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DRAFT Regulatory Amendment 36

to the Fishery Management Plan for the Snapper Grouper Fishery of the South

Gag and Black Grouper Recreational Vessel Limits and Black Sea Bass On-Demand Pot Gear

Environmental Assessment, Regulatory Flexibility Act Analysis, and Regulatory Impact Review

June 2024 DRAFT

South Atlantic Fishery Management Council
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Award Number FNA15NMF4410010

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Regulatory Amendment 36 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region

Proposed action(s): Revise recreational vessel limits for gag and black grouper and stowage requirements for on-demand black sea bass pots while transiting marine protected areas, special management zones (SMZ), and spawning SMZs.

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This Environmental Assessment applies CEQ's NEPA regulations currently in effect. See 50 C.F.R. § 1506.13.

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Why is the South Atlantic Fishery Management Council considering action?

Gag and Black Grouper

In March 2023, the South Atlantic Fishery Management Council (Council) approved Amendment 53 to the Fishery Management Plan (FMP) for the Snapper Grouper Fishery of the South Atlantic Region (Snapper Grouper FMP), and its regulations were effective October 23, 2023. Amendment 53 established recreational vessel limits of two fish per vessel per day or per trip (depending on private recreational or for-hire component) of gag and black grouper. The Council had intended for this to be an **aggregate limit of two gag or black grouper per vessel**, but the amendment implemented a two-fish vessel limit for each species. Given the stock status of gag (overfished and experiencing overfishing) and the aggregate bag limit in place of one fish of either of these species per person, the Council decided in September 2023 to initiate development of Regulatory Amendment 36 to modify the aggregate vessel limits to two fish (gag or black grouper) per vessel.

Black Sea Bass On-demand Gear

In August 2023, a workshop was held to discuss the experimental use of on-demand (ropeless) pot gear in the commercial black sea bass portion of the fishery. Traditional black sea bass pot fishing gear includes vertical end lines and buoys which stay in the water column for hours while the gear is deployed, presenting an entanglement risk to cetaceans and other protected species. Traditional roped and on-demand gear use the same black sea bass pots (same dimensions, mesh size, escape panels, etc.), and pots equipped with on-demand gear are fished the same way as roped pots, in terms of soak times, bait, etc. On-demand, or ropeless, types of gear differ from roped gear by storing buoys and their retrieval devices at depth, existing in the water column only when fishers are present to retrieve the gear. Adaptation of on-demand gear for this style of pot fishing would lower the probability of negative interactions with whales and other marine animals that suffer entanglements. The exempted fishing permit (EFP) that has allowed experimental use of this gear and exemption from time, area, and other sea bass pot requirements (See Appendix A) expires on April 30, 2025.

In September 2023, the Council discussed the continued use of on-demand pot gear beyond the EFP time period. The Council recognizes that the EFP allows this gear to experimentally operate in nearshore waters of the southeast U.S. during winter months, when North Atlantic right whales migrate through that area. However, **this framework amendment does not consider opening areas that are currently closed to pot fishing in the South Atlantic**. Such an action would require more extensive evaluation and discussion, especially given results of the SEDAR 76 stock assessment that indicates the South Atlantic black sea bass stock is at historically low levels. Consideration of revising stowage or other requirements that may be impractical for the use of on-demand pots in areas currently open to commercial pot fishing can be addressed more quickly through a framework amendment. Therefore, the Council decided to consider regulatory changes to transit stowage requirements (or exemptions to such requirements) that would allow more practical use of on-demand pots in Regulatory Amendment 36.

Purpose for Action

The *purpose* of this framework amendment is to revise the gag and black grouper recreational vessel limits and ~~revise black sea bass commercial pot requirements to accommodate the use of on-demand pots~~ specify requirements for on-demand pots while transiting through closed areas.

Need for Action

The *need* for this framework amendment is to make recreational vessel limits for gag and black grouper consistent with the goals of the aggregate bag limit for both species and rebuilding of the South Atlantic gag stock, and to allow ~~the~~ more practical transit of a new fishing gear modification that lowers the probability of negative interactions with marine mammals, while minimizing negative social and economic effects to the extent practicable, consistent with the Magnuson-Stevens Fishery Conservation and Management Act and its National Standards.

What Actions are Being Proposed in This Amendment?

Action 1. Revise recreational vessel limits for gag and black grouper

Purpose of Action: This action considers revising the recreational vessel limits, which have been recently implemented through Amendment 53, to address the Council's original intent of an aggregate vessel limit that includes both gag and black grouper.

Alternative 1 (No Action). The vessel limits for the private component of the recreational sector are two gag per vessel per day and two black grouper per vessel per day, not to exceed the daily bag limit of one gag or black grouper per person per day, whichever is more restrictive. The vessel limits for the for-hire (charter and headboat) component of the recreational sector are two gag per vessel per trip and two black grouper per vessel per trip, not to exceed the daily bag limit of one gag or black grouper per person per day, whichever is more restrictive.

Alternative 2. Remove the single species recreational (private and for-hire) vessel limits for gag and black grouper. Establish an aggregate **private recreational vessel limit** of two gag or black grouper per vessel per day, not to exceed the daily bag limit of one gag or black grouper per person per day, whichever is more restrictive.

Alternative 3. Remove the single species recreational (private and for-hire) vessel limits for gag and black grouper. Establish an aggregate **for-hire recreational vessel limit** of two gag or black grouper per vessel per trip, not to exceed the daily bag limit of one gag or black grouper per person per day, whichever is more restrictive.

Action 2. Revise transit stowage requirements for black sea bass pots with on-demand gear

Purpose of Action: This action considers revising requirements for black sea bass pots to allow more practical stowage of on-demand pots during transit through marine protected areas and special management zones.

Alternative 1 (No Action). Transit through a marine protected area (MPA), special management zone (SMZ), or spawning SMZ with a black sea pot on board is allowed with fishing gear appropriately stowed. Transit means direct, non-stop progression through the MPA,

SMZ, or spawning SMZ. Fishing gear appropriately stowed means a sea bass pot is not baited and all buoys must be disconnected from the gear; however, buoys may remain on deck.

Alternative 2. On-demand black sea bass pots must be not baited, but may have buoys connected to the gear during transit through a marine protected area, special management zone, or spawning special management zone.

Alternative 3. On-demand black sea bass pots must be not baited and buoys must be disconnected from the gear or stowed within the sea bass pot during transit through a marine protected area, special management zone, or spawning special management zone.

Chapter 1. Introduction

1.1. What Actions are Being Proposed?

The actions proposed in Regulatory Amendment 36 to the Fishery Management Plan (FMP) for the Snapper Grouper Fishery of the South Atlantic Region (Snapper Grouper FMP) would revise the recreational vessel limits for gag and black grouper and revise stowage requirements for black sea bass pots while transiting marine protected areas (MPA), special management zones (SMZ), and spawning SMZs.

South Atlantic Fishery Management Council

- Responsible for conservation and management of fish stocks in the South Atlantic Region.
- Consists of 13 voting members and 4 non-voting members; voting members include 1 representative from each of the 4 South Atlantic state fishery management agencies, 8 members appointed by the Secretary of Commerce, and the Southeast Regional Administrator of NMFS.
- Responsible for developing fishery management plans and amendments under the Magnuson-Stevens Act; recommends actions to NMFS for implementation.
- Management area is from 3 to 200 nautical miles off the coasts of North Carolina, South Carolina, Georgia, and east Florida through Key West, except for mackerel which is from New York to Florida, and dolphin and wahoo, which is from Maine to Florida.

1.2. Who is Proposing the Actions?

The South Atlantic Fishery Management Council (Council) is responsible for managing snapper grouper stocks in the South Atlantic region. Guided by the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), the Council works with the National Marine Fisheries Service (NMFS), other partners, and stakeholders to assess the status of fish stocks, specify ACLs, reduce bycatch, and enforce fisheries regulations. NMFS is an agency of the National Oceanic and Atmospheric Administration within the Department of Commerce. The Council develops the amendment and sends it to NMFS, who determines whether to approve the amendment. If approved, NMFS publishes a rule to implement the amendment on behalf of the Secretary of Commerce.

The Council and NMFS are also responsible for making this amendment available for public comment. The draft environmental assessment (EA) was combined with the amendment and was made available to the public during the scoping process, public hearings, and in Council meeting briefing books. The final EA and amendment will be made available for public comment during the proposed rule stage of the rulemaking process. The final EA and amendment will be found on the Council's website at http://www.safmc.net.

1.3. Where is the Project Located?

Management of the federal snapper grouper fishery located off the southeastern United States (South Atlantic) in the 3-200 nautical miles U.S. exclusive economic zone (EEZ) is conducted

under the Snapper Grouper FMP (SAFMC 1983) (Figure 1.3.1). There are fifty-five species managed by the Council under the Snapper Grouper FMP.

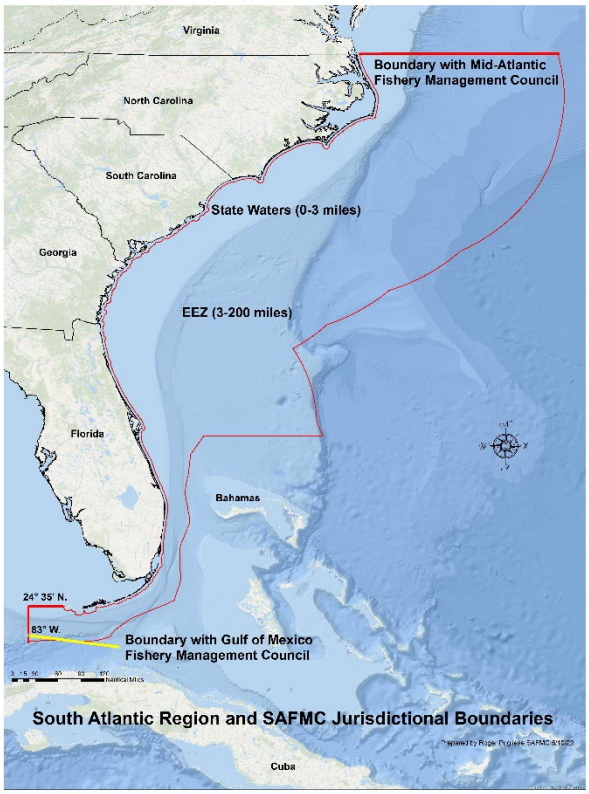


Figure 1.3.1. Jurisdictional boundaries of the Council.

1.4. Why are the Council and NMFS Considering Action? (Purpose and Need)

Purpose: The *purpose* of this framework amendment is to revise the gag and black grouper recreational vessel limits and ~~revise black sea bass commercial pot requirements to accommodate the use of on-demand pots~~ specify requirements for on-demand pots while transiting through closed areas.

Need: The *need* for this framework amendment is to make recreational vessel limits for gag and black grouper consistent with the goals of the aggregate bag limit for both species and rebuilding of the South Atlantic gag stock, and to allow ~~the~~ more practical transit of a new fishing gear modification that lowers the probability of negative interactions with marine mammals, while minimizing negative social and economic effects to the extent practicable, consistent with the Magnuson-Stevens Fishery Conservation and Management Act and its National Standards.

Background

In March 2023, the South Atlantic Fishery Management Council (Council) approved Amendment 53 to the Fishery Management Plan (FMP) for the Snapper Grouper Fishery of the South Atlantic Region (Snapper Grouper FMP) and its implementing regulations were effective

October 23, 2023. Amendment 53 established recreational vessel limits of two fish per vessel per day or per trip (depending on private recreational or for-hire component) of gag and black grouper. After additional consideration, the Council expressed interest in revising these regulations to be aggregate limits of two gag or black grouper per vessel, rather than the species-specific two-fish vessel limits. This regulatory change would help rebuild the South Atlantic gag stock (which is overfished and was experiencing overfishing at the conclusion of the 2021 stock assessment, SEDAR 71). The change would also better align with the recreational bag limit, which allows one gag or black grouper per person.

In August 2023, a workshop was held to discuss the experimental use of on-demand (ropeless) pot gear in the commercial black sea bass portion of the fishery. Traditional black sea bass pot fishing gear includes vertical end lines and buoys which stay in the water column for hours while the gear is deployed, presenting an entanglement risk to cetaceans and other protected species. Traditional roped and on-demand gear use the same black sea bass pots (same dimensions, mesh size, escape panels, etc.), and pots equipped with on-demand gear are fished the same way as roped pots, in terms of soak times, bait, etc. On-demand, or ropeless, types of gear differ from roped gear by storing buoys and their retrieval devices at depth, existing in the water column only when fishers are present to retrieve the gear. Adaptation of on-demand gear for this style of pot fishing would lower the probability of negative interactions with whales and other marine animals that suffer entanglements. The exempted fishing permit (EFP) that has allowed experimental use of this gear and exemption from time, area, and other black sea bass pot requirements (See Appendix A) expires on April 30, 2025.

In September 2023, the Council discussed the continued use of on-demand pot gear beyond the EFP time period. The Council recognizes that the EFP allows this gear to experimentally operate in nearshore waters of the southeast U.S. during winter months, when North Atlantic right whales migrate through that area. Opening this area that is currently closed to commercial pot gear would require more extensive evaluation and discussion. An additional complication is that the results of the SEDAR 76 stock assessment indicate the South Atlantic black sea bass stock is at historically low levels. However, revisions to stowage or other requirements could be addressed more immediately through a framework amendment. During scoping and initial review of how current black sea bass pot requirements apply to those with on-demand gear, black sea bass pot fishermen that participated in the EFP study commented that due to the construction of the on-demand gear, it would be difficult and time-consuming to remove and reattach the buoy upon retrieval and deployment, respectively, beyond the time and effort necessary for traditional roped retrieval gear. With the differences in stowage requirements depending on the type of closed area (see section 2.2), the fishermen and Council noted a potential alternative indicator that the gear was not actively being used: storing the buoy within the pot. Commercial fishermen indicated this is more easily done. Therefore, the Council decided to consider regulatory changes to transit stowage requirements (or exemptions to such requirements) that would allow more practical use of on-demand pots in areas currently open to commercial pot fishing in Regulatory Amendment 36.

1.5. What is the Management History for Gag, Black Grouper, and Black Sea Bass?

Management of the South Atlantic snapper grouper fishery was established through the Snapper Grouper FMP in 1983. More information about management for all species in the snapper grouper fishery management unit may be found at https://safmc.net/fishery-management-plans/snapper-grouper/. Stock assessment information can be found at www.sedarweb.org and Section 3.2.1. Below are select amendments to the Snapper Grouper FMP that are relevant to consideration of recreational retention of gag and black grouper and changes to commercial black sea bass pot requirements.

Snapper Grouper FMP (SAFMC 1983)
The Snapper Grouper FMP included provisions to prevent growth overfishing in thirteen species in the snapper grouper complex and established a procedure for preventing overfishing in other species; established minimum size limits for red snapper, yellowtail snapper, red grouper, Nassau grouper, and black sea bass; established a 4-inch trawl mesh size to achieve a 12-inch total length (TL) minimum size limit for vermilion snapper; and included additional harvest and gear limitations.

Amendment 4 (SAFMC 1991)
Amendment 4 established permit, gear, and vessel identification requirements for black sea bass pots. The amendment also established a 20-inch total length minimum size limit for gag and black grouper and an aggregate grouper recreational bag limit (which included gag and black grouper) of five fish per person per day.

Emergency Rule (1992)
This emergency rule temporarily modified the definition of a black sea bass pot, allowed multi-gear trips for black sea bass, and allowed retention of incidentally-caught fish on black sea bass trips.

Regulatory Amendment 4 (1993)
This framework amendment modified the definition of a black sea bass pot, allowed multi-gear trips for black sea bass, and allowed retention of incidentally-caught fish on black sea bass trips.

Amendment 9 (1999a)
The amendment increased the gag and black grouper minimum size limit for both sectors to 24 in TL and established no harvest or possession greater than the bag limit, and no purchase or sale, during March and April for both species. The amendment also stated that within the 5-fish aggregate grouper bag limit, no more than two fish may be gag or black grouper (individually or in combination).

For black sea bass, the amendment implemented a 10-inch minimum size limit for both sectors, a 20 fish recreational bag limit, and required escape vents and escape panels with degradable fasteners in black sea bass pots.

Amendment 13C (2006)
The amendment revised commercial and recreational quotas for black sea bass, required the use of at least 2-inch mesh for the entire back panel of black sea bass pots, required black sea bass pots be removed from the water when the quota is met, and changed the commercial fishing year to June 1 through May 31.

Amendment 16 (2009a)
The amendment established a shallow-water grouper spawning season closure from January 1 to April 30 and the 51% commercial and 49% recreational allocations. It also set a commercial quota for gag that when met, closed the shallow-water grouper complex.

Amendment 18A (2012)
The amendment defined a rebuilding strategy and catch levels for black sea bass, established a limited access commercial black sea bass pot endorsement, revised identification requirements for pots, limited the number of pots to 35 per vessel, and required that all pots must be brought back to shore at the conclusion of each trip.

Regulatory Amendment 19 (2013)
The framework amendment adjusted black sea bass catch levels and established an annual prohibition on the use of black sea bass pots from November 1 through April 30 to minimize interactions between pots and large whale migrations.

Regulatory Amendment 22 (2015)
The framework amendment reduced the recreational bag limit to one gag or black grouper per person per day within the shallow-water grouper complex as well adjusting the ACL and annual OY.

Regulatory Amendment 16 (2016)
The amendment modified the annual black sea bass pot closure from November 1 through April 30 to November 1-30 and April 1-30 each year for waters inshore of designated points around Daytona Beach to Cape Hatteras. From December 1 through March 31, the closure applies to waters inshore of designated points around Cape Canaveral to Cape Hatteras.

Amendment 53 (2023)
The amendment established a rebuilding plan and adjusted catch levels, sector allocations, management measures for the commercial and recreational sectors, and accountability measures (AM) for gag. Recreational management measures were also adjusted for black grouper. Recreational management measure changes included establishment of recreational vessel limits for gag and black grouper.

Chapter 2. Proposed Actions

2.1. Action 1. Revise Recreational Vessel Limits for Gag and Black Grouper

2.1.1. Alternatives

Alternative 1 (No Action). The vessel limits for the private component of the recreational sector are two gag per vessel per day and two black grouper per vessel per day, not to exceed the daily bag limit of one gag or black grouper per person per day, whichever is more restrictive. The vessel limits for the for-hire (charter and headboat) component of the recreational sector are two gag per vessel per trip and two black grouper per vessel per trip, not to exceed the daily bag limit of one gag or black grouper per person per day, whichever is more restrictive.

Alternative 2. Remove the single species recreational private vessel limits for gag and black grouper. Establish an aggregate **private recreational vessel limit** of two gag or black grouper per vessel per day, not to exceed the daily bag limit of one gag or black grouper per person per day, whichever is more restrictive.

Alternative 3. Remove the single species recreational for-hire vessel limits for gag and black grouper. Establish an aggregate **for-hire (charter and headboat) recreational vessel limit** of two gag or black grouper per vessel per trip, not to exceed the daily bag limit of one gag or black grouper per person per day, whichever is more restrictive.

Discussion

Recreational retention of gag and black grouper is limited by vessel limits (two gag per vessel and two black grouper per vessel) and aggregate bag limits. The aggregate grouper and tilefish bag limit allows retention of three fish of any grouper or tilefish species per person, subject to retention limits of individual species. The aggregate gag and black grouper bag limit allows retention of one fish of either gag or black grouper per person. Retention of a gag or black grouper would also count toward the aggregate grouper and tilefish bag limit.

2.1.2. Comparison of Alternatives

Alternatives 2 and **3** would be expected to result in reduced landings per trip of gag and black grouper, increased dead releases of both species, and a longer recreational season for gag (noting that recent black grouper seasons have not been limited by recreational landings exceeding the recreational ACL; see Appendix F). The positive biological benefits from reduced landings per trip are expected to outweigh the negative biological effects from potential increases in dead releases. Therefore, **Alternatives 2** and **3** are expected to provide greater biological benefits than **Alternative 1 (No Action)**.

With reduced landings per trip, **Alternatives 2** and **3** are expected to have fewer economic benefits than **Alternative 1 (No Action)** for each of the private and for-hire components of the recreational sector. The difference in economic benefit from **Alternative 1 (No Action)** is

expected to be greater (i.e. more negative) for the private component (**Alternative 2**) than for the for-hire component (**Alternative 3**).

Social effects on the private and for-hire components of the recreational sector will depend on individual community preferences for catch levels versus season length. **Alternative 1 (No Action)** would provide the greatest social benefits for communities that value more retained catch over a longer season. **Alternatives 2** and **3** would provide the greatest social benefits for communities that value a longer season over more retained catch. Fishery participants on vessels that hold larger numbers of anglers (e.g. headboats) are likely to experience stronger negative social effects under **Alternative 3** due to fewer gag and black grouper that can be retained on a per angler basis.

Alternatives 2 and **3** could increase administrative burdens relative to **Alternative 1 (No Action)** due to necessary investments to promote compliance with and enforcement of new regulations. The new regulations under either alternative would not be outside the range of regulations currently enforced in the region.

2.2. Action 2. Revise Transit Stowage Requirements for Black Sea Bass Pots With On-Demand Gear

2.2.1. Alternatives

Alternative 1 (No Action). Transit through a marine protected area (MPA), special management zone (SMZ), or spawning SMZ with a black sea pot on board is allowed with fishing gear appropriately stowed. Transit means direct, non-stop progression through the MPA, SMZ, or spawning SMZ. Fishing gear appropriately stowed means a sea bass pot is not baited and all buoys must be disconnected from the gear; however, buoys may remain on deck.

Alternative 2. On-demand black sea bass pots must be not baited, but may have buoys connected to the gear during transit through a marine protected area, special management zone, or spawning special management zone.

Alternative 3. On-demand black sea bass pots must be not baited and buoys must be disconnected from the gear or stowed within the sea bass pot during transit through a marine protected area, special management zone, or spawning special management zone.

Discussion

Under current regulations, buoys are required to be disconnected from pots while transiting through a marine protected area (MPA), special management zone (SMZ), or spawning SMZ [50 CFR 622.183(a)(2)(vii)]. Preliminary input from on-demand black sea bass pot users under the current EFP indicates that buoys are more difficult to disconnect from on-demand gear than traditional, roped gear. Therefore, revision of the transit stowage requirements is being considered to accommodate more practical use of on-demand gear. **Alternative 2** would remove the requirement that buoys be disconnected from the gear while transiting through MPAs, SMZs, and spawning SMZs, for on-demand black sea bass pots.

Under current regulations, while transiting through one of the seasonally closed areas, buoys are required to be disconnected or can remain connected to the pot if the buoy is stowed within the pot [50 CFR 622.183(b)(6)]. **Alternative 3** considers application of this requirement for on-demand black sea bass pots in MPAs, SMZs, and spawning SMZs, as well.

2.2.2. Comparison of Alternatives

None of the alternatives proposed under Action 2 are expected to significantly change catch or harvest of black sea bass from current levels. This action addresses only the legal transport of gear (black sea bass pots) that is currently allowed. All black sea bass pots, whether roped or on-demand, remain subject to the same requirements for the pot itself.

Because **Alternatives 2** and **3** are not expected to impact black sea bass harvest, no direct biological effects on black sea bass would be expected to result from either of these alternatives being implemented. Indirect biological effects are potentially expected for North American right whales and other marine mammals, if revising transit requirements encourages more prominent use of on-demand gear and reduces the probability of marine mammal entanglements with black sea bass pot gear.

Some economic benefits could be realized under **Alternatives 2** or **3** for fishermen that use on-demand gear, as less time would need to be spent dismantling or setting up gear when being transported or deployed under either of these alternatives.

Alternatives 2 or **3** would have social benefits of making transit requirements for on-demand gear more practical for commercial fisherman. Additionally, if on-demand gear use becomes more prominent in the black sea bass pot fishery, this could contribute to the recovery of endangered marine mammal populations, providing associated societal benefits.

Alternatives 2 and **3** could increase administrative burdens relative to **Alternative 1 (No Action)** due to necessary investments to promote compliance with and enforcement of new regulations. The new regulations under either alternative would not be outside the range of regulations currently enforced in the region. Indirectly, if **Alternatives 2** or **3** contribute to an increased use of on-demand gear, administrative burdens could increase in the short-term as law enforcement priorities for the black sea bass pot fishery shift to an increased number of pots that are not visible or accessible for law enforcement without the fisherman being present.

Chapter 3. Affected Environment

This section describes the affected environment in the proposed project area. The affected environment is divided into six major components:

- **Habitat Environment** (Section 3.1)
- **Biological and Ecological Environment** (Section 3.2)
- **Economic Environment** (Sections 3.3)
- **Social Environment** (Section 3.4)
- **Environmental Justice** (Section 3.5)
- **Administrative Environment** (Section 3.6)

3.1. Habitat Environment

Information on the habitat utilized by species managed under the Fishery Management Plan (FMP) for the Snapper Grouper Fishery of the South Atlantic Region (Snapper Grouper FMP) is included in Volume II of the Fishery Ecosystem Plan (FEP; SAFMC 2009b) which is incorporated here by reference. The South Atlantic Fishery Management Council (Council) designated essential fish habitat (EFH) and EFH-Habitat Areas of Particular Concern (HAPC) are presented in the SAFMC User Guide and spatial representations of these and other habitat related layers are within the Council's SAFMC Atlas.

3.1.1. Essential Fish Habitat

EFH is defined in the 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 ft (but to at least 2,000 ft 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 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-ft) 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 HAPC; all hermatypic coral habitats and reefs; manganese outcroppings on the Blake Plateau; Council-designated Artificial Reef Special Management Zones (SMZs); and deep water marine protected areas. Areas that meet the criteria for EFH-HAPCs include habitats required during each life stage (including egg, larval, postlarval, juvenile, and adult stages).

The Council established the SMZ designation process in 1983 in the Snapper Grouper FMP, and SMZs have been designated in federal waters off North Carolina, South Carolina, Georgia, and Florida since that time. The purpose of the original SMZ designation process, and the subsequent specification of SMZs, was to protect snapper grouper populations at the relatively small, permitted artificial reef sites and "create fishing opportunities that would not otherwise exist." Thus, the SMZ designation process was centered on protecting the relatively small habitats, which are known to attract desirable snapper grouper species.

Similarly, in the Comprehensive Ecosystem-Based Amendment 1 (CE-BA 1; SAFMC 2010), the Council has designated EFH areas and EFH-HAPCs under the Snapper Grouper FMP. Under the Magnuson-Stevens Act, FMPs are required to describe and identify EFH and to minimize the adverse effects of fishing on such habitat to the extent practicable. An EFH-HAPC designation adds an additional layer to the EFH designation. Under the Snapper Grouper FMP, EFH-HAPCs are designated based upon ecological importance, susceptibility to human-induced environmental degradation, susceptibility to stress from development, or rarity of habitat type. The Council determined in CE-BA 1 that the Council-designated SMZs met the criteria to be EFH-HAPCs for species included in the Snapper Grouper FMP. Since CE-BA 1, the Council has designated additional SMZs in the Snapper Grouper FMP including Spawning SMZs (SAFMC 2016). The SMZ and EFH-HAPC designations serve similar purposes in pursuit of identifying and

protecting valuable and unique habitat for the benefit of fish populations, which are important to both fish and fishers. Therefore, the Council determined that a designated SMZ meets the criteria for an EFH-HAPC designation, and the Council intends that all SMZs designated under the Snapper Grouper FMP also be designated as EFH-HAPCs under the Snapper Grouper FMP.

EFH-HAPCs for the snapper grouper complex include the following deep-water marine protected areas (MPA) as designated in Amendment 14 to the Snapper Grouper FMP: 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.

In addition to protecting habitat from fishing related degradation though fishery management plan regulations, the Council, in cooperation with National Marine Fisheries Service (NMFS), actively comments on non-fishing projects or policies that may impact essential fish habitat. With guidance from the Habitat Advisory Panel, the Council has developed and approved 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; alterations to riverine, estuarine and near shore flows; offshore aquaculture; and marine invasive species and estuarine invasive species.

3.2. Biological and Ecological Environment

The waters off the South Atlantic coast are home to a diverse population of fish. The fishery management unit (FMU) contains 55 species of fish, many of them neither “snappers” nor “groupers.” These species live in depths from a few feet (typically as juveniles) to hundreds of feet. As far as north/south distribution, the more temperate species tend to live in the upper reaches of the South Atlantic management area (e.g., black sea bass, red porgy) while the tropical variety’s core residence is in the waters off south Florida, Caribbean Islands, and northern South America (e.g., black grouper, mutton snapper). These are reef-dwelling species that live amongst each other. These species rely on the reef environment for protection and food. There are several reef tracts that follow the southeastern coast. The fact that these fish populations congregate dictates the nature of the fishery (multi-species) and further forms the type of management regulations proposed in this document.

3.2.1. Gag, *Mycteroperca microlepis*

Life History

Gag (*Mycteroperca microlepis*) occur in the Western Atlantic from North Carolina to the Yucatan Peninsula, and throughout the Gulf of Mexico. Juveniles are sometimes observed as far north as Massachusetts (Heemstra and Randall 1993). Gag commonly occur at depths of 39-152 m (131-498 ft) (Heemstra and Randall 1993) and prefer inshore-reef and shelf-break habitats (Hood and Schlieder 1992). Bullock and Smith (1991) indicated that gag probably do not move seasonally between reefs in the Gulf of Mexico, but show a gradual shift toward deeper water with age. McGovern et al. (2005) reported extensive movement of gag along the southeast U.S. In a tagging study, 23% of the 435 recaptured gag moved distances greater than 185 km. Most of these individuals were tagged off South Carolina and were recaptured off Georgia, Florida, and in the Gulf of Mexico (McGovern et al. 2005).

Gag Life History
An Overview

- Extend from North Carolina to the Florida Keys, and throughout the Gulf of Mexico to the Yucatan Peninsula
- Waters ranging from 131-498 ft
- Move more extensively in the South Atlantic than the Gulf of Mexico
- Spawning season is December-May
- Can live for at least 26 years

Gag are considered estuarine dependent (Keener et al. 1988; Ross and Moser 1995; Koenig and Coleman 1998; Strelcheck et al. 2003). Juveniles (age 0) occur in shallow grass beds along Florida's east coast during the late spring and summer (Bullock and Smith 1991). Sea grass is also an important nursery habitat for juvenile gag in North Carolina (Ross and Moser 1995). Post-larval gag enter South Carolina estuaries when they are 13 mm total length (TL) and 40 days old during April and May each year (Keener et al. 1988), and utilize oyster shell rubble as nursery habitat. Juveniles remain in estuarine waters throughout the summer and move offshore as water temperatures cool during September and October.

Huntsman et al. (1999) indicated that gag are vulnerable to overfishing since they are long-lived, change sex, and aggregate to spawn. Maximum reported size for gag is 145 cm (57.5 in) TL and 36.5 kg (81 lbs) (Heemstra and Randall 1993), and maximum reported age is 26 years (Harris and Collins 2000). Most gag are females at lengths less than 87.5 cm (34.7 in) TL. As they grow, females change to males with 50% of the fish being males at 105 cm (41.6 in) TL and almost 100% males at lengths greater than 120 cm (47.5 in) TL (McGovern et al. 1998).

Along the southeastern U.S. (1994-1995), size at first maturity is 50.8 cm (20.2 in) TL, and 50% of gag females are sexually mature at 62.2 cm (24.7 in) (McGovern et al. 1998). According to Harris and Collins (2000), age-at-first-maturity is 2 years, and 50% of gag are mature at 3 years. For data that were collected during 1978-1982 off the southeastern U.S., McGovern et al. (1998) reported that the smallest mature females were 58 cm (22.9 in) TL and 3 years old. Hood and Schlieder (1992) indicated that most females reach sexual maturity at ages 5-7 in the Gulf of

Mexico. Off the southeastern U.S., gag spawn from December through May, with a peak in March and April (McGovern et al. 1998). Duration of planktonic larvae is about 42 days (Keener et al. 1988, Koenig and Coleman 1998, Lindeman et al. 2000). McGovern et al. (1998) reported that the percentage of male gag landed by commercial fishermen decreased from 20% during 1979-1981 to 6% during 1995-1996. This coincided with a decrease in the mean length of fish landed. A similar decrease in the percentage of males was reported in the Gulf of Mexico (Hood and Schleider 1992, Coleman et al. 1996).

Adults are sometimes solitary, or can occur in groups of 5 to 50 individuals, especially during the spawning season. They feed primarily on fishes, but also prey on crabs, shrimps, and cephalopods (Heemstra and Randall 1993), and often forage in small groups far from the reef ledge (Bullock and Smith 1991). Juveniles feed primarily on crustaceans, and begin to consume fishes when they reach about 25 mm (1 in) in length (Bullock and Smith 1991, Mullaney 1994).

Stock Status

The SEDAR process is a cooperative Fishery Management Council initiative to improve the quality and reliability of fishery stock assessments in the South Atlantic, Gulf of Mexico, and U.S. Caribbean. The Caribbean, Gulf of Mexico, and South Atlantic Fishery Management Councils manage SEDAR in coordination with the National Marine Fisheries Service (NMFS) and the Atlantic and Gulf States Marine Fisheries Commissions. SEDAR seeks improvements in the scientific quality of stock assessments, constituent and stakeholder participation in assessment development, transparency in the assessment process, and a rigorous and independent scientific review of completed stock assessments.

SEDAR is organized around three workshops. First is the Data Workshop, during which fisheries monitoring and life history data are reviewed and compiled. Second is the Assessment Workshop, which may be conducted via a workshop and several webinars, during which assessment models are developed and population parameters are estimated using the information provided from the Data Workshop. Third and final is the Review Workshop, during which independent experts review the input data, assessment methods, and assessment products. The completed assessment, including the reports of all three workshops and all supporting documentation, are then forwarded to the Council's Scientific and Statistical Committee (SSC). The SSC considers whether the assessment represents the best available science and develops fishing level recommendations for Council consideration.

SEDAR workshops are public meetings organized by SEDAR. Workshop participants appointed by the lead Council are drawn from state and federal agencies, non-government organizations, Council members, Council advisors, and the fishing industry with a goal of including a broad range of disciplines and perspectives. All participants are expected to contribute to this scientific process by preparing working papers, contributing data, providing assessment analyses, evaluating and discussing information presented, and completing the workshop report.

In 2006, the gag stock was assessed through the SEDAR process as a benchmark assessment (SEDAR 10 2006). The assessment indicated that the stock was not overfished but was undergoing overfishing. The Council and NMFS implemented management measures, including

implementing a spawning season closure to end overfishing in Amendment 16 to the FMP (SAFMC 2009a).

In 2014, the gag stock was assessed through SEDAR 10 Update as a standard assessment. The assessment indicated that the gag stock was not overfished but was still experiencing overfishing. In response to SEDAR 10 Update, the Council and NMFS modified the annual catch limits and management measures through Regulatory Amendment 22 to the FMP (SAFMC 2015).

The most recent update assessment (SEDAR 71) was finalized in 2021, using data through 2019. The Council's SSC reviewed SEDAR 71 and determined that the assessment is based on the best scientific information available. The assessment's terminal year (2019) base-run estimate of spawning stock biomass (SSB) was below the minimum stock size threshold (MSST) (SSB2019/MSST=0.20), indicating that the stock is overfished (Figure 3.2.1.1). With the exception of a few years in the late 1990s and early 2000s, the estimated fishing rate has exceeded the maximum fishing mortality threshold (MFMT) since the mid-1980s. The estimated terminal year fishing mortality rate (F) based on a three-year geometric mean is above F_{MSY} ($F_{F2017-2019}/F_{MSY}$=2.15), indicating overfishing is occurring (Figure 3.2.1.1). Therefore, NMFS determined the South Atlantic gag stock is undergoing overfishing and remains overfished.

Landings

Table 3.2.1.1. South Atlantic gag recreational landings in pounds and number of fish for years 2018 to 2022.

Species	Year	Landings (lb)	Pound Units	Landings (# of fish)	Recreational Units
Gag	2018	440,410	gw	25,698	MRIP-FES
	2019	268,251	gw	22,186	MRIP-FES
	2020	157,008	gw	15,222	MRIP-FES
	2021	244,259	gw	16,223	MRIP-FES
	2022	137,701	gw	11,179	MRIP-FES

Source: SEFSC FES ACL Monitoring (Feb 2024).

The landings for gag have been variable in the last five years, with an overall declining trend (Figure 3.2.1.1.). The annual catch limit (ACL) for gag was reduced drastically in 2023 in response to the overfishing and overfished determinations based on the most recent stock assessment (SEDAR 71 2021). The ACL was exceeded in 2023, which has led to an updated ACL for 2024, which is referenced in Figure 3.2.1.1.

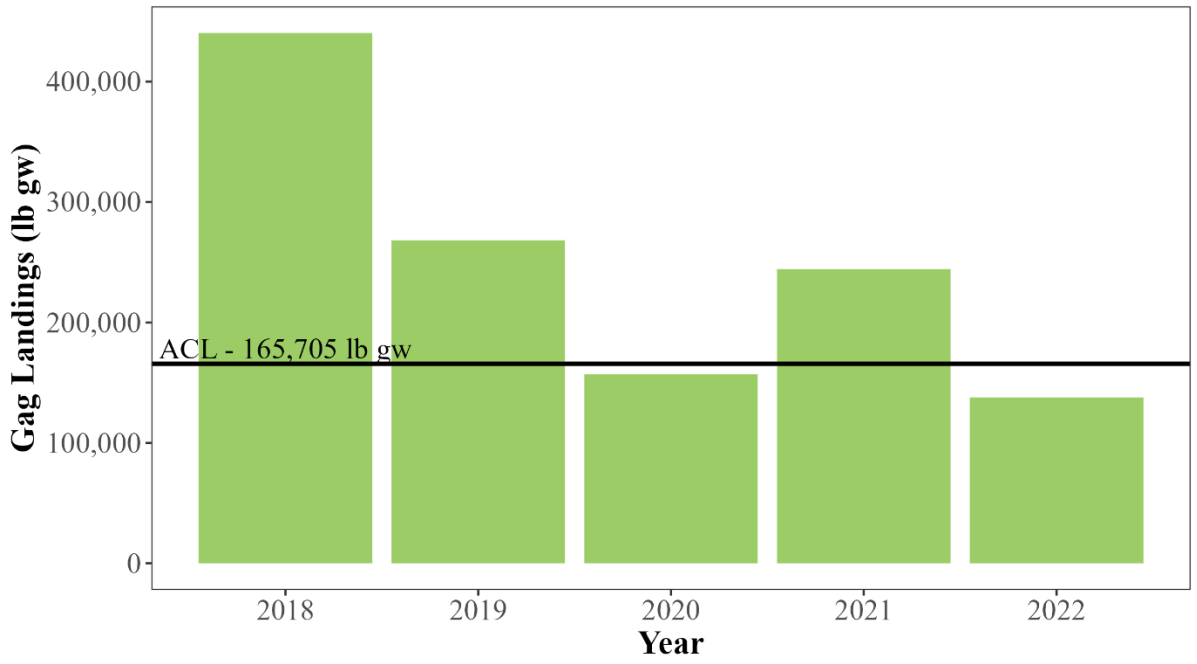


Figure 3.2.1.1. Annual gag recreational landings from 2018 through 2022 in pounds whole weight, using MRFSS units. The current recreational ACL is represented by a solid horizontal black line.
Data Source: SEFSC MRFSS ACL Monitoring (Feb 2024).

3.2.2. Black Grouper, *Mycteroperca bonaci*

Life History

Black grouper (*Mycteroperca bonaci*) in the southeastern U.S. (the northernmost part of their range) are found chiefly in southern Florida and the Florida Keys, although specimens have been recorded from Massachusetts to Texas. The range of black grouper extends to southeastern Brazil and east to Bermuda. They are often found associated with rocky ledges and coral reefs from 10-100 m. In the northern hemisphere, black grouper are more often caught in the southeastern Gulf of Mexico, southern Gulf of Mexico, and the Caribbean, and in spawning aggregations off the coast of Belize. In the southeastern U.S., black grouper are caught more commonly in the Florida Keys along the reef tract, and are caught along high relief areas in deeper waters off of the west coast of Florida to the Florida Middle Grounds and off the east coast of

Black Grouper Life History
An Overview

- Occur from southern Florida and the Florida Keys to southeastern Brazil and east to Bermuda
- Waters ranging from 33-328 ft
- Often found around rocky ledges and coral reefs
- Spawning season is February through April
- Can live for at least 33 years

Florida. Generally, larger and older individuals are caught more often in deeper waters (SEDAR 19 2010).

Limited tagging data suggests black groupers only move short distances. Natural mortality is thought to vary by age. Black grouper are protogynous hermaphrodites. The peak spawning season of black grouper based on back-calculated hatching dates of post larval fish is from February through April (SEDAR 19 2010).

Stock Status

The Gulf of Mexico and South Atlantic black grouper stock was most recently assessed through the SEDAR process in 2010 (SEDAR 19 2010). The assessment indicated that black grouper was not overfished nor experiencing overfishing as the biomass status was 1.40 ($SSB_{2008}/SSB_{F30\%SPR}$) and the exploitation status was 0.50 ($F_{current}/MFMT$). In addition, since that most recent assessment, black grouper has not been determined to be overfished nor subject to overfishing. Prior to 2010, black grouper was considered to be two separate South Atlantic and Gulf of Mexico stocks, however starting with SEDAR 19 (2010), South Atlantic and Gulf of Mexico black grouper has been treated as a single stock.

Landings

Black grouper commercial landings have been variable and have not met the commercial ACL in recent years (96,844 lbs ww; Table 3.2.2.1).

Table 3.2.2.1. South Atlantic black grouper recreational landings in pounds and number of fish for years 2018 to 2022.

Species	Year	Landings (lb)	Pound Units	Landings (# of fish)	Recreational Units
Black Grouper	2018	89,465	ww	7,175	MRFSS
	2019	21,642	ww	1,927	MRFSS
	2020	52,129	ww	4,851	MRFSS
	2021	59,855	ww	4,781	MRFSS
	2022	56,844	ww	4,745	MRFSS

Data Source: SEFSC MRFSS ACL Monitoring (Feb 2024).

The landings for black grouper have been variable in the last 5 years, with an overall declining trend, and have stayed below the recreational ACL (Figure 3.2.2.1).

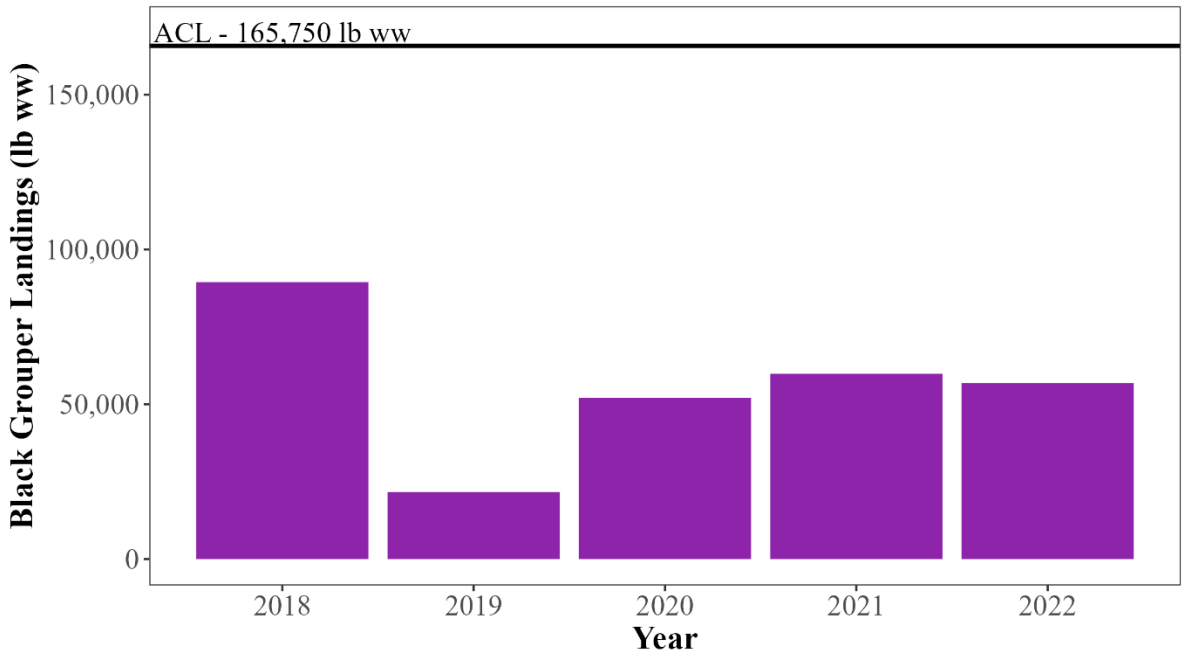


Figure 3.2.2.1. Annual black grouper recreational landings from 2018 through 2022 in pounds whole weight, using MRFSS units. The current recreational ACL is represented by a solid horizontal black line.
Data Source: SEFSC MRFSS ACL Monitoring (Feb 2024).

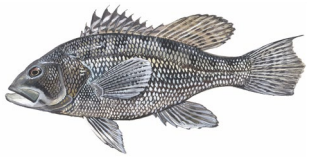
3.2.3. Black Sea Bass, *Centropristis striata*

Life History

Black sea bass, *Centropristis striata*, occur in the Western Atlantic, from Maine to northeastern Florida, and in the eastern Gulf of Mexico. The species can be found in extreme south Florida during cold winters (Robins and Ray 1986). Separate populations were reported to exist to the north and south of Cape Hatteras, North Carolina (Wenner et al. 1986; McCartney and Burton 2011). However, genetic similarities suggest that 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 m (7-394 ft). Most adults occur at depths from 20- 60 m (66-197 ft) (Vaughan et al. 1995).

Maximum reported size is 66.0 cm (26.1 in) TL and 3.6 kg (7.9 lbs) (McGovern et al. 2002). The minimum size and age of maturity for females studied off the southeastern U.S.

Black Sea Bass Life History
An Overview



- Occur from Maine to northeastern Florida and in the eastern Gulf of Mexico
- Waters ranging from 7-394 ft
- Common around rock jetties and on rocky bottoms in shallow water
- Spawning season is March through May and September through November
- Can live for at least 10 years

coast is 10 cm (3.6 in) standard length and age 0. All females are mature by 18 cm (7.1 in) standard length and age 3 (McGovern et al. 2002). Wenner et al. (1986) reported that spawning occurs from March through May in the South Atlantic Bight. McGovern et al. (2002) indicated that 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. Spawning takes place in the evening (McGovern et al. 2002). Black sea bass change sex from female to male (protogyny). McGovern et al. (2002) noted that the size at maturity and the size at transition of black sea bass was smaller in the 1990s than during the early 1980s. Black sea bass appear to compensate for the loss of larger males by changing sex at smaller sizes and younger ages.

In the eastern Gulf of Mexico and off North Carolina, females dominate the first 5-year classes. Individuals over the age of 5 are more commonly males. Black sea bass live for at least 10 years. The diet of this species is generally composed of shrimp, crab, and fish (Sedberry 1988). Sedberry (1988) indicated that black sea bass consume primarily amphipods, decapods, and fishes off the Southeastern United States. Smaller black sea bass ate more small crustaceans and larger individuals fed more on decapods and fishes.

Stock Status

South Atlantic black sea bass was previously listed as overfished throughout the 2000s, a 10-year rebuilding plan was implemented in 2006, and the stock was rebuilt in 2013. In 2018, SEDAR 56 showed the stock was not undergoing overfishing, and, although the stock was below the SSB_{MSY} threshold, it was not overfished. In 2023, the most recent assessment, SEDAR 76, used an updated version of the Beaufort Assessment Model with data through 2021. Changes to the model included natural mortality, discard mortality, correcting start dates for some selectivity time blocks, and domed shaped selectivity for the Southeast Reef Fish Survey trap index. The assessment results indicated that the stock is undergoing overfishing and is overfished. It suggested that black sea bass is overfished because SSB_{2021} of 81.5 trillion eggs is below MSST of 255 trillion eggs (SSB_{2021}/MSST = 0.32) and is subject to overfishing because $F_{2019\text{-}2021}$ (0.937) is greater than the MFMT (0.43).

Stock abundance declined until 1992, leveled off through the mid-2000s, and increased in 2008 through 2010 due to high recruitment. Since then, stock abundance has sharply declined because of below average recruitment, with the last eight years being the lowest recruitment in the time series. The declining stock biomass will likely continue if recruitment remains low. These years of low recruitment followed shortly after the change in the minimum size limit for the commercial fishery to 11 inches and for the recreational fishery to 13 inches. However, it is noted in SEDAR 76 that a lack of reported discards from the commercial fisheries could appear as recruitment failure in the assessment model. SEDAR 76 (2018) also notes that studies from other regions (Zemeckis et al. 2020; Schweitzer et al. 2020; Rudershausen et al. 2020) suggest the discard mortality rates assumed within SEDAR 76 (2018) are an underestimate. If true, the model used in SEDAR 76 (2018) would be treating a large portion of discarded fish as alive and able to be caught in the future, leading to an underestimated fishing mortality.

The last three stock assessments for black sea bass used a direct estimate of F_{msy} and B_{msy} - SEDAR 56 (2018), SEDAR 25 update (2013), and SEDAR benchmark (SEDAR 25 2011).

At its February 2024 meeting, the Council's SSC recommended using proxy values for reference points so that discard mortality could be appropriately captured in the stock assessment, as well as to set appropriate catch levels going forward. Using $F_{40\%}$ and $B_{40\%}$, the SSC recommended the overfishing status be revised to not subject to overfishing but still overfished. The SSC also identified the magnitude of black sea bass discards relative to landings as a significant issue and identified bycatch as the primary source of overall removal rates. The SSC noted that high levels of bycatch for black sea bass are severely hindering rebuilding.

Landings

Table 3.2.3.1. South Atlantic black sea bass commercial landings for fishing years 2018 to 2022.

Species	Year	Landings (lb)	Pound Units	ACL	ACL (%)
Black Sea Bass	2018	249,298	ww	755,274	33.0
	2019	199,064	ww	326,800	60.9
	2020	80,643	ww	287,670	28.0
	2021	71,535	ww	276,490	25.9
	2022	84,158	ww	276,490	30.4

Source: SEFSC Commercial ACL dataset.

3.2.4. Protected Species

NMFS manages marine protected species in the Southeast region under the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA). There are 29 ESA-listed species or distinct population segments (DPS) of marine mammals, sea turtles, fish, and corals managed by NMFS that may occur in federal waters of the South Atlantic or Gulf of Mexico. There are 91 stocks of marine mammals managed within the Southeast region plus the addition of the stocks such as North Atlantic right whales (NARW), humpback, sei, fin, minke, and blue whales that regularly or sometimes occur in Southeast region managed waters for a portion of the year (Hayes et al. 2017). All marine mammals in U.S. waters are protected under the MMPA. The MMPA requires that each commercial fishery be classified by the number of marine mammals they seriously injure or kill. NMFS's List of Fisheries (LOF)[1] classifies U.S. commercial fisheries into three categories based on the number of incidental mortality or serious injury they cause to marine mammals.

Five of the marine mammal species (sperm, sei, fin, blue, and NARW) protected by the MMPA, are also listed as endangered under the ESA. In addition to those five marine mammals, six species or DPSs of sea turtles [green (the North Atlantic DPS and the South Atlantic DPS), hawksbill, Kemp's ridley, leatherback, and the Northwest Atlantic DPS of loggerhead]; nine species or DPSs of fish (the smalltooth sawfish; five DPSs of Atlantic sturgeon; Nassau grouper; oceanic whitetip shark, and giant manta ray); and seven species of coral (elkhorn coral, staghorn coral, rough cactus coral, pillar coral, lobed star coral, mountainous star coral, and boulder coral) are also protected under the ESA and occur within the action area of the snapper grouper fishery.

[1] https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-protection-act-list-fisheries

Portions of designated critical habitat for NARW, the Northwest Atlantic DPS of loggerhead sea turtles, and *Acropora* corals occur within the Council's jurisdiction.

NMFS completed a formal consultation and resulting biological opinion (Bi-Op) on the conservation regulations under the ESA and the authorization of the South Atlantic snapper grouper fishery in federal waters under the Magnuson-Stevens Act, including the fishery managed by the Snapper Grouper FMP, on threatened and endangered species and designated critical habitat dated December 1, 2016. NMFS concluded that the activities addressed in the consultation are not likely to jeopardize the continued existence of any threatened or endangered species, including the North Atlantic right whale, loggerhead sea turtle Northwest Atlantic DPS, leatherback sea turtle, Kemp's ridley sea turtle, green sea turtle North Atlantic DPS, green sea turtle South Atlantic DPS, hawksbill sea turtle, smalltooth sawfish U.S. DPS, or Nassau grouper.

Since completing the December 2016 Bi-Op, NMFS published several final rules that listed additional species and designated critical habitat. On January 22, 2018, the giant manta ray (*Manta birostris*) was listed as threatened under the ESA, effective February 21, 2018. On January 30, 2018, the oceanic whitetip shark (*Carcharinus longimanus*) was listed as threatened under the ESA, effective March 1, 2018. Giant manta rays and oceanic whitetip sharks are found in the South Atlantic exclusive economic zone (EEZ) and may be affected by the subject fishery via incidental capture in snapper grouper fishing gear. NMFS has reinitiated formal consultation to address these listings and concluded the authorization of the South Atlantic snapper grouper fishery in federal waters during the re-initiation period will not violate ESA Sections 7(a)(2) or 7(d). For summary information on the protected species that may be adversely affected by the snapper grouper fishery and how they are affected refer to Section 3.2.5 in Vision Blueprint Commercial Regulatory Amendment 27 to the Snapper Grouper FMP (SAFMC 2019).

For additional information on North Atlantic right and humpback whales, including range, abundance and population dynamics, threats, and ESA and MMPA listings histories, refer to Section 3.2.3 and Appendix M of Regulatory Amendment 16 (SAFMC 2016).

3.3. Economic Environment

3.3.1. Commercial Sector

Economic information pertaining to the commercial sector of the snapper grouper fishery is provided in the draft comprehensive commercial electronic logbook amendment (SAFMC 2024), Amendment 45 to the FMP (SAFMC 2023b), Liese (2023), and Buck (2018), and is incorporated herein by reference. Select updates to this information specific to black sea bass are provided below. The major sources of data summarized in this section are the NMFS Southeast Regional Office (SERO) Permits Information Management System (PIMS) and the Southeast Fisheries Science Center (SEFSC) Social Science Research Group (SSRG) Socioeconomic Panel[2] data set.

[2] This data set is compiled by the SEFSC Social Science Research Group from Federal Logbook System data, supplemented by average prices calculated from the Accumulated Landings System. Because these landings are self-reported, they may diverge slightly from dealer-reported landings presented elsewhere. Additionally, landings for all species in the SEFSC-SSRG Socioeconomic Panel data are expressed in gutted weight to provide one unit for all species.

Inflation adjusted values are reported in 2023 dollars, through application of the annual, not seasonally adjusted GDP implicit price deflator provided by the U.S. Bureau of Economic Analysis.

Permits

Any fishing vessel that harvests and sells any of the snapper grouper species from the South Atlantic exclusive economic zone (EEZ) must have a valid South Atlantic commercial snapper grouper permit, which is a limited access permit. As of August 26, 2021, there were 579 valid or renewable[3] South Atlantic Snapper Grouper unlimited permits and 112 valid or renewable 225-lb trip-limited permits. In addition to a valid Snapper Grouper unlimited permit, vessels that use black sea bass pots in federal waters must have a valid South Atlantic sea bass pot endorsement. There were 31 valid or renewable sea bass pot endorsements as of August 26, 2021. Finally, commercial harvest of snapper grouper species in the EEZ may only be sold to dealers with a federal dealer permit. As of August 26, 2021, there were 379 entities with a federal Gulf and South Atlantic Dealers permit.

Landings, Value, and Effort

The number of federally permitted commercial vessels that landed South Atlantic black sea bass declined steadily from 2018 through 2022 (Table 3.3.1.1). Annual landings of black sea bass also experienced a strong downward trend during this period, with an overall decline of approximately 70%. Although not shown in the table, 57% of all black sea bass landings, on average (2018 through 2022), were harvested using trap/pot gear, while most of the remainder were harvested by handlines or bandit reels. On average (2018 through 2022), vessels that landed black sea bass did so on approximately 25% of their South Atlantic trips and this species accounted for approximately 13% of revenue on such trips. Additionally, black sea bass landings comprised 3.5% of average annual all species revenue (2018 through 2022) for these vessels, including revenue from Gulf of Mexico trips (Table 3.3.1.1 and Table 3.3.1.2). Average all species vessel-level revenue for black sea bass harvesters decreased steadily from 2018 through 2021, then bounced back to a 5-year high in 2022 (Table 3.3.1.2). The average annual price per lb gw for black sea bass during this period was $3.82 (2023 dollars). Although not shown in the table, the maximum annual revenue from all species reported by a single one of the vessels that harvested black sea bass from 2018 through 2022 was $394,668 (2023 dollars).

Liese (2023)[4] generated annual vessel-level estimates of costs (as a percentage of revenue) and net revenue from operations for vessels that harvested black sea bass in the South Atlantic. Estimates of producer surplus (PS) can be calculated from the cost information contained in Liese (2023) in conjunction with estimates of annual revenue from the SEFSC-SSRG Socioeconomic Panel. PS is total annual revenue minus the costs for fuel, other supplies, hired crew, and the opportunity cost of an owner's time as captain. Net revenue from operations, which most closely represents economic profits to the owner(s), is total annual revenue minus the costs for fuel, other supplies, hired crew, vessel repair and maintenance, insurance, overhead, and the opportunity cost of an owner's time as captain, as well as the vessel's depreciation.

[3] A renewable permit is an expired limited access permit that cannot be actively fished, but can be renewed for up to one year after expiration.

[4] This report is available via the NOAA repository: https://repository.library.noaa.gov/view/noaa/56480

According to Liese (2023), PS for commercial vessels that harvested South Atlantic black sea bass was approximately 29.7% of their annual gross revenue, on average, from 2014 through 2018. Net revenue from operations was -1.9% of their annual gross revenue, on average, during this period. Applying these percentages to the results provided in Table 3.3.1.2 would result in an estimated per vessel average annual PS of $19,973 (2023 dollars) and an average annual net revenue from operations of -$1,278 per year. It is important to note that the net revenue from operations estimate included in Liese (2023) considers implicit costs in its calculation, namely the opportunity cost of an owner's time as captain and vessel depreciation. As a result, the negative value for net revenue presented here does not necessarily mean the average business is operating at a loss in an accounting sense, but rather, the owner is not being fully compensated for their time or asset depreciation when compared to the next best use of their labor and capital resources. In other words, the data suggest that the average owner's time and vessel would generate greater returns doing something else.

Liese (2023) also provides annual trip-level estimates of costs (as a percentage of trip revenue) and trip net revenue for vessels that harvested black sea bass in the South Atlantic. According to Liese (2023), labor, including both hired and owner's time, consumed 52.9% of trip revenue and fuel and supplies consumed 23.4%, leaving a trip net revenue margin of 23.7%, on average, from 2014 through 2018.

Table 3.3.1.1. Number of vessels, number of trips, and landings (lbs gw) by year for South Atlantic black sea bass.

Year	# of vessels that caught black sea bass (> 0 lbs gw)	# of trips that caught black sea bass	black sea bass landings (lbs gw)	Other species' landings jointly caught w/ black sea bass (lbs gw)	# of South Atlantic trips that only caught other species	Other species' landings on South Atlantic trips w/o black sea bass (lbs gw)	All species landings on Gulf trips (lbs gw)
2018	199	1,593	203,873	862,161	4,026	2,686,354	35,026
2019	194	1,459	158,262	688,789	4,150	2,662,200	26,783
2020	165	1,042	61,040	501,162	3,414	2,189,514	64,445
2021	137	879	45,567	404,201	2,827	1,761,166	35,419
2022	135	900	61,666	430,917	2,994	2,099,226	2,407
Average	166	1,175	106,082	577,446	3,482	2,279,692	32,816

Source: SEFSC-SSRG Socioeconomic Panel (January 2024 version).
Note: South Atlantic trips refer to trips taken in Council jurisdictional waters and Gulf trips refer to trips taken in Gulf of Mexico Fishery Management Council jurisdictional waters.

Table 3.3.1.2. Number of vessels and ex-vessel revenues by year (2023 dollars) for South Atlantic black sea bass.

Year	# of vessels that caught black sea bass (> 0 lbs gw)	Dockside revenue from black sea bass	Dockside revenue from 'other species' jointly caught w/ black sea bass	Dockside revenue from 'other species' caught on South Atlantic trips w/o black sea bass	Dockside revenue from 'all species' caught on Gulf trips	Total dockside revenue	Average total dockside revenue per vessel
2018	199	$847,505	$3,756,587	$8,936,279	$95,876.20	$13,636,248	$68,524
2019	194	$624,752	$3,040,103	$9,205,154	$56,757.35	$12,926,767	$66,633
2020	165	$221,273	$2,246,512	$7,737,071	$160,300.49	$10,365,157	$62,819
2021	137	$167,604	$1,685,321	$6,349,212	$161,880.56	$8,364,018	$61,051
2022	135	$228,749	$1,924,498	$8,264,006	$7,880.12	$10,425,134	$77,223
Average	166	$417,977	$2,530,604	$8,098,345	$96,539	$11,143,465	$67,250

Source: SEFSC-SSRG Socioeconomic Panel (January 2024 version).

Imports

Imports of seafood products compete in the domestic seafood market and have in fact dominated many segments of the seafood market. Imports affect the price for domestic seafood products and tend to set the price in the market segments in which they dominate. Seafood imports have downstream effects on the local fish market. At the harvest level for snapper and grouper species, imports affect the returns to fishermen through the ex-vessel prices they receive for their landings. As substitutes to the domestic production of snapper and grouper species, imports tend to cushion the adverse economic effects on consumers resulting from a reduction in domestic landings. The following describes the imports[5] of fish products that directly compete with the domestic harvest of black sea bass, including snappers, groupers, and sea bass. Import data for black sea bass, in particular, are not available.

Imports of fresh snapper ranged from 30.5 million lbs product weight (pw) to 36 million lbs pw from 2018 through 2022. During this time, total revenue from fresh snapper imports ranged from approximately $115.2 million (2023 dollars) to $164.9 million. The average annual price per lb pw for fresh snapper ranged from $3.78 to $4.58 (2023 dollars). Imports of fresh snapper primarily originated in Mexico, Central America, or South America and entered the U.S. through the ports of Miami, Florida, New York, New York, and San Diego, California. On average (2018 through 2022), monthly imports of fresh snapper were mostly stable with a peak in July.

[5] NOAA Fisheries Service purchases fisheries trade data from the Foreign Trade Division of the U.S. Census Bureau. Data are available for download at https://www.fisheries.noaa.gov/national/sustainable-fisheries/foreign-fishery-trade-data

Imports of frozen snapper ranged from 11.4 million lbs pw to 18.2 million lbs pw during 2018 through 2022. The annual value of these imports ranged from $40.9 million (2023 dollars) to $73.9 million, with a peak in 2021. The average annual price per lb pw for frozen snapper ranged from $3.39 to $4.09 (2023 dollars). Imports of frozen snapper primarily originated in South America and entered the U.S. through the ports of Miami, Florida, New York, New York, and Tampa, Florida. On average (2018 through 2012), monthly imports of frozen snapper were greatest during the months of January, November, and December.

Imports of fresh grouper ranged from 10.4 million lbs pw to 12.4 million lbs pw from 2018 through 2022. During this time, total revenue from fresh grouper imports ranged from approximately $45.3 million (2023 dollars) to $65.4 million. The average annual price per lb pw for fresh grouper ranged from $4.36 to $5.59 (2023 dollars). Imports of fresh grouper primarily originated in Mexico, Central America, or South America and entered the U.S. through the ports of Miami, Florida, Tampa, Florida, and San Diego, California. On average (2018 through 2022), monthly imports of fresh grouper were mostly stable with a peak in July.

Imports of frozen grouper ranged from 0.8 million lbs pw to 4.6 million lbs pw during 2018 through 2022. The annual value of these imports ranged from approximately $1.7 million (2023 dollars) to $6.9 million, with a peak in 2018. The average annual price per lb pw for frozen grouper increased steadily from $1.5 in 2018 to $2.60 in 2021 and then decreased moderately in 2022 to $2.23 (2023 dollars). Imports of frozen grouper primarily originated in Mexico and India. The majority of frozen grouper imports entered the U.S. through the ports of Miami, Florida, Tampa, Florida, and New York, New York. On average (2018 through 2012), monthly imports of frozen grouper were greatest during the months of March, July, and November.

Imports of fresh sea bass ranged from 14.2 million lbs pw to 24.9 million lbs pw from 2018 through 2022. During this time, total revenue from fresh sea bass imports ranged from approximately $53.9 million (2023 dollars) to $106.3 million. The average annual price per lb pw for fresh sea bass ranged from $3.12 to $4.27 (2023 dollars). Imports of fresh sea bass primarily originated in Turkey, Greece, or Spain and entered the U.S. through the ports of New York, New York, Los Angeles, California, and Miami, Florida. On average (2018 through 2022), monthly imports of fresh sea bass were mostly stable with a peak in December.

Imports of frozen sea bass ranged from 1.4 million lbs pw to 2.8 million lbs pw during 2018 through 2022. The annual value of these imports ranged from approximately $4.4 million (2023 dollars) to $9.5 million, with a peak in 2021. The average annual price per lb pw for frozen sea bass ranged from $3.09 to $3.39 (2023 dollars). Imports of frozen sea bass primarily originated in Turkey, Taiwan, Argentina, Spain, and Greece. The majority of frozen sea bass imports entered the U.S. through the ports of New York, New York, Los Angeles, California, and Miami, Florida. On average (2018 through 2012), monthly imports of frozen sea bass were greatest during the months of January, May, July, and December.

Business Activity

The commercial harvest and subsequent sales and consumption of fish generate business activity as fishermen expend funds to harvest the fish and consumers spend money on goods and services, such as seafood purchased at a local fish market and served during restaurant visits. These expenditures spur additional business activity in the region(s) where the harvest and

purchases are made, such as jobs in local fish markets, grocers, restaurants, and fishing supply establishments. In the absence of the availability of a given species for purchase, consumers would spend their money on substitute goods, such as other finfish or seafood products, and services, such as visits to different food service establishments. As a result, the analysis presented below represents a distributional analysis only; that is, it only shows how economic effects may be distributed through regional markets and should not be interpreted to represent the impacts if these species are not available for harvest or purchase.

In addition to these types of impacts, economic impact models can be used to determine the sources of the impacts. Each impact can be broken down into direct, indirect, and induced economic impacts. "Direct" economic impacts are the results of the money initially spent in the study area (e.g., country, region, state, or community) by the fishery or industry being studied. This includes money spent to pay for labor, supplies, raw materials, and operating expenses. The direct economic impacts from the initial spending create additional activity in the local economy, i.e., "indirect" economic impacts. Indirect economic impacts are the results of business-to-business transactions indirectly caused by the direct impacts. For example, businesses initially benefiting from the direct impacts will subsequently increase spending at other local businesses. The indirect economic impact is a measure of this increase in business-to-business activity, excluding the initial round of spending, which is included in the estimate of direct impacts. "Induced" economic impacts are the result of increased personal income caused by the direct and indirect economic impacts. For example, businesses experiencing increased revenue from the direct and indirect impacts will subsequently increase spending on labor by hiring more employees, increasing work hours, raising salaries/wage rates, etc. In turn, households will increase spending at local businesses. The induced impact is a measure of this increase in household-to-business activity.

Estimates of the U.S. average annual business activity associated with the commercial harvest of black sea bass in the South Atlantic were derived using the model developed for and applied in NMFS (2024) and are provided in Table 3.3.1.3.[6] This business activity is characterized as jobs (full- and part-time), output impacts (gross business sales), income impacts (wages, salaries, and self- employed income), and value-added impacts, which represent the contribution made to the U.S. Gross Domestic Product (GDP). These impacts should not be added together because this would result in double counting. These results are based on average relationships developed through the analysis of many fishing operations that harvest many different species. Separate models to address individual species are not available. For example, the results provided here apply to a general "East Coast Groundfish" category, rather than just black sea bass, and a harvester job is "generated" for approximately every $39,535 (2023 dollars) in ex-vessel revenue. These results contrast with the number of harvesters (vessels) with recorded landings of black sea bass presented in Table 3.3.1.1.

Between 2018 and 2022, landings of South Atlantic black sea bass resulted in approximately $418,000 (2023 dollars) in gross revenue on average. In turn, this revenue generated employment,

[6] A detailed description of the input/output model is provided in NMFS (2011).

income, value-added, and output impacts of 45 jobs, $1.5 million, $2.2 million, and $4.2 million per year, respectively, on average (Tables 3.3.1.3).

Table 3.3.1.3. Average annual business activity (2018 through 2022) associated with the commercial harvest of black sea bass in the South Atlantic. All monetary estimates are in thousands of 2023 dollars.*

Harvesters	Direct	Indirect	Induced	Total
Employment impacts	8	1	2	11
Income impacts	223	45	102	370
Total value-added impacts	237	159	175	572
Output Impacts	418	356	340	1,115
Primary dealers/processors	**Direct**	**Indirect**	**Induced**	**Total**
Employment impacts	2	1	1	3
Income impacts	74	68	64	206
Total value-added impacts	78	87	121	286
Output impacts	237	179	236	652
Secondary wholesalers/distributors	**Direct**	**Indirect**	**Induced**	**Total**
Employment impacts	1	0	1	2
Income impacts	44	13	46	103
Total value-added impacts	47	22	79	147
Output impacts	117	43	153	314
Grocers	**Direct**	**Indirect**	**Induced**	**Total**
Employment impacts	3	0	1	4
Income impacts	90	30	45	166
Total value-added impacts	96	48	77	221
Output impacts	154	78	151	383
Restaurants	**Direct**	**Indirect**	**Induced**	**Total**
Employment impacts	20	1	3	25
Income impacts	362	110	207	679
Total value-added impacts	386	196	349	931
Output impacts	706	307	689	1,702
Harvesters and seafood industry	**Direct**	**Indirect**	**Induced**	**Total**
Employment impacts	34	4	8	45
Income impacts	792	266	465	1,523
Total value-added impacts	845	512	801	2,158
Output impacts	1,632	963	1,570	4,165

Source: Calculated by NMFS SERO using the model developed for and applied in NMFS (2024).
*Converted to 2023 dollars using the annual, not seasonally adjusted GDP implicit price deflator provided by the U.S. Bureau of Economic Analysis.

3.3.2. Recreational Sector

The recreational sector is composed of the private and for-hire modes. The private mode includes anglers fishing from shore (all land-based structures) and private/rental boats. The for-hire mode is composed of charter vessels and headboats. Charter vessels generally carry fewer passengers and charge a fee on an entire vessel basis, whereas headboats carry more passengers and payment is per person. The type of service, from a vessel- or passenger-size perspective, affects the flexibility to search different fishing locations during the course of a trip and target different species because larger concentrations of fish are required to satisfy larger groups of anglers.

Economic information pertaining to the recreational sector of the snapper grouper fishery is provided in Amendment 53 to the FMP (SAFMC 2023a) and is incorporated herein by reference. Select updates to this information specific to gag and black grouper are provided below.

Permits

For anglers to fish for or possess snapper grouper species in or from the South Atlantic EEZ on for-hire vessels, those vessels are required to have an open access South Atlantic Snapper-Grouper Charter/Headboat permit (snapper grouper for-hire permit). As of August 26, 2021, there were 1,930 valid for-hire snapper grouper permits. This sector operates as an open access fishery and not all permitted vessels are necessarily active in the fishery, as evidenced in Souza and Liese (2019). Some vessel owners may have obtained open access permits as insurance for uncertainties in the fisheries in which they currently operate.

Although the for-hire permit application collects information on the primary method of operation, the permit itself does not identify the permitted vessel as either a headboat or a charter vessel and vessels may operate in both capacities. However, only federally permitted headboats are required to submit harvest and effort information to the NMFS Southeast Region Headboat Survey (SRHS).[7] Participation in the SRHS is based on determination by the SEFSC that the vessel primarily operates as a headboat. During 2023, 65 South Atlantic headboats were registered in the SRHS (K. Brennan, NMFS SEFSC, pers. comm. 2024). The majority of these headboats were located in Florida/Georgia (38), followed by North Carolina (15) and South Carolina (12). As a result, of the 1,930 vessels with snapper grouper for-hire permits, up to 65 may primarily operate as headboats.[8]

There are no specific permitting requirements for recreational anglers to harvest snapper grouper species. 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

[7] All federal charter/headboat permit holders, including charter vessel owners or operators, are required to comply with the new Southeast For-Hire Electronic Reporting Program as of January 2021. Under this program, all such permit holders must submit logbooks weekly, by 11:59 pm, local time, the Tuesday following a reporting week (Monday-Sunday). Those vessels selected to report to the SRHS (i.e., federally permitted headboats) will continue to submit their reports under the new requirements directly to the SRHS program. For more information, see: https://www.fisheries.noaa.gov/southeast/recreational-fishing-data/southeast-hire-integrated-electronic-reporting-program/.

[8] This estimate is based on the SEFSC criteria; however, there may be additional vessels not included in the SRHS that also identify as headboats.

Registry system, subject to appropriate exemptions. As a result, it is not possible to identify with available data how many individual anglers would be expected to be affected by this proposed amendment.

Angler Effort

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

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

Estimates of gag target and catch effort are provided in Table 3.3.2.1 and Table 3.3.2.2, respectively. It is important to note that in 2018, MRIP transitioned from the CHTS to the mail-based FES. The estimates presented in this section are calibrated to the MRIP FES and may be greater than estimates that are non-calibrated.[9] As shown in Table 3.3.2.1, approximately 90% of gag target trips occurred in Florida from 2018 through 2022, while 10% occurred in North Carolina. South Atlantic gag target trips decreased by 83% from 2018 to 2022. Conversely, gag catch trips increased by 82% during the same period (Table 3.3.2.2). After Florida, South Carolina recorded the second largest number of recreational gag catch trips on average (2018 through 2022). For both target and catch trips, the private/rental mode was the dominant mode of fishing (Table 3.3.2.1 and Table 3.3.2.2).

[9] As of August 2018, all directed trip estimate information provided by MRIP (public use survey data and directed trip query results) for the entire time series was updated to account for both the Access Point Angler Intercept Survey (APAIS) design change in 2013, as well as the transition from the CHTS to the FES in 2018. Back-calibrated estimates of directed effort are not available. For more information, see: https://www.fisheries.noaa.gov/recreational-fishing-data/recreational-fishing-estimate-updates/.

Table 3.3.2.1. South Atlantic gag recreational target trips, by year, mode, and state.*

	FL	GA	NC	SC	Total
	Charter Mode				
2018	811	0	40	0	851
2019	0	0	0	0	0
2020	0	0	0	0	0
2021	311	0	0	0	311
2022	0	0	425	0	425
Average	224	0	93	0	317
	Private/Rental Mode				
2018	68,834	0	0	0	68,834
2019	37,667	0	1,750	0	39,416
2020	43,173	0	2,792	0	45,965
2021	24,284	415	5,520	0	30,219
2022	2,589	0	8,756	0	11,345
Average	35,309	83	3,764	0	39,156
	All Modes				
2018	69,645	0	40	0	69,685
2019	37,667	0	1,750	0	39,416
2020	43,173	0	2,792	0	45,965
2021	24,595	415	5,520	0	30,531
2022	2,589	0	9,181	0	11,770
Average	35,534	83	3,857	0	39,473

Source: MRIP database, SERO, NMFS (April 2024).
*Headboat data are unavailable.
Note 1: These estimates are in MRIP FES units.
Note 2: There were no shore mode target trips recorded for gag.
Note 3: Includes post-stratified effort estimates from Monroe County, FL to align with SEDAR estimates.

Table 3.3.2.2. South Atlantic gag recreational catch trips, by year, mode, and state.*

	FL	GA	NC	SC	Total
	Shore Mode				
2018	0	0	0	0	0
2019	0	0	887	0	887
2020	2,751	0	3,925	2,260	8,936
2021	0	0	0	1,824	1,824
2022	0	0	4,073	18,161	22,234
Average	550	0	1,777	4,449	6,776
	Charter Mode				
2018	3,853	310	643	338	5,145
2019	4,714	0	592	322	5,627
2020	6,047	0	1,677	562	8,286
2021	4,228	155	1,927	3,455	9,765
2022	4,401	7	964	4,330	9,702
Average	4,649	94	1,161	1,801	7,705
	Private/Rental Mode				
2018	62,205	1,869	1,059	3,080	68,214
2019	23,530	0	10,032	4,994	38,556
2020	45,412	1,170	12,987	14,893	74,462
2021	76,144	1,903	18,245	20,956	117,248
2022	35,283	7,637	31,597	27,261	101,778
Average	48,515	2,516	14,784	14,237	80,052
	All Modes				
2018	66,058	2,179	1,703	3,419	73,359
2019	28,244	0	11,511	5,316	45,071
2020	54,211	1,170	18,589	17,715	91,685
2021	80,372	2,057	20,173	26,235	128,837
2022	39,684	7,644	36,634	49,751	133,714
Average	53,714	2,610	17,722	20,487	94,533

Source: MRIP database, SERO, NMFS (April 2024).
*Headboat data are unavailable.
Note 1: These estimates are in MRIP FES units.
Note 2: Includes post-stratified effort estimates from Monroe County, FL to align with SEDAR estimates.

Estimates of South Atlantic black grouper target and catch effort, which occurred almost entirely in Florida, are provided in Table 3.3.2.3 and Table 3.3.2.4, respectively. Black grouper target trips experienced a strong upward trend from 2018 through 2022, while catch trips fluctuated

over the time period. Because black grouper is a rare event species in MRIP, the estimates presented in this section are imprecise[10] and should be viewed accordingly.

Table 3.3.2.3. South Atlantic black grouper recreational target trips, by year, mode, and state.*

	FL	GA	NC	SC	Total
	Charter Mode				
2018	200	0	0	0	200
2019	0	0	0	0	0
2020	1,912	0	0	0	1,912
2021	430	0	0	0	430
2022	966	0	0	0	966
Average	702	0	0	0	702
	Private/Rental Mode				
2018	623	0	0	0	623
2019	2,568	0	0	0	2,568
2020	0	0	0	0	0
2021	3,867	0	0	0	3,867
2022	9,624	0	0	0	9,624
Average	3,336	0	0	0	3,336
	All Modes				
2018	823	0	0	0	823
2019	2,568	0	0	0	2,568
2020	1,912	0	0	0	1,912
2021	4,298	0	0	0	4,298
2022	10,590	0	0	0	10,590
Average	4,038	0	0	0	4,038

Source: MRIP database, SERO, NMFS (April 2024).
*Headboat data are unavailable.
Note 1: These estimates are in MRIP FES units.
Note 2: There were no shore mode target trips recorded for black grouper.
Note 3: Includes post-stratified effort estimates from Monroe County, FL to align with SEDAR estimates.

[10] Percent standard errors (PSE) for estimates of black grouper target and catch trips (by year, mode, and state) often exceed 50 and are as high as 100 in several cases.

Table 3.3.2.4. South Atlantic black grouper recreational catch trips, by year, mode, and state.*

	FL	GA	NC	SC	Total
	Shore Mode				
2018	0	0	0	0	0
2019	0	0	0	0	0
2020	0	0	0	0	0
2021	1,219	0	0	0	1,219
2022	0	0	0	0	0
Average	244	0	0	0	244
	Charter Mode				
2018	3,807	0	0	0	3,807
2019	4,183	0	0	0	4,183
2020	7,068	0	35	0	7,103
2021	10,491	29	0	0	10,520
2022	8,002	0	0	0	8,002
Average	6,710	6	7	0	6,723
	Private/Rental Mode				
2018	28,920	0	0	0	28,920
2019	17,835	0	0	0	17,835
2020	24,838	0	0	0	24,838
2021	28,270	0	0	0	28,270
2022	30,047	0	0	0	30,047
Average	25,982	0	0	0	25,982
	All Modes				
2018	32,727	0	0	0	32,727
2019	22,018	0	0	0	22,018
2020	31,906	0	35	0	31,941
2021	39,980	29	0	0	40,009
2022	38,049	0	0	0	38,049
Average	32,936	6	7	0	32,949

Source: MRIP database, SERO, NMFS (April 2024).
*Headboat data are unavailable.
Note 1: These estimates are in MRIP FES units.
Note 2: Includes post-stratified effort estimates from Monroe County, FL to align with SEDAR estimates.

Similar analysis of recreational angler trips is not possible for the headboat mode because headboat data are not collected at the angler level. Estimates of effort by the headboat mode are provided in terms of angler days, or the total number of standardized full-day angler trips.[11]

[11] Headboat trip categories include half-, three-quarter-, full-, and 2-day trips. A full-day trip equals one angler day, a half-day trip equals .5 angler days, etc. Angler days are not standardized to an hourly measure of effort and actual trip durations may vary within each category.

From 2018 through 2022, headboat effort in the South Atlantic, in terms of angler days, fluctuated with a five-year low in 2020 (Table 3.3.2.5). Headboat effort was the highest, on average, during the summer months of June through August (Table 3.3.2.6).

Table 3.3.2.5. South Atlantic headboat angler days and percent distribution by state (2018 through 2022).

	Angler Days			Percent Distribution		
Year	**FL/GA***	**NC**	**SC**	**FL/GA**	**NC**	**SC**
2018	120,560	16,813	37,611	68.9%	9.6%	21.5%
2019	119,712	15,546	41,470	67.7%	8.8%	23.5%
2020	84,005	14,154	34,080	63.5%	10.7%	25.8%
2021	120,367	19,719	47,908	64.0%	10.5%	25.5%
2022	104,989	16,140	38,748	65.7%	10.1%	24.2%
Average	109,927	16,474	39,963	66.0%	9.9%	24.1%

*East Florida and Georgia are combined for confidentiality purposes.
Source: NMFS SRHS (January, 2024).

Table 3.3.2.6. South Atlantic headboat angler days and percent distribution by month (2018 through 2022).

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Headboat Angler Days											
2018	4,428	9,862	14,080	15,167	13,264	29,038	30,235	26,233	9,715	8,072	7,673	7,217
2019	7,746	8,476	15,186	15,566	19,368	26,587	32,914	20,177	6,716	9,011	8,587	6,394
2020	6,920	7,805	8,445	407	8,711	23,250	26,565	16,320	10,973	9,855	6,251	6,737
2021	7,629	7,421	14,582	16,062	19,582	28,669	32,887	20,631	13,183	10,920	6,739	9,689
2022	6,546	8,146	10,158	13,361	17,176	24,421	27,074	20,210	10,528	8,785	6,139	7,333
Avg	6,654	8,342	12,490	12,113	15,620	26,393	29,935	20,714	10,223	9,329	7,078	7,474
	Percent Distribution											
2018	3%	6%	8%	9%	8%	17%	17%	15%	6%	5%	4%	4%
2019	4%	5%	9%	9%	11%	15%	19%	11%	4%	5%	5%	4%
2020	5%	6%	6%	0%	7%	18%	20%	12%	8%	7%	5%	5%
2021	4%	4%	8%	9%	10%	15%	17%	11%	7%	6%	4%	5%
2022	4%	5%	6%	8%	11%	15%	17%	13%	7%	5%	4%	5%
Avg	4%	5%	7%	7%	9%	16%	18%	12%	6%	6%	4%	5%

Source: NMFS SRHS (January, 2024).

Landings

Landings of South Atlantic gag fluctuated from 2018 through 2022, with a decreasing trend overall (Figure 3.3.2.1). Landings of South Atlantic black grouper dropped precipitously from 2018 to 2019 and then rebounded somewhat through 2022 (Figure 3.3.2.2). The private mode was the dominant mode of fishing for gag from 2018 through 2022, whereas for black grouper, the charter mode was dominant in some years.

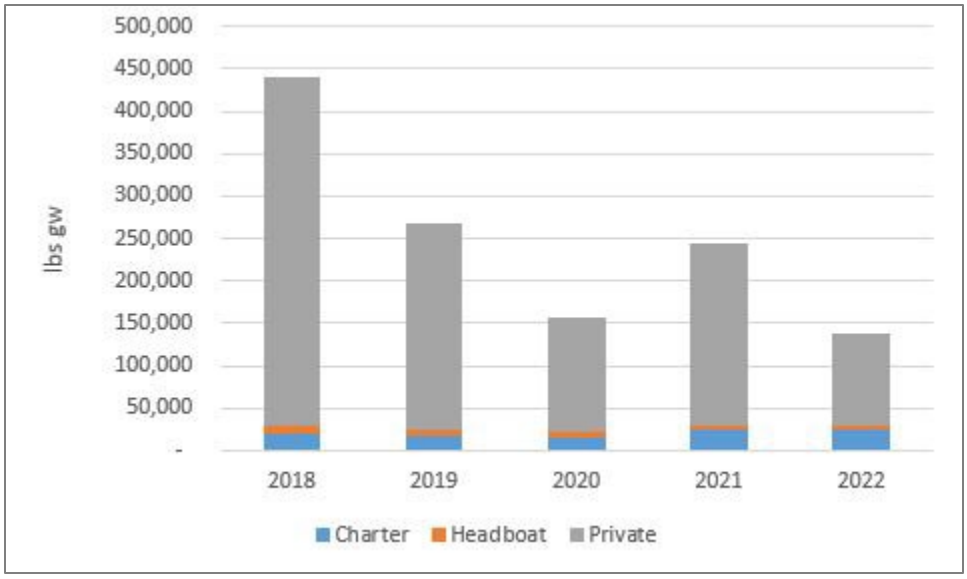


Figure 3.3.2.1. Recreational landings of South Atlantic gag by mode and year.
Source: SEFSC MRIP FES ACL data set (Feb 2024).
Note1: There were no shore mode landings recorded.
Note2: Includes post-stratified landings estimates from Monroe County, FL to align with SEDAR estimates.

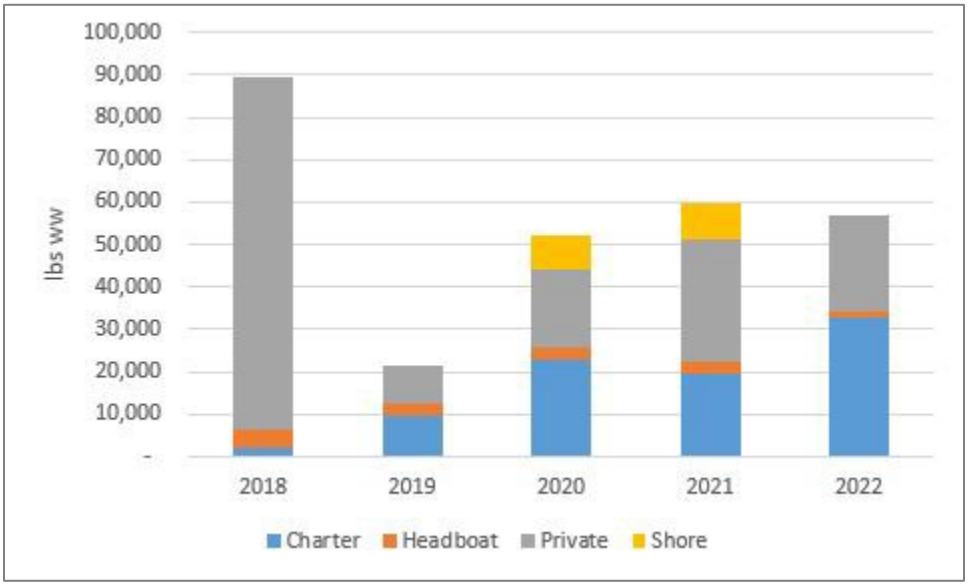


Figure 3.3.2.2. Recreational landings of South Atlantic black grouper by mode and year.
Source: SEFSC MRFSS ACL data set (Feb 2024).
Note1: There were no shore more landings recorded.
Note2: Includes post-stratified landings estimates from Monroe County, FL to align with SEDAR estimates.

Seasonal landings distributions for South Atlantic gag and black grouper from 2018 through 2022 exhibited different patterns. For gag, there were very low landings in waves 1 and 2, which align with the fixed seasonal closure, followed by a spike in wave 3 (season opening), then a gradual decrease through the remainder of the year (Figure 3.3.2.3). For black grouper, there was more interannual variability in wave-level landings and a notable ramp up in wave 6 (Figure 3.3.2.4).

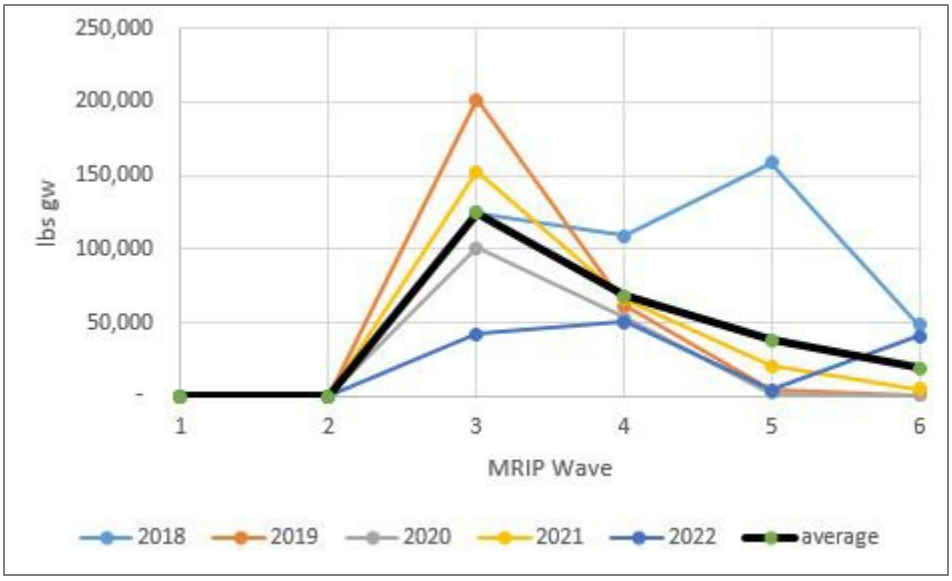


Figure 3.3.2.3. Recreational landings of South Atlantic gag by MRIP wave and year.
Source: SEFSC MRIP FES ACL data set (Feb 2024).
Note: Includes post-stratified landings estimates from Monroe County, FL to align with SEDAR estimates.

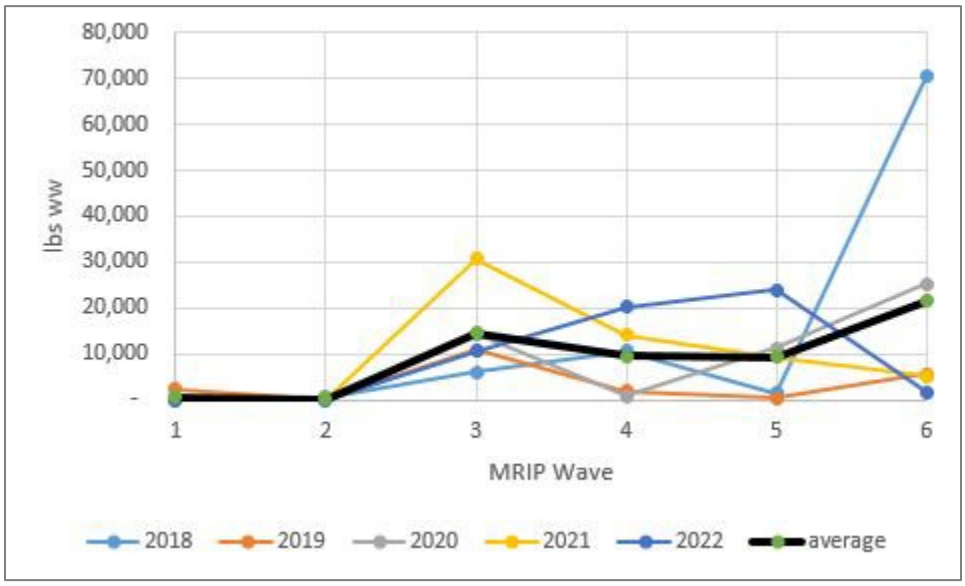


Figure 3.3.2.4. Recreational landings of South Atlantic black grouper by MRIP wave and year.
Source: SEFSC MRFSS ACL data set (Feb 2024).
Note: Includes post-stratified landings estimates from Monroe County, FL to align with SEDAR estimates.

Economic Value

Participation, effort, and harvest are indicators of the value of saltwater recreational fishing. However, a more specific indicator of value is consumer surplus (CS), which is the difference between the maximum amount an angler would be willing to pay for a fish and the amount they actually do pay.[12] CS represents a savings of one's income that can be spent later on other goods

[12] Holding income and the prices of other goods constant.

and services, leading to an overall increase in utility or satisfaction for the angler and a benefit to the economy. All else equal, the amount anglers are willing to pay and the costs of fishing can vary depending on expected catch rates, harvest rates, and existing regulations. The economic value of changes in expected catch rates, harvest rates, or existing regulations can be measured by any associated changes in CS. However, because recreationally-caught fish are non-market goods and there are no transaction data available, CS cannot be measured directly. Instead, using survey elicitation methods, it is possible to estimate hypothetical willingness to pay (WTP) values[13] that are a close approximation to the individual CS an angler would derive from an additional fish that is caught and kept. Carter and Liese (2012) estimated a mean WTP value for catching and keeping a second grouper on an angler trip at approximately $128 (2023 dollars) and lower thereafter (approximately $85 for a third grouper, $63 for a fourth grouper, and $49 for a fifth grouper). The benefit-cost analysis presented in this document will use this WTP value of $128 times the change in the number of fish expected to be harvested to estimate aggregate changes in CS.[14]

The foregoing estimates of economic value should not be confused with economic impacts associated with recreational fishing expenditures. Although 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 average annual gross revenue for South Atlantic charter vessels and headboats in 2009 are provided in Holland et al. (2012). In 2023 dollars, the average annual gross revenue for a South Atlantic headboat was approximately $259,000, while the average annual gross revenue for a South Atlantic charter vessel was approximately $146,000. However, a more recent estimate of average annual gross revenue for South Atlantic headboats is available from D. Carter (NMFS, pers. comm., 2018). D. Carter (NMFS, pers. comm., 2018) recently estimated that average annual gross revenue for South Atlantic headboats was approximately $355,637 (2023 dollars) in 2017. This estimate is likely the best current estimate of annual gross revenue for South Atlantic headboats, as it is based on a relatively large sample and is more recent. The difference in the Holland et al. (2012) and D. Carter (NMFS, pers. comm., 2018) estimates for headboats suggests that the estimate for charter vessels based on Holland et al. (2012) is likely also an underestimate of current average annual revenue for charter vessels in the South Atlantic. Estimates of annual PS and economic profit for South Atlantic charter vessels and headboats are not available.

With regard to for-hire trips, economic value can be measured by PS per angler trip, which represents the amount of money that a vessel owner earns in excess of the cost of providing the trip. Estimates of revenue, costs, and trip net revenue for trips taken by charter vessels and

[13] These are measures of compensating surplus, or the amount of money that an angler would be willing to pay in order to harvest the additional fish, while maintaining the same level of utility.

[14] This analysis uses a WTP value per fish estimate for a second grouper kept. The first grouper kept would have a higher value for recreational fishermen than the second grouper based on the law of diminishing marginal utility, but an estimate for that is not available. Currently, both the private and for-hire components have a bag limit of one gag or black grouper per person. Therefore, the economic value estimate for the recreational sector in this analysis may be a lower bound estimate.

headboats in 2017 are available from Souza and Liese (2019). They also provide estimates of trip net cash flow per angler trip, which are an approximation of PS per angler trip. According to Table 3.3.2.7, after accounting for transactions fees, supply costs, and labor costs, net revenue per trip was 40% of revenue for South Atlantic charter vessels and 54% of revenue for Southeast headboats or $649 and $2,128 (2022 dollars), respectively. Given the average number of anglers per trip for each fleet, PS per angler trip is estimated to be $138 for South Atlantic charter vessels and $80 for Southeast headboats (Table 3.3.2.7).

Table 3.3.2.7. Trip-level economics for offshore trips by South Atlantic charter vessels and Southeast headboats in 2017 (2023 dollars).

	South Atlantic Charter Vessels	Southeast Headboats*
Revenue	100%	100%
Transaction Fees (% of revenue)	3%	6%
Supply Costs (% of revenue)	29%	19%
Labor Costs (% of revenue)	28%	22%
Net Revenue per trip including Labor costs (% of revenue)	40%	54%
Net Revenue per Trip	$649	$2,128
Average # of Anglers per Trip	4.7	26.6
Trip Net Cash Flow per Angler Trip	$138	$80

Source: Souza and Liese (2019).
*Although Souza and Liese (2019) break headboats out by sub-region, the South Atlantic sample size is small and thus estimates for Southeast headboats in general (Gulf and South Atlantic combined) are presented here.

Business Activity

The desire for recreational fishing generates economic activity as consumers spend their income on various goods and services needed for recreational fishing. This income spurs economic activity in the region where recreational fishing occurs. It should be clearly noted that, in the absence of the opportunity to fish, the income would presumably be spent on other goods and services and these expenditures would similarly generate economic activity in the region where the expenditure occurs. As such, the analysis below represents a distributional analysis only. Estimates of the business activity (economic impacts) associated with recreational angling for South Atlantic gag and black grouper were calculated using average trip-level impact coefficients derived from the 2021 Fisheries Economics of the U.S. report (NMFS 2024) and underlying data provided by the National Oceanic and Atmospheric Administration (NOAA) Office of Science and Technology. Economic impact estimates in 2021 dollars were adjusted to 2023 dollars using the annual, not seasonally adjusted GDP implicit price deflator provided by the U.S. Bureau of Economic Analysis.

Business activity (economic impacts) for the recreational sector is characterized in the form of value-added impacts (contribution to the GDP in a state or region), output impacts (gross business sales), income impacts (wages, salaries, and self-employed income), and jobs (full- and part-time). Estimates of the average annual economic impacts (2018-2022) resulting from South Atlantic recreational gag target trips and black grouper target trips are provided in Table 3.3.2.8 and Table 3.3.2.9, respectively. The average impact coefficients, or multipliers, used in the

model are invariant to the "type" of effort (e.g., target or catch) and can therefore be directly used to measure the impact of other effort measures such as gag catch trips. To calculate the multipliers from Table 3.3.2.8 or Table 3.3.2.9, simply divide the desired impact measure (value-added impact, sales impact, income impact or employment) associated with a given state and mode by the number of target trips for that state and mode.

The estimates provided in Tables 3.3.2.8 and 3.3.2.9 only apply at the state-level. Addition of the state-level estimates to produce a regional (or national) total may underestimate the actual amount of total business activity, because state-level impact multipliers do not account for interstate and interregional trading. Additionally, some trips may have targeted both gag and black grouper and therefore may be included in both sets of estimates (Tables 3.3.2.8 and 3.3.2.9). It is also important to note, that these economic impacts estimates are based on trip expenditures only and do not account for durable expenditures. Durable expenditures cannot be reasonably apportioned to individual species or species groups. As such, the estimates provided in Tables 3.3.2.8 and 3.3.2.9 may be considered a lower bound on the economic activity associated with those trips that targeted gag and those that targeted black grouper.

Estimates of the business activity associated with headboat effort are not available. Headboat vessels are not covered in MRIP, so, in addition to the absence of estimates of target effort, estimation of the appropriate business activity coefficients for headboat effort has not been conducted.

Table 3.3.2.8. Estimated annual average economic impacts (2018-2022) from South Atlantic recreational gag target trips, by state and mode, using state-level multipliers. All monetary estimates are in 2023 dollars (in thousands).

	NC	SC	GA	FL
Charter Mode				
Target Trips	93	0	0	224
Value Added Impacts	$46	$0	$0	$62
Sales Impacts	$80	$0	$0	$104
Income Impacts	$27	$0	$0	$36
Employment (Jobs)	1	0	0	1
Private/Rental Mode				
Target Trips	3,764	0	83	35,309
Value Added Impacts	$138	$0	$2	$1,141
Sales Impacts	$228	$0	$4	$1,703
Income Impacts	$79	$0	$1	$564
Employment (Jobs)	2	0	0	14
All Modes				
Target Trips	3,857	0	83	35,534
Value Added Impacts	$184	$0	$2	$1,203
Sales Impacts	$307	$0	$4	$1,806
Income Impacts	$106	$0	$1	$600
Employment (Jobs)	3	0	0	15

Source: Effort data from MRIP; economic impact results calculated by NMFS SERO using NMFS (2024) and underlying data provided by the NOAA Office of Science and Technology.
Note: There were no shore mode target trips recorded for gag.

Table 3.3.2.9. Estimated annual average economic impacts (2018-2022) from South Atlantic black grouper recreational target trips in Florida* by mode, using state-level multipliers. All monetary estimates are in 2023 dollars in thousands.

	Charter Mode	Private/Rental Mode	All Modes
Target Trips	702	3,336	4,038
Value Added Impacts	$193	$108	$301
Sales Impacts	$324	$161	$485
Income Impacts	$114	$53	$167
Employment (Jobs)	3	1	4

Source: Effort data from MRIP; economic impact results calculated by NMFS SERO using NMFS (2024) and underlying data provided by the NOAA Office of Science and Technology.
*Florida was the only South Atlantic state with recorded target effort for black grouper.
Note: There were no shore mode target trips recorded for black grouper.

3.4. Social Environment

This section describes select aspects of the social context associated with commercial harvest of black sea bass, and recreational pursuit of gag and black grouper in the South Atlantic. The section provides descriptive context for social effects analysis provided in Chapter 4, with emphasis on identification of communities where the species examined in this amendment are of local social and economic importance. The section also provides information pertinent to Executive Orders that call for examination and mitigation of environmental equity and justice (EEJ) issues in the context of federal regulatory actions.

3.4.1. Commercial Sector: Black Sea Bass

The vast majority of black sea bass landings are known to occur in the northerly portions of the South Atlantic region—especially in communities along the North Carolina coastline, and to a lesser extent in northeast South Carolina. Commercial harvest of black sea bass most typically involves use of hook-and-line gear and/or pots (aka traps), with trace amount of the species taken by divers using spear-guns or slings for a wider array snappers, groupers, and other reef-associated fish. Hook-and line gear is occasionally used to target black sea bass in particular, but it is often the case that the species is caught incidentally or in conjunction with other benthic fish that inhabit or frequent similar hard bottom features such as wrecks and reefs. Meanwhile, the use of traps obviously is a highly focused approach for landing black sea bass. It is also an efficient method, such that the targeted species is at times captured with traps in the absence of bait. Table 3.4.1.1 below depicts observed differences in landings of black sea bass by type of gear used for the ten year time-series 2011 through 2021. Inasmuch as relatively few participants possess the endorsement needed to harvest black sea bass with pots (discussed below), the figures suggest that pots are indeed effective.

Table 3.4.1.1. Observed landings of black sea bass in the South Atlantic by predominant commercial gears*.

Year	Pots (Traps)	Hook-and-Line
2011	342.497	46.373
2012	269.160	106.971
2013	274.330	195.304
2014	181.308	285.891
2015	171.621	152.330
2016	103.900	160.266
2017	194.197	141.014
2018	156.739	92.063
2019	128.571	70.079
2020	49.691	31.019
2021	22.701	34.481

* Landings expressed in units of1000 lb. whole weight
Source: SEDAR 76, South Atlantic Sea Bass, Section II, Assessment Report, p. 46.

While the table above is a useful point of reference for understanding levels of production among commercial participants using differing types of gear, it does not indicate the communities from

which permit holders travel offshore to deploy pots for the harvest of black sea bass. Such specific information cannot be provided in this section given: (a) the need to safeguard confidential business information among the consistently small number of participants who are legally permitted to set pots during offshore trips from their home communities (Table 3.4.1.2. below), and (b) because some participants in the commercial sector land the species using both hook-and-line *and* trap gear during any given fishing year.[15] However, by using black sea bass permit (endorsement) information in conjunction with sea bass landings data, we are able to provide a basic sense of the communities from which deployment of pot gear is most likely (as indicated in Figure 3.4.1.1 later in this section).

From a human/social perspective, the black sea bass pot fishery is indeed a focused and purposeful endeavor. As for any commercial fishery, experiential understanding of the target species, its seasonal whereabouts, its behaviors, and its linkages to the larger marine ecosystem are important forms of knowledge among those intending to succeed over time. But pots, and fishing with pots or traps, present unique considerations and challenges that are distinct from other forms of gear. Thus, from a regulatory perspective, each of the total of 35 black sea bass pots that may be deployed from any appropriately permitted vessel must: (a) have a valid identification tag attached; (b) incorporate sinking ground lines and appropriately designed weak links, with no floating lines at the surface (all of which can mitigate entanglement events); (c) utilize appropriately sized and marked buoys; (d) be tended and pulled only by the permittee or another person who has been given written consent by the permittee to do so; (e) incorporate appropriately configured and comprised mesh, doors, panels, hinges, and escape vents; (f) not be linked to each other except by appropriately configured trot or trawl line; (g) not be set in specific locations at certain times of year; (h) stowed appropriately when transiting protected zones; (i) not retain any black sea bass less than 11 inches in length; and (j) be removed from the water column and returned to land (i.e., a berthing, dock, beach, seawall, etc.) at the conclusion of each trip.

Use and storage of black sea bass pots also necessitate a range of practical steps and considerations among participating captains and crew. These include, but are not limited to: (a) clear and ongoing understanding of, and appropriate reaction to, predicted and real-time weather and sea state dynamics—so as to reduce risks associated with setting and pulling the gear on any given trip; (b) effective maintenance of the gear for sake of both regulatory compliance and efficiency in capturing the target species, where such maintenance includes ongoing repairs and adjustments to the traps and their lines, buoys, and points of attachment, along with removal of inordinate amounts of algae and/or other debris; (c) release of other than the targeted species into the water column; (d) purchase of new traps as needed, and transportation of new gear to the

[15] North Carolina participants who actively pursue black sea bass north of the latitude of Cape Hatteras may also use trawl gear to harvest the species. Of note, black sea bass stocks north of Hatteras are commonly considered to be genetically distinct from those to the south, albeit with some level of admixture (e.g., see Koob et al. 2023). As such, fishing for the species north of Hatteras is jointly managed by entities with jurisdiction to the north, i.e., the Mid-Atlantic Fishery Management Council, the Atlantic States Marine Fisheries Commission, and NOAA Fisheries. While use of bottom trawl gear to harvest black sea bass is prohibited in federal waters of the South Atlantic, use of such gear to harvest the species remains allowable north of 35° 15.3' N latitude (Cape Hatteras). Black sea bass pots may not be used south of the latitude of Cape Canaveral.

vessel(s); (e) appropriate/legal disposal of old gear; (f) acquisition of space or arrangement for use of space for storage of traps during down times, such as during large storm events; (g) acquisition, maintenance, and appropriate stowage of bait and rapid/effective deployment in the traps at sea; (h) manual labor associated with regular loading and off-loading of traps, line, buoys, and other related gear; (i) acquisition, payment, and application of ice, and other considerations for cold storage of fish in transit at sea and on land; and (j) the wide range of social and economic considerations and relationships associated with the negotiation, sale, and distribution of the harvested product.

South Atlantic Commercial S-G Permits by State and Community

Use of hook-and-line gear to harvest black sea bass on a commercial basis requires either an unlimited or trip-limited snapper-grouper (S-G) permit, while use of pots requires both an S-G permit and a black sea bass pot endorsement. The unlimited S-G permit allows for a trip-specific catch limit of 1,000 lbs. (gutted weight) of black sea bass, while the trip-limited permit presently allows for a catch limit of 300 lbs. Of note, both the S-G permit and black sea bass endorsement must be kept onboard during any given trip. As indicated in Table 3.4.1.2 below, black sea bass pot endorsements were most typically held by persons with mailing addresses in North Carolina during the period 2016 through 2020 (with 2020 being the most recent year for which permit data are presently available). Notable exceptions are Ponce Inlet in northern Florida, and Little River in northeastern South Carolina, where multiple endorsements have also been held in recent years. These data are in keeping with the findings of Buck (2018) who describes black sea bass as an important part of the annual catch portfolios of commercial operators from North Carolina to northern Florida.

Table 3.4.1.2.

Distribution of black sea bass pot endorsements among communities in the South Atlantic region during the period 2016 through 2020.

Community	2016	2017	2018	2019	2020
Little River, SC	4	3	3	4	4
Sneads Ferry, NC	3	5	5	4	3
Ponce Inlet, FL	1	2	2	3	3
Hampstead, NC	2	3	3	2	2
Murrells Inlet, SC	1	0	1	2	2
Cape Carteret, NC	2	2	2	2	1
Holden Beach, NC	0	0	1	2	1
Port Orange, FL	3	3	2	1	1
Townsend, GA	1	2	2	1	1
Georgetown, SC	3	3	1	1	1
Port Canaveral, FL	2	1	1	1	1
Miami, FL	1	1	1	1	1
Wrightsville Beach, NC	1	1	1	1	1
Carolina Beach, NC	1	1	1	1	1
Harkers Island, NC	1	1	1	1	1
Atlantic Beach, NC	0	1	1	1	1
McClellanville, SC	1	0	1	1	1
Beaufort, NC	0	0	1	1	1
Crescent, GA	0	0	0	1	1
Wanchese, NC	1	0	0	0	1
Southport, NC	0	0	0	0	1
Calabash, NC	0	0	0	0	1
Atlantic, NC	0	0	0	0	1

Source: SERO Sustainable Fisheries (SF) Access permits database, accessed March 2023.

Regional & Local Quotients: South Atlantic Black Sea Bass Landings

Figure 3.4.1.1 below depicts the community-level (proportional) distribution of commercially landed black sea bass for the period 2018 through 2022. The distribution is expressed here as a regional quotient (RQ), or the share of community-specific black sea bass landings in pounds divided by landings among South Atlantic fleets as a whole. The communities are rank-ordered based on landings averaged over the time-series. Notably, the vast majority of black sea bass landings occurred in communities along the northern, central, and southern portions of the North Carolina coastline during the time-series, with a considerable volume also landed in the community of Little River in northeast South Carolina. Of particular note here is the extensive volume of black sea bass landings registered in Beaufort, North Carolina, a centrally located historic fishing-oriented community where local seafood dealers buy product from commercial fishing operations based in numerous adjacent communities to the north and south.

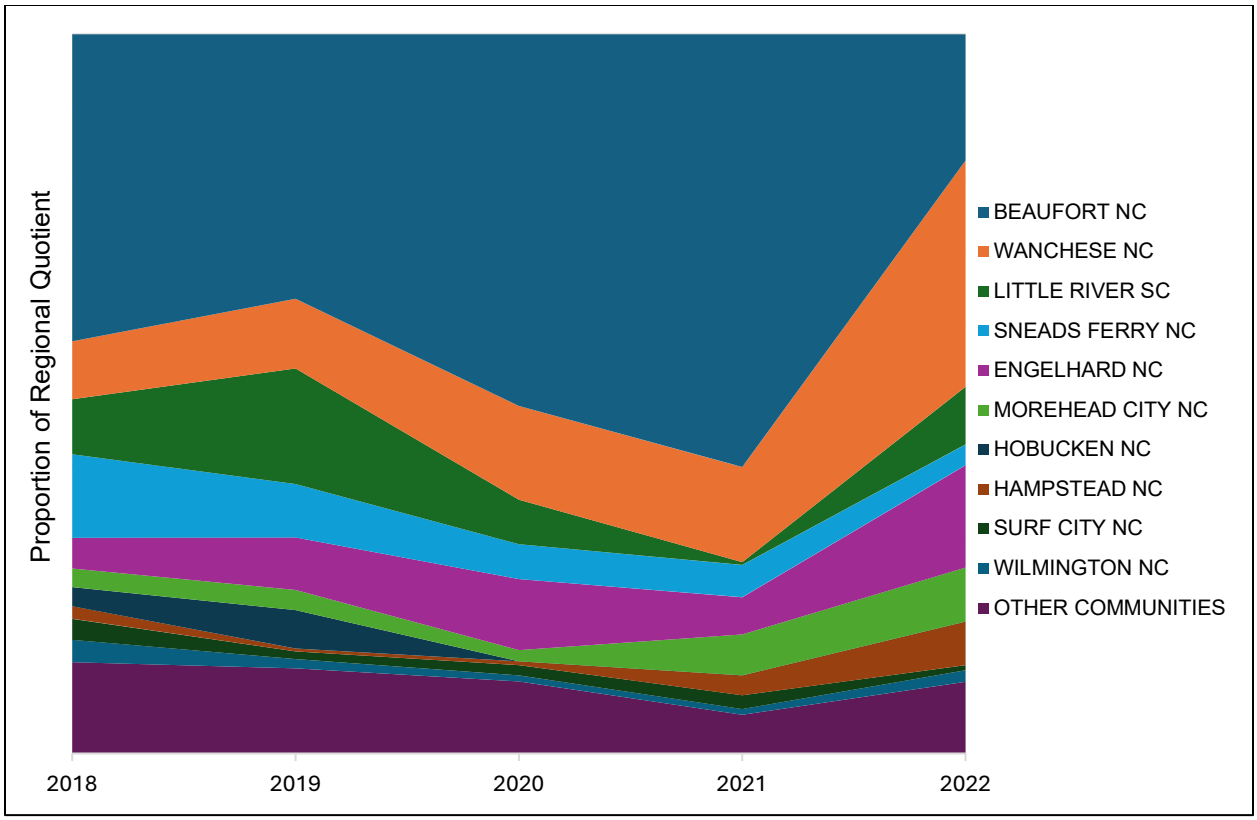


Figure 3.4.1.1. Distribution of landings among the top South Atlantic commercial black sea bass landings communities: 2018 through 2022. Vertical scale is removed to retain confidentiality.
Source: SEFSC, Community ALS Data File, Accessed March 2024.

The Local Quotient (LQ) is also useful for understanding the importance of black sea bass among South Atlantic communities. The LQ metric specifies the relative extent of community-specific landings for a given species in relation to landings of all species made by vessels based in that community during a given year or years. In this case, the LQ speaks to the absolute importance of black sea bass in relation to all other species harvested by the local fleets during a given year or years. As can be seen in Figure 3.4.1.2 below, black sea bass was of particular importance in the community of Little River, South Carolina during the period 2018 through 2022, with nearly 13% of local landings consisting of that species. Landings in the remainder of the communities depicted here were relatively more diverse during the time-series.

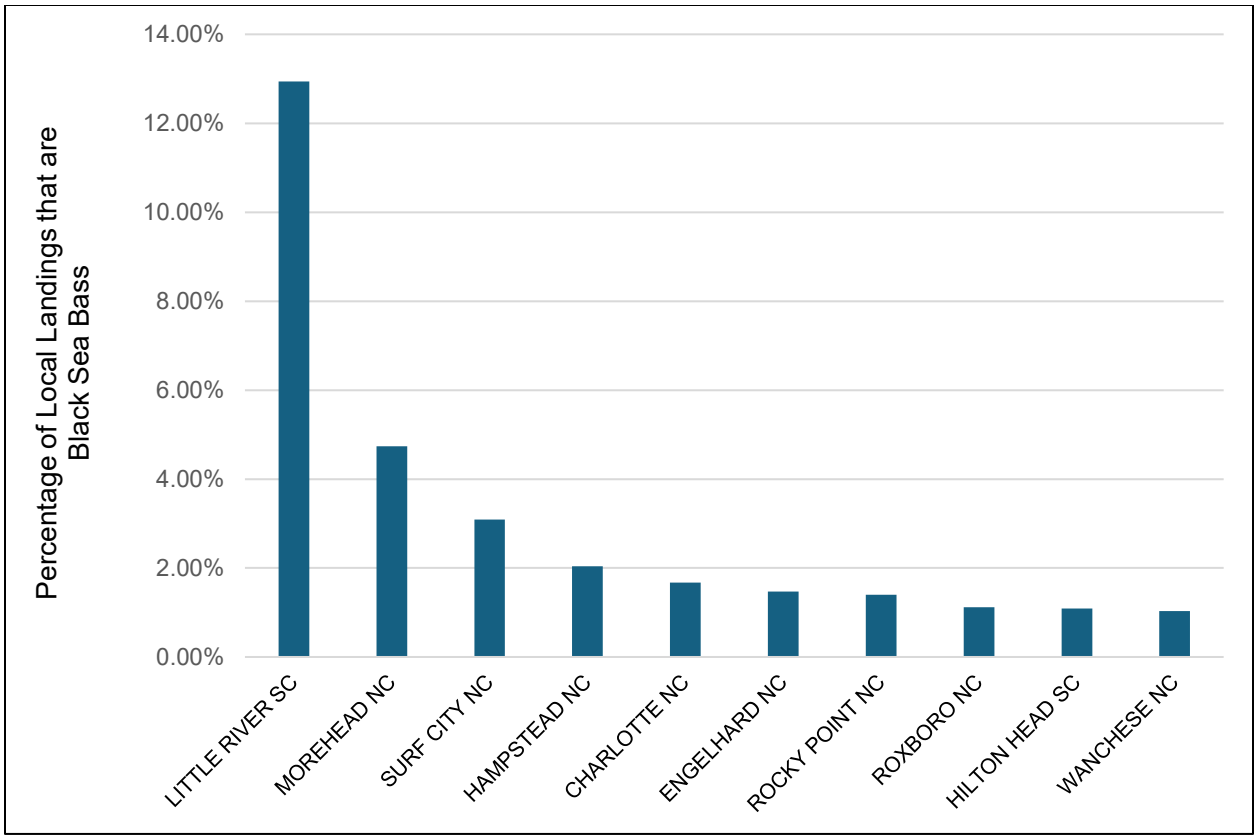


Figure 3.4.1.2. Communities landing the greatest absolute percentages of black sea bass relative to all species harvested by those communities in the South Atlantic region: 2018 through 2022.
Source: SEFSC, Community ALS Data File, accessed March 2024.

Community Engagement and Reliance

Figure 3.4.1.3 below depicts measures of engagement and reliance among South Atlantic communities with the greatest average percentage of commercial landings of black sea bass during the period 2018 through 2022. The measure of engagement used here is a generalizable composite indicator based on: (a) pounds of fish landed annually by local commercial vessels, (b) associated ex-vessel revenue, and (c) the number of active locally based commercial fishery participants and seafood dealers. The reliance measure incorporates the same variables divided by the total local population figure. In addition to the RQ and LQ, the engagement and reliance measures are useful for indicating where the prospective effects of any implemented management actions are most likely to be experienced. As can be seen in the graphic, the North Carolina communities of Beaufort, Wanchese, Sneads Ferry, and Wilmington each exceed the one standard deviation threshold for engagement in commercial fisheries. The community of Hobucken—situated along the Pamlico Sound in rural eastern North Carolina—exceeds the two standard deviation threshold for reliance on the commercial fishing industry.

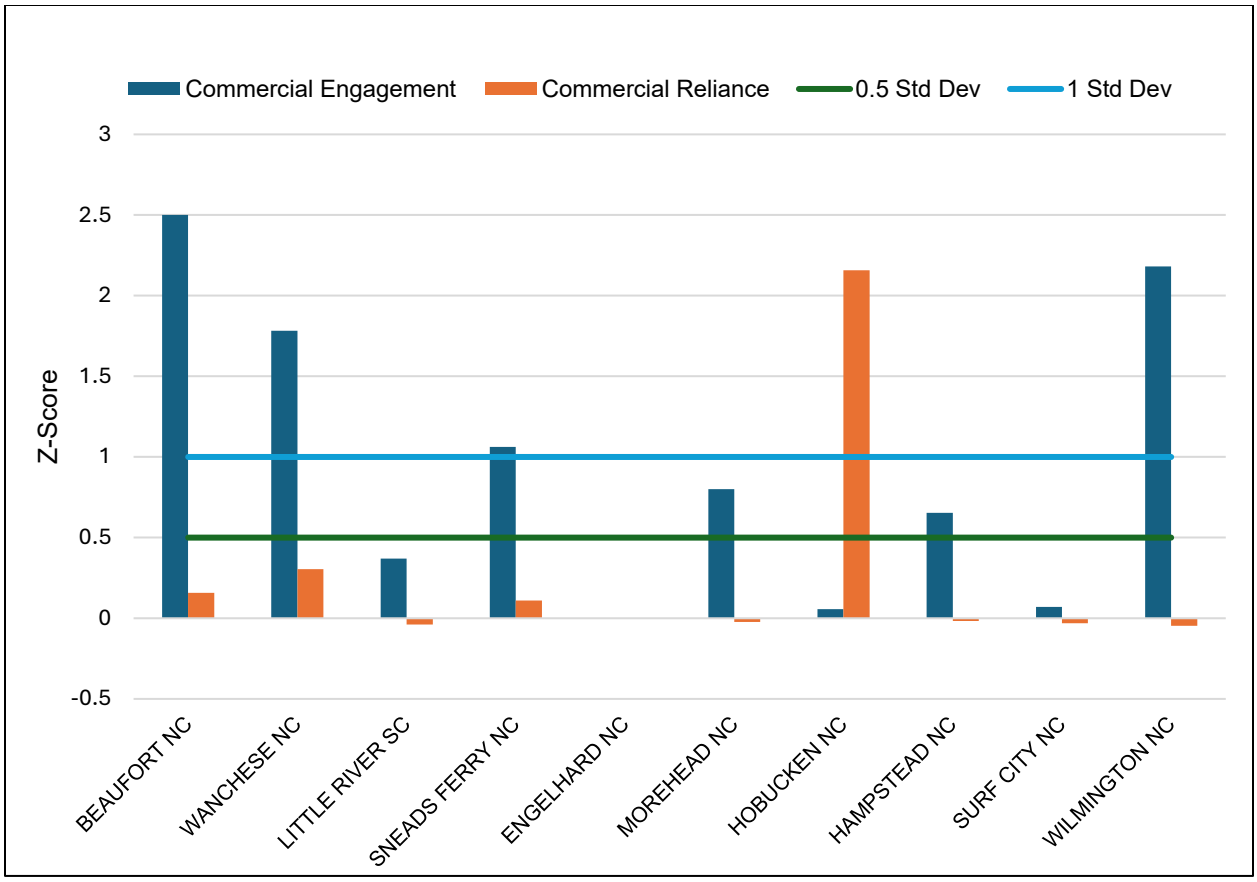


Figure 3.4.1.3. Measures of engagement and reliance among South Atlantic communities with the greatest volume of commercial black sea bass landings during the period 2018-2022.
Source: SEFSC, Community ALS Data File, accessed March 2024.

3.4.2. Recreational Sector: Gag and Black Grouper

Gag and black grouper are demersal species, with mature individuals exhibiting affinity for rocky ledges and mixed hard bottom and sand environs, typically between ~60 and 250 feet in depth (North Carolina Department of Environmental Quality). Such is the basic nature of offshore zones where the species is commonly pursued by commercial and recreational fleets in the South Atlantic. Recreational pursuit of the species, as undertaken by captains and crew of chartered and privately owned vessels alike, typically involves use of vertical hook-and-line gear deployed with live or cut bait. Given a common tendency among private recreational anglers to confuse gag and black grouper, the federal waters recreational bag limit is one fish of either species per person per day (SAFMC 2022). Juvenile gag are found at times in shallow estuaries (Ross and Moser 1995), where they are occasionally pursued or captured incidentally by inshore anglers.

Effort associated with fishing for gag and black grouper (and other snapper-grouper species) from charter vessels operating in the offshore zone is said to be on the rise in recent years (see SAFMC 2020). This relates in part to rapid access to productive fishing grounds enabled by ever-evolving vessel and engine technologies, and increasingly proficient fish-finding and geo-positioning technologies (Cooke et al. 2022). As a result, charter and private vessel trips

focusing on gag and adjacent species very typically last for one day and often less, depending on distance to the grounds, motivations for fishing, time needed to achieve success (or cease effort), and so forth. Although motivations to fish on a recreational basis in the South Atlantic are many and various, an increasing emphasis on formally and informally organized local and regional fishing competitions is readily observable in coastal communities around the region.

For-Hire Permits

For-hire captains pursuing gag and/or black grouper in the South Atlantic must possess a region-specific snapper grouper charter/headboat permit. A total of 2,136 such permits were issued during 2020, the most recent full year for which permit data are presently available. The vast majority of permits that year were issued to persons with mailing addresses in Florida, Georgia, South Carolina, and North Carolina. The total number of permits increased steadily during the period 2016 through 2019, with 1,867 issued in 2016, 1,982 in 2017, 2,126 in 2018, and 2,183 in 2019. As such, 47 fewer permits were issued during 2020 than during 2019. Table 3.4.2.1 below depicts communities where the greatest number of such permits were issued during 2020.

Table 3.4.2.1. Distribution of South Atlantic for-hire/headboat snapper grouper permits among the top 20 permit-holding communities in the region during 2020.

State	Leading Communities	Number of Permits in 2020
Florida	Key West	196
Florida	Islamorada	98
Florida	Marathon	81
Florida	Port Canaveral	77
South Carolina	Charleston	55
Florida	St. Augustine	44
North Carolina	Hatteras	42
Florida	Miami	41
Florida	Ponce Inlet	40
South Carolina	Murrells Inlet	36
Florida	Jacksonville	36
North Carolina	Morehead City	35
Florida	Jupiter	33
Florida	Key Largo	33
South Carolina	Little River	29
North Carolina	Manteo	28
Florida	Naples	27
Florida	Cape Canaveral	26
Florida	Port Orange	25
South Carolina	Fort Lauderdale	22
North Carolina	Carolina Beach	20
Florida	Sebastian	20
North Carolina	Wanchese	20
Florida	Stuart	19
South Carolina	Hilton Head	18

Source: SERO Sustainable Fisheries (SF) Access permits database, accessed March 2024.

Distribution of Recreational Gag and Black Grouper Landings by State

Based on data generated through the NMFS Marine Recreational Information Program Fishing Effort Survey (MRIP-FES), nearly 62% of gag grouper landings (in lbs. gw) were documented along Florida's east coast during 2020, followed by 30.7% in South Carolina, and 6.3% in North Carolina. Gag grouper landings resulting from bottom fishing activities along the coast of Georgia were minimal during 2020 and other recent years. With specific regard to black grouper landings documented by MRIP-FES in the South Atlantic region, more than 99% of all such landings were documented along Florida's east coast during 2020, with only trace landings documented elsewhere in the region that year.

Gag grouper landings for additional MRIP data collection years (2015 through 2019) are depicted by state/region in Table 3.4.2.2. below. In keeping with the 2020 data above, notable in the table are the relatively extensive landings documented among participants active in the Florida East recreational sector during the time-series.

Table 3.4.2.2. Recreational landings of gag grouper in the South Atlantic: 2015 through 2019*.

Year	**Landings by State/Region** (in numbers of fish)				
	Florida Keys	Florida East	Georgia	South Carolina	North Carolina
2015	1,223	14,331	0	588	3,447
2016	2,240	18,943	0	331	3,890
2017	0	17,065	5,352	2,522	3,688
2018	40	22,760	1,908	34	171
2019	0	12,154	0	2,000	7,569
Total	3,463	85,253	7,260	5,475	18,594

Source: MRIP-generated data as presented in Matter and Nuttall (2020) for SEDAR 71; *2019 is the most recent recreational data addressed in SEDAR 71; these figures incorporate all modes of recreational fishing: private vessel, hired vessel, and shoreline.

3.5. Environmental Justice Considerations

Executive Order (EO) 12898 (Environmental Justice) was established in 1994 to require that federal actions be undertaken in a way that identifies and avoids adverse human health and/or social and economic effects among low-income and minority groups and populations around the nation and its territories. As such, federal regulatory decisions must be undertaken in ways that ensure no individuals or populations are excluded, denied the benefits of, or are subjected to discrimination due to race, color, or nation of origin. Established in 2021, EO 13985 calls for human equity in the context of federal decision-making and policy actions. This EO requires that federal policies and programs are designed to deliver resources and benefits equitably to all citizens, including members of historically underserved communities. Here, the phrase "underserved communities" refers to persons and groups of persons who have been systematically denied equitable opportunity to participate in economic, social, and civic aspects of life in the nation. Finally, EO 14008, established in 2021, calls on agencies to make the achievement of environmental equity and justice part of their respective missions "by developing programs, policies, and activities that address disproportionately high and adverse human health, environmental, climate-related and/or other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts."

NOAA Fisheries released a National Environmental Equity and Justice (EEJ) Strategy in 2023, with each regional office submitting a draft region-specific EEJ implementation plan to agency headquarters early in April 2024. The Southeast EEJ Implementation Plan will ultimately guide NOAA Fisheries' efforts to mitigate EEJ issues and improve its services to underserved fishery-oriented populations around the U.S. Caribbean, Gulf of Mexico, and South Atlantic fishery management regions.

Various data are presently available to indicate environmental justice issues among underserved populations and communities potentially affected by federal regulatory actions and other sources of change in the South Atlantic. Census data, including community-specific rates of poverty, number of households maintained by single females, number of households with children under the age of five, rates of crime, and rates of unemployment exemplify data of value for identifying underserved populations and assessing community-level vulnerabilities to environmental, regulatory, and other sources of change among the nation's fishing- and/or seafood-oriented communities (see Jacob et al. 2013; Jepson and Colburn 2013; Hospital and Leong 2021). The following two figures use three composite indices—termed here as poverty, population composition, and personal disruption—to indicate relative degrees of socioeconomic vulnerability among communities that are most deeply involved in: (a) the South Atlantic black sea bass commercial fishery sector, and (b) the recreational sector of the region's gag/black grouper fishery. Mean standardized scores are provided along the y-axis and means for vulnerability measures and threshold standard deviations are depicted along the x-axis. Scores exceeding the 0.5 standard deviation level indicate social vulnerabilities to various sources of change.

As indicated in Figure 3.5.1 below, two of the principal commercial black sea bass landings communities exceed the designated vulnerability thresholds for one or more indices. Snead's Ferry, situated along the central coast of North Carolina, exceeds the 0.5 standard deviation threshold for personal disruption, while the rural Pamlico Sound community of Hobucken far exceeds the two standard deviation threshold for the same aggregated indicators. Meanwhile, the community of Beaufort, also along the central North Carolina coastline, exceeds the 0.5 standard deviation threshold for poverty.

Finally, Figure 3.5.2 depicts social vulnerability measures for communities most extensively involved in the South Atlantic recreational fishing industry. The data presented here indicate the presence of such issues especially in the Florida communities of Miami and Key Largo, and in the North Carolina communities of Hatteras, Morehead City, and Manteo. Both figures derive from data available in the SERO Community Social Vulnerability Indicators (CSVI) Database.

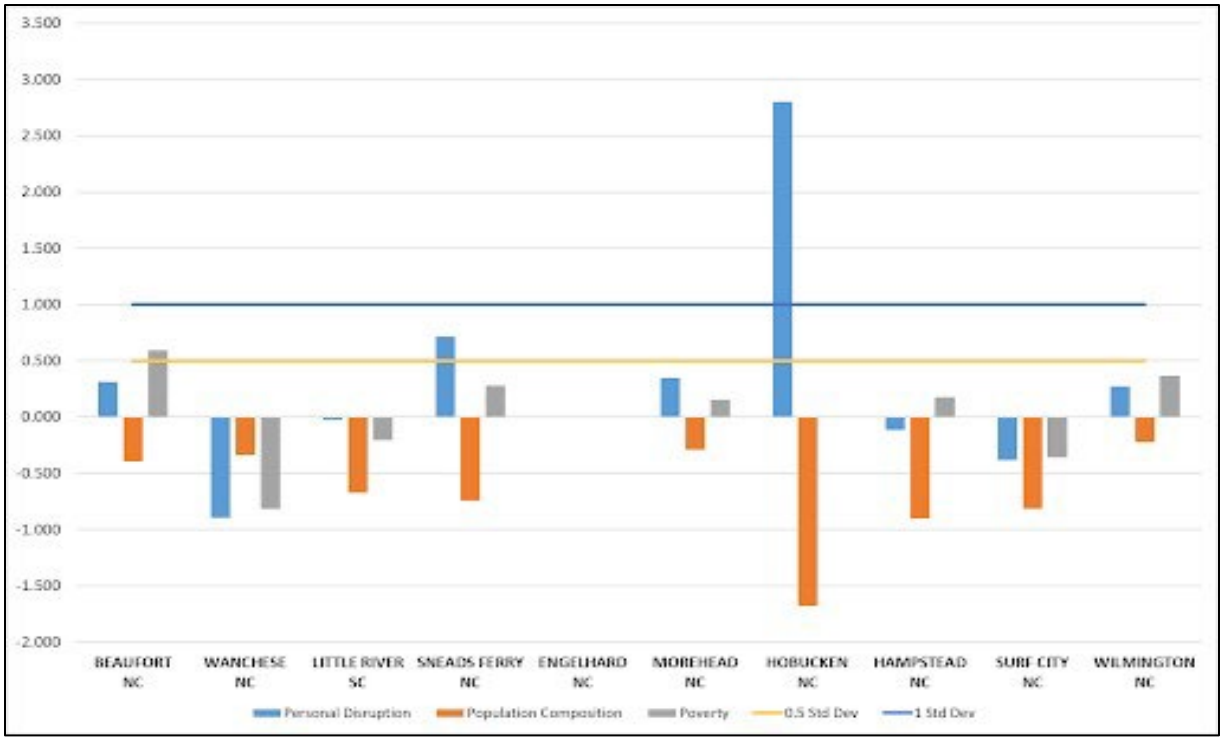


Figure 3.5.1. Socioeconomic vulnerability measures for communities most extensively involved in the South Atlantic commercial black sea bass fishery.
Source: SERO CSVI Database, accessed March 2024.

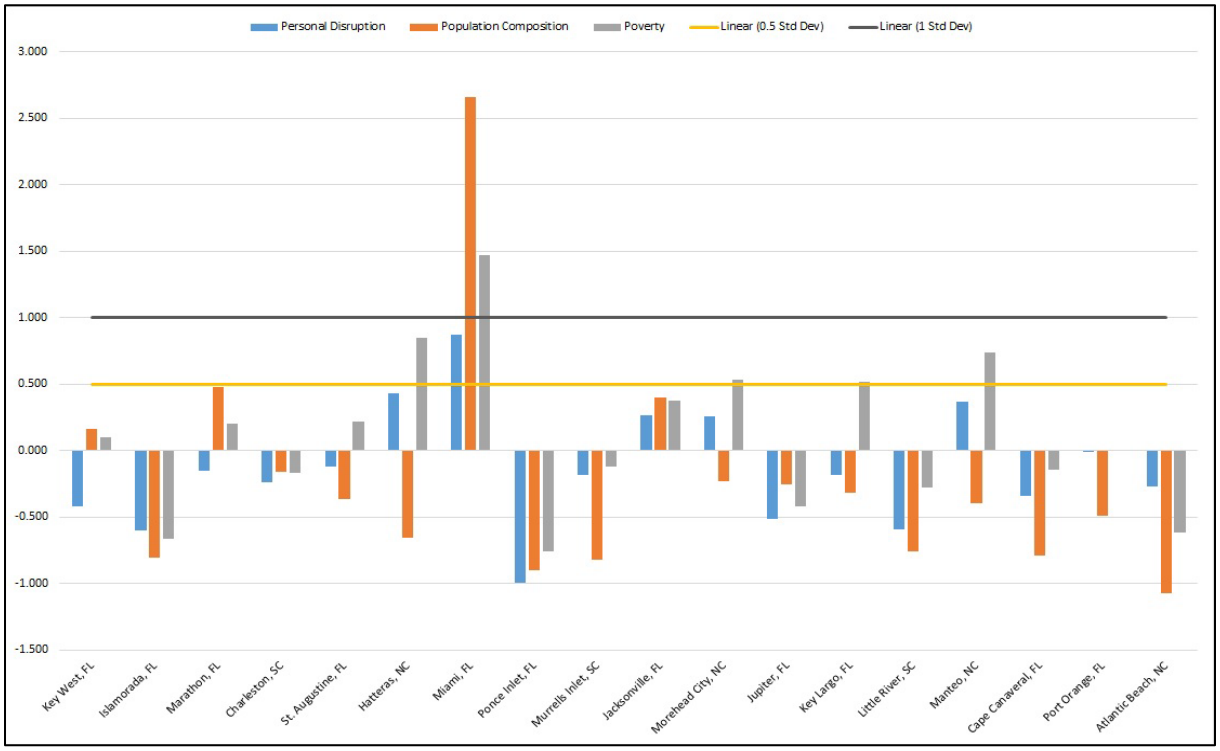


Figure 3.5.2. Socioeconomic vulnerability measures for communities most extensively involved in the recreational sector of the South Atlantic snapper grouper fishery.
Source: SERO CSVI Database, accessed March 2024.

3.6. Administrative Environment

3.6.1. Federal Fishery Management

Federal fishery management is conducted under the authority of the 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 the EEZ, an area extending 200 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 (Secretary) 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 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. In most cases, the Secretary has delegated this authority to NMFS.

The 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 North Carolina, South Carolina, Georgia, and east Florida to Key West. The Council has thirteen voting members: one from NMFS; 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 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 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 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 and legal matters, are open to the public. The Council uses its Scientific 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 Procedure Act, in the form of "notice and comment" rulemaking.

3.6.2. 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 Environmental Quality. 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 Management 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 Council. The purpose of state representation at the 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 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 ASMFC is also represented at the Council level, but does not have voting authority at the Council level.

NMFS's 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.

3.6.3. Enforcement

Both the NMFS Office for Law Enforcement (NOAA/OLE) and the USCG have the authority and the responsibility to enforce 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.

The NOAA Office of General Counsel Penalty Policy and Penalty Schedule is available online at https://www.noaa.gov/general-counsel/gc-enforcement-section/penalty-policy-and-schedules.

Chapter 4. Environmental Effects and Comparison of Alternatives

4.1. Action 1. Revise Recreational Vessel Limits for Gag and Black Grouper

4.1.1. Biological Effects

Generally, positive biological effects occur when fishing mortality (which can occur as landings or dead releases) is reduced.

The majority of recreational vessel trips that harvested gag or black grouper from 2018 through 2022 harvested two or less gag (Figure 4.1.1.1) and two or less black grouper (Figure 4.1.1.2). Less than 3% of vessel trips that landed gag or black grouper also landed the other species.

Alternatives 2 and **3** are expected to reduce landings of gag and black grouper per fishing trip, relative to **Alternative 1 (No Action)**, by varying amounts, based on species and recreational component (private, charter, or headboat) (Tables 4.1.1.1 and 4.1.1.2). Headboats are expected to be the most affected component, with an expected reduction in average landings per trip of approximately 30% for each species. Average landings per trip for private and charter components are expected to be reduced by 10-15% for each species.

Alternatives

1. (No Action). The vessel limits for the private component of the recreational sector are two gag per vessel per day and two black grouper per vessel per day, not to exceed the daily bag limit of one gag or black grouper per person per day, whichever is more restrictive. The vessel limits for the for-hire (charter and headboat) component of the recreational sector are two gag per vessel per trip and two black grouper per vessel per trip, not to exceed the daily bag limit of one gag or black grouper per person per day, whichever is more restrictive.

2. Establish an aggregate private recreational vessel limit of two gag or black grouper per vessel per day, not to exceed the daily bag limit of one gag or black grouper per person per day, whichever is more restrictive.

3. Establish an aggregate for-hire (charter and headboat) recreational vessel limit of two gag or black grouper per vessel per trip, not to exceed the daily bag limit of one gag or black grouper per person per day, whichever is more restrictive.

*See Chapter 2 for detailed language of alternatives. **Preferred indicated in bold.**

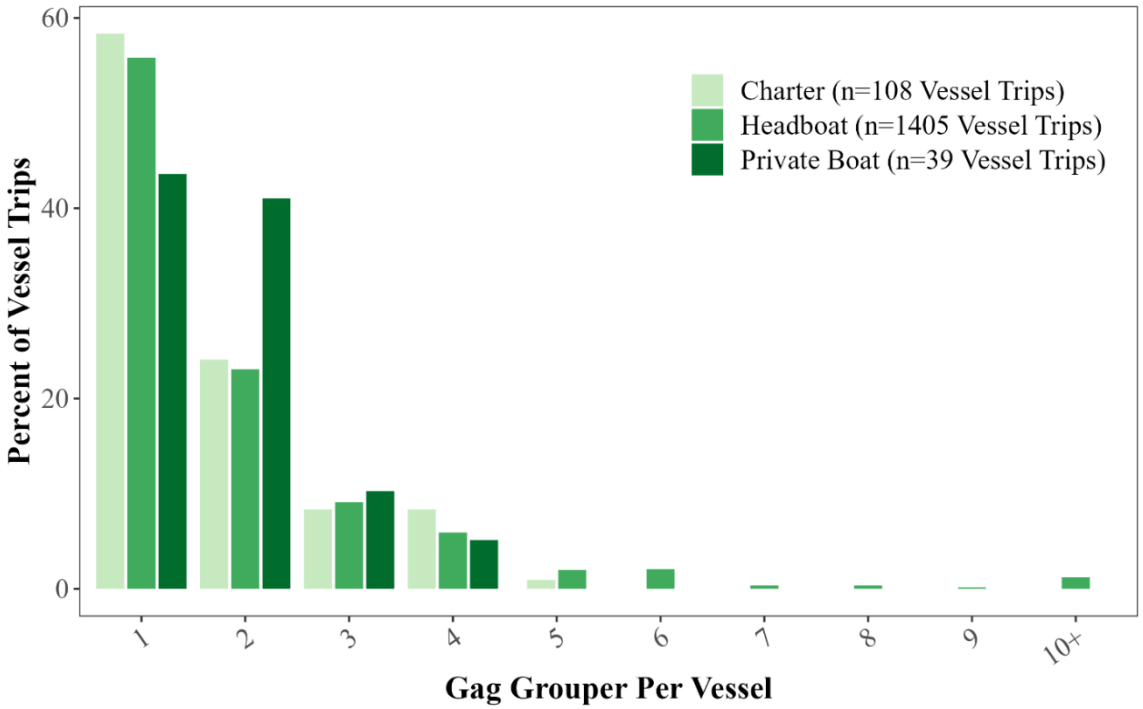


Figure 4.1.1.1. Distribution of gag vessel harvest from dockside intercept and headboat logbook data from 2018-2022, by recreational fleet.

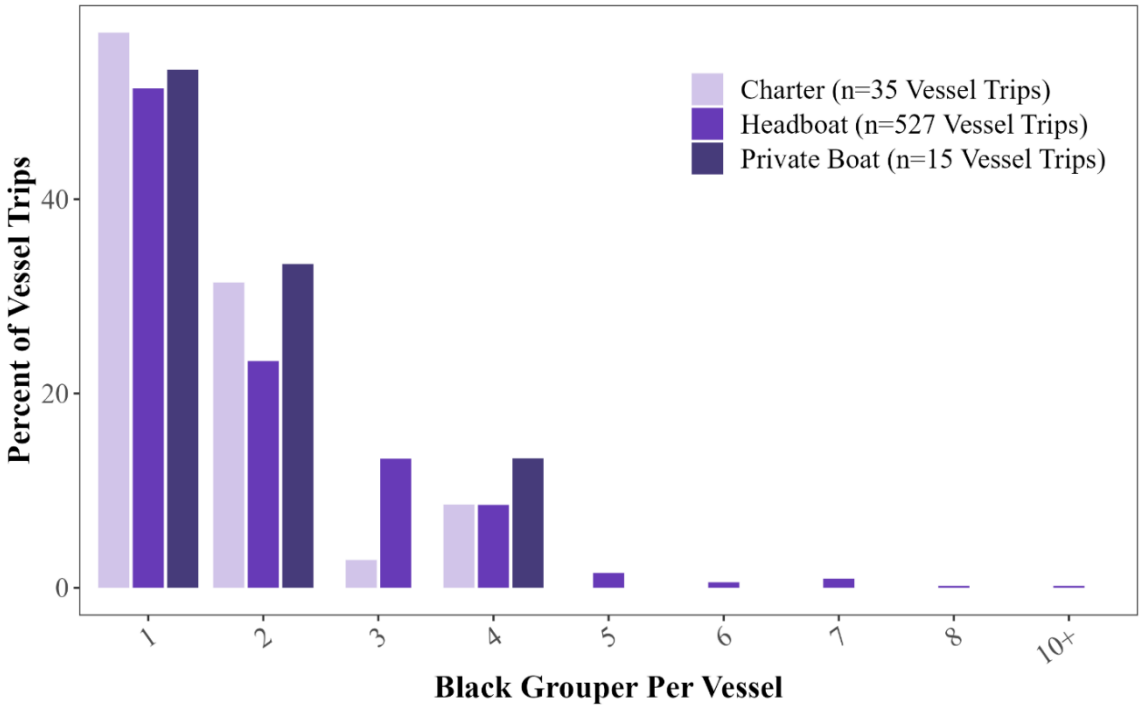


Figure 4.1.1.2. Distribution of black grouper vessel harvest from dockside intercept and headboat logbook data from 2018-2022, by recreational fleet.

Table 4.1.1.1. Proposed recreational vessel limit alternatives and associated percent reductions in landings for gag in the South Atlantic.

Species	Alternative	Private	Charter	Headboat
Gag	Alternative 1: No Action (two gag or two black grouper per vessel / trip)	0.0%	0.0%	0.0%
	Alternative 2: two gag or black grouper per vessel per day (private boat)	-10.5%	0.0%	0.0%
	Alternative 3: two gag or black grouper per vessel per trip (for-hire)	0.0%	-14.6%	-29.2%
	Alternative 2 & 3: two gag or black grouper per vessel per day / trip (all fleets)	-10.5%	-14.6%	-29.2%

Table 4.1.1.2. Proposed recreational vessel limit alternatives and associated percent reductions in landings for black grouper in the South Atlantic.

Species	Alternative	Private	Charter	Headboat
Black Grouper	Alternative 1: No Action (two black grouper and two gag per vessel / trip)	0.0%	0.0%	0.0%
	Alternative 2: two black grouper or gag per vessel per day (private boat)	-12.7%	0.0%	0.0%
	Alternative 3: two black grouper or gag per vessel per trip (for-hire)	0.0%	-13.5%	-31.0%
	Alternative 2 & 3: two black grouper or gag per vessel per day / trip (all fleets)	-12.7%	-13.5%	-31.0%

Due to reduced landings per trip, **Alternatives 2** and **3** are each (and cumulatively) expected to extend the recreational gag season compared to **Alternative 1 (No Action)** (Table 4.1.1.3). **Alternatives 2** and **3** are not expected to extend the recreational fishing season for black grouper because the recreational annual catch limit (ACL) has not been met in recent years (2018-2022). Therefore, the season for black grouper has not been limited by the annual landings and would not be expected to become limited under a lower overall vessel limit.

Refer to Appendix F for the complete vessel limit analysis.

Table 4.1.1.3. The predicted closure dates for the three vessel limits alternatives proposed for gag in the South Atlantic recreational sector, for an ACL of 133,075 lb gw, using MRIP (FES) units.

Vessel Limit Alternative	ACL Met	Season
Alternative 1: No Action (two gag or two black grouper per vessel / trip)	7-Aug	98
Alternative 2: two gag or black grouper per vessel per day (private boat)	22-Aug	113
Alternative 3: two gag or black grouper per vessel per trip (for-hire)	11-Aug	102
Alternatives 2 & 3: two gag or black grouper per vessel per trip (all fleets)	26-Aug	117

Data Source: SEFSC FES ACL Monitoring – Feb 2024.

Alternatives 2 and **3** would be expected to reduce harvest rates of gag and black grouper, relative to **Alternative 1 (No Action)**. Additionally, recreational harvests are limited to the ACLs through accountability measures. Therefore, none of the alternatives would be expected to result in overfishing due to annual landings.

The number of recreational releases of gag and black grouper resulting from the revised vessel limits proposed in **Alternatives 2** and **3** can be affected in different ways, depending on the behavioral response of the fishery. Gag and black grouper are also sometimes caught incidentally when fishing for other snapper grouper species (Refer to the Bycatch Practicability Analysis in Appendix G). Under a shorter season, as would be the case for gag under **Alternative 1 (No Action)**, this could prolong the time when all gag that are caught must be release, increasing the number of releases and dead releases (estimated as a fraction of the releases). Reducing the recreational vessel limits could increase the number of released gag or black grouper per trip, because fish that could have been retained would be discarded under a lower vessel limit. Additionally, gag and black grouper are both subject to minimum size limits (both 24 inches total length). Lengthening of the recreational season could prolong the time period during which gag are targeted and undersized fish are caught and released, increasing the number of fish that die due to this process. However, a lengthened gag season could also contribute to reduced discards by allowing legal-sized gag to be kept, rather than released, for a longer portion of the year. Continuing improved compliance with descender device requirements could improve survival of released fish and mitigate negative effects from catch-and-release fishing.

Overall, compared to **Alternative 1 (No Action)**, if dead releases are not increased substantially by the vessel limits proposed in **Alternatives 2** and **3**, these vessel limits are expected to reduce annual harvest of black grouper and harvest per trip for both species. Recreational release mortality rates for gag and black grouper are 25% and 20% (meaning expected survival of 75% and 80% of released fish), respectively (SEDAR 19 2010 and SEDAR 71 2022). Considering most recreational trips harvest two or fewer gag or black grouper (Figures 4.1.1.1 and 4.1.1.2), the number of recreational releases of either species is unlikely to increase substantially for most trips. Therefore, with mixed biological effects on dead releases and overall positive biological effects from reduced landings per trip (neutral effect on gag because harvest is expected to be

limited by the ACL and positive effect on black grouper), **Alternatives 2** and **3** would be expected to result in greater net biological benefits than **Alternative 1 (No Action)**.

4.1.2. Economic Effects

Revising the vessel limit for gag and black grouper would likely result in direct economic effects through a reduction in harvest and economic benefits associated with that harvest. As such **Alternatives 2** and **3** would be expected to reduce net economic benefits (as measured in consumer surplus or CS) on some fishing trips, with **Alternative 2** affecting anglers on private recreational trips and **Alternative 3** affecting anglers on for-hire trips.

According to Table 3.3.2.1 and Table 3.3.2.3, there are a relatively low number of for-hire trips targeting gag or black grouper. It is assumed that revising the vessel limit in **Alternative 3** would only affect catch per trip and not notably affect the overall number of trips taken due to the low retention limits for gag and black grouper. This assumption includes no notable direct change to for-hire fishing activity and thus no change in direct economic effects for the for-hire component of the recreational sector. As such, there are no estimated changes to producer surplus provided for the recreational sector.

The recreational annual catch limits (ACLs) for gag that were recently implemented in Amendment 53 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region will initially constrain recreational landings due to the sector ACL being met and the accountability measure being triggered (SAFMC 2023a). As such, although harvest would be reduced for gag on some fishing trips as a result of **Alternative 2** or **Alternative 3**, the overall harvest of gag as well as the related total CS derived from this harvest should be comparable across all of the alternatives being considered. For black grouper, the recreational ACL is not constraining on harvest and reductions in harvest that result from a vessel limit for the species would also be representative of a reduction in overall harvest along with a reduction in CS associated with the reduced harvest. Thus, there would be an expected reduction in net economic benefits that would occur under **Alternative 2** or **Alternative 3** in relation to black grouper.

The quantitative economic effects of Action 1 focus on black grouper since there is an expected reduction in total harvest directly resulting from a vessel limit for this species. Gag are not included in the quantitative analysis, since harvest is already being notably constrained by sector ACL for the species and reductions in harvest resulting from a vessel limit are expected on the trip level but not for overall harvest. The quantitative economic effects of this action include application of 5-year average landings for black grouper in numbers of fish by component of the recreational sector (private, charter, and headboat) to the reductions found in Table 4.1.1.2. The 5-year average landings of black grouper from 2018 to 2022 are 2,910 fish for the private component, 1,580 fish for the charter component, and 205 fish for the headboat component[16]. Reductions in the total number of fish are then applied to a consumer surplus estimate of $128 per fish for the second grouper kept on a recreational trip to provide the estimated change in net

[16] Personal communication, NMFS SERO Limited Access Privilege Program/Data Management Branch, April 29, 2024.

economic benefits (Section 3.3; 2023 dollars). In doing so, **Alternative 2** would reduce net economic benefits by an estimated $47,311 and **Alternative 3** would reduce net economic benefits by $35,444 annually (2023 dollars). In combination, **Alternative 2** and **Alternative 3** would reduce net economic benefits by $82,755annually (Table 4.1.2.1; 2023 dollars).

In terms of negative economic effects, **Alternative 2** would have the highest negative economic effects followed by **Alternative 3** and **Alternative 1 (No Action)**.

Table 4.1.2.1. Comparison of the estimated change in recreational landings of black grouper and the associated change in net economic benefits (CS) for Action 1 (2023 dollars).

Alternative	Estimated change in black grouper landings (numbers of fish)	Total estimated change net economic benefits (2023 dollars)
Alternative 1 (No Action)	0	$0
Alternative 2	-370	-$47,311
Alternative 3	277	-$35,444
Alternatives 2 and 3 combined	647	-$82,755

4.1.3. Social Effects

In general, establishing a vessel limit may help slow the rate of harvest, lengthen a season, and prevent the ACL from being exceeded. However, limits that are too low may make fishing trips inefficient and too costly if fishing grounds are too far away. Establishing a vessel limit would restrict recreational fishing opportunities for gag and black grouper and change the recreational fishing experience. By restricting the number of gag that can be kept, the season would also likely be longer because the rate of harvest would be slower. The black grouper season will likely be unaffected, as recent harvests have not limited the season by exceeding the recreational ACL. It is also likely that fishermen who have targeted gag and black grouper in recent years also target other species and may be able to adjust their businesses to adapt to regulatory changes.

Under the current recreational ACL, recreational landings of gag are anticipated to result in triggering of recreational AMs in the short-term. Establishing a private recreational aggregate vessel limit (**Alternative 2**) and for-hire aggregate vessel limit (**Alternative 3**) may work to extend the season for gag when compared to **Alternative 1 (No Action)**. AMs for black grouper are not anticipated to be triggered under any alternatives, but including black grouper in the aggregate vessel limit will make the vessel limit more consistent with bag limits that aggregate gag and black grouper.

An aggregate vessel limit for the private recreational sector (**Alternative 2**) that results in a reduction in landings is likely to have negative social effects on the private recreational sector in the form of decreased access to the resource. However, the proposed vessel limit may work to extend the fishing season providing access to the gag stock for the largest portion of the year. The for-hire component of the recreational sector would also experience negative social effects

on the form of decreased access under an aggregate vessel limit (**Alternative 3**). The negative social effects would be compounded on trips where the number of paying passengers exceeds the number of gag that may be retained.

Alternative 2 and **Alternative 3** combined would set the aggregate vessel limit for both components of the recreational sector (private and for-hire) and thus would result in the largest reduction in landings but would also provide for a longer season.

Ultimately, social effects on the private and for-hire components of the recreational sector will depend on individual community preferences for catch levels versus season length. Overall, slowing the rate of harvest, which would contribute to ending overfishing of gag, would be expected to contribute to the sustainability of harvest and the health of the gag stock and provide long term social benefits to South Atlantic fishing communities.

4.1.4. Administrative Effects

Alternatives 2 and **3** could increase administrative burden in the form of cost, time, or law enforcement efforts in the short-term, as law enforcement personnel adapt to the vessel limit changes. However, because **Alternative 1 (No Action)** maintains vessel limits, monitoring and enforcement efforts would not change under this alternative.

4.2. Action 2. Revise Transit Stowage Requirements for Black Sea Bass Pots With On-Demand Gear

Alternatives

1 (No Action). Pots must not be baited and all buoys must be disconnected from the gear; however, buoys may remain on deck.

2. Pots must not be baited, but may have buoys connected to the gear during transit.

3. Pots must not be baited and buoys must be disconnected from the gear or stowed within the sea bass pot during transit.

*See Chapter 2 for detailed language of alternatives. **Preferred indicated in bold.**

4.2.1. Biological Effects

Black Sea Bass

None of the alternatives are predicted to alter harvest and would not provide additional protection to the black sea bass stock or other non-target species. Therefore, there are no biological effects on the black sea bass stock from the alternatives in Action 2.

Protected Species

The South Atlantic black sea bass pot sector is listed as part of the larger "Atlantic mixed species trap/pot fishery" under the List of Fisheries (LOF). The National Marine Fisheries Service (NMFS) publishes annually an LOF as required by the Marine Mammal Protection Act (MMPA). The LOF classifies U.S. commercial fisheries into one of three categories according to the level of incidental mortality or serious injury of marine mammals:

I. **frequent** incidental mortality or serious injury of marine mammals
II. **occasional** incidental mortality or serious injury of marine mammals
III. **remote likelihood of/no known** incidental mortality or serious injury of marine mammals.

The classification of a fishery on the LOF determines whether participants in that fishery are subject to certain provisions of the MMPA, such as registration, observer coverage, and take reduction plan requirements.

The black sea bass pot sector is considered a Category II fishery by the NMFS because of its potential to occasionally interact with marine mammals. The Atlantic mixed species trap/pot fishery has had interactions with threatened and endangered species including fin and humpback whales (January 28, 2015; 79 FR 77919). Some pot gear in other areas are Category I fisheries under the LOF, such as the Northeast/Mid-Atlantic American lobster and Jonah crab trap/pot fishery, because they frequently cause incidental mortalities or serious injuries of marine mammals. Category I fisheries have been documented to cause serious injury and death to North Atlantic right whales (Johnson et al. 2005, Knowlton et al. 2012). Other trap/pot fisheries are classified as Category III fisheries, such as the Southeastern U.S. Atlantic and Gulf of Mexico golden crab trap/pot fishery, because there is a remote likelihood of or no known incidental mortality or serious injury of marine mammals.

Entanglements incidental to commercial fishing are the primary threat to right whales; however, less is known about the source of entanglement. Black sea bass gear has not been definitively identified in entanglements, although it cannot be ruled out as gear that has resulted in serious injuries or deaths to right whales.

Allowing for practical storage of on-demand black sea bass pots during transit could increase the likelihood that fishermen will use on-demand gear. Disconnecting buoys from on-demand black sea bass pots may be time consuming. Thus, **Alternative 1 (No Action)** may limit the adoption of on-demand gear by black sea bass fishermen. Switching from traditional roped gear to on-demand gear would reduce the number of lines in the water and thus lower the probability of negative interactions with marine mammals. Thus, **Alternatives 2** and **3** could have a positive effect on marine mammals by making transit requirements more practical for on-demand black sea bass pots, potentially increasing the use of on-demand gear and reducing the number of vertical lines in the water.

4.2.2. Economic Effects

None of the alternatives being considered in Action 2 would affect landings or revenues for commercial vessels participating in the pot fishery for black sea bass, thus there are no anticipated direct economic effects for this action in relation to changes in revenue. There may be direct economic effects that stem from the opportunity cost of the difference in time that may be spent to satisfy new stowage requirements under **Alternative 2** or **Alternative 3** if it is different than the time that it takes to satisfy existing stowage requirements under **Alternative 1 (No Action)**. The opportunity cost would depend on the ease of compliance with transit stowage requirements for the alternative being considered, with more burdensome alternatives exhibiting higher adverse economic effects. **Alternative 1 (No Action)** requires that the buoy be disconnected from the gear and thus is likely the most burdensome and time consuming alternative with the associated highest opportunity costs and negative economic effects. **Alternative 3** would allow the buoy to be either disconnected from the gear or stowed in the pot, adding an additional option for commercial fishery participants and somewhat easing the ability to comply with transit stowage requirements. **Alternative 2** would allow the buoy to be connected to the gear and thus would be the easiest alternative to comply with transit stowage requirements and have the lowest associated opportunity costs and negative economic effects. The realized economic effects of the alternatives considered would be highly variable and depend on the number of pots fished, number of sets, and number of trips taken every year.

In terms of economic effects, **Alternative 2** would be the most beneficial for fishermen and have the lowest associated opportunity costs followed by **Alternative 3** and **Alternative 1 (No Action)**.

4.2.3. Social Effects

In general, the social effects of gear specifications are associated with the economic effects and burden on black sea bass fishermen, and with broad social benefits that could occur with improved protection for right whales. **Alternative 2** and **Alternative 3** would not require the use of on-demand gear, it would simply make current transit requirements more convenient for black sea bass fishermen who would prefer to utilize on-demand gear when compared to **Alternative 1 (No Action)**.

Marine mammal protection has broad social effects as well, as conservation of endangered species can produce societal benefits by protecting species for aesthetic, economic, scientific, and historical value to the U.S. and citizens. The social benefits would be tied to any benefits for

right whale protection if on-demand gear is more commonly utilized under **Alternative 2** and **Alternative 3**. Overall, any social benefits that would be expected to result from improved right whale protection would only be realized when biological benefits to the right whales can be measured and demonstrated.

4.2.4. Administrative Effects

Alternatives 2 and **3** would change the current transit stowage requirements and could increase administrative burden in the form of cost, time, or law enforcement efforts in the short-term, as law enforcement personnel adapt to the changes. Under **Alternative 1 (No Action)**, transit stowage requirements remain unchanged, so that alternative would retain the current level of administrative effects.

Indirectly, if **Alternatives 2** or **3** contribute to increased usage of on-demand gear in the black sea bass pot fishery, law enforcement priorities and activities will need to adapt to a higher number of on-demand pots, which may not be visible or accessible without the fishermen being present. This could lead to difficulties in monitoring whether pots are being fished in allowable areas and changes in how law enforcement can conduct onsite checks to ensure compliance with black sea bass pot specifications (e.g. trap dimensions, mesh size, etc.).

Chapter 5. Council's Choice for the Preferred Alternative

5.1. Action 1. Revise Recreational Vessel Limits for Gag and Black Grouper

5.1.1. Snapper Grouper Advisory Panel Comments and Recommendations

The Snapper Grouper Advisory Panel (AP) discussed proposed actions for Regulatory Amendment 36 during their March 2024 meeting in Charleston, SC. The AP additionally had a general discussion about how recreational vessel limits should be applied to headboats.

The AP's general recommendation concerning recreational vessel limits for headboats was to consider applying such limits in proportion to the number of anglers (e.g. number of anglers/six) for federally-permitted headboats. AP members commented that headboat businesses are dependent on anglers being able to keep a large portion of their catch and headboats provide access for people that cannot afford or otherwise do not have a vessel. The AP also had some discussion about the definition of vessels that would be included in such a consideration, and noted that U.S. Coast Guard Certificates of Inspection may be useful in defining applicable vessels for a headboat-specific limit.

Alternatives

No Action). The vessel limits for the private component of the recreational sector are two gag per vessel per day and two black grouper per vessel per day, not to exceed the daily bag limit of one gag or black grouper per person per day, whichever is more restrictive. The vessel limits for the for-hire (charter and headboat) component of the recreational sector are two gag per vessel per trip and two black grouper per vessel per trip, not to exceed the daily bag limit of one gag or black grouper per person per day, whichever is more restrictive.

2. Establish an aggregate private recreational vessel limit of two gag or black grouper per vessel per day, not to exceed the daily bag limit of one gag or black grouper per person per day, whichever is more restrictive.

3. Establish an aggregate for-hire (charter and headboat) recreational vessel limit of two gag or black grouper per vessel per trip, not to exceed the daily bag limit of one gag or black grouper per person per day, whichever is more restrictive.

*See Chapter 2 for detailed language of alternatives. **Preferred indicated in bold.**

The AP passed two motions regarding Action 1. The first motion recommended that the Council add an alternative to Action 1 to implement an aggregate gag and black grouper vessel limit for recreational for-hire vessels that are federally inspected and permitted to carry more than six passengers (intended to align with a federal headboat definition) of two fish for every six passengers on board, not to exceed a maximum number of fish per vessel per trip ranging from 6-12 fish and not to include retention for captain and crew. The second motion recommended that the Council select **Alternative 2** and **Alternative 3** modified with the removal of the headboat component, as the preferred alternatives for Action 1.

5.1.2. Law Enforcement Advisory Panel Comments and Recommendations

The Law Enforcement AP (LE AP) discussed proposed actions for Regulatory Amendment 36 during their January 2024 meeting in Charleston, SC. The LE AP did not provide any comments regarding enforcement difficulties for aggregate gag and black grouper recreational vessel limits.

5.1.3. Scientific and Statistical Committee Comments and Recommendations

The Scientific and Statistical Committee will review proposed actions for Regulatory Amendment 36 at their August 2024 meeting.

5.1.4. Public Comments and Recommendations

Scoping webinars were conducted on February 12 and 13, 2024, and written comments were accepted through 5pm on February 16, 2024. Four written comments were submitted using the Council's online public comment form for Regulatory Amendment 36. Two comments were emailed to the Council and are available on the Council's March 2024 Council Meeting webpage, although one of those was a copy of a comments submitted through the online form. Seven comments were given verbally at the scoping webinars. Most commenters were commercial fishery stakeholders, although at least one comment was received from the following stakeholder groups: for-hire, recreational, wholesale/dealer/retail, non-governmental organization, and other.

During scoping, two comments supported the recreational aggregate vessel limits of two gag or black grouper per person per day/trip.

Additional comments were provided during the March 2024 Council Meeting public comment session. Comments submitted online are available through the Council's March 2024 Council Meeting webpage.

5.1.5. Council's Draft Rationale

The Council has not selected a preferred alternative for Action 1.

5.2. Action 2. Revise Transit Stowage Requirements for Black Sea Bass Pots With On-Demand Gear

Alternatives

1 (No Action). Pots must be is unbaited and all buoys must be disconnected from the gear; however, buoys may remain on deck.

2. Pots must be unbaited, but may have buoys connected to the gear during transit.

3. Pots must be unbaited and buoys must be disconnected from the gear or stowed within the sea bass pot during transit.

*See Chapter 2 for detailed language of alternatives. **Preferred indicated in bold.**

5.2.1. Snapper Grouper Advisory Panel Comments and Recommendations

During their March 2024 meeting, the Snapper Grouper AP passed a motion recommending that the Council select **Alternative 3** as the preferred alternative for Action 2. Support for this alternative came primarily from preference expressed by some black sea bass pot endorsement holders through conversations with AP members.

5.2.2. Law Enforcement Advisory Panel Comments and Recommendations

During their January 2024 meeting, the LE AP provided the following comments concerning more widespread use of on-demand black sea bass pots:

- Adopting on-demand technology may change the expectation for enforcement. There would be no buoys to indicate the location of the gear; hence, officers would not be able to inspect the gear while in the water to confirm other requirements (e.g., side panel configuration, pot dimensions, etc.). If the expectation does change, it should be acknowledged and communicated to law enforcement.
- On-demand gear could be equipped with GPS device or pingers to facilitate locating the pots. North Carolina has a new observer program that requires a call-in. A similar approach could be considered for black sea bass pot endorsement holders to report pot locations. However, in-water gear inspections still would not be possible because officers would not be able to access the pot.
- The Exempted Fishing Permit under which the feasibility of on-demand gear was investigated, included an application that allowed fishermen to locate their pots.
- In addition to in-water inspections for pot specifications, on-demand gear allows the potential for pots to be deployed in closed areas without being detected. Even if gear location reporting is required, fishermen that deploy pots in closed areas are not likely to report those locations.
- The LE AP did not recommend against the use of on-demand gear. However, the AP does note that while on-demand pots provide a biological benefit of fewer whale interactions, they also come with the potential for fewer violations to be identified due to reduced access to the gear in the water.
- The LE AP did not express any opposition to buoy storage within a pot as an appropriate indicator that the pot is not actively being fished during transit through a closed area, special management zone, or marine protected area.

5.2.3. Scientific and Statistical Committee Comments and Recommendations

The Scientific and Statistical Committee will review proposed actions for Regulatory Amendment 36 at their August 2024 meeting.

5.2.4. Public Comments and Recommendations

During scoping, four commenters expressed general support for the expanded use of on-demand gear in the black sea bass pot fishery. Four commenters expressed support for not requiring that buoys be detached while stowed and transiting marine protected areas (MPA) and special management zones (SMZ). These commenters expressed support for allowing the buoy to be stored within the pot.

Additional comments were provided during the March 2024 Council Meeting public comment session. Comments submitted online are available through the Council's March 2024 Council Meeting webpage.

5.2.5. Council's Draft Rationale

The Council has not selected a preferred alternative for Action 2.

Chapter 6. Cumulative Effects

6.1. Affected Area

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 (South Atlantic exclusive economic zone [EEZ]), which is also the South Atlantic Fishery Management Council's (Council) area of jurisdiction. In light of the available information, the extent of the boundaries 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 Volume II of the Fishery Ecosystem Plan.[17] For the proposed actions found in Regulatory Amendment 36 to the Fishery Management Plan (FMP) for the Snapper Grouper Fishery of the South Atlantic Region (Snapper Grouper FMP), the cumulative effects analysis includes an analysis of data from 2017 through the present.

6.2. Past, Present, and Reasonably Foreseeable Actions Impacting the Affected Area

The complete history of management of the snapper grouper fishery in the South Atlantic region can be found on the NOAA Fisheries website (NOAA Fisheries Rules and Regulations webpage) and on the South Atlantic Fishery Management Council website (Snapper Grouper FMP webpage). Described below are the most relevant past, present, and reasonably foreseeable future actions.

Past Actions

Regulatory Amendment 16 the Snapper Grouper FMP, effective February 21, 2017, revised the seasonal prohibition on the use of black sea bass pot gear in the South Atlantic and added a gear-marking requirement for black sea bass pot gear to aid in identification in the event of a whale entanglement.

Amendment 53 to the Snapper Grouper FMP, effective October 23, 2023, addressed the results of the latest stock assessment for the gag stock in the South Atlantic region. Gag was determined to be overfished and undergoing overfishing. The Council established a rebuilding plan and adjusted catch levels and management measures to end overfishing.

Present Actions

Amendment 56 to the Snapper Grouper FMP is intended to respond to the most recent stock assessment for South Atlantic black sea bass. Actions being initially considered for Amendment 56 include establishment of a rebuilding plan, revision of catch levels, revision of sector allocations, and other measures intended to rebuild the stock.

[17] https://safmc.net/documents/fishery-ecosystem-plan-2-fep-ii/

Reasonably Foreseeable Future Actions

Seasonal closure for black sea bass pots were initially established to reduce interactions with migrating whales. Given that on-demand gear is effective at reducing these interactions while allowing pot fishing to occur, the Council may consider changes to the current nearshore seasonal closures. This action could be included for consideration in Amendment 56, although it could also be considered in a later amendment.

6.3. Consideration of Climate Change and Other Non-Fishery Related Issues

Climate Change

Global climate changes could have significant effects on Atlantic fisheries, though the extent of these effects on the snapper grouper fishery is not known at this time. The Environmental Protection Agency's climate change webpage (https://www.epa.gov/climate-indicators/marine-species-distribution), and NOAA's Office of Science and Technology climate webpage (https://www.fisheries.noaa.gov/topic/climate), provides background information on climate change, including indicators which measure or anticipate effects on oceans, weather and climate, ecosystems, health and society, and greenhouse gases. The United Nations Intergovernmental Panel on Climate Change's Sixth Assessment Report (February 28, 2022), U.S. Global Change Research Program (USGCRP)'s Fourth Climate Assessment (2018), and the Ecosystem Status Report for the U.S. South Atlantic Region (Craig et al. 2021) also provide a compilation of scientific information on climate change. Those findings are summarized below.

Ocean acidification, or a decrease in surface ocean pH due to absorption of anthropogenic carbon dioxide emissions, affects the chemistry and temperature of the water. Increased thermal stratification alters ocean circulation patterns, and causes a loss of sea ice, sea level rise, increased wave height and frequency, reduced upwelling, and changes in precipitation and wind patterns. Changes in coastal and marine ecosystems can influence organism metabolism and alter ecological processes such as productivity, species interactions, migration, range and distribution, larval and juvenile survival, prey availability, and susceptibility to predators. The "center of biomass," a geographical representation of each species' weight distribution, is being used to identify the shifting of fish populations. Warming sea temperature trends in the southeast have been documented, and animals must migrate to cooler waters, if possible, if water temperatures exceed survivable ranges (Needham et al. 2012). Rising water temperatures, ocean acidification, retreating arctic sea ice, sea level rise, high-tide flooding, coastal erosion, higher storm surge, and heavier precipitation events are projected to continue, putting ocean and marine species at risk, decreasing the productivity of certain fisheries, and threatening communities that rely on marine ecosystems for livelihoods and recreation (USGCRP 2018). Harvesting and habitat changes also cause geographic population shifts. Changes in water temperatures may also affect the distribution of native and exotic species, allowing invasive species to establish communities in areas they may not have been able to survive previously. The numerous changes to the marine ecosystem may cause an increased risk of disease in marine biota. An increase in the occurrence and intensity of toxic algae blooms will negatively influence the productivity of keystone animals, such as corals, and critical coastal ecosystems such as wetlands, estuaries, and coral reefs (Kennedy et al. 2002; IPCC 2022). Free et al. (2019) investigated the impacts of historical warming on marine fisheries production and found that climate change is altering

habitats for marine fishes and invertebrates, but the net effect of these changes on potential food production is unknown.

Climate driven movement of fish stocks is causing commercial, small-scale, artisanal, and recreational fishing activities to shift poleward and diversify harvests (IPCC 2022). In the South Atlantic Region, species richness and abundance of offshore hard bottom reef fishes have generally declined over time while richness and abundance of demersal fishes in soft sediment habitats on the nearshore shelf have increased. Potential explanations for these patterns include changes in harvest (directed and bycatch), trophic interactions, and environment effects on recruitment (Craig et al. 2021). Climate change may impact snapper grouper species in the future, but the level of impacts cannot be quantified at this time, nor is the time frame known in which these impacts will occur.

Patterns from stock assessments in the South Atlantic Region indicate biomass of most assessed species generally show declines from the 1970s through the 1990s with some species showing signs of recovery beginning in the early to mid-2000s. Recruitment of a number of snapper grouper species has declined since the early 2010s; whereas, recruitment of red snapper and some pelagic species has increased in recent years (Craig et al. 2021). In the near term, it is unlikely that the actions in Regulatory Amendment 36 would compound or exacerbate the ongoing effects of climate change snapper grouper species.

Weather Variables

Hurricane season is from June 1 to November 30, and accounts for 97% of all tropical activity affecting the Atlantic basin. These storms, although unpredictable in their annual occurrence, can devastate areas when they occur. Although these effects may be temporary, those fishing related businesses whose profitability is marginal may go out of business if a hurricane strikes.

6.4. Overall Impacts Expected from Past, Present, and Future Actions

The proposed management actions are summarized in Chapter 2 of this document. Detailed discussions of the magnitude and significance of the impacts of the alternatives on the human environment appear in Chapter 4 of this document. None of the impacts of the actions in this amendment, in combination with past, present, and future actions have been determined to be significant. Although several other management actions, in addition to this amendment, are expected to affect snapper grouper species, any additive effects, beneficial and adverse, are not expected to result in a significant level of cumulative impacts.

The proposed actions would not adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places as these are not in the South Atlantic EEZ. These actions are not likely to result in direct, indirect, or cumulative effects to unique areas, such as significant scientific, cultural, or historical resources, park land, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas as the proposed action is not expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort within the South Atlantic region. The U.S.S. Monitor, Gray's Reef, and Florida Keys National Marine Sanctuaries are within the boundaries of the South Atlantic EEZ. The proposed actions are not likely to cause loss or destruction of these

national marine sanctuaries because the actions are not expected to result in appreciable changes to current fishing practices. Additionally, the proposed actions are not likely to change the way in which the snapper grouper fishery is prosecuted; therefore, the actions are not expected to result in adverse impacts on health or human safety beyond the status quo.

6.5. Monitoring and Mitigation

Fishery-independent and fishery-dependent data comprise a significant portion of information used in stock assessments. Fishery-independent data are being collected through the Southeast Fishery Information Survey and the Marine Resources Monitoring Assessment and Prediction Program. The effects of the proposed actions are, and would continue to be, monitored through collection of recreational landings data by all the four states in the South Atlantic Region (Florida, Georgia, South Carolina, and North Carolina). The National Marine Fisheries Service would continue to monitor and collect information on snapper grouper species for stock assessments and stock assessment updates, life history studies, economic and social analyses, and other scientific observations. The proposed actions relate to the harvest of indigenous species in the Atlantic, and the activities/regulations being altered do not introduce nonindigenous species, and are not reasonably expected to facilitate the spread of such species through depressing the populations of native species. Additionally, these alternatives do not propose any activity, such as increased ballast water discharge from foreign vessels, which is associated with the introduction or spread on non-indigenous species.

Chapter 7. List of Interdisciplinary Plan Team (IPT) Members

Name	Agency/Division	Title
Michael Schmidtke	SAFMC	Fishery Scientist/IPT Lead
Caroline Potter	SERO/SF	Fishery Scientist/IPT Lead
Rick DeVictor	SERO/SF	South Atlantic Branch Chief/IPT Lead
John Hadley	SAFMC	Economist
Christina Wiegand	SAFMC	Social Scientist
Myra Brouwer	SAFMC	Deputy Director for Management
Chip Collier	SAFMC	Deputy Director for Science
Allie Iberle	SAFMC	Fishery Scientist
Kathleen Howington	SAFMC	Fishery Scientist
Erik Williams	SEFSC	Atlantic Fisheries Branch Chief
Scott Crosson	SERO/SF	Economist
Ed Glazier	SERO/SF	Social Scientist
Dominique Lazarre	SERO/SF	Data Analyst
David Records	SERO/SF	Economist
Adam Bailey	SERO/SF	Technical Writer & Editor
Mike Travis	SERO/SF	Social Science Branch Chief
Monica Smit-Brunello	NOAA GC	General Counsel
Matthew Walia	SERO/OLE	Compliance Liaison Analyst
Manny Antonaras	SERO/OLE	Assistant Director
David Dale	SERO/HC	EFH Specialist
Jashira Torres-Pabon	SERO/PR	Natural Resource Specialist
Kara Shervanick	SERO/PR	Southeast Right Whale Coordinator
Jennifer Lee	SERO/PR	Biologist
Katline Barrows	SERO/PR	Fishery Scientist

IPT = Interdisciplinary Planning Team, SAFMC = South Atlantic Fishery Management Council, SERO = Southeast Regional Office, SF = Sustainable Fisheries Division, PR = Protected Resources Division, HC = Habitat Conservation Division, NOAA=National Oceanic and Atmospheric Administration, GC = General Counsel, OLE = Office of Law Enforcement, SEFSC = Southeast Fisheries Science Center.

Chapter 8. Agencies and Persons Consulted

Responsible Agencies

South Atlantic Fishery Management Council (Administrative Lead)
4055 Faber Place Drive, Suite 201
N. Charleston, South Carolina 29405
843-571-4366/ 866-SAFMC-10 (TEL)
843-769-4520 (FAX)
www.safmc.net

NMFS, Southeast Region
263 13th Avenue South
St. Petersburg, Florida 33701
727- 824-5301 (TEL)
727-824-5320 (FAX)

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
National Marine Fisheries Service
- -Washington Office
- -Office of Ecology and Conservation
- -Southeast Regional Office
- -Southeast Fisheries Science Center

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Appendix A. Other Applicable Law

A.1. Administrative Procedure Act (APA)

All federal rulemaking is governed under the provisions of the APA (5 U.S.C. Subchapter II), which establishes a "notice and comment" procedure to enable public participation in the rulemaking process. Among other things under the APA, the National Marine Fisheries Service (NMFS) 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. Regulatory Amendment 36 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Regulatory Amendment 36) complies with the provisions of the APA through the South Atlantic Fishery Management Council's (Council) extensive use of public meetings, requests for comments and consideration of comments. The proposed rule associated with this regulatory amendment will have a request for public comments, which complies with the APA, and upon publication of the final rule, unless the rule falls within an APA exception, there will be a 30-day wait period before the regulations are effective.

A.2. Information Quality Act (IQA)

The IQA (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 IQA. Regulatory Amendment 36 uses the best available information and made a broad presentation thereof. The information contained in this document was developed using best available scientific information. Therefore, this document is in compliance with the IQA.

A.3. Coastal Zone Management Act (CZMA)

Section 307(c)(1) of the federal 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 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 the actions in this regulatory amendment are consistent to the maximum extent practicable with the Coastal Zone Management Plans of Florida, Georgia, South Carolina, and North Carolina. Pursuant to Section 307 of the CZMA, this determination will be submitted to the responsible

state agencies who administer the approved Coastal Zone Management Programs in the States of Florida, South Carolina, Georgia, and North Carolina.

A.4. Executive Order 12612: Federalism

Executive Order (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 document and associated regulations. Therefore, preparation of a Federalism assessment under E.O. 12612 is not necessary.

A.5. 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 National Recreational Fisheries Coordination 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 NMFS and the U.S. Fish and Wildlife Service to develop a joint agency policy for administering the ESA.

The alternatives considered in this document are consistent with the directives of E.O. 12962.

A.6. 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 document are consistent with the directives of E.O. 13089.

A.7. Executive Order 13158: Marine Protected Areas (MPA)

E.O. 13158 was signed on May 26, 2000, to strengthen the protection of U.S. ocean and coastal resources through the use of 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 document are consistent with the directives of E.O. 13158.

A.8. National Marine Sanctuaries Act (NMSA)

Under the 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 NMSA 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 three sanctuaries in the South Atlantic exclusive economic zone are the U.S.S. Monitor, Gray's Reef, and Florida Keys National Marine Sanctuaries.

The alternatives considered in this document are not expected to have any adverse impacts on the resources managed by the National Marine Sanctuaries.

A.9. Paperwork Reduction Act (PRA)

The purpose of the PRA is to minimize the burden on the public. The PRA 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. Actions in this document are not expected to affect PRA.

A.10. Small Business Act (SBA)

Enacted in 1953, the SBA requires that agencies assist and protect small-business interests to the extent possible to preserve free competitive enterprise. The objectives of the SBA 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, NMFS, in

implementing regulations, must make an assessment of how those regulations will affect small businesses.

A.11. Public Law 99-659: Vessel Safety

Public Law 99-659 amended the Magnuson-Stevens Fishery Conservation and Management Act 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.

Appendix B. Regulatory Impact Review

To be completed at a later stage of amendment development.

Appendix C. Regulatory Flexibility Act Analysis

To be completed at a later stage of amendment development.

Appendix D. Essential Fish Habitat and Move to Ecosystem Based Management

D.1. EFH and EFH-HAPC Designations and Cooperative Habitat Policy Development

Summary

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) requires federal fishery management councils and the National Marine Fisheries Service (NMFS) to designate essential fish habitat (EFH) for species managed under federal fishery management plans (FMP). Federal regulations that implement the EFH program encourage fishery management councils and NMFS to designate subsets of EFH to highlight priority areas for conservation and management. These subsets of EFH are called EFH-Habitat Areas of Particular Concern (EFH-HAPCs or HAPCs) and are designated based on ecological importance, susceptibility to human-induced environmental degradation, susceptibility to stress from development, or rarity of the habitat type.

Information supporting EFH and EFH-HAPC designations was updated (pursuant to the EFH Final Rule) in Fishery Ecosystem Plan (FEP) II (SAFMC 2018). Additional detailed information supporting the EFH designations appears in FEP I (SAFMC 2009a), individual FMPs, general information on the EFH provisions of the Magnuson-Stevens Act and its implementing regulations (50 CFR 900 Subparts J and K), and the EFH User Guide (SAFMC 2021).

In addition to implementing regulations to protect habitat from degradation due to fishing activities, the Council cooperates with NMFS to comment on non-fishing projects or policies that may impact EFH. The Council established a Habitat and Ecosystem Advisory Panel (AP) and adopted a comment and policy development process that was recently revised in the Habitat Blueprint (SAFMC 2023). Members of the AP serve as the Council's habitat contacts and professionals in the field and have guided the Council's development of the policy statements. To access these policy statements, refer to the habitat website: https://safmc.net/fishery-management-plans/habitat/.

Habitat Conservation

The Council has been proactive in advancing habitat conservation through extensive fishing gear restrictions in all Council FMPs and by directly managing habitat and fisheries affecting those habitats through two FMPs: the FMP for Coral, Coral Reefs and Live/Hard Bottom Habitat of the South Atlantic Region (Coral FMP; SAFMC 1984) and the FMP for the Sargassum Fishery of the South Atlantic Region (SAFMC 2003).

Ecosystem Approach to Conservation and Management of Deep-water Ecosystems

Building on the long-term conservation approach, the Council facilitated the evolution of the Habitat Plan into FEP and FEP II to assemble information on the physical, biological, and human/institutional context of ecosystems within which fisheries are managed. These two documents were intended to initiate the transition from single species management to Ecosystem-Based Fisheries Management (EBFM) in the region. To support this, the South Atlantic Council adopted broad goals: (1) maintaining or improving ecosystem structure and

function; (2) maintaining or improving economic, social, and cultural benefits from resources; and (3) maintaining or improving biological and cultural diversity.

Through Comprehensive Ecosystem-Based Amendment 1 (CE-BA 1;SAFMC 2009b), Comprehensive Ecosystem-Based Amendment 2 (SAFMC 2011), and Coral Amendment 8 (SAFMC 2013), the South Atlantic Council established and expanded deep-water coral HAPCs (CHAPCs) and co-designated them as EFH-HAPCs.

D.2. EFH for species managed under the Snapper Grouper FMP

EFH for species managed under the Snapper Grouper FMP 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 (m) (but to at least 610 m 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 EFH because it provides a mechanism to disperse snapper grouper species larvae.

For specific life stages of estuarine dependent and nearshore snapper grouper species, EFH includes areas inshore of the 31 m 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.

D.3. HAPC for species managed under the Snapper Grouper FMP

EFH-HAPC for species managed under the Snapper Grouper FMP 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 HAPC; all hermatypic coral habitats and reefs; manganese outcroppings on the Blake Plateau; and Council-designated Special Management Zones (SMZ).Areas that meet the criteria for EFH-HAPCs include habitats required during each life stage (including egg, larval, post-larval, juvenile, and adult stages).

EFH-HAPCs for Golden Tilefish includes irregular bottom comprised of troughs and terraces inter-mingled with sand, mud, or shell hash bottom. Mud-clay bottoms in depths of 150-300m are HAPC. Golden tilefish are generally found in 80-540 m, but most commonly found in 200 m depths. EFH-HAPC for Blueline Tilefish includes irregular bottom habitats along the shelf edge in 45-65 m depth; shelf break; or upper slope along the 100-fathom contour (150-225 m); hard bottom 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, South Carolina.

EFH-HAPCs for the Snapper Grouper complex include the following deep-water marine protected areas (MPA) as designated in Amendment 14 to the Snapper Grouper FMP: 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.

The Council established the Special management Zone (SMZ) designation process in 1983 in the Snapper Grouper FMP, and SMZs have been designated in federal waters off North Carolina, South Carolina, Georgia, and Florida since that time. The purpose of the original SMZ designation process, and the subsequent specification of SMZs, was to protect snapper grouper populations at the relatively small, permitted artificial reef sites and "create fishing opportunities that would not otherwise exist." Thus, the SMZ designation process was centered on protecting the relatively small habitats, which are known to attract desirable snapper grouper species.

In CE-BA 1 (SAFMC 2009b), the Council determined that SMZs met the criteria to be EFH-HAPCs for species included in the Snapper Grouper FMP. Since CE-BA 1, the Council has designated additional SMZs in the Snapper Grouper FMP including Spawning SMZs. The SMZ and EFH-HAPC designations serve similar purposes in identifying and protecting valuable and unique habitat for the benefit of fish populations, which are important to both fish and fishers. Therefore, the Council determined that a designated SMZ meets the criteria for an EFH-HAPC designation, and the Council intends that all SMZs designated under the Snapper Grouper FMP also be designated as EFH-HAPCs under the Snapper Grouper FMP.

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Appendix E. Alternatives Considered but Eliminated from Detailed Analysis

To be completed at a later stage of amendment development, if necessary.

Appendix F. Data Analyses

The South Atlantic Fishery Management Council (Council) approved Amendment 53 to the Fishery Management Plan (FMP) for the Snapper Grouper Fishery of the South Atlantic Region (Snapper Grouper FMP), which became effective in October of 2023. The amendment established a recreational vessel limit of two gag or two black grouper per vessel per day or per trip, for the private recreational fleet or for-hire fleet, respectively. The Council intended for this to be an aggregate limit of two gag or black grouper per vessel, but instead implemented a two-fish vessel limit for each species. In September of 2023, the Council initiated development of Regulatory Amendment 36 to establish an aggregate vessel limit of two fish (gag or black grouper) per vessel. This analysis provides a vessel limit analysis to project the closure dates for gag and black grouper under the proposed change to the vessel limit.

Data Sources

The Southeast Fisheries Science Center (SEFSC) generates monitoring datasets that are used to track landings of all federally managed species in the commercial and recreational sector. This analysis focuses on the impacts of implementing an aggregate vessel limit for gag and black grouper in the recreational sector. To project closure dates in association with the proposed vessel limits, recreational landing rates for both species must be investigated.

Federally administered surveys generate landings estimates for all headboat vessels and landings from shore, private boat and charter vessels. The Southeast Regional Headboat survey produces landings estimates for species caught by headboats operating in the southeastern United States by combining dockside intercept and logbook data. Federal estimates of shore, private boat and charter anglers were initially generated by the Marine Recreational Fisheries Statistics Survey (MRFSS), which used a combination of dockside intercept survey and phone effort survey data to estimate landings. This survey was replaced by the Marine Recreational Information Program (MRIP) in 2008 to improve precision, accuracy and timeliness of recreational catch estimates. MRIP uses the Access Point Angler Intercept Survey (APAIS) to collect dockside catch data from anglers fishing from shore, private boats and charter vessels. Fishing effort data for the shore and private boat fishing modes was collected by the Coastal Household Telephone Survey (CHTS) and charter effort was estimated from data collected by the For-Hire Survey (FHS). In 2018, the CHTS was replaced by a mail survey, the Fishing Effort Survey (FES). The changes to the federal survey over time has led to recreational landings being estimated in three different currencies associated with the major changes to the surveys. MRFSS units represent the earliest iteration of the federal survey, MRIP (CHTS) incorporates updates to the dockside APAIS and implementation of the improved CHTS phone survey, and MRIP (FES) incorporates the change from a phone to mail effort survey. The SEFSC creates three separate final recreational landings data sets that combine SRHS landings estimates with either the MRFSS, MRIP (CHTS), or MRIP (FES) survey estimates. Catch limits for federally managed species are monitored with the recreational currency associated with the last stock assessment for each species. This report will provide landings summaries and daily landing rates for gag in MRIP (FES) units in pounds gutted weight, while black grouper were aggregated using MRFSS units in pounds whole weight.

In addition to landings data, trip records were used to investigate the proposed vessel limit alternatives proposed by the Council. SRHS logbook data (August 2023) and publicly accessible MRIP dockside trip and catch data (https://www.fisheries.noaa.gov/recreational-fishing-) were

used to characterize the proportion of catch associated with vessel trips for the private boat, charter, and headboat fleets. Landings and trip records from 2018 to 2022 were used to describe recent landing behaviors for gag and black grouper. Additional data filtering will be described for each analysis below.

Landings History

A time series of landing was generated for both gag and black grouper from 2018 through 2022 (SEFSC FES ACL Monitoring – Feb 2024 & SEFSC MRFSS ACL Monitoring – Feb 2024). The landings were summed annually for each species in pounds and number of fish, using the pound and recreational units that each species is monitored in (Table F.1). The landings for both species have been variable in the last 5 years, with an overall declining trend for each species (Figure F.1 and F.2). It should be noted that the annual catch limit (ACL) for gag was reduced drastically in 2023 in response to the overfishing and overfished determinations from the most recent Southeast Data Assessment and Review assessment for the species, (SEDAR 71). The ACL was exceeded in 2023, which has led to an updated ACL for 2024, which is referenced in Figure 1. Black grouper landings, while showing a similar declining trend, have stayed well below the recreational ACL for the species.

Table F.1. Landings in pounds and number of fish for gag and black grouper harvested in the South Atlantic region.

Species	Year	Landings (lb)	Pound Units	Landings (# of fish)	Recreational Units
Gag	2018	440,410	gw	25,698	MRIP-FES
	2019	268,251	gw	22,186	MRIP-FES
	2020	157,008	gw	15,222	MRIP-FES
	2021	244,259	gw	16,223	MRIP-FES
	2022	137,701	gw	11,179	MRIP-FES
Black Grouper	2018	89,465	ww	7,175	MRFSS
	2019	21,642	ww	1,927	MRFSS
	2020	52,129	ww	4,851	MRFSS
	2021	59,855	ww	4,781	MRFSS
	2022	56,844	ww	4,745	MRFSS

Data Source: SEFSC FES ACL Monitoring – Feb 2024 & SEFSC MRFSS ACL Monitoring – Feb 2024.

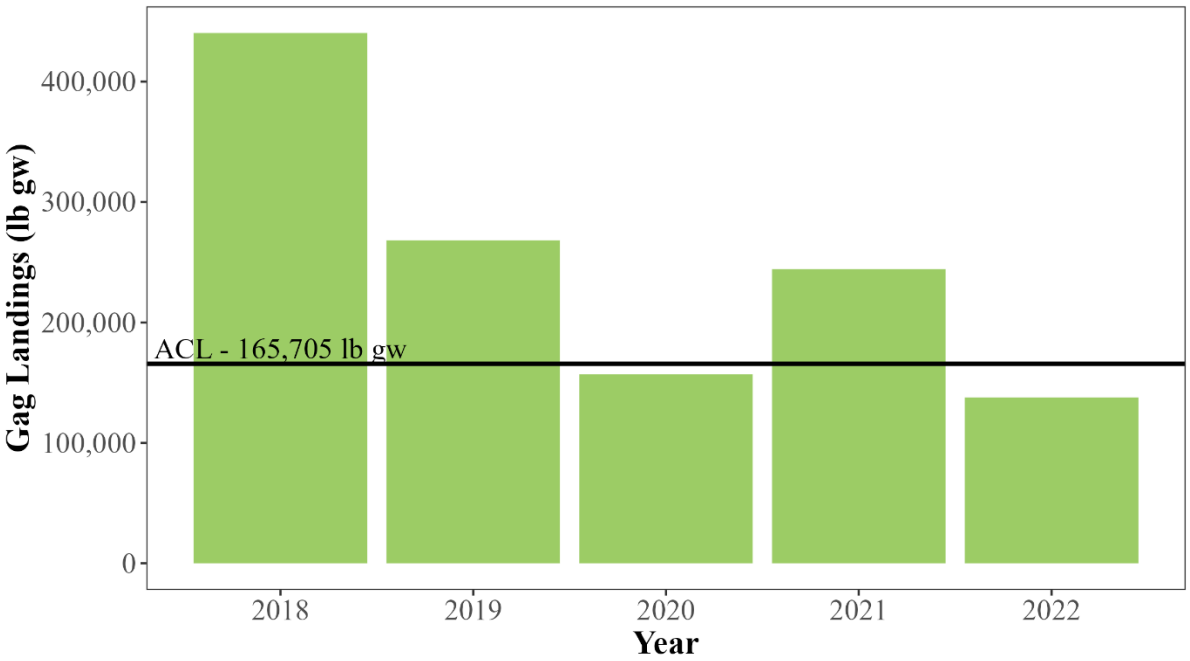

Figure F.1. Annual gag landings from 2018 through 2022 in pounds whole weight, using MRFSS units. The current recreational ACL is represented by a solid horizontal black line.
Data Source: SEFSC MRFSS ACL Monitoring – Feb 2024.

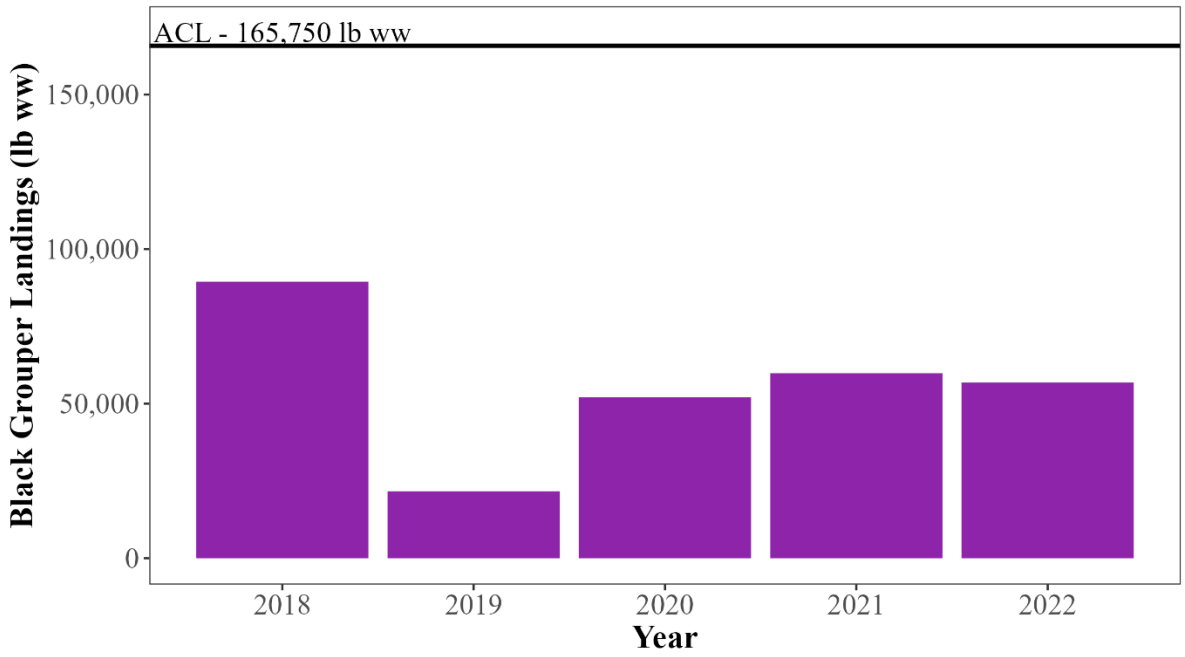

Figure F.2. Annual black grouper landings from 2018 through 2022 in pounds whole weight, using MRFSS units. The current recreational ACL is represented by a solid horizontal black line.
Data Source: SEFSC MRFSS ACL Monitoring – Feb 2024.

Recreational Vessel Limit Analysis

The Council requested analysis of three alternatives that would project closures for an update to the current aggregate vessel limits for gag and black grouper. To evaluate each alternative, the percent reduction in catch associated with each alternative was calculated for each species. While the proposed vessel limits set an aggregate limit for two species, these species are monitored individually, so the analysis was completed for each species separately. Publicly available MRIP trip and catch files for 2018 to 2022 were used to evaluate the expected percent reduction in catch associated with each alternative associated with the private boat and charter fleet, for each species. The SRHS logbook data was restricted to the same time period, 2018 to 2022. The vessel distribution was calculated for each fleet, to better understand the distribution of gag or black grouper harvest per vessel trip (Figures F.3 and F.4). The majority of vessel trips harvested two or fewer gag or black grouper. Additionally, the proportion of vessel trips harvesting both species was calculated to help clarify the relative proportion of trips that harvest both species. Less than 3% of vessel trips that land gag or black grouper also land the other species.

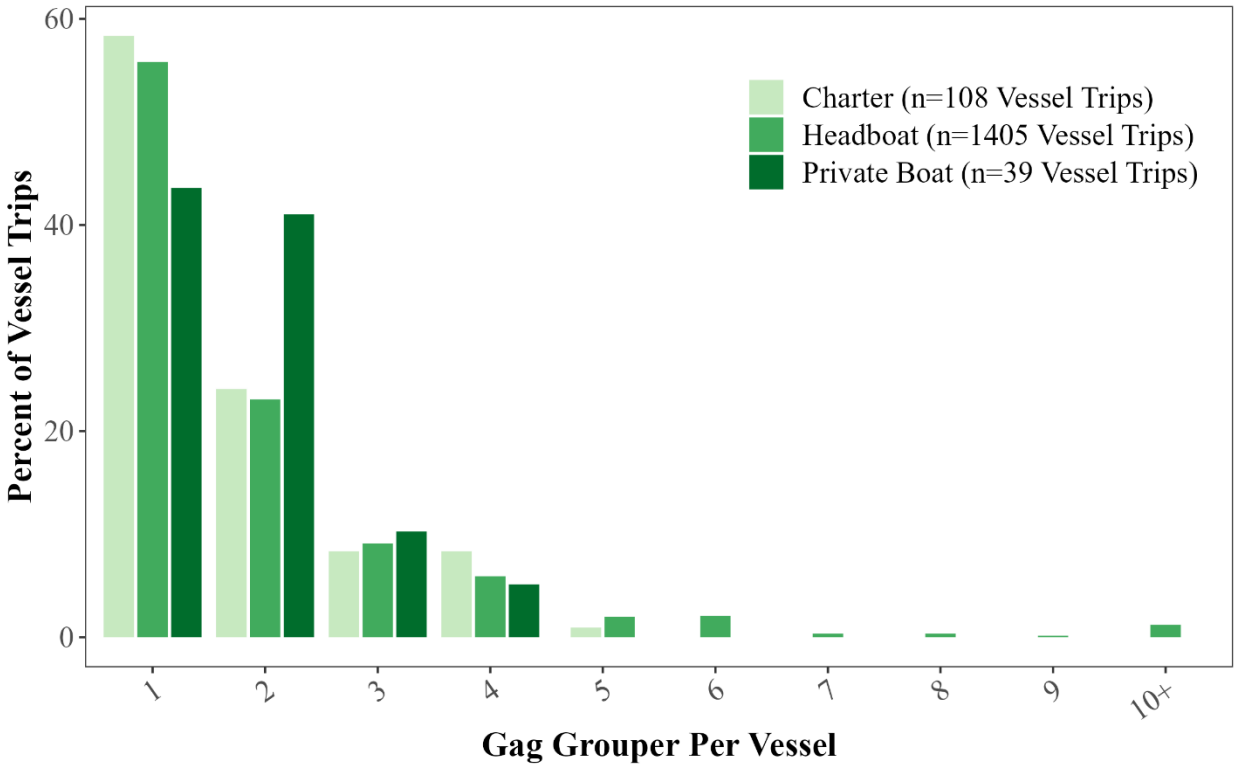

Figure F.3. Distribution of gag vessel harvest from dockside intercept and headboat logbook data from 2018-2022, by recreational fleet.

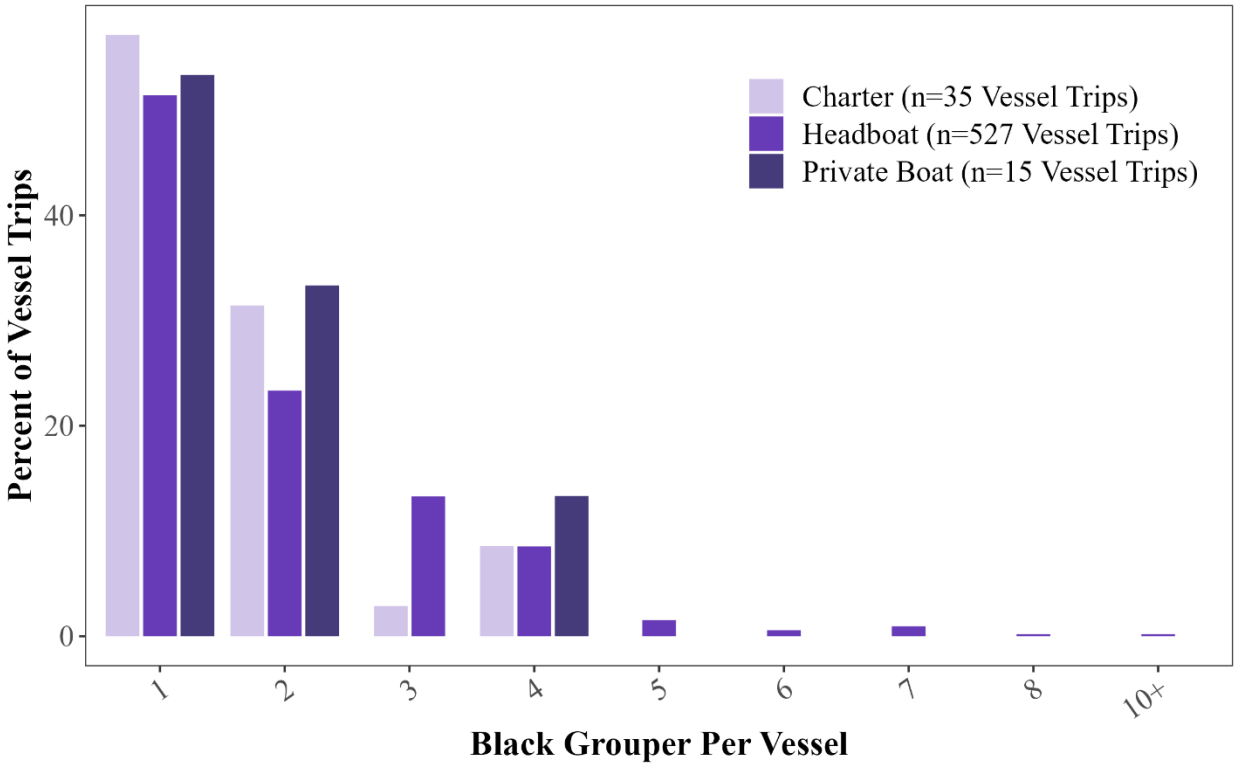

Figure F.4. Distribution of black grouper vessel harvest from dockside intercept and headboat logbook data from 2018-2022, by recreational fleet.

To investigate the aggregate vessel limit alternatives, a percent reduction in catch was calculated by determining the proportion of catch associated with each alternative and species. If a vessel catch value was higher than the proposed alternative that value was changed to match the maximum value allowed by the proposed alternative. For example, if a vessel trip record indicated that four gag were harvested on a private boat trip, for Action 1– Alternative 2, the vessel catch value was changed to two instead of four to match the maximum allowable catch. The final percent reduction was calculated by dividing the harvest from each alternative by the harvest from the No Action alternative (Table F.2 and F.3).

Table F.2. Proposed recreational vessel limit alternatives and associated percent reductions for gag in the South Atlantic.

Species	Alternative	Private	Charter	Headboat
Gag	Alternative 1: No Action (two gag or two black grouper per vessel / trip)	0.0%	0.0%	0.0%
	Alternative 2: two gag or black grouper per vessel per day (private boat)	-10.5%	0.0%	0.0%
	Alternative 3: two gag or black grouper per vessel per trip (for-hire)	0.0%	-14.6%	-29.2%
	Alternatives 2 & 3: two gag or black grouper per vessel per day / trip (all fleets)	-10.5%	-14.6%	-29.2%

Table F.3. Proposed recreational vessel limit alternatives and associated percent reductions for black grouper in the South Atlantic.

Species	Alternative	Private	Charter	Headboat
Black Grouper	Alternative 1: No Action (two black grouper and two gag per vessel / trip)	0.0%	0.0%	0.0%
	Alternative 2: two black grouper or gag per vessel per day (private boat)	-12.7%	0.0%	0.0%
	Alternative 3: two black grouper or gag per vessel per trip (for-hire)	0.0%	-13.5%	-31.0%
	Alternatives 2 & 3: two black grouper or gag per vessel per day / trip (all fleets)	-12.7%	-13.5%	-31.0%

These reductions were applied to the daily landing rate for each recreational fleet for the various vessel limit alternatives. The wave level landings for each species and recreational fleet was reviewed over the most recent 5-year time period to assess which years are most likely to be representative of current landing behavior. For both species, the landings in the three most recent years were most consistent and were then averaged to generate a projected wave level landing rate for each species. The projected wave level landings were used to calculate a daily recreational landing rate by dividing the projected value by the number of days in each wave. The fleet averages were then aggregated to generate a sector and species level daily landing rate. The daily landing rate for each species was summed cumulatively and compared to the recreational ACL for each species (Figures F.5 and F.6). The implementation of an aggregate vessel limit is likely to lead to the ACL being met for gag landings in Wave 4 (Table F.4), which extends the season by almost 2 months when compared to the projections provided for gag in Amendment 53. The ACL is not projected to be met for black grouper (Table F.5). The current landing behavior, particularly for gag, shows the highest rates of harvest in the summer months immediately after the season begins.

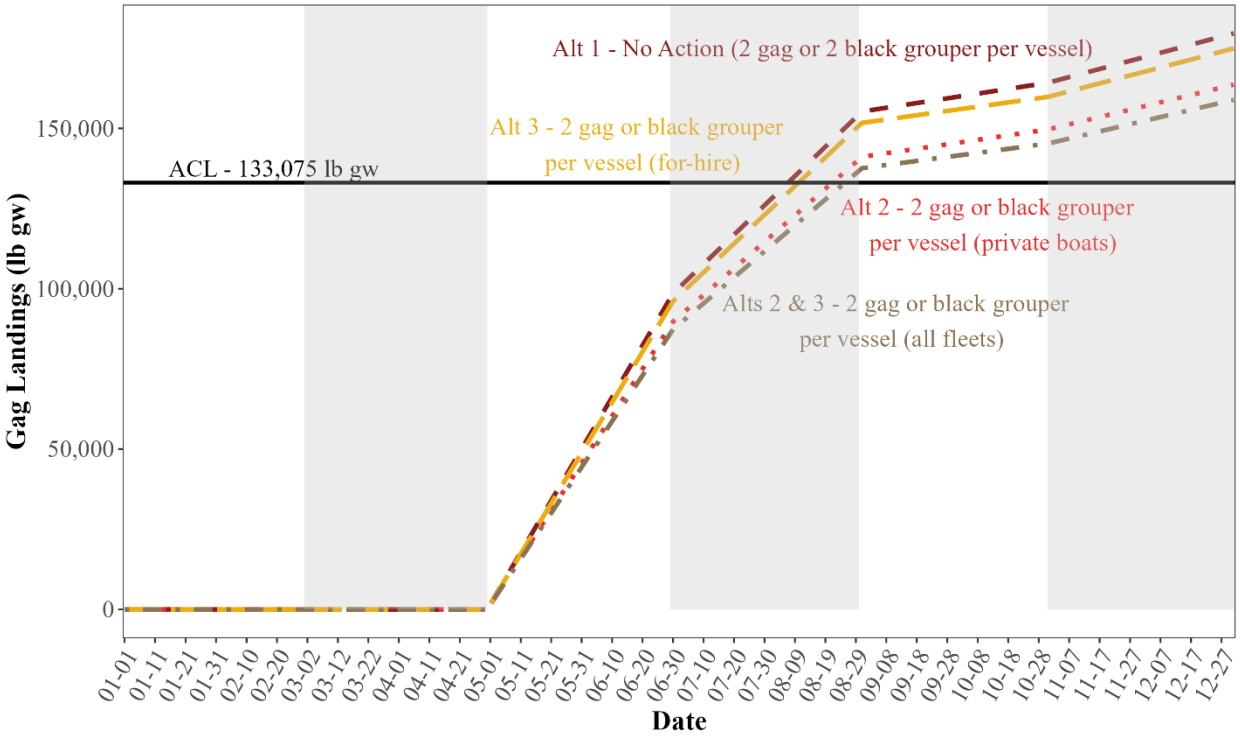

Figure F.5. Cumulative gag landings for each vessel limit alternative proposed for the South Atlantic recreational sector. The transition from white to gray background indicates the start of a new fishing wave.
Data Source: SEFSC FES ACL Monitoring – Feb 2024.

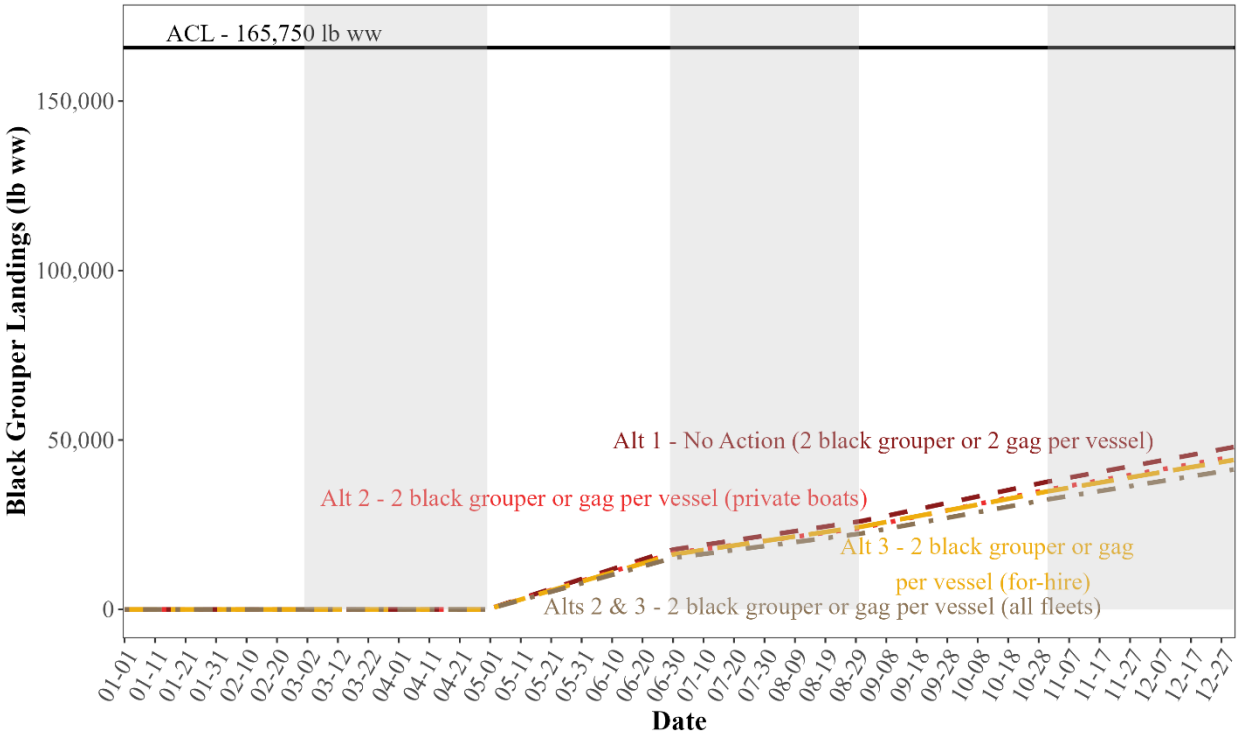

Figure F.6. Cumulative black grouper landings for each vessel limit alternative proposed for the South Atlantic recreational sector. The transition from white to gray background indicates the start of a new fishing wave.
Data Source: SEFSC MRFSS ACL Monitoring – Feb 2024.

Table F.4. The predicted closure dates for the three vessel limits alternatives proposed for gag in the South Atlantic recreational sector, for an ACL of 133,075 lb gw, using MRIP (FES) units.

Vessel Limit Alternative	ACL Met	Season
Alternative 1: No Action (two gag or two black grouper per vessel / trip)	7-Aug	98
Alternative 2: two gag or black grouper per vessel per day (private boat)	22-Aug	113
Alternative 3: two gag or black grouper per vessel per trip (for-hire)	11-Aug	102
Alternatives 2 & 3: two gag or black grouper per vessel per day / trip (all fleets)	26-Aug	117

Data Source: SEFSC FES ACL Monitoring – Feb 2024.

Table F.5. The predicted closure dates for the three vessel limits alternatives proposed for black grouper in the South Atlantic recreational sector, for an ACL of 165,750 lb ww, using MRFSS units.

Vessel Limit Alternative	ACL Met	Season
Alternative 1: No Action (two black grouper and two gag per vessel / trip)	-	245
Alternative 2: two black grouper or gag per vessel per day (private boat)	-	245
Alternative 3: two black grouper or gag per vessel per trip (for-hire)	-	245
Alternatives 2 & 3: two black grouper or gag per vessel per day / trip (all fleets)	-	245

Data Source: SEFSC MRFSS ACL Monitoring – Feb 2024.

Appendix G. Bycatch Practicability Analysis

G.1. Background

Regulatory Amendment 36 to the Fishery Management Plan (FMP) for the Snapper Grouper Fishery of the South Atlantic Region (Snapper Grouper FMP) would modify management of South Atlantic gag and black sea bass. Actions include revising the recreational vessel limits for gag and black grouper and revising stowage requirements for black sea bass pots while transiting marine protected areas, special management zones (SMZ), and spawning SMZs. National Marine Fisheries Service (NMFS) outlines at 50 CFR § 600.350(d) (3) (i) ten factors that should be considered in determining whether a management measure minimizes bycatch or bycatch mortality to the extent practicable.

1. Population effects for the bycatch species.
2. Ecological effects due to changes in the bycatch of that species (effects on other species in the ecosystem).
3. Changes in the bycatch of other species of fish and the resulting population and ecosystem effects.
4. Effects on marine mammals and birds.
5. Changes in fishing, processing, disposal, and marketing costs.
6. Changes in fishing practices and behavior of fishermen.
7. Changes in research, administration, and enforcement costs and management effectiveness.
8. Changes in the economic, social, or cultural value of fishing activities and non-consumptive uses of fishery resources.
9. Changes in the distribution of benefits and costs.
10. Social effects.

Bycatch Reporting Requirements and Methodology

For the commercial sector, the vessel reporting requirement is achieved through logbooks. Fishermen with Commercial South Atlantic Unlimited Snapper Grouper or 225-lb Trip Limit Snapper Grouper Permits, who are selected by the Science and Research Director, are required to maintain and submit fishing records through the NMFS Southeast Fisheries Science Center (SEFSC) Commercial Logbook. Discard data are collected using the Supplemental Discard Logbook that is sent to a 20% stratified random sample of the active commercial permit holders in the fishery. In addition to the number of self-reported discards per trip and gear, the SEFSC Supplemental Discard Logbook attempts to quantify the reason why discarding occurs using four codes.[18] Fishermen can specify multiple reasons for a species discarded on the same trip and gear.

1) Regulation – Not legal size: Animals that would have been sold, however local or federal size limits forbid it.
2) Regulation – Out of season: Animals that would have been sold, however the local or federal fishing season is closed.

[18] More information on the discard logbook is available here https://www.fisheries.noaa.gov/about/southeast-fisheries-science-center.

3) Regulation – Other: Animals that would have been sold, however a local or federal regulation other than size or season, forbids it (Other than size or season; i.e., protected species, not properly permitted).
4) Market conditions: Animals that have no market value (rotten, damaged).

For the recreational sector, estimates of discards from private recreational and charter fishermen are collected through the Marine Recreational Information Program (MRIP)/Fishing Effort Survey (FES). MRIP/FES replaced the Marine Recreational Fishery Statistics Survey. The Southeast Region Headboat Survey, which includes limited headboat observer sampling, collects discard information from headboat vessels. In addition, in January 2021, NMFS implemented the Southeast For-Hire Electronic Reporting Program, which implemented mandatory electronic reporting of for-hire vessel catch data for over 3,000 vessels in the Gulf of Mexico and South Atlantic. The purpose of this program is to provide more accurate and reliable fisheries information about for-hire catch, effort, and discards.

G.2. Population Effects for the Bycatch Species

Commercial Sector

Commercial discards in the South Atlantic snapper grouper fishery are shown in Table G.2.1. and Figure G.2.1. Most discards originate from handline/electric rig and trap gear, with some discards from trolling gear and relatively low discards from longline and diving gear. Trap/pot gear show high levels of discarded black sea bass, which is the targeted species of this gear type, but low levels of bycatch for other species. It is possible that trip-level reporting leads to the relatively high discard estimates from trolling gear; these may be sets using another gear type (i.e., handline/electric rig) on a trip declared as a trolling gear trip. The ratio of commercial landings to commercial discards is not compared because commercial landings are reported in pounds and discards are reported in numbers of fish.

Table G.2.1. Top ten species with mean estimated South Atlantic commercial discards (number of fish) during snapper grouper trips (defined as trips >50% of landings from snapper grouper stocks), sorted from largest to smallest, by gear, for the 2018-2022 period.

Stock	Handline/ Electric	Stock	Longline	Stock	Trap / Pot	Stock	Troll
Vermilion Snapper	4,514	Blueline Tilefish	155	Black Sea Bass	6,069	Black Sea Bass	236
Red Snapper	3,669	Snowy Grouper	57	Vermilion Snapper	198	Amberjacks	131
Red Porgy	2,634	Red Snapper	14	Grunts	145	Red Snapper	78
Yellowtail Snapper	1,681	Red Porgy	12	White Grunt	75	Grunts	57
Black Sea Bass	1,556	Greater Amberjack	10	Gray Triggerfish	71	King Mackerel	18
Gray Triggerfish	886	Confidential Data		Triggerfishes	64	Cobia	11
Almaco Jack	671			Red Snapper	24	Yellowtail Snapper	9
Triggerfishes	569			Red Porgy	17	Greater Amberjack	8
Blue Runner	434			Red Grouper	17	Little Tunny	6
Gray Snapper	367			**Gag**	**13**	Confidential Data	

Source: SEFSC Coastal Logbook (March 2023) and Discard Logbook (March 2023).

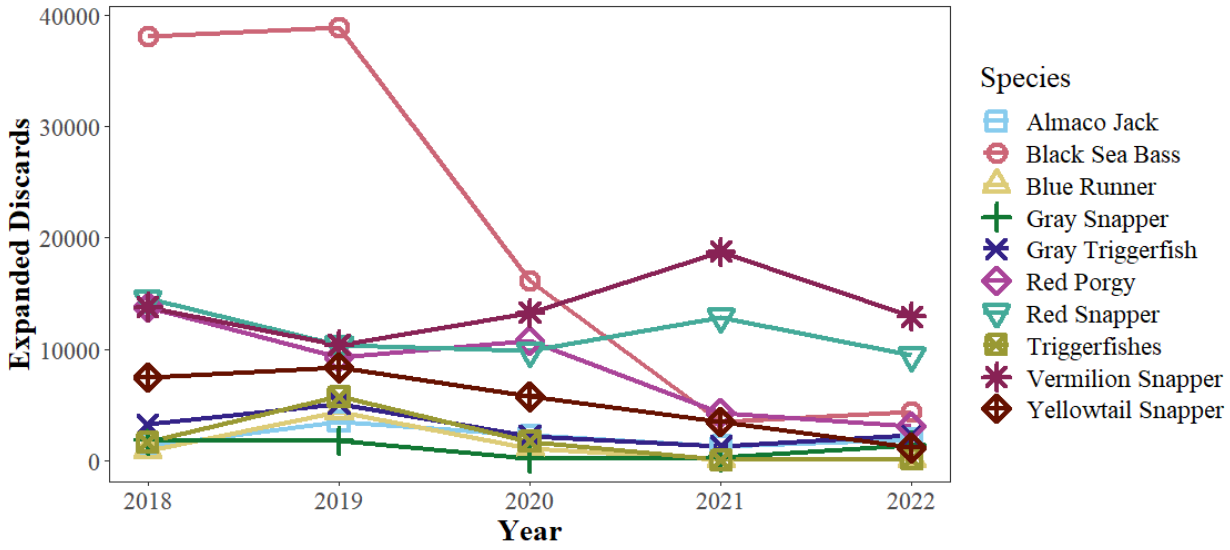

Figure G.2.1. Expanded self-reported commercial discards (numbers of fish) for the top ten species discarded during snapper grouper trips (defined as trips with 50% of landings from snapper grouper stocks) from 2018-2022.
Source: SEFSC Coastal Logbook (March 2023) and Discard Logbook (March 2023).

Of the four discard codes, regulations (i.e., not legal size and out of season) was the most common reason selected for the most commonly discarded snapper grouper species based on self-reported discards (Table G.1.2). The minimum size limit appears to be the primary driver of commercial discards for gag and black sea bass, followed by out of season for gag.

Table G.2.2. The percentage of unexpanded discards for each discard reason out of the total number of self-reported discards reported to the Supplemental Discard Logbook for the top ten snapper grouper species discarded in the South Atlantic from 2015 through 2019. Some percentages may not sum to 100% due to rounding.

Species	Not Legal Size	Out of Season	Other Regulations	Market Conditions
Almaco Jack	47%	43%	5%	5%
Black Sea Bass	**100%**	**0%**	**0%**	**0%**
Blue Runner	21%	0%	28%	51%
Blueline Tilefish	2%	9%	89%	1%
Gag	**72%**	**25%**	**1%**	**1%**
Gray Triggerfish	57%	42%	1%	0%
Greater Amberjack	91%	6%	2%	1%
Red Porgy	43%	51%	4%	2%
Red Snapper	2%	79%	18%	1%
Vermilion Snapper	91%	1%	8%	0%

Source: SEFSC Supplemental Commercial Discard Logbook (March 2023).

Recreational Sector

From 2018 through 2022, the most discarded species on trips capturing a snapper grouper species was black sea bass for all three modes (Table G.2.3). Red snapper, tomtate, white grunt, yellowtail snapper, gray triggerfish, mutton snapper, and gray snapper were in the top ten for all modes.

Table G.2.3. Top ten species with discards reported on trips capturing a snapper grouper species in the South Atlantic by recreational mode from 2018 through 2022. Species are sorted by number of total discards for each mode from 2018-2022.

Rank	Headboat Species	Headboat Discards (N)	Charter Species	Charter Discards (N)	Private Boat Species	Private Boat Discards (N)
1	Black Sea Bass	1,633,530	Black Sea Bass	884,078	Black Sea Bass	28,873,282
2	Vermilion Snapper	401,382	Yellowtail Snapper	604,799	Gray Snapper	23,400,512
3	White Grunt	298,683	Red Snapper	555,294	Red Snapper	12,819,769
4	Yellowtail Snapper	266,501	Gray Snapper	419,188	Yellowtail Snapper	7,263,605
5	Red Snapper	266,431	Tomtate	353,139	White Grunt	7,132,700
6	Tomtate	250,332	Mutton Snapper	287,594	Tomtate	6,924,826
7	Gray Triggerfish	96,746	Vermilion Snapper	268,547	Vermilion Snapper	4,481,418
8	Mutton Snapper	65,575	White Grunt	237,570	Mutton Snapper	3,854,408
9	Lane Snapper	62,142	Gray Triggerfish	78,982	Lane Snapper	2,692,497
10	Gray Snapper	46,477	Greater Amberjack	63,372	Gray Triggerfish	1,947,762

Sources: MRIP FES data from SEFSC Recreational ACL Dataset (December 2023); Expanded Headboat data from SEFSC Headboat Logbook files (December 2023).

Recreational discards of several snapper grouper species are higher than the landings for certain modes of fishing (Table G.2.4). Black sea bass, gag, red snapper, red grouper, mutton snapper, and tomtate discards are higher than their landings across all modes. Across most of the snapper grouper species, the magnitude of private mode discards is much higher compared to the headboat or charter modes. Gag and black sea bass recreational discards to landings ratios are high (Table G.2.4).

Table G.2.4. South Atlantic snapper grouper headboat, charter, and private mean annual estimates of landings and discards (2018-2022). Headboat and MRIP (charter and private) landings and discards are in numbers of fish.

Species	Headboat Landings (N)	Headboat Discards (N)	Headboat Ratio (D:L)	Charter Landings (N)	Charter Discards (N)	Charter Ratio (D:L)	Private Landings (N)	Private Discards (N)	Private Ratio (D:L)
Almaco Jack	11,205	1,736	15%	18,243	4,172	23%	88,422	245,230	277%
Black Sea Bass	**33,148**	**326,706**	**986%**	**20,474**	**176,816**	**864%**	**269,012**	**5,774,656**	**2147%**
Gag	**561**	**819**	**146%**	**1,580**	**5,117**	**324%**	**15,960**	**82,585**	**517%**
Gray Triggerfish	30,278	19,349	64%	58,620	15,796	27%	270,036	389,552	144%
Greater Amberjack	2,155	2,282	106%	20,827	12,674	61%	33,463	69,821	209%
Mutton Snapper	10,166	13,115	129%	28,813	57,519	200%	218,945	770,882	352%
Red Grouper	2,518	7,917	314%	4,873	11,640	239%	47,573	161,077	339%
Red Porgy	6,840	5,914	86%	6,188	2,126	34%	68,930	40,804	59%
Red Snapper	3,165	53,286	1684%	7,202	111,059	1542%	336,295	2,563,954	762%
Scamp	849	501	59%	976	506	52%	2,127	3,667	172%
Snowy Grouper	218	3	1%	1,065	355	33%	2,235	2,017	90%
Tomtate	40,243	50,066	124%	17,525	70,628	403%	544,383	1,384,965	254%
Vermilion Snapper	125,620	80,276	64%	93,776	53,709	57%	496,660	896,284	180%
White Grunt	127,661	59,737	47%	20,550	47,514	231%	575,785	1,426,540	248%
Whitebone Porgy	4,181	465	11%	2,551	39	2%	28,675	4,699	16%
Yellowtail Snapper	98,480	53,300	54%	215,676	120,960	56%	1,033,437	1,452,721	141%

Sources: MRIP FES data from SEFSC Recreational ACL Dataset (December 2023); Expanded Headboat data from SEFSC Headboat Logbook files (December 2023).

G.3. Practicability of Management Measures in Directed Fisheries Relative to their Impact on Bycatch and Bycatch Mortality

Expected Impacts on Bycatch for the Subject Amendment Actions

Action 1 would revise recreational vessel limits for gag and black grouper by removing the single species recreational (private and for-hire) vessel limits and establishing an aggregate vessel limit for gag and black grouper. Reducing the recreational vessel limits could increase the number of discards of gag or black grouper per trip. It could also lengthen the recreational gag season and increase the duration during which gag is targeted and undersized fish are caught and released, which could increase the number of dead discards. However, a lengthened gag season could also reduce discards as caught gag could be kept, instead of discarded, for a longer portion of the year. Fishing activity or behavior in the snapper grouper recreational sector is not

expected to substantially change as a result of this action, thus no changes in bycatch of co-occurring species are expected as a result of Action 1.

Action 2 revises transit stowage requirements for black sea bass pots with on-demand gear and does not directly affect bycatch. Thus, no changes in bycatch are expected for Action 2.

Past, Current, and Future Actions to Prevent Bycatch and Improve Monitoring of Harvest, Discards, and Discard Mortality

Actions taken in the Snapper Grouper FMP related to management of gag, black grouper, and black sea bass are outlined in Section 1.5 of this amendment. Other past, current, and future actions that could prevent bycatch and/or improve monitoring of harvest, discards, and discard mortality are included below.

Amendment 16 to the Snapper Grouper FMP (SAFMC 2009) required the use of dehooking devices, which could help reduce bycatch mortality of snapper grouper species. Dehooking devices can allow fishermen to remove hooks with greater ease and more quickly without removing the fish from the water. If a fish does need to be removed from the water, de-hookers reduce handling time thus increasing survival (Cooke et al. 2001).

Amendment 17A to the Snapper Grouper FMP (SAFMC 2010) required circle hooks for snapper grouper species north of 28 degrees latitude, which has likely reduced bycatch mortality of some snapper grouper species.

The Comprehensive Ecosystem-Based Amendment 2 (CE-BA 2; SAFMC 2011b) included actions that modified management of special management zones (SMZ) off South Carolina; revised sea turtle release gear requirements for the snapper grouper fishery that were established in Amendment 15B to the Snapper Grouper FMP (SAFMC 2008); and designated new essential fish habitat (EFH) and EFH-Habitat Areas of Particular Concern in the South Atlantic. CE-BA 2 also included an action that limited harvest and possession of snapper grouper and coastal migratory pelagic (CMP) species to the bag limit in SMZs off South Carolina. This action likely reduced bycatch around SMZs by restricting commercial harvest in the area, but has probably had limited effect on the magnitude of overall bycatch of snapper grouper species in the South Atlantic.

The Comprehensive ACL Amendment (SAFMC 2011a) implemented ACLs and AMs for species not undergoing overfishing in the FMPs for snapper grouper, dolphin and wahoo, golden crab, and Sargassum, in addition to other actions such as allocations and establishing annual catch targets for the recreational sector. ACLs and AMs have likely reduced bycatch of target species as well as incidentally caught species.

The Council's Joint Headboat Electronic Reporting Amendment (SAFMC 2013) changed the reporting frequency by headboats from monthly to weekly, and required that reports be submitted electronically. The action is expected to provide more timely information on landings and discards. Improved information on landings would help ensure ACLs are not exceeded. Furthermore, more timely and accurate information would be expected to 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, and lead to better decisions regarding additional measures to reduce bycatch.

Amendment 36 to the Snapper Grouper FMP (SAFMC 2016) established SMZs and is expected to reduce bycatch of many snapper grouper species, especially speckled hind and Warsaw grouper.

The Council developed a joint For-Hire Reporting Amendment (SAFMC 2017) with the Gulf of Mexico Fishery Management Council that requires all federally permitted charter vessels report landings information weekly to the SEFSC electronically. Additionally, the Councils have began development of a joint amendment to require all federally permitted commercial fishing vessels in the southeast to also report their logbook landings information electronically. These future actions will help to improve estimates on the composition and magnitude of catch and bycatch of species affected by this amendment, as well as all other federally managed species in the southeast region.

Amendment 42 to the Snapper Grouper FMP (SAFMC 2019) modified sea turtle release gear regulations for the commercial snapper grouper fishery and modified the snapper grouper framework so the Council may more quickly modify sea turtle and other protected resources release gear and handling requirements in the future.

Regulatory Amendment 29 to the Snapper Grouper FMP (SAFMC 2020) required descending devices be on board all commercial, for-hire, and private recreational vessels while fishing for or possessing snapper grouper species; the use of non-offset, non-stainless steel circle hooks when fishing for snapper grouper species with hook-and-line gear and natural baits north of 28° N latitude; and all hooks be non-stainless steel when fishing for snapper grouper species with hook-and-line gear and natural baits throughout South Atlantic federal waters. The Council has also implemented an extensive outreach and public education program, which along with its citizen science initiative is promoting best fishing practices for all the species it manages.

Regulatory Amendment 35 to the Snapper Grouper FMP proposes actions to prohibit the use of certain gear types (multi-hook rigs) for the recreational sector while fishing for snapper grouper species.

Amendment 46 to the Snapper Grouper FMP proposes actions to focus on private recreational permit and reporting.

These past, current, and potential future actions will help to improve estimates on the composition and magnitude of catch and bycatch of federally managed species in the southeast region and minimize discard mortality. Additional information on fishery related actions from the past, present, and future considerations can be found in Chapter 6 (Cumulative Effects) of the amendment.

G.4. Ecological Effects Due to Changes in Bycatch

Release mortality rates for the snapper grouper fishery are widely variable species to species and sector to sector, and are dependent on fishing mode (Table G.4.1). For instance, recreational

discards of red snapper in the South Atlantic are a main driver in the overfishing determination for the stock (SEDAR 73 2021). However, discard mortality estimates for snapper grouper species are variable and highly uncertain. Generally, release mortality is highly correlated with depth for snapper grouper species, with highest mortality among fish captured in deep water (Campbell et al. 2014; Pulver 2017; Rudershausen et al. 2014; Stephen and Harris 2010; Wilson and Burns 1996). Gag can be captured over a broad depth range or transition to different depth zones throughout their life history, so release mortality rates can be variable. The commercial sector shows a slightly higher discard mortality rate (40%) than the recreational sector (25%), likely due to the differences in average depth the two sectors prosecute the fishery. Release mortalities for black sea bass are listed in Table G.4.1.

Table G.4.1. Release mortality rates of select recreationally and commercially important snapper-grouper species from recent stock assessments.

Species	Fishery	Release mortality	Data Source
Black Sea Bass	**Recreational**	**13.70%**	**SEDAR 56 (2018)**
Black Sea Bass	**Commercial Trap/Pot (2007- present)**	**6.80%**	**SEDAR 56 (2018)**
Black Sea Bass	**Commercial Vertical Line**	**19%**	**SEDAR 56 (2018)**
Gag	**Recreational**	**25%**	**SEDAR 10 Update (2014)**
Gag	**Commercial**	**40%**	**SEDAR 10 Update (2014)**
Gray Triggerfish	Recreational & Commercial	12.50%	SEDAR 41 (2016)
Greater Amberjack	Recreational & Commercial	20%	SEDAR 59 (2020)
Red Porgy	Recreational	41%	SEDAR 60 (2020)
Red Porgy	Commercial	53%	SEDAR 60 (2020)
Red Snapper	Recreational - Private	23%	SEDAR 73 (2021)
Red Snapper	Recreational - Charter & Headboat	22%	SEDAR 73 (2021)
Red Snapper	Commercial	32%	SEDAR 73 (2021)
Scamp / Yellowmouth Grouper	Recreational	39%	SEDAR 68 (2021)
Scamp / Yellowmouth Grouper	Commercial	26%	SEDAR 68 (2021)
Vermilion snapper	Recreational	38%	SEDAR 55 (2018)
Vermilion snapper	Commercial	41%	SEDAR 55 (2018)
Yellowtail snapper	Recreational	15%	SEDAR 64 (2020)
Yellowtail snapper	Commercial	12.50%	SEDAR 64 (2020)

It is likely that most mortality is a function of hooking and handling of the fish when the hook is being removed. Regulatory Amendment 29 to the Snapper Grouper FMP (SAFMC 2020) required descending devices be on board all commercial, for-hire, and private recreational vessels while fishing for or possessing snapper grouper species; the use of non-offset, non-stainless steel circle hooks when fishing for snapper grouper species with hook-and-line gear and natural baits north of 28° N latitude; and all hooks be non-stainless steel when fishing for snapper grouper species with hook-and-line gear and natural baits throughout South Atlantic

federal waters. The Council also implemented an extensive outreach and public education program, which along with its citizen science initiative is promoting best fishing practices for all the species it manages. The goal of these regulations is to reduce discard mortality for snapper grouper species.

The actions contained in this regulatory amendment are not expected to result in substantial changes to bycatch in the snapper grouper fishery; thus, ecological effects due to changes in bycatch in this fishery are expected to be negligible. For more details on ecological effects, see Chapters 3 and 4 of this amendment.

G.5. Changes in the Bycatch of Other Fish Species and Resulting Population and Ecosystem Effects

Regulatory Amendment 36 is not expected to result in changes in bycatch of other fish species. The snapper grouper fishery is characterized by a high number of discards for all species and sectors (Table G.2.1. and G.2.3). Both sectors likely target a wide range of species, including dolphin wahoo, snapper grouper, and coastal migratory pelagic species during each trip. This results in a varied amount and type of bycatch of species. However, the actions in this amendment are not expected to alter overall fishing activity or behavior in the fishery; thus, no changes in bycatch of other species are expected.

G.6. Effects on Marine Mammals and Birds

Marine Mammals

Under Section 118 of the Marine Mammal Protection Act (MMPA), NMFS 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. The longline and hook-and-line gear components of the snapper grouper fishery are determined to have remote likelihood of / no known interactions with marine mammals (Category III, LOF, 88 FR 16899; March 21, 2023).

Sea Birds

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 US Fish and Wildlife Service data). Interaction with fisheries has not been reported as a concern for either of these species. Although, the Bermuda petrel and roseate tern occur within the action area, these species are not commonly found and neither has been described as associating with vessels or having had interactions with the dolphin wahoo fishery. Thus, the fishery is not likely to adversely affect the Bermuda petrel and the roseate tern.

G.7. Changes in Fishing, Processing, Disposal, and Marketing Costs

The actions proposed in Regulatory Amendment 36 are not expected to substantially alter fishing practices, processing, disposal, or marketing costs in the near or short term in relation to bycatch or discards in the snapper grouper fishery. As shown in the analyses in Chapter 4 of the preferred alternatives for actions potentially affecting catch, costs are not expected to change. Similarly in the long term, it is more likely that current fishing, processing, disposal, and marketing costs would be maintained at or near their status quo levels, thus leading to no anticipated changes.

G.8. Changes in Fishing Practices and Behavior of Fishermen

As discussed above, the actions proposed in Regulatory Amendment 36 are not expected to change fishing practices or fishing behavior, and are likely to have little effect on the overall magnitude of discards. Also, any changes to fishing behavior and subsequent changes in the level of discards or discard mortality that may result from the actions in the amendment are expected to be small, and would not jeopardize the sustainability of any target or non-target species.

G.9. Changes in Research, Administration, and Enforcement Costs and Management Effectiveness

Research

Research and monitoring is ongoing to understand the effectiveness of implemented management measures and their effect on bycatch. The SEFSC is developing electronic logbooks, which could be used to enable fishery managers to obtain information on species composition, size distribution, geographic range, disposition, and depth of fishes that are released. Further, a joint Commercial Logbook Reporting Amendment is being developed by the Council and the Gulf of Mexico Fishery Management Council, which would require electronic reporting of landings information by federally permitted commercial vessels to increase the timeliness and accuracy of landings and discard data. The For-Hire Reporting Amendment should improve timeliness and quality of data for the charter and headboat components of the recreational sector.

Cooperative research projects between science and industry are available each year in the form of grants from Marine Fisheries Initiative, Saltonstall-Kennedy program, and the Cooperative Research Program. These programs can provide research funds for observer programs, as well as gear testing and testing of electronic devices. A condition of funding for these projects is that data are made available to the Councils and NMFS upon completion of a study.

Administration

The proposed actions are not expected to significantly impact administrative costs.

Enforcement

The proposed actions are not expected to significantly impact enforcement costs.

G.10. Changes in the Economic, Social, or Cultural Value of Fishing Activities and Non-Consumptive Uses of Fishery Resources

Changes in economic, social, or cultural values are discussed in Chapter 4. None of the actions and alternatives in Regulatory Amendment 36 are likely to change the current level of bycatch of target or non-target species in the South Atlantic and thus are unlikely to change the social, economic, or cultural value of fishing activities and non-consumptive uses of the snapper grouper fishery.

G.11. Changes in the Distribution of Benefits and Costs

The distribution of benefits and costs expected from the proposed actions in Regulatory Amendment 36 are discussed in the economic and social effects analysis in Chapter 4. These effects are discussed in relation to the baseline economic and social conditions of the fishery and fishing communities outlined in Chapter 3 of the document. Additionally, the Regulatory Impact Review (Appendix B) and Regulatory Flexibility Act Analysis (Appendix C) provide additional information on changes in the distribution of benefits and costs. Overall, almost no such alterations would be caused by changes to bycatch resulting from this amendment.

G.12. Social Effects

The baseline social environment and social effects of the proposed actions are described in Chapters 3 and 4 of Regulatory Amendment 36, respectively. In general, fishermen become frustrated as waste of the resource increases due to regulatory bycatch of target and non-target species. This often results in a distrust of science in that regulations are intended to protect stocks and rebuild overfished stocks by reducing such bycatch. However, none of the actions and alternatives in Regulatory Amendment 36 are likely to change the current level of bycatch of target or non-target species in the South Atlantic and thus are unlikely to result in the negative social effects described.

G.13. Conclusion

This BPA evaluates the practicability of taking additional action to minimize bycatch and bycatch mortality using the ten factors provided at 50 CFR section 600.350(d)(3)(i). In summary, the proposed actions in Regulatory Amendment 36 are not likely to significantly contribute or detract from the current level of bycatch in the snapper grouper fishery. The Council, NMFS, and the SEFSC have implemented and plan to implement numerous management measures and reporting requirements that have improved, or are likely to improve monitoring efforts of discards and discard mortality.

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