also, only the buoy line, groundline, anchor, and weak link configuration are displayed here; please see individual ALWTRP Management Areas for information regarding gear marking and/or any other additional ALWTRP requirements.**



**Configuration 2:**

**For all variations in panel size:**

- One weak link must be placed in the center of each of the up and down lines at both ends of the net panel; and
- One weak link must be placed between floatline tie-loops between net panels; and
- One weak link must be placed where the floatline tie-loops attach to the bridle, buoy line, or groundline at each end of a net string.

**For net panels 50 fathoms or less in length:**

- One weak link must be placed in the center of the floatline.

**For net panels greater than 50 fathoms:**

- One weak link must be placed at least every 25 fathoms along the floatline.

Northeast Region- Gillnet Fisheries

# Cape Cod Bay Restricted Area

The Cape Cod Bay Restricted Area includes the area bounded by: 42°04.8'N / 70°10'W; 42°12'N / 70°15'W; 42°12'N / 70°30'W; 41°46.8'N / 70°30'W; and on the south and east by the interior shoreline of Cape Cod, MA.

## January 1- May 15:

The Cape Cod Bay Restricted Area is **closed** to **all** gillnet fishing.

## May 16 - December 31:

### *For All Gillnet Gear:*

- Gillnet surface buoys to be marked to identify the vessel or fishery with one of the following: the owner's motorboat registration number and/or U.S. vessel documentation number; the federal commercial fishing permit number; or whatever positive identification marking is required by the vessel's home-port state.
  - » When marking is not already required by state or federal regulations, the letters and numbers to mark gear must be at least 1 inch (2.5cm) in height, block letters or Arabic numbers, in a color that contrasts with the color of the buoy.
- Buoy lines to be marked with one 4-inch (10.2 cm), **GREEN**, mark midway along the buoy line.

### *For Anchored Gillnets:*

- Compliance with the **Universal Requirements:**
  - » No buoy line floating at the surface.
  - » No wet storage of gear (all gear must be hauled out of the water at least once every 30 days)
  - » Fishermen are encouraged, but not required, to maintain knot-free buoy lines.
- All buoys, flotation devices and/or weights must be attached to the buoy line with a weak link with a breaking strength of no greater than 1,100 lb*;
- Each net panel must be configured with five or more weak links, depending on panel length, with a breaking strength no greater than 1,100 lb. The weak link placement must meet one of the two configuration options (page 36). The same configuration will be required for all gillnet panels in a string;
- All gillnets, regardless of number of net panels, will be required to be anchored with the holding power of at least a 22-lb Danforth-style anchor at each end of the net string (must be a burying anchor; no dead weights);
- All groundlines must be made of sinking line.

### *For Drift Gillnets:*

- Fishing with driftnet gear at ***night*** (i.e., anytime between one-half hour before sunset and one-half hour after sunrise) is **prohibited** unless that gear is tended (i.e., attached to the vessel);
- All driftnet gear must be removed from the water and stowed on board before a vessel returns to port.

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✶ Weak links must be chosen from the list of NMFS approved gear, which includes: off the shelf weak links, rope of appropriate breaking strength, hog rings, and other materials or devices approved in writing.

✶ Weak links must be designed in such a way that the bitter end of the buoy line is clean and free of any knots when the weak link breaks.

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# Northeast Region: Cape Cod Bay Restricted Area

NOAA Nautical Chart Name: West Quoddy Head to New York
Chart ID: 13006_1

Northeast Region- Gillnet Fisheries

# Stellwagen Bank Jeffrey's Ledge Restricted Area

The Stellwagen Bank/Jeffreys Ledge Restricted Area includes all federal waters of the Gulf of Maine (except those designated as the Cape Cod Bay Restricted Area) that lie south of 43°15'N and west of 70°00'W.

## Year-round:

### *For All Gillnet Gear:*

- Gillnet surface buoys to be marked to identify the vessel or fishery with one of the following: the owner's motorboat registration number and/or U.S. vessel documentation number; the federal commercial fishing permit number; or whatever positive identification marking is required by the vessel's home-port state.
  - » When marking is not already required by state or federal regulations, the letters and numbers to mark gear must be at least 1 inch (2.5cm) in height, block letters or Arabic numbers, in a color that contrasts with the color of the buoy.
- Buoy lines to be marked with one 4-inch (10.2 cm), **GREEN**, mark midway along the buoy line.

### *For Anchored Gillnets:*

- Compliance with the **Universal Requirements:**
  - » No buoy line floating at the surface.
  - » No wet storage of gear (all gear must be hauled out of the water at least once every 30 days)
  - » Fishermen are encouraged, but not required, to maintain knot-free buoy lines.
- All buoys, flotation devices and/or weights must be attached to the buoy line with a weak link with a breaking strength of no greater than 1,100 lb*;
- Each net panel must be configured with five or more weak links, depending on panel length, with a breaking strength no greater than 1,100 lb. The weak link placement must meet one of the two configuration options (page 36). The same configuration will be required for all gillnet panels in a string;
- All gillnets, regardless of number of net panels, will be required to be anchored with the holding power of at least a 22-lb Danforth-style anchor at each end of the net string (must be a burying anchor; no dead weights);
- All groundlines must be made of sinking line.

### *For Drift Gillnets:*

- Fishing with driftnet gear at ***night*** (i.e., anytime between one-half hour before sunset and one-half hour after sunrise) is **prohibited** unless that gear is tended (i.e., attached to the vessel);
- All driftnet gear must be removed from the water and stowed on board before a vessel returns to port.

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✶ Weak links must be chosen from the list of NMFS approved gear, which includes: off the shelf weak links, rope of appropriate breaking strength, hog rings, and other materials or devices approved in writing.

✶ Weak links must be designed in such a way that the bitter end of the buoy line is clean and free of any knots when the weak link breaks.

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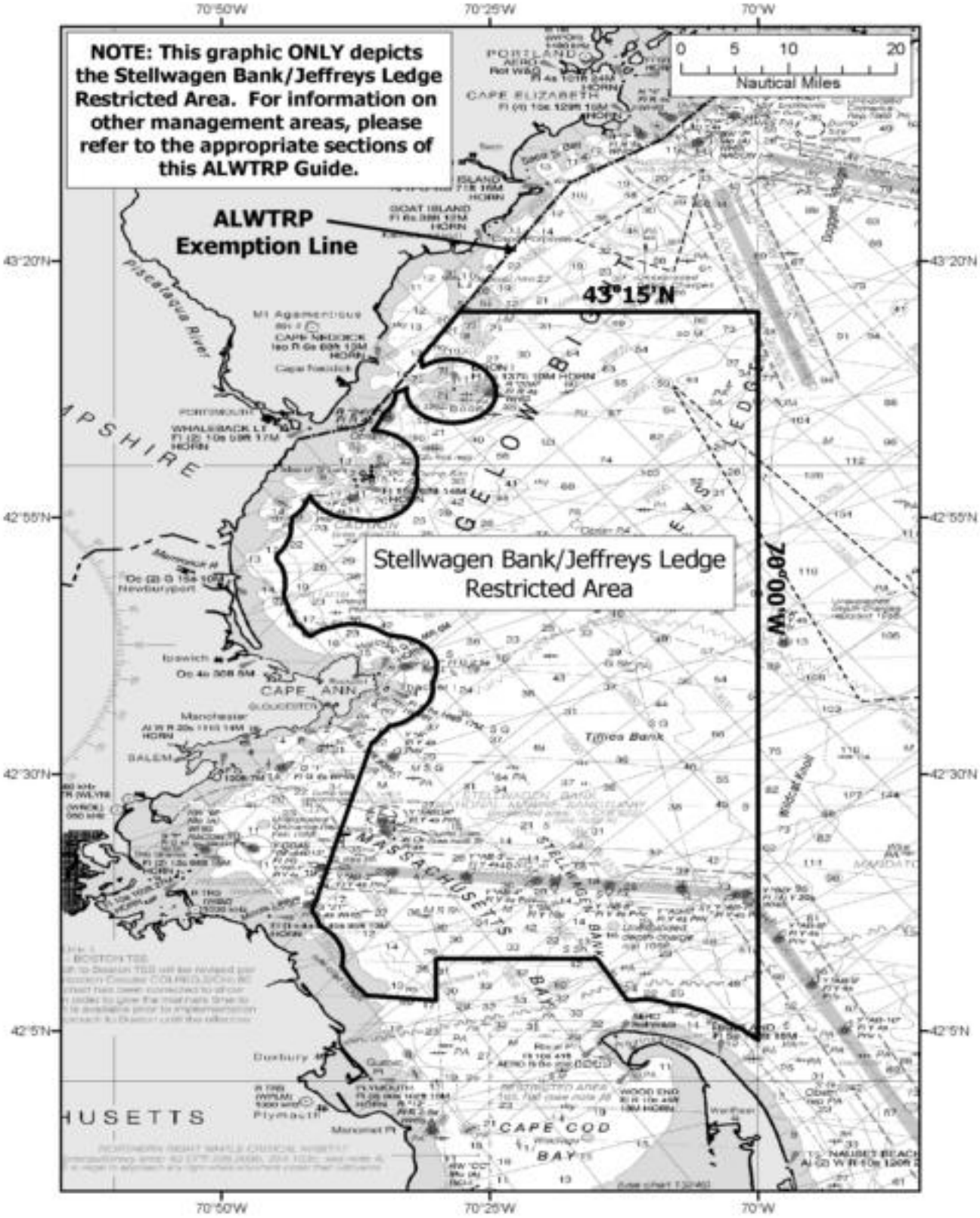
# Northeast Region: Stellwagen Bank/ Jeffreys Ledge Restricted Area




NOAA Nautical Chart Name: West Quoddy Head to New York
Chart ID: 13006_1

Northeast Region- Gillnet Fisheries

# Great South Channel Restricted Gillnet Area (Including the Sliver Area)

The Great South Channel Restricted Gillnet Area includes the area bounded by: 41°40'N/ 69°45'W; 41°00'N/ 69°05'W; 41°38'N/ 68°13'W; and 42°10'N/ 68°31'W. The Great South Channel Sliver Restricted Gillnet Area includes the area bounded by: 41°02.2'N/ 69°02'W; 41°43.5'N/ 69°36.3'W; 41°40'N/ 69°45'W; and 41°00'N/ 69°05'W.

**April 1- June 30:**

The Great South Channel Restricted Gillnet Area is **closed** to **all** gillnet fishing (not including the **Sliver Area**).

**July 1- March 31 (GSC Restricted Gillnet Area) and year-round (GSC Sliver Restricted Gillnet Area)**

***For Anchored Gillnets:***

- Compliance with the **Universal Requirements:**
  - » No buoy line floating at the surface.
  - » No wet storage of gear (all gear must be hauled out of the water at least once every 30 days)
  - » Fishermen are encouraged, but not required, to maintain knot-free buoy lines.
- Compliance with **Gear Marking Requirements:**
  - » Gillnet surface buoys to be marked to identify the vessel or fishery with one of the following: the owner's motorboat registration number and/or U.S. vessel documentation number; the federal commercial fishing permit number; or whatever positive identification marking is required by the vessel's home-port state.
    - When marking is not already required by state or federal regulations, the letters and numbers to mark gear must be at least 1 inch (2.5cm) in height, block letters or Arabic numbers, in a color that contrasts with the color of the buoy.
  - » Buoy lines to be marked with one 4-inch (10.2 cm), **GREEN**, mark midway along the buoy line.
- All buoys, flotation devices and/or weights must be attached to the buoy line with a weak link with a breaking strength of no greater than 1,100 lb*;
- Each net panel must be configured with five or more weak links, depending on panel length, with a breaking strength no greater than 1,100 lb*. The weak link placement must meet one of the two configuration options (page 36). The same configuration will be required for all gillnet panels in a string;
- All gillnets, regardless of number of net panels, will be required to be anchored with the holding power of at least a 22-lb Danforth-style anchor at each end of the net string (must be a burying anchor; no dead weights);
- All groundlines must be made of sinking line.

**July 1- March 31 (GSC Restricted Gillnet Area) and year-round (GSC Sliver Restricted Gillnet Area):**

***For Drift Gillnets:***

- Compliance with **Gear Marking Requirements** (see above).
- Fishing with driftnet gear at ***night*** (i.e., anytime between one-half hour before sunset and one-half hour after sunrise) is **prohibited** unless that gear is tended (i.e., attached to the vessel);
- All driftnet gear must be removed from the water and stowed on board before a vessel returns to port.

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✶ Weak links must be chosen from the list of NMFS approved gear, which includes: off the shelf weak links, rope of appropriate breaking strength, hog rings, and other materials or devices approved in writing.

✶ Weak links must be designed in such a way that the bitter end of the buoy line is clean and free of any knots when the weak link breaks.

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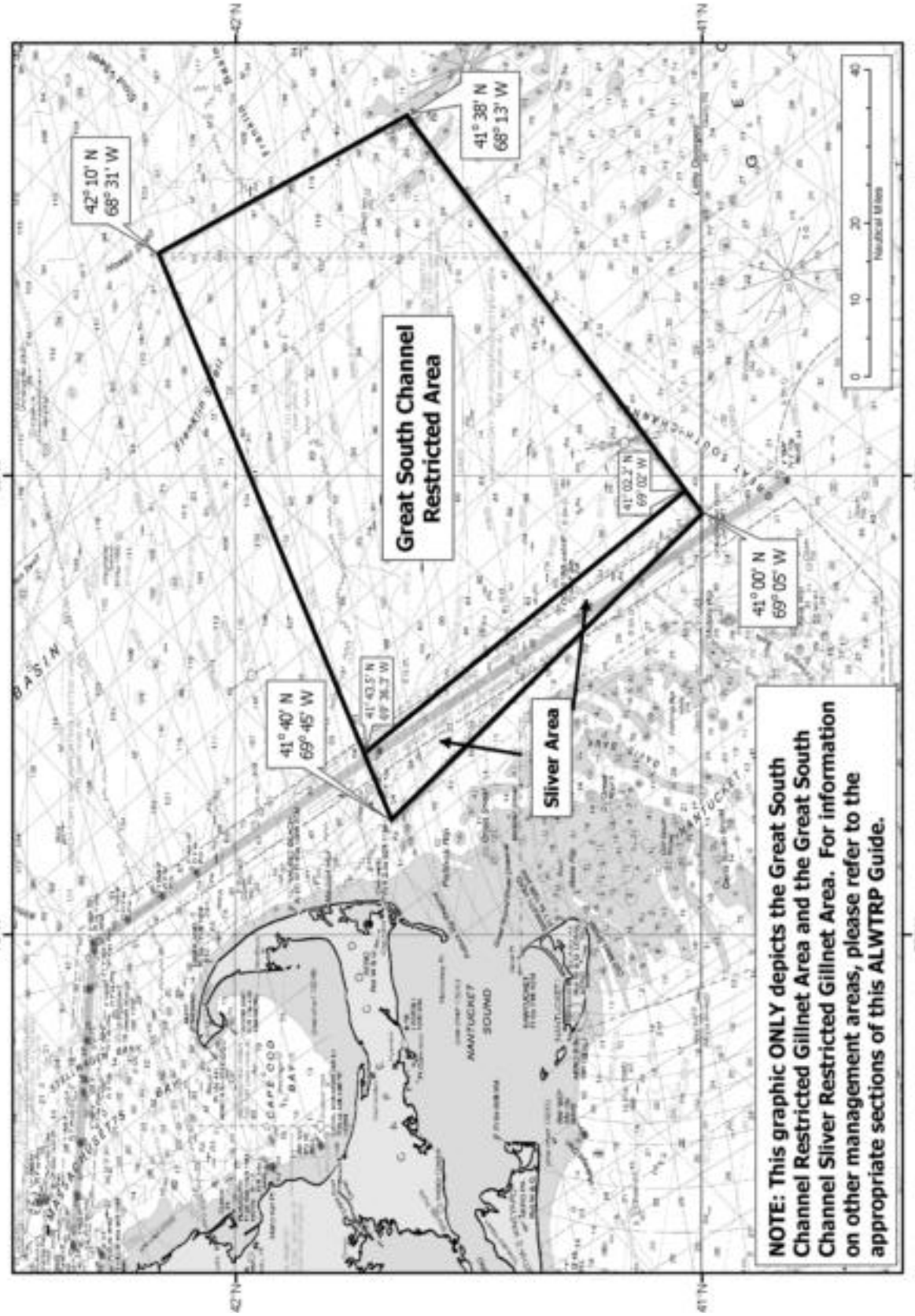
# Northeast Region: Great South Channel Restricted Gillnet Area (including Sliver Area)




NOAA Nautical Chart Name: West Quoddy Head to New York
Chart ID: 13006_1

Northeast Region- Gillnet Fisheries

# Other Northeast Gillnet Waters

Other Northeast Gillnet Waters consists of all U.S. waters from the U.S./Canada border to Long Island, NY, at 72°30' W. long. south to 36°33.03' N. lat., and east to the eastern edge of the EEZ, with the exception of the Cape Cod Bay Restricted Area, Stellwagen Bank/Jeffreys Ledge Restricted Area, Great South Channel Restricted Area and the exempted waters listed on page 61.

## Year-round (see following map for corresponding area):

### *For All Gillnet Gear:*

- Gillnet surface buoys to be marked to identify the vessel or fishery with one of the following: the owner's motorboat registration number and/or U.S. vessel documentation number; the federal commercial fishing permit number; or whatever positive identification marking is required by the vessel's home-port state.
  - » When marking is not already required by state or federal regulations, the letters and numbers to mark gear must be at least 1 inch (2.5cm) in height, block letters or Arabic numbers, in a color that contrasts with the color of the buoy.
- Buoy lines to be marked with one 4-inch (10.2 cm), **GREEN**, mark midway along the buoy line.

### *For Anchored Gillnets:*

- Compliance with the **Universal Requirements:**
  - » No buoy line floating at the surface.
  - » No wet storage of gear (all gear must be hauled out of the water at least once every 30 days).
  - » Fishermen are encouraged, but not required, to maintain knot-free buoy lines.
- All buoys, flotation devices and/or weights must be attached to the buoy line with a weak link with a breaking strength of no greater than 1,100 lb*;
- Each net panel must be configured with five or more weak links, depending on panel length, with a breaking strength no greater than 1,100 lb. The weak link placement must meet one of the two configuration options (page 36). The same configuration will be required for all gillnet panels in a string;
- All gillnets, regardless of number of net panels, will be required to be anchored with the holding power of at least a 22-lb Danforth-style anchor at each end of the net string (must be a burying anchor; no dead weights);
- All groundlines must be made of sinking line.

### *For Drift Gillnets:*

- Fishing with driftnet gear at ***night*** (i.e., anytime between one-half hour before sunset and one-half hour after sunrise) is **prohibited** unless that gear is tended (i.e., attached to the vessel);
- All driftnet gear must be removed from the water and stowed on board before a vessel returns to port.

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✶ Weak links must be chosen from the list of NMFS approved gear, which includes: off the shelf weak links, rope of appropriate breaking strength, hog rings, and other materials or devices approved in writing.

✶ Weak links must be designed in such a way that the bitter end of the buoy line is clean and free of any knots when the weak link breaks.

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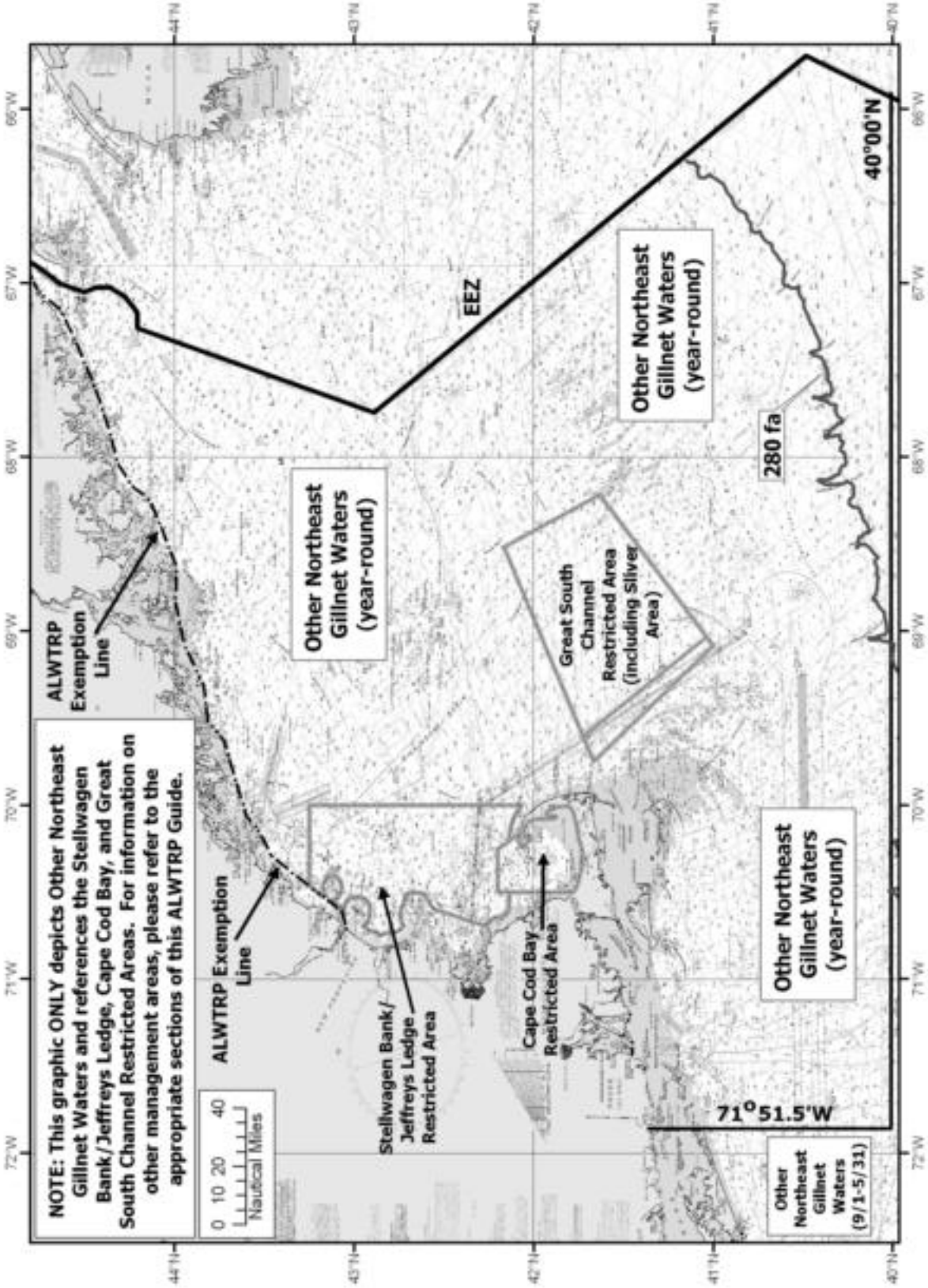
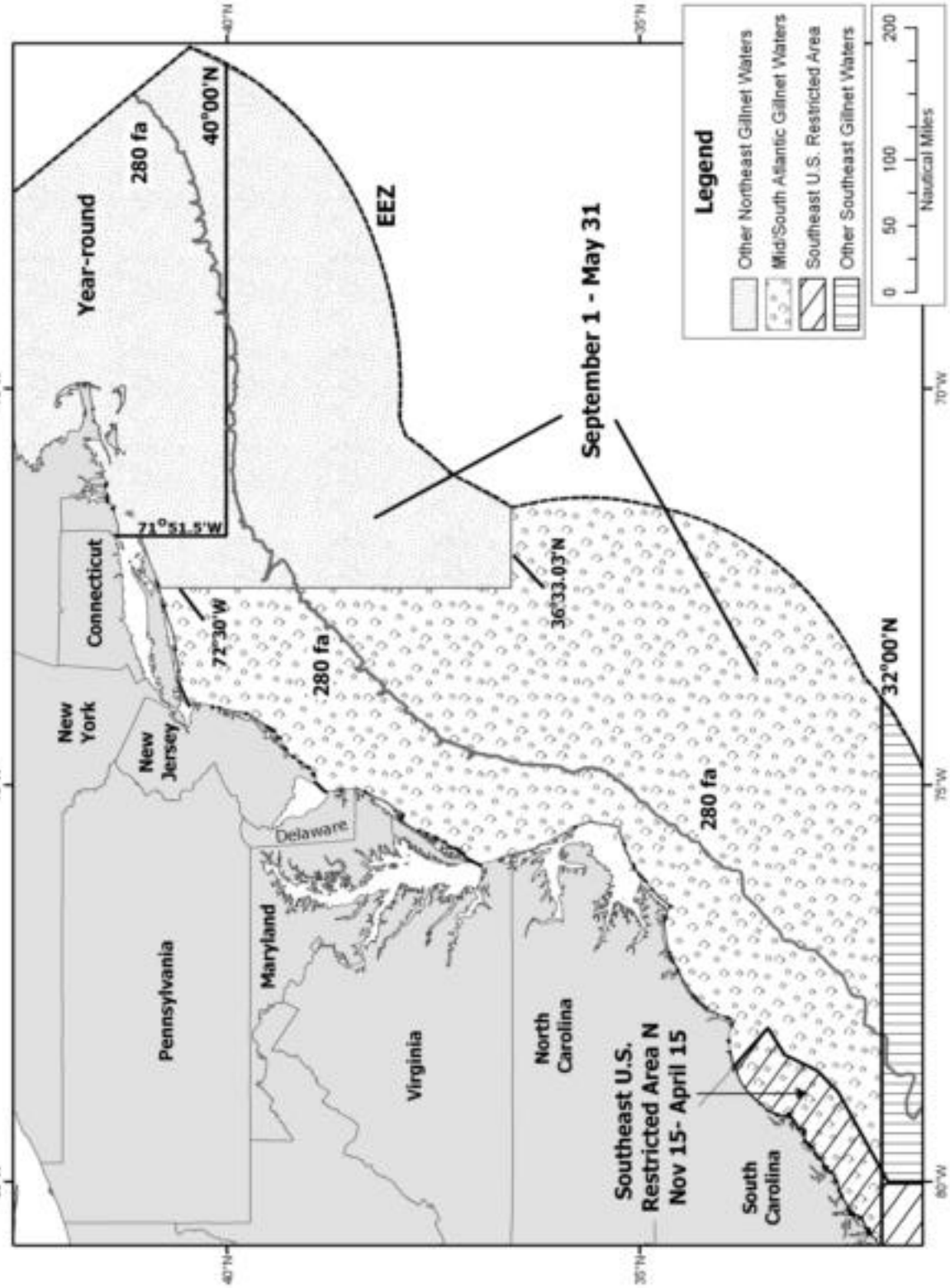
# Northeast Region: Other Northeast Gillnet Waters




NOAA Nautical Chart Name: West Quoddy Head to New York
Chart ID: 13006_1

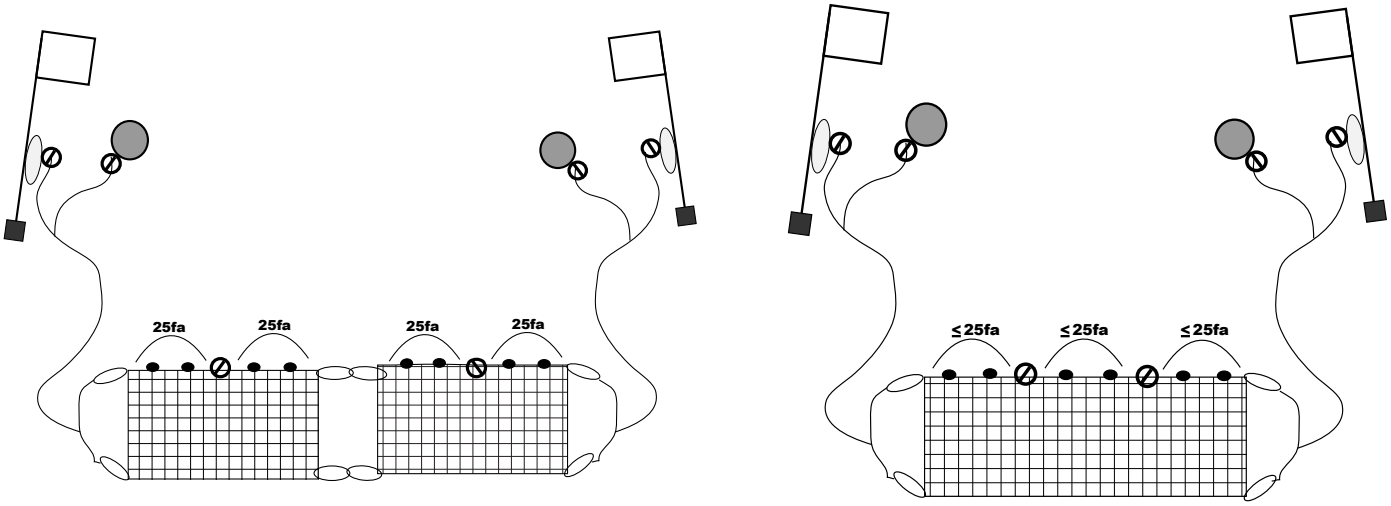
# Mid-Atlantic Region: Gillnet Fisheries



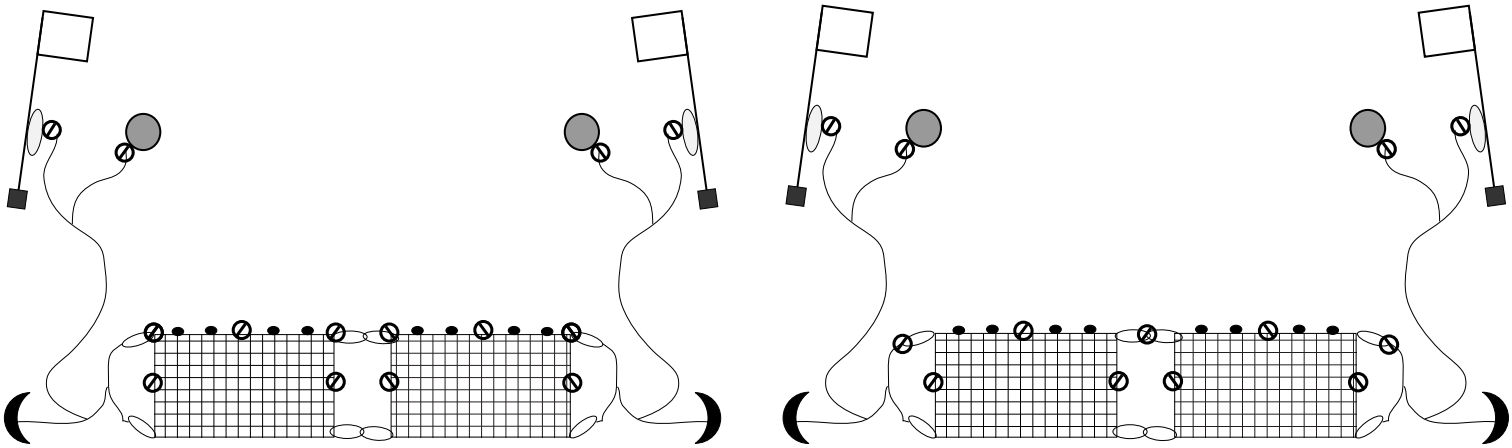

Other Northeast Gillnet Waters, Mid/South Atlantic Gillnet Waters, and Southeast U.S. Restricted Area North (November 15-April 15)

# Gillnet Options for Net Panel Weak Links (Mid/South Atlantic)

## For gillnets that do return to port with the vessel:




## For gillnets that do not return to port with the vessel:



**Configuration 1:**

**For all variations in panel size:**
- One weak link must be placed in the center of each of the up and down lines at both ends of the net panel; and
- One weak link must be placed as close as possible to each end of the net panels on the floatline.

**For net panels 50 fathoms or less in length:**
- One weak link must be placed in the center of the floatline.

**For net panels greater than 50 fathoms:**
- One weak link must be placed at least every 25 fathoms along the float line.

**Configuration 2:**

**For all variations in panel size:**
- One weak link must be placed in the center of each of the up and down lines at both ends of the net panel; and
- One weak link must be placed between floatline tie-loops between net panels; and
- One weak link must be placed where the floatline tie-loops attach to the bridle, buoy line, or groundline at each end of a net string.

**For net panels 50 fathoms or less in length:**
- One weak link must be placed in the center of the floatline.

**For net panels greater than 50 fathoms:**
- One weak link must be placed at least every 25 fathoms along the floatline.

weak link
float
tie loop
buoy
high flyer or buoy
Danforth-style anchor (holding power of at at least 22lb)

****NOTE: Individual weak links are not required in locations where rope of appropriate breaking strength is used. Additionally, if no up and down line is present, then weak links are not required at that location. This graphic depicts a general anchored gillnet gear configuration, which may vary. Also, only the buoy line, groundline, anchor, and weak link configuration are displayed here; please see individual ALWTRP Management Areas for information regarding gear marking and/or any other additional ALWTRP requirements.**

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Mid-Atlantic Region- Gillnet Fisheries

# Other Northeast Gillnet Waters

Other Northeast Gillnet Waters consists of all U.S. waters from the U.S./Canada border to Long Island, NY, at 72°30' W. long. south to 36°33.03' N. lat., and east to the eastern edge of the EEZ, with the exception of the Cape Cod Bay Restricted Area, Stellwagen Bank/Jeffreys Ledge Restricted Area, Great South Channel Restricted Area and the exempted waters listed on page 61.

## September 1- May 31 (see following map for seasonal boundaries):

### *For All Gillnet Gear:*

- Gillnet surface buoys to be marked to identify the vessel or fishery with one of the following: the owner's motorboat registration number and/or U.S. vessel documentation number; the federal commercial fishing permit number; or whatever positive identification marking is required by the vessel's home-port state.
  - » When marking is not already required by state or federal regulations, the letters and numbers to mark gear must be at least 1 inch (2.5cm) in height, block letters or Arabic numbers, in a color that contrasts with the color of the buoy.
- Buoy lines to be marked with one 4-inch (10.2 cm), **GREEN**, mark midway along the buoy line.

### *For Anchored Gillnets:*

- Compliance with the **Universal Requirements:**
  - » No buoy line floating at the surface.
  - » No wet storage of gear (all gear must be hauled out of the water at least once every 30 days).
  - » Fishermen are encouraged, but not required, to maintain knot-free buoy lines.
- All buoys, flotation devices and/or weights must be attached to the buoy line with a weak link with a breaking strength of no greater than 1,100 lb*;
- Each net panel must be configured with five or more weak links, depending on panel length, with a breaking strength no greater than 1,100 lb. The weak link placement must meet one of the two configuration options (page 46). The same configuration will be required for all gillnet panels in a string;
- All gillnets, regardless of number of net panels, will be required to be anchored with the holding power of at least a 22-lb Danforth-style anchor at each end of the net string (must be a burying anchor; no dead weights);
- All groundlines must be made of sinking line.

### *For Drift Gillnets:*

- Fishing with driftnet gear at ***night*** (i.e., anytime between one-half hour before sunset and one-half hour after sunrise) is **prohibited** unless that gear is tended (i.e., attached to the vessel);
- All driftnet gear must be removed from the water and stowed on board before a vessel returns to port.

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✶ Weak links must be chosen from the list of NMFS approved gear, which includes: off the shelf weak links, rope of appropriate breaking strength, hog rings, and other materials or devices approved in writing.

✶ Weak links must be designed in such a way that the bitter end of the buoy line is clean and free of any knots when the weak link breaks.

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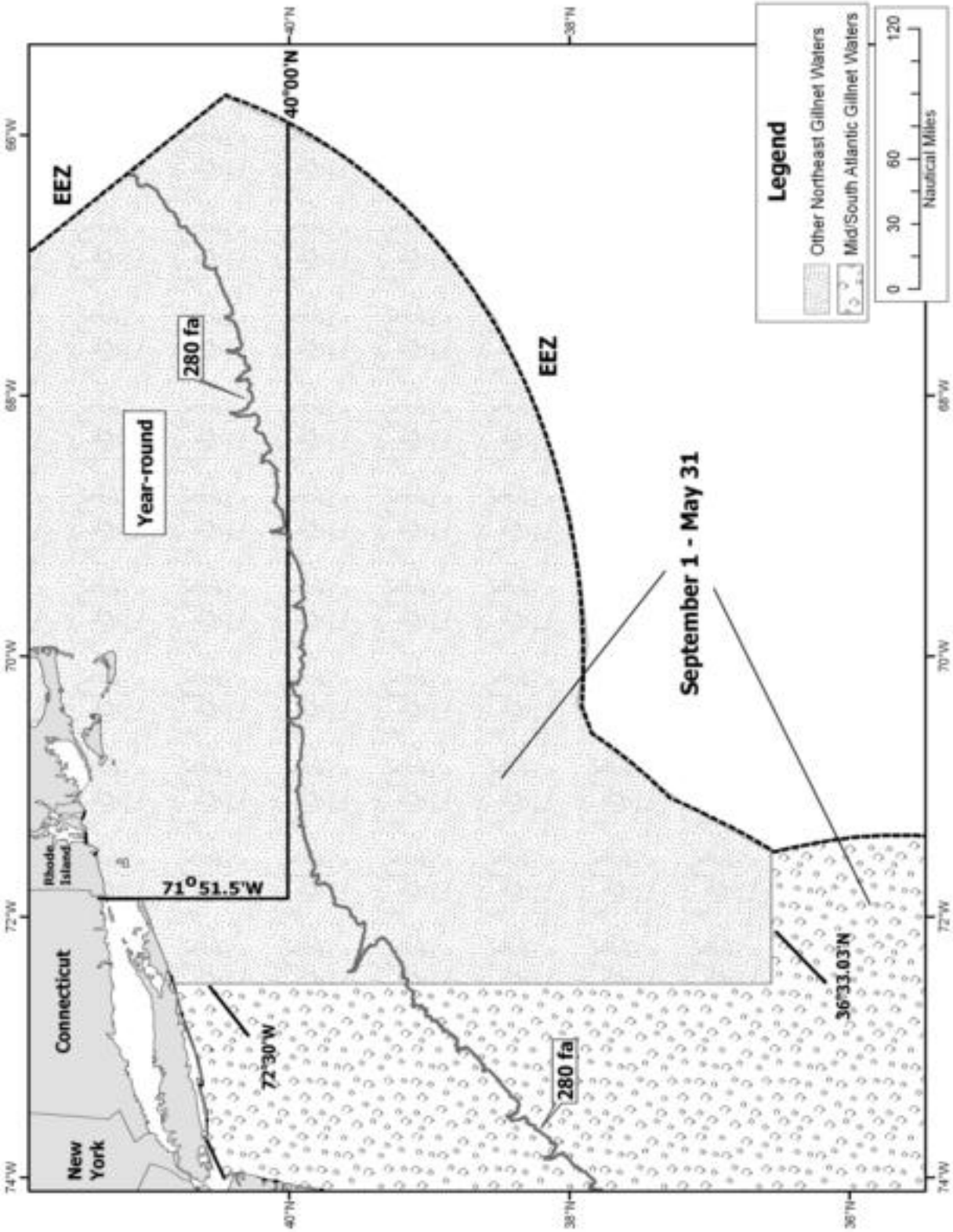
# Mid-Atlantic Region: Other Northeast Gillnet Waters*




* Nautical charts could not be effectively applied to the expansive mid-Atlantic region shown here. Thus, nautical charts are not displayed for this region.

Mid-Atlantic Region- Gillnet Fisheries

# Mid/South Atlantic Gillnet Waters

Mid/South Atlantic Gillnet Waters consists of all U.S. waters bounded on the north from 72°30' W. long. south to 36°33.03' N. lat., and east to the eastern edge of the EEZ, and bounded on the south by 32°00' N. lat, and east to the eastern edge of the EEZ. From ***November 15-April 15***, waters within ***35nm of the SC shoreline*** are part of the Southeast U.S. Restricted Area North (Little River Inlet, SC, is not included in this area). **Please refer to page 53 for more details on the Southeast U.S. Restricted Area North.**

## September 1- May 31 (see following map for seasonal boundaries):

### *For All Gillnet Gear:*

- Gillnet surface buoys to be marked to identify the vessel or fishery with one of the following: the owner's motorboat registration number and/or U.S. vessel documentation number; the federal commercial fishing permit number; or whatever positive identification marking is required by the vessel's home-port state.
  - » When marking is not already required by state or federal regulations, the letters and numbers to mark gear must be at least 1 inch (2.5cm) in height, block letters or Arabic numbers, in a color that contrasts with the color of the buoy.
- Buoy lines to be marked with one 4-inch (10.2 cm), **BLUE**, mark midway along the buoy line.

### *For Anchored Gillnets:*

- Compliance with the **Universal Requirements:**
  - » No buoy line floating at the surface.
  - » No wet storage of gear (all gear must be hauled out of the water at least once every 30 days).
  - » Fishermen are encouraged, but not required, to maintain knot-free buoy lines.
- All buoys, flotation devices and/or weights must be attached to the buoy line with a weak link having a breaking strength no greater than 1,100 lbs;
- All gillnet panels are required to have weak links with the breaking strength of no greater than 1,100 lbs in the center of the floatline of each net panel up to and including 50 fathoms (100yds; 300ft), or at least every 25 fathoms (50yds; 150ft) for longer panels (page 46).
- Gillnets that do not return to port with the vessel must be configured with five or more weak links per net panel, depending on panel length, with a breaking strength no greater than 1,100 lb, and be anchored with the holding power of at least a 22-lb Danforth-style anchor at each end of the net string (must be a burying anchor; no dead weights). The weak link placement must meet one of two configuration options (page 46). The same configuration will be required for all gillnet net panels in a string☆☆;
- All groundlines must be made of sinking line.

### *For Drift Gillnets:*

- Fishing with driftnet gear at ***night*** (i.e., anytime between one-half hour before sunset and one-half hour after sunrise) is **prohibited** unless that gear is tended (i.e., attached to the vessel);
- All driftnet gear must be removed from the water and stowed on board before a vessel returns to port.

**Note:**

☆☆ In addition to the requirements described above, gillnets ***set within 300 yards (900ft) of the shoreline in NC***, that do not return to port with the vessel, will also have an optional gillnet configuration: net panels configured with 5 or more weak links per net panel, depending on panel length, with a breaking strength no greater than 600 lb, and be anchored with the holding power of at least an 8-lb Danforth-style anchor on the offshore end of the string and a 31-lb dead weight on the inshore end of the string. The entire string must be set within 300 yards (900ft) of the shoreline. See page 46 for configuration options for net panel weak links. The same configuration will be required for all gillnet net panels in a string.

✶ Weak links must be chosen from the list of NMFS approved gear, which includes: off the shelf weak links, rope of appropriate breaking strength, hog rings, and other materials or devices approved in writing.

✶ Weak links must be designed in such a way that the bitter end of the buoy line is clean and free of any knots when the weak link breaks.

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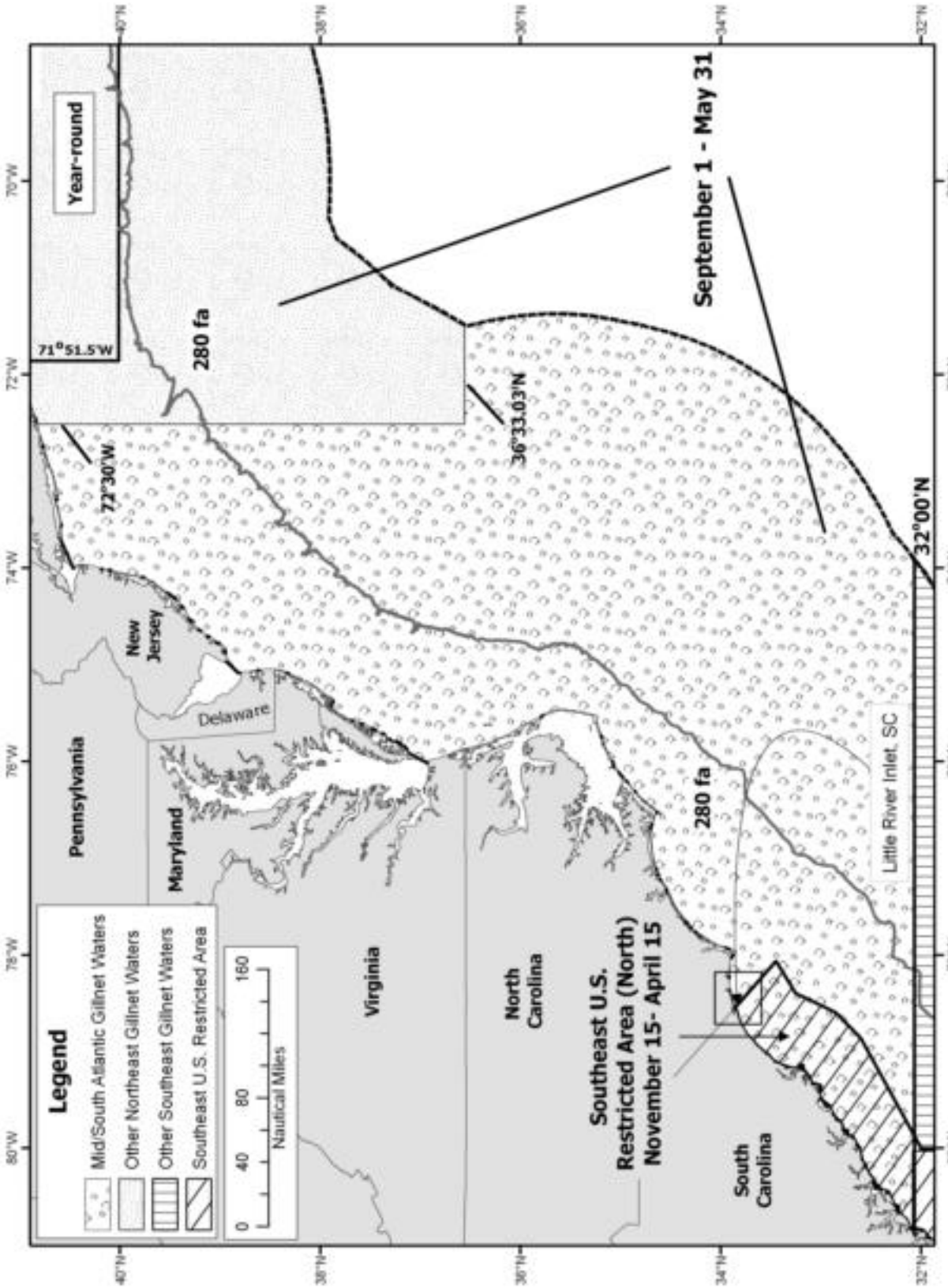
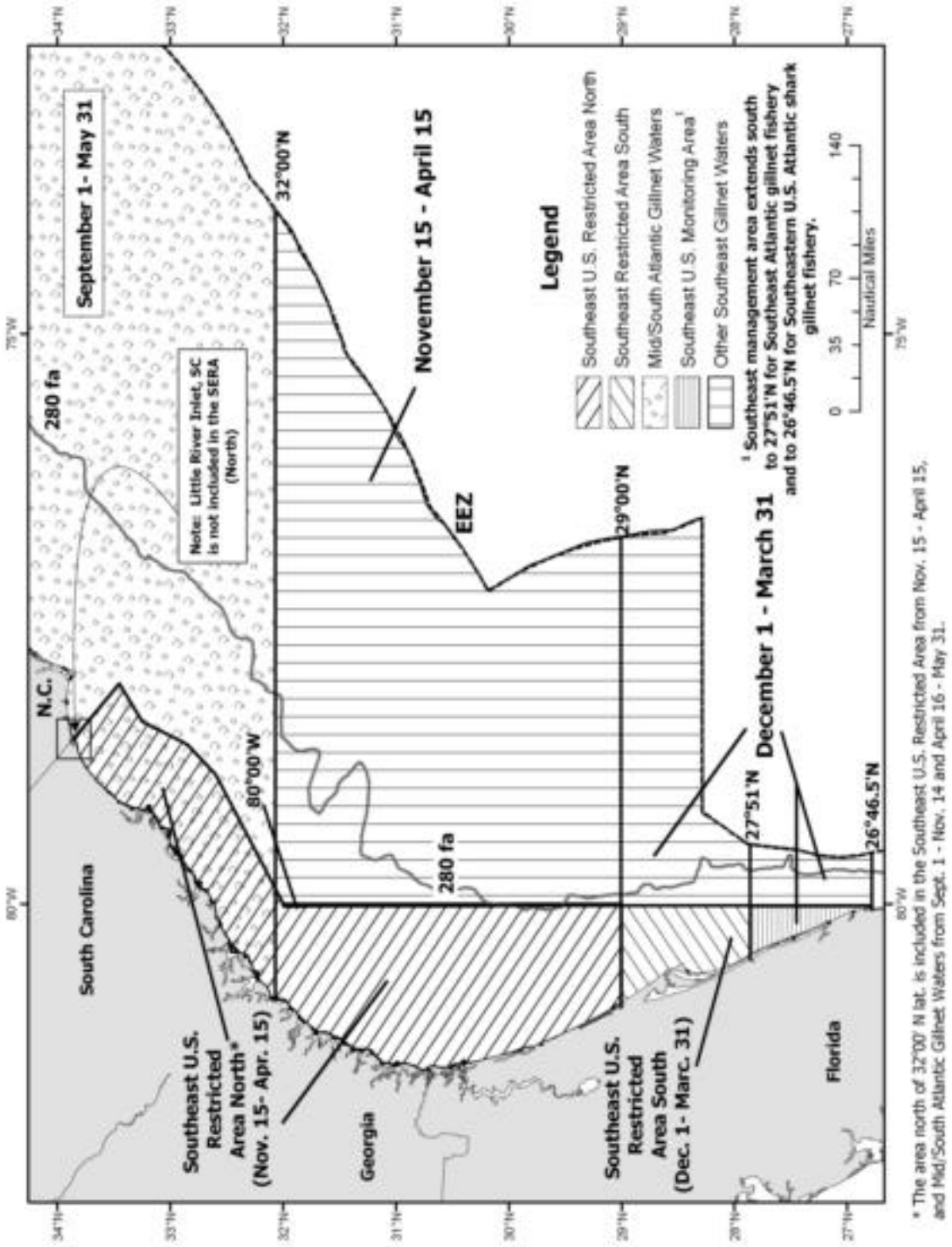
# Mid-Atlantic Region: Mid/South Atlantic Gillnet Waters*




* Nautical charts could not be effectively applied to the expansive mid-Atlantic region shown here. Thus, nautical charts are not displayed for this region.

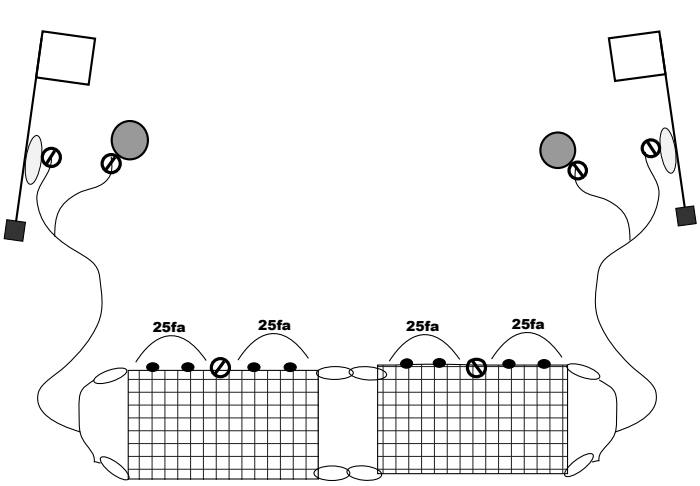
# Southeast Region: Gillnet Fisheries

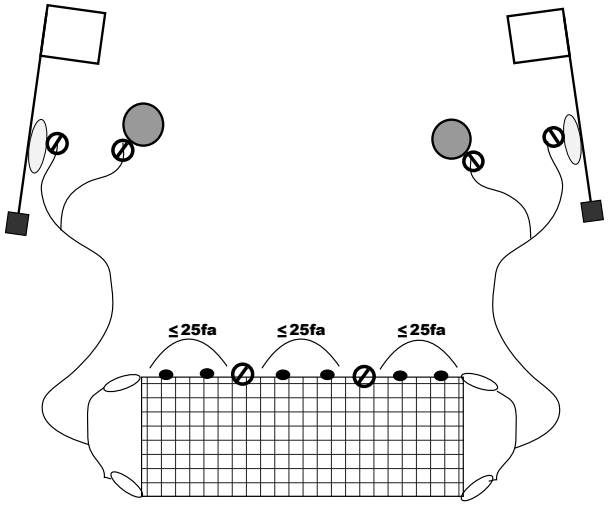



Southeast U.S. Restricted Area (North and South), Other Southeast Gillnet Waters, and Southeast U.S. Monitoring Area

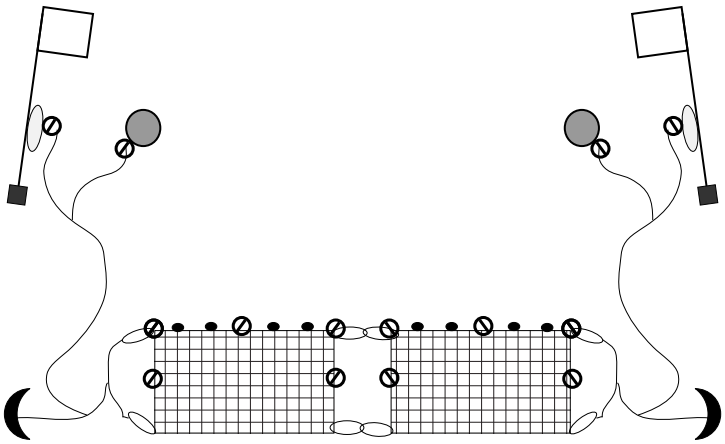
# Gillnet Options for Net Panel Weak Links (Mid/South Atlantic)

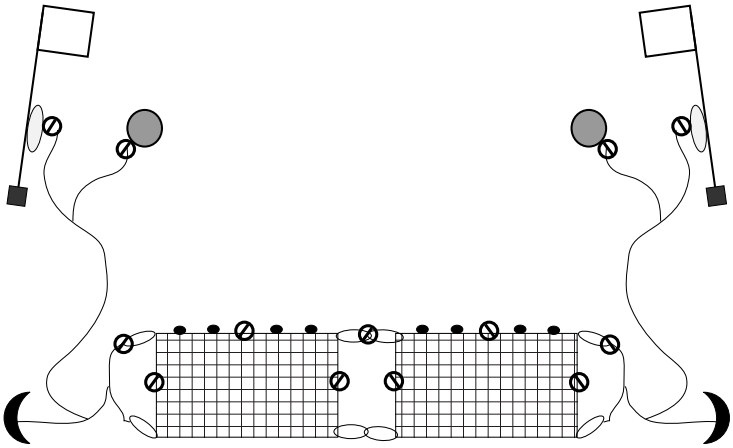
## For gillnets that do return to port with the vessel:




## For gillnets that do not return to port with the vessel:





**Configuration 1:**

**For all variations in panel size:**
- One weak link must be placed in the center of each of the up and down lines at both ends of the net panel; and
- One weak link must be placed as close as possible to each end of the net panels on the floatline.

**For net panels 50 fathoms or less in length:**
- One weak link must be placed in the center of the floatline.

**For net panels greater than 50 fathoms:**
- One weak link must be placed at least every 25 fathoms along the float line.

**Configuration 2:**

**For all variations in panel size:**
- One weak link must be placed in the center of each of the up and down lines at both ends of the net panel; and
- One weak link must be placed between floatline tie-loops between net panels; and
- One weak link must be placed where the floatline tie-loops attach to the bridle, buoy line, or groundline at each end of a net string.

**For net panels 50 fathoms or less in length:**
- One weak link must be placed in the center of the floatline.

**For net panels greater than 50 fathoms:**
- One weak link must be placed at least every 25 fathoms along the floatline.

weak link
float
tie loop
buoy
high flyer or buoy
Danforth-style anchor (holding power of at at least 22lb)

****NOTE: Individual weak links are not required in locations where rope of appropriate breaking strength is used. Additionally, if no up and down line is present, then weak links are not required at that location. This graphic depicts a general anchored gillnet gear configuration, which may vary. Also, only the buoy line, groundline, anchor, and weak link configuration are displayed here; please see individual ALWTRP Management Areas for information regarding gear marking and/or any other additional ALWTRP requirements.**

This document is intended as a guide to measures required under the Atlantic Large Whale Take Reduction Plan. This document is not the legal document detailing the regulations. Interested and affected parties can find the regulations at 50CFR229.32 or at the whale plan website www.nero.noaa.gov/whaletrp/

Southeast Region- Gillnet Fisheries

# Southeast U.S. Restricted Area North

The Southeast U.S. Restricted Area North includes waters north of 29°00' N. (near Ponce de Leon Inlet, FL) to 32°00' N. (near the GA/SC border) from the shoreline eastward to 80°00' W, and off South Carolina, within 35 nautical miles of the shoreline. Little River Inlet, SC, is not located in the Southeast U.S. Restricted Area North.

**November 15 - April 15 (see following map for seasonal boundaries):**

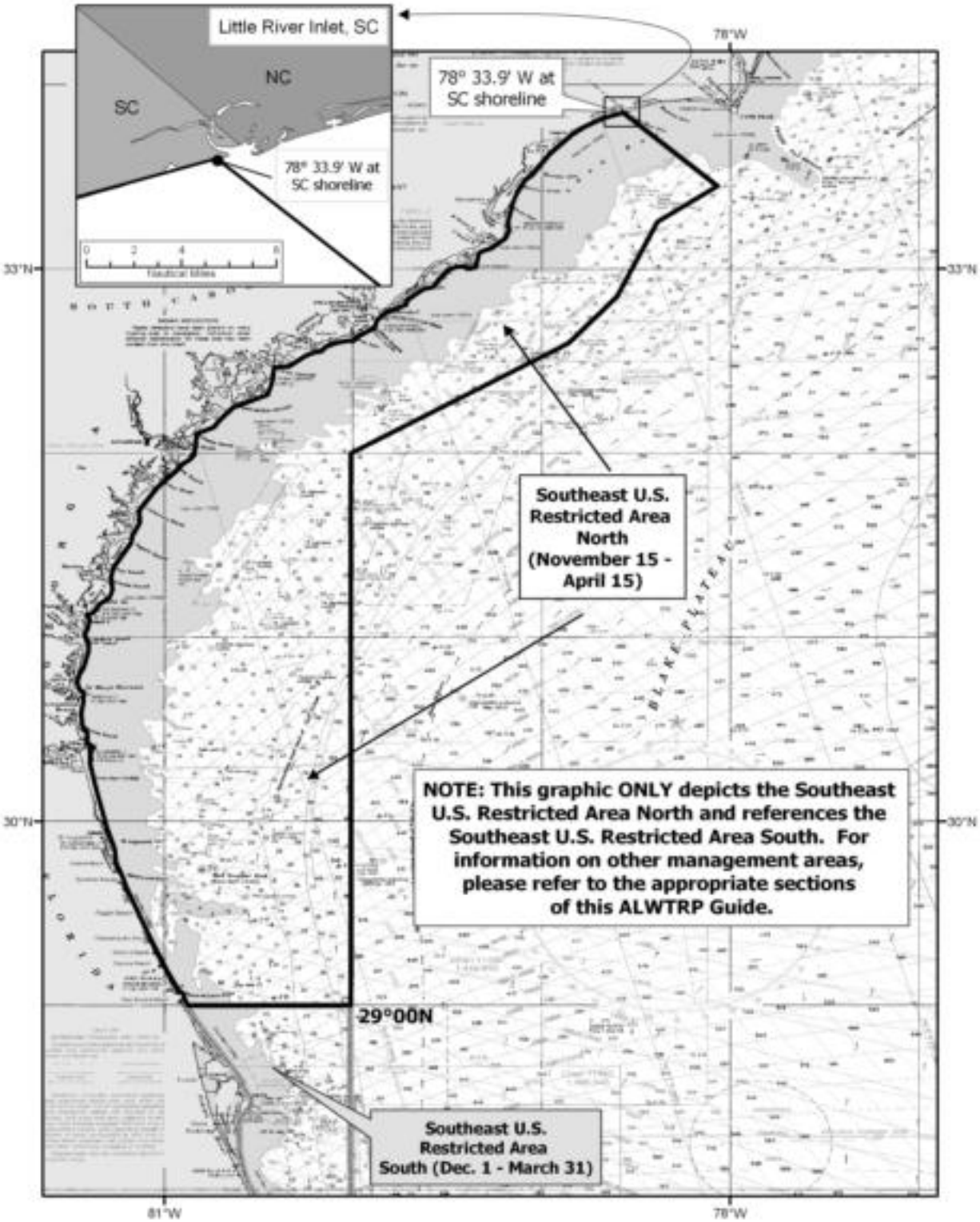
***For All Gillnet Gear:***

- Fishing with or possessing gillnets during the restricted period is **prohibited**.
- Exemption for vessels in transit with gillnets aboard* if:
  - » All nets are covered with canvas or other similar material and lashed or otherwise securely fastened to the deck, rail, or drum; and
  - » All buoys, high flyers, and anchors are disconnected from all gillnets.

*No fish may be possessed aboard such a vessel in transit.

**NOTE**: The area off South Carolina is also included in the "Mid/South Atlantic Gillnet Waters" management area from September 1-November 14 and from April 16-May 31. **Please refer to the "Mid/South Atlantic Gillnet Waters" section for these requirements (page 49).**

# Southeast Region: Southeast U.S. Restricted Area North




NOAA Nautical Chart Name: Cape Hatteras to Straits of Florida
Chart ID: REG 6

Southeast Region- Gillnet Fisheries

# Southeast U.S. Restricted Area South

The Southeast U.S. Restricted Area South includes waters north of 27°51' N. (near Sebastian Inlet, FL) to 29°00' N. (near Ponce de Leon Inlet, FL) from the shoreline eastward to 80°00' W.

## December 1- March 31 (see following map for seasonal boundaries):

***For All Gillnet Gear:***

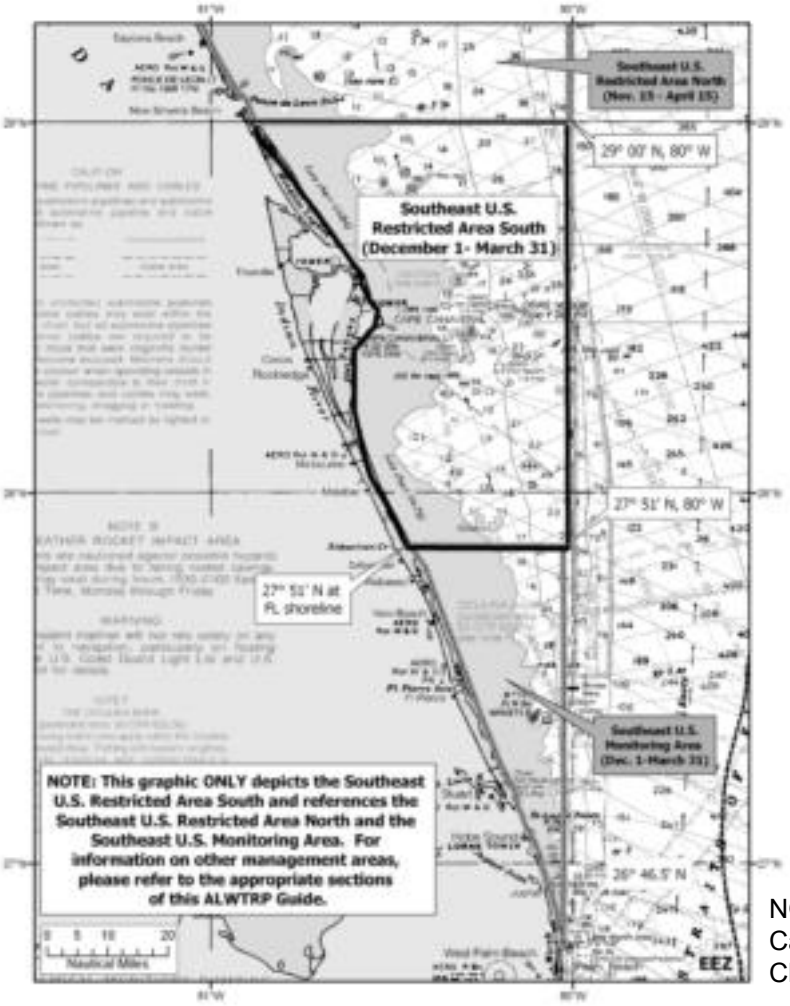
- Fishing with or possessing gillnets during the restricted period is **prohibited**.
  - » ***Exemption for Southeast Atlantic gillnet fishery***
    Fishing with gillnet for Spanish mackerel is exempt from the restrictions from December 1 - December 31, and from March 1 - March 31 if:
    - Gillnet mesh is between 3.5" and 4 7/8" stretched mesh;
    - A valid commercial vessel permit for Spanish mackerel has been issued to the vessel in accordance with 50 CFR 622.4(a)(2)(iv) and is on board;
    - No person may fish with, set, place in the water, or have on board a gillnet with a float line longer than 800 yards;
    - No person may fish with, set, or place in the water more than one gillnet at any time;
    - No more than two gillnets, including any net in use, may be possessed at any one time; provided, however, that if two gillnets, including any net in use, are possessed at any onetime, they must have stretched mesh sizes that differ by at least 1/4";
    - No person may soak a gillnet for more than 1 hour. The soak period begins when the first mesh is placed in the water and ends either when the first mesh is retrieved back on board the vessel or the gathering of the gillnet is begun to facilitate retrieval on board the vessel, whichever occurs first; providing that, once the first mesh is retrieved or the gathering is begun, the retrieval is continuous until the gillnet is completely removed from the water;
    - No net is set at **night** or when visibility is less than 500 yards;
    - The gillnet is removed from the water before night or immediately if visibility decreases below 500 yards;
    - No gillnet is set within 3 nautical miles of a right, humpback, or fin whale; and
    - The gillnet is removed immediately from the water if a right, humpback, or fin whale moves within 3nm of the set gear.
    - The gillnet (regardless of how fished) complies with the "anchored gillnet" requirements, including the universal requirements, as specified for the Mid/South Atlantic Gillnet Waters on page 49 of this guide.
  - » ***Exemption for Southeastern U.S. Atlantic shark gillnet fishery***
    Fishing with gillnet for sharks is exempt from the restrictions from December 1- March 31 if:
    - Gillnet mesh is 5" or greater stretched mesh;
    - The gillnet is deployed so that it encloses an area of water;
    - A valid commercial directed shark limited access permit has been issued to the vessel, in accordance with 50 CFR 635.4(e), and is on board;
    - No net is set at **night** or when visibility is less than 500 yards;
    - The gillnet is removed from the water before night or immediately if visibility decreases below 500 yards;
    - Each set is made under the observation of a spotter plane;
    - No gillnet is set within 3 nautical miles of a right, humpback, or fin whale; and
    - The gillnet is removed immediately from the water if a right, humpback, or fin whale moves within 3nm of the set gear.
    - No person may fish with shark gillnet gear unless the operator of the vessel calls the Southeast Fisheries Science Center Panama City Laboratory in Panama City, FL (phone: 850/234-6451, fax: 850/235-3559), not less than 48 hours prior to departing on any fishing trip in order to arrange for observer coverage.
      - → If the Panama City Laboratory requests that an observer be taken on board a vessel, no person may fish with such gillnet aboard the vessel unless an observer is on board that vessel during the trip.

**Night** is defined as anytime between one-half hour before sunset and one-half hour after sunrise.

### Gear Marking Requirements for All Gillnet Gear

- Gillnet surface buoys to be marked to identify the vessel or fishery with one of the following: the owner's motor-boat registration number and/or U.S. vessel documentation number; the federal commercial fishing permit number; or whatever positive identification marking is required by the vessel's home-port state.
  - » When marking is not already required by state or federal regulations, the letters and numbers to mark gear must be at least 1 inch (2.5cm) in height, block letters or Arabic numbers, in a color that contrasts with the color of the buoy.
- Buoy lines for **non-shark gillnet gear** to be marked with one 4-inch (10.2 cm), **YELLOW**, mark midway along the buoy line.
- **Shark gillnet gear** with webbing of 5" or greater stretched mesh must be marked with two, 4-inch color codes, one designating gear type **(GREEN)** and the other where the gear is set **(BLUE).**
  - » Each color of the two-color codes must be permanently marked on or along the line and must be clearly visible when the gear is hauled or removed from the water.
  - » The two color marks must be placed within 6" of each other.
  - » If the color of the rope is the same as or similar to a color code, a white mark may be substituted for that color code.
  - » All buoy lines greater than 4 feet long must be marked within 2 feet of the top of the buoy line (closest to the surface) and midway along the length of the buoy line.
  - » Each gillnet net panel must be marked along both the floatline and the leadline at least once every 100 yards, unless otherwise required.

# Southeast Region: Southeast U.S. Restricted Area South




NOAA Nautical Chart Name: Cape Hatteras to Straits of Florida
Chart ID: REG 6

Southeast Region- Gillnet Fisheries

# Other Southeast Gillnet Waters

Other Southeast Gillnet Waters consists of the area from 32°00' N. (near Savannah, GA) south to 27°51' N. lat for the Southeast Atlantic gillnet fishery, and from 32°00' N. (near Savannah, GA) south to 26°46.50' N. lat for the Southeastern U.S. Atlantic shark gillnet fishery, and extending from 80°00' W. long. east to the eastern edge of the EEZ, for both the Southeast Atlantic gillnet fishery and the Southeastern U.S. Atlantic shark gillnet fisheries.

**November 15- April 15 (*North* of 29°00' N. lat.) and December 1- March 31 (*South* of 29°00' N. lat) (see following map for seasonal boundaries):**

***For All Gillnet Fisheries (non-shark and shark gillnet fisheries):***

- Gillnet surface buoys to be marked to identify the vessel or fishery with one of the following: the owner's motorboat registration number and/or U.S. vessel documentation number; the federal commercial fishing permit number; or whatever positive identification marking is required by the vessel's home-port state.
  - » When marking is not already required by state or federal regulations, the letters and numbers to mark gear must be at least 1 inch (2.5cm) in height, block letters or Arabic numbers, in a color that contrasts with the color of the buoy.
- Buoy lines for **non-shark gillnet gear** to be marked with one 4-inch (10.2 cm), **YELLOW**, mark midway along the buoy line.
- **Shark gillnet gear** with webbing of 5" or greater stretched mesh must be marked with two, 4-inch color codes, one designating gear type **(GREEN)** and the other where the gear is set **(BLUE).**
  - » Each color of the two-color codes must be permanently marked on or along the line and must be clearly visible when the gear is hauled or removed from the water.
  - » The two color marks must be placed within 6" of each other.
  - » If the color of the rope is the same as or similar to a color code, a white mark may be substituted for that color code.
  - » All buoy lines greater than 4 feet long must be marked within 2 feet of the top of the buoy line (closest to the surface) and midway along the length of the buoy line.
  - » Each gillnet net panel must be marked along both the floatline and the leadline at least once every 100 yards, unless otherwise required.

***For the Southeast Atlantic gillnet fishery (non-shark gillnetting):***

- Compliance with the **Universal Requirements:**
  - » No buoy line floating at the surface.
  - » No wet storage of gear (all gear must be hauled out of the water at least once every 30 days).
  - » Fishermen are encouraged, but not required, to maintain knot-free buoy lines.
- All buoys, flotation devices and/or weights must be attached to the buoy line with a weak link having a breaking strength no greater than 1,100 lb;
- All gillnet panels to have weak links with the breaking strength of no greater than 1,100 lb in the center of the floatline of each net panel up to and including 50 fathoms (100yds; 300ft), or at least every 25 fathoms (50yds; 150ft) for longer panels;
- Gillnets that do not return to port with the vessel must be configured with 5 or more weak links per net panel, depending on panel length, with a breaking strength no greater than 1,100 lb, and be anchored with the holding power of at least a 22-lb Danforth-style anchor at each end of the net string (must be a burying anchor; no dead weights). The weak link placement must meet one of two configuration options (page 52). The same configuration will be required for all gillnet net panels in a string;
- All groundlines must be made of sinking line.

***For the Southeastern U.S. Atlantic shark gillnet fishery***

- No net can be set within 3nm of a right, humpback or fin whale; and
- If a right, humpback, or fin whale moves within 3nm of the set gear, the gear is removed immediately from the water.

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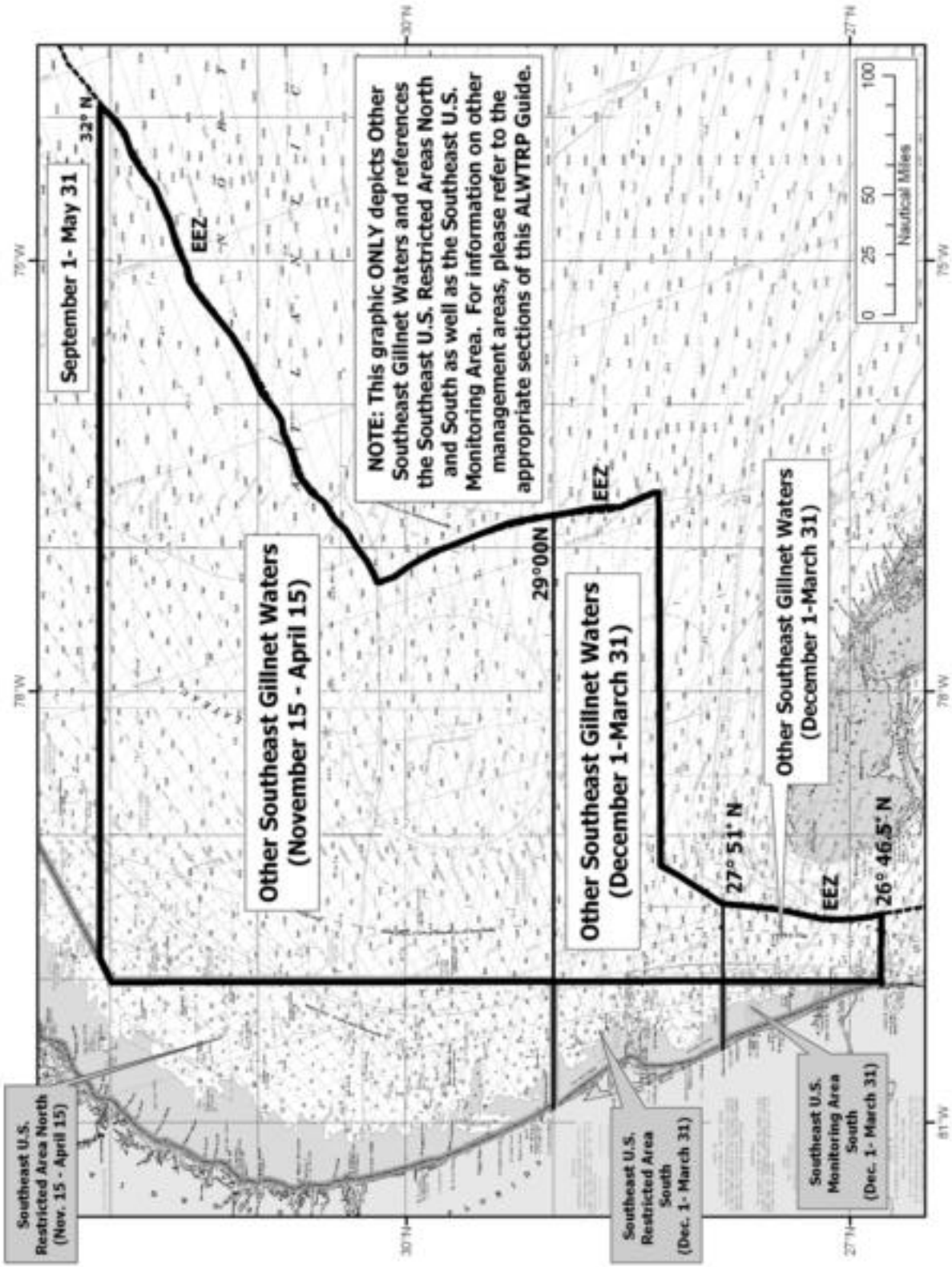
# Southeast Region: Other Southeast Gillnet Waters




NOAA Nautical Chart Name: Cape Hatteras to Straits of Florida
Chart ID: REG 6

Southeast Region- Gillnet Fisheries

# Southeast U.S. Monitoring Area

The Southeast U.S. Monitoring Area is a management area for the Southeastern U.S. Atlantic shark gillnet fishery **only,** and includes the area along the coast from 27°51' N. (near Sebastian Inlet, FL) south to 26°46.5' N. (near West Palm Beach, FL), and extending from the shoreline or exemption line eastward to 80°00' W.

## December 1 - March 31

Compliance with **Gear Marking Requirements:**

- Gillnet surface buoys to be marked to identify the vessel or fishery with one of the following: the owner's motorboat registration number and/or U.S. vessel documentation number; the federal commercial fishing permit number; or whatever positive identification marking is required by the vessel's home-port state.
  - » When marking is not already required by state or federal regulations, the letters and numbers to mark gear must be at least 1 inch (2.5cm) in height, block letters or Arabic numbers, in a color that contrasts with the color of the buoy.
- Shark gillnet gear with webbing of 5" or greater stretched mesh in the Southeast U.S. Monitoring Area must be marked with two, 4-inch color codes, one designating gear type (**GREEN**) and the other where the gear is set (**BLUE**).
  - » Each color of the two-color codes must be permanently marked on or along the line and must be clearly visible when the gear is hauled or removed from the water.
  - » The two color marks must be placed within 6" of each other.
  - » If the color of the rope is the same as or similar to a color code, a white mark may be substituted for that color code.
  - » All buoy lines greater than 4 feet long must be marked within 2 feet of the top of the buoy line (closest to the surface) and midway along the length of the buoy line.
  - » Each gillnet net panel must be marked along both the floatline and the leadline at least once every 100 yards, unless otherwise required.

Compliance with the **Vessel Monitoring System (VMS) Requirement:**

- » No person may fish with or possess gillnet gear for shark with webbing of 5" or greater stretched mesh in the Southeast U.S. Monitoring Area unless the operator of the vessel is in compliance with the vessel monitoring system requirements found in 50 CFR 635.69.
- » NMFS may select any shark gillnet vessel regulated under the ALWTRP to carry an observer. When selected, the vessels are required to take observers on a mandatory basis in compliance with the requirements for at-sea observer coverage found in 50 CFR 229.7. Any vessel that fails to carry an observer once selected is prohibited from fishing pursuant to 50 CFR part 635.

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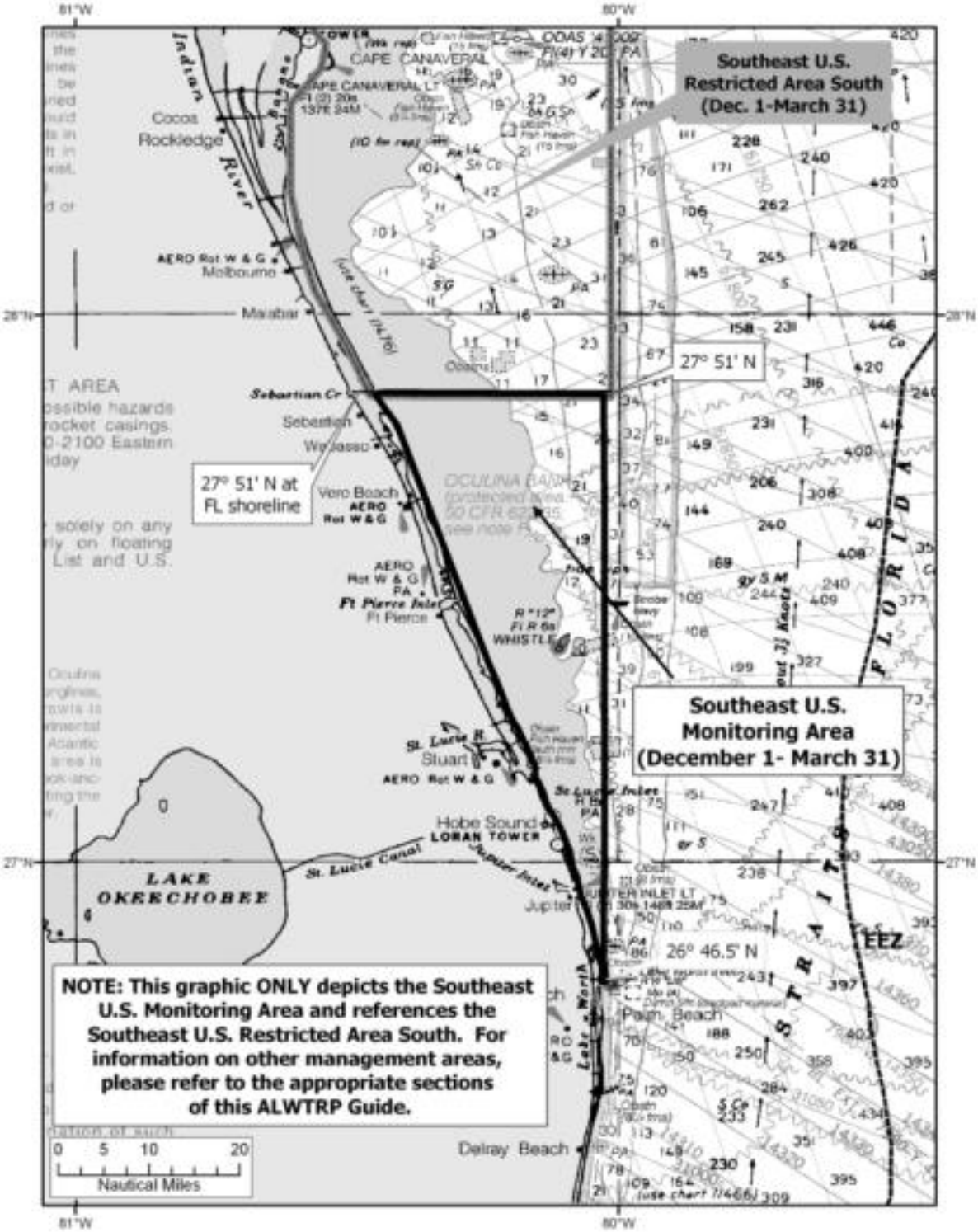
# Southeast Region: Southeast U.S. Monitoring Area




NOAA Nautical Chart Name: Cape Hatteras to Straits of Florida
Chart ID: REG 6

# Regulations that Apply to All Trap/Pot, Anchored and Drift Gillnet Fisheries

## Regulated and Exempted Waters

**ALWTRP regulations apply to all U.S. waters in the Atlantic except for the areas described below (and on the pages to follow).**

**Exempted Waters:**

- Regulations do not apply to waters landward of the 72 COLREGS lines in ALWTRP-managed waters from **Maine through Florida**, with the exception of the COLREGS lines for Casco Bay (**Maine**), Portsmouth Harbor (**New Hampshire**), Gardiners Bay and Long Island Sound (**New York**), and the state of **Massachusetts**;
- Regulations do not apply to waters landward of the first bridge over any embayment, harbor, or inlet in **Massachusetts.**

**Other Exempted Waters:**

- Regulations do not apply to waters of **New Hampshire** landward of the following line:
  - » A line from 42°53.691′ N. lat., 70°48.516′ W. long. to 42°53.516′ N. lat., 70°48.748′ W. long. (Hampton Harbor).
  - » A line from 42°59.986′ N. lat., 70°44.654′ W. long. to 42°59.956′ N., 70°44.737′ W. long. (Rye Harbor).
- Regulations do not apply to waters of **Rhode Island** landward of the following line:
  - » A line from 41°22.441′ N. lat., 71°30.781′ W. long. to 41°22.447′ N lat., 71°30.893′ W. long. (Pt. Judith Pond Inlet).
  - » A line from 41°21.310′ N. lat., 71°38.300′ W. long. to 41°21.300′ N. lat., 71°38.330′ W. long. (Ninigret Pond Inlet).
  - » A line from 41°19.875′ N. lat., 71°43.061′ W. long. to 41°19.879′ N. lat., 71°43.115′ W. long. (Quonochontaug Pond Inlet).
  - » A line from 41°19.660′ N. lat., 71°45.750′ W. long. to 41°19.660′ N. lat., 71°45.780′ W. long. (Weekapaug Pond Inlet).
- Regulations do not apply to waters of **New York** landward of the following line:
  - » A line that follows the territorial sea baseline through Block Island Sound (Watch Hill Point, RI, to Montauk Point, NY).
- Regulations do not apply to waters of **South Carolina** landward of the following line:
  - » A line from 32°34.717′ N. lat., 80°08.565′ W. long. to 32°34.686′ N. lat., 80°08.642′ W. long. (Captain Sams Inlet).

**Gear Modification Exemptions >280fa:**

→ Fisheries are exempt from the requirement to have groundlines composed of sinking line if their groundline is at a depth equal to or greater than 280 fathoms (1,680 ft; 512.1m).

→ Anchored gillnet fisheries are exempt from the requirement to install weak links in net panel(s) and to anchor each end of the net string if the float line is at a depth equal to or greater than 280 fathoms (1,680 ft; 512.1m).

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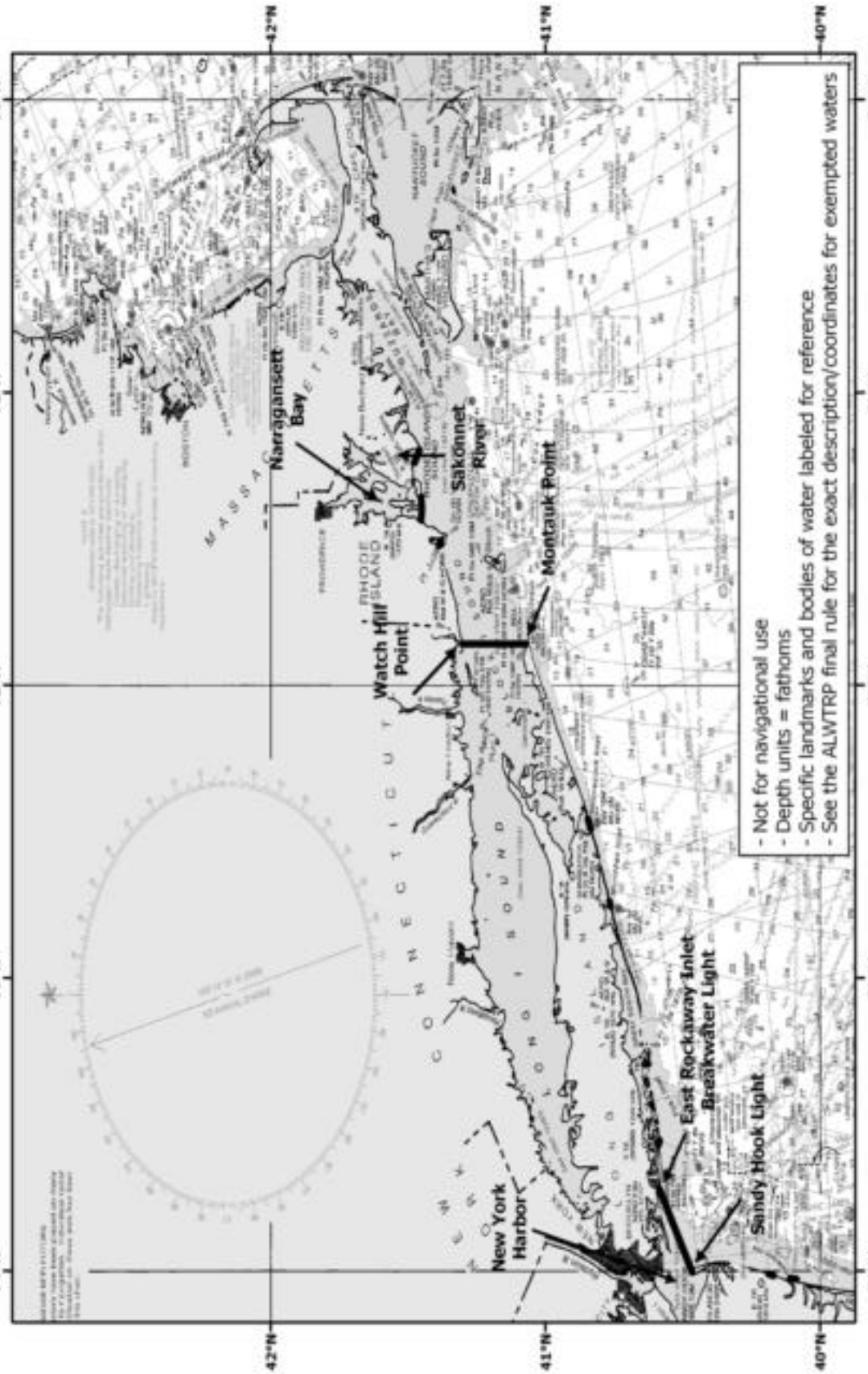
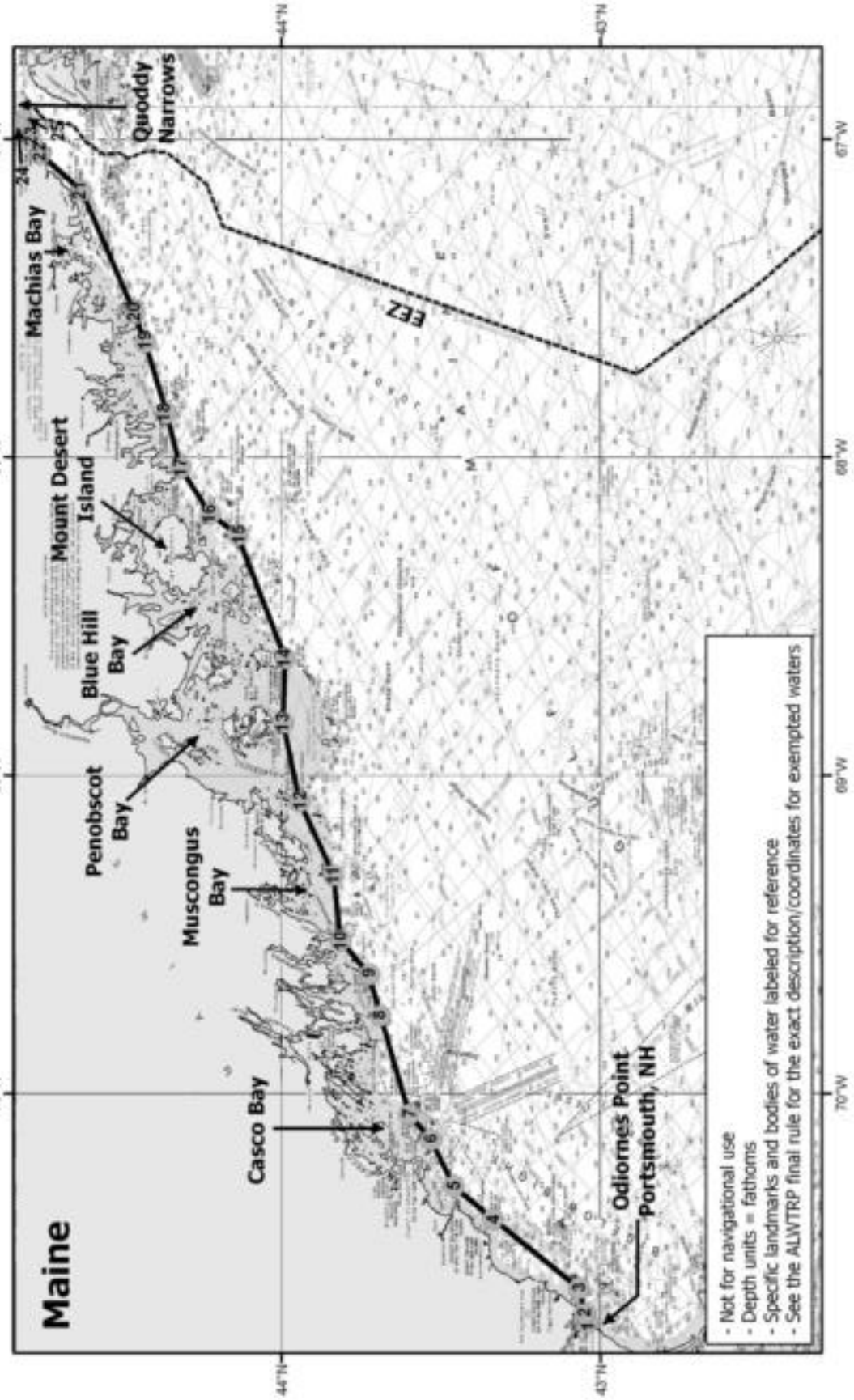
# ALWTRP Exempted Waters: Exemption Lines for Coastal Waters of RI, CT, and NY




NOAA Nautical Chart Name: Cape Sable to Cape Hatteras
Chart ID: 13003_1
EXEMPTION LINES FOR COASTAL WATERS OF RHODE ISLAND, CONNECTICUT, AND NEW YORK (SHOWN AS SOLID DARK LINES). EXEMPTION LINES FOR THE COASTAL WATERS OF MASSACHUSETTS REMAIN UNCHANGED.

# ALWTRP Exempted Waters: Exemption Lines for the State of Maine




NOAA Nautical Chart Name: West Quoddy Head to New York
Chart ID: 13006_1

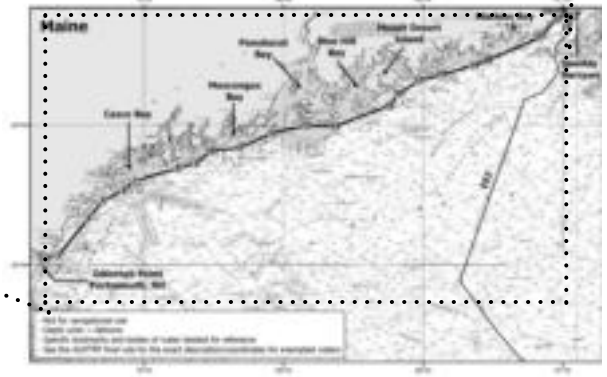
EXEMPTION LINES FOR THE STATE OF MAINE (SHOWN AS SOLID DARK LINES). THE EASTERN BOUNDARY OF THE EEZ IS REPRESENTED BY THE DASHED LINE.

# ALWTRP Exempted Waters: Coordinates for the Exemption Lines for the State of Maine

**Coordinates and Landmarks for State of Maine Exemption Line:**

Final areas are those landward of a line which connects the points below:

1. Odiornes Pt. Portsmouth NH:
   43° 02.55' N 70°43.33' W
2. R 2KR Whistle – Kittery Point
   43°02.93' N 70°41.47' W
3. N 2MR – Murray Rock:
   43°04.06' N 70°36.70' W
4. RW CP Whistle – Cape Porpoise:
   43°20.23' N 70°23.64' W
5. RW WI Whistle – Wood I
   43°27.63' N 70°17.48' W
6. G 1 – East Hue and Cry:
   43°31.94' N 70°08.68' W
7. RG N BS – Bulwark Shoal
   43°36.04' N 70°03.98' W
8. R 20ML Bell - Mile Ledge
   43°41.44' N 69°45.27' W
9. R 2BR Bell – Bantam Rock
   43°43.64' N 69°37.58' W
10. GR C PL – Pemaquid Ledge:
    43°48.96' N 69°31.15' W
11. R 2 OM Whistle – Old Man Ledge:
    43°50.28' N 69°18.86' W
12. G 5TB Bell – Two Bush Channel:
    43°56.72' N 69°04.89' W
13. R 2A Bell – Old Horse Ledge:
    43°59.83' N 68°50.06' W
14. R 2 Bell – Roaring Bull Ledge, Isle Au Haut:
    43°59.36' N 68°37.95' W
15. Southern point Great Duck I:
    44°08.36' N 68°14.75' W
16. R 8BI Whistle – Baker I:
    44°13.55' N 68°10.71' W
17. R 2S Bell – Schoodic I:
    44°19.08' N 68° 02.05' W
18. R N 2 – Petit Manan I:
    44°21.66' N 67°51.78' W
19. R 2SR Bell – Seahorse Rock, west of Great Wass I
    44°25.74' N 67° 38.39' W
20. Freeman Rock – east of Great Wass I
    44°27.77' N 67°32.86' W
21. Obstruction – southeast of Cutler:
    44°37.70' N 67°09.75' W
22. R 28M Whistle – Baileys Mistake:
    44°45.51' N 67°02.87' W
23. R N 2 – Morton Ledge:
    44°47.36' N 66°59.25' W
24. G 1 Whistle – West Quoddy Head:
    44°48.64' N 66°56.43' W
25. R N 2 – Quoddy Narrows:
    44°49.67' N 66°57.77' W

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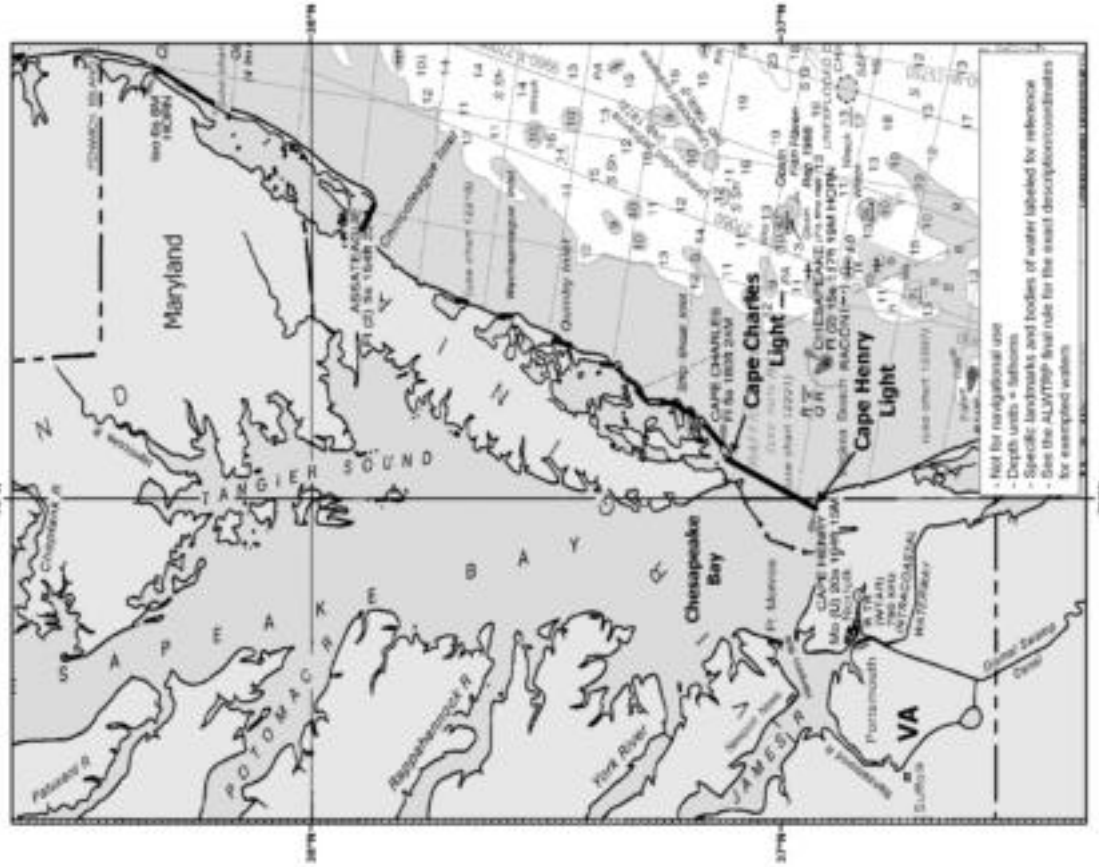
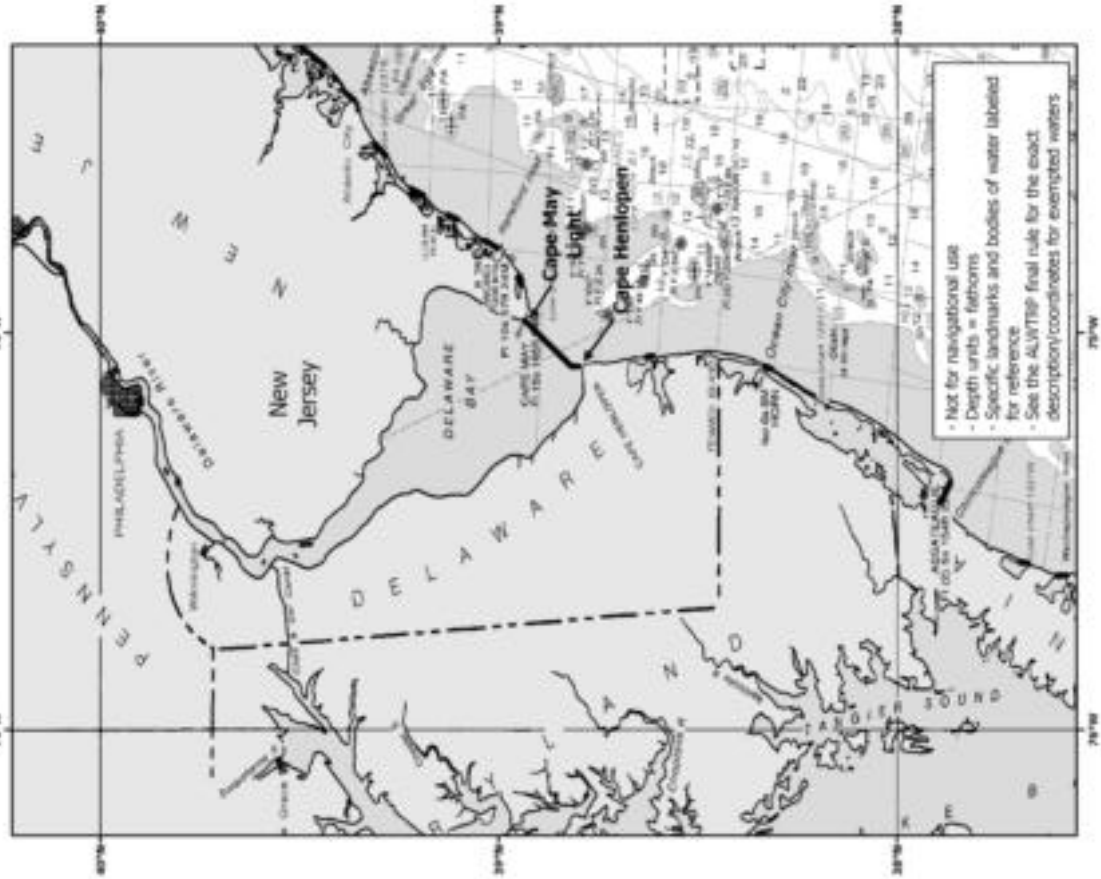
# ALWTRP Exempted Waters: Exemption Lines for Delaware Bay and Chesapeake Bay




EXEMPTION LINES FOR CHESAPEAKE BAY AND NEARBY INLETS (SHOWN AS SOLID DARK LINES).




EXEMPTION LINES FOR DELAWARE BAY AND NEARBY INLETS (SHOWN AS SOLID DARK LINES).

NOAA Nautical Chart Name: Cape Sable to Cape Hatteras
Chart ID: 13003_1

# Supplemental Information

## Gear Marking: Trap/Pot Fisheries

### Surface Buoy Marking:

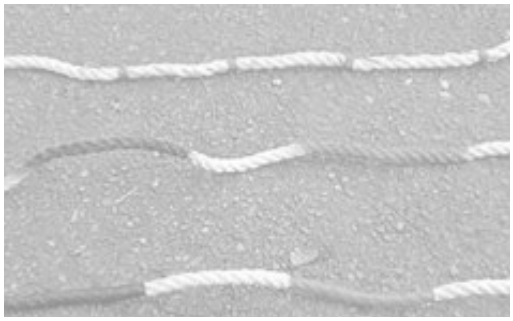
Trap/pot surface buoys will need to be marked to identify the vessel or fishery with one of the following:

- » The owner's motorboat registration number and/or U.S. vessel documentation number;
- » The federal commercial fishing permit number; or
- » Whatever positive identification marking is required by the vessel's home-port state.

When marking is not already required by state or federal regulations, the letters and numbers to mark gear must be at least 1 inch (2.5cm) in height, block letters or Arabic numbers, in a color that contrasts with the color of the buoy.

### Buoy Line Marking:

The gear marking scheme will require one 4-inch (10.2 cm) colored mark midway along the buoy line. Each color code must be permanently affixed on or along the line and each color code must be clearly visible when the gear is hauled or removed from the water.



**Trap/Pot gear marking colors:**

RED: Cape Cod Bay Restricted Area; Northern Nearshore Trap/Pot Waters; Northern Inshore State Trap/Pot Waters; Stellwagen Bank/ Jeffreys Ledge Restricted Area; Great South Channel Restricted Area overlapping with Lobster Management Area (LMA) 2 and/or the Outer Cape LMA.

ORANGE: Southern Nearshore Trap/Pot Waters.

BLACK: Offshore Trap/Pot Waters; Great South Channel Restricted Area overlapping with the LMA 2/3 Overlap and/or LMA 3.

**Note:** If the color of the rope is the same as or similar to a color code listed above, a white mark may be substituted for that color code.

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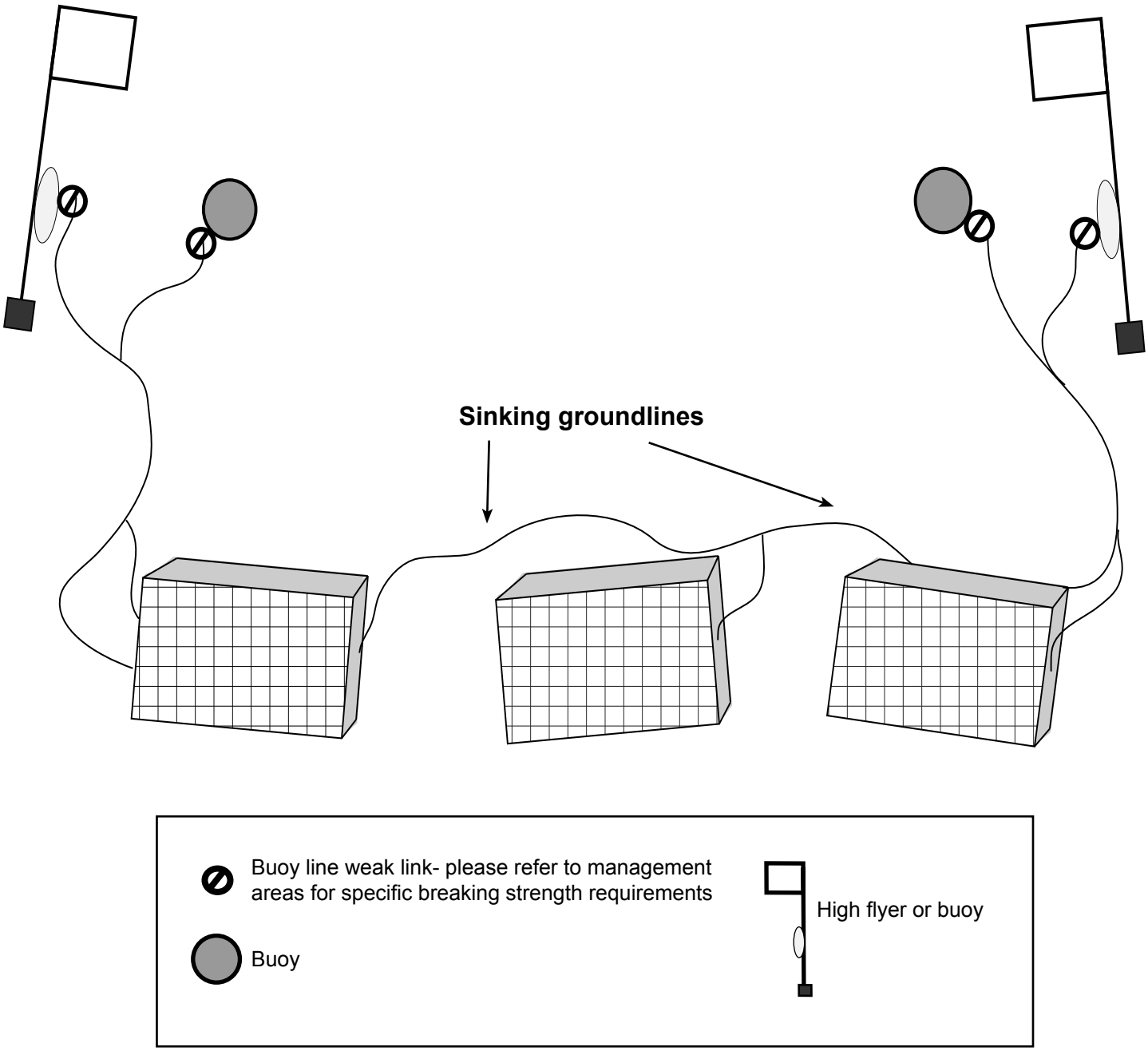
# Trap/Pot Gear Diagram




**This graphic depicts a general trap/pot gear configuration, which may vary. Please see individual ALWTRP Management Areas for information regarding specific weak link, gear marking and/or any other ALWTRP requirements.**

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# Gear Marking: Gillnet Fisheries

## Surface Buoy Marking:

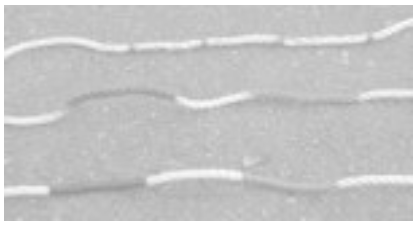
Trap/pot surface buoys will need to be marked to identify the vessel or fishery with one of the following:

- The owner's motorboat registration number and/or U.S. vessel documentation number;
- The federal commercial fishing permit number; or
- Whatever positive identification marking is required by the vessel's home-port state.

When marking is not already required by state or federal regulations, the letters and numbers to mark gear must be at least 1 inch (2.5cm) in height, block letters or Arabic numbers, in a color that contrasts with the color of the buoy.

## Buoy Line Marking:

The gear marking scheme will require one 4-inch (10.2 cm) colored mark midway along the buoy line. Each color code must be permanently affixed on or along the line and each color code must be clearly visible when the gear is hauled or removed from the water.



**Gear marking colors (gillnet, excluding shark gillnet):**

- GREEN: Cape Cod Bay Restricted Area; Stellwagen Bank/ Jeffreys Ledge Restricted Area; Great South Channel Restricted Gillnet Area; Great South Channel Sliver Restricted Area; and Other Northeast Gillnet Waters.
- BLUE: Mid/South Atlantic Gillnet Waters.
- YELLOW: Southeast U.S. Restricted Area South and Other Southeast Gillnet Waters.

If the color of the rope is the same as or similar to a color code, a white mark may be substituted for that color code.

**Gear marking colors (shark gillnet only):**

Shark gillnet gear with webbing of 5" or greater stretched mesh in the Southeast U.S. Restricted Area S, Southeast U.S. Monitoring Area, and Other Southeast Gillnet Waters must be marked with two, 4-inch color codes, one designating gear type (GREEN) and the other where the gear is set (BLUE).

Each color of the two-color codes must be permanently marked on or along the line and must be clearly visible when the gear is hauled or removed from the water. The two color marks must be placed within 6" of each other. If the color of the rope is the same as or similar to a color code, a white mark may be substituted for that color code.

All buoy lines greater than 4 feet long must be marked within 2 feet of the top of the buoy line (closest to the surface) and midway along the length of the buoy line.

Each gillnet net panel must be marked along both the floatline and the leadline at least once every 100 yards, unless otherwise required.

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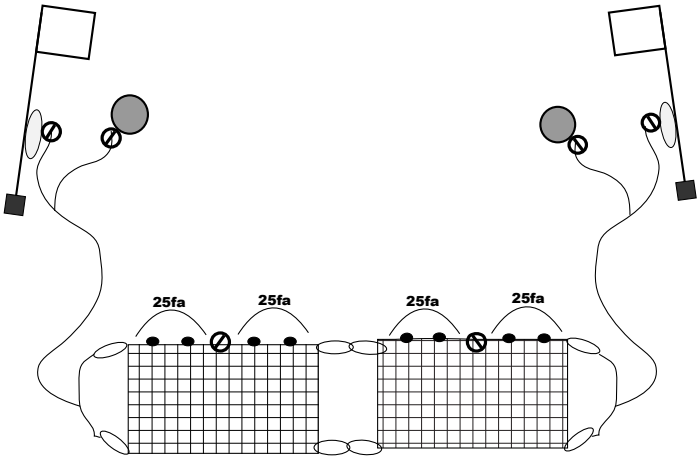
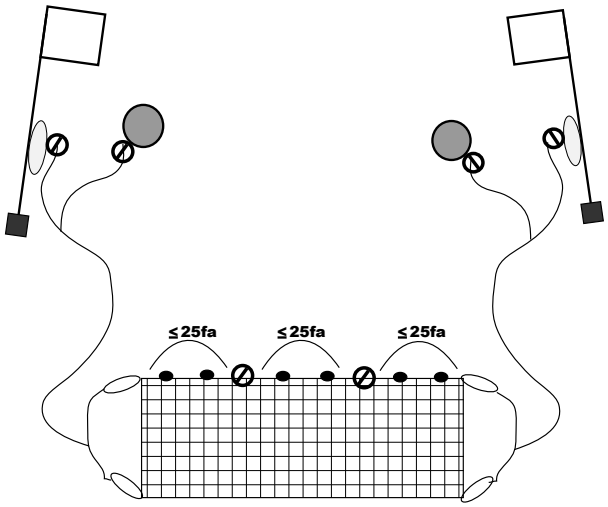
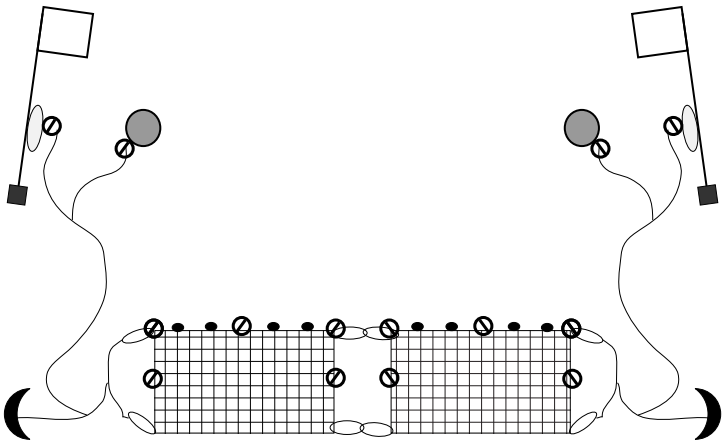
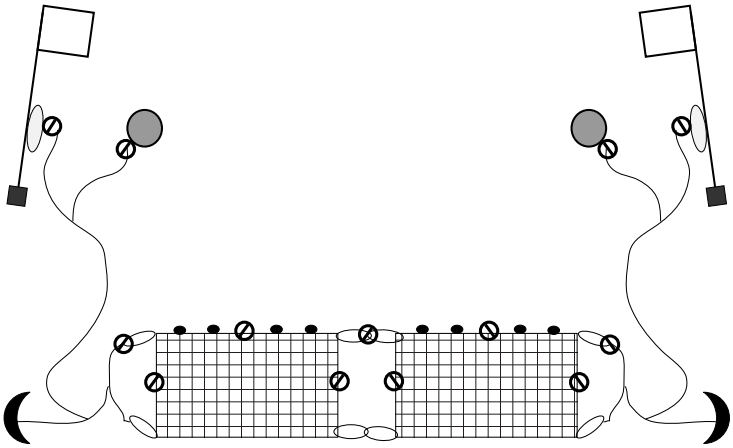
# Gillnet Options for Net Panel Weak Links





**Configuration 1:**

**For all variations in panel size:**
- One weak link must be placed in the center of each of the up and down lines at both ends of the net panel; and
- One weak link must be placed as close as possible to each end of the net panels on the floatline.

**For net panels 50 fathoms or less in length:**
- One weak link must be placed in the center of the floatline.

**For net panels greater than 50 fathoms:**
- One weak link must be placed at least every 25 fathoms along the float line.

**Configuration 2:**

**For all variations in panel size:**
- One weak link must be placed in the center of each of the up and down lines at both ends of the net panel; and
- One weak link must be placed between floatline tie-loops between net panels; and
- One weak link must be placed where the floatline tie-loops attach to the bridle, buoy line, or groundline at each end of a net string.

**For net panels 50 fathoms or less in length:**
- One weak link must be placed in the center of the floatline.

**For net panels greater than 50 fathoms:**
- One weak link must be placed at least every 25 fathoms along the floatline.

weak link
float
tie loop
buoy
high flyer or buoy
Danforth-style anchor (holding power of at at least 22lb)

****NOTE: Individual weak links are not required in locations where rope of appropriate breaking strength is used. Additionally, if no up and down line is present, then weak links are not required at that location. This graphic depicts a general anchored gillnet gear configuration, which may vary. Also, only the buoy line, groundline, anchor, and weak link configuration are displayed here; please see individual ALWTRP Management Areas for information regarding gear marking and/or any other additional ALWTRP requirements**

# ALWTRP Definitions

- **Anchored gillnet:** any gillnet gear, including an anchored float gillnet, sink gillnet or stab net, that is set anywhere in the water column and which is anchored, secured, or weighted to the bottom of the sea. Also called a **set gillnet**.
- **Bitter end:** the end of a line that detaches from a weak link.
- **Bottom portion of the line:** for buoy lines, the portion of the line in the water column that is closest to the fishing gear.
- **Bridle:** the lines connecting a gillnet to an anchor or buoy line.
- **Buoy line:** a line connecting fishing gear in the water to a buoy at the surface of the water.
- **Drift gillnet (or driftnet):** a gillnet or gillnets that is/are unattached to the ocean bottom and not anchored, secured or weighted to the bottom, regardless of whether attached to a vessel.
- **Gillnet:** fishing gear consisting of a wall of webbing (meshes) or nets, designed or configured so that the webbing (meshes) or nets are placed in the water column, usually held approximately vertically, and are designed to capture fish by entanglement, gilling, or wedging. The term ‘‘gillnet’’ includes gillnets of all types, including but not limited to sink gillnets, other anchored gillnets (e.g. anchored float gillnets, stab, and set nets), and drift gillnets. Gillnets may or may not be attached to a vessel.
- **Groundline:** a line connecting traps in a trap trawl, and, with reference to gillnet gear, means a line connecting a gillnet or gillnet bridle to an anchor or buoy line.
- **Night:** anytime between one-half hour before sunset and one-half hour after sunrise
- **Sinking line for both groundlines and buoy lines:** line that has a specific gravity greater than or equal to 1.030, and, for groundlines only, does not float at any point in the water column.
- **Stowed:** means traps/pots and gillnets that are unavailable for immediate use and further, all gillnets are stored in accordance with the following: (1) All nets are covered with canvas or other similar material and lashed or otherwise securely fastened to the deck, rail, or drum, and all buoys larger than 6 inches (15.24 cm) in diameter, high flyers, and anchors are disconnected; and (2) Any other method of stowage authorized in writing by the Regional Administrator and subsequently published in the *Federal Register.*
- **Tend/Tended gear:** fishing gear that is physically attached to a vessel in a way that is capable of harvesting fish, or to fish with gear attached to the vessel.
- **Tie loops:** the loops on a gillnet panel used to connect net panels to the buoy line, groundline, bridle or each other.
- **Trap/Pot:** any structure or other device, other than a net or longline, that is placed, or designed to be placed, on the ocean bottom and is designed for or is capable of, catching species including but not limited to lobster, crab (red, Jonah, rock, and blue), hagfish, finfish (black sea bass, scup, tautog, cod, haddock, pollock, redfish (ocean perch), and white hake), conch/whelk, and shrimp.
- **Up and down line:** means the line that connects the float-line and lead-line at the end of each gillnet net panel.

## Appendix E. Bycatch Practicability Analysis

### 1. Population Effects for Bycatch Species

### Background

Amendment 18A to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Amendment 18A) includes actions which could: establish an endorsement program for the pot portion of the black sea bass component of the snapper grouper fishery; establish an appeals process for fishery participants who feel they have been incorrectly omitted from the endorsement program; limit the number black sea bass pot tags issued to an endorsement holder per fishing year; require that all black sea bass pots be removed from the water at the end of every trip; update the current system of accountability measures (AMs) for black sea bass; modify the current rebuilding strategy for black sea bass; specify a spawning season closure for black sea bass; and improve data reporting in the commercial and for-hire sectors of the snapper grouper fishery.

Black sea bass are predominantly taken with pots; whereas, hook and line gear has been the predominant gear type used to capture other snapper grouper species.

**Table 1.** Percentage of commercial catch by gear based on data from 2005-2010.

| Taxon | H&L | Longline | Spear | Pots |
|---|---|---|---|---|
| Black Sea Bass | 11% | 0% | 0% | 89% |

Source: NMFS SEFSC Logbook Program.

During 2005-2009 (the time period for which the most recent recreational catch data is available), the recreational sector dominated landings of black sea bass (Table 2).

**Table 2.** Percentage of landings among the commercial, for-hire, private recreational sectors during 2005-2010. Landings provided by the Southeast Fisheries Science Center.

| Taxon | Commercial | For Hire | Recreational |
|---|---|---|---|
| black sea bass | 41% | 22% | 37% |

### Commercial Fishery

During 2005 to 2010, approximately 20% of snapper grouper permitted vessels from the Gulf of Mexico and South Atlantic were randomly selected to fill out supplementary logbooks. The average number of trips per year during 2005 to 2010 was 14,372 (Table 3). Fishermen spent an average of 1.68 days at sea per trip.

**Table 3.** Snapper grouper fishery effort for South Atlantic.

| YEAR | Trips | Days | Days per Trip |
|---|---|---|---|
| 2005 | 13,766 | 22,846 | 1.66 |
| 2006 | 13,264 | 23,324 | 1.76 |
| 2007 | 14,886 | 24,510 | 1.65 |
| 2008 | 14,781 | 25,023 | 1.69 |
| 2009 | 15,888 | 26,580 | 1.67 |
| 2010 | 13,649 | 22,143 | 1.62 |
| Mean | 14,372 | 24,071 | 1.68 |

Source: NMFS SEFSC Logbook Program.

For species in the snapper grouper fishery management unit (FMU), the number of commercial trips that reported discards was greatest for yellowtail snapper, red porgy, vermilion snapper, scamp, and black sea bass (Table 4). Table 4 indicates many other species not included in the snapper grouper FMU including mackerel species, sharks, dolphin, and others are discarded by fishermen with federal commercial snapper grouper permits.

**Table 4.** The 70 most commonly discarded species during 2005-2009 for the South Atlantic. Snapper grouper species are highlighted. Note: Represents total of unexpanded data during 2005-2009.

| Species | Number of trips reported discarding the species | Number discarded |
|---|---|---|
| red porgy, unc | 1,449 | 128,197 |
| vermilion snapper | 1,272 | 89,156 |
| black sea bass, unc | 896 | 69,027 |
| knobbed porgy | 503 | 27,924 |
| yellowtail snapper | 2,058 | 21,420 |
| rough skin dogfish | 85 | 14,807 |
| red snapper | 634 | 11,340 |
| scamp | 969 | 8,703 |
| king mackerel | 1,415 | 7,917 |
| mangrove snapper | 416 | 7,230 |
| spottail pinfish | 113 | 7,194 |
| smooth dogfish | 43 | 5,456 |
| Atlantic sharpnose | 204 | 5,055 |
| menhaden | 50 | 4,880 |
| little tunny | 140 | 4,189 |
| greater amberjack | 361 | 4,163 |
| gag | 618 | 4,045 |
| grunts | 181 | 3,517 |
| dogfish shark | 54 | 3,435 |
| bluefish | 77 | 3,092 |

| Species | Number of trips reported discarding the species | Number discarded |
|---|---|---|
| red grouper | 559 | 3,045 |
| white grunt | 168 | 2,695 |
| gray triggerfish | 233 | 2,508 |
| scups or porgies, unc | 73 | 2,495 |
| blue runner | 303 | 2,332 |
| triggerfish | 168 | 2,274 |
| blacktip shark | 161 | 2,098 |
| amberjack | 262 | 1,818 |
| sandbar shark | 129 | 1,810 |
| black grouper | 381 | 1,723 |
| tomtate | 22 | 1,703 |
| tiger shark | 115 | 1,506 |
| mutton snapper | 296 | 1,347 |
| dolphin | 214 | 1,270 |
| unc, finfish for food | 86 | 1,167 |
| Atlantic bonito | 218 | 1,049 |
| speckled hind | 122 | 817 |
| remora | 270 | 815 |
| snappers, unc | 36 | 681 |
| barracuda | 75 | 668 |
| Spanish mackerel | 106 | 651 |
| ballyhoo | 18 | 600 |
| lane snapper | 73 | 582 |
| groupers | 67 | 396 |
| chubs | 8 | 364 |
| caribbean sharpnose | 13 | 361 |
| stingrays | 29 | 335 |
| hake | 35 | 333 |
| rays, unc | 46 | 324 |
| snowy grouper | 59 | 319 |
| margate | 17 | 313 |
| cobia | 182 | 304 |
| needlefish | 72 | 299 |
| cero | 98 | 288 |
| lesser amberjack | 12 | 282 |
| sand tilefish | 35 | 264 |
| spinner shark | 33 | 245 |
| hammerhead shark | 69 | 218 |
| almaco jack | 20 | 203 |
| sheepshead | 21 | 201 |

| Species | Number of trips reported discarding the species | Number discarded |
|---|---|---|
| sea catfish | 69 | 188 |
| rudderfish | 33 | 181 |
| black margate | 3 | 161 |
| yellowfin tuna | 36 | 161 |
| banded rudderfish | 14 | 159 |
| mahogany snapper | 13 | 133 |
| rock sea bass | 11 | 131 |
| squirrelfish | 18 | 131 |
| silky shark | 13 | 114 |
| Atlantic spadefish | 21 | 107 |

**Recreational Fishery**

For the recreational fishery, estimates of the number of recreational discards are available from 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.

Black sea bass is the most commonly released snapper grouper species (Table 5). Other commonly released species include red porgy and vermilion snapper.

**Table 5.** Estimated number of fish released (B2) fish in numbers for the South Atlantic during 2005-2010.

| Species | Year: 2005 | | Year: 2006 | | Year: 2007 | | Year: 2008 | | Year: 2009 | | Year: 2010 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | TYPE B2 | PSE | TYPE B2 | PSE | TYPE B2 | PSE | TYPE B2 | PSE | TYPE B2 | PSE | TYPE B2 | PSE |
| **BARRACUDAS** | | | | | | | | | | | | |
| BARRACUDAS | 126,721 | 10.8 | 180,157 | 8.7 | 268,282 | 9.5 | 239,534 | 9.6 | 204,545 | 9.8 | 153,535 | 9.2 |
| -- Species Group Subtotal -- | 126,721 | 10.8 | 180,157 | 8.7 | 268,282 | 9.5 | 239,534 | 9.6 | 204,545 | 9.8 | 153,535 | 9.2 |
| **BLUEFISH** | | | | | | | | | | | | |
| BLUEFISH | 3,004,781 | 6.1 | 3,707,415 | 5.7 | 4,539,620 | 6 | 3,440,594 | 5 | 2,337,256 | 5.4 | 4,226,412 | 5.1 |
| -- Species Group Subtotal -- | 3,004,781 | 6.1 | 3,707,415 | 5.7 | 4,539,620 | 6 | 3,440,594 | 5 | 2,337,256 | 5.4 | 4,226,412 | 5.1 |
| **CARTILAGINOUS FISHES** | | | | | | | | | | | | |
| DOGFISH SHARKS | 151,502 | 28.1 | 91,248 | 17.4 | 132,366 | 42.2 | 129,161 | 22.3 | 92,811 | 24.9 | 158,920 | 14.8 |
| OTHER SHARKS | 2,888,895 | 5.1 | 2,770,853 | 6.8 | 3,128,079 | 4.5 | 2,925,490 | 4.4 | 2,638,748 | 5.5 | 2,891,631 | 5.6 |
| SKATES/RAYS | 1,387,330 | 6.9 | 1,059,210 | 6.7 | 1,183,040 | 5.3 | 1,070,743 | 6.2 | 1,431,617 | 10.8 | 1,132,737 | 6.2 |
| -- Species Group Subtotal -- | 4,427,727 | 4.1 | 3,921,311 | 5.1 | 4,443,485 | 3.7 | 4,125,394 | 3.6 | 4,163,176 | 5.1 | 4,183,288 | 4.3 |
| **CATFISHES** | | | | | | | | | | | | |
| FRESHWATER CATFISHES | 64,895 | 28.1 | 40,805 | 30.2 | 20,552 | 25.6 | 45,502 | 28 | 12,530 | 35.4 | 23,634 | 33.3 |
| SALTWATER CATFISHES | 1,775,623 | 6.2 | 1,362,776 | 5.8 | 2,473,885 | 7.1 | 1,912,040 | 6.5 | 1,016,001 | 6.6 | 1,903,731 | 6 |
| -- Species Group Subtotal -- | 1,840,518 | 6 | 1,403,581 | 5.7 | 2,494,437 | 7 | 1,957,542 | 6.3 | 1,028,531 | 6.6 | 1,927,365 | 5.9 |
| **CODS AND HAKES** | | | | | | | | | | | | |
| OTHER CODS/HAKES | 34,531 | 40.3 | 5,889 | 37 | 9,605 | 31 | 7,405 | 69.3 | 32,350 | 39.9 | 12,729 | 43.5 |
| -- Species Group Subtotal -- | 34,531 | 40.3 | 5,889 | 37 | 9,605 | 31 | 7,405 | 69.3 | 32,350 | 39.9 | 12,729 | 43.5 |
| **DOLPHINS** | | | | | | | | | | | | |
| DOLPHINS | 218,931 | 16.1 | 231,853 | 10.8 | 254,568 | 17.1 | 200,879 | 11.8 | 75,493 | 14 | 95,769 | 13.3 |
| -- Species Group Subtotal -- | 218,931 | 16.1 | 231,853 | 10.8 | 254,568 | 17.1 | 200,879 | 11.8 | 75,493 | 14 | 95,769 | 13.3 |
| **DRUMS** | | | | | | | | | | | | |
| ATLANTIC CROAKER | 2,153,037 | 6.6 | 3,439,549 | 6.4 | 2,540,696 | 7 | 2,372,758 | 5.9 | 3,113,213 | 5.5 | 2,469,631 | 5.8 |
| BLACK DRUM | 190,110 | 11.4 | 312,415 | 9.7 | 820,032 | 10.2 | 640,413 | 7.7 | 293,214 | 8.8 | 369,539 | 8.5 |
| KINGFISHES | 2,226,960 | 6.8 | 3,582,622 | 7.7 | 3,309,945 | 5.9 | 2,902,539 | 6.1 | 2,710,822 | 6.8 | 2,861,064 | 6.3 |
| OTHER DRUM | 581,461 | 11 | 834,383 | 8.8 | 1,049,974 | 10.9 | 1,173,266 | 9.5 | 900,754 | 12.3 | 241,704 | 15.7 |
| RED DRUM | 2,412,470 | 5.8 | 2,111,089 | 5.6 | 2,070,575 | 5.6 | 2,333,096 | 6.1 | 1,979,705 | 5.6 | 2,932,869 | 4.9 |
| SAND SEATROUT | 0 | 0 | 9,401 | 72 | 11,324 | 45.8 | 27,367 | 42.5 | 110,534 | 48.4 | 11,380 | 50.4 |
| SILVER PERCH | 480,503 | 13.2 | 726,915 | 11.5 | 584,828 | 12.1 | 491,659 | 15.6 | 595,518 | 15.6 | 434,418 | 13.8 |
| SPOT | 1,728,002 | 9.9 | 3,851,795 | 9.6 | 1,732,440 | 9.9 | 1,713,571 | 7.6 | 1,798,841 | 8.8 | 1,219,043 | 8.7 |
| SPOTTED SEATROUT | 5,336,913 | 5.3 | 4,988,541 | 4.7 | 6,114,718 | 5 | 4,715,679 | 5.5 | 3,782,693 | 5.4 | 5,193,793 | 5.4 |
| WEAKFISH | 438,519 | 11 | 538,799 | 11.4 | 346,898 | 14 | 265,383 | 14.1 | 189,614 | 21.8 | 289,290 | 16.7 |
| -- Species Group Subtotal -- | 15,547,975 | 2.8 | 20,395,509 | 2.9 | 18,581,430 | 2.6 | 16,635,731 | 2.5 | 15,474,908 | 2.7 | 16,022,731 | 2.6 |

| Species | Year: 2005 | | Year: 2006 | | Year: 2007 | | Year: 2008 | | Year: 2009 | | Year: 2010 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | TYPE B2 | PSE | TYPE B2 | PSE | TYPE B2 | PSE | TYPE B2 | PSE | TYPE B2 | PSE | TYPE B2 | PSE |
| **EELS** | | | | | | | | | | | | |
| EELS | 51,553 | 26.3 | 62,029 | 25.8 | 43,847 | 16.3 | 41,653 | 19 | 27,700 | 17.3 | 39,006 | 19.2 |
| -- Species Group Subtotal -- | 51,553 | 26.3 | 62,029 | 25.8 | 43,847 | 16.3 | 41,653 | 19 | 27,700 | 17.3 | 39,006 | 19.2 |
| **FLOUNDERS** | | | | | | | | | | | | |
| GULF FLOUNDER | 4,932 | 64 | 10,047 | 58.5 | 32,472 | 49.1 | 6,181 | 51.8 | 964 | 100 | 4,362 | 53.8 |
| OTHER FLOUNDERS | 1,214,700 | 6.3 | 1,201,665 | 5.6 | 1,689,592 | 5.8 | 1,900,658 | 5.9 | 1,577,521 | 6.8 | 2,161,196 | 5.3 |
| SOUTHERN FLOUNDER | 131,274 | 17.9 | 257,712 | 13.7 | 190,340 | 13 | 125,290 | 14.8 | 104,871 | 23.9 | 6,485 | 32.1 |
| SUMMER FLOUNDER | 83,320 | 22.4 | 139,805 | 20.5 | 10,815 | 38.6 | 5,715 | 38 | 35,632 | 27.3 | 27,741 | 38.4 |
| -- Species Group Subtotal -- | 1,434,226 | 5.7 | 1,609,229 | 5 | 1,923,219 | 5.4 | 2,037,844 | 5.6 | 1,718,988 | 6.4 | 2,199,784 | 5.2 |
| **GRUNTS** | | | | | | | | | | | | |
| OTHER GRUNTS | 905,462 | 8.2 | 790,470 | 8.4 | 1,561,407 | 8.3 | 903,581 | 7.7 | 1,219,001 | 8.5 | 1,034,807 | 18.7 |
| PIGFISH | 743,829 | 7.8 | 553,384 | 9.6 | 868,092 | 10.3 | 821,930 | 8.4 | 841,230 | 10.1 | 1,062,295 | 7.2 |
| WHITE GRUNT | 195,770 | 14.8 | 274,926 | 15 | 241,875 | 11.3 | 434,040 | 14.5 | 148,501 | 24.3 | 43,267 | 15.9 |
| -- Species Group Subtotal -- | 1,845,061 | 5.3 | 1,618,780 | 5.8 | 2,671,374 | 6 | 2,159,551 | 5.4 | 2,208,732 | 6.3 | 2,140,369 | 9.7 |
| **HERRINGS** | | | | | | | | | | | | |
| HERRINGS | 1,243,180 | 17.4 | 2,640,817 | 12.5 | 1,203,718 | 16.9 | 512,502 | 31.7 | 1,698,306 | 15.3 | 2,121,775 | 14 |
| -- Species Group Subtotal -- | 1,243,180 | 17.4 | 2,640,817 | 12.5 | 1,203,718 | 16.9 | 512,502 | 31.7 | 1,698,306 | 15.3 | 2,121,775 | 14 |
| **JACKS** | | | | | | | | | | | | |
| BLUE RUNNER | 661,888 | 9.6 | 822,370 | 9.2 | 1,159,991 | 11.7 | 796,058 | 11.1 | 705,910 | 24.5 | 499,651 | 10.2 |
| CREVALLE JACK | 1,362,086 | 6.7 | 1,264,018 | 6.5 | 1,634,661 | 6 | 1,097,877 | 7 | 1,139,832 | 7.9 | 1,032,042 | 8.4 |
| FLORIDA POMPANO | 693,755 | 12.5 | 1,007,541 | 20.1 | 605,621 | 12 | 696,269 | 10.7 | 345,791 | 21.5 | 347,629 | 11.7 |
| GREATER AMBERJACK | 16,687 | 25.1 | 19,234 | 19.6 | 30,752 | 20.8 | 80,931 | 19.8 | 71,802 | 16.1 | 26,242 | 22.5 |
| OTHER JACKS | 332,217 | 17.4 | 180,298 | 14 | 326,798 | 15.8 | 433,050 | 12.2 | 352,874 | 16 | 243,164 | 18.3 |
| -- Species Group Subtotal -- | 3,066,633 | 5 | 3,293,461 | 7.1 | 3,757,823 | 5.1 | 3,104,185 | 4.8 | 2,616,209 | 8.3 | 2,148,728 | 5.5 |
| **MULLETS** | | | | | | | | | | | | |
| MULLETS | 1,384,536 | 13.7 | 1,801,720 | 11.3 | 2,263,848 | 9.4 | 1,091,237 | 10.7 | 1,367,241 | 11.1 | 2,641,902 | 24 |
| -- Species Group Subtotal -- | 1,384,536 | 13.7 | 1,801,720 | 11.3 | 2,263,848 | 9.4 | 1,091,237 | 10.7 | 1,367,241 | 11.1 | 2,641,902 | 24 |
| **OTHER FISHES** | | | | | | | | | | | | |
| OTHER FISHES | 2,965,704 | 4.8 | 2,882,611 | 4.7 | 4,518,284 | 3.7 | 2,828,534 | 4.2 | 2,751,240 | 5.7 | 2,871,776 | 7.4 |
| -- Species Group Subtotal -- | 2,965,704 | 4.8 | 2,882,611 | 4.7 | 4,518,284 | 3.7 | 2,828,534 | 4.2 | 2,751,240 | 5.7 | 2,871,776 | 7.4 |
| **PORGIES** | | | | | | | | | | | | |
| OTHER PORGIES | 72,379 | 20.1 | 150,357 | 20.4 | 139,040 | 21.4 | 116,266 | 19.5 | 65,856 | 19.2 | 92,406 | 27.8 |
| PINFISHES | 3,917,568 | 5.8 | 5,056,606 | 6.2 | 4,960,818 | 5.1 | 5,040,941 | 6 | 3,588,516 | 5.8 | 5,080,786 | 5.1 |
| RED PORGY | 27,514 | 19.2 | 16,636 | 15.8 | 30,085 | 19 | 44,154 | 30 | 18,089 | 55.8 | 5,525 | 30 |
| SCUP | 1,620 | 46.5 | 7,721 | 44 | 5,729 | 30.6 | 9,755 | 36 | 3,293 | 25.3 | 1,417 | 29.4 |

| Species | Year: 2005 | | Year: 2006 | | Year: 2007 | | Year: 2008 | | Year: 2009 | | Year: 2010 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | TYPE B2 | PSE | TYPE B2 | PSE | TYPE B2 | PSE | TYPE B2 | PSE | TYPE B2 | PSE | TYPE B2 | PSE |
| SHEEPSHEAD | 436,207 | 9.6 | 437,836 | 9.3 | 603,767 | 10.7 | 773,720 | 8 | 520,600 | 9.1 | 536,490 | 8.5 |
| -- Species Group Subtotal -- | 4,455,288 | 5.2 | 5,669,156 | 5.6 | 5,739,439 | 4.5 | 5,984,836 | 5.2 | 4,196,354 | 5.1 | 5,716,624 | 4.6 |
| **PUFFERS** | | | | | | | | | | | | |
| PUFFERS | 425,264 | 7.7 | 635,341 | 8.5 | 1,152,418 | 6.6 | 1,341,422 | 6.7 | 912,983 | 7.6 | 573,280 | 11.1 |
| -- Species Group Subtotal -- | 425,264 | 7.7 | 635,341 | 8.5 | 1,152,418 | 6.6 | 1,341,422 | 6.7 | 912,983 | 7.6 | 573,280 | 11.1 |
| **SEA BASSES** | | | | | | | | | | | | |
| BLACK SEA BASS | 2,483,947 | 5.5 | 2,967,099 | 5.6 | 3,764,105 | 7.3 | 2,940,795 | 6.2 | 2,716,240 | 6.2 | 3,270,077 | 5.6 |
| EPINEPHELUS GROUPERS | 254,936 | 9.1 | 165,261 | 9.1 | 107,240 | 17.6 | 97,808 | 11.9 | 128,065 | 11.9 | 118,264 | 14.5 |
| MYCTEROPERCA GROUPERS | 145,222 | 11 | 152,123 | 10.7 | 302,398 | 11.2 | 252,309 | 8.9 | 142,865 | 10.6 | 121,698 | 12.9 |
| OTHER SEA BASSES | 324,893 | 11.5 | 797,375 | 11.3 | 910,942 | 8.7 | 801,710 | 9.1 | 499,275 | 10.4 | 217,610 | 15.4 |
| -- Species Group Subtotal -- | 3,208,998 | 4.5 | 4,081,858 | 4.6 | 5,084,685 | 5.7 | 4,092,622 | 4.8 | 3,486,445 | 5.1 | 3,727,649 | 5 |
| **SEAROBINS** | | | | | | | | | | | | |
| SEAROBINS | 158,366 | 12.1 | 300,921 | 21.5 | 432,617 | 11.1 | 333,166 | 14.5 | 123,415 | 10.5 | 139,435 | 10.1 |
| -- Species Group Subtotal -- | 158,366 | 12.1 | 300,921 | 21.5 | 432,617 | 11.1 | 333,166 | 14.5 | 123,415 | 10.5 | 139,435 | 10.1 |
| **SNAPPERS** | | | | | | | | | | | | |
| GRAY SNAPPER | 1,228,211 | 7.8 | 1,457,251 | 5.9 | 2,936,755 | 6 | 1,839,406 | 6.5 | 1,725,889 | 7.4 | 585,571 | 10.3 |
| LANE SNAPPER | 111,276 | 22.7 | 137,572 | 16.8 | 330,770 | 14.1 | 227,775 | 18.4 | 157,594 | 16.6 | 74,057 | 22 |
| OTHER SNAPPERS | 242,324 | 10.6 | 280,948 | 10.1 | 426,284 | 10.4 | 557,020 | 10 | 314,681 | 10.1 | 155,776 | 12.1 |
| RED SNAPPER | 125,739 | 13.3 | 134,692 | 18.5 | 455,405 | 12.8 | 403,244 | 10.5 | 210,279 | 12.4 | 93,654 | 17.5 |
| VERMILION SNAPPER | 140,356 | 13.2 | 102,219 | 34.3 | 293,433 | 12.9 | 246,103 | 14.2 | 226,125 | 11.6 | 131,392 | 24.2 |
| YELLOWTAIL SNAPPER | 258,606 | 17.7 | 344,982 | 11.7 | 402,201 | 12.5 | 319,239 | 11.1 | 221,836 | 22.6 | 117,970 | 13.7 |
| -- Species Group Subtotal -- | 2,106,512 | 5.5 | 2,457,664 | 4.5 | 4,844,848 | 4.3 | 3,592,787 | 4.3 | 2,856,404 | 5.2 | 1,158,420 | 6.6 |
| **TEMPERATE BASSES** | | | | | | | | | | | | |
| STRIPED BASS | 136,536 | 16.3 | 85,438 | 19.4 | 50,735 | 18.2 | 86,858 | 19.6 | 93,353 | 21 | 74,856 | 18.7 |
| WHITE PERCH | 0 | 0 | 46,904 | 38.1 | 7,339 | 56.8 | 1,397 | 58.5 | 0 | 0 | 5,353 | 62.8 |
| -- Species Group Subtotal -- | 136,536 | 16.3 | 132,342 | 18.4 | 58,074 | 17.5 | 88,255 | 19.4 | 93,353 | 21 | 80,209 | 18 |
| **TOADFISHES** | | | | | | | | | | | | |
| TOADFISHES | 477,955 | 8.3 | 479,125 | 9.4 | 435,924 | 7.7 | 691,142 | 8 | 405,848 | 8.2 | 480,589 | 8.4 |
| -- Species Group Subtotal -- | 477,955 | 8.3 | 479,125 | 9.4 | 435,924 | 7.7 | 691,142 | 8 | 405,848 | 8.2 | 480,589 | 8.4 |
| **TRIGGERFISHES/FILEFISHES** | | | | | | | | | | | | |
| TRIGGERFISHES/FILEFISHES | 239,995 | 10.7 | 210,123 | 14.6 | 228,262 | 10.1 | 199,476 | 10.7 | 181,503 | 14 | 133,118 | 13 |
| -- Species Group Subtotal -- | 239,995 | 10.7 | 210,123 | 14.6 | 228,262 | 10.1 | 199,476 | 10.7 | 181,503 | 14 | 133,118 | 13 |
| **TUNAS AND MACKERELS** | | | | | | | | | | | | |

| Species | Year: 2005 | | Year: 2006 | | Year: 2007 | | Year: 2008 | | Year: 2009 | | Year: 2010 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | TYPE B2 | PSE | TYPE B2 | PSE | TYPE B2 | PSE | TYPE B2 | PSE | TYPE B2 | PSE | TYPE B2 | PSE |
| ATLANTIC MACKEREL | 67,658 | 81.9 | | | | | | | | | | |
| KING MACKEREL | 207,618 | 13.7 | 195,618 | 9.8 | 303,008 | 9.4 | 166,716 | 9.7 | 127,316 | 13.4 | 82,557 | 14.1 |
| LITTLE TUNNY/ATLANTIC BONITO | 288,459 | 8.5 | 476,296 | 7 | 780,193 | 8.4 | 511,878 | 7.6 | 585,015 | 8.3 | 369,128 | 8.4 |
| OTHER TUNAS/MACKERELS | 66,422 | 24.6 | 43,933 | 13.7 | 58,912 | 16.3 | 121,352 | 17.4 | 93,887 | 17 | 48,253 | 15 |
| SPANISH MACKEREL | 704,569 | 12.9 | 321,860 | 11.9 | 586,722 | 9.4 | 994,693 | 10.4 | 466,681 | 9.4 | 659,992 | 10.4 |
| -- Species Group Subtotal -- | 1,334,726 | 8.5 | 1,037,707 | 5.3 | 1,728,835 | 5.3 | 1,794,639 | 6.3 | 1,272,899 | 5.4 | 1,159,930 | 6.6 |
| **WRASSES** | | | | | | | | | | | | |
| OTHER WRASSES | 2,966 | 53.3 | 2,079 | 50.4 | 10,386 | 41.8 | 13,203 | 51.5 | 2,977 | 42.4 | 9,296 | 35.5 |
| TAUTOG | 2,885 | 100 | 5,185 | 52 | 2,905 | 60.9 | 1,755 | 58.9 | 1,922 | 62.6 | 2,907 | 43.7 |
| -- Species Group Subtotal -- | 5,851 | 56.2 | 7,264 | 39.8 | 13,291 | 35.3 | 14,958 | 46 | 4,899 | 35.6 | 12,203 | 29 |
| -- Grand Total -- | 49,741,568 | 1.4 | 58,765,863 | 1.6 | 66,691,933 | 1.3 | 56,515,888 | 1.3 | 49,238,778 | 1.5 | 53,966,626 | 1.8 |

Source: http://www.st.nmfs.noaa.gov/st1/recreational/queries/index.html

When compared to co-occurring species in the snapper grouper FMU, black sea bass were most often discarded by headboat fishermen during 2005-2010 (Table 6).

**Table 6.** Most commonly discarded snapper grouper species from headboats in South Atlantic. Total fish reported released alive or dead on sampled headboat trips during 2005-2010. Data are not expanded to all trips.

| Species | Released dead | Released alive |
|---|---|---|
| Black sea bass | 10,444 | 1,095,014 |
| Vermilion snapper | 22,109 | 503,297 |
| Tomtate | 43,916 | 302,959 |
| Red snapper | 3,604 | 250,600 |
| Yellowtail snapper | 3,600 | 138,638 |
| White grunt | 3,671 | 125,624 |
| Red porgy | 2,490 | 123,025 |
| Red grouper | 382 | 41,680 |
| Gray triggerfish | 411 | 32,954 |
| Gag | 387 | 25,060 |
| Gray snapper | 162 | 19,006 |
| Mutton snapper | 575 | 16,206 |
| Bank sea bass | 822 | 12,494 |

Source: NMFS Headboat survey.

**Finfish Bycatch Mortality**

Release mortality rates are unknown for most snapper grouper species. Recent SEDAR assessments include estimates of release mortality rates based on published studies. Stock assessment reports can be found at http://www.sefsc.noaa.gov/sedar/.

Release mortality of black sea bass is considered to be low (1-7%) (SEDAR 25 2011) and indicating minimum size limits are probably an effective management tool for black sea bass. Collins et al. (1999) reported venting of the swim bladder yielded reductions in release mortality of black sea bass, and the benefits of venting increased with capture depth. The same study was analyzed by Wilde (2009) to suggest that venting increased the survival of black sea bass, although this was an exception to the general findings of Wilde's (2009) study.

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

Tables 2 through 6 list the species that are most commonly discarded by commercial and recreational fishermen. The primary purpose of Amendment 18A is to limit participation and effort in the black sea bass pot fishery. This would be accomplished through: the establishment of an endorsement program for the black sea bass pot fishery, and limiting the number of pots allowed on board a black sea bass fishing vessel per fishing year. Additionally, Amendment 18A would modify the current rebuilding strategy and system of AMs for black sea bass.

Due to recently implemented annual catch limits (ACLs) and a positive response to rebuilding efforts for the species, the recreational season for black sea bass has been substantially shortened. Therefore, bycatch of black sea bass is likely occurring when recreational fishermen target co-occurring species. Reducing the number of participants in the black sea bass pot fishery, limiting the number of pot tags issued to each endorsement holder, and requiring that all pots be removed from the water at the end of each trip have the potential to reduce bycatch of black sea bass. However, survival of released black sea bass is expected to be high as release mortality is estimated to be 1-7%. Additionally, reduced ACLs for multiple species or closing co-occurring species at the same time could have the effect of reducing effort, which in turn could reduce bycatch.

If recreational ACLs for many co-occurring species are met, the AM would either shorten the following fishing season, reduce the ACL in the following fishing season, or trigger in-season monitoring. Extended closures for co-occurring species could reduce bycatch and enhance the reproductive potential of fish stocks. For example, Amendment 16 to the Snapper Grouper FMP established a January - April spawning season closure for gag, red grouper, black grouper, scamp, rock hind, red hind, coney, graysby, yellowfin grouper, yellowmouth grouper, and tiger grouper. These species are in spawning condition from December through April each year and many form spawning aggregations when they are extremely vulnerable to fishing pressure. Groupers change sex from female to male and there is evidence that males can be selectively removed from spawning aggregations, which could affect reproductive success. Furthermore, the largest most fecund females could also be selectively removed by fishing gear. Therefore, a spawning season closure for all shallow water grouper species implemented through Snapper

Grouper Amendment 16 would be expected to protect grouper species when they are most vulnerable to capture, reduce bycatch of co-occurring grouper species, increase the percentage of males in grouper populations, enhance reproductive success, and increase the magnitude of recruitment.

Snapper Grouper Amendment 16 required the use of dehooking devices, which could help reduce bycatch of black sea bass, and other snapper grouper species. Dehooking devices can allow fishermen to remove hooks with greater ease and more quickly from snapper grouper species without removing the fish from the water. If a fish does need to be removed from the water, dehookers could still reduce handling time in removing hooks, thus increasing survival (Cooke et al. 2001). Furthermore, Snapper Grouper Amendment 17A required circle hooks for snapper grouper species north of 28 degrees latitude, which is expected to reduce bycatch mortality of snapper grouper species. Amendment 13C increased the mesh size in the back panel of black sea bass pots, which has likely reduced the magnitude of black sea bass regulatory discards in the commercial sector, and Amendment 18A proposes to limit effort in the black sea bass pot fishery.

**2. Ecological Effects Due to Changes in the Bycatch**

The ecological effects of bycatch mortality are the same as fishing mortality from directed fishing efforts. If not properly managed and accounted for, either form of mortality could potentially reduce stock biomass to an unsustainable level. Actions proposed in Amendment 18A are likely to reduce bycatch of black sea bass and other co-occurring species since effort would be limited and pots would be hauled at the end of each trip reducing ghost fishing. Many of the species in the snapper grouper fishery management unit have spatial and temporal coincidence with black sea bass and the benefits could be shared among them.

Data from North Carolina presented to the Council indicated fishermen with snapper grouper permits also fish in the nearshore gillnet fisheries. Fishermen with snapper grouper permits in other areas also participate in various state fisheries. It is expected that if efforts shift to these fisheries, there could be impacts to protected species.

Actions in Amendment 18A, which reduce the number of pots that can be fished, reduce the number of individuals who can fish pots, and require that pots be returned to shore at the end of a fishing trip would be expected to reduce interactions with right whales relative to conditions that existed prior to 2008. However since 2009, the black sea bass quota has been met very quckly during the June-May black sea bass fishing year and eliminated the potential for interaction with right whales. New information presented to the Atlantic Large Whale Take Reduction Team indicates that right whales, which migrate along the South Atlantic coast line during the winter calving season (November-April), may have an increased risk of encountering black sea bass pot lines if the measures in Amendment 18A result in a prolonged fishing season without a seasonal closure. Current monitoring programs will allow NOAA Fisheries Service to track and evaluate any increased risk to protected species. If necessary, an Endangered Species Act (ESA) consultation can be re-initiated to address any increased levels of risk to ESA-listed species.

Amendment 18A could restrict the number of pot tags issued to each endorsement holder, require that pots be removed from the water at the completion of a trip, limit the number of endorsement holders in the commercial black sea bass pot fishery, and establish a spawning season closure. These actions could help reduce the incidence of "ghost fishing" by lost pots and reduce interaction of protected species with lines on black sea bass pots.

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

Management measures proposed in Amendment 18A are intended to limit effort in the black sea bass fishery and improve data reporting in the commercial and for-hire sectors of the snapper grouper fishery. The actions contained in Amendment 18A are likely to reduce effort in the pot component of the black sea bass fishery to prevent overcapitalization and minimize any risk of gear interactions with protected species such as the North Atlantic right whale. Any ecological changes in the community structure of reef ecosystems through the proposed actions would be expected to be beneficial. These ecological changes could positively affect the nature and magnitude of bycatch over time.

**4. 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 marine mammals. 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 2011 proposed List of Fisheries classifies as a Category II. 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 released 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 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).

North Atlantic 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). These requirements will help further reduce the likelihood of North Atlantic 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 Carolina 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.

Fishing effort reductions have the potential to reduce the amount of interactions between the fishery and marine mammals and birds. 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.

**5. Changes in Fishing, Processing, Disposal, and Marketing Costs**

Actions in Amendment 18A would be expected to affect the cost of fishing operations. It is likely that all four states (NC, SC, GA & FL) would be affected by actions in the amendment if implemented through rulemaking. Additionally, factors such as waterfront property values, availability of less expensive imports, etc. may affect economic decisions made by recreational and commercial fishermen. Amendment 18A proposes to enhance current data collection programs. This might provide more insight in calculating the changes in fishing, processing, disposal and marketing costs.

**6. Changes in Fishing Practices and Behavior of Fishermen**

Actions proposed in Amendment 18A could result in a modification of fishing practices by commercial and recreational fishermen in the black sea bass component of the snapper grouper fishery, thereby affecting the magnitude of discards. However, it is difficult to quantify any of the measures in terms of reducing discards until the magnitude of bycatch has been monitored over several years. Overall, it is expected that measures contained within Amendment 18A would reduce bycatch in the black sea bass pot fishery.

**7. Changes in Research, Administration, and Enforcement Costs and Management Effectiveness**

Research and monitoring is needed to understand the effectiveness of proposed management measure in reducing bycatch. Additional work is needed to determine the effectiveness of measures in Amendment 18A, recently implemented amendments, and by future actions being

proposed by the South Atlantic Fishery Management Council to reduce bycatch. Amendment 18A proposes to enhance current data collection programs. Some observer information has recently been provided by MARFIN and Cooperative Research Programs but more is needed. Approximately 20% of commercial fishermen are asked to fill out discard information in logbooks; however, a greater percentage of fishermen could be selected with emphasis on individuals that dominate landings. The use of electronic logbooks could be enhanced to enable fishery managers to obtain information on species composition, size distribution, geographic range, disposition, and depth of fishes that are released. Additional administrative and enforcement efforts will be needed to implement and enforce these regulations. NOAA Fisheries Service established the South East Fishery-Independent Survey in 2010 to strengthen fishery-independent sampling efforts in southeast US waters, addressing both immediate (e.g., red snapper) and long-term fishery-independent data needs, with an overarching goal of improving fishery-independent data utility for stock assessments. Meeting these data needs is critical to improving scientific advice to the management process, ensuring overfishing does not occur, and successfully rebuilding overfished stocks on schedule.

**8. 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**.

**9. Changes in the Distribution of Benefits and Costs**

Measure proposed in Amendment 18A could help to reduce bycatch and affect the cost of fishing operations. Limiting effort in the black sea bass pot fishery would have different economic effects on participants from various states. Alternatively, improvements to the current data reporting regime could result in net benefits to the fishing community in the form of more precise data upon which management measures are based.

**10. Social Effects**

The social effects of all the management measures, including those most likely to reduce bycatch, are described in **Section 4**.

**11. Conclusion**

This section evaluates the practicability of taking additional action to minimize bycatch and bycatch mortality using the ten factors provided at 50 CFR 600.350(d)(3)(i). In summary, limiting participation and effort in the commercial black sea bass component of the snapper grouper fishery, in addition to establishing spawning season closure and requiring pots to be removed from the water at the end of each trip could help reduce bycatch. Additionally, measures contained in Amendment 18A may help to reduce the risk of gear interactions with protected species in the South Atlantic. Improvements to data collection would enable closer tracking of the magnitude of discards and overall landings in the black sea bass pot fishery, which could be used to inform future fishery management decisions.

## Appendix F - Fishery Impact Statement for Amendment 18A

The Magnuson-Stevens Act requires a Fishery Impact Statement (FIS) be prepared for all amendments to Fishery Management Plans. 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.

### 1.1 Actions Contained in Amendment 18A to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Amendment 18A)

Amendment 18A is intended to reduce overcapacity and reduce the rate of harvest in the black sea bass pot component of the snapper grouper fishery. The South Atlantic Fishery Management Council (South Atlantic Council) is concerned an increase effort on this species will deteriorate profits while recognizing that the Magnuson-Steven Act states that economics cannot be the sole reason to take action.

The actions proposed in Amendment 18A are listed below:

1. Modify Rebuilding Strategy, ABC, ACLs, and ACTs for Black Sea Bass
2. Limit Participation in the Black Sea Bass Pot Fishery Through an Endorsement Program
3. Establishment of an Appeals Process for Fishermen Excluded from the Black Sea Bass Pot Endorsement Program
4. Allow for Transferability of Black Sea Bass Pot Endorsements
5. Limit Effort in the Black Sea Bass Pot Fishery Each Permit Year
6. Implement Measures to Reduce Black Sea Bass Bycatch
7. Modify Accountability Measures for Black Sea Bass
8. Establish a Commercial Trip Limit for Black Sea Bass
9. Modify Commercial and/or Recreational Black Sea Bass Size Limits
10. Improvements to For-Hire Data Reporting

### 1.2 Assessment of Biological Effects

The preferred rebuilding strategy would maintain the constant catch ACL 718,000 lbs gw (847,000 lbs ww) for the commercial and recreational sectors in the 2012-2014 fishing years. However, in contrast to taking no action, it would allow catch to move to a constant fishing mortality strategy in 2014, which has a 66% chance of rebuilding the stock by 2016. Beneficial biological effects include a more rapid rebuilding of the stock and increase in the average age and size structure compared to the other alternatives. Fishing at a lower fishing mortality rate may increase population robustness to environmental perturbations (Rothschild 1986). Also, older and larger females have greater reproductive potential because fecundity increases exponentially with size. The preferred ACL alternative would set ACL and OY based on the ABC for black sea bass from SEDAR 25, which takes into consideration scientific uncertainty to ensure catch is maintained below a MSY/OFL level. This is the least conservative option of all the ACL alternatives and would result in the greatest increase in overall allowable harvest over

time while still allowing the stock to rebuild. Setting the ACL equal ABCwould also provide no buffer between the ABC and the ACL. Creating a buffer between the ACL/OY and ABC would provide greater assurance that overfishing is prevented and the long-term average biomass is near or above $B_{MSY}$. However, the ABC takes into account scientific uncertainty from the assessment. The NS1 guidelines indicate ACLs may be set very close to the ABC. Setting a buffer between the ACL and ABC would be appropriate in situations where there is uncertainty in whether or not management measures are constraining fishing mortality to target levels. ACTs, which are not required, can also be set below the ACLs to account for management uncertainty and provide greater assurance overfishing does not occur. The preferred recreational ACT alternative would have the greatest biological benefit of the four alternatives by adjusting the ACL by 50% or one minus the Percent Standard Error (PSE) from the recreational fishery, whichever is greater. The lower the value of the PSE the more reliable the landings data. By using PSE, more precaution is taken in the estimate of the ACL with increasing variability and uncertainty in the landings data. Establishing an ACT below the recreational ACL would also reduce the need to close or implement post-season AMs that are meant to correct for an ACL overage.

Establishing an endorsement program with the preferred eligibility criteria would reduce the number of fishery participants who currently fish for black sea bass using pot gear by over half. It is expected that by reducing the number of entities able to fish with black sea bass pots to 31, proposing the limit on the number of pots allowed to be used to 35, proposing a commercial trip limit of 1,250 pounds gw, the commercial quota should be met later in the fishing season (i.e., September as opposed to July or August). Establishing an appeals process for those fishermen who feel they were incorrectly excluded from the black sea bass pot endorsement program could result in indirect effects on the biological environment if additional Unlimited Snapper Grouper Permit holders are issued black sea bass pot endorsements as a result of granted appeals. Though black sea bass pot effort could potentially increase above the expected number of qualifying vessels (31) due to issuance of endorsements through appeals, those impacts on the biological environment including target and non-target species, and critical habitat are not likely to be significant. Furthermore, overall harvest of black sea bass would be constrained by the sector ACLs and AMs contained in this amendment, if approved and implemented through rulemaking. Allowing black sea bass pot endorsements to be transferred independently of South Atlantic Unlimited Snapper Grouper Permits may result in minimal biological impacts if those endorsements are transferred to individuals who are more likely to fish them.

Limiting the number of black sea bass pot tags to be issued each permit year to 35 would reduce the number of black sea bass pots fished by 52% for those individuals who qualify for endorsements, and would have beneficial impacts to the biological environment by reducing the number of pots fished per trip. Requiring black sea bass pots to be brought back to shore upon the conclusion of each trip would result in biological benefits in the form of reduced bycatch and reduced probability of protected species interactions with pot gear. The biological effects of the preferred accountability measure (AM) alternative would be expected to be more beneficial than the other alternatives under consideration since it would prohibit recreational harvest in-season regardless of the overfished status if the ACL is projected to be met. As a result, the magnitude of an overage of the recreational ACL would be expected to be less than if this provision were not included in the action, and less of a post-season correction would be needed in the following

year. The preferred AM alternative would also implement a payback provision if the commercial ACL is exceeded. Under the no action alternative, there is no payback if the ACL is exceeded. Therefore, biological effects of the preferred AM alternative would be greater than if no action were taken because it would reduce the commercial ACL in the fishing year following an ACL overage regardless of stock status, further protecting the stock from overfishing.

A 1,000 lbs gw trip limit for black sea bass is likely to extend the fishing season until July-September for the 31 qualifying endorsement holders in the black sea bass pot fishery. Significant biological impacts on black sea bass, bycatch species, or protected species are not expected under this action. For the recreational black sea bass sector, increasing the minimum size limit from 12 inches TL to 13 inches TL would result in a 20-22% harvest reduction for the for-hire sector and an 18-20% reduction in harvest for the private recreational sector. Increasing the minimum size limit in the commercial black sea bass sector to 11 inches would result in a 9.4% reduction in harvest. Therefore, both actions to increase the recreational and commercial size limits for black sea bass are expected to support rebuilding efforts.

Indirect impacts resulting from the requirement for selected for-hire snapper grouper vessels to report landings data electronically would provide a better understanding of the composition and magnitude of catch and bycatch; enhance the quality of data provided for stock assessments; increase the quality of assessment output; provide better estimates of interactions with protected species; better track recreational ACLs; and lead to better decisions regarding additional measures that might be needed to reduce bycatch. Management measures that affect gear and effort for a target species can influence fishing mortality in other species. Therefore, enhanced catch and bycatch monitoring would provide better data that could be used in multi-species assessments.

## 1.3 Assessment of Economic Effects

Modifying the rebuilding strategy for black sea bass would not directly alter the current harvest or use of the resource. Since there would be no direct effects on resource harvest or use, there would be no direct economic effects on fishery participants, associated industries or communities. Direct economic effects only accrue to actions that alter harvest or other use of the resource. Specifying a rebuilding strategy, however, would establish a course of action that would condition future management adjustments. In this sense, specifying or modifying a rebuilding strategy may be considered to have indirect economic effects on fishery participants. The preferred ACL alternative would provide for the highest ACL, and would be expected to impose the least constraint on fishing activities. In principle, it would allow the commercial and recreational fishing sectors to generate the largest short-term economic benefits from the use of the resource. The preferred recreational ACT alternative would be more restrictive than any of the ACT alternatives, but since no corrective action would be taken when the ACT is met or exceeded there are likely to be no economic impacts as a result of establishing a recreational ACT.

In general, choosing endorsement eligibility criteria that allows for a smaller number of vessels than currently fish for black sea bass to continue fishing, could increase average vessel profitability. Choosing an alternative that allows for a larger number of vessels than currently

fish for black sea bass to fish for black sea bass, could decrease average vessel profitability. It should be noted, however, that a higher average vessel profitability associated with fewer participants would not necessarily ensure higher industry profitability unless some form of rationalization of effort among the remaining participants is adopted. Economic impacts of an appeals program are largely determined by the number of appeals received. Fishermen excluded from the endorsement program who decide to appeal may incur costs associated with trying to prove their case. However, access to NMFS logbook landings or state trip tickets should be at little or no cost to a fisherman. Conceptually, the degree of transfer flexibility influences the aggregate profitability of the fishery and the average individual profitability. The greater the degree of endorsement transferability allowed, the greater the value of the endorsement is expected. Also, the greater the degree of transferability allowed, the greater the profitability of the individual who owns the endorsement because they have the ability to sell it when they need to switch to more profitable fisheries or when they are unable to fish. The preferred endorsement transferability alternative would enhance profitability for fishermen who qualify for black sea bass endorsements.

Under the action to limit the number of black sea bass tags issued to an endorsement holder to 35 if we assume that the number of pots carried per vessel is currently optimal for that individual vessel's operation, then any reduction in the number of pots fished per vessels would have a negative impact on the profitability of that operation. Requiring that black sea bass pots be brought back to shore at the end of each trip may functionally limit soak time if fishermen prefer not to stay at sea longer while their pots soak or force them to stay longer at sea to maintain customary soak times. Further, a vessel could not return to port without retrieving all pots, even if the expected soak time was still expected to be short. Given that bycatch reduction requirement to bring pots back to shore at the end of each trip is intend to protect the biological resource as well as the surrounding ecosystem, by helping to reduce bycatch, the fishery would experience long-term economic benefits from these alternatives.

The preferred AM alternative may result in slightly higher economic losses for the recreational sector since in-season AMs would be triggered regardless of the overfished status of the stock. The preferred AM alternative also includes a payback provision for the commercial sector, which does not exist under the status quo. Additionally the preferred AM alternative would trigger a post-season AM if the commercial or recreational sector ACL is exceeded regardless of the overfished status of black sea bass. Economic losses that may result from this action would take the form of diminished fishing opportunities caused by potential early in-season closures in the recreational sector, and lowered ACLs following a season in which the ACL was exceeded. Approximately $202,000 in lost revenue would result from the action to establish a commercial trip limit of 1,000 lbs gw. In general, for boats that bring in relatively larger landings per trip, ex-vessel revenue losses are expected to occur. If a boat with historically larger landings adheres to the trip limit and does not increase the number of trips made, landings by these vessels would decrease compared to current landings as will ex-vessel revenues. Boats that bring in smaller landings per trip may or may not be impacted by the trip limits proposed. Most trips that land black sea bass as part of their total trip landings are not specifically targeting that species.

In general, short term economic losses are experienced in a fishery like black sea bass when the size limit is increased. The length of the short term loss is dependent on the growth rate of the

fish and the size of the increase. Allowing fish to become larger before they are harvested will allow the fishermen to receive a higher price. If the size limit is increased, the fish will get larger and weigh more; therefore, it will take fewer fish to meet the ACL. To the extent that headboats are already subject to paper logbook reporting, the incremental cost of electronic reporting under the action to require selected for-hire snapper grouper vessels to report electronically, especially the weekly frequency option, would likely be minimal and would accrue only to a subset of headboats selected to report. On the other hand, the incremental cost to charterboats would likely be higher for those selected to report as there are currently no logbook reporting requirements on charterboats.

## 1.4 Assessment of the Social Effects

The proposed rebuilding strategy, which would hold catch at current levels for the 2012-2013 and 2013-2014 fishing years would be expected to have similar social effects as taking no action, with the exception that catch would be held constant for only two fishing years rather than the remainder of the rebuilding period. In regard to the ACL, in general the higher the ACL, the greater the short-term social and economic benefits that would be expected to accrue, assuming long-term recovery and rebuilding goals are met. Adhering to stock recovery and rebuilding goals is assumed to result in net long-term positive social and economic benefits. The preferred recreational ACT alternative would provide flexibility but the relative social effects are unknown without defined numbers for the ACT. Although this proposed black sea bass pot endorsement program would not limit total black sea bass harvest, restricting participation may affect the total amount of black sea bass harvested as well as change product flow through communities and dealers. If the harvesters with traditionally higher landings receive tags and endorsements, as may be expected, total black sea bass harvest and the landing patterns through communities where most black sea bass is landed should not be affected. Establishing an appeals process for those who did not qualify for a black sea bass endorsement would be expected to result in greater social benefits than not establishing such a appeals mechanism. It is assumed that the process will adequately identify appropriate qualifiers and not simply result in an increase in fishermen with endorsements. Any ability to transfer endorsements may result in equity criticisms, similar to complaints associated with transferable catch share programs. Although the black sea bass pot endorsement would not contain an entitlement to a specific harvest quantity, it would bestow asset rights to the recipient because endorsement possession would enable harvest, and the recipient would possess a new marketable asset. The value of this asset (the endorsement) would represent a windfall profit for the endorsement recipient, in addition to any benefits from actual harvests, a circumstance that may seem inequitable to entities denied an endorsement upon their initial issuance.

The proposed measure to limit the number of black sea bass pot tags issued to each endorsement holder each permit year may indirectly result in a reduction in harvest for some vessels, as well as limit the potential for harvest increases by fishermen, than if no specific harvest reductions or limits are proposed. Thus, no direct adverse social effects associated with explicit harvest reductions would be expected on average (across all current participants) and the primary social effects of the alternative limits may be largely due to reduced fishing flexibility and interference with personal fishing or business practices. These effects may take the form of reduced independence, lower job satisfaction, reduced time to engage in other activities, or increased

costs, among other effects. The action to require all black sea bass pots be brought back to shore at the end of each trip would be expected to help reduce bycatch, resulting in increased long-term social and economic benefits for affected species, but would restrict fishing flexibility. The preferred AM alternative may result in the recreational sector being closed when the recreational sector ACL is projected to be met, in addition to lowered recreational and commercial ACLs following a season where the respective sector ACLs were exceeded. Both of these scenarios are not socially beneficial; however, they are likely to maintain rebuilding momentum of the stock, which could result in long-term social benefits. The potential economic effects of the proposed black sea bass trip limit are described in Section 4.9.2 of Amendment 18A, noting that these estimates do not incorporate potential compensating effort or harvest behavior. In general, it is assumed for the purposes of this discussion that the greater the economic losses, the greater the social losses.

Similar to regulations that could restrict harvest, such as ACLs, bag limits and trip limits, an increase in the minimum size for black sea bass is expected to produce negative social effects in the short term, but positive social effects in the long term. The negative social effects for the commercial sector will generally be associated with the economic impacts of the change in minimum size limit, as there may be fewer fish that can be retained for sale. For the recreational sector, the size limit will also reduce the number of fish that can be kept, which may impact recreational fishing experiences and have an economic impact on the for-hire sector. The long-term social benefits would be associated with the biological benefits of a larger minimum size, as the black sea bass stock rebuilds. The increased reporting burden that would result under the action to require that selected for-hire snapper grouper vessel report landings data electronically, would be expected to result in reduced social benefits to affected entities, while the improved data quality and utility would be expected to result in improved management (better and more timely fishery and impact assessments resulting in improved regulations) relative to taking no action. Overall, the social benefits of improved management would be expected to exceed the reduced benefits associated with increased reporting burden. The actual magnitude of effects would, however, be dependent upon the as yet unspecified reporting frequency, with more frequent reporting increasing the reporting burden, while improving the quality and utility of the data, and subsequent management decisions.

## 1.5 Assessment of Effects on Safety at Sea

Overall, management measures contained in Amendment 18A would not present safety at sea concerns. The requirement that all pots be brought back to shore at the conclusion of each trip would likely be waived during periods of inclement weather where doing so would pose a safety hazard to the captain and crew of a vessel. Modifying the rebuilding strategy, establishing an endorsement program, limiting the number of black sea bass tags to be issued each permit year, establishing a commercial trip limit, modifying the commercial and recreational size limits, and requiring for-hire snapper grouper vessels to report electronically would not result in any safety at sea issues, and therefore, require no related mitigation measures to counter any potential safety concerns.

## Appendix G - Regulatory Flexibility Analysis

### Introduction

The purpose of the Regulatory Flexibility Act (RFA) is to establish a principle of regulatory issuance that agencies shall endeavor, consistent with the objectives of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of businesses, organizations, and governmental jurisdictions subject to regulation. To achieve this principle, agencies are required to solicit and consider flexible regulatory proposals and to explain the rationale for their actions to assure that such proposals are given serious consideration. The RFA does not contain any decision criteria; instead, the purpose of the RFA is to inform the agency, as well as the public, of the expected economic impacts of various alternatives contained in the FMP or amendment (including framework management measures and other regulatory actions). The RFA is also intended to ensure that the agency considers alternatives that minimize the expected impacts while meeting the goals and objectives of the FMP and applicable statutes.

With certain exceptions, the RFA requires agencies to conduct a regulatory flexibility analysis for each proposed rule. The regulatory flexibility analysis is designed to assess the impacts various regulatory alternatives would have on small entities, including small businesses, and to determine ways to minimize those impacts. In addition to analyses conducted for the RIR, the regulatory flexibility analysis provides: 1) A statement of the reasons why action by the agency is being considered; 2) a succinct statement of the objectives of, and legal basis for the proposed rule; 3) a description and, where feasible, an estimate of the number of small entities to which the proposed rule will apply; 4) a description of the projected reporting, record-keeping, and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirements of the report or record; 5) an identification, to the extent practical, of all relevant Federal rules which may duplicate, overlap, or conflict with the proposed rule; and 6) a description of any significant alternatives to the proposed rule which accomplish the stated objectives of applicable statutes and which minimize any significant economic impact of the proposed rule on small entities.

Additional information on the description of affected entities may be found in **Section 3.7,** and additional information on the expected economic effects of the proposed action may be found in **Section 4**.

### Statement of Need for, Objectives of, and Legal Basis for the Rule

The purpose and need, issues, problems, and objectives of the proposed rule are presented in **Sections 1.2 and 1.3**. The purpose of this proposed action is to limit participation and effort in the black sea bass pot fishery; limit bycatch in the black sea bass pot fishery; modify the current system of accountability measures; modify the current rebuilding strategy; consider a spawning season closure in addition to other management measures to reduce the rate of harvest of black sea bass; and, improve the accuracy, timing, and quantity of fisheries data, while minimizing, to the maximum extent practicable, adverse socioeconomic impacts.
The need for the proposed action is to reduce overcapacity in the black sea bass portions of the snapper grouper fishery. There is concern that an increasing effort on black sea bass (and other

species) would deteriorate profits, noting that in recent years the fishery experienced shortened seasons for the commercial and recreational sectors.

The Magnuson-Stevens Fishery Conservation and Management Act, as amended, provides the statutory basis for the proposed rule.

**Identification of All Relevant Federal Rules Which May Duplicate, Overlap or Conflict with the Proposed Rule**

No duplicative, overlapping, or conflicting Federal rules have been identified. Previous amendments, whether already implemented or in the process of being implemented, have been considered in designing the various actions in this amendment.

**Description and Estimate of the Number of Small Entities to Which the Proposed Rule will Apply**

This proposed action is expected to directly affect commercial fishers and for-hire operators. The SBA has established size criteria for all major industry sectors in the U.S. including fish harvesters and for-hire operations. A business involved in fish harvesting is classified as a small business if it is independently owned and operated, is not dominant in its field of operation (including its affiliates), and has combined annual receipts not in excess of $4.0 million (NAICS code 114111, finfish fishing) for all its affiliated operations worldwide. For for-hire vessels, the other qualifiers apply and the annual receipts threshold is $7.0 million (NAICS code 713990, recreational industries).

From 2005-2010, an annual average of 247 vessels with valid permits to operate in the commercial snapper grouper fishery landed black sea bass, generating dockside revenues of approximately $1.103 million (2010 dollars). Each vessel, therefore, generated an average of approximately $4,465 in gross revenues from black sea bass. Vessels that operate in the black sea bass fishery may also operate in other snapper grouper fisheries, the revenues of which are not reflected in these totals.

Based on revenue information, all commercial vessels affected by the proposed action can be considered small entities.

From 2005-2010, an annual average of 1,985 vessels had valid permits to operate in the snapper grouper for-hire fishery, of which 85 are estimated to have operated as headboats. The for-hire fleet is comprised of charterboats, which charge a fee on a vessel basis, and headboats, which charge a fee on an individual angler (head) basis. The charterboat annual average gross revenue is estimated to range from approximately $62,000-$84,000 for Florida vessels, $73,000-$89,000 for North Carolina vessels, $68,000-$83,000 for Georgia vessels, and $32,000-$39,000 for South Carolina vessels. For headboats, the corresponding estimates are $170,000-$362,000 for Florida vessels, and $149,000-$317,000 for vessels in the other states.

Based on these average revenue figures, all for-hire operations that would be affected by the proposed action can be considered small entities.

Some fleet activity, i.e., multiple vessels owned by a single entity, may exist in both the commercial and for-hire snapper grouper sectors but its extent is unknown, and all vessels are treated as independent entities in this analysis. A commenter on another amendment to the Snapper Grouper FMP indicated he owns 12 snapper grouper commercial permits. For this fleet to reach the $4 million threshold, each permitted vessel would have to generate yearly receipts of approximately $333,000. It is not known whether or not this is the case, but it appears such amount is too high given the above noted average gross revenues per vessel.

**Description of the projected reporting, record-keeping and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirement and the type of professional skills necessary for the preparation of the report or records**

In general, the proposed action would not introduce any changes to reporting, record-keeping, and other compliance requirements which are currently required. However, a sample of the 1,985 vessels with for-hire snapper grouper permits would be required to electronically report their harvest. To the extent that headboats are currently subject to logbook reporting, the incremental professional skill needed under the new requirement would be relatively small. The incremental professional skill required of charterboats would be relatively higher, although about 10 percent of charter captains are now currently contacted on a weekly basis to collect trip level information.

**Substantial Number of Small Entities Criterion**

The proposed action is expected to directly affect all Federally permitted commercial vessels harvesting black sea bass and for-hire vessels that operate in the South Atlantic snapper grouper fishery. All directly affected entities have been determined, for the purpose of this analysis, to be small entities. Therefore, it is determined that the proposed action will affect a substantial number of small entities.

**Significant Economic Impact Criterion**

The outcome of 'significant economic impact' can be ascertained by examining two issues: disproportionality and profitability.

<u>Disproportionality</u>: Do the regulations place a substantial number of small entities at a significant competitive disadvantage to large entities?

All entities that are expected to be affected by the proposed rule are considered small entities, so the issue of disproportional effects on small versus large entities does not arise in the present case.

<u>Profitability</u>: Do the regulations significantly reduce profit for a substantial number of small entities?

Modifying the rebuilding strategy and setting the ABC for black sea bass would retain the current economic status of small entities for the next two years of the rebuilding period. Thereafter profits to small entities may be expected to increase with a shift from a constant catch strategy to a constant fishing mortality strategy that would allow the ABC to increase over time.

Setting the ACL, ABC, and OY equal to one another would likely result in profit increases to small entities, at least in the short term. Over the long-term, this proposed action would also lead to increases in profits.

By not setting an ACT for the commercial sector, the short-term profits of small entities would remain unaffected by this proposed measure.

Setting an ACT for the recreational sector would account for management uncertainty in this sector partly due to issues related to the timely accounting of this sector's harvests. Currently, this ACT is not used to trigger applications of accountability measures, so short-term profits to small entities would remain unaffected. Over time, this ACT measure may be used to trigger applications of accountability measures. In that event profits to small entities may be adversely affected, but with this measure designed to help ensure the rebuilding strategy is on track, long-term profitability would be sustainable.

Establishing a black sea bass pot endorsement program would likely result in profit increases to those who would qualify and profit decreases to those who would not. Out of the 50 to 60 individuals that currently fish for black sea bass using pots, approximately 28 to 30 would qualify for the endorsement. Although those who not qualify could still fish for black sea bass using other gear types, their harvest performance would very likely still suffer. To the extent that a limited number of individuals would be allowed to fish for pots under the endorsement program, there is a good possibility that the fishing season for the commercial sector would remain longer than current experience. This could possibly result in overall industry profits to increase or at least not deteriorate as it would be without the endorsement program.

Establishing an appeals process for fishermen initially excluded from the black sea bass pot endorsement would provide opportunities for those legitimately qualified to receive their endorsement. There is a good possibility that, given the narrow basis for appeals (landings reported on NMFS logbook records or state landing records), only a limited number of appeals would be successful.

Allowing transferability of black sea bass pot endorsements would open opportunities for increasing the value of the endorsement asset as well as for the more efficient operators to engage in the fishery. Such opportunities, however, would still be limited by the requirement that transfers of endorsements be made between entities possessing Unlimited Snapper Grouper Permits. These permits are now under a limited entry program.

Limiting the number of pots per vessel would likely decrease the short-run profits of small entities. The proposed maximum number of 35 pots allowed per vessels is much lower than the current average of 45 pots fished, and would affect about 48 percent of the trips. Vessels would generate lower revenues per trip or higher overall fishing costs to maintain the same overall

revenues. To the extent, however, that the endorsement program would limit the number of participants in the pot fishery, the overall industry profits may not substantially decrease as a result of the restrictions on the number of pot tags per vessel.

Requiring that black sea bass pots be brought back to shore at the conclusion of each trip as a means to reduce bycatch may restrict the fishing operations of some vessels. Its effects on profits are relatively unknown, but it is worth noting that in approximately 65 percent of trips pots are brought back to shore. If vessels undertake longer trips, since there is no restriction on the length of each trip, to allow their pots to fish longer, costs could rise. If this practice mainly results in maintaining the same revenues per trip, vessel profits could fall down. If, however, this requirement could effectively result in less ghost fishing and interaction with some protected species, less future restrictions may be imposed on the fishery such that long-term profits of small entities would remain sustainable.

The recreational accountability measures (AM) consisting of in-season harvest and possession restriction and post-season reduction in the sector's ACL if the aggregate ACL is met or projected to be met in the current year would likely reduce the short-term profits of for-hire vessels. In a similar way, the commercial AM consisting of in-season prohibition on the purchase and sale of black sea bass and post-season reduction in the sector's ACL would likely result in profit reductions to the commercial vessels. To the extent that this provision allow the rebuilding target to be achieved within the rebuilding period, long-term profits to for-hire and commercial fishing operations would increase. In addition, the projected increases in aggregate ACL, when it is not exceeded, would tend to negate some or all of the adverse profit effects of the post-season AM.

By not implementing any spawning closure for black sea bass, the profits of small entities would remain unaffected by this proposed measure.

Establishing a commercial vessel trip limit of 1,000 lb gw (1,180 lb ww) would tend to adversely affect the catch and revenue per trip of vessels that generally land over this limit. Based on the 2010-2011 fishing season data, this alternative would adversely affect approximately 8.4 percent of trips accounting for about 83,000 pounds valued at about $203,000. It may be noted, though, that this trip limit could lengthen the fishing season, allowing opportunities for some vessels to recoup some of their revenue losses for the year. At any rate, there is some expectation that some of these revenue reductions would filter into the bottom line of some vessels and potentially the bottom line of the entire industry. The actual extent of industry profit reduction cannot be estimated with available information.

Increasing the recreational minimum size limit from 12 inches TL to 13 inches TL is estimated to potentially reduce the black sea bass harvests of headboats in the range of 20.9 percent to 22.6 and black sea bass harvests of other fishing modes from 18.8 percent to 20.3 percent. These harvest reductions can possibly lead to trip cancellations as the quality of fishing experience would decrease; on the other hand, these reductions could happen only early in the fishing season but be recouped through additional trips with a lengthened season. The actual effects on for-hire vessel profits depend on whether there would be trip cancellations, and this cannot be ascertained with available information.

Increasing the commercial size limit from 10 inches TL to 11 inches TL is estimated to potentially reduce the black sea bass harvests of commercial vessels by slightly over 9 percent. Actual reductions in harvest would partly depend on whether vessels take additional or longer trips to recoup potential harvest losses. Although additional or longer trips would maintain total revenues, either from maintaining the same harvest or from generating more revenue per fish since a bigger black sea bass generally commands a higher price, costs would also increase. The net effects on per vessel and industry profits cannot be determined with available information.

There are no proposed changes in commercial data reporting, so commercial vessel profits would remain unaffected. Requiring selected for-hire vessels to report electronically would affect some of the 1,985 vessels with for-hire snapper grouper permits. This requirement would add costs to these vessels' operations. The incremental costs to selected headboats would likely be minimal because headboats are currently subject to logbook reporting. The incremental cost to selected charterboats would be higher as they are not currently subject to logbook reporting although some charter captains are now routinely contacted to collect trip level information. The resulting effects to for-hire vessel profits cannot be determined.

In summary, it cannot be determined whether the proposed action would have a significant impact on the profits of small entities. The public is therefore encouraged to provide input regarding the magnitude of effects on the profits of small entities.

**Description of Significant Alternatives**

Five alternatives, including the preferred alternative, were considered for modifying the rebuilding strategy and ABC. The first alternative, the no action alternative, would maintain the constant catch rebuilding strategy and current ABC throughout the rebuilding timeframe. This alternative would provide for lower ABC over time, implying lower economic benefits than the preferred alternative. The second alternative would establish a new constant catch rebuilding strategy with a higher (than current) ABC throughout the remaining years of the rebuilding timeframe. Relative to the preferred alternative, the second alternative would provide for higher ABC for two years but lower ABC thereafter. The sum of economic benefits over the rebuilding timeframe under this alternative would be lower than that of the preferred alternative, primarily because the sum of annual ABC under this alternative would be lower. In addition, a constant catch strategy in general would likely lead to the ACL being met sooner as the fish stock rebuilds, resulting in applications of in-season and post-season AMs. The third alternative, with two sub-alternatives, would establish a constant fishing mortality rebuilding strategy throughout the remaining years of the rebuilding timeframe. Under the first sub-alternative, the fishing mortality rate would be 75 percent of the fishing mortality at MSY (75%$F_{MSY}$), and under the second sub-alternative, the fishing mortality rate that would rebuild the stock by 2016 ($F_{REBUILD}$ by 2016). These two sub-alternatives would provide for lower ABCs than the preferred alternative, and thus lower economic benefits over time. The fourth alternative would maintain the current constant catch strategy and ABC for the next two years of the rebuilding timeframe and switch to a constant fishing mortality strategy at $F_{REBUILD}$ throughout the remainder of the rebuilding timeframe. This alternative would provide for the same ABC as the preferred

alternative, but it is associated with a lower probability of rebuilding the stock to biomass at MSY.

Four alternatives, including the preferred alternative, were considered for modifying the ACL for black sea bass. The first alternative, the no action alternative, would maintain the existing ACL as equal to ABC and OY equal to 75 of the fishing mortality at MSY. This alternative is more restrictive in setting OY as the underlying goal of managing the black sea bass stock. The second alternative would set the ACL equal to 90 percent of ABC and the latter equal to OY. The third alternative would set the ACL equal to 80 percent of ABC and the latter equal to OY. These other alternatives would provide for lower ACL than the preferred alternative, and thus lower economic benefits as well.

Three alternatives, including the preferred alternative (no action alternative), were considered for setting the commercial ACT. The first alternative would set the commercial ACT equal to 90 percent of the commercial ACL. The second alternative would set the commercial ACT equal to 80 percent of the commercial ACL. Because the commercial landings are closely tracked in-season through a quota monitoring system, the need to provide for a commercial ACT as a monitoring tool was deemed unnecessary.

Although a recreational ACT would not be used to implement corrective or preventative measures, it was deemed necessary to have a recreational ACT as a monitoring target on the performance of recreational management measures because of the difficulty of tracking recreational harvest on a real time basis. Four alternatives, including the preferred alternative, were considered for setting the recreational ACT. The first alternative, the no action alternative, would not set a recreational ACT, and thus would not meet the mentioned objective. The second alternative would set the recreational ACT equal to 85 percent of the recreational ACL. The third alternative would set the recreational ACT equal to 75 percent of the recreational ACL. These two alternatives are currently estimated to result in lower ACTs than the preferred alternative, so that if an ACT is used to trigger management actions these two alternatives would result in larger adverse effects on the profits of for-hire vessels.

Three alternatives, including the preferred alternative, were considered for establishing an endorsement program for the black sea bass pot segment of the snapper grouper fishery. The first alternative, the no action alternative, would not establish an endorsement program. This alternative would allow anybody with Unlimited Snapper Grouper Permit to engage in the black sea bass pot segment of the snapper grouper fishery. This would increase the likelihood of the evolving derby conditions in the fishery to become more acute over time, potentially dampening industry profitability. The second alternative includes seven sub-alternatives, of which one is the preferred sub-alternative that would set the minimum landings at 2,500 lb gutted weight for eligibility in the endorsement program. The first sub-alternative would set the minimum landings at 500 lb gutted weight; the second sub-alternative, at 1,000 lb gutted weight; the third sub-alternative, at 2,000 lb gutted weight; the fourth, at 3,500 lb gutted weight; the fifth, at 5,000 lb gutted weight; and, the sixth, at 10,000 lb gutted weight. These sub-alternatives would allow varying number of individuals/entities to qualify for the endorsement: the higher the landings requirement, the fewer would be the qualifiers. The Council's choice of preferred alternative was based on their assessment that about 30 individuals/entities can be profitably sustained by

the pot fishery. In this case, sub-alternatives requiring less than 2,500 lb gutted weight of landings for endorsement eligibility would likely result in unsustainable profits. On the other end, sub-alternatives requiring higher than 2,500 lb gutted weight of landings would severely restrict participation in the fishery although industry profitability would be more sustainable. In addition, a highly restrictive endorsement qualification criterion, such as 10,000 lb gutted weight, would tend to eliminate small scale operations that have historically characterized the pot fishery for black sea bass. The third alternative, with two sub-alternatives, would require that no South Atlantic state shall have less than two entities qualifying for the endorsement. The first sub-alternative would set as minimum landings requirement 1,000 lb gutted weight, and the second, 2,000 lb gutted weight. This alternative, with the sub-alternatives, was intended to allow participation by all South Atlantic states in the endorsement program. Since the minimum number of qualifiers from each state would be the same under this alternative and the preferred alternative, this third alternative was deemed unnecessary.

Three alternatives, including the preferred alternative, were considered for establishing an appeals process for fishermen initially excluded from the endorsement program. The first alternative, the no action alternative, would not establish an appeals process. This alternative has the potential to unduly penalized participants due mainly to some errors in data reporting. The second alternative is the same as the preferred alternative, except that it would additionally establish a special board composed of state directors/designees that would review, evaluate, and make individual recommendations to the Regional Administrator. This alternative would mainly introduce additional administrative burden that may not improve the appeals process considering that the only issue subject to appeals is the landings record.

Three alternatives, including the preferred alternative, were considered for allowing transferability of black sea bass pot endorsements. The first alternative, the no action alternative, would not allow transfers of endorsements. This alternative would tend to limit the value of the endorsement asset and hinder the participation of potentially more efficient operators. The second alternative includes four sub-alternatives, of which one is the preferred sub-alternative. The first sub-alternative would not allow transfers of endorsements during the first two years of the program; the second sub-alternative would not allow transfers of endorsements during the first three years of the program; and, the third sub-alternative would not allow transfers of endorsements during the first five years of the program. All these sub-alternatives would mainly delay the entrance of more efficient operators and the generation of higher-valued endorsement assets. The third alternative is similar to the preferred alternative, except that the endorsement and associated landings history would be transferred only if the Unlimited Snapper Grouper Permit is transferred. This alternative may restrict the entry of more efficient operators that currently possess Unlimited Snapper Grouper Permits. This third alternative includes four sub-alternatives: the first sub-alternative would allow transfers of endorsement upon program implementation; the second sub-alternative would not allow transfers of endorsements during the first two years of the program; the third sub-alternative would not allow transfers of endorsements during the first three years of the program; and, the fourth sub-alternative would not allow transfers of endorsements during the first five years of the program. All these sub-alternatives would mainly delay the entrance of more efficient operators or the consolidation and the generation of higher-valued endorsement assets.

Five alternatives, including the preferred alternative, were considered for limiting effort in the black sea bass pot segment of the snapper grouper fishery. The first alternative, the no action alternative, would not limit the number of black sea bass pots deployed or pot tags issued to holders of snapper grouper commercial permits. Among the alternatives, this is potentially the best alternative for efficient operations in the black sea bass pot fishery. But without limiting the number of pots, there is a high likelihood that many pots, left in the water for a longer time due to vessel or weather problems, may be lost and "ghost fish" for black sea bass or other species. In addition, many pots would employ many vertical lines that would increase the probability of interaction with certain protected species. Such occurrences are likely to hinder the rebuilding of black sea bass or other species and to require the implementation of more restrictive measures that would impinge on the profits commercial vessels. The second alternative would limit the black sea bass pot tags to 100 per vessel per year; the second alternative, to 50 per vessel per year; and, the third alternative, to 25 per vessel per year. These other alternatives differ from the preferred alternative only in the maximum number of pots deployed or pot tags issued per vessel, with the higher numbers providing better opportunities for higher profits per vessel trip. But as noted above, the higher number of pots, the higher would be the probability of ghost fishing and interaction with protected species.

Three alternatives, including the preferred alternative, were considered for reducing bycatch in black sea bass pots. The first alternative, the no action alternative, would not implement additional measures on when pots must be removed from the water. This alternative would not help in reducing bycatch in the black sea bass pot fishery. The second alternative would allow fishermen to leave pots in the water for no more than 72 hours. This alternative would have about the same effects as the preferred alternative on pot fishing operations, since most fishing trips for black sea bass using pots last for three days. But it would present a higher for ghost fishing since pots may be left in the water on short vessel trips or not retrieved during inclement weather.

Three alternatives, including the preferred alternative, were considered for modifying accountability measures (AM) for black sea bass. The first alternative, the no action alternative, would maintain the current commercial and recreational AMs. This alternative was deemed to be relatively deficient in constraining harvest at or below the sector ACLs. Moreover, it could unnecessarily penalize commercial and recreational participants in the black sea bass fishery. The second is similar to the preferred alternative for the recreational sector, except that it would trigger in-season AM only if the black sea bass stock is overfished. This alternative could lead to larger post-season adjustment of the recreational ACL and thus larger adverse effects on for-hire profits, particularly if the aggregate ACL is exceeded, in order to keep the rebuilding trajectory on track. Moreover, if overages in the recreational harvests lead to exceeding the aggregate ACL, the aggregate ACL would not automatically increase the following year so that both the commercial and recreational sectors would be adversely affected.

Five alternatives, including the preferred alternative (no action alternative), were considered for implementing a spawning closure. The first alternative would implement a March 1-April 30 spawning closure; the second alternative, an April 1-May 31 spawning closure; the third alternative, a March 1-May 31 spawning closure; and, the fourth alternative, a May 1-May 31 spawning closure. These alternatives would result in short-term profit reductions to commercial

and for-hire vessels. It is also possible such short-term profit reductions would persist in the future as the benefits from a spawning closure are not well established since black sea bass do not form large spawning aggregations and the peak spawning period occurs at different times of the year across the South Atlantic.

Nine alternatives, including the preferred alternative, were considered for establishing a commercial trip limit. The first alternative, the no action alternative, would not establish a commercial trip limit. In principle, this alternative would provide the best economic environment for short-term profitability of commercial vessels on a per trip basis, since commercial vessel operations would remain unaffected. However, this alternative would not aid could possibly lead to lower industry profitability as a result of a shortened fishing season that would occur when the harvest rate is not effectively controlled. The second alternative would establish a trip limit of 500 lb gutted weight; the third alternative, 750 lb gutted weight; the fourth alternative, 1,250 lb gutted weight; the fifth alternative, 1,000 lb gutted weight and reduced to 500 lb gutted weight when 75 percent of the commercial ACL is met; the sixth alternative, 2,000 lb gutted weight; the seventh, 2,500 lb gutted weight; and, the eighth alternative, 250 lb gutted weight. It is but expected that trip limits lower than the preferred alternative of 1,000 lb gutted would lead to larger adverse effects on per trip profitability; the opposite would occur with higher trip limits. Based on the Council's assessment, the preferred alternative would provide the best balance between per trip losses in profits and higher industry profits from a longer fishing season.

Three alternatives, including two preferred alternatives, were considered for modifying the commercial and recreational minimum size limit. The first alternative, the no action alternative, would not change the commercial or recreational size limit. In principle, this alternative would provide the best economic environment for both the commercial and recreational sectors, because their operations would remain relatively unaffected. However, this alternative would not help in constraining the rate of harvest which has been increasing in recent years, leading to early closures of both the commercial and recreational sectors of the black sea bass fishery. The second alternative includes three sub-alternatives, of which one is the preferred sub-alternative. The second sub-alternative would increase the commercial size limit from 10 inches TL to 12 inches TL. This sub-alternative would lead to relatively larger adverse effects on the profits of commercial vessels but would also tend to allow a longer fishing season. However, the Council deemed this sub-alternative would not provide a better balance between short-term profit reductions and profit increases from a longer season. The third sub-alternative would increase the commercial size limit from 10 inches TL to 11 inches TL in the first year and to 12 inches TL thereafter. This sub-alternative would eventually lead to relatively larger adverse effects on the profits of commercial vessels but would also tend to allow a longer fishing season. However, the Council deemed this sub-alternative would not provide a better balance between short-term profit reductions and profit increases from a longer season.

Four alternatives, including the preferred alternative (no action alternative), were considered for improving the commercial data reporting. The first alternative would require all vessels with Federal snapper grouper commercial permit to have an electronic logbook tied to the vessel's GPS onboard the vessel. The second alternative would provide the option for fishermen to submit their logbook entries electronically via an electronic version of the logbook made

available online. The third alternative would require that commercial landings and catch/effort data be submitted in accordance with the Atlantic Coastal Cooperative Statistics Program (ACCSP) standards, using the Standard Atlantic Fisheries Information System (SAFIS). These alternatives would introduce additional cost to commercial fishing operations. In consideration of the potential for these alternatives to enhance data collection, the Council proposed to address this issue later through a comprehensive amendment for improving data collection.

Four alternatives, including the preferred alternative, were considered for improving the for-hire data reporting. The first alternative (the no action alternative) would retain the existing data reporting systems for the for-hire sector. Unlike the case for the commercial sector, data collection in the recreational sector has some deficiencies that may be corrected through additional reporting requirements or a different reporting system. Thus, modifications to existing recreational data collection were deemed necessary to the extent they would not be too burdensome on for-hire vessel operations. The second alternative would require vessels operating with a Federal For-Hire permit to maintain a logbook for discard characteristics (e.g., size and reason for discarding), if selected. This alternative would provide better information regarding discards but would add cost to for-hire vessel operations. The third alternative would require that for-hire landings and catch/effort data be submitted in accordance with the ACCSP standards, using the SAFIS system. Although this alternative has potentials for improving recreational data collection, it would be costly to for-hire vessels. Besides the Council deemed it prudent to allow the new Marine Recreational Information Program (MRIP) to be in place for some time to determine whether it would be sufficient for reporting for-hire landings data.

## Appendix H - Regulatory Impact Review

### Introduction

The NOAA Fisheries Service requires a Regulatory Impact Review (RIR) for all regulatory actions that are of public interest. The RIR does three things: (1) it provides a comprehensive review of the level and incidence of impacts associated with a proposed or final regulatory action; (2) it provides a review of the problems and policy objectives prompting the regulatory proposals and an evaluation of the major alternatives that could be used to solve the problem; and, (3) it ensures that the regulatory agency systematically and comprehensively considers all available alternatives so that the public welfare can be enhanced in the most efficient and cost-effective way. The RIR also serves as the basis for determining whether the proposed regulations are a "significant regulatory action" under the criteria provided in Executive Order (E.O.) 12866 and provides information that may be used in conducting an analysis of impacts on small business entities pursuant to the Regulatory Flexibility Act (RFA). This RIR analyzes the expected effects that this action would be expected to have on the commercial and recreational sectors of the snapper grouper fisheries, with emphasis on the black sea bass segment. Additional details on the expected economic effects of this action are included in **Section 4** and are incorporated herein by reference.

### Problems and Objectives

The purpose and need, issues, problems, and objectives of the proposed rule are presented in **Sections 1.2 and 1.3**. The purpose of this proposed action is to limit participation and effort in the black sea bass pot fishery; limit bycatch in the black sea bass pot fishery; modify the current system of accountability measures; modify the current rebuilding strategy; consider a spawning season closure in addition to other management measures to reduce the rate of harvest of black sea bass; and, improve the accuracy, timing, and quantity of fisheries data, while minimizing, to the maximum extent practicable, adverse socioeconomic impacts.

The need for the proposed action is to reduce overcapacity in the black sea bass portions of the snapper grouper fishery. There is concern that an increasing effort on black sea bass (and other species) would deteriorate profits, noting that in recent years the fishery experienced shortened seasons for the commercial and recreational sectors.

### Methodology and Framework for Analysis

This RIR assesses management measures from the standpoint of determining the resulting changes in costs and benefits to society. To the extent practicable, the net effects of the proposed measures are stated in terms of producer and consumer surplus. In addition, the public and private costs associated with the process of developing and enforcing regulations on fishing for snapper grouper in waters of the U.S. South Atlantic are provided.

### Description of the Fishery

A description of the South Atlantic snapper grouper fishery, with particular reference black sea bass, is contained in **Chapter 3** and is incorporated herein by reference.

**Effects of Management Measures**

Details on the economic effects of all alternatives are found in **Chapter 4** and are included herein by reference. The following discussion focuses mainly on the expected effects of the preferred alternatives.

**Alternative 5 (Preferred)** would implement a rebuilding strategy consisting of a constant catch strategy, similar to the current rebuilding strategy, for the first two years of the rebuilding timeframe and a switch to a constant fishing mortality strategy for years thereafter. This constant fishing mortality rate strategy would have a 66 percent probability of recovery rate throughout the remaining years of the rebuilding timeframe. The ABC/ACL for the first two years of rebuilding under this alternative would be the same as that of the no action alternative but would increase over time. Relative to the no action alternative, **Alternative 5 (Preferred)** would have no economic effects for the first two years but would provide better economic environment over time because the ABC/ACL is allowed to increase.

**Alternative 2 (Preferred)** would set the ACL, OY, and ABC equal to one another, and thus would provide for the highest ACL among the alternatives considered. For this reason, **Alternative 2 (Preferred)** would allow the commercial and recreational sectors to generate the largest short-term economic benefits from the use of the resource. Inasmuch as this alternative would still allow for the stock to rebuild within the rebuilding timeframe, benefits from this alternative may be expected to persist over time.

**Alternative 1 (Preferred)** for setting a commercial sector ACT would not introduce economic changes because it would retain the status quo. **Alternative 4 (Preferred)** would set a recreational ACT equal to one-half of the ACL or ACL times the proportional standard error of the estimate, whichever is greater. Because this recreational ACT is mainly a “soft target” and would not used to trigger accountability measures (AM), the short-term economic conditions would remain unaffected. However, it would provide fisher manager with a monitoring tool to ensure recreational harvests would not exceed the sector’s ACL.

**Alternative 2 (Preferred)**, together with **Sub-alternative 2g (Preferred)**, would establish an endorsement program for the black sea bass pot sector. Eligible for inclusion in this program are entities with a valid or renewable Unlimited Snapper Grouper Permit whose average annual black sea bass landings using pots between January 1, 1999 and December 31, 2010 were at least 2,500 lb gutted weight. Of the 50 to 60 individuals harvesting black sea bass using pots, 28 to 31 would qualify for the endorsement. The natural expectation is for those included in the endorsement to experience profit increases and those excluded, profit decreases. There is a good likelihood, however, that overall profitability in the black sea bass pot sector would increase and be sustainable over time. Whether or not such profit increase would outweigh total profit losses of those excluded from the program cannot be ascertained with available information. It may only be noted that the endorsement program would help address the evolving derby in the fishery

as evidenced by early closures due to reaching the ACL/quota before the normal end of the season.

**Alternative 2 (Preferred)** would establish an appeals process for fishermen initially excluded from the black sea bass pot endorsement. This would provide opportunities for those legitimately qualified to receive their endorsement. There is good possibility that, given the narrow basis for appeals (landings reported on NMFS logbook records or state landing records), only a limited number of appeals would be successful.

**Alternative 2 (Preferred)**, together with **Sub-alternative 2a (Preferred**), would allow transferability of black sea bass pot endorsement between individuals or entities with Unlimited Snapper Grouper Permits. Allowing transferability of black sea bass pot endorsements would open opportunities for increasing the value of the endorsement asset and for the more efficient operators to engage in the fishery. Such opportunities, however, would still be limited by the requirement that transfers of endorsements be made between individuals/entities possessing unlimited snapper grouper permits. These permits are now under a limited entry program.

**Alternative 5 (Preferred)** would limit the number of pots deployed of pot tags issued to 35 per vessel. Considering that this maximum number of pots is lower than the current average of 45 pots fished, vessels would generate lower revenues per trip or higher overall fishing costs to maintain the same overall revenues. To the extent that the endorsement program would limit the number of participants in the pot fishery, overall industry profits may not substantially decrease.

**Alternative 2 (Preferred)** would require that black sea bass pots be brought back to shore at the conclusion of each trip as a means to reduce bycatch. This may restrict the fishing operations of some vessels so as to potentially limit vessel profitability. If vessels undertake longer trips, since there is no restriction on the length of each trip, to allow their pots to fish longer, costs could rise. If this practice mainly results in maintaining the same revenues per trip, vessel profits could fall down. But if this requirement could effectively result in less ghost fishing and interaction with some protected species, less future restrictions may be imposed on the fishery such that long-term profits would be sustainable.

**Alternative 3 (Preferred)** would modify the recreational accountability measures (AM) as to consist of in-season harvest and possession restriction, regardless of the stock status, and post-season reduction in the sector's ACL if the aggregate ACL is met or projected to be met in the current year. **Alternative 3 (Preferred)** would also modify the commercial AM to consist of in-season prohibition on the purchase and sale of black sea bass and post-season reduction in the sector's ACL. This alternative may be expected to result in short-term adverse economic effect on fishery participants. Since there is good chance that the commercial and recreational AMs would be effective in constraining harvest below or equal to the aggregate ACL, increases in aggregate ACL according to the rebuilding strategy would likely happen, and this would tend to negate some or all of the short-term adverse economic effects over time.

**Alternative 1 (Preferred)** would not establish any spawning closure, so the economic status of fishery participants would remain unaffected.

**Alternative 4 (Preferred)** would establish a commercial trip limit of 1,000 lb gw. This would tend to adversely affect the catch and revenue per trip of vessels that generally land over this limit. Based on 2010-2011 fishing season data, approximately 8.4 percent of trips would be adversely affected by the trip limit. These trips accounted for about 83,000 pounds with a dockside value of approximately $203,000. If this trip limit were successful in lengthening the fishing season, opportunities would be open for some vessels to recoup some of their revenue losses for the year. At any rate, there is some expectation that some of these revenue reductions would filter into the bottom line of some vessels and potentially the bottom line of the entire industry.

**Alternative 2 (Preferred Sub-alternative 2a)** would increase the recreational size limit from 12 inches TL to 13 inches TL. This alternative is estimated to potentially reduce black sea bass harvests of headboats from 20.9 percent to 22.6 and black sea bass harvests in other fishing modes from 18.8 percent to 20.3 percent. It is possible that the harvest reduction due to the size limit increase would extend the recreational fishing season. Whether this would result in net economic benefits to the recreational sector would depend largely on the interplay of benefits from additional fishing days and the cost of fishing during the regular season (fishing days without the size limit increase) and extended seasons (additional fishing days due to the size limit increase). An extended fishing season would allow more fishing trips to be undertaken by recreational anglers through the various fishing platforms. Additional trips would generate more revenues and likely profits to the for-hire sector and more consumer surplus to anglers fishing in private and for-hire boats. On the other hand, the quality of an angler's fishing experience may decrease from being compelled to throw back undersize fish. If the reduction in the quality of fishing experience were substantial enough to result in some trip cancellations, for-hire revenues and profits may be impaired. In addition, a reduction in the quality of fishing experience would result in lower angler consumer surplus per fishing trip. The net effects of such an increase in benefits and costs due to the size limit change cannot be ascertained given current information.

**Alternative 3 (Preferred),** together with **Sub-alternative 3a (Preferred)**, would increase the commercial size limit from 10 inches TL to 11 inches TL. This size limit increase is estimated to potentially reduce commercial harvest of black sea bass by slightly over 9 percent. Actual reductions in harvest would partly depend on whether vessels take additional or longer trips to recoup potential harvest losses. Although additional or longer trips would maintain total revenues, either from maintaining the same harvest or from generating more revenue per fish since a bigger black sea bass generally commands a higher price, costs would also increase. The net effects on per vessel and industry profits cannot be determined with available information.

**Alternative 1 (Preferred)** would retain the existing data reporting system for the commercial sector, so no economic effects may be expected from this alternative.

**Alternative 2 (Preferred)** would require selected vessels with Federal For-Hire Permit to report electronically on a daily or weekly basis. This alternative would affect some of the 1,985 vessels with for-hire snapper grouper permits. The incremental costs to selected headboats would likely be minimal because headboats are currently subject to logbook reporting. The incremental cost to selected charterboats would be higher as they are not currently subject to logbook reporting although some charter captains are now routinely contacted for collecting trip level information. The resulting effects of these additional costs on the profits of for-hire vessels cannot be quantified. Noting that not all for-hire vessels would be affected, the resulting reduction in overall for-hire vessel profits may be considered not substantial. To the extent that this proposed action would enhance current data collection programs, better information would be made available that could improve fishery assessments and management decisions.

**Public and Private Costs of Regulations**

The preparation, implementation, enforcement, and monitoring of this or any Federal action involves the expenditure of public and private resources which can be expressed as costs associated with the regulations. Costs associated with this amendment include:

Council costs of document preparation, meetings, public hearings, and information dissemination……...…….. $200,000

NOAA Fisheries administrative costs of document preparation, meetings and review ..... $100,000

Annual law enforcement costs .....unknown

TOTAL ..... $300,000

Law enforcement currently monitors regulatory compliance in these fisheries under routine operations and does not allocate specific budgetary outlays to these fisheries, nor are increased enforcement budgets expected to be requested to address components of this action. In practice, some enhanced enforcement activity might initially occur while the fishery becomes familiar with the new regulations. However, the costs of such enhancements cannot be forecast. Thus, no specific law enforcement costs can be identified.

**Determination of Significant Regulatory Action**

Pursuant to E.O. 12866, a regulation is considered a “significant regulatory action” if it is expected to result in: (1) an annual effect of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights or obligations of recipients thereof; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this

executive order. Based on the information provided above, this regulatory action would not meet the first criterion. Therefore, this regulatory action is determined to not be economically significant for the purposes of E.O. 12866.

# Appendix I. Other Applicable Laws Including Environmental Justice

## 1 Other Applicable Laws

### 1.1 Administrative Procedure Act

All federal rulemaking is governed under the provisions of the Administrative Procedures Act (APA) (5 U.S.C. Subchapter II), which establishes a "notice and comment" procedure to enable public participation in the rulemaking process. Under the APA, NOAA Fisheries Service is required to publish notification of proposed rules in the Federal Register and to solicit, consider and respond to public comment on those rules before they are finalized. The APA also establishes a 30-day wait period from the time a final rule is published until it takes effect, with some exceptions. This amendment complies with the provisions of the APA through the Council's extensive use of public meetings, requests for comments and consideration of comments. The proposed rule associated with this amendment will have request for public comments which complies with the APA, and upon publication of the final rule there will be a 30-day wait period before the regulations are effective.

### 1.2 Information Quality Act

The Information Quality Act (Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Public Law 106-443)) which took effect October 1, 2002, directed the Office of Management and Budget (OMB) to issue government-wide guidelines that "provide policy and procedural guidelines to federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information disseminated by federal agencies." OMB directed each federal agency to issue its own guidelines, establish administrative mechanisms allowing affected persons to seek and obtain correction of information that does not comply with OMB guidelines, and report periodically to OMB on the number and nature of complaints.

The NOAA Section 515 Information Quality Guidelines require a series of actions for each new information product subject to the Information Quality Act. This document has used the best available information and made a broad presentation thereof. The process of public review of this document provides an opportunity for comment and challenge to this information, as well as for the provision of additional information.

The information contained in this document was developed using best available scientific information. Therefore, this Amendment and EIS are in compliance with the IQA.

### 1.3 Coastal Zone Management Act

Section 307(c)(1) of the federal Coastal Zone Management Act (CZMA) of 1972 requires that all federal activities that directly affect the coastal zone be consistent with approved state coastal zone management programs to the maximum extent practicable. While it is the goal of the South Atlantic Fishery Management Council (Council) to have management measures that complement those of the states, federal and state administrative procedures vary and regulatory changes are unlikely to be fully instituted at the same time. The Council believes this amendment is

consistent to the maximum extent practicable with the Coastal Zone Management Plans of Florida, Georgia, South Carolina, and North Carolina. This determination will be submitted to the responsible state agencies under Section 307 of the CZMA administering approved Coastal Zone Management Programs in the States of Florida, South Carolina, Georgia, and North Carolina.

## 1.4 Endangered Species Act

The Endangered Species Act (ESA) of 1973 (16 U.S.C. Section 1531 et seq.) requires that federal agencies must ensure actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or the habitat designated as critical to their survival and recovery. The ESA requires NOAA Fisheries Service to consult with the appropriate administrative agency (itself for most marine species, and the U.S. Fish and Wildlife Service for all remaining species) when proposing an action that may affect threatened or endangered species or adversely modify critical habitat. Consultations are necessary to determine the potential impacts of the proposed action. They are concluded informally when proposed actions may affect but are "not likely to adversely affect" threatened or endangered species or designated critical habitat. Formal consultations, resulting in a biological opinion, are required when proposed actions may affect and are "likely to adversely affect" threatened or endangered species or adversely modify designated critical habitat.

NOAA Fisheries Service completed a biological opinion in 2006 evaluating the impacts of the continued authorization of the South Atlantic snapper grouper fishery under the snapper grouper FMP and Amendment 13C (NMFS 2006) on ESA-listed species (see **Section 3.2.3**). The opinion stated the fishery was not likely to adversely affect northern right whale critical habitat, seabirds, or marine mammals (see NMFS 2006 for discussion on these species). However, the opinion did state that the snapper grouper fishery would adversely affect sea turtles and smalltooth sawfish, but would not jeopardize their continued existence. An incidental take statement was issued for green, hawksbill, Kemp's ridley, leatherback, and loggerhead sea turtles, as well as smalltooth sawfish. Reasonable and prudent measures to minimize the impact of these incidental takes were specified, along with terms and conditions to implement them. Since we anticipate only sea turtles may have interactions with the wreckfish fishery, only the discussion of potential effects from the snapper-grouper fishery on those species is discussed below. See NMFS (2006) for a full discussion of impacts to smalltooth sawfish.

Sea turtles are vulnerable to capture by bottom longline and vertical hook-and-line gear. The magnitude of the interactions between sea turtles and the South Atlantic snapper-grouper fishery was evaluated in NMFS (2006) using data from the Supplementary Discard Data Program (SDDP). Three loggerheads and three unidentified sea turtles were caught on vertical lines; one leatherback and one loggerhead were caught on bottom longlines, all were released alive. The effort reported in the program represented between approximately 5% and 14% of all South Atlantic snapper-grouper fishing effort. These data were extrapolated in NMFS (2006) to better estimate the number of interactions between the entire snapper-grouper fishery and ESA-listed sea turtles. The extrapolated estimate was used to project future interactions (**Table 1-3**).

The SDDP does not provide data on recreational fishing interactions with ESA-listed sea turtle species. However, anecdotal information indicates that recreational fishermen occasionally take sea turtles with hook-and-line gear. The biological opinion also used the extrapolated data from the SDDP to estimate the magnitude of recreational fishing on sea turtles (**Table 1-3**).

Regulations implemented through snapper-grouper Amendment 15B (74 FR 31225; June 30, 2009) required all commercial or charter/headboat vessels with a South Atlantic snapper grouper permit, carrying hook-and-line gear on board, to possess required literature and release gear to aid in the safe release of incidentally caught sea turtles and smalltooth sawfish. These regulations are thought to decrease the mortality associated with accidental interactions with sea turtles and smalltooth sawfish.

Subsequent to the completion of the opinion, two species of *Acropora* corals (*Acropora palmata* and *A. cervicornis*) were listed as threatened and critical habitat for these species has been designated. NOAA Fisheries analyzed the likely affects of the South Atlantic snapper-grouper fishery on the newly listed *Acropora* corals and their designated critical habitat in two memos dated July 9, 2007, and December 2, 2008. Each memo determined the fishery was not likely to interact with either species or critical habitat.

**Table 1-3.** Three-year South Atlantic anticipated takes sea turtles by the snapper grouper fishery.

| Species | Amount of Take | Total |
|---|---|---|
| Green | Total Take | 39 |
| | Lethal Take | 14 |
| Hawksbill | Total Take | 4 |
| | Lethal Take | 3 |
| Kemp's ridley | Total Take | 19 |
| | Lethal Take | 8 |
| Leatherback | Total Take | 25 |
| | Lethal Take | 15 |
| Loggerhead | Total Take | 202 |
| | Lethal Take | 67 |

Source: NMFS 2006

## 1.5 Executive Order 12612: Federalism

E.O. 12612 requires agencies to be guided by the fundamental federalism principles when formulating and implementing policies that have federalism implications. The purpose of the Order is to guarantee the division of governmental responsibilities between the federal government and the states, as intended by the framers of the Constitution. No federalism issues have been identified relative to the actions proposed in this amendment and associated regulations. Therefore, preparation of a Federalism assessment under E.O. 13132 is not necessary.

## 1.6 Executive Order 12866: Regulatory Planning and Review

E.O. 12866, signed in 1993, requires federal agencies to assess the costs and benefits of their proposed regulations, including distributional impacts, and to select alternatives that maximize net benefits to society. To comply with E.O. 12866, NOAA Fisheries Service prepares a Regulatory Impact Review (RIR) for all fishery regulatory actions that implement a new FMP or that significantly amend an existing plan. RIRs provide a comprehensive analysis of the costs and benefits to society associated with proposed regulatory actions, the problems and policy objectives prompting the regulatory proposals, and the major alternatives that could be used to solve the problems. The reviews also serve as the basis for the agency's determinations as to whether proposed regulations are a "significant regulatory action" under the criteria provided in E.O. 12866 and whether proposed regulations will have a significant economic impact on a substantial number of small entities in compliance with the Regulatory Flexibility Act. A regulation is significant if it is likely to result in an annual effect on the economy of at least $100,000,000 or if it has other major economic effects.

In accordance with E.O. 12866, the following is set forth by the Council: (1) this rule is not likely to have an annual effect on the economy of more than $100 million or to adversely affect in a material way the economy, a sector of the economy, productivity, jobs, the environment, public health or safety, or state, local, or tribal governments or communities; (2) this rule is not likely to create any serious inconsistencies or otherwise interfere with any action taken or planned by another agency; (3) this rule is not likely to materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights or obligations of recipients thereof; (4) this rule is not likely to raise novel or policy issues arising out of legal mandates, or the principles set forth in the Executive Order; (5) this rule is not controversial.

## 1.7 Executive Order 12898: Environmental Justice

E.O. 12898 requires that "to the greatest extent practicable and permitted by law…each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations in the United States and its territories and possessions…"

The alternatives being considered in this amendment are not expected to result in any disproportionate adverse human health or environmental effects to minority populations or low-income populations of Florida, North Carolina, South Carolina or Georgia, rather the impacts would be spread across all participants in the black sea bass fishery regardless of race or income. A detailed description of the communities impacted by the actions contained in this amendment and potential socioeconomic impacts of those actions are contained in **Sections 3.7** and **4.0** of this amendment.

## 1.8 Executive Order 12962: Recreational Fisheries

E.O. 12962 requires Federal agencies, in cooperation with States and Tribes, to improve the quantity, function, sustainable productivity, and distribution of U.S. aquatic resources for increased recreational fishing opportunities through a variety of methods. Additionally, the order establishes a seven-member National Recreational Fisheries Coordination Council responsible for, among other things, ensuring that social and economic values of healthy aquatic systems that

support recreational fisheries are considered by federal agencies in the course of their actions, sharing the latest resource information and management technologies, and reducing duplicative and cost-inefficient programs among federal agencies involved in conserving or managing recreational fisheries. The Council also is responsible for developing, in cooperation with federal agencies, states and tribes, a Recreational Fishery Resource Conservation Plan - to include a five-year agenda. Finally, the Order requires NOAA Fisheries Service and the U.S. Fish and Wildlife Service to develop a joint agency policy for administering the ESA.

The alternatives considered in this amendment are consistent with the directives of E.O. 12962.

### 1.9 Executive Order 13089: Coral Reef Protection

E.O. 13089, signed by President William Clinton on June 11, 1998, recognizes the ecological, social, and economic values provided by the Nation's coral reefs and ensures that Federal agencies are protecting these ecosystems. More specifically, the Order requires federal agencies to identify actions that may harm U.S. coral reef ecosystems, to utilize their program and authorities to protect and enhance the conditions of such ecosystems, and to ensure that their actions do not degrade the condition of the coral reef ecosystem.

The alternatives considered in this amendment are consistent with the directives of E.O. 13089.

### 1.10 Executive Order 13158: Marine Protected Areas

E. O. 13158 was signed on May 26, 2000 to strengthen the protection of U.S. ocean and coastal resources through the use of Marine Protected Areas (MPAs). The E.O. defined MPAs as "any area of the marine environment that has been reserved by Federal, State, territorial, tribal, or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein." It directs federal agencies to work closely with state, local and non-governmental partners to create a comprehensive network of MPAs "representing diverse U.S. marine ecosystems, and the Nation's natural and cultural resources".

The alternatives considered in this amendment are consistent with the directives of E.O. 13158.

### 1.11 Marine Mammal Protection Act (MMPA)

The MMPA established a moratorium, with certain exceptions, on the taking of marine mammals in U.S. waters and by U.S. citizens on the high seas. It also prohibits the importing of marine mammals and marine mammal products into the United States. Under the MMPA, the Secretary of Commerce (authority delegated to NOAA Fisheries Service) is responsible for the conservation and management of cetaceans and pinnipeds (other than walruses). The Secretary of the Interior is responsible for walruses, sea otters, polar bears, manatees, and dugongs.

Part of the responsibility that NOAA Fisheries Service has under the MMPA involves monitoring populations of marine mammals to make sure that they stay at optimum levels. If a population falls below its optimum level, it is designated as "depleted." A conservation plan is then developed to guide research and management actions to restore the population to healthy levels.

In 1994, Congress amended the MMPA, to govern the taking of marine mammals incidental to commercial fishing operations. This amendment required the preparation of stock assessments for all marine mammal stocks in waters under U.S. jurisdiction; development and implementation of take-reduction plans for stocks that may be reduced or are being maintained below their optimum sustainable population levels due to interactions with commercial fisheries; and studies of pinniped-fishery interactions. The MMPA requires a commercial fishery to be placed in one of three categories, based on the relative frequency of incidental serious injuries and mortalities of marine mammals. Category I designates fisheries with frequent serious injuries and mortalities incidental to commercial fishing; Category II designates fisheries with occasional serious injuries and mortalities; Category III designates fisheries with a remote likelihood or no known serious injuries or mortalities.

Under the MMPA, to legally fish in a Category I and/or II fishery, a fisherman must take certain steps. For example, owners of vessels or gear engaging in a Category I or II fishery, are required to obtain a marine mammal authorization by registering with the Marine Mammal Authorization Program (50 CFR 229.4). They are also required to accommodate an observer if requested (50 CFR 229.7(c)) and they must comply with any applicable take reduction plans.

The commercial hook-and-line components of the South Atlantic snapper grouper fishery (i.e., bottom longline, bandit gear, and handline) are listed as part of a Category III fishery (76 FR 37716, June 28, 2011) because there have been no documented interactions between these gears and marine mammals. The black sea bass pot component of the South Atlantic snapper grouper fishery is part of the Atlantic mixed species trap/pot fishery, a Category II fishery, in the 2012 proposed LOF (76 FR 37716, June 28, 2011). The Atlantic mixed species trap/pot fishery designation was created in 2003 (68 FR 41725, July 15, 2003), by combining several separately listed trap/pot fisheries into a single group. This group was designated Category II as a precaution because of known interactions between marine mammals and gears similar to those included in this group. Prior to this consolidation, the black sea bass pot fishery in the South Atlantic was a part of the "U.S. Mid-Atlantic and Southeast U.S. Atlantic Black Sea Bass Trap/Pot" fishery (Category III). There has never been a documented interaction between marine mammals and black sea bass trap/pot gear in the South Atlantic. The actions in Amendment 18A are not expected to negatively impact the provisions of the MMPA

## 1.12 National Environmental Policy Act

This amendment to the Councils Snapper Grouper FMP has been written and organized in a manner that meets NEPA requirements, and thus is a consolidated NEPA document, including a draft Environmental Impact Statement, as described in NOAA Administrative Order (NAO) 216-6, Section 6.03.a.2.

Purpose and Need for Action

The purpose and need for this action are described in **Section 1.1.**

Alternatives

The alternatives for this action are described in **Section 2.0.**

Affected Environment

The affected environment is described in **Section 3.0**.

Impacts of the Alternatives
The impacts of the alternatives on the environment are described in **Section 4.0.**

### 1.13 National Marine Sanctuaries Act

Under the National Marine Sanctuaries Act (NMSA) (also known as Title III of the Marine Protection, Research and Sanctuaries Act of 1972), as amended, the U.S. Secretary of Commerce is authorized to designate National Marine Sanctuaries to protect distinctive natural and cultural resources whose protection and beneficial use requires comprehensive planning and management. The National Marine Sanctuary Program is administered by the Sanctuaries and Reserves Division of NOAA. The Act provides authority for comprehensive and coordinated conservation and management of these marine areas. The National Marine Sanctuary Program currently comprises 13 sanctuaries around the country, including sites in American Samoa and Hawaii. These sites include significant coral reef and kelp forest habitats, and breeding and feeding grounds of whales, sea lions, sharks, and sea turtles. The two main sanctuaries in the South Atlantic EEZ are Gray's Reef and Florida Keys National Marine Sanctuaries.

The alternatives considered by this document are not expected to have any adverse impacts on the resources managed by the Gray's Reef and Florida Keys National Marine Sanctuaries.

### 1.14 Paperwork Reduction Act

The purpose of the Paperwork Reduction Act (PRA) is to minimize the burden on the public. The Act is intended to ensure that the information collected under the proposed action is needed and is collected in an efficient manner (44 U.S.C. 3501 (1)). The authority to manage information collection and record keeping requirements is vested with the Director of the Office of Management and Budget (OMB). This authority encompasses establishment of guidelines and policies, approval of information collection requests, and reduction of paperwork burdens and duplications. The PRA requires NMFS to obtain approval from the OMB before requesting most types of fishery information from the public.

Action 12 contains alternatives requiring the establishment of an electronic logbook program. If this alternative is chosen as the preferred, they would be subject to PRA review and approval prior to implementation. Action 13 requires selected vessels with federal for-hire permits to report electronically; and therefore, this action has PRA implications. However, an action implemented through Amendment 15B to the FMP included the same requirement; thus, Action 13 has been covered under the previous PRA clearance process for Amendment 15B.

### 1.15 Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) of 1980 (5 U.S.C. 601 et seq.) requires federal agencies to assess the impacts of regulatory actions implemented through notice and comment rulemaking procedures on small businesses, small organizations, and small governmental entities, with the goal of minimizing adverse impacts of burdensome regulations and record-keeping requirements on those entities. Under the RFA, NOAA Fisheries Service must determine whether a proposed fishery regulation would have a significant economic impact on a substantial number of small entities. If not, a certification to this effect must be prepared and submitted to the Chief Counsel

for Advocacy of the Small Business Administration. Alternatively, if a regulation is determined to significantly impact a substantial number of small entities, the Act requires the agency to prepare an initial and final Regulatory Flexibility Analysis to accompany the proposed and final rule, respectively. These analyses, which describe the type and number of small businesses, affected, the nature and size of the impacts, and alternatives that minimize these impacts while accomplishing stated objectives, must be published in the Federal Register in full or in summary for public comment and submitted to the chief counsel for advocacy of the Small Business Administration. Changes to the RFA in June 1996 enable small entities to seek court review of an agency's compliance with the Act's provisions.

This amendment includes an Initial Regulatory Flexibility Analysis (IRFA) in **Appendix H**.

### 1.16 Small Business Act

Enacted in 1953, the Small Business Act requires that agencies assist and protect small-business interests to the extent possible to preserve free competitive enterprise. The objectives of the act are to foster business ownership by individuals who are both socially and economically disadvantaged; and to promote the competitive viability of such firms by providing business development assistance including, but not limited to, management and technical assistance, access to capital and other forms of financial assistance, business training, and counseling, and access to sole source and limited competition federal contract opportunities, to help firms achieve competitive viability. Because most businesses associated with fishing are considered small businesses, NOAA Fisheries Service, in implementing regulations, must make an assessment of how those regulations will affect small businesses.

### 1.17 Public Law 99-659: Vessel Safety

Public Law 99-659 amended the MSFCMA to require that a FMP or FMP amendment must consider, and may provide for, temporary adjustments (after consultation with the U.S. Coast Guard and persons utilizing the fishery) regarding access to a fishery for vessels that would be otherwise prevented from participating in the fishery because of safety concerns related to weather or to other ocean conditions. No vessel would be forced to participate in South Atlantic fisheries under adverse weather or ocean conditions as a result of the imposition of management regulations proposed in this amendment.

No concerns have been raised by South Atlantic fishermen or by the U.S. Coast Guard that the proposed management measures directly or indirectly pose a hazard to crew or vessel safety under adverse weather or ocean conditions. The action to require that all black sea bass pots be brought to shore at the end of each trip would not apply during period of foul weather where safety at sea issues may arise.

## Appendix J. Other Things to Consider

### 1.1 Unavoidable Adverse Effects

There are several unavoidable adverse effects on the socioeconomic environment that may result from the implementation of Amendment 18A. A brief summary of those effects follows.

Under Action 2, black sea bass pot fishermen who do not qualify to receive a black sea bass pot endorsement would be excluded from that portion of the fishery, and would be limited to black sea bass using hook-and-line gear only. Fishermen excluded from the endorsement program would incur a reduction in net revenue comparable to the profits they would have otherwise realized had they been allowed to continue pot fishing in future fishing seasons. Profits may also be lost as a result of the implementation of a commercial trip limit, a reduced bag limit, and increased size limits due to likely decreases in per-trip yield and trip quality. It is assumed that some trips would be canceled under these new proposed management measures; however, the extent to which this would happen is unknown.

Administratively, implementation of the black sea bass pot endorsement program would be burdensome. A significant amount of staff time and resources would be spent on developing the endorsement, processing initial endorsement issuances, and maintaining the program throughout its duration. If the black sea bass pot endorsement program is approved by the Secretary for implementation, the administrative time and cost would be considered an unavoidable adverse impact.

### 1.2 Effects of the Fishery on the Environment

The biological impacts of the proposed actions are described in Section 4.0, including potential impacts on habitat. No actions proposed in this amendment are anticipated to have any adverse impact on Essential Fish Habitat (EFH) or EFH-Habitat Areas of Particular Concern (EFH-HAPCs) for managed species. Nor are the actions contained in this amendment likely to jeopardize the sustainability of any target or non-target species.

### 1.3 Damage to Ocean and Coastal Habitats

The alternatives and proposed actions are not expected to have any adverse effect on the ocean and coastal habitat. Management measures implemented in the original Snapper Grouper FMP through Amendment 7 to the Snapper Grouper FMP combined have significantly reduced the impact of the snapper grouper fishery on EFH. The South Atlantic Council has reduced the impact of the fishery and protected EFH by prohibiting the use of poisons and explosives; prohibiting use of fish traps and entanglement nets in the EEZ; banning use of bottom trawls on live/hard bottom habitat north of Cape Canaveral, Florida; restricting use of bottom longline to depths greater than 50 fathoms north of St. Lucie Inlet; and prohibiting use of black sea bass pots south of Cape Canaveral, Florida. These gear restrictions have significantly reduced the impact of the fishery on coral and live/hard bottom habitat in the South Atlantic Region.

Additional management measures in Amendment 8 to the Snapper Grouper FMP (SAFMC 1997), including specifying allowable bait nets and capping effort, have protected habitat by

making existing regulations more enforceable. Establishing a controlled effort program limited overall fishing effort and to the extent there is damage to the habitat from the fishery (e.g. black sea bass pots, anchors from fishing vessels), limited such impacts.

In addition, measures in Amendment 9 to the Snapper Grouper FMP (SAFMC 1998), that include further restricting longlines to retention of only deepwater species and requiring that black sea bass pots have escape panels with degradable fasteners, reduce the catch of undersized fish and bycatch and ensure that the pot, if lost, will not continue to "ghost" fish. Snapper Grouper Amendment 13C (SAFMC 2006) increased mesh size in the back panel of pots, which has reduced bycatch and retention of undersized fish.

Amendment 15B to the Snapper Grouper FMP (SAFMC 2009a) includes an action that would implement sea turtle bycatch release equipment requirements and sea turtle and smalltooth sawfish handling protocols and/or guidelines in the permitted commercial and for-hire snapper grouper fishery effective February 15, 2010.

Amendment 16 to the Snapper Grouper FMP (SAFMC 2008c) included an action which is intended to reduce bycatch by requiring fishermen use dehooking devices effective July 29, 2009. Limiting the overall fishing mortality reduces the likelihood of over-harvesting of species with the resulting loss in genetic diversity, ecosystem diversity, and sustainability.
Measures adopted in the Coral and Shrimp FMPs have further restricted access by fishermen that had potential adverse impacts on essential snapper grouper habitat. These measures include the designation of the *Oculina* Bank HAPC and the Rock Shrimp closed area (see the Shrimp and Coral FMP/Amendment documents for additional information).

The South Atlantic Council's Comprehensive Habitat Amendment (SAFMC 1998c) contains measures that expanded the *Oculina* Bank HAPC and added two additional satellite HAPCs. Amendment 14 to the Snapper Grouper (SAFMC 2007), established eight marine protected areas where fishing for or retention of snapper grouper species is prohibited.

## 1.4 Relationship of Short-Term Uses and Long-Term Productivity

The relationship between short-term uses and long-term productivity will be affected by this amendment. The proposed actions limit participation and effort in the black sea bass fishery. Reductions on the rate of harvest are expected to benefit the long-term productivity of these species.

## 1.5 Irreversible and Irretrievable Commitments of Resources

Irreversible commitments are defined as commitments that cannot be reversed, except perhaps in the extreme long-term, whereas irretrievable commitments are lost for a period of time. There are no irreversible commitments for this amendment.

Since the Snapper Grouper FMP and its implementing regulations are always subject to future changes, proceeding with the development of Amendment 18A to their Snapper Grouper FMP does not represent an irreversible or irretrievable commitment of resources. NOAA Fisheries

Service always has discretion to amend its regulations and may do so at any time, subject to the Administrative Procedures Act.

## 1.6 Monitoring and Mitigation Measures

The proposed actions would adversely affect immediate, short-term net revenues of some commercial and for-hire fishermen in the South Atlantic. The proposed actions would also adversely affect short-term consumer surplus of some commercial and recreational black sea bass anglers in the South Atlantic and may result in cancelled trips and reduced expenditures to the fishery and associated industries. However, it is anticipated reductions in the rate of harvest will prevent the progressive shortening of the commercial and recreational fishing seasons for black sea bass. The South Atlantic Council's preferred alternatives contain those measures that are believed to best mitigate the unavoidable, short-term, adverse effects of limiting participation in the black sea bass fishery.

## 1.7 Unavailable or Incomplete Information

The Council on Environmental Quality, in its implementing regulations for the National Environmental Policy Act, addressed incomplete or unavailable information at 40 CFR 1502.22 (a) and (b). That direction has been considered. There are two tests to be applied: 1) Does the incomplete or unavailable information involve "reasonable foreseeable adverse effects…;" and 2) is the information about these effects "essential to a reasoned choice among alternatives…".

Stock assessments have been conducted on black sea bass using the best available data available. Status determinations for the species were derived from the Southeast Data, Assessment, and Review (SEDAR) process, which involves a series of three workshops designed to ensure each stock assessment reflects the best available scientific information. The findings and conclusions of each SEDAR workshop are documented in a series of reports, which are ultimately reviewed and discussed by the Council and their Scientific and Statistical Committee (SSC). SEDAR participants, the South Atlantic Council's Advisory Panels, the South Atlantic Council, and NOAA Fisheries Service staff reviewed and considered any concerns about the adequacy of the data. **Sections 4.13-4.15** list research needs that resulted from these assessments. The Council's SSC determined that the assessments were based on the best available data.

**Appendix K - Summary of Scoping Meetings Amendment 18A**

Scoping meetings for Amendment 18 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Amendment 18A) were held in the following locations on the specified dates:

**January 26, 2009**
Hilton Garden Inn,
5265 International Blvd.
North Charleston, SC 29418

**January 27, 2009**
Bridge Point Hotel
101 Howell Rd.
New Bern, NC 28582

**February 3, 2009**
Key Largo Grande
97000 Overseas Hwy.
Key Largo, FL 33037

**February 4, 2009**
Doubletree Hotel
2080 N. Atlantic Ave.
CoCoa Beach, FL 32931

**February 5, 2009**
Mighty Eight Air Force Museum
175 Bourne Ave.
Pooler GA, 31322

At their June 2011 meeting, the South Atlantic Fishery Management Council decided to split Amendment 18 into three separate amendments. Black sea bass and data collection issues are addressed in Amendment 18A, golden tilefish issues are addressed in Amendment 18B, and the extension of the fishery management unit northward will be addressed in Amendment 18C. Subsequently, the comments summarized below are for those actions specific to Amendment 18A. Scoping comment summaries for actions in Amendments 18B and 18C will be provided with those documents, respectively.

Scoping comments were received on several actions contained in Amendment 18A. Two commenters supported a provision that would require traps to be pulled from the water at the end of each trip. One commenter supported limiting soak time to 72 hours. One commenter suggested trap limit alternatives including 100 traps per vessel and make trap tags transferable, in addition to alternatives for a 50 trap per vessel alternative and a 40 trap per vessel alternative. Three commenters opposed the use of black sea bass pots. Seven commenters felt recreational data collection needed improvement. One commenter was in favor of electronic reporting, and one commenter was willing to participate in a video monitoring pilot study. One commenter was against requiring electronic reporting due to technical constraints. Eleven commenters felt that

data is inaccurate, and one commenter felt recreational logbooks are needed. Two commenters were in favor or using observers, and one commenter felt that fishermen are not involved enough in data collection efforts.

**APPENDIX L Executive Summary:**
**PROJECTED IMPACTS OF AMENDMENT 18A ON SOUTH ATLANTIC BLACK SEA BASS SEASON LENGTH**

LAPP/DM Branch
Southeast Regional Office

December 12, 2011

## INTRODUCTION

A recent stock assessment (SEDAR-25 2011) indicated black sea bass are no longer overfished, as the current biomass is above the minimum stock size threshold (MSST). However, the stock is undergoing slight overfishing, and stock biomass is still below the spawning stock biomass at maximum sustainable yield ($SSB_{MSY}$). The South Atlantic Fishery Management Council (SAFMC) is in the process of developing Amendment 18A to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Amendment 18A; SAFMC 2011), which will contain management measures intended to end overfishing and rebuild the black sea bass stock to the $SSB_{MSY}$ level by the end of the 2015/2016 fishing year. The current preferred alternatives in Amendment 18A would reduce participation in the black sea bass commercial pot fishery to those qualified under a landings threshold of 2,500 lb whole weight (ww), reduce vertical line gear by establishing a trap limit of 35 black sea bass pots, and extend the season by establishing a 1,000 lb ww trip limit. Subsequent to this report being completed, the SAFMC modified the preferred alternatives for the endorsement eligibility criteria and the commercial trip limit. The projected impacts of the SAFMC's previous preferred endorsement eligibility criteria (3,500 lb ww), and their preferred trip limit (1,250 lb ww) are reflected in Figures 2, 3, A1-1, and A1-2; and Tables A1-1 and A1-2. Projected impacts of the SAFMC's current and final preferred endorsement eligibility criteria (2,500 lb ww) and preferred trip limit (1,000 ww) are reflected in Tables A1-3 and A1-4, and in Figures A1-3, A1-4, and A1-5. This report forecasts quota closure dates for the 2012-2013 and 2013-2014 seasons likely to result from these new management measures. The SAFMC's Scientific and Statistical Committee has indicated that a stock assessment update be conducted before allowing any increase in black sea bass harvest beyond the 2013-2014 fishing season.

The report also assesses the potential impacts on North Atlantic right whales, which migrate along the U.S. Southeast Atlantic coast between November-April each year. With less than 400 individuals remaining in the population, the North Atlantic right whale is one of the most endangered whales in the world. Migrating right whales are potentially vulnerable to entanglement in vertical line gear, such as those utilized by the commercial black sea bass pot sector. The loss of one or two reproducing female right whales per year from human activity could lead to extinction (http://rightwhalessouth.nmfs.noaa.gov). Management measures proposed in Amendment 18A are expected to reduce effort and could extend the length of the commercial fishing season. Therefore, actions proposed in Amendment 18A could increase the potential for interactions with right whales. During the past several fishing seasons, commercial quotas were met for black sea bass in December or earlier, with the most recent commercial fishing season lasting only 45 days (June 1-July 15, 2011). This analysis forecasts whether new management measures would extend the commercial fishing season into right whale season (November-April).

## METHODS

Because black sea bass landings have a long-term time-series trend and a seasonal trend, forecasting future catches is particularly well-suited to a seasonal autoregressive integrated moving-average (SARIMA) model (Box and Jenkins 1976). A SARIMA model analyzes and forecasts equally-spaced univariate time series data, predicting a value in a response time series as a linear combination of its own past values, past errors, and past, current, and projected future values of other time series. In the SARIMA model, monthly catch per day for 3,500 lb gw endorsement qualifiers following trap (n = 35) and trip limit (1,250 lbs gw) implementation was projected as a linear combination of its own past values. Abundance at age was obtained from the most recent black sea bass stock assessment (K. Shertzer, pers. comm.) and converted to exploitable abundance using the selectivity at age for the commercial pot sector (**Figure 1**; SEDAR-25 2011). The final model used exploitable abundance as a predictor and captured non-seasonal and seasonal trends in monthly catch per day using a moving average (MA) with a one-month lag combined with a seasonal autoregressive (SAR) model with a 24 month lag. A 24-month lag provided superior model fits as compared to a 12 month lag due to missing values in recent years attributable to quota closures. SEDAR-25 (2011) projected values of exploitable abundance were used to seed the forecast of the final model. Following Hanson et al. (2006), a retrospective model was fit with the 2011 values dropped, and the actual 2011 values were compared to the retrospective model predictions and a percent prediction error was determined. Other gear landings were projected as a percentage of trap gear landings using the most recent three-year average of months when the commercial sector was open. Cumulative landings were derived from projections to determine mean and 95% lower (LCL) and upper confidence limits (UCL) for quota closure date.

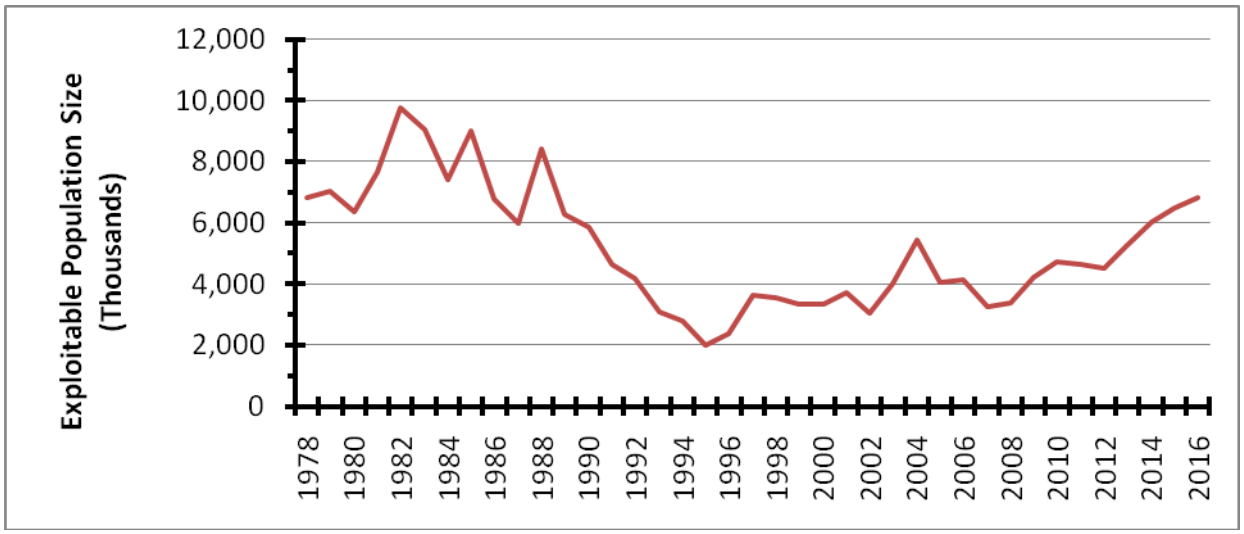



**Figure 1.** SEDAR-25 (2011) Beaufort Assessment Model estimated (1978-2010) and projected (2011-2016) black sea bass population abundance (N) exploitable by commercial pot gear.

**RESULTS**

The final SARIMA model for monthly catch-per-day for 3,500 lb gw endorsement qualifiers indicates a seasonal trend with higher catch rates during winter months as compared to summer, and also a generally increasing catch rate trend through time, with significant increases expected in the next few years (**Figure 2**). Catch rates for December 2010 were the highest ever observed, and summer 2011 catch rates were as high as historical winter catch rates, suggesting rebuilding of the stock is resulting in higher yields. The SARIMA model projections (**Figure 3**) suggest a quota closure may be necessary by August-September 2012 (95% UCL projected closure date: July 2012) for the 2012-2013 season, and as

early as August (95% UCL closure date: July 2013) for the 2013-2014 season. Retrospective fits of the model without 2011 data only overestimated the 2011 catch rates in June and July by 3% and 7%, respectively. Given that these prediction errors are <10% and the 2011 catch rate data are underreported as the commercial logbooks are currently incomplete, the SARIMA model predictions appear reliable for short-term projections. SARIMA model predictions for other combinations of qualification and trip limit levels are provided in Appendix 1.

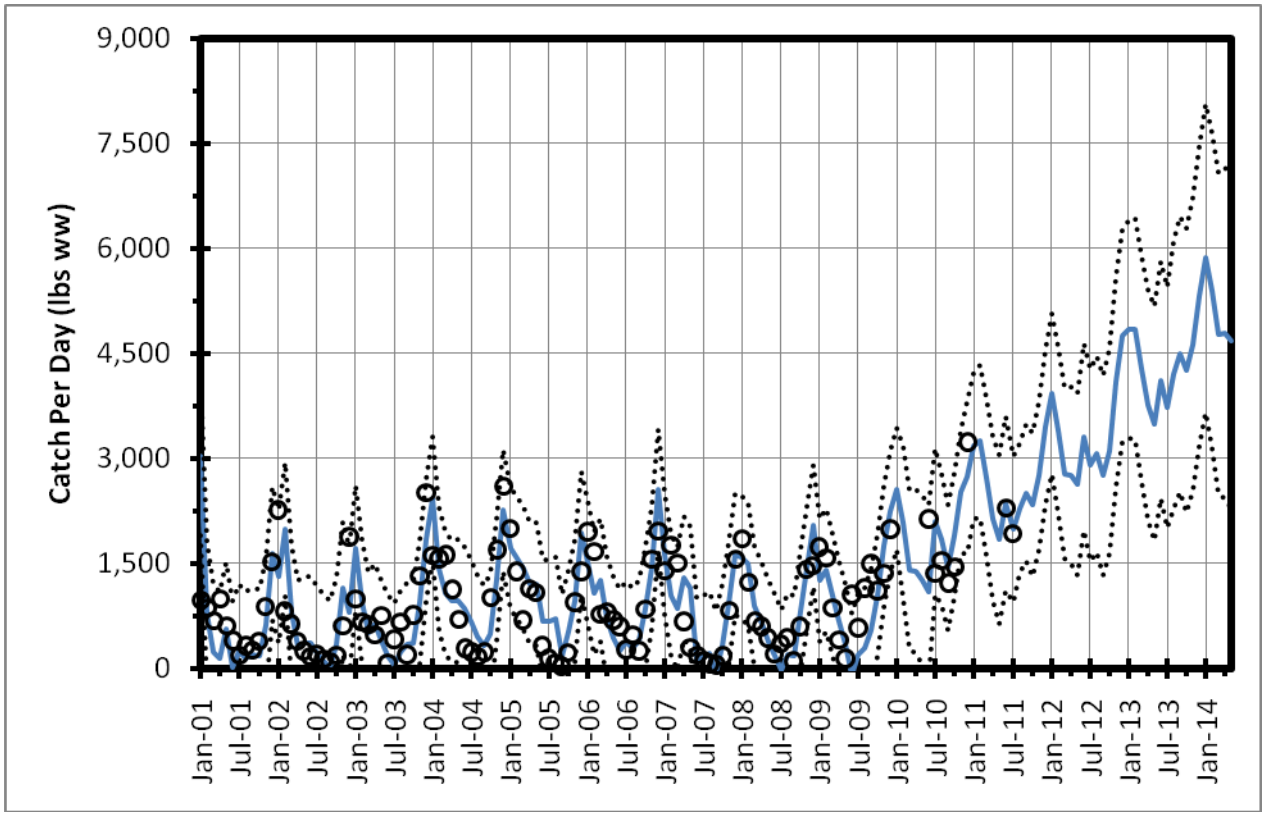



**Figure 2.** SARIMA model of black sea bass catch-per-day for 3,500 lb gw endorsement qualifiers fit to historical data (open circles) and forecast through June 2013, with 95% confidence bands (dotted).

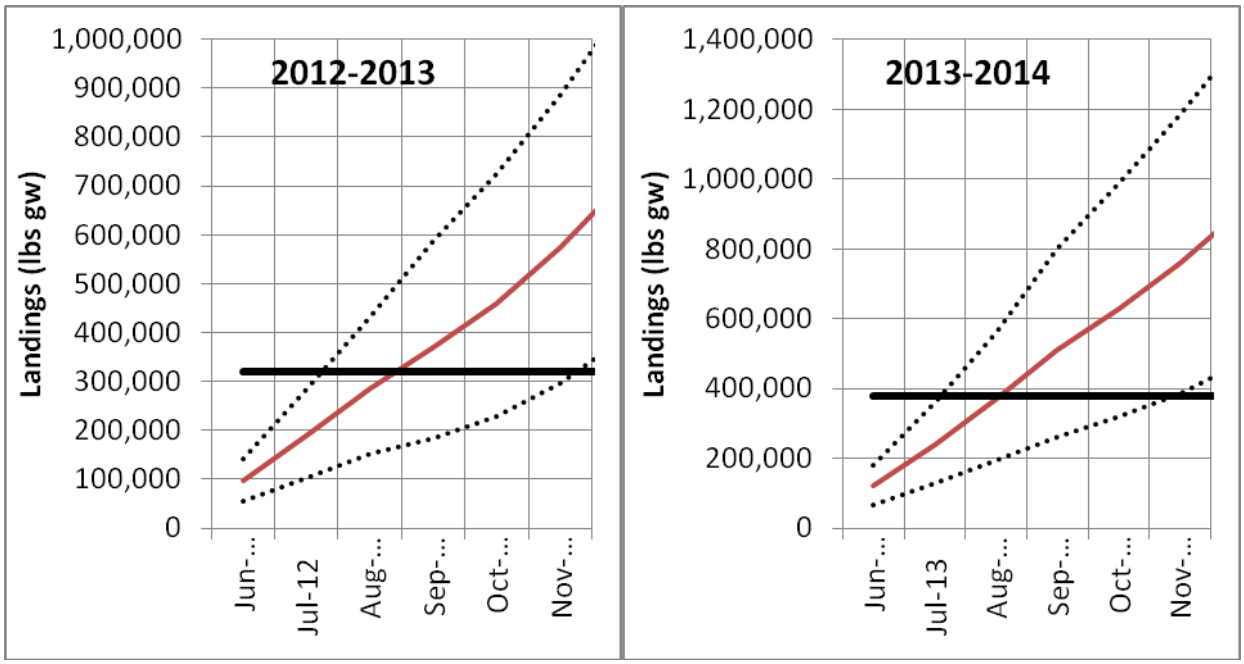



**Figure 3.** SARIMA projected mean (red) and 95% confidence interval (black dotted) cumulative landings of black sea bass for 3,500 lb gw qualifiers for 2012-2013 (left) and 2013-2014 (right) seasons vs. annual catch limits (solid black) from constant fishing mortality rebuilding projections given 50% overage in 2011-2012 (SEDAR 25 2011).

**DISCUSSION**

As with any modeling process, the accuracy of the projections is highly sensitive to the model assumptions and the quality of the input data. The preferred management measures in the Amendment 18A should provide a longer fishing season by reducing pot-fishing effort via the 3,500 lb gw qualifier for black sea bass pot endorsements, the 1,250 lb gw trip limit, and the 35-black sea bass pot limit. Stock assessment projections (SEDAR 25 2011) provide for a slight increase in the black sea bass quota, which could also lengthen the fishing season. Factors that might lead to a later quota closure than modeled include:

(1) **seasonal shift** in fishing effort of trap endorsement qualifiers into months with higher catch rates, and,

(2) **reduced catch per trip due to pot limits**.

Given that the quota closures in the past three years have come increasingly earlier in the fishing season, it seems unlikely black sea bass pot endorsement qualifiers will mutually decide to shift their fishing pressure to later in the fishing season. The proposed limit for black sea bass pots is currently modeled as having no effect on landed catch, as most fishers use close to the preferred alternative of 35 pots (mean 2009: 37 pots). A reduction in catch due to the black sea bass pot limit is assumed to be offset by an increase in effort (i.e., setting traps more frequently).

Many factors suggest the modeling scenarios presented likely overestimate the duration of the upcoming black sea bass fishing seasons. Although we have incorporated exploitable abundance as a predictor variable in two of our projection approaches, many other factors could lead to an earlier quota closure than estimated by our models:

(1) **increases in average size** of landed fish

(2) **effort compensation** as remaining anglers fill market gaps left by excluded competitors,

(3**) gear switching** as excluded competitors land black sea bass using other gear types,

(4) **additional landings** not reported to logbook,
(5) **derby fishing** leading to early season effort intensification, and,
(6) **underestimation of 2011 catch rates** due to incomplete reporting.

The joint impacts of these factors upon the pace of black sea bass harvest rates is difficult to model; however, it appears likely that the actual quota closures for subsequent years will likely be somewhere between the means and 95% upper confidence limits presented in this report. Under the modeling scenarios explored, this would imply a quota closure by December 2012 at the latest for the 2012-2013 season, with more advanced projection scenarios indicating a closure likely between July and September 2012. Thus, under the current suite of preferred alternatives in Amendment 18A, it seems highly unlikely that the black sea bass pot sector will be fishing during Nov-Apr in 2012-2013 or 2013-2014. Under the current suite of preferred alternatives in Amendment 18A, it appears black sea bass pot gear will pose no risk to North Atlantic right whales through May 2014.

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Hanson PJ, Vaughan DS, Narayan S. 2006. Forecasting annual harvests of Atlantic and Gulf menhaden. North American Journal of Fisheries Management 26: 753-764.

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SEDAR-25 (Southeast Data, Assessment, and Review). 2011. South Atlantic Black Sea Bass Stock Assessment Report. SEDAR, North Charleston, SC, 480 p.

**Appendix 1: SARIMA Model Fits to Other Amendment 18A Alternatives**

**Table A1-1.** Number of endorsements that qualify under Action 1, and estimated date commercial quota is met if trip limit is 1,250 lb gw. Projections based upon SARIMA model output with 321,042 lb gw commercial quota for 2012-2013 fishing year and 378,983 lb gw commercial quota for 2013-2014 fishing year, based upon 150% of commercial ACL met during 2011-2012 fishing year. Values in gutted weight.

| | | **2012-2013 Fishing Season** | | **2013-2014 Fishing Season** | |
|---|---|---|---|---|---|
| **Landings (gw)** | **# Endorsements** | **UCL** | **Mean** | **UCL** | **Mean** |
| 500 lbs | 50 | July | August | July | July |
| 1,000 lbs | 41 | July | August | July | July |
| 2,000 lbs | 34 | July | August | July | August |
| 2,500 lbs | 28 | July | August | July | August |
| 3,000 lbs | 24 | July | August | July | August |
| **(Preferred)** 3,500 lbs | 21 | July | August/Sept. | July | August |
| 5,000 lbs | 18 | July | September | July | August |
| 10,000 lbs | 9 | September | December | September | December |

**Table A1-2.** Projected month of black sea bass commercial closure under various trip limits assuming 21 individuals qualify for black sea bass pot endorsements under Action 1. Projections based upon SARIMA model output (*95% UCL-Mean*) with 321,042 lb gw commercial quota for 2012-2013 fishing year and 378,983 lb gw commercial quota for 2013-2014 fishing year, based upon 150% of ACL met during 2011-2012 fishing year. Values in gutted weight.

| Fishing Year | **Alternative 1** No trip limit. | **Alternative 2** 500 pounds trip limit. | **Alternative 3** 750 pounds trip limit. | **Alternative 4** 1,000 pounds trip limit. | **Alternative 5** 1,250 pounds trip limit. | **Alternative 6** 1,000 pounds trip limit reduce to 500 pounds trip limit when 75% quota met. |
|---|---|---|---|---|---|---|
| June 2012-May 2013 | July-Aug | Sept-Nov | Aug-Oct | Aug-Sept | July-Sept | Not modeled |
| June 2013-May 2014 | July-July | Sept-Nov | Aug-Sept | July-Aug | July-Aug | Not modeled |

**Table A1-3.** Projected month of black sea bass commercial closure is estimated to occur for the 2011 and 2012 fishing year based various trip limit alternatives assuming 31 individuals qualify for endorsements under Action 1. Assumes 2,500 lb ww qualification level. Trip limits in gutted weight.

| Fishing Year | **Alternative 1** No trip limit. | **Alternative 2** 500 pounds trip limit. | **Alternative 3** 750 pounds trip limit. | **Alternative 4** 1,000 pounds trip limit. | **Alternative 5** 1,250 pounds trip limit. | **Alternative 6** 1,000 pounds trip limit reduce to 500 pounds trip limit when 75% quota met. |
|---|---|---|---|---|---|---|
| June 2012-May 2013 | July (July-Sept) | Oct (Aug-Feb) | Sept (July-Dec) | Aug (July-Oct) | Aug (July-Oct) | X |
| June 2013-May 2014 | July (June-Aug) | Oct (Aug-Feb) | Aug (July-Dec) | July (July-Oct) | July (July-Sept) | X |

**Table A1-4.** Number of endorsements that qualify under Action 2, and estimated date commercial quota is met if the trip limit is 1,000 lbs gw (1,180 lbs ww).

| | | **2012-2013 Fishing Season** | | **2013-2014 Fishing Season** | |
|---|---|---|---|---|---|
| **Landings (ww)** | **# Endorsements** | **UCL** | **Mean** | **UCL** | **Mean** |
| 500 lbs | 52 | July | Aug | July | July |
| 1,000 lbs | 44 | July | Aug | July | July |
| 2,000 lbs | 38 | July | Aug | July | July |
| **(Preferred) 2,500 lbs** | 31 | July | Aug | July | July |
| 3,000 lbs | 27 | July | Aug | July | Aug |
| 3,500 lbs | 24 | July | Aug | July | Aug |
| 5,000 lbs | 20 | July | Sept | July | Sept |
| 10,000 lbs | 12 | Sept | Nov | Sept | Nov |

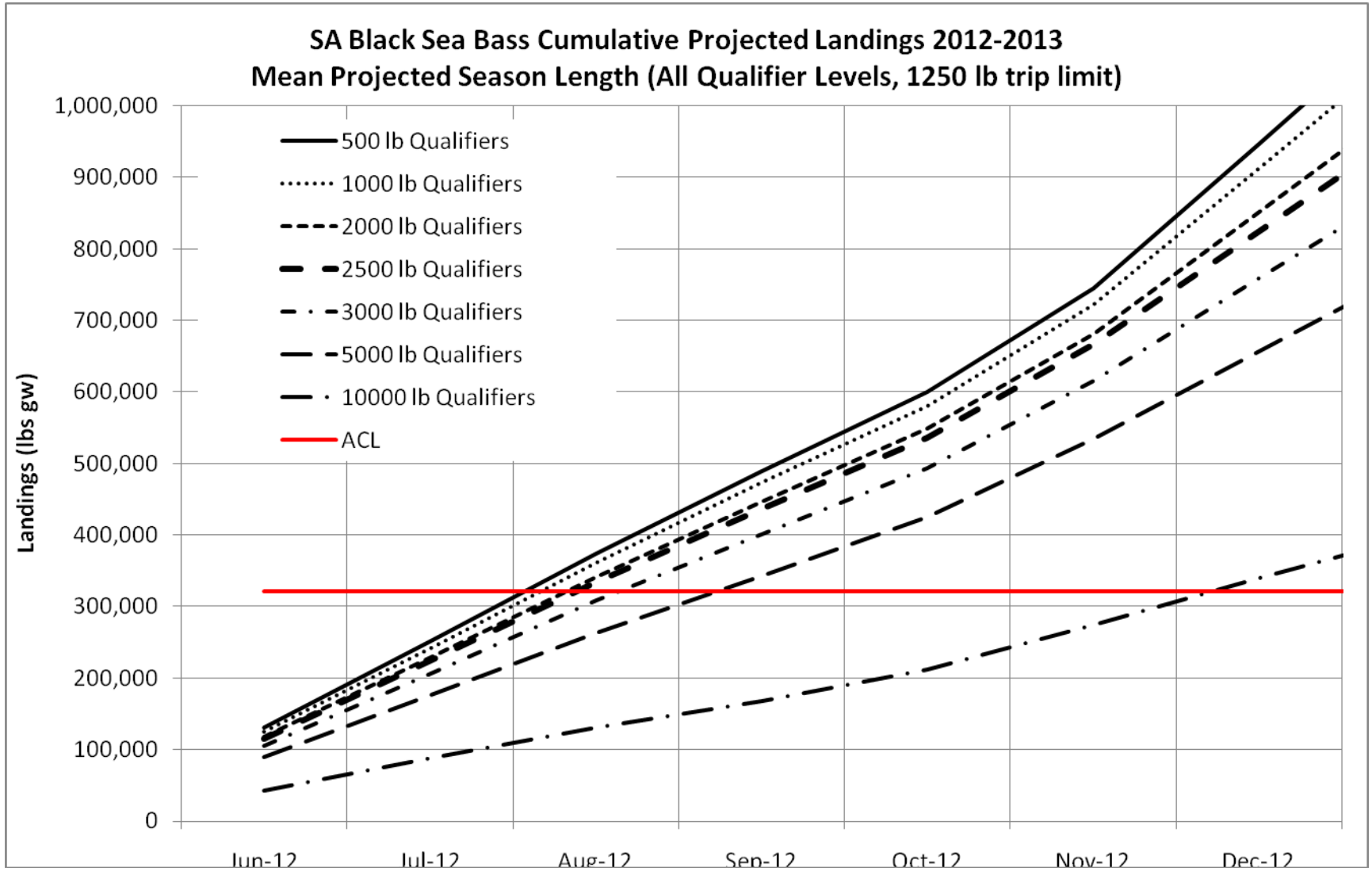


**Figure A1-1.** SARIMA model mean projected cumulative landings of black sea bass for all qualification levels for 2012-2013 seasons.

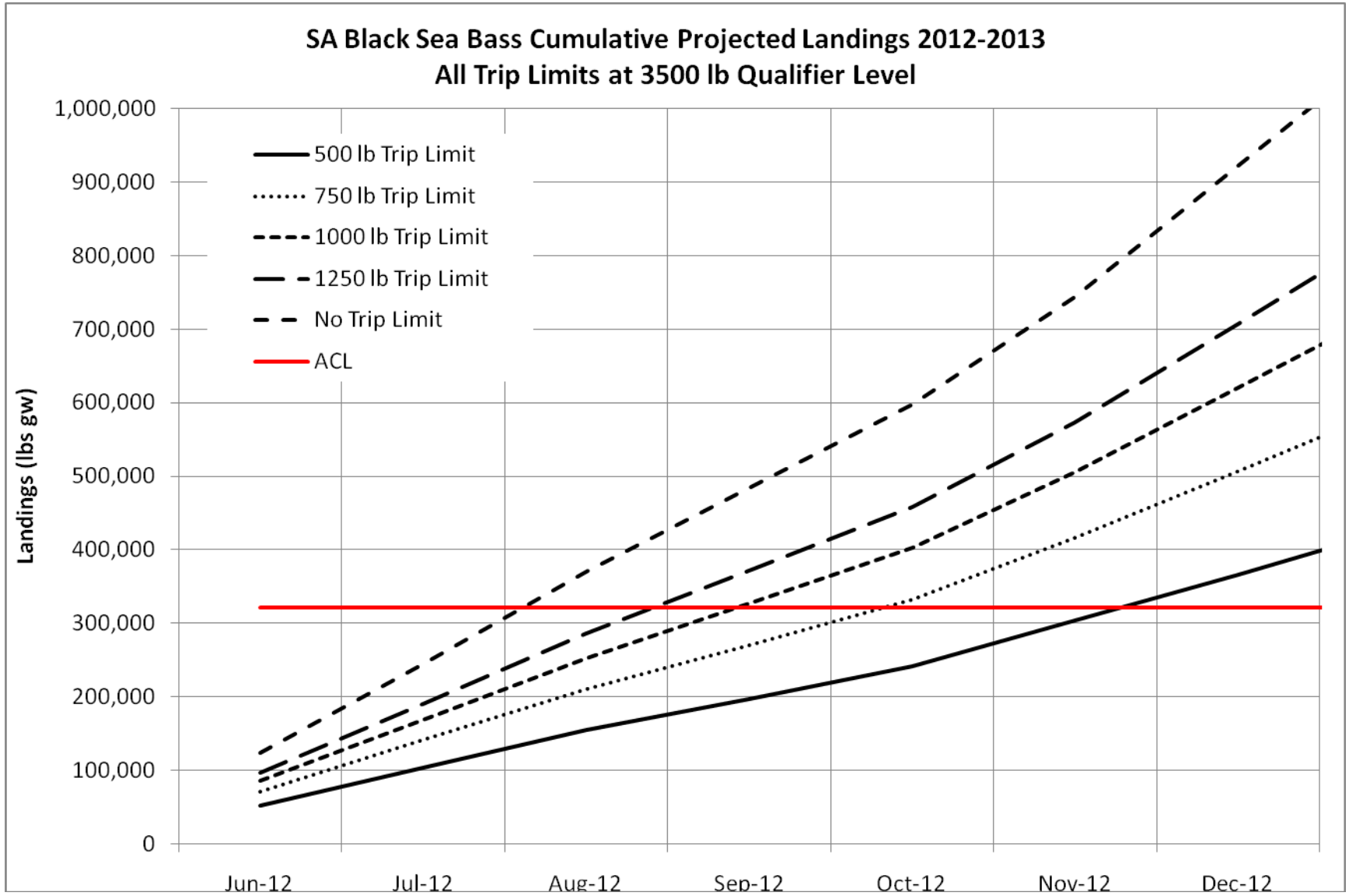


**Figure A1-2.** SARIMA model mean projected cumulative landings of black sea bass for all trip limit levels for 2012-2013 seasons.

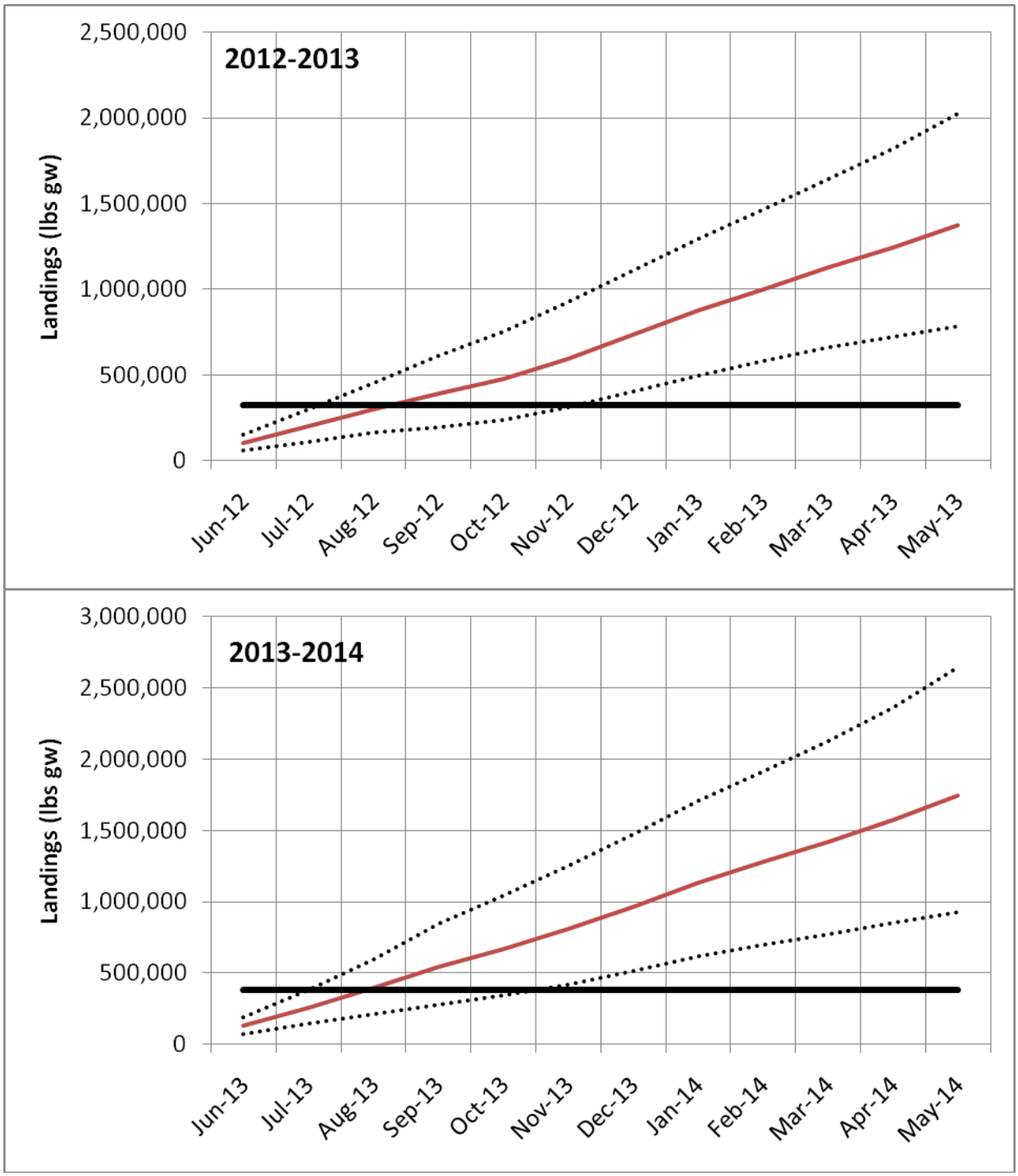


**Figure A1-3.** SARIMA model projected mean (red) and 95% confidence intervals (black dotted) cumulative landings of black sea bass for 2500 lb qualifiers for 2012-2013 (top) and 2013-2014 (bottom) seasons under a 1000-lb trip limit. ACL (solid black) is based upon constant F rebuilding projection with 2011-2012 ACL exceeded by 50% (SEDAR 25 2011).

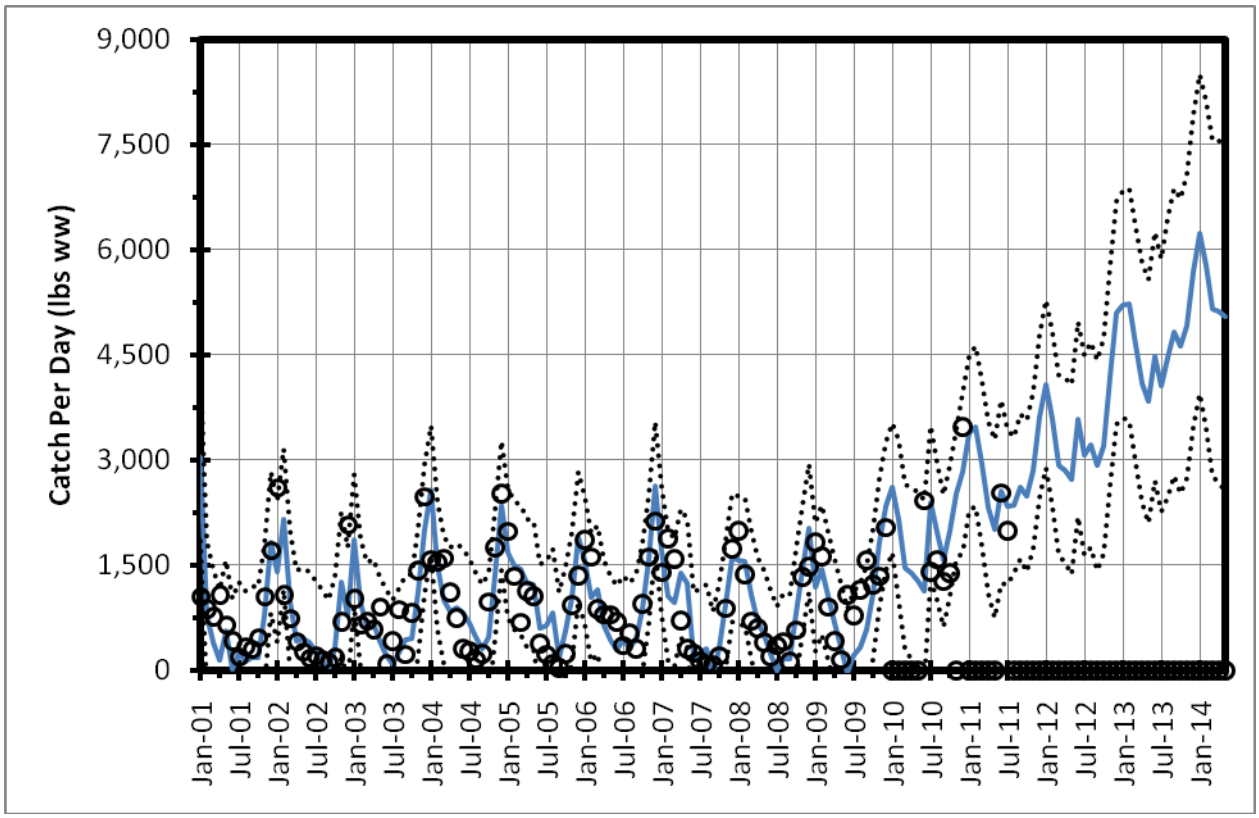


**Figure A1-4.** SARIMA model of black sea bass catch-per-day for 2,500 lb ww endorsement qualifiers at 1000-lb trip limit fit to historical data (open circles) and forecast through June 2013, with 95% confidence bands (dotted).

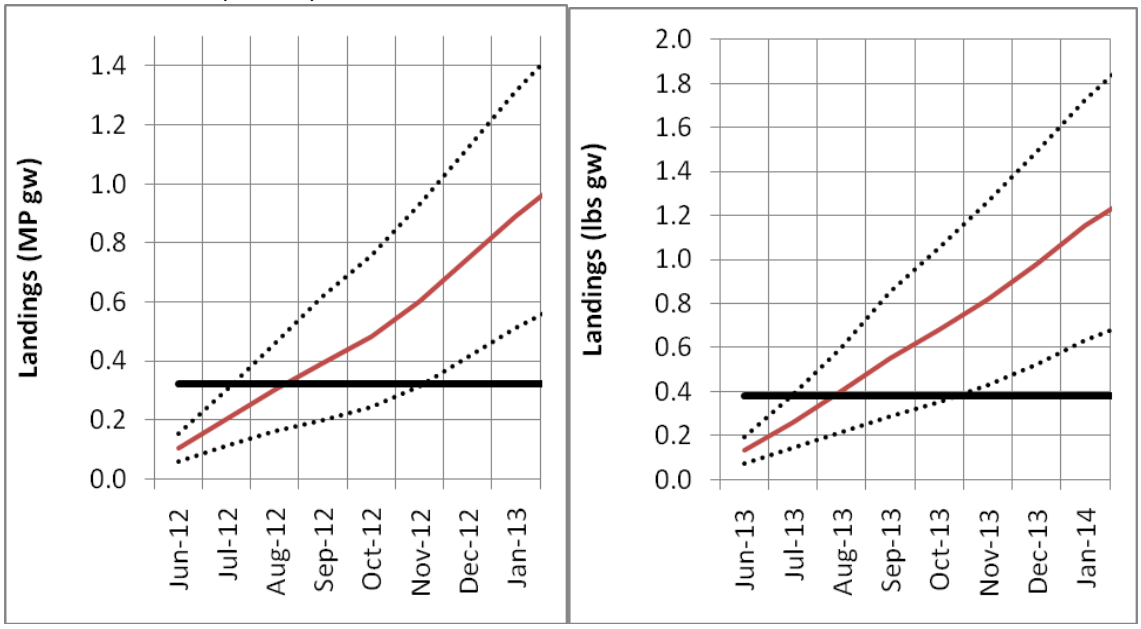


**Figure A1-5.** SARIMA projected mean (red) and 95% confidence interval (black dotted) cumulative landings of black sea bass for 2,500 lb ww qualifiers at a 1000-lb trip limit for 2012-2013 (left) and 2013-2014 (right) seasons vs. annual catch limits (solid black) from constant fishing mortality rebuilding projections given 50% overage in 2011-2012 (SEDAR 25 2011).

## Appendix M. Essential Fish Habitat and Move to Ecosystem Based Management

### South Atlantic Fishery Management Council Habitat Conservation, Ecosystem Coordination and Collaboration

The Council, using the Essential Fish Habitat Plan as the cornerstone, adopted a strategy to facilitate the move to an ecosystem-based approach to fisheries management in the region. This approach required a greater understanding of the South Atlantic ecosystem and the complex relationships among humans, marine life and the environment including essential fish habitat. To accomplish this, a process was undertaken to facilitate the evolution of the Habitat Plan into a Fishery Ecosystem Plan (FEP), thereby providing more comprehensive understanding of the biological, social and economic impacts of management necessary to initiate the transition from single species management to ecosystem-based management in the region.

### Moving to Ecosystem-Based Management

The Council adopted broad goals for Ecosystem-Based Management to include maintaining or improving ecosystem structure and function; maintain or improving economic, social and cultural benefits from resources; and maintaining or improving biological, economic and cultural diversity. Development of a regional FEP (SAFMC 2009a) provided an opportunity to expand scope of the original Council Habitat Plan and compile and review available habitat, biological, social, and economic fishery and resource information for fisheries in the South Atlantic ecosystem. The South Atlantic Council views habitat conservation at the core of the move to EBM in the region. Therefore, development of the FEP was a natural next step in the evolution and expands and significantly updates the SAFMC Habitat Plan (SAFMC 1998a) incorporating comprehensive details of all managed species (SAFMC, South Atlantic States, ASMFC, and NOAA Fisheries Highly Migratory Species and Protected Species) including their biology, food web dynamics, and economic and social characteristics of the fisheries and habitats essential to their survival. The FEP therefore serves as a source document presents more complete and detailed information describing the South Atlantic ecosystem and the impact of the fisheries on the environment. This FEP updates information on designated Essential Fish Habitat (EFH) and EFH-Habitat Areas of Particular Concern; expands descriptions of biology and status of managed species; presents information that will support ecosystem considerations for managed species; and describes the social and economic characteristics of the fisheries in the region. In addition, it expands the discussion and description of existing research programs and needs to identify biological, social, and economic research needed to fully address ecosystem-based management in the region. In is anticipated that the FEP will provide a greater degree of guidance by fishery, habitat, or major ecosystem consideration of bycatch reduction, prey-predator interactions, maintaining biodiversity, and spatial management needs. This FEP serves as a living source document of biological, economic, and social information for all Fishery Management Plans (FMP). Future Environmental Assessments and Environmental Impact Statements associated with subsequent amendments to Council FMPs will draw from or cite by reference the FEP.

The Fishery Ecosystem Plan for the South Atlantic Region encompasses the following volume structure:
FEP Volume I - Introduction and Overview of FEP for the South Atlantic Region
FEP Volume II - South Atlantic Habitats and Species
FEP Volume III - South Atlantic Human and Institutional Environment
FEP Volume IV - Threats to South Atlantic Ecosystem and Recommendations

FEP Volume V - South Atlantic Research Programs and Data Needs
FEP Volume VI - References and Appendices

Comprehensive Ecosystem-Based Amendment (CE-BA) 1 (SAFMC 2009b) is supported by this FEP and updates EFH and EFH-HAPC information and addresses the Final EFH Rule (e.g., GIS presented for all EFH and EFH-HAPCs). Management actions implemented in the CE-BA establish deepwater Coral HAPCs to protect what is thought to be the largest continuous distribution (>23,000 square miles) of pristine, deepwater coral ecosystems in the world.

### Ecosystem Approach to Deepwater Ecosystem Management

The South Atlantic Council manages coral, coral reefs and live/hard bottom habitat, including deepwater corals, through the Fishery Management Plan for Coral, Coral Reefs and Live/Hard Bottom Habitat of the South Atlantic Region (Coral FMP). Mechanisms exist in the FMP, as amended, to further protect deepwater coral and live/hard bottom habitats. The SAFMC's Habitat and Environmental Protection Advisory Panel and Coral Advisory Panel have supported proactive efforts to identify and protect deepwater coral ecosystems in the South Atlantic region. Management actions in Comprehensive Ecosystem-Based Amendment (CE-BA 1) (SAFMC 2009b)established deepwater coral HAPCs (C-HAPCs) to protect what is thought to be the largest continuous distribution (>23,000 square miles) of pristine deepwater coral ecosystems in the world. In addition, CE-BA 1 established areas within the CHAPC which provide for traditional fishing in limited areas which do not impact deepwater coral habitat. CE-BA 1, supported by the FEP, also addresses non-regulatory updates for existing EFH and EFH- HAPC information and addresses the spatial requirements of the Final EFH Rule (i.e., GIS presented for all EFH and EFH-HAPCs).

### Building from a Habitat to an Ecosystem Network to Support the Evolution

Starting with our Habitat and Environmental Protection Advisory Panel, the Council expanded and fostered a comprehensive Habitat network in our region to develop the Habitat Plan of the South Atlantic Region completed in 1998 to support the EFH rule. Building on the core regional collaborations, the Council facilitated an expansion to a Habitat and Ecosystem network to support the development of the FEP and CE-BA as well as coordinate with partners on other regional efforts.

These efforts include participation as a member and on the Board of the Southeast Coastal Regional Ocean Observing Association (SECOORA) to guide and direct priority needs for observation and modeling to support fisheries oceanography and integration into stock assessment process through SEDAR. Cooperation through SECOORA is envisioned to facilitate the following:

- Refining current or water column designations of EFH and EFH-HAPCs (e.g., Gulf Stream and Florida Current)
- Providing oceanographic models linking benthic, pelagic habitats and food webs
- Providing oceanographic input parameters for ecosystem models
- Integration of OOS information into Fish Stock Assessment process in the SA region
- Facilitating OOS system collection of fish and fishery data and other research necessary to support the Council's use of area-based management tools in the SA Region including but not limited to EFH, EFH-HAPCs, Marine Protected Areas, Deepwater Coral Habitat Areas of Particular Concern, Special Management Zones and Allowable Gear Areas.
- Integration of OOS program capabilities and research Needs into the South Atlantic Fishery Ecosystem Plan

- Collaboration with SECOORA to integrate OOS products on the Council's Habitat and Ecosystem Internet Mapping System to facilitate model and tool development
- Expanding IMS and Arc Services will provide permissioned researchers access to data or products including those collected/developed by SA OOS partners

In addition, the Council serves on the National Habitat Board and, as a member of the Southeast Aquatic Resource Partnership (SARP), has highlighted the collaboration by including the Southeast Aquatic Habitat Plan and associated watershed conservation restoration targets into the FEP. Many of the habitat, water quality, and water quantity conservation needs identified in the threats and recommendations Volume of the FEP are directly addressed by on-the-ground projects supported by SARP. This cooperation results in funding fish habitat restoration and conservation intended to increase the viability of fish populations and fishing opportunity which also meets the needs to conserve and manage Essential Fish Habitat for Council managed species or habitat important to their prey.

Initially discussed as a South Atlantic Eco-regional Compact, the Council has also cooperated with South Atlantic States in the formation of a Governor's South Atlantic Alliance (SAA). This will also provide regional guidance and resources that will address State and Council broader habitat and ecosystem conservation goals. The SAA was initiated in 2006. An Executive Planning Team (EPT), by the end of 2007, had created a framework for the Governors South Atlantic Alliance. The formal agreement between the four states (NC, SC, GA, and FL) was executed in May 2009. The Agreement specifies that the Alliance will prepare a "Governors South Atlantic Alliance Action Plan" which will be reviewed annually for progress and updated every five years for relevance of content. Alliance mission and purpose is to promote collaboration among the four states, and with the support and interaction of federal agencies, academe, regional organizations, non-governmental organizations, and the private sector, to sustain and enhance the region's coastal and marine resources. The Alliance proposes to regionally implement science-based actions and policies that balance coastal and marine ecosystems capacities to support both human and natural systems. An Action Plan was approved by the Governors and an Implementation Plan is under development.

One of the more recent collaborations is the Council participation as Steering Committee member for the newly establish South Atlantic Landscape Conservation Cooperative (SALCC). Landscape Conservation Cooperatives (LCCs) are applied conservation science partnerships focused on a defined geographic area that informs on-the-ground strategic conservation efforts at landscape scales. LCC partners include DOI agencies, other federal agencies, states, tribes, non-governmental organizations, universities and others. The newly formed Department of Interior Southeast Climate Services Center (CSC) has the LCCs in the region as their primary clients. One of the initial charges of the CSCs is to downscale climate models for use at finer scales.

### Building Tools to support EBM in the South Atlantic Region

The Council has developed a Habitat and Ecosystem Section of the website http://www.safmc.net/ecosystem/Home/EcosystemHome/tabid/435/Default.aspx and, in cooperation with the Florida Wildlife Research Institute (FWRI), developed a Habitat and Ecosystem Internet Map Server (IMS) http://www.safmc.net/EcosystemManagement/EcosystemBoundaries/MappingandGISData/tabid/62/Default.aspx. The IMS was developed to support Council and regional partners' efforts in the transition to EBM. Other regional partners include NMFS Habitat Conservation, South Atlantic States,

local management authorities, other Federal partners, universities, conservation organizations, and recreational and commercial fishermen. As technology and spatial information needs evolve, the distribution and use of GIS demands greater capabilities. The Council has continued its collaboration with FWRI in the now evolution to Web Services initially for for Essential Fish Habitat (http://ocean.floridamarine.org/SAFMC_EFH/) and Fishery Regulations (http://ocean.floridamarine.org/SAFMC_Regulations/) and is refining permissioned services for Fishery Independent and Habitat Research and developing one for Ocean Energy activities in the region (e.g., wind, wave and current).

### Ecosystem Based Action, Future Challenges and Needs

The Council has implemented ecosystem-based principles through several existing fishery management actions including establishment of deepwater Marine Protected Areas for the Snapper Grouper fishery, proactive harvest control rules on species (e.g., dolphin and wahoo) which are not overfished, implementing extensive gear area closures which in most cases eliminate the impact of fishing gear on Essential Fish Habitat and use of other spatial management including Special Management Zones. Pursuant to the development of the Comprehensive Ecosystem-Based Amendment, the Council is taking an ecosystem approach to protect deepwater ecosystems while providing for traditional fisheries for the Golden Crab and Royal Red shrimp in areas where they do not impact deepwater coral habitat. The stakeholder based process taps in on an extensive regional Habitat and Ecosystem network. Support tools facilitate Council deliberations and with the help of regional partners, are being refined to address long-term ecosystem management needs.

One of the greatest challenges to the long-term move to EBM in the region is funding high priority research, including but not limited to, comprehensive benthic mapping and ecosystem model and management tool development. In addition, collecting detailed information on fishing fleet dynamics including defining fishing operation areas by species, species complex and season, as well as catch relative to habitat is critical for assessment of fishery, community, and habitat impacts and for Council use of place based management measures. Additional resources need to be dedicated to expand regional coordination of modeling, mapping, characterization of species use of habitats, and full funding of regional fishery independent surveys (e.g., MARMAP, SEAMAP and SEFIS) which are linking directly to addressing high priority management needs. Development of ecosystem information systems to support Council management should build on existing tools (e.g., Regional Habitat and Ecosystem GIS and Arc Services) and provide resources to regional cooperating partners for expansion to address long-term Council needs.

The FEP and CE-BA 1 complement, but do not replace, existing FMPs. In addition, the FEP serves as source document to the CE-BAs. NOAA should support and build on regional coordination efforts of the Council as it transitions to a broader management approach. Resources need to be provided to collect information necessary to update and refine our FEP and support future fishery actions including but not limited to completing one of the highest priority needs to support EBM, the completion of mapping of near-shore, mid-shelf, shelf edge and deepwater habitats in the South Atlantic region. In developing future FEPs, the Council will draw on SAFEs (Stock Assessment and Fishery Evaluation reports) which NMFS is required to provide the Council for all FMPs implemented under the Magnuson-Stevens Act. The FEP, serving as the source document for CE-BAs, could also meet NMFS SAFE requirements if information is provided to the Council to update necessary sections.

**EFH and EFH-HAPC Designations Translated to Cooperative Habitat Policy Development and Protection** The Council actively comments on non-fishing projects or policies that may impact fish habitat. Appendix A of the Comprehensive Amendment Addressing Essential Fish Habitat in Fishery Management Plans of the South Atlantic Region (SAFMC 1998b) outlines the Council's comment and policy development process and the establishment of a four-state Habitat Advisory Panel. Members of the Habitat Advisory Panel serve as the Council's habitat contacts and professionals in the field. AP members bring projects to the Council's attention, draft comment letters, and attend public meetings. With guidance from the Advisory Panel, the Council has developed and approved policies on:

1. Energy exploration, development, transportation and hydropower re-licensing;
2. Beach dredging and filling and large-scale coastal engineering;
3. Protection and enhancement of submerged aquatic vegetation;
4. Alterations to riverine, estuarine and nearshore flows; and
5. Marine aquaculture.
6. Marine Ecosystems and Non-Native and Invasive Species
7. Estuarine Ecosystems and Non-Native and Invasive Species

NOAA Fisheries, State and other Federal agencies apply EFH and EFH-HAPC designations and protection policies in the day-to-day permit review process. In addition to the workshop process described above the revision and updating of existing habitat policies and the development of new policies is being coordinated with core agency representatives on the Habitat and Coral Advisory Panels. Existing policies are included at the end of this Appendix.

## South Atlantic Bight Ecopath Model

The Council worked cooperatively the University of British Columbia and the Sea Around Us project to develop a straw-man and preliminary food web models (Ecopath with Ecosim) to characterize the ecological relationships of South Atlantic species, including those managed by the Council. This effort was envisioned to help the Council and cooperators in identifying available information and data gaps while providing insight into ecosystem function. More importantly, the model development process provides a vehicle to identify research necessary to better define populations, fisheries and their interrelationships. While individual efforts are still underway in the South Atlantic (e.g., Biscayne Bay) only with significant investment of new resources through other programs will a comprehensive regional model be further developed.

## Essential Fish Habitat and Essential Fish Habitat Areas of Particular Concern

Following is a summary of the current South Atlantic Council's EFH and EFH-HAPCs. Information supporting their designation is being updated (pursuant to the EFH Final Rule) in the Council's Fishery Ecosystem Plan and Comprehensive Ecosystem Amendment:

## Snapper Grouper FMP

Essential fish habitat for snapper-grouper species includes coral reefs, live/hard bottom, submerged aquatic vegetation, artificial reefs and medium to high profile outcroppings on and around the shelf break zone from shore to at least 600 feet (but to at least 2000 feet for wreckfish) where the annual water temperature range is sufficiently warm to maintain adult populations of members of this largely tropical complex. EFH includes the spawning area in the water column above the adult habitat and the additional pelagic environment, including *Sargassum*, required for

larval survival and growth up to and including settlement. In addition the Gulf Stream is an essential fish habitat because it provides a mechanism to disperse snapper grouper larvae.

For specific life stages of estuarine dependent and nearshore snapper-grouper species, essential fish habitat includes areas inshore of the 100-foot contour, such as attached macroalgae; submerged rooted vascular plants (seagrasses); estuarine emergent vegetated wetlands (saltmarshes, brackish marsh); tidal creeks; estuarine scrub/shrub (mangrove fringe); oyster reefs and shell banks; unconsolidated bottom (soft sediments); artificial reefs; and coral reefs and live/hard bottom.

Areas which meet the criteria for EFH-HAPCs for species in the snapper-grouper management unit include medium to high profile offshore hard bottoms where spawning normally occurs; localities of known or likely periodic spawning aggregations; nearshore hard bottom areas; The Point, The Ten Fathom Ledge, and Big Rock (North Carolina); The Charleston Bump (South Carolina); mangrove habitat; seagrass habitat; oyster/shell habitat; all coastal inlets; all state-designated nursery habitats of particular importance to snapper grouper (e.g., Primary and Secondary Nursery Areas designated in North Carolina); pelagic and benthic *Sargassum*; Hoyt Hills for wreckfish; the *Oculina* Bank Habitat Area of Particular Concern; all hermatypic coral habitats and reefs; manganese outcroppings on the Blake Plateau; and Council-designated Artificial Reef Special Management Zones (SMZs). In addition, the Council through CEBA 2 (SAFMC 2011) is proposing the deepwater snapper grouper MPAs and golden tilefish and blueline tilefish habitat as EFH-HAPCs under the Snapper Grouper FMP as follows:

EFH-HAPCs for golden tilefish to include irregular bottom comprised of troughs and terraces inter-mingled with sand, mud, or shell hash bottom. Mud-clay bottoms in depths of 150-300 meters are HAPC. Golden tilefish are generally found in 80-540 meters, but most commonly found in 200-meter depths.

EFH-HAPC for blueline tilefish to include irregular bottom habitats along the shelf edge in 45-65 meters depth; shelf break; or upper slope along the 100-fathom contour (150-225 meters); hardbottom habitats characterized as rock overhangs, rock outcrops, manganese-phosphorite rock slab formations, or rocky reefs in the South Atlantic Bight; and the Georgetown Hole (Charleston Lumps) off Georgetown, SC.

EFH-HAPCs for the snapper grouper complex to include the following deepwater Marine Protected Areas (MPAs) as designated in Snapper Grouper Amendment 14; Snowy Grouper Wreck MPA, Northern South Carolina MPA, Edisto MPA, Charleston Deep Artificial Reef MPA, Georgia MPA, North Florida MPA, St. Lucie Hump MPA and East Hump MPA.

### Shrimp FMP

For penaeid shrimp, Essential Fish Habitat includes inshore estuarine nursery areas, offshore marine habitats used for spawning and growth to maturity, and all interconnecting water bodies as described in the Habitat Plan. Inshore nursery areas include tidal freshwater (palustrine), estuarine, and marine emergent wetlands (e.g., intertidal marshes); tidal palustrine forested areas; mangroves; tidal freshwater,

estuarine, and marine submerged aquatic vegetation (e.g., seagrass); and subtidal and intertidal non-vegetated flats. This applies from North Carolina through the Florida Keys.

For rock shrimp, essential fish habitat consists of offshore terrigenous and biogenic sand bottom habitats from 18 to 182 meters in depth with highest concentrations occurring between 34 and 55 meters. This applies for all areas from North Carolina through the Florida Keys. Essential fish habitat includes the shelf current systems near Cape Canaveral, Florida which provide major transport mechanisms affecting planktonic larval rock shrimp. These currents keep larvae on the Florida Shelf and may transport them inshore in spring. In addition the Gulf Stream is an essential fish habitat because it provides a mechanism to disperse rock shrimp larvae.

Essential fish habitat for royal red shrimp include the upper regions of the continental slope from 180 meters (590 feet) to about 730 meters (2,395 feet), with concentrations found at depths of between 250 meters (820 feet) and 475 meters (1,558 feet) over blue/black mud, sand, muddy sand, or white calcareous mud. In addition the Gulf Stream is an essential fish habitat because it provides a mechanism to disperse royal red shrimp larvae.

Areas which meet the criteria for EFH-HAPCs for penaeid shrimp include all coastal inlets, all state-designated nursery habitats of particular importance to shrimp (for example, in North Carolina this would include all Primary Nursery Areas and all Secondary Nursery Areas), and state-identified overwintering areas.

## Coastal Migratory Pelagics FMP

Essential fish habitat for coastal migratory pelagic species includes sandy shoals of capes and offshore bars, high profile rocky bottom and barrier island ocean-side waters, from the surf to the shelf break zone, but from the Gulf stream shoreward, including *Sargassum*. In addition, all coastal inlets, all state-designated nursery habitats of particular importance to coastal migratory pelagics (for example, in North Carolina this would include all Primary Nursery Areas and all Secondary Nursery Areas).

For Cobia essential fish habitat also includes high salinity bays, estuaries, and seagrass habitat. In addition, the Gulf Stream is an essential fish habitat because it provides a mechanism to disperse coastal migratory pelagic larvae.
For king and Spanish mackerel and cobia essential fish habitat occurs in the South Atlantic and Mid-Atlantic Bights.

Areas which meet the criteria for EFH-HAPCs include sandy shoals of Capes Lookout, Cape Fear, and Cape Hatteras from shore to the ends of the respective shoals, but shoreward of the Gulf stream; The Point, The Ten-Fathom Ledge, and Big Rock (North Carolina); The Charleston Bump and Hurl Rocks (South Carolina); The Point off Jupiter Inlet (Florida); *Phragmatopoma* (worm reefs) reefs off the central east coast of Florida; nearshore hard bottom south of Cape Canaveral; The Hump off Islamorada, Florida; The Marathon Hump off Marathon, Florida; The “Wall” off of the Florida Keys; Pelagic *Sargassum*; and Atlantic coast estuaries with high numbers of Spanish mackerel and cobia based on abundance data from the ELMR Program. Estuaries meeting this criteria for Spanish mackerel include Bogue Sound and New River, North Carolina; Bogue Sound,

North Carolina (Adults May-September salinity >30 ppt); and New River, North Carolina (Adults May-October salinity >30 ppt). For Cobia they include Broad River, South Carolina; and Broad River, South Carolina (Adults & juveniles May-July salinity >25ppt).

### Golden Crab FMP

Essential fish habitat for golden crab includes the U.S. Continental Shelf from Chesapeake Bay south through the Florida Straits (and into the Gulf of Mexico). In addition, the Gulf Stream is an essential fish habitat because it provides a mechanism to disperse golden crab larvae. The detailed description of seven essential fish habitat types (a flat foraminferan ooze habitat; distinct mounds, primarily of dead coral; ripple habitat; dunes; black pebble habitat; low outcrop; and soft-bioturbated habitat) for golden crab is provided in Wenner et al. (1987). There is insufficient knowledge of the biology of golden crabs to identify spawning and nursery areas and to identify HAPCs at this time. As information becomes available, the Council will evaluate such data and identify HAPCs as appropriate through the framework

### Spiny Lobster FMP

Essential fish habitat for spiny lobster includes nearshore shelf/oceanic waters; shallow subtidal bottom; seagrass habitat; unconsolidated bottom (soft sediments); coral and live/hard bottom habitat; sponges; algal communities (*Laurencia*); and mangrove habitat (prop roots). In addition the Gulf Stream is an essential fish habitat because it provides a mechanism to disperse spiny lobster larvae.

Areas which meet the criteria for EFH-HAPCs for spiny lobster include Florida Bay, Biscayne Bay, Card Sound, and coral/hard bottom habitat from Jupiter Inlet, Florida through the Dry Tortugas, Florida.

### Coral, Coral Reefs, and Live/Hard Bottom Habitats FMP

Essential fish habitat for corals (stony corals, octocorals, and black corals) must incorporate habitat for over 200 species. EFH for corals include the following:

A. Essential fish habitat for hermatypic stony corals includes rough, hard, exposed, stable substrate from Palm Beach County south through the Florida reef tract in subtidal to 30 m depth, subtropical (15°-35° C), oligotrophic waters with high (30-35$^{o}/_{oo}$) salinity and turbidity levels sufficiently low enough to provide algal symbionts adequate sunlight penetration for photosynthesis. Ahermatypic stony corals are not light restricted and their essential fish habitat includes defined hard substrate in subtidal to outer shelf depths throughout the management area.

B. Essential fish habitat for *Antipatharia* (black corals) includes rough, hard, exposed, stable substrate, offshore in high (30-35$^{o}/_{oo}$) salinity waters in depths exceeding 18 meters (54 feet), not restricted by light penetration on the outer shelf throughout the management area.

C. Essential fish habitat for octocorals excepting the order Pennatulacea (sea pens and sea pansies) includes rough, hard, exposed, stable substrate in subtidal to outer shelf depths within a wide range of salinity and light penetration throughout the management area.

D. Essential fish habitat for Pennatulacea (sea pens and sea pansies) includes muddy, silty bottoms in subtidal to outer shelf depths within a wide range of salinity and light penetration.

Areas which meet the criteria for EFH-HAPCs for coral, coral reefs, and live/hard bottom include: The 10-Fathom Ledge, Big Rock, and The Point (North Carolina); Hurl Rocks and The Charleston Bump (South Carolina); Gray's Reef National Marine Sanctuary (Georgia); The *Phragmatopoma* (worm reefs) reefs off the central east coast of Florida; Oculina Banks off the east coast of Florida from Ft. Pierce to Cape Canaveral; nearshore (0-4 meters; 0-12 feet) hard bottom off the east coast of Florida from Cape Canaveral to Broward County); offshore (5-30 meter; 15-90 feet) hard bottom off the east coast of Florida from Palm Beach County to Fowey Rocks; Biscayne Bay, Florida; Biscayne National Park, Florida; and the Florida Keys National Marine Sanctuary. In addition, the Council through CEBA 2 (SAFMC 2011) is proposing the Deepwater Coral HAPCs as EFH-HAPCs under the Coral FMP as follows:

Deepwater Coral HAPCs designated in Comprehensive Ecosystem-Based Amendment 1 as Snapper Grouper EFH-HAPCs: Cape Lookout Coral HAPC, Cape Fear Coral HAPC, Blake Ridge Diapir Coral HAPC, Stetson-Miami Terrace Coral HAPC, Pourtalés Terrace Coral HAPC.

**Dolphin and Wahoo FMP**

EFH for dolphin and wahoo is the Gulf Stream, Charleston Gyre, Florida Current, and pelagic *Sargassum*. This EFH definition for dolphin was approved by the Secretary of Commerce on June 3, 1999 as a part of the South Atlantic Council's Comprehensive Habitat Amendment (SAFMC, 1998b) (dolphin was included within the Coastal Migratory Pelagics FMP).

Areas which meet the criteria for EFH-HAPCs for dolphin and wahoo in the Atlantic include The Point, The Ten-Fathom Ledge, and Big Rock (North Carolina); The Charleston Bump and The Georgetown Hole (South Carolina); The Point off Jupiter Inlet (Florida); The Hump off Islamorada, Florida; The Marathon Hump off Marathon, Florida; The "Wall" off of the Florida Keys; and Pelagic *Sargassum*. This EFH-HAPC definition for dolphin was approved by the Secretary of Commerce on June 3, 1999 as a part of the South Atlantic Council's Comprehensive Habitat Amendment (dolphin was included within the Coastal Migratory Pelagics FMP).

**Pelagic *Sargassum* Habitat FMP**

The Council through CEBA 2 (SAFMC 2011) is proposing to designate the top 10 meters of the water column in the South Atlantic EEZ bounded by the Gulfstream, as EFH for pelagic Sargassum.

### Actions Implemented That Protect EFH and EFH-HAPCs

### Snapper Grouper FMP

- Prohibited the use of the following gears to protect habitat: bottom longlines in the EEZ inside of 50 fathoms or anywhere south of St. Lucie Inlet Florida, fish traps, bottom tending (roller-rig) trawls on live bottom habitat, and entanglement gear.

- Established the *Oculina* Experimental Closed Area where the harvest or possession of all species in the snapper grouper complex is prohibited

### Shrimp FMP

- Prohibition of rock shrimp trawling in a designated area around the *Oculina* Bank,
- Mandatory use of bycatch reduction devices in the penaeid shrimp fishery,
- Mandatory Vessel Monitoring System (VMS) in the Rock Shrimp Fishery.
- A mechanism that provides for the concurrent closure of the EEZ to penaeid shrimping if environmental conditions in state waters are such that the overwintering spawning stock is severely depleted.

### *Pelagic Sargassum* Habitat FMP

- Prohibited all harvest and possession of *Sargassum* from the South Atlantic EEZ south of the latitude line representing the North Carolina/South Carolina border (34° North Latitude).
- Prohibited all harvest of *Sargassum* from the South Atlantic EEZ within 100 miles of shore between the 34° North Latitude line and the Latitude line representing the North Carolina/Virginia border.
- Harvest of *Sargassum* from the South Atlantic EEZ is limited to the months of November through June.
- Established an annual Total Allowable Catch (TAC) of 5,000 pounds landed wet weight.
- Required that an official observer be present on each *Sargassum* harvesting trip. Require that nets used to harvest *Sargassum* be constructed of four inch stretch mesh or larger fitted to a frame no larger than 4 feet by 6 feet.

### Coastal Migratory Pelagics FMP

- Prohibited of the use of drift gill nets in the coastal migratory pelagic fishery;

### Golden Crab FMP

- In the northern zone golden crab traps can only be deployed in waters deeper than 900 feet; in the middle and southern zones traps can only be deployed in waters deeper than 700 feet.
  Northern zone - north of the 28°N. latitude to the North Carolina/Virginia border;
  Middle zone - 28°N. latitude to 25°N. latitude; and
  Southern zone - south of 25°N. latitude to the border between the South Atlantic and Gulf of Mexico Fishery Management Councils.

### Coral, Coral Reefs and Live/Hard Bottom FMP

- Established an optimum yield of zero and prohibiting all harvest or possession of these resources which serve as essential fish habitat to many managed species.
- Designated of the *Oculina* Bank Habitat Area of Particular Concern
- Expanded the *Oculina* Bank Habitat Area of Particular Concern (HAPC) to an area bounded to the west by 80°W. longitude, to the north by 28°30' N. latitude, to the south by 27°30' N. latitude, and to the east by the 100 fathom (600 feet) depth contour.
- Established the following two Satellite *Oculina* HAPCs: (1) Satellite *Oculina*

HAPC #1 is bounded on the north by 28°30'N. latitude, on the south by 28°29'N. latitude, on the east by 80°W. longitude, and on the west by 80°3'W. longitude, and (2) Satellite *Oculina* HAPC #2 is bounded on the north by 28°17'N. latitude, on the south by 28°16'N. latitude, on the east by 80°W. longitude, and on the west by 80°3'W. longitude.

- Prohibited the use of all bottom tending fishing gear and fishing vessels from anchoring or using grapples in the *Oculina* Bank HAPC.
- Established a framework procedure to modify or establish Coral HAPCs.
- Established the following six deepwater CHAPCs: Cape Lookout Lophelia Banks, Cape Fear Lophelia Banks, Stetson Reefs, Savannah and East Florida Lithoherms, and Miami Terrace (Stetson-Miami Terrace), Pourtales Terrace, and Blake Ridge Diapir Methane Seep.
- Within the deepwater CHAPCs, the possession of coral species and the use of all bottom damaging gear is prohibited including bottom longline, trawl (bottom and mid-water), dredge, pot or trap, or the use of an anchor, anchor and chain, or grapple and chain by all fishing vessels.

## South Atlantic Council Policies for Protection and Restoration of Essential Fish Habitat.

### SAFMC Habitat and Environmental Protection Policy

In recognizing that species are dependent on the quantity and quality of their essential habitats, it is the policy of the SAFMC to protect, restore, and develop habitats upon which fisheries species depend; to increase the extent of their distribution and abundance; and to improve their productive capacity for the benefit of present and future generations. For purposes of this policy, "habitat" is defined as the physical, chemical, and biological parameters that are necessary for continued productivity of the species that is being managed. The objectives of the SAFMC policy will be accomplished through the recommendation of no net loss or significant environmental degradation of existing habitat. A long-term objective is to support and promote a net-gain of fisheries habitat through the restoration and rehabilitation of the productive capacity of habitats that have been degraded, and the creation and development of productive habitats where increased fishery production is probable. The SAFMC will pursue these goals at state, Federal, and local levels. The Council shall assume an aggressive role in the protection and enhancement of habitats important to fishery species, and shall actively enter Federal, decision- making processes where proposed actions may otherwise compromise the productivity of fishery resources of concern to the Council.

### SAFMC EFH Policy Statements

In addition to implementing regulations to protect habitat from fishing related degradation, the Council in cooperation with NOAA Fisheries, actively comments on non-fishing projects or policies that may impact fish habitat. The Council adopted a habitat policy and procedure document that established a four-state Habitat Advisory Panel and adopted a comment and policy development process. Members of the Habitat Advisory Panel serve as the Council's habitat contacts and professionals in the field. With guidance from the Advisory Panel, the Council has developed and approved the following habitat policy statements which are available on the Habitat and Ecosystem section of the Council website:

*Protection and Restoration of EFH from Marine Aquaculture*
http://www.safmc.net/Portals/0/HabitatPolicies/SAFMCAquaPolicyFinalJune07.pdf
*Protection and Enhancement of Marine Submerged Aquatic Vegetation*
http://www.safmc.net/Portals/0/HabitatPolicies/SAFMCSAVPol.pdf
*Protection and Restoration of EFH from Beach Dredging and Filling*

http://www.safmc.net/Portals/0/HabitatPolicies/BeachPolicy.pdf

*Protection and Restoration of EFH from Energy Exploration, Development, Transportation and Hydropower Re-Licensing*

http://www.safmc.net/Portals/0/HabitatPolicies/SAFMCEnergyPolicyFinal05.pdf

*Protection and Restoration of EFH from Alterations to Riverine, Estuarine and Nearshore Flows*

http://www.safmc.net/Portals/0/HabitatPolicies/FlowsPolicy.pdf

*Policies for the Protection of South Atlantic Estuarine Ecosystems from Non-Native and Invasive Species*

http://www.safmc.net/LinkClick.aspx?fileticket=Qn%2baT%2blNjZM%3d&tabid=245

*Policies for the Protection of South Atlantic Marine Ecosystems from No-Native and Invasive Species*

http://www.safmc.net/LinkClick.aspx?fileticket=bNFKO%2fIcvHQ%3d&tabid=245

## Appendix N. Response to Comments on the Draft Environmental Impact Statement for Amendment 18A to the Fishery Management Plan for the Snapper-Grouper Fishery of the South Atlantic Region (Amendment 18A)

The following section satisfies the National Environmental Policy Act's (NEPA's) requirement for responding to comments on the draft environmental impact statement (DEIS). NEPA requires that a federal agency shall respond to comments on the DEIS by one or more of the following means: (1) Modify an existing alternative; (2) develop and analyze a new alternative; (3) supplement, improve, or modify the analyses; (4) make factual corrections; or (5) explain why the comments do not warrant further agency response, citing the sources, authorities, or reasons which support the agency's position. The following section responds to written comments generated during the comment period for the DEIS.

The first section summarizes and responds to Environmental Protection Agency (EPA) comments on the DEIS, which received a "Lack of Objections" rating from that agency. The remaining sections summarize and respond to comments received from the Southeast Fisheries Science Center (SEFSC), state agencies, various organizations, and the general public.

### A. DEIS COMMENTS

### I. Environmental Protection Agency (EPA) Comments

***Comment 1:*** *The "Need" portion of the "Purpose and Need Statement" appears unclear and inconsistent with proposed actions. In the "Need" statement the definition of overcapacity is not clear and it is not defined in the DEIS.*

Response: The need for Amendment 18A is to reduce overcapacity and the rate of harvest of black sea bass in the commercial and recreational sectors, based on new information, to maximize socioeconomic benefits for the black sea bass portion of the snapper-grouper fishery while maintaining the current schedule that rebuilds the black sea bass stock by 2016. Amendment 18A would also improve data reporting the for-hire sector of the snapper-grouper fishery.

The term "overcapacity" in the black sea bass segment of the snapper-grouper fishery refers to the high level of participation in the sector as it relates to the speed at which the commercial annual catch limit (ACL) is harvested. Participation in the commercial black sea bass pot sector has increased in recent years and has partially contributed to the ACL being met and the black sea bass sector closing early in the fishing season. Currently, anyone with a federal snapper-grouper permit can fish black sea bass pots; therefore, participation in the black sea bass commercial pot sector could further expand if not constrained. Another factor that has contributed to the shortening of the black sea bass commercial and recreational fishing seasons is the constant catch rebuilding strategy that was established in 2006 to rebuild the stock, which does not allow catch to increase as the stock rebuilds. As the stock rebuilds in this constant catch rebuilding strategy, the black sea bass are harvested at a faster rate each year. For example, the 2011/2012 commercial fishing year lasted only 45-days; whereas the commercial season was open for over 4 months during the 2010/2011 fishing year. There is not a need to reduce the

amount of fish allowed to be harvested, as overall harvest is limited by the sector ACLs, which are set at levels that would rebuild the stock within the rebuilding timeframe. Rather, the need is slow the rate at which black sea bass are harvested. By implementing measures that would slow the rate at which the sector ACLs are met and modify the rebuilding strategy, fishery participants may be able to fish longer during the fishing year, which would promote more stable market conditions and associated socioeconomic benefits.

All of the actions in Amendment 18A meet the purpose and need of the amendment. Action 1 would modify the rebuilding strategy to increase the ACL, pending the outcome of a stock assessment update prior the start of the 2014/2015 fishing year while still having a 66% probability of rebuilding the stock by 2016. Actions 2-4 would limit the number of fishermen allowed to fish for black sea bass with pot gear, which would also slow the rate of harvest in the commercial sector. Action 5 would limit effort in the pot sector of the black sea bass segment of the snapper-grouper fishery by limiting the number of pots each endorsement holder is allowed to fish. Action 6 would require that all black sea bass pots be brought back to shore at the end of each trip, which would further slow the rate of harvest since fishermen would no longer be allowed to leave their gear in the water for prolonged periods of time. Action 7 would modify accountability measures, which would ensure that rebuilding efforts remain on track despite effort shifting in to the black sea bass component of the snapper-grouper fishery. Action 8, though not chosen for implementation, considered a spawning season closure for black sea bass to help rebuild the stock by the 2016 deadline. Action 9 would establish a commercial trip limit for black sea bass to reduce the rate of harvest and extend fishing opportunities further into the fishing year. Action 10 would increase the minimum size limits for black sea bass in the commercial and recreational sectors, which is also expected to slow the rate of harvest of the species. Actions 11 and 12 are intended to improve the accuracy and timing of fisheries information available to fishery managers; however, only Action 12 was approved for implementation by the South Atlantic Fishery Management Council (South Atlantic Council).

***Comment 2:*** *The technical use of the words "catch" and "harvest" are unclear. The use of the terms "catch level" and "mortality rate" are also unclear, which makes it difficult to understand the differences between the analysis of Alternative 2 and Alternative 3 under Action 1a.*

Response: In the context of this amendment the words "catch" and "harvest" can be used interchangeably. For example "catch rate" and the "rate of harvest" both refer to how quickly fish are taken from the population, which relates directly to how quickly the ACL is met for a particular sector. Alternative 2 would hold catch constant for the remaining years of the rebuilding plan and the catch would not increase as stock biomass increases. Holding catch constant does not allow fishermen to harvest more fish as the stock rebuilds and is often very frustrating for fishermen who are allowed to retain only a limited number of fish while the number and size of fish they see in the water increases dramatically.

The fishing "mortality rate" often noted as "F" refers to the rate at which fish are removed from the stock by fishing. Holding a fishing mortality rate constant is different than holding a catch rate constant. A fishing mortality rate can be held constant over time while the allowable catch is adjusted upward as the stock rebuilds. In contrast to Alternative 2, the rebuilding strategy

under Alternative 3 would hold the fishing mortality rate constant and allow the catch rate to increase as the stock rebuilds.

***Comment 3:*** *The final environmental impact statement (FEIS) should clarify how the preferred alternative for Action 1a (Rebuilding Strategy Modifications) was selected.*

Response: The South Atlantic Council had originally chosen Sub-Alternative 3b as their preferred rebuilding strategy alternative, which appeared in the DEIS, published for public comment on December 9, 2011. Sub-Alternative 3b would allow the greatest amount of harvest possible, while still having a 50% chance of rebuilding by 2016. Assuming the allowable catch for the 2011/2012 fishing year is 150% of the ACL, the acceptable biological catch (ABC) specified in Sub-Alternative 3b would increase each fishing year from the current ABC of 718,000 pounds gutted weight (gw) (847,000 pounds whole weight (ww)) up to 1,215,254 pounds gw (1,434,000 lbs ww) at the start of the 2016/2017 fishing year when the stock is expected to be rebuilt. However, in Action 1b, the ABC would not increase automatically in a subsequent year if the present year's projected catch has exceeded the total ACL specified for the commercial and recreational sectors. Sub-Alternative 3b would reduce the number of dead discards slightly relative to the status quo, since there would likely be increased opportunities to retain black sea bass. This option may also extend the fishing season slightly for the commercial and recreational sectors since it would increase the current level of harvest by approximately 28,610 pounds gw (~33,760 ww) in 2012/2013 based on estimates from the most recent stock assessment.

The South Atlantic Council's Scientific and Statistical Committee (SSC) endorsed the ABC associated with Sub-Alternative 3b, which assumes 150% of the ACL was met in the 2011/2012 fishing year, with the caveat that ABC is specified for only the 2012/2013 and 2013/2014 fishing seasons. However, at their December 2011 meeting the South Atlantic Council determined a more conservative rebuilding strategy alternative that incorporates a higher probability of rebuilding by the start of the 2016/2017 fishing year is more appropriate for the stock. Therefore, the preferred rebuilding strategy alternative was changed from Sub-Alternative 3b to Preferred Alternative 5, which would hold catch at the current level for the 2012/2013 and 2013/2014 fishing years, and would have a 66% chance of rebuilding the stock to $B_{MSY}$ by 2016**.** An updated stock assessment would need to be conducted to identify the ABC and ACL levels in years following the 2013/2014 fishing year**.**

***Comment 4:*** *The text on page S-6 appears to be inconsistent with Table S-1a. On page S-6, the text states the preferred alternative has a greater than 50% probability of rebuilding stock; however, the text in Table S-1a indicates it only has a 50% probability of rebuilding the stock.*

Response: Sub-Alternative 3b under Action 1a (Rebuilding Strategy Modifications) has a 50% probability of rebuilding the stock by 2016, not a greater than 50% probability of rebuilding the stock. Though, this is no longer the preferred alternative, the text on what is now page S-5 now reads: Sub-Alternative 3b would allow the greatest amount of harvest possible, while still having a 50% chance of rebuilding by 2016. The table referenced in Comment 4 is correct.

***Comment 5:*** *For Alternatives 3 and 4 under Action 1a (Rebuilding Strategy Modifications), the DEIS indicates the socioeconomic impacts are potentially greater under Alternative 3 than Alternative 4. However, it is unclear what the actual differences are between the two alternatives.*

Response: Section 4.1.1.2 (Economic Effects for Action 1a) in the FEIS states the potential advantage of Alternative 4 over Alternative 3 is the possibility of allowing for an increasing fishing mortality over time to the extent the rebuilding target is met at the end of the rebuilding period. Thus, ACLs could also increase over time under Alternative 4 more than under Alternative 3. Given the current conditions of relatively low ACLs and fishery closures, a higher ACL may be expected to provide more economic benefits.

***Comment 6:*** *The DEIS does not adequately differentiate between Alternative 1(No Action) and Alternative 2 under Action 1b (Set an ACL for the Black Sea Bass). Both alternatives set the ACL equal to the ABC and both are subject to the commercial and recreational allocations established in Amendment 13C to the FMP.*

Response: In the no action Alternative 1, optimum yield (OY) is equal to 75%$F_{MSY}$. Alternative 2 would set OY equal to the ABC and the ACL, which is 718,000 pounds gw. Alternative 1 (No Action) would not change the existing ACL and OY for black sea bass. Based on a recommendation from the South Atlantic Council's SSC, Amendment 17B to the FMP indicates that the ABC for overfished stocks is consistent with the value from the rebuilding plan. The Comprehensive ACL Amendment adopted this definition of ABC for overfished stocks into the ABC Control Rule. Amendment 15A to the Snapper-Grouper FMP (Amendment 15A) specified an OY to equal the average yield associated with fishing at 75% of $F_{MSY}$. If the stock is overfished, Amendment 15A indicates $F_{OY}$ equals the fishing mortality rate specified by the rebuilding plan designed to rebuild the stock to $SSB_{MSY}$ within the approved schedule.

***Comment 7:*** *The preferred Action 1b (Set an ACL for the Black Sea Bass) alternative provides no buffer between the ABC and the ACL while the other two alternatives provide a buffer. The FEIS should discuss why NOAA Fisheries Service prefers to set ACL equal to ABC. The discussion should include the pros and cons of each approach. The FEIS should define overfishing limit (OFL) when it is first used.*

Response: OFL is first defined in Section 4.1 of Amendment 18A; however, the acronym was first used in the Amendment 18A with no definition. The National Standard 1 Guidelines discuss the relationship of the OFL to maximum sustainable yield (MSY) and annual catch target (ACT) or ACL to OY. The OFL is an annual amount of catch that corresponds to the estimate of maximum fishing mortality threshold (MFMT) applied to a stock or complex's abundance; MSY is the long-term average of such catches. The ACL is the limit that triggers accountability measures (AMs), and ACT, if specified, would be the management target for a fishery. Management measures for a fishery should, on an annual basis, prevent the ACL from being exceeded. The long-term objective is to achieve OY through annual achievement of an ACL or ACT. The National Standard 1 Guidelines state that if OY is set close to MSY, the conservation and management measures in the fishery must have very good control of the amount of catch in

order to achieve the OY without overfishing. Since the OY is reduced from MSY in this case, setting OY equal to ACL would provide a larger buffer between OY and MSY, and provide greater insurance that OY is achieved without overfishing and that the long-term average biomass is near or above $B_{MSY}$.

A complete discussion of the benefits of each of the alternatives under Action 1b appears in Section 4.1.2.1 of Amendment 18A. In summary, under Alternative 2 (Preferred), the ACL would equal OY and ABC, and ABC would be based on the outcome of the most recent stock assessment for black sea bass (SEDAR 25), which takes into consideration scientific uncertainty to ensure catch is maintained below a MSY/OFL level. Although Preferred Alternative 2 is the least conservative option of all the alternatives under consideration in Action 1b by setting the ACL/OY equal to ABC, it would result in the greatest increase in overall allowable harvest over time while still allowing the stock to rebuild. Under the other alternatives considered a buffer between ABC and ACL would be created, which would provide greater assurance that overfishing is prevented and the long-term average biomass is near or above $B_{MSY}$. However, the ABC is based on the preferred rebuilding strategy alternative in Action 1a (Modification to the Black Sea Bass Rebuilding Strategy), which has a 66% chance of rebuilding the stock to $SSB_{MSY}$ by the end of the 2016 fishing year, and takes into account scientific uncertainty from the assessment. The National Standard 1 guidelines state that an ACL may equal the ABC. Setting a buffer between the ACL and ABC would be appropriate in situations where there is uncertainty in whether or not management measures are constraining fishing mortality to target levels. The South Atlantic Council determined that there is little uncertainty associated with the current management measures and those contained in Amendment 18A designed to limit harvest to the ACL; therefore, such a buffer is not necessary for black sea bass.

Alternative 3 would establish an ACL based on 90% of the ABC, which would result in a slightly more conservative ACL level and would leave a 10% buffer between ABC and the ACL. Choosing an ACL that is 90% of ABC may also increase the chance that the stock would rebuild within the required timeframe. Alternative 4 is the most risk adverse approach to setting a total ACL for black sea bass. Alternative 4 would result in 80% of the ABC being designated as the ACL. This alternative is the most likely to rebuild the stock before the end of the 2016 fishing year rebuilding schedule, and is therefore, considered the most biologically beneficial. Alternative 4 would also increase the ACL by the least amount over time, and would ultimately be responsible for extending the fishing season by the least amount compared to other alternatives under consideration.

***Comment 8:*** *Table S-2 in the DEIS compares Action 1b (Set an ACL for the Black Sea Bass) based upon the preferred alternative under Action 1a (Modifications to the Black Sea Bass Rebuilding Strategy) instead of the other Action 1b alternatives. The DEIS is unclear on the relationship between Action 1a and Action 1b nor why all Action 1a alternatives were analyzed in the context of all Action 1b alternatives.*

Response: Section 4 of the FEIS provides a detailed analysis and comparison of alternatives to one another under each action and is hereby incorporated by reference. The summary Table S-2 is simply an overview of the alternatives considered and the preferred alternatives chosen with a

short impacts summary, and is not meant to provide a detailed comparison of alternatives, which is found elsewhere in the document. Because Action 1 uses a four-pronged tiered approach, whichever alternative is chosen as the preferred alternative under Action 1a is intertwined with the outcome of the alternative chosen under Action 1b (Set an ACL for the Black Sea Bass), and the preferred alternative chosen under Action 1b would influence the ACT levels that are chosen under Actions 1c and 1d. Therefore, alternatives under Actions 1a and 1b must be discussed in the context of how those alternatives would ultimately impact the ACL chosen under Action 1b.

***Comment 9:*** *The DEIS does not explain why an ACT is needed in the recreational sector but not the commercial sector.*

Response: The DEIS and FEIS both explain why an ACT is an appropriate management tool for the recreational sector and why ACTs are not needed in the commercial sector for black sea bass. In summary, the South Atlantic Council felt a commercial ACT for black sea bass was not needed for the commercial sector because landings are closely tracked in-season through a quota monitoring system and project when the ACL is going to be met in order to close the fishery before the ACL is exceeded. The same ACL tracking accuracy is not yet available in the recreational sector; therefore, ACTs are an appropriate means of measuring the effectiveness of management measures intended to limit recreational harvest to the ACL. The summary is referenced as a source of information for this comment; however, the summary of the document does not serve as an in-depth explanation of choice of preferred alternatives for each action, and NOAA Fisheries Service does not intend to include such details in summary sections of its documents. The summary is simply an overview of the alternatives considered and the preferred alternatives chosen with a short impacts summary. Sections 4 and 6 of Amendment 18A include comprehensive discussions of why each sector ACT was chosen as a preferred; therefore, those sections are hereby incorporated by reference.

***Comment 10:*** *For Action 1 (Modify Rebuilding Strategy, ABC, ACLs, and ACTs for Black Sea Bass), the DEIS appears to indicate the No Action Alternative will not allow harvest to increase as the stock improves, which makes it the most biologically preferable alternative among the alternatives under consideration. However, in the discussion it states: Alternative 1 (No Action) could result in unnecessary discards of black sea bass if harvest can increase while still allowing the stock to rebuild to* $B_{MSY}$ *by 2016, which contradicts the previous statement. The FEIS should also further explain the use of the term "unnecessary discards".*

Response: The two statements referenced in Comment 10 are not contradictory. The No Action Alternative for Action 1a (Modifications to the Black Sea Bass Rebuilding Strategy) would be the most biologically beneficial alternative even though it would result in unnecessary discards. The term "unnecessary discards" is used to describe discards that would result from unnecessarily restrictive catch limits, or discards above and beyond what should exist if more appropriate management regulations are not put in place. The discard mortality rate for black sea bass is relatively low. The recommended discard mortality for the black sea bass used in the most recent black sea bass stock assessment (SEDAR 25) is 7% for hook-and-line gear, 5% for 1 ½ inch panel black sea bass pots, and 1% for 2 inch panel black sea bass pots. Therefore, although the No Action Alternative would result in unnecessary discards, it would still be the

most biologically beneficial alternative because it would result in the lowest overall fishing mortality of all the alternatives considered. Therefore, under Alternative 1 (No Action), the stock could rebuild at a faster rate than under the other Action 1a alternatives.

***Comment 11:*** *The FEIS should clarify what is meant by the statement "Under a constant catch strategy…, the ACL would likely be reached sooner when the stock starts to rebuild", by explaining how ACLs currently work in the black sea bass segment of the snapper-grouper fishery.*

Response: The current black sea bass ACL is 718,000 pounds gw, which under the No Action Alternative for Action 1a would be held constant until modified. If no other action were to be taken to reduce effort in the black sea bass segment of the snapper-grouper fishery in Amendment 18A, effort shifting into black sea bass would persist, and as the stock rebuilds, the catch rate would continue to increase since more fish would be available for harvest with a larger stock size. These factors combined, would result in the progressive shortening of the commercial and recreational fishing seasons. As more people are fishing for the same amount of fish and continue to catch them at ever-increasing rates, the fishing seasons for both sectors would be progressively shorter as the sector ACLs are reached sooner each season.

***Comment 12:*** *Generic statements regarding potential biological effects of management measures on black sea bass should be more specific to black sea bass and their life cycle.*

Response: Section 3.2.1 of Amendment 18A states, the minimum size and age of maturity for females reported off the southeastern U.S. coast is 10.0 centimeters (3.6") standard length and age 1. All females are mature by 18.0 centimeters (7.1") standard length and age 3**.** Black sea bass females are in spawning condition during March-July, with a peak during March through May. Some spawning also occurs during September and November. Females dominate the first 5 year classes and individuals over the age of 5 are more commonly males. The size at maturity and the size at transition of black sea bass were smaller in the 1990s than during the early 1980s off the southeast U.S. Black sea bass appear to compensate for the loss of larger males by changing sex at smaller sizes and younger ages.

Given these life cycle characteristics, increasing biomass through current and proposed rebuilding efforts and management measures to reduce effort could increase the age and size at which black sea bass go through sexual transition. Additionally, rebuilding the stock and implementing strict AMs may result in an increase in the number of large males and females in the population, which would help restore a healthy sex ratio and enhance future reproductive potential. The action to increase the minimum size limit could lead to more large males being removed from the population, which could negate some of the previously mentioned benefits of rebuilding efforts; however, previous studies suggest black sea bass can compensate for the loss of males by undergoing sexual transition at smaller sizes.

***Comment 13:*** *The DEIS does not address why the black sea bass stock has yet to be rebuilt despite characteristics that make is resilient to fishing pressure such as a short life cycle, fast growth, and maturing in less than five years.*

Response: Amendment 15A established a 10-year rebuilding schedule for black sea bass, the objective of which was to allow the stock to rebuild gradually over time and minimize adverse socioeconomic impacts to the maximum extent practicable. A stock assessment conducted in 2010 indicates the black sea bass stock is rebuilding as scheduled. The assessment indicates that although the stock is no longer overfished it is not yet rebuilt. The South Atlantic Council could have chosen a shorter rebuilding schedule for black sea bass; however, the less time there is to rebuild the stock the more restrictive management need to be to rebuild the stock within the specified time period. The South Atlantic Council chose the longest allowable rebuilding schedule (10 years) to avoid unnecessary negative socioeconomic impacts. The black sea bass stock is on track to reach a fully rebuilt condition on or before the end of the 10-year rebuilding schedule, which ends in 2016.

***Comment 14:*** *Under Action 3 (Appeals Processes for the Initial Issuance of Black Sea Bass Pot Endorsements), neither of the two alternatives appear to provide the Regional Administrator (RA) much discretion in deciding appeals. It appears the RA is given no ability to address potential credible errors in federal or state data. The lack of discretion may provide the appealing fishermen the perception the appeals process is rigged against them.*

Response: NOAA Fisheries Service does not agree. The RA is given full discretion to consider "credible errors" in federal or state data. Eligibility for the endorsement is based on landings data reported by fishermen in their own NMFS logbooks. Errors in data that can be corroborated with logbooks and or state landings records will be considered during the appeals process. It is unreasonable to expect the RA to consider anecdotal claims, with no documented evidence, that landings information contained in the federal or state databases is incorrect. Therefore, fishery participants who feel they were incorrectly excluded from the endorsement program must present landings records in the form of federal logbooks and/or state landings records.

***Comment 15:*** *Prohibiting the purchase and sale of black sea bass after the ACL has been met could potentially have discard and fish mortality implications which are not discussed in the DEIS.*

Response: Prohibiting the sale and purchase of black sea bass when the commercial sector is projected to meet or has met their ACL serves as a disincentive for the commercial fishermen to continue fishing after the sector has been closed. Discard mortality of black sea bass is very low. The recommended discard mortality for the black sea bass used in the most recent black sea bass stock assessment (SEDAR 25) is 7% for hook-and-line gear, 5% for 1 ½ inch panel black sea bass pots, and 1% for 2 inch panel black sea bass pots. Furthermore, black sea bass pots must be removed from the water and cannot be fished when the commercial ACL is reached and commercial sector is closed. Most (~80%) commercial landings of black sea bass are by pots. Therefore, discard mortality occurring after the commercial sector AM has been triggered is not expected to jeopardize rebuilding efforts.

***Comment 16:*** *The DEIS is unclear regarding the differences to black sea bass fishery management between the weight limits (gutted and whole) associated with Action 1 (Modify Rebuilding Strategy, ABC, ACLs, and ACTs for Black Sea Bass) and the proposed size limits in Action 10.*

Response: During public hearings for Amendment 18A several fishermen expressed confusion over the use of gutted weight and whole weight used in analyzing various management measures throughout the document. In response to this feedback NOAA Fisheries Service created the following table (Table 1-2) which outlines how and why each unit of measurement is used in the black sea bass segment of the snapper-grouper fishery. The minimum size limits in Action 10 are intended to limit commercial and recreational harvest, and slow the rate the ACLs are met.

**Table 1-2.** Gutted Weight/Whole Weight Conversion Table for Black Sea Bass.

| Entity | Use of gw vs. ww | Purpose for Reporting in gw or ww |
|---|---|---|
| Southeast Fisheries Science Center | Gutted Weight | Quotas and ACL are in gutted weight. The SEFSC expresses landings in gutted weight for quota monitoring purposes. |
| Fishermen | Whole Weight | Fishermen land and sell harvested black sea bass to dealers whole. |
| Dealers | Whole Weight | Dealers purchase black sea bass from fishermen whole. |
| Regulatory Text | Gutted Weight | Commercial quota/ACLs and recreational ACLs are provided as gw the regulatory text. * |
| **Conversion Factor Calculations**<br>**Conversion Factor = <u>1.18</u>** | | |
| Example 1: 500 lbs gw → ww | 500 x 1.18 = 590 lbs ww | |
| Example 2: 500 lbs ww → gw | 500/1.18 = 423.73 lbs gw | |

*Recently, there has been an initiative to make the weight units in the regulatory text consistent throughout, and the overall movement has been towards using ww rather than gw. However, this is an ongoing process, and often the gw is included as a parenthetical in the regulations for clarification where necessary.

***Comment 17:*** *The EPA notes in the DEIS several actions do not have preferred alternatives.*

Response: Actions 4, 7, 8, and 10, in the DEIS did not have preferred alternatives designated. Additionally, the South Atlantic Council changed several preferred alternatives from those designated in the DEIS. Below is a complete list of actions and preferred alternatives, which are designated and discussed in detail in the FEIS for Amendment 18A.

| Action | Preferred Alternative | Description |
|---|---|---|
| Action 1a. Modify Rebuilding Strategy and Set ABC for Black Sea | Alternative 5 | Define a rebuilding strategy for black sea bass that holds catch constant (847,000 lbs ww; recreational ACL = 409,000 lbs gw and commercial ACL = 309,000 lbs gw) in fishing years |

| | | |
|---|---|---|
| Bass | | 2012/2013 and 2013/2014 and then changes to $F_{rebuild}$ in 2014/2015. ($F_{rebuild}$ is defined as a constant fishing mortality strategy that maintains the 66% probability of recovery rate throughout the remaining fishing seasons of the rebuilding timeframe.) After the 2015/2016 fishing season the fishing mortality rate would be held constant until modified. |
| Action 1b. Set and ACL for Black Sea Bass | Alternative 2 | Set ACL = ABC = OY. This results in sector ACLs based on the existing allocations. ACLs will not increase automatically in a subsequent year if the present year's projected catch has exceeded the total ACL. |
| Action 1c. Establish an ACT for the commercial Sector | Alternative 1 (No Action) | Do not set an ACT for the commercial black sea bass sector. |
| Action 1d. Establish an ACT for the recreational sector | Alternative 4 | The ACT equals recreational ACL*(1-PSE) or recreational ACL*0.5, whichever is greater. |
| Action 2. Establish a black sea bass pot endorsement program | Alternative 2. Sub-Alternative 2g. | Limit endorsements and tag distribution to entities with a valid or renewable South Atlantic Unlimited Snapper-Grouper Permits on the effective date of the final rule whose *average* annual black sea bass landings using black sea bass pot gear between 1/1/99 and 12/31/10 were at least 2,500 lbs ww. Exclude Unlimited Snapper-Grouper Permits with no reported commercial landings of black sea bass using black sea bass pot gear between January 1, 2008, and December 31, 2010. |
| Action 3. Establish and appeals process for the black sea bass pot endorsement program | Alternative 2 | A period of 90 days will be set aside to accept appeals to the black sea bass endorsement program starting on the effective date of the final rule. The Regional Administrator (RA) will review, evaluate, and render final decisions on appeals. Hardship arguments will not be considered. The RA will determine the outcome of appeals based on NMFS logbooks. If NMFS logbooks are not available, the Regional Administrator may use state landings records. Appellants must submit NMFS logbooks or state landings records to support their appeal. |
| Action 4. Allow for transferability of black sea bass pot endorsements. | Alternative 2, Sub-Alternative 2a. | A valid black sea bass pot endorsement can be transferred between any two individuals or entities that hold a valid or simultaneously obtains a valid, meaning not expired, South Atlantic Unlimited Snapper Grouper Permit. The endorsement and associated landings history of black sea bass can be transferred regardless of whether or not the South Atlantic Unlimited Snapper Grouper Permit is transferred. Transferability allowed upon program implementation. |
| Action 5. Limit effort in the black sea bass pot fishery. | Alternative 5 | Limit the black sea bass pot tags to *35* per vessel each permit year. NOAA Fisheries Service will issue new identification tags each permit year that will replace the tags from the previous fishing year. |
| Action 6. Reduce bycatch | Alternative 2 | Black sea bass pots must be brought back to shore at the conclusion of each trip. |

| | | |
|---|---|---|
| Action 7. Modify accountability measures | Alternative 3 | For the recreational sector: Remove the three-year running average provision used to determine recreational ACL overages. The recreational AM would be: If the recreational sector black sea bass ACL is met or is projected to be met, independent of stock status, prohibit the harvest and retention of black sea bass. If the recreational sector black sea bass ACL is exceeded, independent of stock status, the Regional Administrator shall publish a notice to reduce the recreational sector ACL in the following season by the amount of the overage. For the commercial sector: If the commercial sector black sea bass ACL is met or is projected to be met, independent of stock status, all subsequent purchase and sale of black sea bass is prohibited and harvest and/or possession is limited to the black sea bass bag limit. If the commercial sector black sea bass ACL is exceeded, independent of stock status, the Regional Administrator shall publish a notice to reduce the commercial sector black sea bass ACL in the following season by the amount of the overage. |
| Action 8. Black sea bass spawning season closure | Alternative 1 (No Action) | Do not establish a spawning season closure for black sea bass. |
| Action 9. Commercial trip limit | Alternative 4 | Establish a 1,000 lbs gw (1,180 lbs ww) trip limit. |
| Action 10. Modify minimum size limits | Sub-Alternative 2a, Sub-Alternative 2b | Increase the recreational size limit from 12" TL to 13" TL. Increase the commercial size limit from 10" TL to 11" TL. |
| Action 11. Improvements to commercial data reporting | Alternative 1 (No Action) | Retain existing data reporting systems for the commercial sector. Under this alternative, as implemented by Amendment 15B to the Snapper Grouper FMP, a private recreational vessel that fishes in the EEZ, if selected by NOAA Fisheries Service, is required to maintain and submit fishing records; requires a vessel that fishes in the EEZ, if selected by NOAA Fisheries Service, to carry an observer and install an electronic logbook (ELB) and/or video monitoring equipment provided by NOAA Fisheries Service. |
| Action 12. Improvements to for-hire data reporting | Alterative 2 | Require *selected* vessels with a Federal For-Hire Permit to report landings data electronically; NOAA Fisheries Service is authorized to require weekly or daily reporting as required. |

***Comment 18:*** *The DEIS evaluates the proposed actions in isolation of each other, without discussing the cumulative impacts on the actions together.*

Response: When viewed in totality, the actions in this amendment would benefit black sea bass by reducing participation through by establishing an endorsement program for black sea bass pots, limiting the number of black sea bass pot tags issued to each endorsement holder per permit year to 35, and requiring black sea bass pots be returned to port at the end of each trip. These measures would reduce bycatch and ghost fishing, which would benefit the black sea bass resource. It is expected that short-term losses resulting from the cumulative impacts of this and the other snapper-grouper regulatory actions would result in long-term benefits to the communities that are heavily dependent upon the snapper-grouper fishery for revenue and infrastructure support. Furthermore, Amendment 18A would reduce effort and the rate of

harvest of black sea bass in the commercial and recreational sectors and maximize socioeconomic benefits for the black sea bass portion of the snapper-grouper fishery while maintaining the current schedule that rebuilds the black sea bass stock by 2016. This amendment would also improve data reporting the for-hire sector of the snapper-grouper fishery.

***Comment 19.*** *The DEIS appears to define environmental consequences in the context of biological impacts to black sea bass and endangered species, when it should also include impacts on the ecosystem.*

Response: In general, the actions in Amendment 18A would be beneficial to the ecosystem as a whole. Implementing measures to reduce effort in the black sea bass component of the snapper-grouper fishery and allow the stock to rebuild would help support healthy predator-prey relationships, and reduce adverse impacts on habitat and protected species.

***Comment 20:*** *Input from the Mid-Atlantic Fishery Management Council (Mid-Atlantic Council) should be discussed in the document relative to similar actions they have implemented in their area of jurisdiction.*

Response: A representative member of the Mid-Atlantic Council regularly attends South Atlantic Council meetings to share information and advice from the Mid-Atlantic region. The Mid-Atlantic Council has previously implemented many of the same or similar measures to manage black sea bass that are contained in Amendment 18A. For the purposes of maintaining the focus and scope of an already large document, a discussion of the Mid-Atlantic Council's experience with items such a minimum size limits, permit requirements, and gear requirements is not included in the FEIS. However, during the development process, the experiences of the Mid-Atlantic Region with their own black sea bass management measures were considered and discussed by the South Atlantic Council.

***Comment 21:*** *The DEIS is too complicated and complex for comprehension for the public.*

Response: NOAA Fisheries Service agrees its NEPA documents need improvement. For this reason Southeast Regional Office (SERO) staff in partnership with staff from the South Atlantic and Gulf of Mexico Fishery Management Councils has developed a document titled "Improving the Readability of Documents Produced by Regional Fishery Management Council and NOAA Fisheries Service Southeast Regional Office" (See Attachment A.). This document outlines the new formatting and writing guidelines that will be used to develop its NEPA documents in the future. It is NOAA Fisheries Service's hope that these guidelines will help to make our often complex and technical documents more reader-friendly to our constituency. The Southeast Regional Office is open receiving comments on this readability improvement document from the EPA.

## II. Southeast Fisheries Science Center (SEFSC) comments

The SEFSC submitted comments on the Amendment 18A DEIS in a memorandum dated January 17, 2012. Several of the comments were editorial and non-substantive in nature (i.e., spelling and table formatting), which were corrected in the FEIS and are not addressed here. The South Atlantic Council formally submitted the final Amendment 18A (Amendment 18A) to the Fishery Management Plan for the Snapper-Grouper Fishery of the South Atlantic Region (Snapper-Grouper FMP) for review by the Secretary of Commerce (Secretary) prior to the SERO receiving comments on the DEIS from the SEFSC. Thus, the comments are addressed in this appendix to the amendment. Substantive comments from the SEFSC on the DEIS are addressed in the comments and responses section below.

***Comment 1:*** *The SEFSC recommends clarifying the origin of the per-trip recreational estimates cited in the various studies supporting the analysis in Section 3.7.2.4 (Economic Value and Expenditures) of the DEIS.*

Response: The per-trip recreational estimates were provided by SEFSC to SERO in response to a July 10, 2009, data request for Amendment 17A to the Snapper-Grouper FMP. These estimates are generic and not species-specific, and have been used in previous amendments (Amendment 17A, Amendment 17B, Regulatory Amendment 9, and Regulatory Amendment 10 to the Snapper-Grouper FMP).

***Comment 2:*** *The SEFSC commented that the Cheuvront and Neal (2004) paper cited in Section 3.8.1.1 (Description of North Carolina Fishing Communities) of the document specifically references snapper-grouper fishermen rather than only commercial fishermen. The commenter also recommends adding the following analytical work as a reference in this section of the document: Crosson, S. 2009. A Social and Economic Analysis of Commercial Fisheries in North Carolina: Atlantic Ocean. North Carolina Department of Environment and Natural Resources. http://www.ncfisheries.net/download/2009AtlanticOceanReportCrosson.pdf*

Response: The Cheuvront and Neal (2004) paper cited in Comment 2 and included in Amendment 18A to the FMP only includes North Carolina commercial fishermen, and not all snapper-grouper fishermen as stated by the SEFSC. Through this Appendix N, the Crosson (2009) reference is included as an additional source of information on social and economic aspects of commercial fisheries in North Carolina.

***Comment 3:*** *The SEFSC noted that in Section 3.8.1.4 (Description of Florida Fishing Communities), the Florida population is not growing but has actually been decreasing in recent years as supported by the August 11, 2009, Tampa Bay Times article entitled "Florida loses population for the first time since World War II" by James Thorner. http://www.tampabay.com/news/business/economicdevelopment/article1026447.ece*

Response: NOAA Fisheries Service acknowledges the recent population shifts in the state of Florida as they have been pointed out by the SEFSC. The description of Florida fishing communities will reflect recent population data in future NEPA documents.

***Comment 4:*** *The SEFSC suggests supplementing the economic impacts section (Section 4.2.2) for Action 2 (Limit Participation in the Black Sea Bass Pot Segment of the Snapper-Grouper Fishery through an Endorsement Program) to include impacts of removal of some currently active black sea bass pot fishermen from that segment of the fishery. Section 4.2.2 does not provide sufficient detail on the economic effects on the fishermen who would be left out of the black sea bass endorsement program.*

Response: As the SEFSC recommended in their comments on the DEIS, NOAA Fisheries Service provides the following information to supplement the economic impacts analysis for Action 2. This table provides a summary of vessels that would and would not qualify for black sea bass endorsements under each endorsement Sub-alternative for Alternative 2, the average pounds landed by each category of vessel, and estimated revenue lost by those permit holders who would not qualify for a black sea bass endorsement. Sub-Alternative 2e would result in the greatest estimated loss of revenue for non-qualifying vessels. The preferred Alternative 2g would result in an estimated loss of $66,805 per year for the 21 non-qualifying permit holders.

**Table 1.** Summary of economic impacts of the proposed black sea bass endorsement program.

| Alternative 2 Sub-alternatives | Number of Vessels Qualifying for Endorsement | Average lbs Landed per Year by All Qualifying Vessels | Number of Vessels Not Qualifying for Endorsement | Average lbs Landed per Year by All Non-qualifying Vessels | Average Dockside Revenue Reductions per Year of Non-qualifying Vessels |
|---|---|---|---|---|---|
| **2a** | 52 | 316,475 | 0 | 0 | $0 |
| **2b** | 44 | 309,735 | 8 | 6,740 | $14,626 |
| **2c** | 38 | 298,851 | 14 | 17,624 | $38,244 |
| **2d** | 20 | 252,387 | 32 | 64,088 | $139,070 |
| **2e** | 12 | 188,005 | 40 | 128,470 | $278,781 |
| **2f** | 24 | 265,497 | 28 | 50,978 | $110,621 |
| **2g (Preferred)** | 31 | 285,689 | 21 | 30,785 | $66,805 |

## III. Environmental Organization Comments

***Comment 1:*** *The PEW Environmental Group is concerned accountability measures (AMs) are not being applied appropriately. The commenter states the South Atlantic Council's Scientific and Statistical Committee (SSC) recommended an acceptable biological catch (ABC) for 2012-2014, but the 2012-2014 annual catch limit presented to the South Atlantic Council at their December 2011 meeting did not deduct the 2011 overage from the 2012, 2013, or 2014 ACL. Furthermore, table S-2 lists the 2012 recreational ACL as 425,568 lbs., four percent higher than the 2010 ACL.*

Response: The preferred ABC and ACL for black sea bass in Amendment 18A does account for the 2011 ACL overage. Information provided to the SSC indicated the commercial ACL of 309,000 lbs gw had been exceeded by about 5%, and the recreational ACL had been exceeded by at least 10%. Since two months of recreational data had not been provided, the SSC supported an ABC which assumes 150% of the allowable catch would be met in the 2011/2012 fishing year. Furthermore, the SSC stated the ABC should be specified for only the 2012/2013 and 2013/2014 fishing seasons. In addition, at their December 2011 meeting the South Atlantic Council determined a more conservative rebuilding strategy alternative that incorporates a higher probability of rebuilding is more appropriate for the stock than one which has a 50% probability of rebuilding the stock $F_{rebuild}$ to $B_{MSY}$ by 2016. Therefore, the preferred rebuilding strategy alternative was changed by the South Atlantic Council in December 2011 from $F = F_{rebuild}$ (by 2016) to a rebuilding strategy that would hold catch at the current level for the 2012/2013 and 2013/2014 fishing years, and would have a 66% chance of rebuilding the stock to $B_{MSY}$ by 2016**.** An updated stock assessment would need to be conducted to identify the ABC and ACL levels in years following the 2013 fishing year**.** Table S-2 in the FEIS appears below and includes the correct recreational and commercial ACLs, in gutted weight, that would result from each of the alternatives considered.

**Table S-2.** ACLs (lbs gutted weight) based on Constant Catch shifting to Constant F rebuilding strategy (Action 1a, Preferred Alternative 5). ACL values after 2014/2015 will be determined from an update assessment.

| Constant Fishing Mortality Rate Options | Fishing Season | Combined ACL | Com. ACL (43%)* | Recreational ACL (57%) |
|---|---|---|---|---|
| **Preferred Alternative 2** ACL=ABC=OY | 2012/2013 | 718,000 | 309,000 | 409,000 |
| | 2013/2014 | 718,000 | 309,000 | 409,000 |
| **Alternative 3** ACL=90%ABC | 2012/2013 | 646,200 | 277,866 | 368,334 |
| | 2013/2014 | 646,200 | 277,866 | 368,334 |
| **Alternative 4** ACL=80%ABC | 2012/2013 | 574,400 | 246,992 | 327,408 |
| | 2013/2014 | 574,400 | 246,992 | 327,408 |

*Sector ACLs are based on the allocation formula used in Amendment 13C (SAFMC 2006) whereby the commercial quota is 43% of the total allowable catch (TAC) and the recreational allocation is 57% of the TAC.

Additionally, the South Atlantic Council chose to modify the current system of AMs to include an ACL payback provision for the commercial sector, and an in-season ACL closure for the

recreational sector regardless of the overfished status of black sea bass. However, ACL paybacks in either sector are not required when new projections are adopted that incorporate ACL overages and the ACLs are adjusted in accordance with those projections, which is the case for the 2011 overage. Beyond the 2013/2014 fishing season (when the rebuilding strategy switches over to $F_{rebuild}$) for years when there is no assessment, the ACL would not automatically increase if the ACL has been exceeded during the previous fishing year.

***Comment 2:*** *The Georgia Conservancy supports measures that will reduce the risk of gear interactions with North Atlantic right whales.*

Response: Right whales are known to migrate up and down the southeast coast during their calving season, which begins in November and ends in March each year. Right whales are susceptible to interactions with vertical line gear such as black sea bass pot gear during this time. However, during the past several fishing years the black sea bass pot sector has closed before the beginning of the right whale calving season. Though part of the objective of Amendment 18A is to extend fishing opportunities further into the fishing season, the South Atlantic Council and NOAA Fisheries Service seeks to do so without negatively impacting critically endangered right whales. None of the actions in Amendment 18A would result in black sea bass pot fishing during the right whale calving season. Several management measures in Amendment 18A would serve to reduce the risk of gear interactions with large whales, such as: Establishing an endorsement program for the black sea bass pot sector of the fishery, which would reduce the number of individuals allowed to use pot gear; limiting the number of black sea bass pot tags that may be issued to any one endorsement holder; and requiring that all black sea bass pots be brought back to shore at the end of each trip.

## IV. Comments from the General Public

***Comment 1:*** *One commenter states the ABC and annual catch limit (ACL) for black sea bass should be set a level that avoids large amounts of regulatory discards. One commenter stated the black sea bass ACL should be significantly increased for both sectors based on the increasing numbers of black sea bass fishermen have reported seeing while on trips in recent years.*

Response: Black sea bass have a relatively low regulatory discard mortality rate (1-7%). Furthermore, actions taken in Amendment 18A to the FMP are expected to further reduce regulatory discards by establishing an endorsement program for fishing with black sea bass pots, placing a limit on the number of pots that can be fished, and requiring black sea bass pots be brought back to shore at the end of a trip.

The South Atlantic Council's SSC recommends ABCs for species based on an ABC control rule they developed with the South Atlantic Council. In the case of black sea bass, the SSC recommended an ABC based on the result of the most recent stock assessment for black sea bass (Southeast Data, Assessment, and Review (SEDAR 25)), which was completed in October 2011. The SSC indicated that it was satisfied with data used in the assessment and that uncertainties in

the data were sufficiently explored. The SSC endorsed the use of this assessment as representing the best scientific information available.

Information provided to the SSC indicated the commercial ACL of 309,000 lbs gutted weight (gw) had been exceeded by about 5%, and the recreational ACL had been exceeded by at least 10%. Since two months of recreational data had not been provided, the SSC supported an ABC which assumes 150% of the allowable catch would be met in the 2011/2012 fishing year. Furthermore, the SSC stated the ABC should be specified for only the 2012/2013 and 2013/2014 fishing seasons. The SSC indicated an assessment update should be conducted before any adjustments are made to the ACL after the 2013/2014 fishing seasons. The SSC also endorsed the ABC based on a Southeast Data, Assessment, and Review (SEDAR) projection that has a 50% probability of rebuilding by 2016. Using this information, the South Atlantic Council chose an ABC that would be equal to the ACL and optimum yield, which is 718,000 pounds gw (847,000 lbs ww) for the commercial and recreational sectors combined. The ACL would remain the same for the 2012/2013 and 2013/2014 fishing seasons, after which an updated stock assessment would be completed to determine if it is appropriate to increase the ACL in subsequent fishing years.

***Comment 2:*** *One commenter opposes the establishment of the black sea bass endorsement program because it would concentrate that portion of the fishery to a small number of individuals. The commenter recommends allocating five percent of the commercial quota to the black sea bass pot segment of the snapper-grouper fishery, and 95 percent of the quota to the hook-and-line portion of the fishery, and the quotas should be managed separately so as to not affect one another when the respective sectors close. The same commenter also stated the hook-and-line quota should be managed with split seasons and trip limits that are adjusted quarterly to avoid long quota closures. Two other commenters also supported the use of trip limits to manage black sea bass, and one commenter preferred the 500 pound gw trip limit for black sea bass. Another commenter did not support the endorsement program because it would not translate into increased profits for those who qualify given the current market conditions and those who do not qualify for endorsements would incur negative socioeconomic impacts. One commenter supported the endorsement program and the associated appeals process and endorsement transferability requirements.*

Response: The objective of creating a black sea bass endorsement program is to reduce the rate of harvest in the black sea bass pot sector of the snapper-grouper fishery in an effort to curtail derby conditions, which have caused the commercial fishing season to close early for the past three fishing years. In order to slow commercial harvest of black sea bass using pot gear, the South Atlantic Council considered a variety of qualifying criteria that would result in varying levels of participation in the pot sector. The fewer number of vessels harvesting black sea bass with pot gear, the longer those fishermen are likely to be able to fish into the fishing season. In determining which eligibility criteria were most appropriate, the South Atlantic Council considered several variables including landings histories, overall fishing activity in the pot segment of the fishery, and trends in effort with black sea bass pots over time.

Prior to the South Atlantic Council finalizing Amendment 18A at their December 2011 meeting, the preferred endorsement action alternative was Sub-Alternative 2f under Action 2 of the Amendment, and required that fishermen have average annual historical landings greater than 3,500 pounds ww between January 1, 1999 and December 31, 2010, which also appeared as the preferred sub-alternative in the DEIS published on December 9, 2011. Under the 3,500 pound ww criterion, 24 fishery participants would be eligible to receive black sea bass pot endorsements. Subsequent to the publication of the DEIS, the South Atlantic Council determined that limiting the number of black sea bass pot endorsement to 24 participants (using ww) would eliminate too many fishermen from the pot segment of the black sea bass portion of the snapper-grouper fishery who had historically fished large quantities of black sea bass with pot gear. Therefore, at their December 2011 meeting, the South Atlantic Council chose to change their preferred sub-alternative from Sub-Alternative 2f to Preferred Sub-Alternative 2g, which would require 2,500 pounds ww to be landed between January 1, 1999 and December 31, 2010, in addition to having some reported black sea bass landings between January 1, 2008, and December 31, 2010. This new preferred alternative would result in 31 endorsements being issued, seven more than under the previously selected alternative. The objective of the black sea bass endorsement program is not necessarily to increase profits among those who qualify for the endorsement. The objective is to curtail derby conditions.

The issue of sector allocations in the black sea bass portion of the snapper-grouper fishery has been discussed by the South Atlantic Council on several occasions. The commercial hook and line segment of black sea bass historically has taken a small portion of the overall commercial landings. Monitoring small quotas over several sectors is more difficult and associated with more scientific and management uncertainty than monitoring larger ACLs spread over fewer sectors. Additionally, problems with enforcement can be made more difficult if one sector is closed while the other remains open, especially when closures occur in adjacent areas or in the same region. Therefore, the South Atlantic Council determined the administrative burden of monitoring hook-and-line, black sea bass pot, and recreational sectors, in addition to state-specific ACLs in one portion of the snapper-grouper fishery outweighed any benefits that could be achieved. As NOAA Fisheries Service continues to make improvements to its data collection systems, it is possible that this issue of state-by-state quotas and gear-specific allocations may be considered again in the future.

Split season quotas for the commercial sector were considered in Regulatory Amendment 9 to the FMP. The action would have specified separate commercial ACLs (quotas) for June-November and December-May based on landings from 2006-2009. However, because the pot segment of the fishery could potentially impact right whales migrating during calving season, split season quotas were not approved for implementation. The idea of managing the hook-and line segment of the fishery alone through a split season quota was not considered by the South Atlantic Council during the development of Amendment 18A. However, since it is likely only that a small portion of the commercial ACL would be allocated to the hook and line sector, any administrative problems would be enhanced when attempting to monitor an even smaller hook and line split season quota.

The South Atlantic Council is supportive of trip limits where appropriate. Stepped-down (or graduated) trip limits were considered for black sea bass, but the South Atlantic Council determined the commercial ACL is harvested too quickly to allow for action to be taken once the initial step-down trigger is met. In other words, it is likely the ACL would have already been harvested by the time the stepped-down trip limit could be implemented. Therefore, the South Atlantic Council chose a single trip limit of 1,000 pounds gw (1,180 pounds ww) that would be effective for the duration of the fishing year. The 1,000 pound gw trip limit was chosen because it would be expected to reduce harvest by about 17%, resulting in a closure during August for the 2012 fishing year without resulting significant adverse socioeconomic impacts. A 500 pound gw trip limit would result in black sea bass remaining open into October during the 2012/2013 fishing year and would be expected to provide a 49% reduction in landings based on data from 2010; however, it would also result in greater economic losses compared to the 1,000 pound gw trip limit.

***Comment 3:*** *Two commenters supported the 3,500 pound ww criterion for determine qualifying Unlimited South Atlantic Snapper-Grouper Permits for the black sea bass endorsement program. The commenter is concerned lowering the qualifying criteria to allow more vessels to obtain endorsements will not rectify the derby conditions, which presently exist in the fishery.*

Response: The fewer the number of individual who qualify for endorsements, the greater the effect on easing derby conditions. The South Atlantic Council had initially chosen 3,500 pounds ww as their preferred eligibility alternative. However, the South Atlantic Council determined 3,500 pounds would eliminate several fishery participants who had been historically active in the black sea bass pot sector. Therefore, the South Atlantic Council changed their preferred alternative to 2,500 pounds ww as the qualifying criterion. The new alternative would allow seven more endorsements to be issued compared to the previous preferred alternative, while still capping the number of permits that could use black sea bass pots below the historical level of about 50 Unlimited South Atlantic Snapper-Grouper Permits per year. Setting a limit on the number of individuals below historic levels could help to easy derby-like conditions.

***Comment 4:*** *One commenter stated the only accountability measure for black sea bass should be to deduct any ACL overages from the ACL for the following fishing year, and to add any leftover ACL to the following year's ACL. Another commenter supports the South Atlantic Council's choice of preferred alternative for modifying the current system of AMs for black sea bass.*

Response: The objective of implementing an effective system of AMs is to prevent the sector ACLs from being exceeded repeatedly. If no in-season actions were taken when the ACL is projected to be met in either sector it is likely the ACL would be exceeded every year given the current harvest rates. Providing the Regional Administrator the authority to close each sector when their respective sector ACLs are projected to be met greatly reduces the risk of the sector ACL being exceeded, and would therefore reduce the likelihood a payback would be needed in the following fishing year.

***Comment 5:*** *One commenter stated the number of black sea bass pot tags issued to a qualified endorsement holder should not be limited to 35, but should be limited by the number of traps the qualifying vessels can safely carry. Two commenters supported the South Atlantic Council's choice of limiting the number of tags to be issued to each permit holder each permit year to 35. One commenter opposed to the endorsement program, and offered a trap reduction requirement among the current black sea bass pot fleet as an alternative means of reducing the rate of harvest and protect right whales.*

Response: Currently, there is no limit on the number of black sea bass pot tags that could be obtained by a person holding a valid Unlimited South Atlantic Snapper-Grouper Permit or 225-lb (102-kg) trip-limited Snapper-Grouper Permit. Furthermore, fishermen are not required to bring black sea bass pots back to shore at the end of a trip and can leave large numbers of untended pots are sea for extended periods of time, which can contribute to ghost fishing and have the potential for interactions with right whales. An increase in the number of individuals who fish black sea bass pots could increase the rate at which the quota is met and decrease profits for current participants in the black sea bass pot segment of the snapper-grouper fishery. Any increase in participation in the black sea bass pot segment could also lead to earlier closures of black sea bass. To avoid this problem, the South Atlantic Council chose to establish an endorsement system, to limit the number of black sea bass tags issued to each endorsement holder to 35 per vessel per permit year, and to require that black sea bass pots be back to shore at the end of a fishing trip. NOAA Fisheries Service would issue new trap identification tags each permit year that would replace the tags from the previous fishing year.

***Comment 6:*** *Two commenters agree with the provision to require that black sea bass pots be brought back to shore at the end of each trip. One of those commenters also suggested requiring that fishermen must report lost traps with the last known location. Another commenter suggested requiring biodegradable panels that would dissolve in water should a trap become lost.*

Response: Requiring fishermen to report lost black sea bass traps, and requiring the use of biodegradable panels was not considered by the South Atlantic Council during the development process for Amendment 18A. Currently, black sea bass pots must be constructed according provisions in 50 CFR 622.40, which requires that the hinges and fasteners of each panel or door of black sea bass pots be made of degradable materials. These construction specifications are intended to allow for the greatest chance of escape without harm of non-target species. Black sea bass pots traditionally have a low rate of bycatch because black sea bass pots are designed to be extremely selective. There is currently no trap recovery program in place for lost black sea bass pots. However, the South Atlantic Council could consider implementing such a program and requiring that lost traps be reported with the last known location in a future amendment if they determine such an action becomes necessary.

***Comment 7:*** *One commenter opposes a black sea bass spawning season closure because it would increase regulatory discards.*

Response: A spawning season closure does have the potential to increase regulatory discards of black sea bass. However, the South Atlantic Council chose not to establish a spawning season closure for black sea bass based on information that indicated black sea bass do not form large spawning aggregations like many other snapper-grouper species. It was also noted that peak spawning for black sea bass occurred at different times of the year in different areas of the South Atlantic, ranging from late winter/early spring off Georgia and Florida to primarily spring off North Carolina and South Carolina. Not setting a spawning season closure should not have an negative impact on spawning of black sea bass, nor would it increase the potential for right whale interactions since early closures are expected during the black sea bass spawning season and right whale calving season for at least the next several years.

***Comment 8:*** *Two commenters oppose the use of size limits for black sea bass because it would violate the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) provisions that require limiting waste and making efficient use of natural resources. Two commenters state the size limits for the commercial and recreational sectors should be the same. Two commenters support a 13 inch minimum size limit for black sea bass in the recreational sector, and a 12 inch minimum size limit in the commercial sector.*

Response: The South Atlantic Council chose to increase the minimum size limit for black sea bass in the commercial sector from 10 inches to 11 inches, and to increase the recreational size limit from 12 inches to 13 inches. Using minimum size limits as a fishery management tool does not violate any provision of the Magnuson-Stevens Act. Size limits can be used to ensure that enough spawning aged fish remain in the population long enough to spawn and produce future recruits, which would result in long-term benefits to the biological and socioeconomic environments. Increasing the minimum recreational and commercial size limits for black sea bass would theoretically decrease the rate of harvest by reducing the number of legal size fish able to be harvested, and thus potentially extending the length of the fishing season without impinging on the right whale calving season. The most recent stock assessment for black sea bass (SEDAR 25) indicates release mortality of black sea bass is very low (7% hook and line; 1% black sea bass pot), suggesting minimum size limits and other management measures that create regulatory discards can be an effective management tool for black sea bass since the vast majority of any undersized black sea bass returned to the water would survive.

Public hearing comments were divided on the usefulness of increasing minimum size limits for black sea bass; however, the Snapper-Grouper Advisory Panel ultimately supported increasing the minimum size limit to slow the rate of harvest of black sea bass. The SSC also supports increasing the recreational and commercial black sea bass minimum size limits because larger fish are economically more valuable. However, because the black sea bass stock is rebuilding and there is increased availability of black sea bass, increasing the minimum size limit might not substantially extend the fishing season. The South Atlantic Council concluded that modifying the current black sea bass minimum size limits by one inch for each sector would best meet the purpose and need to implement measures expected to reduce the rate of harvest of black sea bass while minimizing, to the extent practicable, adverse biological, social and economic effects.

***Comment 9:*** *Four commenters support requiring all fishermen, especially recreational, and dealers to report their landings electronically on a weekly basis in order to improve ACL monitoring. Two commenters support the alternative that would provide commercial snapper-grouper fishermen the option to submit their logbook entries electronically via an electronic version of the logbook made available online.*

Response: NOAA Fisheries Service acknowledges the need to improve the accuracy and timeliness of fishery data reporting in the commercial and recreational sectors of the snapper-grouper fishery. Therefore, in Amendment 18A, the South Atlantic Council chose to require selected federally-permitted for-hire vessels to report electronically either on a weekly or daily basis. The South Atlantic Council considered an action in Amendment 18A to improve data reporting in the commercial sector of the snapper-grouper fishery; however, at their December 2011 meeting, the South Atlantic Council determined that a generic data reporting amendment would be a more appropriate vehicle for addressing improvements to commercial data reporting in the snapper-grouper fishery and in other fisheries, and they chose the no action alternative as their preferred alternative for that action.

Until new reporting requirements are implemented in the commercial sector of the snapper-grouper fishery, the SEFSC will continue to obtain fishing effort information, protected species interactions, and discard data via logbooks. Dealers will also continue to report landings information, which is used to estimate what percentage of the quotas have been harvested and project when commercial ACLs are likely to be met. Additionally, some data will continue to be collected through cooperative research projects with commercial and recreational fishermen. Amendment 15B to the FMP also implemented a series of reporting requirements, which would also remain in place under the no action alternative for the commercial sector. Those data reporting requirements include requiring selected commercial vessels to maintain and submit fishing records, observers to be placed on selected vessels that fish in the exclusive economic zone (EEZ), and for selected vessels to install an electronic logbook and/or video monitoring equipment provided by NOAA Fisheries Service.

***Comment 10:*** *One commenter stated the overly restrictive black sea bass regulations have caused derby conditions to exist in the fishery. This commenter feels the quota is currently set too low, and trip limits are the most appropriate means to manage the fishery. Another commenter supported a trip limit of 1,400 pounds.*

Response: Revisions to the Magnuson-Stevens Act in 2006 require that regulations, including ACLs and AMs, be put in place to end overfishing. A previous stock assessment update conducted in 2005 indicated black sea bass were overfished and experiencing overfishing. Therefore, NOAA Fisheries Service was required to implement provisions that would end overfishing of the species. Those provisions were included in Amendment 17B to the Snapper-Grouper FMP (Amendment 17B). Amendment 17B maintained the harvest limits implemented through Amendment 13C to the Snapper-Grouper FMP, which addressed overfishing of black sea bass, and Amendment 17B established a new system of AMs for the stock. A recent stock assessment completed in 2010 indicates black sea bass is rebuilding and they are no longer overfished; however the stock is not yet fully rebuilt. Because the stock is rebuilding and catch

per unit effort is increasing, and stricter regulations on other snapper-grouper species have caused some effort to shift into the black sea bass segment of the snapper-grouper fishery, additional management measures were implemented through Regulatory Amendment 9 to the Snapper-Grouper FMP (Regulatory Amendment 9) to address derby conditions in the black sea bass recreational sector. Regulatory Amendment 9 reduced the black sea bass bag limit from 15-fish per person per day, to 5-fish per person per day, in an effort to slow the rate of harvest in the recreational sector. Derby conditions still exist in the commercial sector of the fishery; therefore, the South Atlantic Council chose to implement additional management measures in Amendment 18A to address this issue, including a black sea bass pot endorsement and commercial trip limits.

NOAA Fisheries Service agrees that trip limits can be an effective fishery management tool in the black sea bass segment of the snapper-grouper fishery. A 1,000 pound gw (1,180 pound ww) trip limit for black sea bass was chosen by the South Atlantic Council because it is low enough to slow the rate of commercial harvest without causing significant adverse socioeconomic impacts on fishery participants. However, the South Atlantic Council determined a trip limit alone would not be enough to significantly slow the rate of harvest in the commercial sector to address derby conditions, and extend to fishing opportunities further into the fishing season. Therefore, additional management options were chosen to reduce effort such as establishing an black sea bass pot endorsement program, increasing the minimum size limits for black sea bass, and requiring that all black sea bass pots be brought back to shore at the end of each trip. Please see the response to Comment 1 in this section for a discussion of the SSC recommendation and rationale for the South Atlantic Council's choice of ABC and ACL values for black sea bass.

***Comment 11:*** *One commenter stated no commercial fishing should be allowed for any species that is overfished or is undergoing overfishing.*

Response: In some cases such as red snapper, when a species is overfished and/or undergoing overfishing, stringent management measures, such as a prohibition on all harvest, are necessary to rebuild the stock by the end of a designated rebuilding schedule. However, total prohibitions on fishing are not required to rebuild all stocks undergoing overfishing. Often, harvest in either or both sectors can be reduced sufficiently to allow some fishing while still rebuild a stock by the end of the rebuilding schedule, which minimizes adverse socioeconomic impacts on fishery participants. Such is the case for black sea bass. Amendment 15A implemented a 10-year rebuilding schedule for black sea bass, which ends in 2016. Prohibiting all commercial harvest of the species was not necessary to rebuild the stock with in the 10-year time frame. Doing so would cause unnecessary adverse economic impacts on fishery participants and dockside infrastructure. The outcome of the most recent stock assessment indicates the modified rebuilding strategy chosen by the South Atlantic Council in Amendment 18A would result in a 66% probability of rebuilding the stock by the 2016 deadline. This rebuilding strategy would limit harvest to 718,000 pounds gw over the next two fishing years, with a possible increase in the ACL after that, depending upon the outcome of a stock assessment update,

***Comment 12:*** *One commenter recommends NOAA Fisheries Service reexamine the use of black sea bass pots, which in the view of this commenter are simply fish traps, which are prohibited.*

Response: The final rule implementing Amendment 4 to the Snapper-Grouper FMP contained a prohibition on the use of fish traps in the South Atlantic EEZ based on concerns related to ghost fishing by lost traps, habitat damage, enforcement difficulties, and bycatch mortality issues. Additionally, Amendment 4 (1991) states: "Florida deliberated the issue of traps for many years and the Florida State Legislature prohibited the use of fish traps in 1980. There have been many problems since then due to the inconsistency between state and federal regulations." Page 71 of Amendment 4 outlines the rationale for the South Atlantic Council's choice to prohibit all fish traps except black sea bass pots north of Vehicle Assembly Building at 28°35.1′ N latitude. Black sea bass pot construction specifications make them highly selective for black sea bass, and bycatch is minimal.

Amendment 18A contains a provision that would require black sea bass pots be brought back to shore at the end of each trip. This management measures is likely to reduce the incidences of lost traps and associated ghost fishing. Additionally, Amendment 18A would limit the number of black sea bass pot tags that would be issued to each endorsement holder each permit year to 35. Currently, there is no limit on the number of pot tags a permit holder can acquire. The black sea bass pot endorsement program would also reduce the number of fishermen who historically fished with pot gear to 31. The cumulative effect of these black sea bass pot limitations is likely to benefit the biological environment and enforcement efforts without incurring significant adverse socioeconomic impacts.

***Comment 13:*** *One commenter suggests that the recreational sector of the black sea bass component of the snapper-grouper fishery should be overseen by fishery-independent entities because of the lack of recreational data*.

Response: NOAA Fisheries Service acknowledges the need to improve recreational data accuracy and timeliness. Recreational fishing data are collected by the Marine Recreational Fishing Statistics Survey (MRFSS), which conducts telephone surveys of coastal households and for-hire businesses, as well as in-person access-point angler intercept surveys. These surveys are used to collect information on recreational fishery participation, fishing effort, and catch, in addition to demographic, social, and economic characteristics of the participants. NOAA Fisheries Service recognizes that MRFSS data are highly uncertain for infrequently encountered species and is working with recreational and for-hire fishermen to explore novel approaches to address this issue through the Marine Recreational Information Program.

SEDAR stock assessments, which are often used to inform fishery management decisions, include data that comes from both fishery-dependent and fishery-independent sources. As Section 4.1.1.1 of Amendment 18A states, SEDAR 25, the most recent stock assessment for black sea bass, included three workshops: A data work shop held April 26-28; an assessment workshop held June 21-23, 2011; and a review workshop held October 11-13, 2011. The black sea bass stock assessment was conducted using 70,000 age samples that became available after the 2005 assessment update. Data used in the assessment includes life history data (age, sex, and fecundity), discard mortality, natural mortality, and discards. Also used were multiple types of landings data including headboat landings from 1978-2010, MRFSS landings from 1981-2010, commercial landings with handline gear from 1978-2010, commercial black sea bass pot

landings from 1983-2010, and commercial trawl landings from 1978-1990. Discards were calculated using data from MRFSS and headboat and commercial logbooks. Indices of abundance were calculated based on the Marine Resources, Monitoring, Assessment, and Prediction survey, headboat landings, headboat at-sea observer discard data, and commercial logbooks. Results of the 2011 black sea bass SEDAR 25 stock assessment indicate the stock is no longer overfished but is not rebuilt.

***Comment 14:*** *Two commenters supported the endorsement transferability alternative, which allowed an endorsement to be transferred only if the Unlimited South Atlantic Snapper-Grouper Permit is also transferred.*

Response: The South Atlantic Council chose to make the black sea bass pot endorsement independently transferable from the Unlimited South Atlantic Snapper-Grouper permit to build in the maximum amount of flexibility for fishermen wishing to transfer endorsements, and for those seeking to acquire endorsements. If the endorsements could only be transferred with the Unlimited South Atlantic Permit to which it was originally issued, a person wishing to obtain an endorsement would have to purchase not only the permit with the endorsement but also a second permit under the two-for-one program. The South Atlantic Council preferred to allow valid endorsements to be transferred freely among holders of valid Unlimited South Atlantic Snapper-Grouper Permits in order maximize fishing opportunities for black sea bass among snapper-grouper fishery participants.

***Comment 15:*** *One commenter inquired as to why he is able to keep so few black sea bass when he catches many of them, and the commenter questions the true overfished status of black sea bass.*

Response: Results of the 2011 black sea bass SEDAR 25 stock assessment indicate the stock is no longer overfished but is not rebuilt. As the black sea bass stock rebuilds, fishermen have been catching more and larger black sea bass. This is a positive sign of rebuilding. A constant catch rebuilding strategy was implemented for black sea bass in 2006, which requires the least amount of initial reduction in harvest. However, under this rebuilding strategy, catch cannot increase as the size of the population increases. Through Amendment 18A the rebuilding strategy was modified to maintain harvest levels at 718,000 pounds gw (~847,000 pounds ww) for the next two fishing years, after which a stock assessment update would be completed to determine if it is appropriate to increase the ACL after the 2014/2015 fishing year while still rebuilding stock by 2016.

**Attachment A.** Improving the Readability of Documents Produced by Regional Fishery Management Council and NOAA Fisheries

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Appendices

Appendix A. Document Readability Improvement Team Participants

Appendix B. Document Formatting Guidelines

Appendix C. Examples of Document Guidelines in Use

Appendix D. Sample Document Outline

# Abstract

A Document Readability Improvement Team (Readability Team) was created to recommend methods to increase the readability and comprehension of documents produced by the three regional fishery management councils and the Sustainable Fisheries Division of NOAA Fisheries, Southeast Regional Office (SERO SF) staff. This report largely builds from the findings of a National Environmental Policy Act (NEPA) Writing Workshop sponsored by the SERO NEPA Program in January 2010. Clearer writing and more effective presentation will increase the probability that the documents will be used to inform the public and decision-makers of the proposed regulations. The recommendations are directed to document authors, as well as supervisors who determine what tools are required for document production. The Readability Team determined that reader comprehension may be improved on many levels. Documents should be better organized and written for specific audiences to decrease the time readers have to invest to find material of interest. Redundancy within the documents must be minimized. Writing clarity must improve, largely through the use of the principles of *plain language*. Finally, documents should be standard to the extent possible in terms of both format and outline.

# 1 Background

It is common for the public to comment that the fishery management documents[1] produced in the Southeast Region are unreadable. Document length, use of jargon, and complexity of analysis are often cited as examples of deterrents to readability and comprehension of ideas.

*Why should we strive for a higher degree of readability and comprehension?* Authors of documents are in the business of communicating information; the documents provide decision-makers with the information necessary to make reasoned choices while presenting the information for public comment. Ultimately, the document serves to outline the decision-making process for proposed fishery regulations. Difficult to read documents create a roadblock to effectively communicating the proposed issues and relevant impacts. Decision-makers may not fully understand the basis for their decisions, reviewers may be unable to locate the material they are tasked to review, and the public is often removed from the commenting process. The public may turn to other sources of information, such as newspapers and publications developed by special interest groups. Authors ultimately become the only reviewer and audience of their work.

**A Document Readability Improvement Team (Readability Team)**, composed of Council and SERO SF staff (**Appendix A**), was formed with two primary goals: (1) recommend ways to increase the readability of the documents and (2) recommend a standard outline and format elements to be used by all three Councils. The desired outcome is that, as these recommendations are implemented, documents will be easier to read and understand, and information within the documents will be easier to find.

In developing recommendations, the Readability Team researched *what makes one document more readable than another?* Other questions included: *Why is it important to have a document that is readable? How is*

*readability improved? And finally, how can the document development process be adjusted to address these problems?* This report addresses these questions, while presenting possible solutions.

[1]The use of "documents" in this report refers to documents produced by the Caribbean, Gulf of Mexico, and South Atlantic Fishery Management Councils and SERO SF. Usually, these are in the form of consolidated plan amendments and NEPA documents. "Documents" include the appendices.

Southeast Regional NEPA Office held a NEPA writing workshop that investigated ways to develop better documents (Mattern et al. 2010). This workshop was attended by SERO SF and South Atlantic Council staff.

The Readability Team seeks to develop specific recommendations for supervisors and authors. A three step process was used to develop the report.

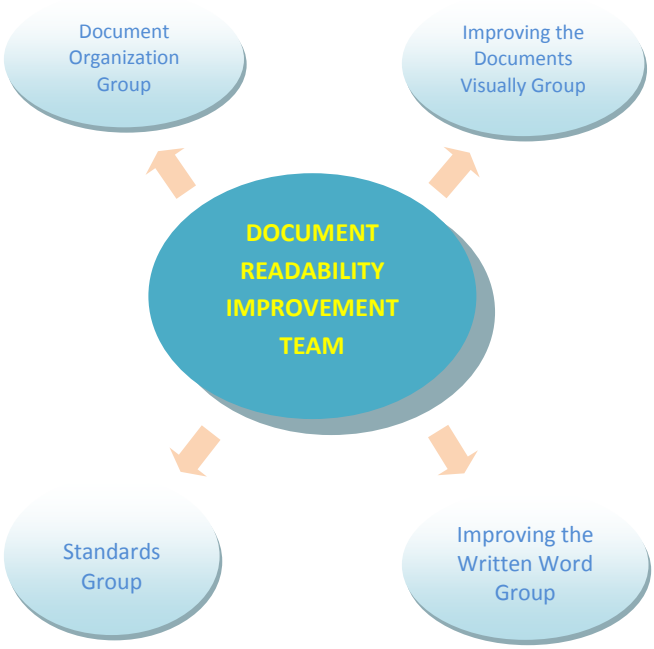
(1) Gather representatives from the three Councils (Caribbean, Gulf of Mexico, and South Atlantic) and SERO SF to serve on the Readability Team.
(2) Form four sub-groups to address problems with document organization, visual appearance, written word, and uniformity among documents (**Figure 1**).
(3) Each group documented the issues to be addressed, cause of problems, and recommendations for solutions. Each recommendation is addressed to either authors or supervisors.

## How the Report is Organized

The following outline is used for each sub-group section:

**(1) Issue to be Addressed**
**(2) Causes of Problems**
**(3) Recommended Solutions**

**Figure 1. Sub-groups of the Readability Team.**



# 3 Improving the Written Word

*"The (land management) plans are so difficult that it appears that only those with advanced education can easily read the plans. This may mean that the plans reduce the role of the average citizen in the decisions, while it increases the role of such groups as university faculty."*
*(Gallagher and Patrick-Riley 1989)*

## Issue to be Addressed

Documents produced by the Regional Fishery Management Councils and SERO SF are difficult to read and fail to engage the reader. Documents are commonly full of long, wordy sentences. In turn, lengthy paragraphs are strung together without a clear direction of ideas. Documents are commonly impersonal, vague, and disjointed without a narrative flow. As a result, the writing often fails to "tell a story". Authors fail to write in *plain language* as required for governmental agencies. More specifically, sentences typically do not have one main point, contain jargon and acronyms, and are written in a passive voice. The documents, as a whole, tend to be repetitive.

A document that is frustrating to read creates a roadblock. Ultimately, the reader is unable to grasp the author's message due to the distractions inherent in a technical document. The information may become incomprehensible. Readers often skeptical of regulations and science may become more suspicious of the information presented in the document. Finally, the Councils and SERO SF may miss an opportunity for public participation in agency decision-making; only those with specialized training and higher education can decipher and interpret the documents.

## Causes of Problems

The process used to create documents contributes to the inability to comprehend the information (**Table 1**). Fishery management plans, subsequent amendments, and associated NEPA documents are created by an Interdisciplinary Team or IPT. The IPT consists of SERO SF, NOAA Fisheries Southeast Regional Science Center, NOAA General Counsel, and Council employees. Typically, an IPT will have five writers; the remaining IPT members are reviewers. Writing styles vary between authors.

**Table 1. Issues that affect the readability of the written material in the documents.**

| DOCUMENT ATTRIBUTES | DOCUMENT PREPARATION PROCESS |
|---|---|
| Multiple writing styles by different authors | Multiple authors working independently |
| Redundant information | Multiple legal mandates |
| Including material that is brought from another amendment through "cut and paste" methods | No training in plain language writing |
| Lengthy documents | No standards for "readability" formally established |
| | No technical editors |
| Wordy sentences | No resources in plain language |
| | Authors must present technical and complex issues |
| | Short deadlines |
| | Multiple audiences |
| | Short timelines |

### What is Plain Language?

Plain language (also called Plain English) is communication your audience can understand the first time they read or hear it.

## Recommended Solutions

### Recommendation 1

**Authors of documents and PowerPoint presentations should use principles of *plain language* to improve message clarity.**

Authors should incorporate the following principles of plain language into their writing:

- **Simplify Sentences**

Shorter sentences with a single main point are more effective. Authors should avoid clusters of nouns ("South Atlantic snapper grouper fishermen" or "trip-level economic performance") and reduce extra words. Writers should aim for sentences shorter than 20 words. Readers are more likely to pay attention to bulleted or numbered lists in place of lengthy sentences.

- **Write Active Sentences**

Using a passive voice can impede concise writing by confusing the traditional object and subject classifications. Readers may be unsure who is acting and who is affected. Passive sentences may be necessary when it is unknown who/what performed the action.

- **Avoid Jargon**

Jargon, or "shop-talk", is language that the layman does not understand. Jargon is usually complicated, wordy, obscure, and pretentious. Examples of jargon in fisheries management include the following:

- Posterior distribution
- Trip-level economic performance
- Distributional effects
- Indices of abundance
- Ex-vessel value
- Proportional standard error
- Cohort
- Maximum fishing mortality threshold
- Yield per recruit analyses
- Marginal rates of return
- Instantaneous mortality rates
- Sensitivity analysis
- Dome-shaped partial recruitment

- Bootstrapping
- Catch-per-unit-effort
- Fecundity

The use of jargon should be avoided or minimized when writing for audiences other than those in the writer's specialized group. If jargon cannot be avoided, the writer should clearly explain the concept to the reader. A glossary may not be enough; jargon may need to be defined and explained at various points throughout the document, through the use of side-bars and text boxes. Generally, the level of jargon increases from the summary, to the main document, to the technical appendices.

## Recommendation 2

**Supervisors should provide access to resources to improve the use of plain language.**

*Training Opportunities.* Onsite and online resources are available through *plainlanguage.gov*

*Books.* Excellent references are available such as *Planning in Plain English* by Natalie Macris.

*Software*. Stylewriter or Microsoft Word have programs to determine readability scores of documents.

### What is a Passive Sentence?

A sentence is passive whenever you encounter the three following elements:

**(1) a form of the passive auxiliary BE (be/been/is/are/was/were),**
**(2) followed by a verb,**
**(3) and then a past form (verb + ed or an irregular past form).**

Example: Replace "Species in the fishery management unit are assessed on a routine basis" with "Fishery scientists assess species in the fishery management unit on a routine basis."

## Recommendation 3

**When appropriate, authors should consider a narrative flow that engages the reader (also called "telling the story").**

It may be more effective to avoid developing an impersonal and vague document and write in a more relaxed and informal manner. As stated in Mattern (2009), "telling a story means writing in clear, simple language and explaining the problem from the reader's perspective". To do this, the writer must know the audience.

Often, documents lack a narrative flow that involves a logical progression of information from sentence to sentence, paragraph to paragraph, and section to section.

As in any good story – whether it be a novel, scientific study, or Environmental Impact Statement (EIS) – characters (entities affected), setting (geographic scope), and basic outline of the plot must be documented. The plot outline includes what is expected to happen, when, and to whom.

## Recommendation 4

**Authors should be brief when possible and discuss impacts in proportion to their significance.**

Fisheries documents are rarely concise. For example, a section that serves to outline the *impacts* of a proposed action will often force a reader through a restatement of all the alternatives and a detailed discussion of the requirements of the Magnuson-Stevens Act. The requirements of the Magnuson-Stevens Act should be discussed in the background section of the document. Also, instead of repeating detailed descriptions throughout the document, authors should consider the use of text boxes with the alternatives strategically placed for the reader's reference (**Figure 2**). The alternatives in abbreviated form throughout the document will remind

the reader of the alternatives without including the full, detailed text. Acronyms may be explained in a similar way.

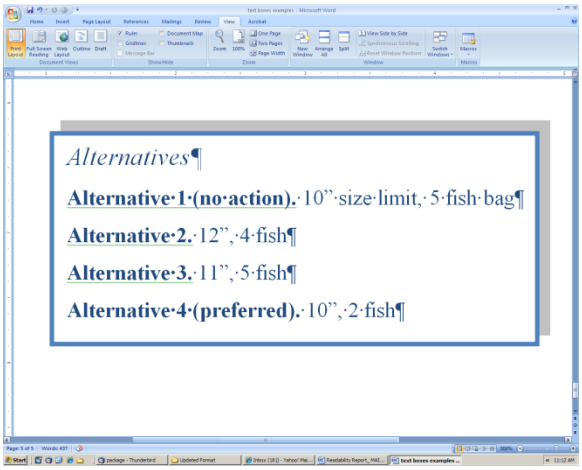



**Figure 2. An example of the use of a text box to remind the reader of the alternatives.**

*Get to the point!* Authors should bring the most important points to the front of the section, paragraph, or document. Authors should incorporate by reference as discussed later in this report. Eliminate redundancies within sentences such as "none (at all)", "(separate) entities", and (alternative) choices".

## Recommendation 5

**Supervisors should incorporate the use of *technical editors* into the document production budget. IPT leads should develop timelines that allow for the technical review of documents. If budget precludes the hiring of editors, then more experienced authors should peer-review text of less experienced authors, if practicable.**

The quality of the documents will improve with a review by a technical editor. Technical editing involves reviewing technical text and identifying errors related to the use of language in general or in adherence to a specific style guide. Editors may review the following:

- Grammar
- Spelling
- Punctuation
- Accuracy
- Inconsistent figures
- Citation errors
- Continuity of thought
- Smooth flow of ideas

Technical editing may support the decision-making process by helping to clearly explain the proposed actions and alternatives. For example, a technical review may highlight inconsistent statements between purpose and need sections, analysis of alternatives, and the section describing the Council's choice of the preferred alternative. The editor may also identify where statements need more support.

# 4 Document Visual Design

*"The careful and considered use of textual effects can help set a persuasive and positive mood for the document itself: a form of pathos or emotional appeal. Moreover, as part of establishing the logos of the substantive arguments contained in the document, the argument must be presented in a visually effective manner so the reader can more easily understand the argument and retain more of the material."*
*(Ruth Ann Robbins 2004)*

## Issue to be Addressed

Documents produced by the Council and SERO SF are often visually unappealing, causing the document to seem overwhelming and laborious. A typical document will fail to draw the reader's attention to important information. Documents favor ink over white space and fail to use tools common to design principles. Numerous tools are available to help the writer convey important concepts. For example, transforming lengthy sentences into vertical lists is a useful way to present a series of requirements or steps. In addition, text boxes and bold font place emphasis on ideas, definitions, or significant points. And of course, "a picture is worth a thousand words"; illustrations and graphs go a long way to describe complex ideas and give life to the document.

Finally, documents should have a similar look and feel. Current documents differ in appearance not only from Council to Council, but also amendment to amendment. Consistent layout, both within a document and between Councils, is important so the reader knows what to expect.

## Cause of Problems

The lack of visual elements makes a document difficult to read and comprehend (**Table 2**). Many IPT members have little training in the use of visual elements, which often leads to extreme document layout differences between Councils.

**Table 2. Issues that affect the readability of the written material in the documents.**

| DOCUMENT ATTRIBUTES | DOCUMENT PREPARATION PROCESS |
|---|---|
| Documents lacks effective visual attributes | No training in of the use of visual elements and layout |
| Different Councils create completely different looking documents | Limitations to Microsoft Word |
| | Perceived lack of creative freedom by the authors |
| | Currently, the improvement of visuals must be done by the IPT Lead |
| | Sometimes easier for authors to just imitate the last document and overuse "cut-and-paste" |
| | Timing constraints limits the amount of time authors can apply towards improving the visuals |

## Recommended Solutions

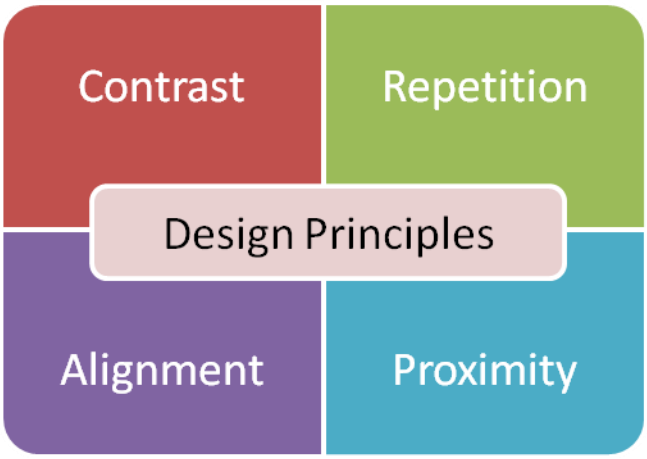
### Recommendation 1

**Authors should use more visual elements to enhance the reader's comprehension of complex issues.**

In addition to text, authors should incorporate tables, figures, photographs, graphics, text boxes, or other visual tools to emphasize key points or to break up long pieces of text. **Appendix C** contains several examples of the use of text boxes. A variety of page layout formats, including columns, may be used to move away from the traditional block paragraphs. White space, sidebars, and headings may also be used to make the writing more visually appealing.

### Recommendation 2

**Authors should use the following 4 Design Principles when developing their material: 1) Contrast; 2) Repetition; 3) Proximity; and 4) Alignment (Figure 3).**


Contrast
Repetition
Design Principles
Alignment
Proximity

### Contrast

- Avoid elements (color, size, line thickness, space, etc.) on the page that are extremely similar;
- If elements are not the same, then make them very different.
- Some examples:
  - Large type and small type (12 pt font paired with 14 pt font is not contrast)
  - Cool colors and warm colors;
  - Horizontal element (long line of text) and vertical element (tall, narrow column of text)

### Repetition

- Can be thought of as "consistency";
- Repeat visual elements throughout the document;
- Develops organization and strengthens the unity;
  Some examples include
- Bold font, colors, shapes, spatial relationships, line thicknesses, fonts, sizes, graphic concepts, a certain bullet, etc.

### Alignment

- Nothing should be placed on the page arbitrarily;
- Everything should have some visual connection with another element on the page;
- Avoid using more than one text alignment on one page (i.e. don't center some text and right-align other text);
- Creates a clean, sophisticated, fresh look.

### Proximity

- Related items should be grouped close together;
- Helps organize information, reduces clutter, and gives the reader a clear structure.
- For example, a heading that is followed by too many vertical spaces (hard returns) will create too many fixation pauses and a less legible document.

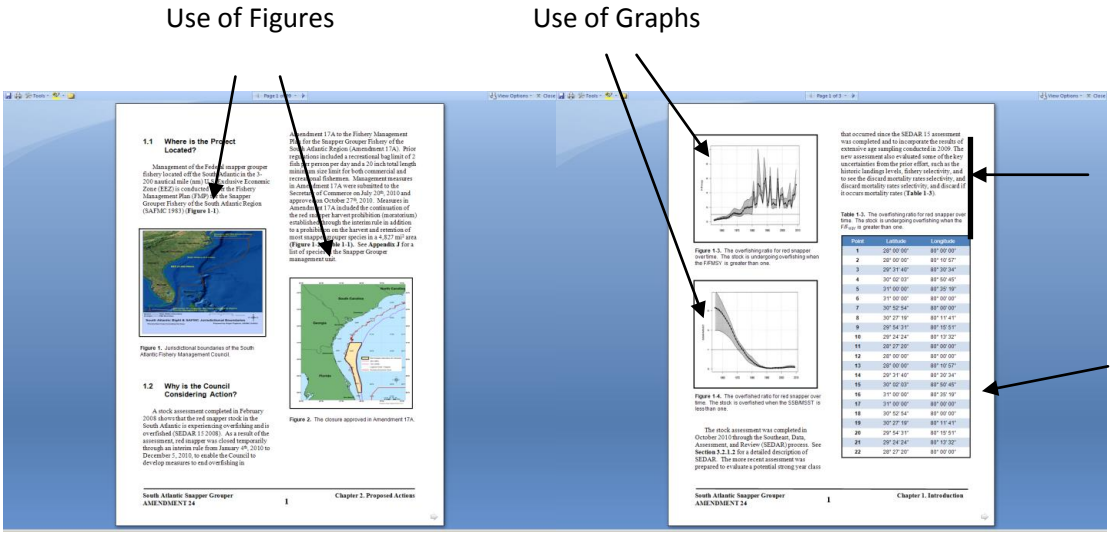
**Figure 3. Design principles that authors should follow.**

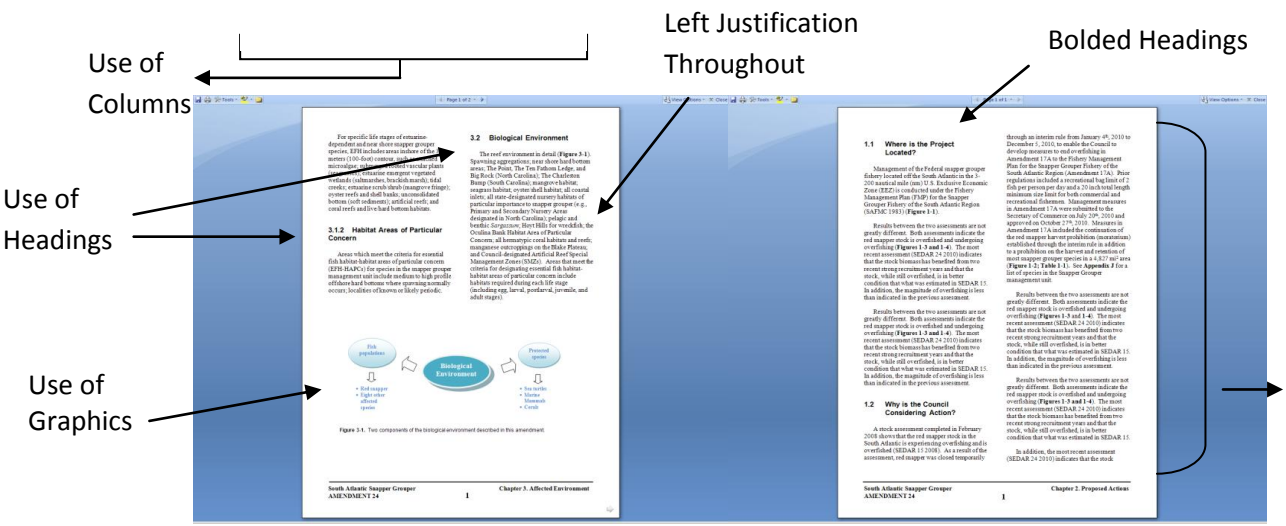
## Recommendation 3

**Authors should follow the Visual Examples in Figure 4 and Appendix C. The tips demonstrate how each Design Principle is used and the accompanying visual examples illustrate how documents look when executed.**

### Tips for Authors

- Use white space.
- Strive for illustrations that are clear and precise.
- Use headings as they summarize what the reader is about to read and increases whitespace. Make heading specific and cover all material until the next heading. Only capitalize first letter of first word.
- Utilize a mixture of paragraph lengths.
- Use lists, tables, figures, sidebars, and columns.
- Do not overuse tables. Graphics may be a better tool to display information.
- Use only two or fewer typefaces in a single document.
- Use a variety of paragraph lengths (maximum 6 to 7 typed lines).


Use of Figures
Use of Graphs
Edge of text and tables & figures line up
Use of Tables


Use of Columns
Left Justification Throughout
Bolded Headings
Use of Headings
Use of Graphics
Same Font Type

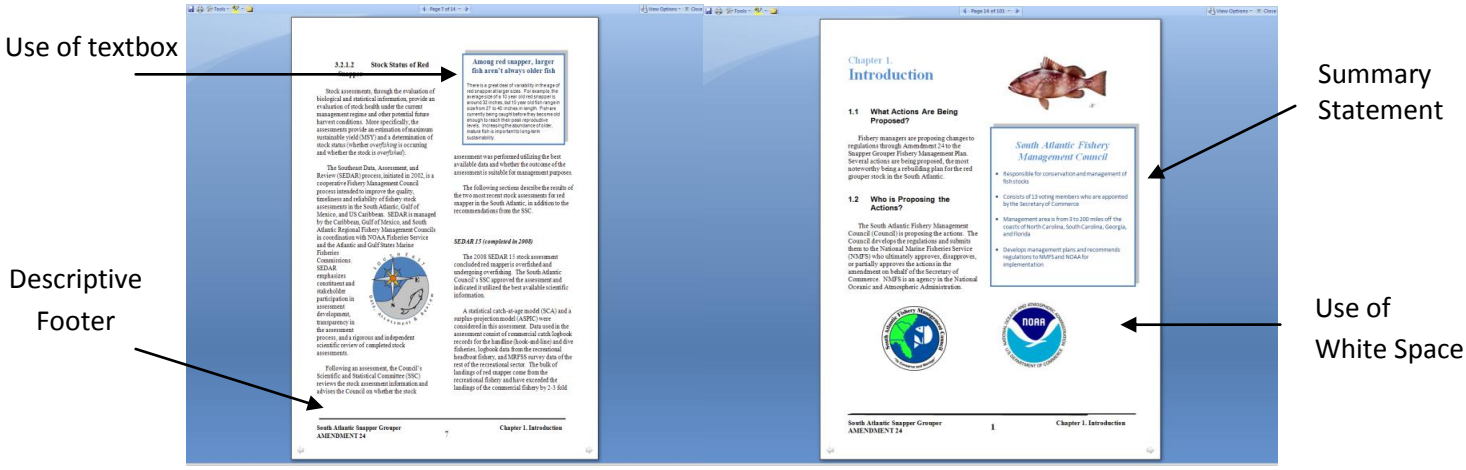



**Figure 4. Attributes of a visually appealing document.**

## Recommendation 4

**Authors should follow the document formatting guidelines outlined in Appendix B. Appendix C contains examples of the guidelines in a document. Document format should be discussed and determined by the document interdisciplinary plan team (IPT) early in the document development process.**

It is important to maintain a consistent format both within a document and between councils. This includes consistency in font size, type, and color. Guidance for formatting is found in **Appendix B**. Examples are available in **Appendix C**. The Readability Team recognizes there would be instances that call for deviation from the guidelines. Examples of possible deviations are shown in **Appendix C**.

## Recommendation 5

**Authors of individual sections should be responsible for ensuring that their sections meet the formatting guidelines, including the placement of the visual elements (e.g., figures, tables, and text boxes) as documented in Appendix B.**

Currently, IPT leads are responsible for improvements to the overall document format and visual elements. This added responsibility creates additional work for the IPT leaders, who are often responsible for writing significant portions of the amendments.

In the future, the author of each section should be responsible for ensuring their respective sections follow the proper formatting as set by the attached template and guidelines (**Appendix B**). This will reduce the amount of work for the IPT leads and may expedite the overall process. IPT lead and writer responsibilities are discussed in detail further in the report (**Section 2, Recommendation 2**).

## Recommendation 6

**The IPT should continue the use of Microsoft Word for document development.**

Documents are currently created in Microsoft Word. The sub-group researched alternative programs (e.g., Adobe InDesign), but determined Microsoft Word contains the necessary

elements to accommodate the recommendations contained in this report. In addition, the continued use of the familiar Microsoft Word software would alleviate the need to learn a new software program.

## Recommendation 7

**The IPT lead should maintain separate folders for original images, tables, and figures.**

Duplicating images from a formatted document sometimes presents a challenge. If original graphics are maintained in a separate file, graphics can be reused as needed.

## Recommendation 8

**Recommend using a specific copywriter/design editor.**

The Readability Team recommends a staff member (new hire or current staff) be assigned as design editor. This staff member will be responsible for editing the visual elements to ensure formatting remains consistent throughout the document. This will help alleviate pressure on the IPT leader and section authors, as well as provide more consistent documents.

# 5 Document Organization

*"Most EISs appear to be organized in a way that makes them easier to review or 'check off' than to study and question. They are arranged so that even a superficial reviewer will quickly see that everything that is supposed to be in the document is there. And if that were the only mission of the EIS, to satisfy some mindless bureaucratic checklist, such an organization would be appropriate. Furthermore, if that were the only function of the EIS, there would be no reason to write the essay!" (Weiss 1989)*

## Issue to be Addressed

Documents are often incomprehensible to the reader, partially due to the document's organization. The current structure ensures all the legal requirements are fulfilled, but results in documents that are full of redundant information. For example, the complete wording of alternatives may be repeated throughout the document. Identical discussions of impacts are often repeated in both Chapters 2 and 4.

Redundancy leads to a lengthy document, and lengthy documents can be daunting, particularly to the general public. Because the table of contents extends over many pages and the index is often insufficient, the document fails to provide a proper roadmap. The result is another roadblock that may prevent the audience from finding information of interest. In addition, section headings fail to adequately describe the contents and message of a particular section.

Long documents lacking a clear and deliberate structure impede the ability of decision-makers to understand the proposed actions and consequences. Council members must consider impacts of various proposals before reaching a decision. The current structure hinders the decision-maker's ability to find relevant information. This may ultimately hurt the process.

In addition, the document structure changes from amendment to amendment and from region to region,

decreasing its readability. The document structure should be consistent across Councils.

Reducing the overall page length presents a challenge due to the numerous legal requirements. However, eliminating redundancy and using incorporation by reference to the extent possible should decrease the overall length of the document. In addition, documents that are compartmentalized more efficiently, with each section geared towards a particular audience, result in a more readable document.

## Causes of Problems

The current document structure and document preparation process negatively affect readability (**Table 3**). Documents are simply assembled, in place of designed (Weiss 1989). The document often lacks roadmaps or instructions for the average reader. Authors assume that readers know where to find information of interest.

**Table 3. Issues with the document and the document preparation process that affect document organization.**

| DOCUMENT ATTRIBUTES | DOCUMENT PREPARATION PROCESS |
|---|---|
| Redundant information | Multiple authors working independently |
| No search tools such as roadmaps | Multiple legal mandates |
| Text and tables/figures on different pages | No technical editors |
| Headings do not convey what is in the section | Multiple writing styles by different authors |

## Recommended Solutions

### Recommendation 1

**The document should have three primary components: summary, main body, and appendices/technical reports. The level of detail and the depth of analysis will increase from the summary, to the main body, and finally to the appendices/technical reports. Each section should be written for a particular audience.**

The documents appear to be written by authors who are unaware of their audience. As stated in Weis 1989: *Without meaning to, most EIS authors*

*aim their writing at the wrong audience. They assume not only that the work will be read almost exclusively by environmental engineers and specialists, but also that each specialized component will be read only by persons with that specialty. Even though many of the readers are such specialists, the most important readers are not.*

To decrease the amount of time it takes a particular audience to find information, the Readability Team recommends dividing the amendment into three main parts as described in AASHTD (2006). Each part should be written for particular audiences as described in Mattern et al. (2010) (**Figure 5**).

## What is the Summary?

Each environmental impact statement shall contain a summary which adequately and accurately summarizes the statement. The summary shall stress the major conclusions, areas of controversy (including issues raised by agencies and the public), and the issues to be resolved (including the choice among alternatives). The summary will normally not exceed 15 pages.

CEQ Regulations, Section 1502.12

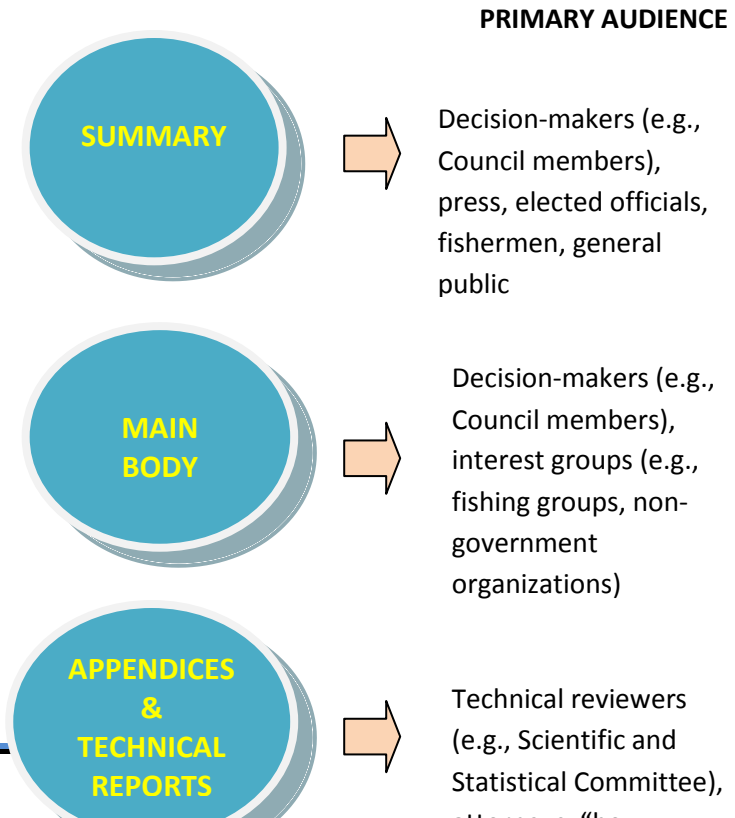



**Figure 5. The three document sections and their primary audiences.**

Fishery management documents are written for a variety of audiences, and each audience has a different interest. Members of the press or elected

officials may be interested in clear, brief statements of the projected impacts to fishing communities; scientific advisors may be interested in the details of the models

used to estimate the impacts; and decision-makers may be interested in both concise statements, as well as information on the methodology used to estimate the impacts.

- **Summary**

The summary may be the only section read by most audiences. Authors should invest considerable time identifying important issues to bring forward in this section. The summary usually contains numerous graphics that help present material in a succinct and understandable manner.
The summary is often seen as a "mini-EIS". It is a standalone document - technical terms should be defined within the document, and references to the main body and appendices and technical reports should be avoided. Summary authors are challenged to include only the most important and relevant information.

- **Main Body**

The main body often contains the majority of the information. This section includes the purpose and need, background information, description of alternatives, affected environment, effects analysis, and comparison of alternatives. It should also include succinct statements of all the information on environmental impacts and alternatives that decision makers and the public need to make a decision and to ascertain that every significant factor has been examined. This section

## The Use of Tables in the Main Body

Writers often overuse tables in the main body, particularly in the Affected Environment Section (Chapter 3). The tables, at times, stretch over multiple pages and contain columns and rows in the double-digits. The tables tend to show the data instead of trends to support the text. Writers should consider whether the tables will overwhelm the reader; the target audience is often Council members and interest groups. Writers should consider the following: (1) reducing the number and size of the tables, (2) consider moving the tables to the appendices, and (3) displaying the information in another form such as a graph.

should explain or summarize methodologies of research and modeling, as well as the results of research that may have been conducted to analyze impacts and alternatives. Incorporation by reference (discussed in the next section) should also be used. The main body requires a balance of enough information for decision-makers to understand but not so much information that the author will lose the reader.

- **Appendices and Technical Reports**

The appendices should contain information directly related to preparation of the document. Examples include research papers directly relevant to the proposal, lists of affected species, discussion of the methodology of models used in the analysis of impacts, and extremely detailed responses to comments (CEQ, Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, Question 25b).

# Example of the Use of the Three Main Components

The following represent example quotes from the documents.

**Document summary**

The preferred alternative is expected to have a 3.8 million dollar impact to the for-hire sector residing in the state of North Carolina.

**Main body**

The preferred alternative is expected to have a 3.8 million dollar impact to the for-hire sector residing in the state of North Carolina. The change in economic value is measured in terms of consumer surplus (CS) to recreational anglers and net operating revenues (NOR) to for-hire vessels. This was determined through the Recreational Model.

(Explain in simple terms how the model works and what type of information it provides. Refer the technical reader to the relevant appendix. Summarize inherent limitations in the model.).

**Appendices & technical reports**

The preferred alternative is expected to have a 3.8 million dollar impact to the for-hire sector residing in the state of North Carolina. The change in economic value is measured in terms of consumer surplus (CS) to recreational anglers and net operating revenues (NOR) to for-hire vessels. This was determined through the Recreational Model.

For-hire removals were estimated by grid through the following equation:

Rc=$(1+x)^n = 1 + \frac{nx}{1!} + \frac{n(n-1)x^2}{2!} + \cdots$

Details, details……

## Recommendation 2

**The document outline in Appendix D should be followed to the maximum extent possible.**

An outline that follows the three component structure is contained in **Appendix D**. The Readability Team recommends that this format be followed to the maximum extent possible but recognizes that deviations from the outline will be necessary.

## Recommendation 3

**The principles of incorporation by reference should be used where appropriate.**

Incorporation by reference is the act of including a second document within another document by only mentioning the second document. It saves time and document space, but authors must be careful in its use. For example, it is often misused when sections are consolidated to one or two sentences with simply a reference to another section for more information. In these instances, the host document should contain more information for the reader.

## Recommendation 4

**Considerable effort should be placed towards developing source documents**

### When Should Authors Include Information as an *Appendix* Versus Using *Incorporation by Reference*?

This issue is addressed by NEPA Guidance and is summarized as follows:
**Appendices** should include material that pertains to preparation of a particular document. Examples include research papers directly relevant to the proposal, lists of affected species, discussion of the methodology of models used in the analysis of impacts, extremely detailed responses to comments, or other information. The appendix accompanies the document, whereas the material which is incorporated by reference does not accompany the document. Basically, the appendix should contain information that reviewers will be likely to want to examine.

Material that is not directly related to preparation of the document should be **incorporated by reference**. This would include other documents, research papers in the general literature, technical background papers or other material that someone with technical training could use to evaluate the analysis of the proposal.

**so that incorporation by reference may be applied. An example of a source documents is a Stock Assessment and Fishery Evaluation (SAFE) Report.**

The development of source documents will increase the applicability and use of incorporation by reference.

## Recommendation 5

**Each document should contain a section that describes the recommendations from Council panels (e.g., advisory panels, Scientific and Statistical Committee) and the Council's preferred alternatives. Council staff should be the primary authors of these sections.**

The document should clearly explain the process for reaching a particular decision. For South Atlantic Council documents, this section has typically been called "Council Conclusions". The Readability Team recommends that this section be titled "Reason for Council's Choice for the Preferred Alternative" and be placed in a stand-alone section following the environmental consequences section. This section should also contain any recommendations from advisory bodies (e.g., law enforcement advisory panel, snapper grouper advisory panel, Scientific and Statistical Committee).

## Recommendation 6

**The entire economic and social analyses of all the alternatives should not occur in the appendices in the Regulatory Impact Review and Regulatory Flexibility Analysis.**

As discussed earlier, the document will be divided into three primary components and each should be written in proportion to its significance. In recent amendments, a significant portion of the description of economic effects has been placed in the Regulatory Impact Review and Regulatory Flexibility Analysis. The Readability Team recommends excluding the entire economic and social analyses from the appendices.

## Recommendation 7

**A document road map should be placed at the beginning of documents to allow the reader to easily locate relevant information.**

Currently, documents contain a table of contents to assist the reader in finding specific sections. An index seeks to direct the reader to all names and subjects on which the document has information. The table of contents, as it extends over multiple pages, often does not help the reader. The index is often insufficient as a topic search tool. Authors should investigate other means to direct reviewers and readers to sections of interest. Federal agencies have used road maps in their documents. These often direct reviewers to sections of a particular subject. A road map is similar to an index, but provides a more user-friendly format.

# 6 Document Standards

## Issue to be Addressed

Document format and graphics not only vary from Council to Council, but also from amendment to amendment. Readers may be unable to locate the material of interest if the location changes from amendment to amendment. Even worse, document format may change within an amendment. For example, table format in terms of shading, borders, colors, font style, and font size of tables more often than not varies between authors.

Interdisciplinary team leads spend a significant amount of time reformatting documents to maintain uniformity. As many as four document preparation guidelines have been produced in the southeast region. Each has been used intermittently by subsequent writing teams.

## Cause of Problems

The current document attributes and document preparation process hinders the establishment of consistent elements between documents (**Table 4**).

**Table 4. Issues with the document and the document preparation process that affect the standardization of documents.**

| DOCUMENT ATTRIBUTES | DOCUMENT PREPARATION PROCESS |
|---|---|
| Formatting changes within and between documents | Multiple authors working independently |
| | Multiple legal mandates |
| | Authors used different formatting |
| | No discussion among authors on format |

## Recommended Solutions

### Recommendation 1

**Use the document formatting standards in Appendix B.**

As many as four document guidelines have been produced over the last 10 years in the southeast region. The latest was produced in February 2010 by a spiny lobster IPT, from which the guidelines in **Appendix B** are largely taken. The Readability Group recommends the adoption of these guidelines with minor deviations. The deviations are principally in the use of a single column format, heading styles, and table styles.

## Recommendation 2

**Establish IPT lead and writer responsibilities as developed by a recent IPT for a spiny lobster amendment (below). IPT leads should initiate a discussion of formatting early in the document preparation process.**

<u>IPT Lead Responsibilities</u>

a) Ensure a timeline is generated that includes specific staff responsibilities.
b) Coordinate and draft data requests to Southeast Fisheries Science Center and other agencies.
c) Organize meetings when required.
d) Develop agendas, lead meetings, and write summaries of meetings. for distribution to the whole team.
e) Serve as a conduit for comments and concerns among IPT members.
f) Develop ground rules with team on how comments are structured and shared. Rules should cover how to handle conflicting and/or substantive comments.
g) Resolve conflicting comments through consensus – have an "editing" workshop of the IPT; elevate up chain of command if needed.

### Document Standards Should Expedite the Process

The establishment of document standards should reduce the document preparation in the following two ways:

(1) IPT leads will not spend as much time reformatting the document
(2) Reviewers will spend less time locating the required sections

h) Update team members on Council actions relevant to the document .
i) Copy IPT members, branch leader, and assistant regional administrator (ARA) on substantive exchanges.
j) Keep branch leader, ARA, and Council executive director updated on team progress.

Writer Responsibilities

a) Please use most recent version sent by the IPT lead when making revisions.
k) Give to support staff for formatting, if applicable.
l) After Council final action, team leads coordinate to ensure amendment and NEPA documents are complete and have gone through legal review before Council submits for Secretarial review.
b) Each author should provide all references to the document coordinator each time a section is submitted.

## How Much Deviation Should Be Allowed Between Document in Terms of Outline and Formatting?

The Readability Team recognizes the value of standardization of outline and formats, but realizes that deviations will be necessary between documents. For example, a 50 page EA with one action may look somewhat different from an EIS with 20 actions. The Readability Team also recognizes that the outline recommended in this report will evolve over time as groups discover new and improved techniques.

One example of a section that may be placed in a different location within the document is the “Comparison of Alternatives section”. This section may be placed in Chapter 2 following the list of alternatives. However, there may be instances when the comparison may be incorporated into Section 4 when a new section is not required, particularly for shorter documents.

c) Edits should be sent to each author using track changes. The author will accept or reject changes and send a clean copy to the coordinator.
d) After final Council action any changes to the document should be shown in track changes.

# References

Gallagher, T.J. and Patrick-Riley, K. 1989. The readability if federal land management plans. Environmental Management 13(1):85-90.

Joint AASHTO/ACEC Comm. 2006. Improving the Quality of Environmental Documents. AASHTO, Washington, D.C.

Mattern, D.S. 2009. Reader-friendly environmental documents: opportunity or oxymoron? Environmental Law Reporter 39:10624.

Mattern, D.S., David Keys, Ray Clark, and Karen Cantillon. 2010. NEPA Writing Report. Prepared for NOAA Fisheries Service, Southeast Region, NEPAProgram, St. Petersburg, FL. Parametrix, Bellevue, WA.

Robbins, R.A. 2004. Painting with print: incorporating concepts of typographic and layout design into the text of legal writing documents. Journal of the Association of Legal Writing Directors 2:108-150.

Weiss, E.H. 1989. An unreadable EIS is an environmental hazard. The Environmental Professional 11:236-240.

# Appendix A

## Document Readability Improvement Team Participants

**Rick DeVictor,** National Marine Fisheries Southeast Regional Office, South Atlantic Branch (Project Lead)

**Stephen Holiman,** National Marine Fisheries Southeast Regional Office, Fisheries Social Science Branch

**Peter Hood,** National Marine Fisheries Southeast Regional Office, Gulf of Mexico Branch

**Kim Iverson,** South Atlantic Fishery Management Council

**Graciela Garcia-Moliner,** Caribbean Fishery Management Council

**Richard Leard,** Gulf of Mexico Fishery Management Council

**Charlene Ponce,** Gulf of Mexico Fishery Management Council

**Britni Tokotch,** National Marine Fisheries Southeast Regional Office, Caribbean Branch

**Gregg Waugh,** South Atlantic Fishery Management Council

# Appendix B

## Document Formatting Guidelines

**General Formatting**

Headings

- 14 pt Ariel Font
- Bold
- Chapter vs. Section
    - Chapter = Main Section
- Example: Chapter 1: Introduction
    - Section = Sub-section of Chapter
- Example: Section 1.1: What actions are being proposed

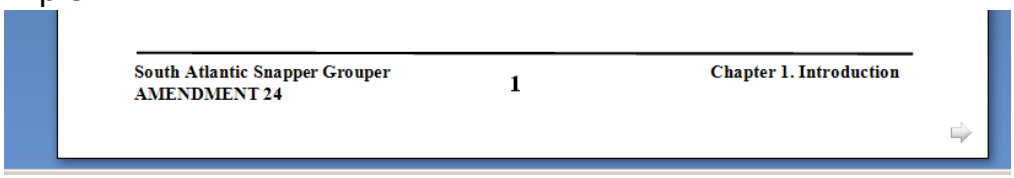
Roman Numeral Pages (TOC, TOC for EIS, Abstract, Acronym list, etc)

- All Margins: 1.0”
- Headings: 18 pt Ariel Font

Body of Text

- 12 pt Times New Roman Font
- Two Columns
    - Line up columns of text
- No page border
- All Margins: 0.7”
- Left Justification
- “1.15” Space between text lines
- Double space between text paragraphs and tables or figures
- Begin new chapter on new page
- Continue new sections on same page
- Indent first line of each paragraph by 0.25”

- Clarification/Example textboxes used as sidebars, as appropriate
    - Example: Side bar explaining what Alternative 2 states instead of only saying, "Alternative 2 will…" so reader is reminded of what each alternative is.
    - Other examples can be seen as shown in Appendix B
    - Footer throughout entire document
    - Name of FMP, Name of Amendment, Page Number, and Chapter Number/Title
    - Example:




Tables

- 2 pt Black Outline
- 10-12 pt Ariel Font depending on space
- No lines inside table
- Alternated row shading
- Center justified within cells
- Aligned with left edge of text paragraphs
- Caption:
    - Above table
    - 10 pt Ariel Font
    - Bold "Table X"
    - Not bold the rest of the title
    - Example:
        - **Table 2.** Gulf of Mexico Black Grouper Landings 1999-2004

Figures

- 2 pt Black Outline
    - Sometimes don't need around figure as shown in Appendix B Example 7
- Aligned with left edge of text paragraphs

- Caption:
  - Below figure
  - 10 pt Ariel Font
  - Bold "Table X"
  - Not bold the rest of the title
  - Example:
    - **Figure 1.** Map of Southeast Region

**Tables and Heading Specifics**

- All data presented in a table should be there for a reason. The main reason will be they are needed to support an interpretation or conclusion presented in the text. Examine tables for extraneous data. If a table contains extra data (data not used in subsequent interpretations), either simplify the table by taking those data out, or add text to the body of the document interpreting those data in the appropriate context.
- Information in tables and figures should not be repeated in the text but should be referenced only.
- Cite the source of all information presented in tables and figures. Write Source: followed by two spaces, then the reference (e.g., Source: MARMAP 2004). Place as the last line in the table or just below the table or figure, not in the figure or table title.
- Table and figure orientation: Orient tables and figures as portrait whenever possible. Center horizontally on the page.
- If a table extends over more than one page, ensure the headings of the table carry over to the subsequent tables. Also ensure there is a table or figure heading on each page, which is the same text as that of the first page plus "(continued)", e.g., "Table 1: Distribution of snowy grouper. (continued)".
- Do not put titles in tables or figures; use captions that are outside the table or figure.

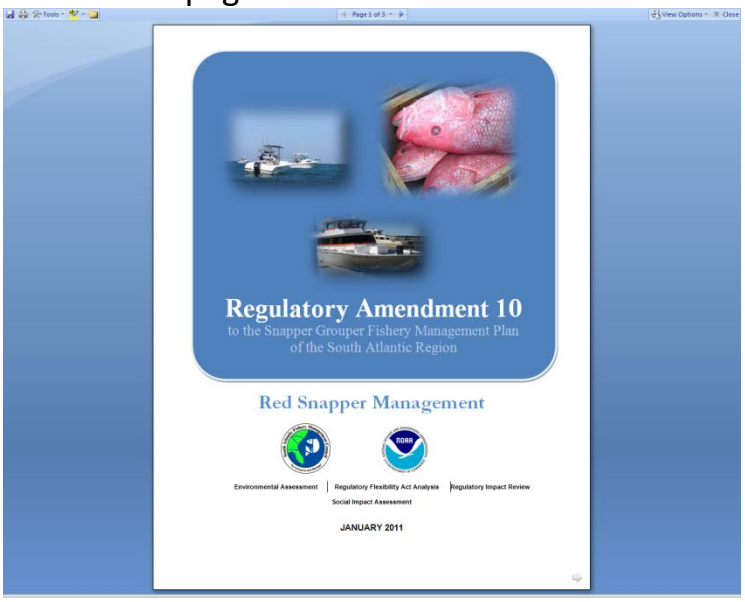
- For tables, the caption should be above; for figures, the caption should be below. The caption should have sufficient information for the table or figure to stand on its own. Captions should be flush left with the table or figure.
- To prevent a caption from becoming unwieldy:
    - Put narrowly focused definitions and explanations in footnotes.
    - Do not define terms and abbreviations that are well known and defined in the text (e.g., ANOVA, CPUE).
    - When definitions and explanations are lengthy and have been given in a previously mentioned table or figure, refer the reader to that table or figure rather than repeating the information.
    - When symbol definitions or detailed explanations are readily located in the text, refer the reader to the text.
- Number tables and figures consecutively in each section, with the chapter and subchapter (if applicable) number first (e.g., Table 2.1.1, Table 2.1.2, etc.). Do not go below the subchapter level (3 digits). Although your text may be ultimately placed such that your Table 2.1 becomes Table 2.10, the coordinators will make that change and will edit your text to reflect it.
- Put the legend inside the figure.
- All columns and rows should be labeled in tables. All axes should be labeled on figures.
- Right justifying numbers and left justifying text in tables.
- Carefully select colors that are readable for figures. Use 12.5% shading for row and column headers, and if necessary to divide sections of a table.
- Use agreed upon format for maps (TBD).

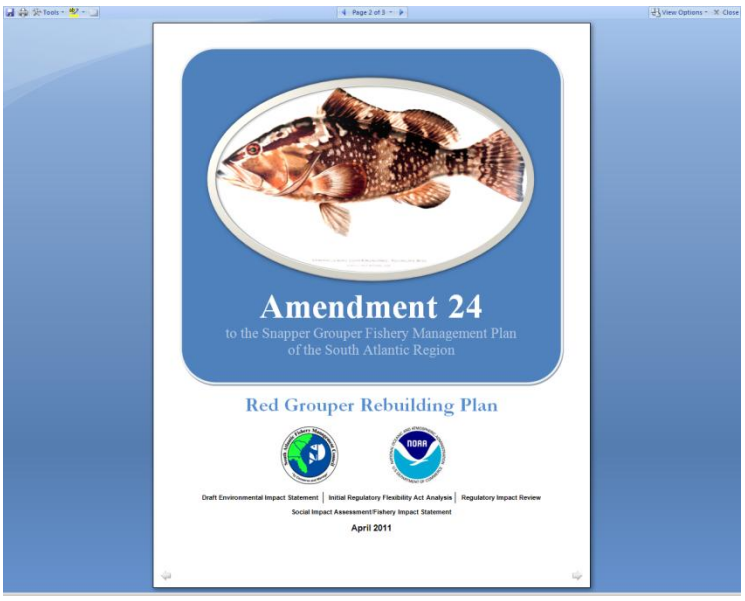
**Appendices**

- Individual pdfs for each appendix
- Team Lead should maintain consolidated pdf with entire document and all appendices

**Title Page**

- The title pages of the documents should follow the following format.




## Writing Specifics

General

- Capitalize and bold alternative when referring to a specific alternative, e.g., the Council chose **Alternative 2** as preferred. Do not capitalize or bold alternative when referring to a non-specific alternative, e.g., this alternative states. Also do not capitalize alternative when referring to a group of alternatives, e.g., the alternatives the Council considered were…
- When referring to specific alternatives or actions, do not precede them with a summary of the action, e.g**., Alternative 3** not **Size Limit Alternative 3**.
- Use the following format (no parentheses) when referencing an alternative and option, write as: **Alternative 1, Option b, Suboption iii.**
- All actions must have a No Action alternative, which should be Action 1.
- In chapter 4, do not restate alternatives in each sub-section. Do not mix analyses from different subsections (e.g., biological and economic).
- Capitalize federal only when it is part of the official name of a federal agency, a federal act, some other proper noun, or used as "the Federal Government."
- State is not capitalized, unless used as "the State of Florida," or another state.
- Cite the Federal Register non-italicized, capitalize F and R.
- Following the Federal Register writing protocol, numbers are expressed as a figure for measurements (7 ft), percentage (7%), time (7 hours), except for first word of a sentence. Numbers are spelled out for less than 10 objects (seven vessels) or as a figure for 10 or more (70 vessels), except it seems to be ok to use figures in one sentence with a string containing other figures, (licenced vessels in the BSAI include 7 pot vessels, 70 hook-and-line vessels, and 700 trawlers).
- Take a minimalist approach to use of scientific names unless it is a species known only by its scientific name. Follow protocol of common name followed by scientific name in parenthesis, use italic font for the scientific name. Example: walleye pollock (*Theragra chalcogramma*). Don't repeat scientific names every time you use a common name.
- Do not state Table 1 "shows" something; instead, something "is shown" by Table 1

- Encourage using all English units with metric in parenthesis 2 in (5.1 cm), when appropriate.

Punctuation

- When including a numbered list in the text (not a bullet list), use the number and a single parenthesis after and use a semicolon between each item, e.g., this amendment will: 1) reinstate permits; 2) eliminate the landing requirement; and 3) impose penalties.
- Avoid using numbers in a bullet list (indicates ranking). Use the standard bullets in Word (as in this document).
- When giving a range of dates, use a hyphen if possible (1995-2004, June-August). A hyphen or "through" means both dates are included in the range; "to" means the end date is not included in the range. If you use one, don't use the other (don't mix Feb. 1 THROUGH Mar 31 with Feb 1 TO Apr 1 later).
- Use two spaces after a colon and one space after a semicolon. Use two spaces after a period.
- Use smart (curly) quotation marks, not straight marks.
- When using quotation marks, periods and commas should fall inside the marks, colons and semicolons fall outside the marks.
- When listing a series of words separated by commas, make sure the last word before "and" is followed by a comma, e.g., Walleye, pickerel, and white sucker were found in the seine.

Abbreviations and Acronyms

- Do not start a sentence with an acronym.
- Don't make abbreviations for things that are used just once or twice in the document.
- Spell out abbreviations and acronyms at the beginning of each chapter and completely throughout the executive summary. Be sure any used are on the list at the beginning of the document. Continue to spell out throughout the document as needed.

- Abbreviate the Magnuson-Stevens Fishery Conservation and Management Act as the Magnuson-Stevens Act.
- Abbreviate the Gulf of Mexico Fishery Management Council (Gulf Council) and the South Atlantic Fishery Management Council (South Atlantic Council).
- Abbreviate amendments to Council plans as Amendment 1, Amendment 2, etc.
- Use NOAA's National Marine Fisheries Service (NOAA Fisheries Service).
- Use % symbol (not percent) after number no space (50%) in text, tables, and figures. Spell out the word percentage when used in a sentence without a number.
- Use lbs, ft, mi, and nm in text, tables, and figures after a number. Spell out the word when used in a sentence without a number.
- Abbreviate million pounds (mp),whole weight (ww) and gutted weight (gw)
- Spell out "less than" and "greater than" in text. However, you can use < and > in tables.
- Use e.g., (for example) and i.e., (that is). It is unnecessary to use e.g., and etc. in a list, because it is repetitive (e.g., seines, trawls, and gill nets).

<u>References</u>

- Literature citations in the text take either of two forms, depending on the context. Note the punctuation in the following examples: 1. Johnson (1995), Jones and Smith (1996, 1998), Rice et al. (1997), and Berger (in press) found walleyes in Lake Pollock. 2. Walleyes occur in Lake Pollock (Johnson 1995; Jones and Smith 1996, 1998; Rice et al. 1997, Berger, in press). Note there is no comma between the author and the year within the parentheses.
- When there are two authors, cite both in text. When there are more than two, cite the first, then et al., e.g., Rogers et al. 2003. Make sure you list all of the authors in the literature cited section.
- When referencing, use GMFMC or SAFMC and then the date of the amendment. For example, Amendment 31 (GMFMC 2009); (SEDAR 7 2005); (SEDAR 7 update assessment 2009).

- When referencing SEDAR reports, use the number and the specific report (SEDAR8-SAR3). When referencing an update report, add the update number to the end (SEDAR8-SAR3-U1).
- Websites should be cited as: Great Lakes Fishery Commission. Available at: www.glfc.org/databases/commercial/commerc.asp. (September 2000). The date in parentheses indicates when the site was last accessed.
- Personal communications should be cited in the text as:
  (F. Smith, Southeast Fisheries Science Center, pers. comm. date)

- For the references section, use AFS standards (http://www.fisheries.org/afs/publications_style.html)
- Do not use hanging indents; all lines should be flush left.

Examples of literature cited:
*Journals*:

Hochachka, P. W. 1990. Scope for survival: a conceptual "mirror" to Fry's scope for activity. Transactions of the American Fisheries Society 119:622–628.

Kennedy, V. S., and J.W. Grant. 1990. Anticipated effects of climate change on estuarine and coastal fisheries. Fisheries 15(6):16–24.

Grant, J.W.A., S.O. Steingrimsoon, E.R. Keeley, and R.A. Cunjak. 1998. Implications of territory size for the measurement and prediction of salmonid abundance in streams. Canadian Journal of Fisheries and Aquatic Sciences 55:181-190.

*Books*:
Brönmark, C., and L.-A. Hansson. 1998. The biology of lakes and ponds. Oxford University Press, New York.

Murphy, B. R., and D. W. Willis, editors. 1996. Fisheries techniques, 2nd edition. American Fisheries Society, Bethesda, Maryland.

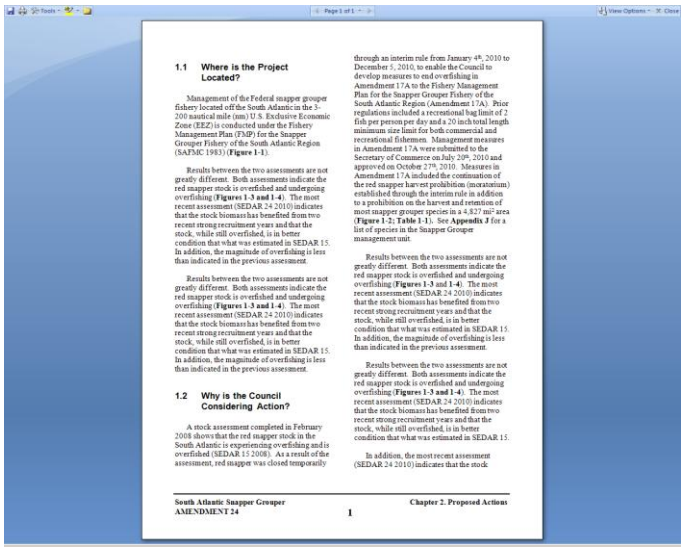
*Chapters within Books*:
Lofgren, B. M. 2002. Global warming influences on water levels, ice, and chemical and biological cycles in lakes: some examples. Pages 15–22 *in* N. A. McGinn, editor. Fisheries in a changing climate. American Fisheries Society, Symposium 32, Bethesda, Maryland.

*Reports:*
SEDAR 2010. 2010 Update of the SEDAR 8 Assessment of Atlantic Spiny Lobster. SEDAR8-SAR3-U1. SEDAR, Charleston, SC.

For other questions about standards, references, numbering, or how we'd like you to format things you submit, please refer to the excellent style guide found here: http://www.fakr.noaa.gov/analyses/editing.pdf. If the guide disagrees with what is in this e-mail, follow the e-mail.

# Appendix C

## Examples of Document Guidelines in Use



1.1 Where is the Project Located?

Management of the Federal snapper grouper fishery located off the South Atlantic in the 3-200 nautical mile (nm) U.S. Exclusive Economic Zone (EEZ) is conducted under the Fishery Management Plan (FMP) for the Snapper Grouper Fishery of the South Atlantic Region (SAFMC 1983) (**Figure 1-1**).

Results between the two assessments are not greatly different. Both assessments indicate the red snapper stock is overfished and undergoing overfishing (**Figures 1-3 and 1-4**). The most recent assessment (SEDAR 24 2010) indicates that the stock biomass has benefited from two recent strong recruitment years and that the stock, while still overfished, is in better condition that what was estimated in SEDAR 15. In addition, the magnitude of overfishing is less than indicated in the previous assessment.

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1.2 Why is the Council Considering Action?

A stock assessment completed in February 2008 shows that the red snapper stock in the South Atlantic is experiencing overfishing and is overfished (SEDAR 15 2008). As a result of the assessment, red snapper was closed temporarily through an interim rule from January 4th, 2010 to December 5, 2010, to enable the Council to develop measures to end overfishing in Amendment 17A to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Amendment 17A). Prior regulations included 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. Management measures in Amendment 17A were submitted to the Secretary of Commerce on July 29th, 2010 and approved on October 27th, 2010. Measures in Amendment 17A included the continuation of the red snapper harvest prohibition (moratorium) established through the interim rule in addition to a prohibition on the harvest and retention of most snapper grouper species in a 4,827 mi² area (**Figure 1-2; Table 1-1**). See **Appendix J** for a list of species in the Snapper Grouper management unit.

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South Atlantic Snapper Grouper AMENDMENT 24 1 Chapter 2. Proposed Actions

**Example 1**

Just text

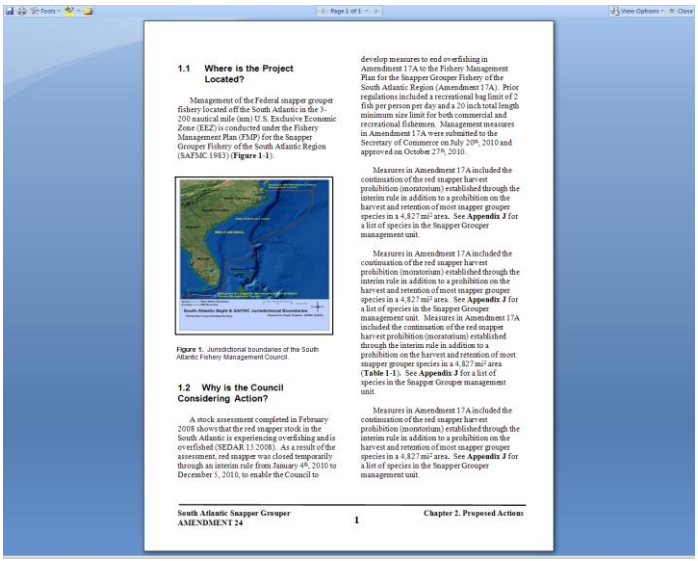

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Figure 1. Jurisdictional boundaries of the South Atlantic Fishery Management Council.

1.2 Why is the Council Considering Action?

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South Atlantic Snapper Grouper AMENDMENT 24 1 Chapter 2. Proposed Actions

**Example 2**

One figure

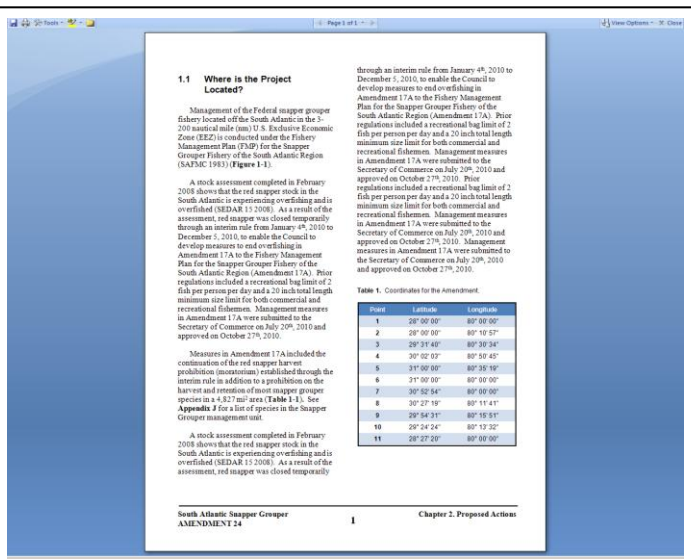

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Table 1. Coordinates for the Amendment.

| 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° 00' 00" | 80° 00' 00" |
| 7 | 30° 52' 54" | 80° 00' 00" |
| 8 | 30° 27' 19" | 80° 11' 41" |
| 9 | 29° 54' 31" | 80° 15' 51" |
| 10 | 29° 24' 24" | 80° 13' 32" |
| 11 | 28° 27' 29" | 80° 00' 00" |

South Atlantic Snapper Grouper AMENDMENT 24 1 Chapter 2. Proposed Actions

**Example 3**

One table

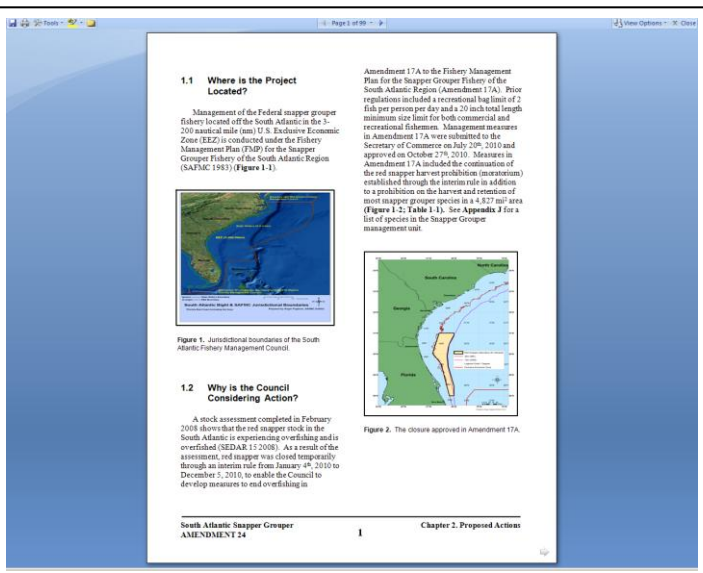

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Figure 1. Jurisdictional boundaries of the South Atlantic Fishery Management Council.

1.2 Why is the Council Considering Action?

A stock assessment completed in February 2008 shows that the red snapper stock in the South Atlantic is experiencing overfishing and is overfished (SEDAR 15 2008). As a result of the assessment, red snapper was closed temporarily through an interim rule from January 4th, 2010 to December 5, 2010, to enable the Council to develop measures to end overfishing in

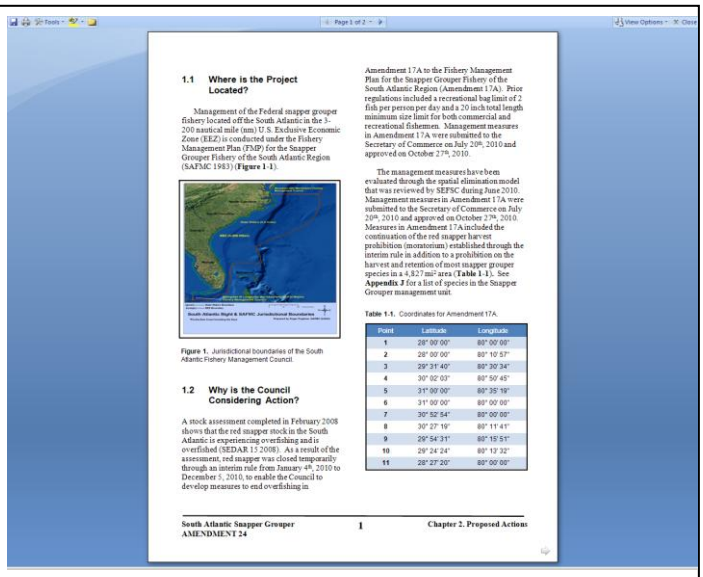
Amendment 17A to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Amendment 17A). Prior regulations included a recreational bag limit of 2 fish per person per day and a 20 inch total length minimum size limit for both commercial and recreational fishermen. Management measures in Amendment 17A were submitted to the Secretary of Commerce on July 29th, 2010 and approved on October 27th, 2010. Measures in Amendment 17A included the continuation of the red snapper harvest prohibition (moratorium) established through the interim rule in addition to a prohibition on the harvest and retention of most snapper grouper species in a 4,827 mi² area (**Figure 1-2; Table 1-1**). See **Appendix J** for a list of species in the Snapper Grouper management unit.

Figure 2. The closure approved in Amendment 17A.

South Atlantic Snapper Grouper AMENDMENT 24 1 Chapter 2. Proposed Actions

**Example 4**

Two figures in two separate columns



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1.2 Why is the Council Considering Action?

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The management measures have been evaluated through the spatial elimination model that was reviewed by SEFSC during June 2010. Management measures in Amendment 17A were submitted to the Secretary of Commerce on July 29th, 2010 and approved on October 27th, 2010. Measures in Amendment 17A included the continuation of the red snapper harvest prohibition (moratorium) established through the interim rule in addition to a prohibition on the harvest and retention of most snapper grouper species in a 4,827 mi² area (**Table 1-1**). See **Appendix 3** for a list of species in the Snapper Grouper management unit.

Table 1-1. Coordinates for Amendment 17A.

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| 9 | 29° 54' 31" | 80° 15' 51" |
| 10 | 29° 24' 24" | 80° 13' 32" |
| 11 | 28° 27' 20" | 80° 00' 00" |

South Atlantic Snapper Grouper AMENDMENT 24 1 Chapter 2. Proposed Actions

## Example 5

A figure and table in separate columns

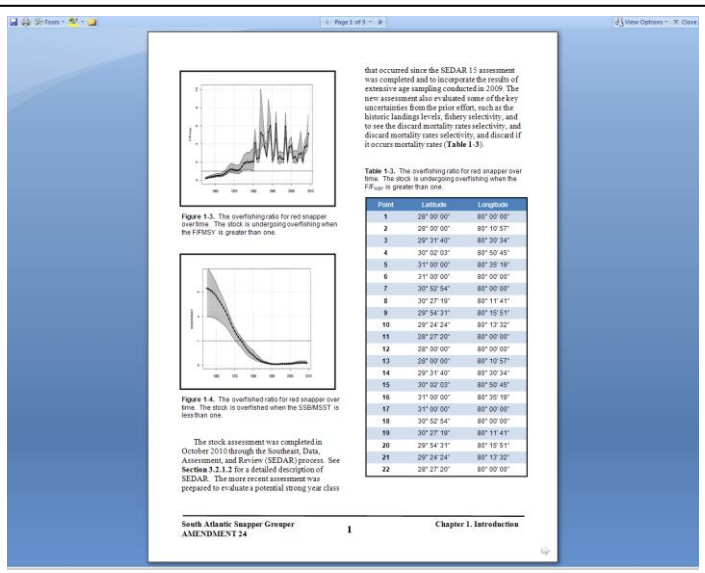

Figure 1-3. The overfishing ratio for red snapper over time. The stock is undergoing overfishing when the F/FMSY is greater than one.

Figure 1-4. The overfished ratio for red snapper over time. The stock is overfished when the SSB/MSST is less than one.

The stock assessment was completed in October 2010 through the Southeast, Data, Assessment, and Review (SEDAR) process. See **Section 3.2.1.2** for a detailed description of SEDAR. The more recent assessment was prepared to evaluate a potential strong year class that occurred since the SEDAR 15 assessment was completed and to incorporate the results of extensive age sampling conducted in 2009. The new assessment also evaluated some of the key uncertainties from the prior effort, such as the historic landings levels, fishery selectivity, and to see the discard mortality rates selectivity, and discard mortality rates selectivity, and discard if it occurs mortality rates (**Table 1-3**).

Table 1-3. The overfishing ratio for red snapper over time. The stock is undergoing overfishing when the $F/F_{MSY}$ is greater than one.

| Point | Latitude | Longitude |
|---|---|---|
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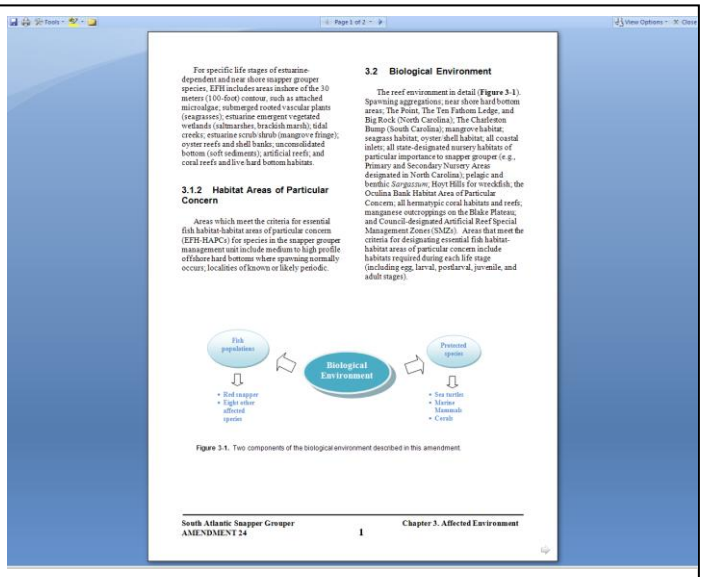
| 20 | 29° 54' 31" | 80° 15' 51" |
| 21 | 29° 24' 24" | 80° 13' 32" |
| 22 | 28° 27' 20" | 80° 00' 00" |

South Atlantic Snapper Grouper AMENDMENT 24 1 Chapter 1. Introduction

## Example 6

Two figures and a table



For specific life stages of estuarine-dependent and near shore snapper grouper species, EFH includes areas inshore of the 30 meters (100-foot) contour, such as attached microalgae; submerged rooted vascular plants (seagrasses); estuarine emergent vegetated wetlands (saltmarshes, brackish marsh); tidal creeks; estuarine scrub shrub (mangrove fringe); oyster reefs and shell banks; unconsolidated bottom (soft sediments); artificial reefs; and coral reefs and live hard bottom habitats.

3.1.2 Habitat Areas of Particular Concern

Areas which meet the criteria for essential fish habitat-habitat areas of particular concern (EFH-HAPCs) for species in the snapper grouper management unit include medium to high profile offshore hard bottoms where spawning normally occurs; localities of known or likely periodic.

3.2 Biological Environment

The reef environment in detail (**Figure 3-1**). Spawning aggregations; near shore hard bottom areas; The Point, The Ten Fathoms Ledge, and Big Rock (North Carolina); The Charleston Bump (South Carolina); mangrove habitat; seagrass habitat; oyster shell habitat; all coastal inlets; all state-designated nursery habitats of particular importance to snapper grouper (e.g., Primary and Secondary Nursery Areas designated in North Carolina); pelagic and benthic *Sargassum*; Hoyt Hills for wreckfish; the Oculina Bank Habitat Area of Particular Concern; all hermatypic coral habitats and reefs; manganese outcroppings on the Blake Plateau; and Council-designated Artificial Reef Special Management Zones (SMZs). Areas that meet the criteria for designating essential fish habitat-habitat areas of particular concern include habitats required during each life stage (including egg, larval, postlarval, juvenile, and adult stages).

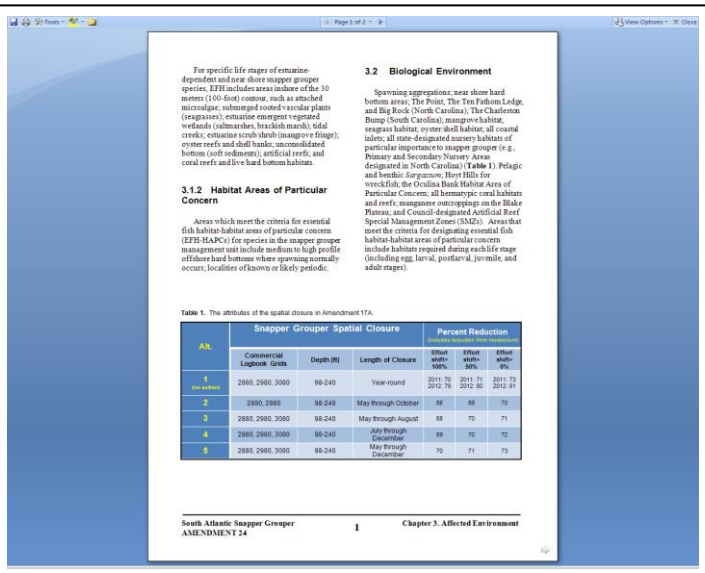


Figure 3-1. Two components of the biological environment described in this amendment.

South Atlantic Snapper Grouper AMENDMENT 24 1 Chapter 3. Affected Environment

## Example 7

One figure in two columns



For specific life stages of estuarine-dependent and near shore snapper grouper species, EFH includes areas inshore of the 30 meters (100-foot) contour, such as attached microalgae; submerged rooted vascular plants (seagrasses); estuarine emergent vegetated wetlands (saltmarshes, brackish marsh); tidal creeks; estuarine scrub shrub (mangrove fringe); oyster reefs and shell banks; unconsolidated bottom (soft sediments); artificial reefs; and coral reefs and live hard bottom habitats.

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Areas which meet the criteria for essential fish habitat-habitat areas of particular concern (EFH-HAPCs) for species in the snapper grouper management unit include medium to high profile offshore hard bottoms where spawning normally occurs; localities of known or likely periodic.

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Spawning aggregations; near shore hard bottom areas; The Point, The Ten Fathom Ledge, and Big Rock (North Carolina); The Charleston Bump (South Carolina); mangrove habitat; seagrass habitat; oyster shell habitat; all coastal inlets; all state-designated nursery habitats of particular importance to snapper grouper (e.g., Primary and Secondary Nursery Areas designated in North Carolina) (**Table 1**). Pelagic and benthic *Sargassum*; Hoyt Hills for wreckfish; the Oculina Bank Habitat Area of Particular Concern; all hermatypic coral habitats and reefs; manganese outcroppings on the Blake Plateau; and Council-designated Artificial Reef Special Management Zones (SMZs). Areas that meet the criteria for designating essential fish habitat-habitat areas of particular concern include habitats required during each life stage (including egg, larval, postlarval, juvenile, and adult stages).

Table 1. The attributes of the spatial closure in Amendment 17A.

| Alt. | Snapper Grouper Spatial Closure | | | Percent Reduction (includes reduction from moratorium) | | |
|---|---|---|---|---|---|---|
| | Commercial Logbook Grids | Depth (ft) | Length of Closure | Effort shift= 100% | Effort shift= 50% | Effort shift= 0% |
| 1 (no action) | 2880, 2980, 3080 | 98-240 | Year-round | 2011: 70 2012: 79 | 2011: 71 2012: 80 | 2011: 73 2012: 81 |
| 2 | 2880, 2980 | 98-240 | May through October | 68 | 69 | 70 |
| 3 | 2880, 2980, 3080 | 98-240 | May through August | 68 | 70 | 71 |
| 4 | 2880, 2980, 3080 | 98-240 | July through December | 69 | 70 | 72 |
| 5 | 2880, 2980, 3080 | 98-240 | May through December | 70 | 71 | 73 |

South Atlantic Snapper Grouper AMENDMENT 24 1 Chapter 3. Affected Environment

## Example 8

One table in two columns

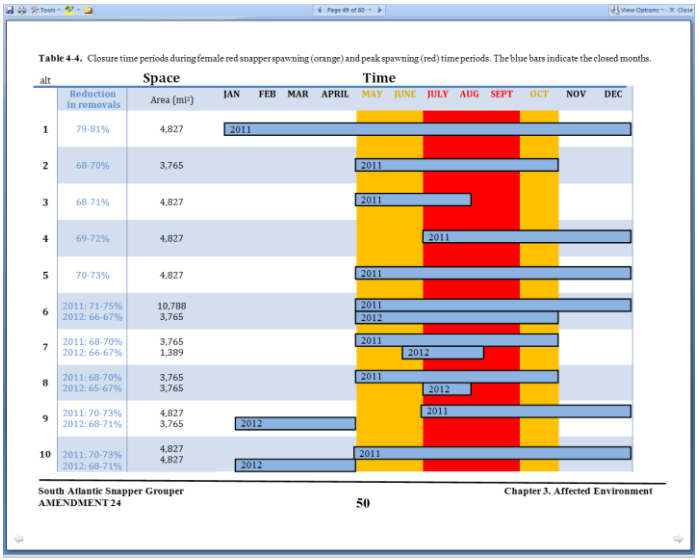


Table 4-4. Closure time periods during female red snapper spawning (orange) and peak spawning (red) time periods. The blue bars indicate the closed months.

| alt | Reduction in removals | Area (mi²) | JAN | FEB | MAR | APRIL | MAY | JUNE | JULY | AUG | SEPT | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 79-81% | 4,827 | 2011 | | | | | | | | | | | |
| 2 | 68-70% | 3,765 | | | | | 2011 | | | | | | | |
| 3 | 68-71% | 4,827 | | | | | 2011 | | | | | | | |
| 4 | 69-72% | 4,827 | | | | | | | 2011 | | | | | |
| 5 | 70-73% | 4,827 | | | | | 2011 | | | | | | | |
| 6 | 2011: 71-75%<br>2012: 66-67% | 10,788<br>3,765 | | | | | 2011<br>2012 | | | | | | | |
| 7 | 2011: 68-70%<br>2012: 66-67% | 3,765<br>1,389 | | | | | 2011 | 2012 | | | | | | |
| 8 | 2011: 68-70%<br>2012: 65-67% | 3,765<br>3,765 | | | | | 2011 | | 2012 | | | | | |
| 9 | 2011: 70-73%<br>2012: 68-71% | 4,827<br>3,765 | 2012 | | | | | | 2011 | | | | | |
| 10 | 2011: 70-73%<br>2012: 68-71% | 4,827<br>4,827 | 2012 | | | | 2011 | | | | | | | |

South Atlantic Snapper Grouper AMENDMENT 24 — 50 — Chapter 3. Affected Environment

## Example 9

One figure on entire page in landscape

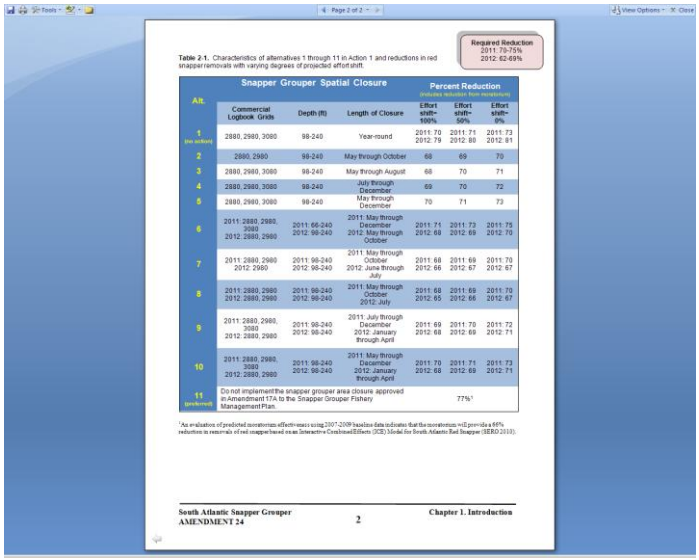


Table 2-1. Characteristics of alternatives 1 through 11 in Action 1 and reductions in red snapper removals with varying degrees of projected effort shift.

Required Reduction 2011: 70-75% 2012: 62-69%

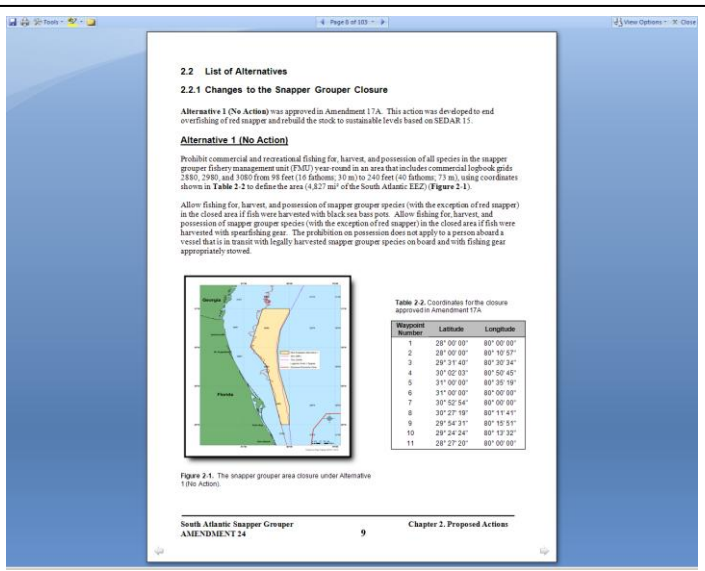
| Alt. | Snapper Grouper Spatial Closure: Commercial Logbook Grids | Depth (ft) | Length of Closure | Percent Reduction (Includes reduction from closure): Effort shift=100% | Effort shift=50% | Effort shift=0% |
|---|---|---|---|---|---|---|
| 1 (no action) | 2880, 2980, 3080 | 98-240 | Year-round | 2011: 70<br>2012: 79 | 2011: 71<br>2012: 80 | 2011: 73<br>2012: 81 |
| 2 | 2880, 2980 | 98-240 | May through October | 68 | 69 | 70 |
| 3 | 2880, 2980, 3080 | 98-240 | May through August | 68 | 70 | 71 |
| 4 | 2880, 2980, 3080 | 98-240 | July through December | 69 | 70 | 72 |
| 5 | 2880, 2980, 3080 | 98-240 | May through December | 70 | 71 | 73 |
| 6 | 2011: 2880, 2980, 3080<br>2012: 2880, 2980 | 2011: 66-240<br>2012: 98-240 | 2011: May through December<br>2012: May through October | 2011: 71<br>2012: 68 | 2011: 73<br>2012: 69 | 2011: 75<br>2012: 70 |
| 7 | 2011: 2880, 2980<br>2012: 2980 | 2011: 98-240<br>2012: 98-240 | 2011: May through October<br>2012: June through July | 2011: 68<br>2012: 66 | 2011: 69<br>2012: 67 | 2011: 70<br>2012: 67 |
| 8 | 2011: 2880, 2980<br>2012: 2880, 2980 | 2011: 98-240<br>2012: 98-240 | 2011: May through October<br>2012: July | 2011: 68<br>2012: 65 | 2011: 69<br>2012: 66 | 2011: 70<br>2012: 67 |
| 9 | 2011: 2880, 2980, 3080<br>2012: 2880, 2980 | 2011: 98-240<br>2012: 98-240 | 2011: July through December<br>2012: January through April | 2011: 69<br>2012: 68 | 2011: 70<br>2012: 69 | 2011: 72<br>2012: 71 |
| 10 | 2011: 2880, 2980, 3080<br>2012: 2880, 2980 | 2011: 98-240<br>2012: 98-240 | 2011: May through December<br>2012: January through April | 2011: 70<br>2012: 68 | 2011: 71<br>2012: 69 | 2011: 73<br>2012: 71 |
| 11 (preferred) | Do not implement the snapper grouper area closure approved in Amendment 17A to the Snapper Grouper Fishery Management Plan. | | | 77%[1] | | |

[1] An evaluation of predicted moratorium effectiveness using 2007-2009 baseline data indicates that the moratorium will provide a 66% reduction in removals of red snapper based on an Interactive Combined Effects (ICE) Model for South Atlantic Red Snapper (SERO 2010).

South Atlantic Snapper Grouper AMENDMENT 24 — 2 — Chapter 1. Introduction

## Example 10

One table on entire page



2.2 List of Alternatives

2.2.1 Changes to the Snapper Grouper Closure

**Alternative 1 (No Action)** was approved in Amendment 17A. This action was developed to end overfishing of red snapper and rebuild the stock to sustainable levels based on SEDAR 15.

Alternative 1 (No Action)

Prohibit commercial and recreational fishing for, harvest, and possession of all species in the snapper grouper fishery management unit (FMU) year-round in an area that includes commercial logbook grids 2880, 2980, and 3080 from 98 feet (16 fathoms; 30 m) to 240 feet (40 fathoms; 73 m), using coordinates shown in **Table 2-2** to define the area (4,827 mi² of the South Atlantic EEZ) (**Figure 2-1**).

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 black sea bass pots. 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. The prohibition on possession does not apply to a person aboard a vessel that is in transit with legally harvested snapper grouper species on board and with fishing gear appropriately stowed.

Figure 2-1. The snapper grouper area closure under Alternative 1 (No Action).

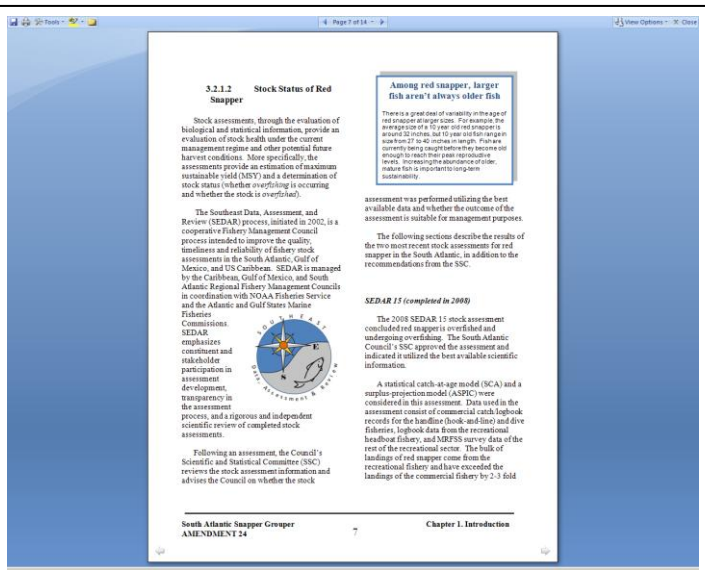
Table 2-2. Coordinates for the closure approved in Amendment 17A.

| Waypoint Number | 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° 00' 00" | 80° 00' 00" |
| 7 | 30° 52' 54" | 80° 00' 00" |
| 8 | 30° 27' 19" | 80° 11' 41" |
| 9 | 29° 54' 31" | 80° 15' 51" |
| 10 | 29° 24' 24" | 80° 13' 32" |
| 11 | 28° 27' 20" | 80° 00' 00" |

South Atlantic Snapper Grouper AMENDMENT 24 — 9 — Chapter 2. Proposed Actions

## Deviation Example 1

Adjusted column width



3.2.1.2 Stock Status of Red Snapper

Stock assessments, through the evaluation of biological and statistical information, provide an evaluation of stock health under the current management regime and other potential future harvest conditions. More specifically, the assessments provide an estimation of maximum sustainable yield (MSY) and a determination of stock status (whether *overfishing* is occurring and whether the stock is *overfished*).

The Southeast Data, Assessment, and Review (SEDAR) process, initiated in 2002, is a cooperative Fishery Management Council process intended to improve the quality, timeliness and reliability of fishery stock assessments in the South Atlantic, Gulf of Mexico, and US Caribbean. SEDAR is managed by the Caribbean, Gulf of Mexico, and South Atlantic Regional Fishery Management Councils in coordination with NOAA Fisheries Service and the Atlantic and Gulf States Marine Fisheries Commissions. SEDAR emphasizes constituent and stakeholder participation in assessment development, transparency in the assessment process, and a rigorous and independent scientific review of completed stock assessments.

Following an assessment, the Council's Scientific and Statistical Committee (SSC) reviews the stock assessment information and advises the Council on whether the stock assessment was performed utilizing the best available data and whether the outcome of the assessment is suitable for management purposes.

The following sections describe the results of the two most recent stock assessments for red snapper in the South Atlantic, in addition to the recommendations from the SSC.

***SEDAR 15 (completed in 2008)***

The 2008 SEDAR 15 stock assessment concluded red snapper is overfished and undergoing overfishing. The South Atlantic Council's SSC approved the assessment and indicated it utilized the best available scientific information.

A statistical catch-at-age model (SCA) and a surplus-production model (ASPIC) were considered in this assessment. Data used in the assessment consist of commercial catch/logbook records for the handline (hook-and-line) and dive fisheries, logbook data from the recreational headboat fishery, and MRFSS survey data of the rest of the recreational sector. The bulk of landings of red snapper come from the recreational fishery and have exceeded the landings of the commercial fishery by 2-3 fold.

**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.

South Atlantic Snapper Grouper AMENDMENT 24 — 7 — Chapter 1. Introduction

## Deviation Example 2

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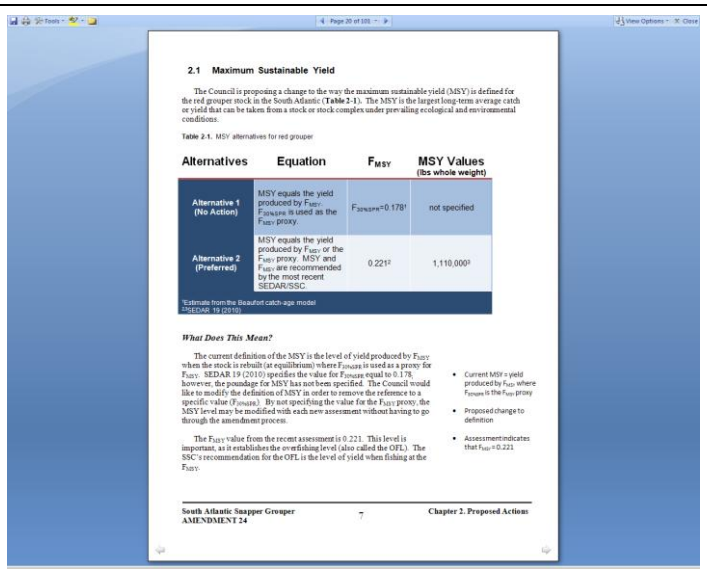


2.1 Maximum Sustainable Yield

The Council is proposing a change to the way the maximum sustainable yield (MSY) is defined for the red grouper stock in the South Atlantic (**Table 2-1**). The MSY is the largest long-term average catch or yield that can be taken from a stock or stock complex under prevailing ecological and environmental conditions.

Table 2-1. MSY alternatives for red grouper

| Alternatives | Equation | $F_{MSY}$ | MSY 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. | $F_{30\%SPR}$=0.178[1] | not specified |
| Alternative 2 (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. | 0.221[2] | 1,110,000[2] |

[1]Estimate from the Beaufort catch-age model
[2]SEDAR 19 (2010)

*What Does This Mean?*

The current definition of the MSY is the level of yield produced by $F_{MSY}$ when the stock is rebuilt (at equilibrium) where $F_{30\%SPR}$ is used as a proxy for $F_{MSY}$. SEDAR 19 (2010) specifies the value for $F_{30\%SPR}$ equal to 0.178; however, the poundage for MSY has not been specified. The Council would like to modify the definition of MSY in order to remove the reference to a specific value ($F_{30\%SPR}$). By not specifying the value for the $F_{MSY}$ proxy, the MSY level may be modified with each new assessment without having to go through the amendment process.

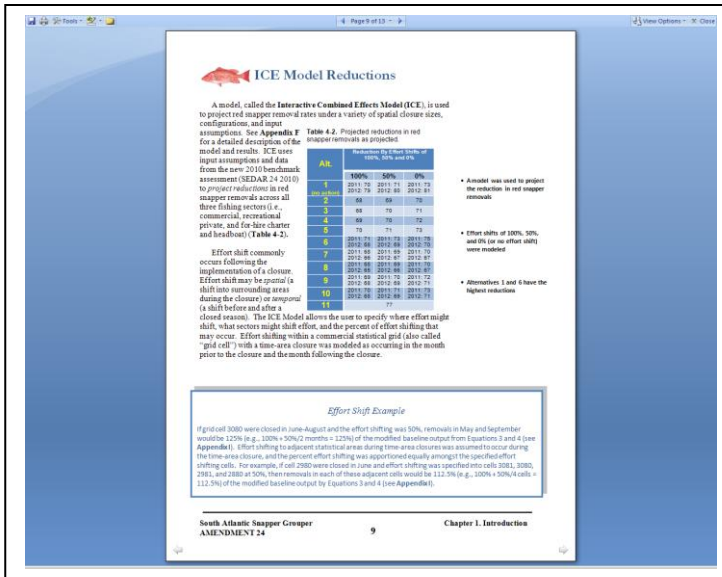
The $F_{MSY}$ value from the recent assessment is 0.221. This level is important, as it establishes the overfishing level (also called the OFL). The SSC's recommendation for the OFL is the level of yield when fishing at the $F_{MSY}$.

- Current MSY = yield produced by $F_{MSY}$ where $F_{30\%SPR}$ is the $F_{MSY}$ proxy
- Proposed change to definition
- Assessment indicates that $F_{MSY}$ = 0.221

South Atlantic Snapper Grouper AMENDMENT 24 7 Chapter 2. Proposed Actions

## Deviation Example 3

¾ page text with bullet points



ICE Model Reductions

A model, called the **Interactive Combined Effects Model (ICE)**, is used to project red snapper removal rates under a variety of spatial closure sizes, configurations, and input assumptions. See **Appendix F** for a detailed description of the model and results. ICE uses input assumptions and data from the new 2010 benchmark assessment (SEDAR 24 2010) to *project reductions* in red snapper removals across all three fishing sectors (i.e., commercial, recreational private, and for-hire charter and headboat) (**Table 4-2**).

Table 4-2. Projected reductions in red snapper removals as projected

| Alt. | Reduction By Effort Shifts of 100%, 50% and 0% | | |
|---|---|---|---|
| | 100% | 50% | 0% |
| 1 (no action) | 2011: 70<br>2012: 79 | 2011: 71<br>2012: 80 | 2011: 73<br>2012: 81 |
| 2 | 68 | 69 | 70 |
| 3 | 68 | 70 | 71 |
| 4 | 69 | 70 | 72 |
| 5 | 70 | 71 | 73 |
| 6 | 2010: 71<br>2012: 68 | 2011: 70<br>2012: 69 | 2011: 68<br>2012: 70 |
| 7 | 2011: 68<br>2012: 66 | 2011: 69<br>2012: 67 | 2011: 70<br>2012: 67 |
| 8 | 2011: 68<br>2012: 66 | 2011: 68<br>2012: 66 | 2011: 70<br>2012: 67 |
| 9 | 2011: 69<br>2012: 66 | 2011: 70<br>2012: 66 | 2011: 72<br>2012: 71 |
| 10 | 2011: 70<br>2012: 66 | 2011: 71<br>2012: 66 | 2011: 73<br>2012: 71 |
| 11 | | ?? | |

- A model was used to project the reduction in red snapper removals
- Effort shifts of 100%, 50%, and 0% (or no effort shift) were modeled
- Alternatives 1 and 6 have the highest reductions

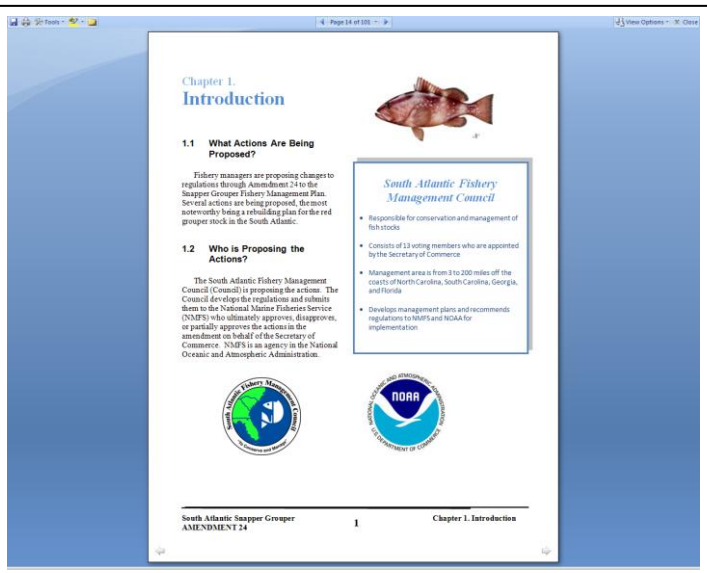
Effort Shift Example

If grid cell 3080 were closed in June-August and the effort shifting was 50%, removals in May and September would be 125% (e.g., 100% + 50%/2 months = 125%) of the modified baseline output from Equations 3 and 4 (see **Appendix I**). Effort shifting to adjacent statistical areas during time-area closures was assumed to occur during the time-area closure, and the percent effort shifting was apportioned equally amongst the specified effort shifting cells. For example, if cell 2980 were closed in June and effort shifting was specified into cells 3081, 3080, 2981, and 2880 at 50%, then removals in each of these adjacent cells would be 112.5% (e.g., 100% + 50%/4 cells = 112.5%) of the modified baseline output by Equations 3 and 4 (see **Appendix I**).

South Atlantic Snapper Grouper AMENDMENT 24 9 Chapter 1. Introduction

## Deviation Example 4

¾ page text with bullet points, imbedded table, graphic in heading



Chapter 1.
Introduction

1.1 What Actions Are Being Proposed?

Fishery managers are proposing changes to regulations through Amendment 24 to the Snapper Grouper Fishery Management Plan. Several actions are being proposed, the most noteworthy being a rebuilding plan for the red grouper stock in the South Atlantic.

1.2 Who is Proposing the Actions?

The South Atlantic Fishery Management Council (Council) is proposing the actions. The Council develops the regulations and submits them to the National Marine Fisheries Service (NMFS) who ultimately approves, disapproves, or partially approves the actions in the amendment on behalf of the Secretary of Commerce. NMFS is an agency in the National Oceanic and Atmospheric Administration.

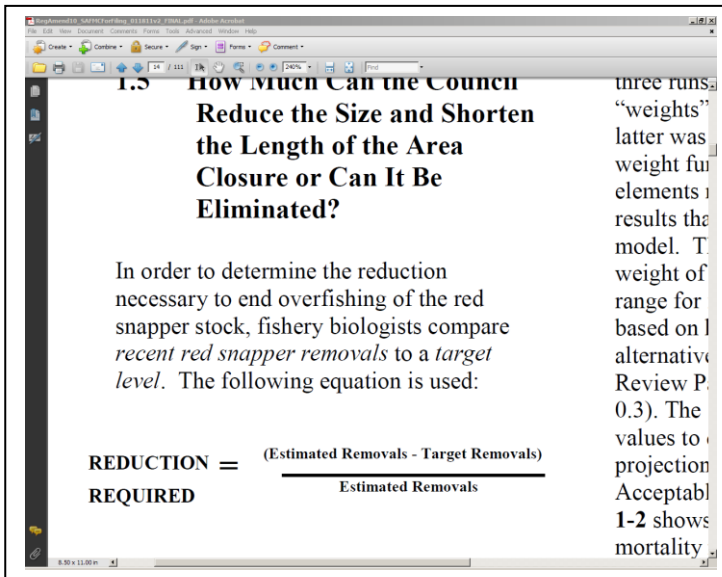
*South Atlantic Fishery Management Council*

- Responsible for conservation and management of fish stocks
- Consists of 13 voting members who are appointed by the Secretary of Commerce
- Management area is from 3 to 200 miles off the coasts of North Carolina, South Carolina, Georgia, and Florida
- Develops management plans and recommends regulations to NMFS and NOAA for implementation

South Atlantic Snapper Grouper AMENDMENT 24 1 Chapter 1. Introduction

## Deviation Example 5

Use of graphics and text boxes



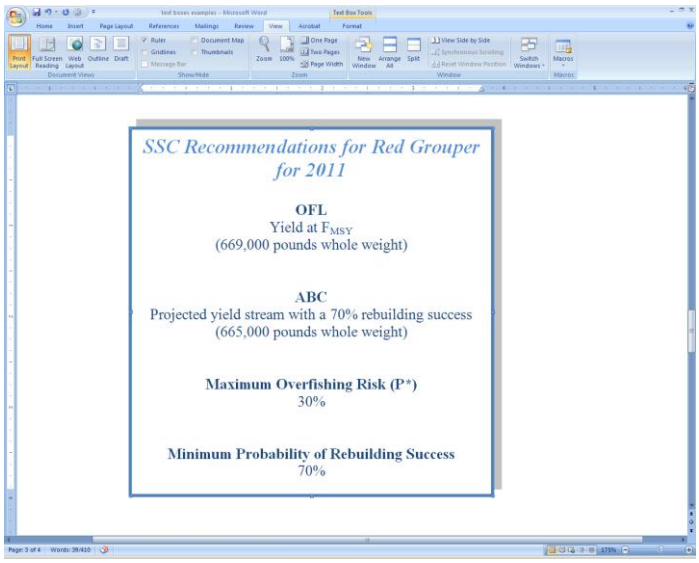
1.5 How Much Can the Council Reduce the Size and Shorten the Length of the Area Closure or Can It Be Eliminated?

In order to determine the reduction necessary to end overfishing of the red snapper stock, fishery biologists compare *recent red snapper removals* to a *target level*. The following equation is used:

$$\text{REDUCTION REQUIRED} = \frac{\text{(Estimated Removals - Target Removals)}}{\text{Estimated Removals}}$$

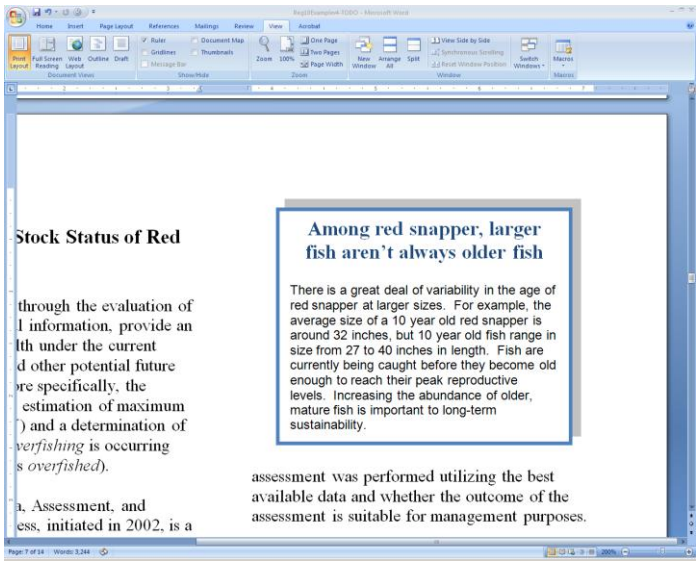
## Deviation Example 6

Show an equation



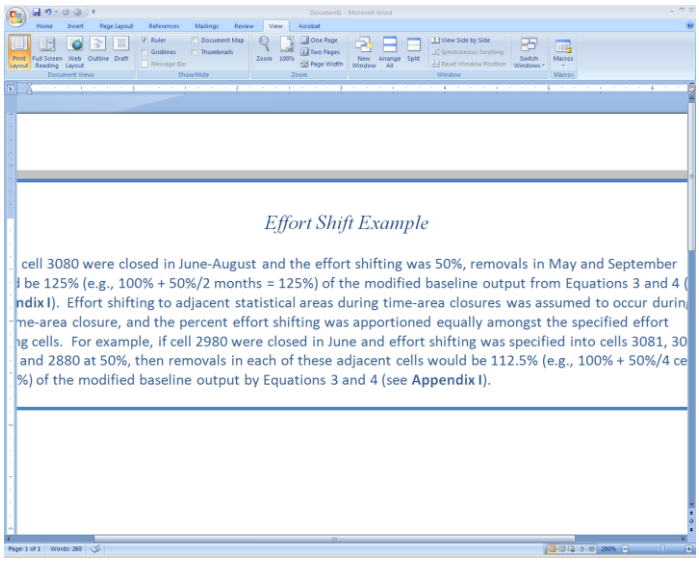

## Text Box Example 1

For highlighting important points: SSC Recommendations



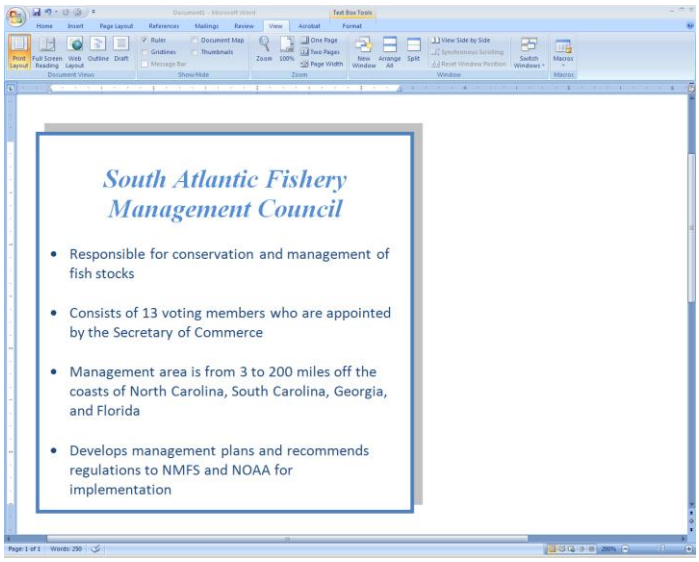

## Text Box Example 2

For highlighting an important point for the reader



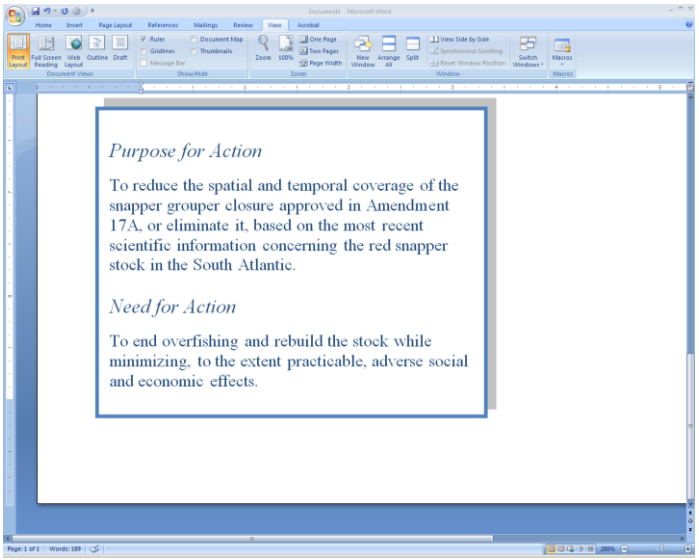

## Text Box Example 3

For providing an example of calculations



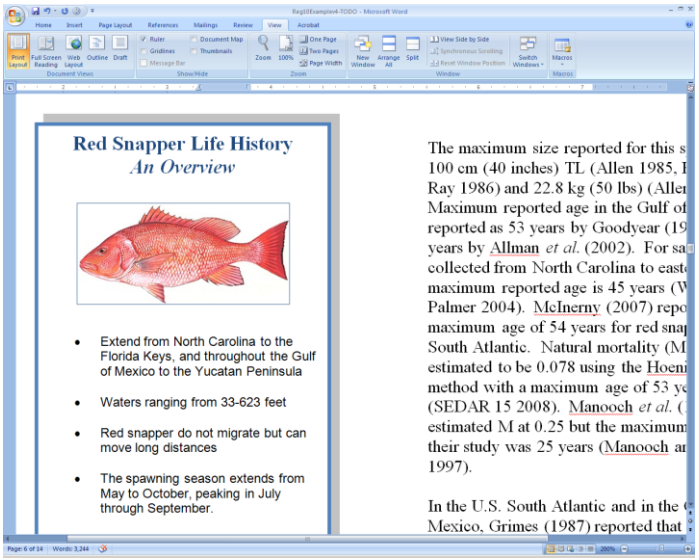

## Text Box Example 4

For describing the Councils




**Text Box Example 5**

For highlighting the purpose and need




**Text Box Example 6**

For providing species life history information

# Appendix D

## Sample Document Outline

Abbreviations and Acronyms Used in the Consolidated FMP/NEPA Document
Cover sheet [Yellow highlighted material is EIS specific.]
Summary
Overall Table of Contents
List of Appendices
List of Figures
List of Tables
***(These sections above are the "roman numeral sections".)***

Chapter 1. Introduction
Purpose and Need statement ***(can include succinctly in a text box or as a section of Chapter 1)***
1.1 What Actions Are Being Proposed?
1.2 Who is Proposing Action?
1.3 Where is the Project Located?
1.4 Why is the Council Considering Action?
1.5 History of Management
***(This will include the history as relevant to the proposed action. A more detailed history of management may be included as an appendix if necessary.)***
***1.6 May include other sections as necessary to aid reader. Examples of sections used in recent amendments: "How much can the Council reduce the size of the area closure"; "How Long Does the South Atlantic Council and NOAA Fisheries Service Have to Implement Measure?"; "How Does the South Atlantic Council Determine the Annual Catch Limits?"***

Chapter 2. Proposed Actions
2.1 What are the Proposed Actions? ***(General discussion of actions)***
2.2 List of Alternatives
2.2.1 Comparison of the Effects of the Alternatives
***(In documents with a few actions, this discussion may best be included in the discussion of the environmental consequences).***

Chapter 3. Affected Environment
3.1 Habitat Environment
3.1.1 Essential Fish Habitat
3.1.2 Habitat Areas of Particular Concern
3.2 Biological Environment
3.2.1 Fish Populations

3.2.1.1 Red Snapper, Lutjanus campechanus
3.2.1.2 Stock Status of Red Snapper
3.2.1.3 Other Fish Species Affected
3.2.2 Protected Species
3.3 Human Environment
3.3.1 Economic Description of the Commercial Fishery
3.3.2 Economic Description of the Recreational Fishery
3.3.3 Social and Cultural Environment
3.4 Administrative Environment
3.4.1 The Fishery Management Process and Applicable Laws
3.4.1.1 Federal Fishery Management
3.4.1.2 State Fishery Management
3.4.1.3 Enforcement

Chapter 4. Environmental Effects
4.1 Biological Effects
4.2 Economic Effects
4.3 Social Effects
4.3.1 Environmental Justice Considerations
4.4 Administrative Effects

Chapter 5. Council's Choice for the Preferred Alternative

Chapter 6. Cumulative Effects
6.1 Effects to Biological Environment
6.2 Effects to Socioeconomic Environment

Chapter 7. Other Things to Consider
7.1 Unavoidable Adverse Effects
7.2 Effects of the Fishery on Essential Fish Habitat
7.3 Damage to Ocean and Coastal Habitats
7.4 Relationship of Short-Term Uses and Long-Term Productivity
7.5 Irreversible and Irretrievable Commitments of Resources
7.6 Unavailable or Incomplete Information
7.7 Climate Change
7.8 Ecosystem-based Management

Chapter 8. List of Preparers
Chapter 9. List of Agencies , Organizations, and Persons to Whom Copies of the Statement are Sent
Chapter 10. References
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Appendices

Appendix A. Alternatives the Council considered but eliminated from detailed study and a brief discussion of the reasons for their elimination
Appendix B. Glossary
Appendix C. History of management
Appendix D. Initial Regulatory Flexibility Analysis (economic analysis of proposed regulations)
Appendix E. Regulatory Impact Review (economic analysis of preferred alternatives)
Appendix F. Bycatch Practicability Analysis
Appendix G. Summary of Scoping Activities