Amendment 46

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

Establish a private recreational permit and education requirement

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

June 2024 DRAFT

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Award Number FNA15NMF4410010

Amendment 46 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region

Proposed action(s): Establish permit and education requirements for the private recreational component of the snapper grouper fishery.

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This environmental assessment (EA) is being prepared using the 2020 CEQ NEPA Regulations as modified by the Phase I 2022 revisions. The effective date of the 2022 revisions was May 20, 2022, and reviews begun after this date are required to apply the 2020 regulations as modified by the Phase I revisions unless there is a clear and fundamental conflict with an applicable statute. This EA began on XXXXX, 2024, and accordingly proceeds under the 2020 regulations as modified by the Phase I revisions.

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Summary

Why is the South Atlantic Fishery Management Council considering action?

To improve estimates of catch and effort from the private recreational component of the snapper grouper fishery, the South Atlantic Fishery Management Council (Council) is considering permit and education requirements. The Marine Recreational Information Program (MRIP) survey used to estimate catch by private recreational fishermen may not always provide accurate and reliable information for many Council-managed species due to sampling limitations, especially for species with low catches, low annual catch limits (ACLs), and those that are rarely encountered by recreational anglers. Establishing a private recreational permit is intended to better identify the universe of participants in the snapper grouper fishery and enhance the ability to collect recreational effort and catch data, leading to improved catch and effort estimates. Additionally, many snapper grouper species caught by the recreational anglers experience post-release mortality. The education requirement is intended to educate anglers on the use of best fish handling and fishing practices that may reduce post-release mortality.

What Actions are Being Proposed in This Amendment?

The actions in Amendment 46 to the Fishery Management Plan (FMP) for the Snapper Grouper Fishery of the South Atlantic Region (Snapper Grouper FMP) would establish permit and education requirements for the private recreational component of the snapper grouper fishery.

Chapter 1. Introduction

1.1. What Actions are Being Proposed?

The actions in Amendment 46 to the Fishery Management Plan (FMP) for the Snapper Grouper Fishery of the South Atlantic Region (Snapper Grouper FMP) would establish permit and education requirements for the private recreational component of the snapper grouper fishery.

1.2. Who is Proposing the Actions?

The South Atlantic Fishery Management Council (Council) is responsible for managing snapper grouper species in the South Atlantic region. The Council develops the amendment and submits it to the National Marine Fisheries Service (NMFS) who determines whether to approve the amendment and publish a rule to implement the amendment on behalf of the Secretary of Commerce. NMFS is an agency of the National Oceanic and Atmospheric Administration within the Department of Commerce. Guided by the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), the Council works with NMFS and other partners to sustainably manage fishery resources in the South Atlantic.

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.

The Council and NMFS are also responsible for making this document available for public comment. The draft environmental assessment (EA) was made available to the public during the scoping process, public hearings, and Council meetings. The EA/amendment will be made available for comment during the rulemaking process.

1.3. Where is the Project Located?

Management of the federal snapper grouper fishery located off the southeastern U.S. in the 3-200 nautical mile U.S. exclusive economic zone is conducted under the Snapper Grouper FMP (SAFMC 1983) (Figure 1.3.1). There are 55 species managed by the Council under the Snapper Grouper FMP.

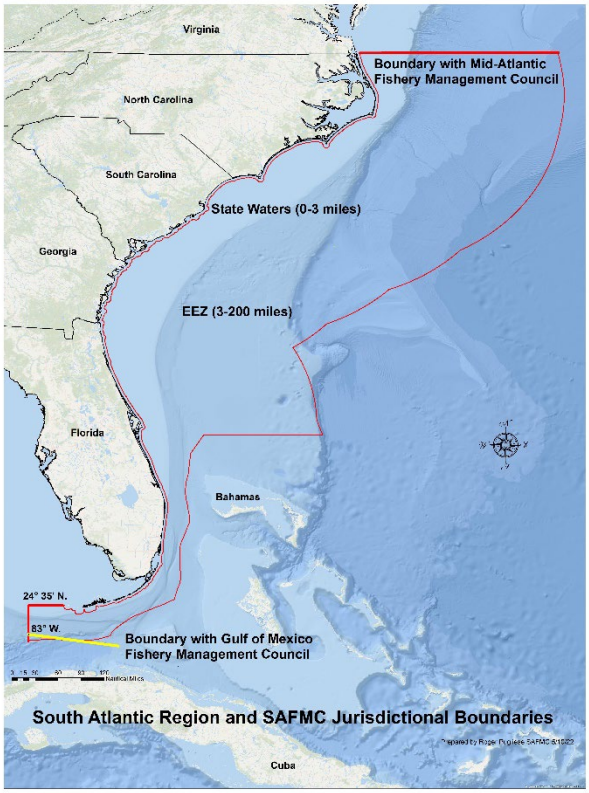

Figure 1.3.1. Jurisdictional boundaries of the Snapper Grouper FMP as managed by the Council.

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

Purpose: The is to develop a recreational permitting system that will better identify the universe of private anglers or vessels targeting South Atlantic snapper grouper species and will enhance the ability to collect recreational effort and catch data. Also work to promote best recreational fishing practices through education.

Need: The *need* for this amendment is to improve the quality of effort and catch data for the private component of the recreational sector that targets South Atlantic snapper grouper species, while minimizing, to the extent practicable, adverse social and economic effects. Also improve education on best fishing practices.

Background

Recreational catch and effort data are used to inform stock assessments and management advice, and to monitor catch levels. High quality catch and effort statistics are needed to determine the effects of fishing on the affected environment and in turn to develop sound management strategies. The quality of catch and effort statistics depends on the sampling design – sample framework, data collection methods, and data estimation process. The Marine Recreational Information Program (MRIP) survey used to estimate catch by private recreational fishermen may not always provide accurate and reliable information for many Council-managed species

due to sampling limitations, especially for species with low catches, low annual catch limits (ACLs), shortened seasons, or for species that are rarely encountered.

The Council is considering establishing a permit for the private recreational component of the snapper grouper fishery to improve the sampling framework (universe of participants). Better understanding the universe of recreational anglers or vessels that target snapper grouper species in federal waters is expected to improve estimates of catch and effort. The Council is also considering best fishing practices education requirements in conjunction with the recreational permit. Expanded education and outreach is expected to reduce discard mortality for snapper grouper species.

1.5. How are recreational data collected in the South Atlantic?

The Marine Recreational Fisheries Statistics Survey (MRFSS) was created in 1979 by NMFS. The program included the Access Point Angler Intercept Survey (APAIS), which consists of onsite interviews at marinas and other points where recreational anglers fish, to determine catch. MRFSS also included Coastal Household Telephone Survey (CHTS), which used random digit dialing of homes in coastal counties to contact anglers to determine fishing effort. In 2000, the For-Hire Survey (FHS) was implemented to incorporate for-hire effort due to lack of coverage of charter boat anglers by the CHTS. The FHS used a directory of all known charter boats and a weekly telephone sample of the charter boat operators to obtain effort information.

MRIP replaced MRFSS in 2013 to meet increasing demand for more precise, accurate, and timely recreational catch estimates. MRIP is a more scientifically sound methodology for estimating catch because it reduces some sources of potential bias as compared to MRFSS resulting in more accurate catch estimates. The MRIP incorporated a new survey design for APAIS in 2013. This new design addressed concerns regarding the validity of the survey approach, specifically that trips recorded during a given time period are representative of trips for a full day (Foster et al. 2018). The more complete temporal coverage with the new survey design provides for consistent increases or decreases in APAIS angler catch rate statistics, which are used in stock assessments and management, for at least some species (NMFS 2021).

MRIP transitioned from the legacy CHTS to a new mail Fishing Effort Survey (FES) beginning in 2015, and in 2018, the FES replaced the CHTS. Both survey methods collect data needed to estimate marine recreational fishing effort (number of fishing trips) by shore and private/rental boat anglers on the Atlantic and Gulf of Mexico coasts. The new mail-based FES uses angler license and registration information as one way to identify and contact anglers (supplemented with data from the U.S. Postal Service, which includes virtually all U.S. households). Because the FES and CHTS are so different, NMFS conducted side-by side testing of the two methods from 2015 to 2017 and developed calibration procedures to convert the historical catch estimates (MRFSS, MRIP CHTS, MRIP APAIS) into MRIP FES. In general, landings estimates are higher using the MRIP FES as compared to the previous estimates. This is because the FES is designed to more accurately measure fishing activity than the CHTS, not because there was a sudden rise in fishing effort. NMFS developed a calibration model to adjust historic effort estimates so that they can be accurately compared to new estimates from the FES. The new effort estimates alone do not lead to definitive conclusions about stock size or status in the past

or at current. NMFS determined that the MRIP FES data, when fully calibrated to ensure comparability among years and across states, produced the best available data for use in stock assessments and management (NMFS 2021).

Responding to concerns expressed by the recreational fishing community, NMFS conducted a limited pilot study to evaluate potential bias related to the recreational FES questionnaire design (NMFS 2023). While the sequence of questions in the FES is based on a well-researched and standard survey practice to ask easier questions prior to more challenging questions, findings from the pilot study suggest this may not always be optimal. The pilot study resulted in effort estimates that were generally 30-40% lower for shore and private boat anglers than estimates produced from the current design. The revised question order also resulted in fewer observed reporting errors compared to the current questionnaire. Lowering the reporting error rate should ultimately produce more accurate data and resulting estimates of effort. NMFS is planning a larger-scale follow-up study over the full course of 2024 to gain a clearer understanding of the differences in effort estimates between the current design and a revised design that changes both the question order and increases the frequency of sampling (monthly instead of every two months).

1.6. What are some examples of federal and state private recreational fishing permits?

Amendment 6 to the Tilefish FMP (MAFMC 2019) established a private recreational vessel permit requirement to fish for golden and blueline tilefish north of the North Carolina/Virginia border, effective August 17, 2020. This action was taken to better characterize and monitor the recreational fisheries for both blueline tilefish and golden tilefish. These permits can be acquired through an online permitting system. Private recreational tilefish anglers must also fill out and submit an electronic vessel trip report within 24 hours of returning to port for trips where tilefish were targeted and/or retained. Reports can be submitted through any NMFS approved electronic reporting system.

The Atlantic Highly Migratory Species (HMS) Angling Permit and Large Pelagics Survey covers recreational fishing for HMS and sharks (XXXX). To fish recreationally in federal waters for any authorized Atlantic tunas, swordfish, billfishes, and sharks, vessel owners must have a valid federal fishing permit for their vessel. Additionally, to fish recreationally for tunas within the waters of Atlantic coastal states (excluding Connecticut and Mississippi), vessel owners must have a valid federal fishing permit for their vessel. The type of permit needed depends on the fish species, fishing gear, and fishing trip. The four types (or categories) of permits that can be used to recreationally fish for Atlantic HMS are: HMS Angling, HMS Charter/Headboat, Atlantic Tunas General category (can fish recreationally only when participating an in HMS tournament), and Swordfish General Commercial (can fish recreationally only when participating an in HMS tournament). Each permit is issued to a vessel owner for a specific vessel. All passengers on board a vessel with a valid HMS permit may recreationally fish for Atlantic HMS under specified terms and conditions. To fish for sharks recreationally, permit holders need to apply for and receive a shark endorsement on their permit.

A recreational saltwater fishing license, issued through the states, is required for private recreational anglers in North Carolina, South Carolina, Georgia, and Florida. The 2007 Magnuson-Stevens Act Reauthorization contained a National Saltwater Angler Registry requirement and exempted states that collected adequate information from state licensed anglers. The state of Florida requires a Reef Fish permit and developed the State Reef Fish Survey where anglers intending to fish for 13 snapper grouper species[1] from a private vessel must obtain a State Reef Fish Angler designation. The survey supplements MRIP by targeting docks/boat ramps where snapper grouper fishermen are likely to return to port.

Gulf of Mexico states have taken steps to improve their estimation of recreational red snapper catch. Alabama, Mississippi, and Texas developed electronic reporting applications to improve estimates of red snapper or reef fish landings. Alabama uses the Snapper Check App to improve estimates of red snapper landings. The application requires a vessel representative to report the catch for the vessel along with number of anglers (AL DCNR 2015). The application requires information on the number of anglers, fish harvested, dead discards, vessel registration, county of landings, type of trip, and trip access type. Mississippi requires fishermen to hail out and hail in through the Tails n' Scales App. Texas uses the iSnapper application as an optional tool to monitor the harvest of red snapper. Fishermen are required to have a Texas saltwater fishing license, but they are not required to report landings. Louisiana requires a free Recreational Offshore Landings Permit but does not require reporting.

1.7. What is the management history for the snapper grouper fishery?

Snapper grouper regulations in the South Atlantic were first implemented in 1983. The reader is referred to the following link for the management history, summary of changes under each amendment, implementation dates, an up-to-date list of amendments under development and more, for all of the species in the Snapper Grouper FMP: https://safmc.net/fishery-management-plans/snapper-grouper/.

[1] https://myfwc.com/fishing/saltwater/recreational/state-reef-fish-survey/

Chapter 2. Proposed Actions

2.1. Action 1. Establish a private recreational permit requirement in the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region

2.1.1. Alternatives

Alternative 1 (No Action). Do not require private vessels or private anglers to have a valid federal permit to fish for, harvest, or possess snapper grouper species in the South Atlantic exclusive economic zone.

Alternative 2. Require a federal permit for **all private vessels** to fish for, harvest, or possess snapper grouper species in the South Atlantic exclusive economic zone.

Preferred Alternative 3. Require a federal permit for **all private anglers** to fish for, harvest, or possess snapper grouper species in the South Atlantic exclusive economic zone.

Discussion:
The Council is considering a private recreational snapper grouper permit to better identify the universe of recreational anglers targeting these species, which could be used to improve effort estimation. A private recreational snapper grouper permit would not be required for fishermen fishing on headboats or charter boats. Headboats participating in the Southeast Region Headboat Survey (SRHS) and all other federal for-hire vessels are required to electronically report trip information, including number of anglers (SRHS; SAFMC 2013) (Southeast For-Hire Integrated Electronic Reporting Program [SEFHIER]; SAFMC 2019).

The permit (**Alternatives 2** and **3**) could improve estimates of fishing effort for trips that target species in the snapper grouper fishery management unit (FMU; Action 2) and would respond to objectives in the 2016-2020 Vision Blueprint for the Snapper Grouper Fishery where stakeholders requested a private recreational stamp (or permit). Additionally, the Snapper Grouper Advisory Panel has made numerous recommendations over the years for a private recreational stamp or permit.

2.1.2. Comparison of Alternatives

Text.

2.2. Action 2. Specify the species for which a private recreational snapper grouper permit would be required

2.2.1. Alternatives

Alternative 1 (No Action). A federal private recreational permit does not apply to any snapper grouper species.

Preferred Alternative 2. A federal private recreational snapper grouper permit would be required when fishing for, harvesting, or possessing **any species in the snapper grouper fishery management unit**.

Alternative 3. A federal private recreational snapper grouper permit would be required when fishing for, harvesting, or possessing any species **covered by the Florida State Reef Fish Survey**.

Alternative 4. A federal private recreational snapper grouper permit would be required when fishing for, harvesting, or possessing **any deepwater species**.

Discussion:

Low number of intercepts is likely for many species in the snapper grouper FMU.

Table 2.2.1.1. Species found within the snapper grouper FMU.*

Species	FL SRFS	DW Species	Species	FL SRFS	DW Species
Black grouper	X		Bank sea bass		
Gag	X		Atlantic spadefish		
Greater amberjack	X		Gray snapper		
Hogfish	X		Graysby		
Mutton snapper	X		Jolthead porgy		
Red grouper	X		Knobbed porgy		
Red snapper	X		Lane snapper		
Vermilion snapper	X		Longspine porgy		
Yellowtail snapper	X		Margate		
Banded rudderfish	X		Nassau grouper		
Lesser amberjack	X		Ocean triggerfish		
Gray triggerfish	X		Red hind		
Almaco jack	X		Red porgy		
Yellowedge grouper		X	Rock hind		
Silk snapper		X	Rock sea bass		
Misty grouper		X	Sailor's choice		
Sand tilefish		X	Saucereye porgy		
Queen snapper		X	Scamp		
Blackfin snapper		X	Scup		

Blueline tilefish		X	Bar Jack		
Golden tilefish		X	Speckled hind		
Snowy grouper		X	Tomtate		
Wreckfish		X	Warsaw grouper		
Black sea bass			White grunt		
Coney			Whitebone porgy		
Cottonwick			Yellowfin grouper		
Cubera snapper			Yellowmouth grouper		
Goliath grouper					

*FL SRFS = species is covered by the Florida State Reef Fish Survey.
*DW Species = species is part of the deepwater complex or considered a deepwater species.

2.2.2. Comparison of Alternatives

Text.

2.3. Action 3. Establish an education component in conjunction with a private recreational snapper grouper permit

2.3.1. Alternatives

Alternative 1 (No Action). Do not require an education component for private anglers or vessels to fish for, harvest, or possess snapper grouper species in the South Atlantic exclusive economic zone.

Alternative 2. Establish and require an education component in conjunction with a private recreational snapper grouper permit to fish for, harvest, or possess snapper grouper species in the South Atlantic exclusive economic zone. The education component would be **implemented before initial issuance** of a private recreational permit requirement.

Alternative 3. Establish and require an education component in conjunction with a private recreational snapper grouper permit to fish for, harvest, or possess snapper grouper species in the South Atlantic exclusive economic zone. The education component would be **implemented after** the private recreational permit requirement has been established.
Completion of the education component would be required:
Sub-alternative 3a. Before initial reissuance of the permit.
Sub-alternative 3b. When permit holders are required to complete the education requirement by the issuing authority.

Discussion:
The Council would specify the length of delay in implementing the education component for **Alternative 3**.

2.3.2. Comparison of Alternatives

Text.

2.4. Action 4. Specify the timing of the education component requirement for the private recreational snapper grouper permit

2.4.1. Alternatives

Alternative 1 (No Action). There is not a required education component for private recreational anglers or vessels to fish for, harvest, or possess snapper grouper species in the South Atlantic exclusive economic zone.

Alternative 2. Completion of the education component would be required upon **each issuance** of a federal private recreational snapper grouper permit.

Alternative 3. Completion of the education component would be required **every other year** upon issuance of a federal private recreational snapper grouper permit.

Alternative 4. Completion of the education component would be required **upon initial issuance** of a federal private snapper grouper recreational snapper grouper permit.

Alternative 5. Completion of the education component would be required **upon initial issuance** of a federal private recreational snapper grouper recreational permit and **each time the education component materials are updated**.

Discussion:

Text

2.4.2. Comparison of Alternatives

Text.

2.5. Action 5. Establish an exemption to the federal private recreational snapper grouper permit requirement based on permitting by the states

2.5.1. Alternatives

Alternative 1 (No Action). Do not establish an exemption to the federal private recreational snapper grouper permit requirement to fish for, harvest, or possess snapper grouper species in the South Atlantic region.

Alternative 2. Establish an exemption to the federal private recreational snapper grouper permit requirement. The National Marine Fisheries Service would certify a state permit as equivalent to a federal private recreational snapper grouper permit provided the state implements equivalent measures that at a minimum include the following:

Sub-alternative 2a. The state permit is required for **the same entity** as the federal permit.

Sub-alternative 2b. The state permit is required for **the same snapper grouper species** as the federal permit.

Sub-alternative 2c. The state permit would **remain valid for the same period of time** as the federal permit.

Sub-alternative 2d. The state permit would have **the same education requirement** as the federal permit.

Discussion:

Text

2.5.2. Comparison of Alternatives

Text.

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 2009c) which is incorporated here by reference. South Atlantic Fishery Management Council (Council)-designated essential fish habitat (EFH) and EFH-Habitat Areas of Particular Concern (HAPC) are described in the SAFMC User Guide and spatial representations of these and other habitat-related layers are in 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)). 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. 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 600 ft (but to at least 2000 ft 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 EFH because it provides a mechanism to disperse snapper grouper larvae.

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

3.1.2. Habitat Areas of Particular Concern

EFH-Habitat Areas of Particular Concern (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 Artificial Reef Special Management Zones (SMZ); and 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 150-300 m 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 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 the Comprehensive Ecosystem-Based Amendment 1 (CE-BA 1; SAFMC 2010a), 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 (SAFMC 2016b). 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.

3.2. Biological and Ecological Environment

3.2.1. Snapper Grouper Species

The waters off the South Atlantic coast are home to a diverse population of fish. The Snapper Grouper 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 amendment.

Further details regarding the biological and ecological environment for the species in the Snapper Grouper FMU are found in the Comprehensive Annual Catch Limit (ACL) Amendment (SAFMC 2011) and amendments to the Snapper Grouper FMP since then, and are incorporated by reference, herein.

3.2.2. Stock Assessments

The Southeast Data, Assessment, and Review (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. 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 public 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 is useful for management and develops fishing level recommendations for Council consideration.

Detailed information on species in the Snapper Grouper FMU assessed by the SEDAR process can be found at http://sedarweb.org/, and is hereby incorporated by reference.

3.2.3. Protected Species

The National Marine Fisheries Service (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), and 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 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. 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 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.

Since completing the December 2016 Bi-Op, NMFS published several final rules that listed additional species and designated critical habitat. 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 Regulatory Amendment 27 to the FMP (SAFMC 2019).

3.3. Economic Environment

3.3.1. Commercial Sector

The actions contained in this amendment only pertain to the recreational sector. As a result, a description of the economic environment for the commercial sector is not provided. Economic information pertaining to the commercial snapper grouper fishery can be found in the draft Comprehensive Amendment Addressing Electronic Reporting for Commercial Vessels (SAFMC 2023), Amendment 29 to the FMP (SAFMC 2020), Buck (2018), and Overstreet et al. (2018).

3.3.2. Recreational Sector

The recreational sector is comprised 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. This amendment and this description of the economic environment focus exclusively on the private/rental component of the recreational sector. Economic information pertaining to the for-hire component of the snapper grouper fishery can be found in Amendment 29 (SAFMC 2020), Holland et al. (2012), and Souza and Liese (2019).

Permits

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 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 Marine Recreational Information Program (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 target and catch effort, in MRIP fishing effort survey (FES) units, are provided in Tables 3.3.2.1 - 3.3.2.8. It is important to note that in 2018, MRIP transitioned from the Coastal Household Telephone Survey (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.[2] Although some of the species[3] managed under the Snapper Grouper FMP are covered under the Florida State Reef Fish Survey (SRFS), all estimates provided in this section are reported in MRIP FES units for consistency and because SRFS does not provide an equivalent measure of target effort.

From 2018 through 2022, the total number of private/rental mode snapper grouper target trips in the South Atlantic fluctuated heavily, with a 5-year peak in 2018 (Table 3.3.2.1). During this period, Florida accounted for the vast majority of these trips and 60% of these trips, on average, occurred in Federal waters (Table 3.3.2.1). In comparison, the number of snapper grouper catch trips for the private/rental mode was more stable from 2018 through 2022 and the majority of those trips occurred in state waters (Table 3.3.2.2).

[2] 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/.

[3] Snapper grouper species covered under SRFS include black grouper, gag, greater amberjack, hogfish, mutton snapper, red grouper, red snapper, vermilion snapper, yellowtail snapper, banded rudderfish, lesser amberjack, gray triggerfish, and almaco jack (Table 2.2.1.1).

Table 3.3.2.1. South Atlantic recreational private/rental mode snapper grouper target trips, by state and area fished.

	FL	GA	NC	SC	Total
	State Waters				
2018	500,761	23,040	4,110	6,005	533,917
2019	275,404	7,226	11,964	10,215	304,809
2020	388,717	26,753	13,850	21,176	450,496
2021	529,009	3,519	16,096	23,546	572,170
2022	524,421	8,731	8,679	40,834	582,666
Average	443,662	13,854	10,940	20,355	488,812
	Federal Waters				
2018	1,351,616	29,432	20,854	10,723	1,412,625
2019	408,063	19,332	24,547	100,566	552,508
2020	910,129	21,904	36,126	84,796	1,052,955
2021	327,480	22,318	30,426	27,117	407,340
2022	519,110	12,979	31,229	17,023	580,341
Average	703,280	21,193	28,636	48,045	801,154
	Total				
2018	1,852,377	52,472	24,964	16,728	1,946,542
2019	683,467	26,558	36,511	110,781	857,317
2020	1,298,846	48,657	49,976	105,972	1,503,451
2021	856,489	25,837	46,522	50,663	979,510
2022	1,043,531	21,710	39,908	57,857	1,163,007
Average	1,146,942	35,047	39,576	68,400	1,289,965

Source: MRIP database, SERO, NMFS (October 2023).

Table 3.3.2.2. South Atlantic recreational private/rental mode snapper grouper catch trips, by state and area fished.

	FL	GA	NC	SC	Total
	State Waters				
2018	2,280,400	43,929	242,660	190,182	2,757,170
2019	1,744,251	92,822	350,265	129,552	2,316,891
2020	1,924,108	52,579	362,743	175,668	2,515,099
2021	2,395,891	68,341	351,170	256,816	3,072,217
2022	2,354,816	144,165	609,269	305,865	3,414,116
Average	2,139,893	80,367	383,221	211,617	2,815,099
	Federal Waters				
2018	2,028,701	52,678	123,799	91,303	2,296,481
2019	1,093,537	68,799	91,162	177,756	1,431,254
2020	1,332,212	86,824	152,287	130,809	1,702,132
2021	1,057,779	56,856	138,176	127,752	1,380,563
2022	971,803	64,757	109,829	154,130	1,300,519
Average	1,296,806	65,983	123,051	136,350	1,622,190
	Total				
2018	4,309,101	96,607	366,459	281,485	5,053,651
2019	2,837,788	161,621	441,427	307,308	3,748,145
2020	3,256,320	139,403	515,030	306,477	4,217,231
2021	3,453,670	125,197	489,346	384,568	4,452,780
2022	3,326,619	208,922	719,098	459,995	4,714,635
Average	3,436,700	146,350	506,272	347,967	4,437,288

Source: MRIP database, SERO, NMFS (October 2023).

Over half (63%) of all private/rental mode snapper grouper target trips, on average (2018 through 2022), were attributed to the subset of species covered under SRFS (Table 3.3.2.1 and Table 3.3.2.3). Approximately 41% of private/rental mode snapper grouper catch trips, on average, harvested SRFS species during the period (Table 3.3.2.2 and Table 3.3.2.4).

Table 3.3.2.3. South Atlantic recreational private/rental mode target trips for snapper grouper species covered under SRFS, by state and area fished.

	FL	GA	NC	SC	Total
	State Waters				
2018	160,707	0	863	3,603	165,173
2019	69,366	2,410	0	0	71,776
2020	169,558	0	4,679	289	174,527
2021	163,894	0	6,399	2,484	172,777
2022	207,311	0	4,102	0	211,413
Average	154,167	482	3,209	1,275	159,133
	Federal Waters				
2018	1,295,940	4,475	4,188	2,134	1,306,738
2019	373,600	15,360	8,627	36,036	433,623
2020	842,524	13,584	5,381	69,402	930,892
2021	289,509	10,636	20,161	11,749	332,054
2022	397,746	3,394	14,746	6,167	422,052
Average	639,864	9,490	10,621	25,098	685,072
	Total				
2018	1,456,647	4,475	5,051	5,737	1,471,911
2019	442,966	17,770	8,627	36,036	505,399
2020	1,012,082	13,584	10,060	69,691	1,105,419
2021	453,403	10,636	26,560	14,233	504,831
2022	605,057	3,394	18,848	6,167	633,465
Average	794,031	9,972	13,829	26,373	844,205

Source: MRIP database, SERO, NMFS.

Table 3.3.2.4. South Atlantic recreational private/rental mode catch trips for snapper grouper species covered under SRFS, by state and area fished.

	FL	GA	NC	SC	Total
	State Waters				
2018	749,461	0	4,522	3,080	757,064
2019	469,610	6,908	10,573	4,823	491,914
2020	359,791	0	27,367	3,342	390,501
2021	666,826	0	13,688	18,945	699,459
2022	669,605	31,202	23,434	26,279	750,519
Average	583,059	7,622	15,917	11,294	617,891
	Federal Waters				
2018	1,721,704	19,012	25,676	32,197	1,798,590
2019	885,595	26,921	44,770	69,468	1,026,754
2020	1,110,184	31,744	35,490	84,765	1,262,183
2021	888,140	26,110	69,888	49,319	1,033,458
2022	789,220	37,168	58,178	89,555	974,121
Average	1,078,969	28,191	46,800	65,061	1,219,021
	Total				
2018	2,471,165	19,012	30,198	35,277	2,555,654
2019	1,355,205	33,829	55,343	74,291	1,518,668
2020	1,469,975	31,744	62,857	88,107	1,652,684
2021	1,554,966	26,110	83,576	68,264	1,732,917
2022	1,458,825	68,370	81,612	115,834	1,724,640
Average	1,662,027	35,813	62,717	76,355	1,836,913

Source: MRIP database, SERO, NMFS (October 2023).

The number of private/rental mode target trips for deepwater species (see note below table for species included)from 2018 through 2022 was minimal, accounting for less than 2% of all private/rental mode snapper grouper target trips in the South Atlantic (Table 3.3.2.1 and Table 3.3.2.5). All of these deepwater species target trips occurred in Florida and North Carolina and almost all of them in Federal waters (Table 3.3.2.5). Similarly, there were a low number of private/rental mode catch trips for deepwater species and these predominantly occurred in federal waters off Florida and North Carolina (Table 3.3.2.6).

Table 3.3.2.5. South Atlantic recreational private/rental mode target trips for deepwater* snapper grouper species, by state and area fished.

	FL	GA	NC	SC	Total
	State Waters				
2018	0	0	0	0	0
2019	0	0	0	0	0
2020	0	0	0	0	0
2021	0	0	0	0	0
2022	12,831	0	0	0	12,831
Average	2,566	0	0	0	2,566
	Federal Waters				
2018	2,471	0	615	0	3,085
2019	8,227	0	297	0	8,525
2020	37,404	0	15,866	0	53,270
2021	15,973	0	0	0	15,973
2022	14,450	0	0	0	14,450
Average	15,705	0	3,356	0	19,061
	Total				
2018	2,471	0	615	0	3,085
2019	8,227	0	297	0	8,525
2020	37,404	0	15,866	0	53,270
2021	15,973	0	0	0	15,973
2022	27,281	0	0	0	27,281
Average	18,271	0	3,356	0	21,627

Source: MRIP database, SERO, NMFS (October 2023).
*Includes deepwater complex species, plus blueline tilefish, golden tilefish, snowy grouper, and wreckfish.

Table 3.3.2.6. South Atlantic recreational private/rental mode catch trips for deepwater* snapper grouper species, by state and area fished.

	FL	GA	NC	SC	Total
	State Waters				
2018	39,444	0	0	0	39,444
2019	9,762	0	0	0	9,762
2020	3,196	0	0	0	3,196
2021	14,376	0	0	0	14,376
2022	31,257	0	0	0	31,257
Average	19,607	0	0	0	19,607
	Federal Waters				
2018	17,057	0	3,351	0	20,408
2019	78,058	0	1,918	0	79,976
2020	14,196	0	17,338	0	31,533
2021	17,780	0	6,753	0	24,533
2022	19,924	0	0	4,845	24,770
Average	29,403	0	5,872	969	36,244
	Total				
2018	56,501	0	3,351	0	59,852
2019	87,820	0	1,918	0	89,738
2020	17,392	0	17,338	0	34,729
2021	32,156	0	6,753	0	38,909
2022	51,181	0	0	4,845	56,027
Average	49,010	0	5,872	969	55,851

Source: MRIP database, SERO, NMFS (October 2023).
*Includes deepwater complex species, plus blueline tilefish, golden tilefish, snowy grouper, and wreckfish.

The top five snapper grouper species most commonly targeted and harvested by the private/rental mode in the South Atlantic (state and federal waters combined) from 2018 through 2022 were red snapper, gray snapper, yellowtail snapper, mutton snapper, and black sea bass (Table 3.3.2.7 and Table 3.3.2.8). The top five snapper grouper species by total number of target or catch trips that occurred specifically in federal waters shared a similar ranking with those from state and federal waters combined; however, there are some notable differences such as the inclusion of tomtate (Table 3.3.2.9 and Table 3.3.2.10). It is important to note that many trips target or harvest more than one species and so the sum of individual species results in Table 3.3.2.7, Table 3.3.2.8, Table 3.3.2.9, and Table 3.3.2.10 will be greater than the total snapper grouper target and catch effort estimates presented in Table 3.3.2.1 and Table 3.3.2.2.

Table 3.3.2.7. Snapper grouper species sorted from greatest to least in terms of total private/rental mode target trips from 2018 through 2022 (state and federal waters combined).

Species	2018	2019	2020	2021	2022	Total
red snapper	1,029,076	190,415	716,575	117,441	226,707	2,280,213
gray snapper	435,161	231,953	229,042	416,203	363,604	1,675,963
yellowtail snapper	227,436	63,774	137,437	147,200	99,284	675,130
mutton snapper	81,600	130,978	102,971	90,688	181,283	587,519
black sea bass	95,746	103,444	104,147	76,716	166,521	546,574
vermilion snapper	7,292	57,524	82,425	75,247	67,147	289,635
gray triggerfish	28,910	31,905	50,616	67,475	79,515	258,421
gag	68,834	39,416	45,965	30,219	11,345	195,780
lane snapper	26,014	13,501	31,823	18,186	21,609	111,132
hogfish	41,433	9,515	5,304	24,645	19,025	99,923
golden tilefish	2,471	8,525	37,404	15,973	11,705	76,077
Atlantic spadefish	2,430	36,541	12,125	11,180	3,292	65,568
greater amberjack	17,918	12,479	12,114	0	1,787	44,298
cubera snapper	7,780	0	3,762	4,412	10,246	26,201
red grouper	0	0	0	14,387	4,824	19,211
blueline tilefish	615	0	15,866	0	934	17,415
yellowedge grouper	0	0	0	4,041	12,831	16,872
black grouper	623	2,568	0	3,867	9,624	16,682
white grunt	0	6,045	1,858	0	436	8,340
goliath grouper	0	1,820	756	5,428	0	8,003
scamp	0	0	0	0	5,535	5,535
red porgy	0	0	0	4,447	0	4,447
almaco jack	0	513	0	0	2,169	2,682
lesser amberjack	0	0	0	0	1,681	1,681
snowy grouper	0	0	0	0	1,414	1,414
ocean triggerfish	0	0	0	0	934	934
silk snapper	0	0	0	0	398	398

Source: MRIP database, SERO, NMFS (October 2023).
Note1: Estimates are post-stratified to align with SEDAR estimates.
Note2: Excludes species with no recorded target trips during the period.

Table 3.3.2.8. Snapper grouper species sorted from greatest to least in terms of total private/rental mode catch trips from 2018 through 2022 (state and federal waters combined).

Species	2018	2019	2020	2021	2022	Total
gray snapper	1,685,815	1,258,586	1,379,057	1,756,825	1,838,002	7,918,284
black sea bass	1,194,769	1,249,934	1,384,594	1,050,843	1,406,276	6,286,416
red snapper	1,069,946	614,347	919,987	521,391	443,555	3,569,227
mutton snapper	410,129	378,585	238,891	379,365	468,486	1,875,457
yellowtail snapper	593,201	211,878	241,082	403,532	372,420	1,822,113
gray triggerfish	343,475	321,567	218,111	379,579	331,099	1,593,832
vermilion snapper	372,776	228,815	308,185	323,768	290,973	1,524,518
lane snapper	263,712	269,922	322,145	304,708	232,000	1,392,487
white grunt	302,994	217,997	188,633	240,070	238,130	1,187,824
tomtate	367,368	197,136	291,456	200,994	127,884	1,184,838
almaco jack	128,445	144,747	66,024	118,905	115,535	573,656
jolthead porgy	136,468	51,697	34,646	133,570	91,750	448,129
red grouper	204,196	41,623	36,833	83,815	79,225	445,692
gag	68,214	38,556	74,462	117,248	101,778	400,259
greater amberjack	68,024	136,735	95,127	34,042	57,580	391,506
graysby	107,090	48,799	23,496	21,736	39,184	240,305
Atlantic spadefish	23,519	33,107	55,607	50,287	66,846	229,367
whitebone porgy	32,561	52,607	20,891	46,097	47,320	199,476
red porgy	33,289	21,127	27,023	58,994	21,090	161,523
sailors choice	58,372	18,918	1,589	39,774	40,886	159,540
sand tilefish	44,973	39,629	4,998	19,385	33,251	142,237
black grouper	28,920	17,835	24,838	28,270	30,047	129,910
hogfish	28,682	15,726	10,879	45,574	28,032	128,893
ocean triggerfish	27,311	4,672	15,513	40,628	12,177	100,301
rock sea bass	3,265	2,499	20,986	29,852	34,938	91,540
bar jack	9,883	26,975	589	9,312	26,351	73,110
bank sea bass	3,494	1,744	6,720	6,622	48,958	67,539
goliath grouper	9,305	9,121	8,481	17,515	16,672	61,094
knobbed porgy	862	41,444	1,295	9,403	4,331	57,335
tilefish	8,514	25,776	4,919	4,896	11,393	55,498
cubera snapper	18,312	0	8,901	12,997	2,660	42,869
rock hind	4,467	0	26,232	6,587	4,510	41,796
margate	0	0	2,115	29,873	9,758	41,746
blueline tilefish	4,090	2,620	24,339	8,107	0	39,157
scamp	8,808	4,105	1,204	6,433	10,045	30,594
banded rudderfish	12,356	0	1,391	1,517	8,486	23,750
scup	1,377	4,705	5,688	0	9,453	21,224

Species	2018	2019	2020	2021	2022	Total
silk snapper	0	16,852	0	2,337	398	19,587
snowy grouper	1,911	0	474	0	7,613	9,997
queen snapper	0	4,862	0	0	4,266	9,128
lesser amberjack	0	188	5,339	0	579	6,107
longspine porgy	0	0	0	0	5,647	5,647
coney	0	2,838	0	0	1,567	4,405
yellowedge grouper	2,275	0	0	1,621	0	3,896
red hind	941	0	0	2,337	0	3,278
blackfin snapper	0	0	0	2,563	579	3,143
Warsaw grouper	2,187	0	0	0	0	2,187
speckled hind	0	0	1,380	0	0	1,380
nassau grouper	0	0	0	606	0	606
cottonwick	0	0	0	0	0	0
misty grouper	0	0	0	0	0	0
saucereye porgy	0	0	0	0	0	0
wreckfish	0	0	0	0	0	0
yellowfin grouper	0	0	0	0	0	0
yellowmouth grouper	0	0	0	0	0	0

Source: MRIP database, SERO, NMFS (October 2023).
Note1: Estimates are post-stratified to align with SEDAR estimates.

Table 3.3.2.9. Snapper grouper species sorted from greatest to least in terms of total private/rental component target trips from 2018 through 2022 (federal waters only).

Species	2018	2019	2020	2021	2022	Total
red snapper	1,026,598	188,005	716,575	116,632	225,205	2,273,015
black sea bass	65,931	72,857	50,332	45,688	121,110	355,918
yellowtail snapper	161,302	46,411	26,135	80,273	36,459	350,580
vermilion snapper	6,167	57,524	82,135	72,764	37,449	256,039
mutton snapper	20,930	84,100	51,442	17,334	77,060	250,866
gray triggerfish	28,047	31,905	47,317	61,214	70,741	239,224
gag	68,834	39,416	41,521	27,166	10,108	187,045
gray snapper	57,297	38,550	4,376	31,157	30,520	161,901
tilefish	2,471	8,525	37,404	15,973	11,705	76,077
Atlantic spadefish	2,430	36,541	8,704	6,362	3,292	57,330
lane snapper	3,606	4,910	31,823	11,026	0	51,365
greater amberjack	17,918	12,479	12,114	0	1,787	44,298
blueline tilefish	615	0	15,866	0	934	17,415
hogfish	6,908	7,470	1,641	951	0	16,970
cubera snapper	7,780	0	3,762	0	783	12,325
white grunt	0	6,045	0	0	436	6,482
black grouper	0	0	0	951	5,025	5,976
scamp	0	0	0	0	5,535	5,535
red grouper	0	0	0	4,456	0	4,456
red porgy	0	0	0	4,447	0	4,447
yellowedge grouper	0	0	0	4,041	0	4,041
almaco jack	0	0	0	0	2,169	2,169
snowy grouper	0	0	0	0	1,414	1,414
silk snapper	0	0	0	0	398	398

Source: MRIP database, SERO, NMFS (October 2023).
Note1: Estimates are post-stratified to align with SEDAR estimates.
Note2: Excludes species with no recorded target trips during the period.

Table 3.3.2.10. Snapper grouper species sorted from greatest to least in terms of total private/rental component catch trips from 2018 through 2022 (federal waters only).

Species	2018	2019	2020	2021	2022	Total
red snapper	1,063,825	508,797	890,139	494,358	435,691	3,392,809
black sea bass	482,309	519,583	547,764	316,983	413,767	2,280,405
vermilion snapper	360,699	222,971	290,248	291,380	218,353	1,383,651
gray triggerfish	225,529	277,122	172,245	316,971	237,987	1,229,854
tomtate	367,368	168,565	281,859	162,751	108,710	1,089,253
gray snapper	296,324	142,436	87,948	95,840	125,817	748,365
yellowtail snapper	219,900	96,251	84,049	153,382	92,520	646,102
mutton snapper	94,339	163,528	75,910	103,361	157,092	594,231
lane snapper	118,667	155,505	157,706	111,223	47,917	591,018
white grunt	119,590	148,808	116,989	121,787	60,268	567,443
almaco jack	107,886	103,743	47,868	91,412	99,067	449,976
greater amberjack	60,214	120,154	92,359	25,113	42,776	340,616
red grouper	97,421	32,747	10,208	27,372	27,837	195,584
gag	32,820	19,279	47,356	51,918	31,622	182,994
jolthead porgy	46,471	23,324	21,594	52,776	13,720	157,885
red porgy	30,358	21,127	27,023	58,994	20,338	157,840
whitebone porgy	22,171	48,609	16,070	17,318	4,282	108,450
graysby	36,537	16,759	8,491	6,088	22,996	90,870
black grouper	16,770	7,690	21,607	9,425	23,663	79,155
ocean triggerfish	12,458	4,672	15,513	39,395	5,242	77,280
Atlantic spadefish	5,253	18,567	4,944	16,880	23,386	69,030
sand tilefish	5,529	35,322	4,560	11,530	2,702	59,643
tilefish	8,514	25,776	4,919	4,896	11,393	55,498
knobbed porgy	862	41,444	0	8,324	4,331	54,962
sailors choice	9,089	1,742	944	16,894	7,784	36,453
blueline tilefish	4,090	2,620	21,581	8,107	0	36,398
rock hind	4,467	0	26,232	1,028	4,510	36,236
bar jack	4,071	13,938	589	5,104	7,567	31,268
scamp	8,808	4,105	1,204	3,870	10,045	28,031
rock sea bass	0	817	10,640	8,328	6,528	26,313
hogfish	2,113	1,588	5,643	2,381	10,572	22,297
bank sea bass	3,494	1,744	5,658	6,622	4,384	21,903
banded rudderfish	11,561	0	1,391	0	8,486	21,438
scup	1,377	4,705	2,855	0	6,492	15,429
goliath grouper	9,305	0	1,794	485	3,361	14,945
cubera snapper	2,943	0	8,901	2,381	0	14,226
silk snapper	0	11,396	0	0	398	11,794

Species	2018	2019	2020	2021	2022	Total
snowy grouper	1,911	0	474	0	6,905	9,289
queen snapper	0	4,862	0	0	4,266	9,128
lesser amberjack	0	188	5,339	0	579	6,107
coney	0	2,838	0	0	0	2,838
yellowedge grouper	2,275	0	0	0	0	2,275
Warsaw grouper	2,187	0	0	0	0	2,187
speckled hind	0	0	920	0	0	920
blackfin snapper	0	0	0	0	579	579
margate	0	0	0	0	391	391
cottonwick	0	0	0	0	0	0
longspine porgy	0	0	0	0	0	0
misty grouper	0	0	0	0	0	0
nassau grouper	0	0	0	0	0	0
red hind	0	0	0	0	0	0
saucereye porgy	0	0	0	0	0	0
wreckfish	0	0	0	0	0	0
yellowfin grouper	0	0	0	0	0	0
yellowmouth grouper	0	0	0	0	0	0

Source: MRIP database, SERO, NMFS (October 2023).
Note1: Estimates are post-stratified 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 the satisfaction that anglers experience over and above their costs of fishing. The monetary value of this satisfaction is referred to as consumer surplus (CS). The value or benefit derived from the recreational experience is dependent on several quality determinants, which include fish size, catch success rate, and the number of fish kept. These variables help determine the value of a fishing trip and influence total demand for recreational fishing trips.

Direct estimates of the CS for every species included in this action are not currently available. There are, however, estimates for snapper and grouper species in general. Haab et al. (2012) estimated the CS (willingness to pay [WTP] for one additional fish caught and kept) for snappers and groupers in the Southeastern U.S. using four separate econometric modeling techniques. The finite mixture model, which takes into account variation in the preferences of fishermen, had the best prediction rates of the four models and, as such, was selected for presentation here. The WTP for an additional snapper (excluding red snapper) estimated by this model was $14.67 (2022 dollars).[4] This value may seem low and may be strongly influenced by the pooling effect

[4] Converted to 2022 dollars using the annual, not seasonally adjusted GDP implicit price deflator provided by the U.S. Bureau of Economic Analysis (BEA).

inherent to the model in which it was estimated. The WTP for an additional red snapper, in comparison, was estimated to be $166.32 (2022 dollars). The WTP for an additional grouper was estimated to be $159.79 (2022 dollars). Another study estimated the value of the consumer surplus for catching and keeping a second grouper on an angler trip at approximately $124 (2022 dollars) and lower thereafter (approximately $83 for a third grouper, $61 for a fourth grouper, and $48 for a fifth grouper) (Carter and Liese 2012). Additionally, this study estimated the value of harvesting a second red snapper at approximately $97 (2022 dollars) and lower thereafter. Estimates are also available for the WTP for an increase in the bag limit for some snapper grouper species. Liese and Carter (2017) found that private anglers fishing from North Carolina, South Carolina, or Georgia in 2009 would be willing to pay $32 (2022 dollars) to increase the gag grouper bag limit by one fish and $11 (2022 dollars) to increase the aggregate bag for other snappers (not including red) from 5 to 10 fish.

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.

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 snapper grouper species were calculated using average trip-level impact coefficients derived from the 2020 Fisheries Economics of the U.S. report (NMFS 2023) and underlying data provided by the National Oceanic and Atmospheric Administration (NOAA) Office of Science and Technology. Economic impact estimates in 2020 dollars were adjusted to 2022 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 private/rental mode snapper grouper target trips are provided in Table 3.3.2.11. 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 deepwater species catch trips. To calculate the multipliers from Table 3.3.2.11, simply divide the desired impact measure (value-added impact, sales impact, income impact or employment) associated with a given state by the number of target trips for that state.

The estimates provided in Table 3.3.2.11 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. 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 Table 3.3.2.9 may be considered a lower bound on the economic activity associated with private/rental mode trips that targeted snapper grouper species in the South Atlantic.

Table 3.3.2.11. Estimated annual average economic impacts (2018-2022) from South Atlantic recreational private/rental mode snapper grouper target trips, by state, using state-level multipliers. All monetary estimates are in 2022 dollars (in thousands).

	NC	SC	GA	FL
Target Trips	39,576	68,400	35,047	1,146,942
Value Added Impacts	$1,398	$1,807	$986	$35,794
Sales Impacts	$2,311	$2,774	$1,496	$53,405
Income Impacts	$806	$850	$479	$17,684
Employment (Jobs)	20	31	17	455

Source: Effort data from MRIP (October 2023); economic impact results calculated by NMFS SERO using NMFS (2023) and underlying data provided by the NOAA Office of Science and Technology.

3.4. Social Environment

This amendment affects management of the private recreational component of the snapper grouper fishery in the South Atlantic. This section provides the background for the proposed actions, which are evaluated in Chapter 4. Recreational private boat snapper grouper, SRFS species,[5] and deepwater species[6] landings by state and jurisdiction are included to provide information on the geographic distribution of fishing involvement. Descriptions of the top communities based on recreational engagement and reliance are included. Community level data are presented in order to meet the requirements of National Standard 8 of the Magnuson-Stevens Act, which requires the consideration of the importance of fishery resources to human communities when changes to fishing regulations are considered. Lastly, social vulnerability data are presented to assess the potential for environmental justice concerns. Additional detailed

[5] Snapper group species covered under SRFS include black grouper, gag, greater amberjack, hogfish, mutton snapper, red grouper, red snapper, vermilion snapper, yellowtail snapper, banded rudderfish, lesser amberjack, gray triggerfish, and almaco jack (Table 2.2.1.1).

[6] Deepwater species or species in the deepwater complex include yellowedge grouper, silk snapper, misty grouper, sand tilefish, queen snapper, blackfin snapper, blueline tilefish, golden tilefish, snowy grouper, and wreckfish (Table 2.2.1.1).

information about communities in the following analysis can be found on the SERO's Community Snapshots website.[7]

3.4.1. Recreational Sector

Landings

The actions being considered in this amendment would affect private recreational fishermen in the South Atlantic exclusive economic zone; therefore only the landings for the private boat component of the recreational sector are described here.

The greatest proportion of recreational private boat snapper grouper landings came from waters adjacent to Florida (average of 87.9% of total private boat snapper grouper landings from 2018-2022, Table 3.4.1.1) and from federal waters (average of 73.6% of total private boat snapper grouper landings). Within federal waters, the greatest proportion of recreational private boat snapper grouper landings came from waters adjacent to Florida (average of 85.1% of federal private boat snapper grouper landings from 2018-2022, Table 3.4.1.1), followed by North Carolina (6.9%), South Carolina (5.4%), and Georgia (2.6%). However, there is a lot of fluctuation in landings in pounds by state and by year.

[7] https://www.fisheries.noaa.gov/southeast/socioeconomics/snapshots-human-communities-and-fisheries-gulf-mexico-and-south-atlantic

Table 3.4.1.1. South Atlantic recreational private boat snapper grouper landings in whole weight, by state and jurisdiction.

Year	FL	GA	NC	SC	Total
State Waters					
2018	3,979,979	49,491	13,115	26,950	4,069,535
2019	2,114,156	86,246	22,246	45,674	2,268,322
2020	1,917,933	18,916	68,882	50,396	2,056,128
2021	3,065,708	23,471	64,354	29,946	3,183,479
2022	3,123,042	43,098	40,621	47,491	3,254,252
Average	2,840,164	44,245	41,843	40,092	2,966,343
Federal Waters					
2018	10,433,865	307,293	416,613	142,698	11,300,469
2019	5,774,333	280,986	519,336	733,130	7,307,785
2020	9,041,008	278,461	868,040	693,003	10,880,513
2021	5,215,666	191,409	553,512	225,574	6,186,162
2022	4,725,594	21,967	492,620	459,389	5,699,570
Average	7,038,093	216,023	570,024	450,759	8,274,900
Total					
2018	14,413,844	356,784	429,727	169,648	15,370,003
2019	7,888,489	367,232	541,582	778,804	9,576,107
2020	10,958,942	297,378	936,922	743,400	12,936,641
2021	8,281,374	214,881	617,866	255,520	9,369,640
2022	7,848,637	65,065	533,241	506,880	8,953,822
Average	9,878,257	260,268	611,868	490,850	11,241,243

Source: SERO MRIP Database (August 2023).
Note: Although red snapper management is informed by state survey landings data, MRIP data was used for red snapper to ensure an apples to apples comparison can be made for all species and because state data cannot always be split between federal and state waters.

The greatest proportion of recreational private boat snapper grouper SRFS species landings came from waters adjacent to Florida (average of 90.6% of total private boat snapper grouper SRFS species landings from 2018-2022, Table 3.4.1.2) and from federal waters (average of 81.1% of total private boat snapper grouper SRFS species landings). Within federal waters, the greatest proportion of recreational private boat snapper grouper SRFS species landings came from waters adjacent to Florida (average of 89.1% of federal private boat snapper grouper SRFS species landings from 2018-2022, Table 3.4.1.2), followed by North Carolina (4.3%), South Carolina (4%), and Georgia (2.5%). However, there is a lot of fluctuation in landings in pounds by state and by year.

Table 3.4.1.2. South Atlantic recreational private boat snapper grouper SRFS species landings in whole weight, by state and jurisdiction.

Year	FL	GA	NC	SC	Total
State Waters					
2018	2,185,183	-	6,056	-	2,191,239
2019	1,004,515	56,567	11,111	17,001	1,089,194
2020	989,931	-	63,190	-	1,053,121
2021	1,642,386	-	37,846	27,949	1,708,181
2022	1,441,187	-	11,432	-	1,452,619
Average	1,452,640	11,313	25,927	8,990	1,498,871
Federal Waters					
2018	8,130,099	243,307	257,043	55,865	8,686,314
2019	4,156,449	232,426	218,801	406,758	5,014,433
2020	8,217,120	221,442	226,188	538,530	9,203,280
2021	4,118,339	93,293	373,818	86,943	4,672,393
2022	4,072,362	21,317	318,406	200,609	4,612,694
Average	5,738,874	162,357	278,851	257,741	6,437,823
Total					
2018	10,315,282	243,307	263,099	55,865	10,877,553
2019	5,160,964	288,992	229,912	423,759	6,103,627
2020	9,207,050	221,442	289,378	538,530	10,256,400
2021	5,760,725	93,293	411,663	114,893	6,380,574
2022	5,513,549	21,317	329,838	200,609	6,065,313
Average	7,191,514	173,670	304,778	266,731	7,936,693

Source: SERO MRIP Database (August 2023).
Note: Although red snapper management is informed by state survey landings data, MRIP data was used for red snapper to ensure an apples to apples comparison can be made for all species and because state data cannot always be split between federal and state waters.

The greatest proportion of recreational private boat snapper grouper deepwater species landings came from waters adjacent to Florida (average of 92.7% of total private boat snapper grouper deepwater species landings from 2018-2022, Table 3.4.1.3) and from federal waters (average of 69.6% of total private boat snapper grouper deepwater species landings). Within federal waters, the greatest proportion of recreational private boat snapper grouper deepwater species landings came from waters adjacent to Florida (average of 89.5% of federal private boat snapper grouper deepwater landings from 2018-2022, Table 3.4.1.3), followed by South Carolina (10.5%). However, there is a lot of fluctuation in landings in pounds by state and by year.

Table 3.4.1.3. South Atlantic recreational private boat snapper grouper deepwater species landings in whole weight, by state and jurisdiction.

Year	FL	GA	NC	SC	Total
State Waters					
2018	-	-	-	-	-
2019	2,654	-	-	-	2,654
2020	282	-	-	-	282
2021	42,974	-	-	-	42,974
2022	998	-	-	-	998
Average	9,382	-	-	-	9,382
Federal Waters					
2018	43,404	-	-	-	43,404
2019	39,515	-	-	-	39,515
2020	12,491	-	-	-	12,491
2021	-	-	-	-	-
2022	672	-	-	11,281	11,953
Average	19,217	-	-	2,256	21,473
Total					
2018	43,404	-	-	-	43,404
2019	42,169	-	-	-	42,169
2020	12,773	-	-	-	12,773
2021	42,974	-	-	-	42,974
2022	1,670	-	-	11,281	12,951
Average	28,598	-	-	2,256	30,854

Source: SERO MRIP Database (August 2023).

Engagement and Reliance

Landings for the recreational sector are not available by species at the community level, making it difficult to identify communities as dependent on recreational fishing for snapper grouper. Because limited data are available concerning how communities are engaged and reliant on specific species or species groups in the recreational sector, indices were created using secondary data from permit and infrastructure information for the southeast recreational fishing sector at the community level (Jacob et al. 2013; Jepson and Colburn 2013). Recreational fishing engagement is represented by the number of recreational permits and vessels designated as "recreational" by homeport and owner address. Fishing reliance includes the same variables as fishing engagement, divided by population. Factor scores of both engagement and reliance were plotted by community.

Figure 3.4.1.1 identifies the top communities that are engaged and reliant upon recreational fishing in general. All included communities demonstrate high levels of recreational engagement. Four communities (Islamorada, Florida; Hatteras, North Carolina; Tavernier, Florida; and Manteo, North Carolina) demonstrate high levels of recreational reliance.

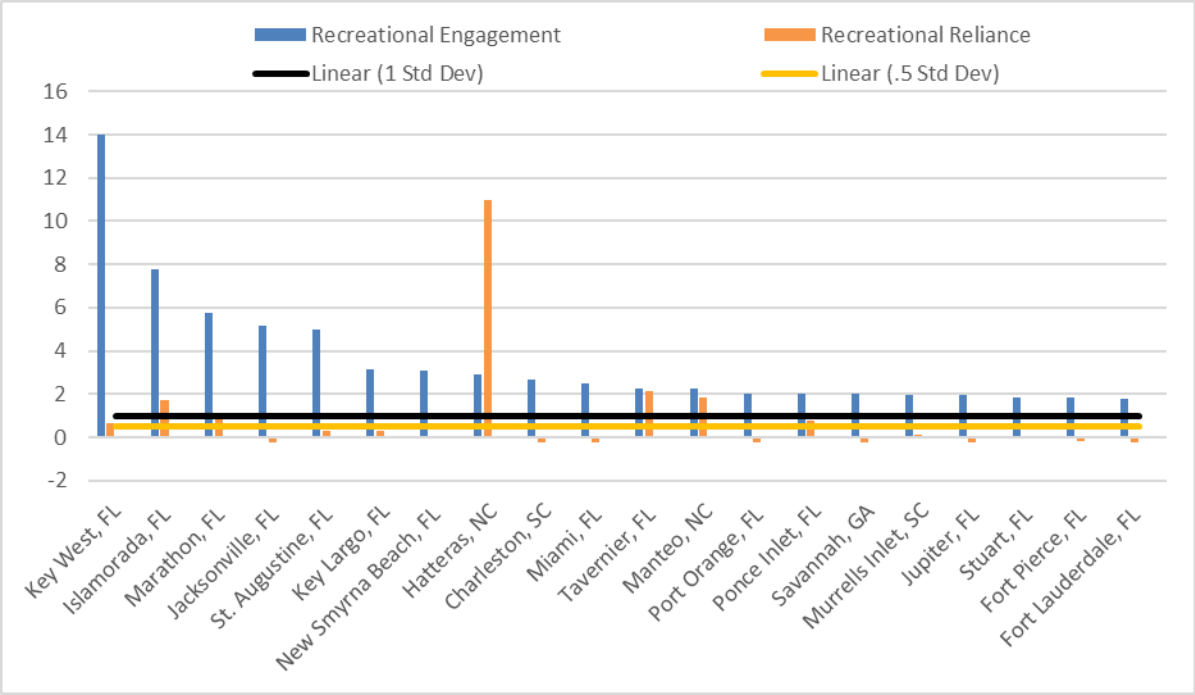

Figure 3.4.1.1. Top 20 communities by recreational fishing engagement and reliance.
Source: SERO, Community Social Vulnerability Indicators Database 2019.

The description of fishing activities presented above highlights the geographic areas and communities which may be most involved in South Atlantic private recreational snapper grouper fishing. It is expected that the impacts from the regulatory actions in this amendment, whether positive or negative, would most likely affect the geographic areas and communities identified above.

3.5. Environmental Justice, Equity, and Underserved Communities

Federal agencies are required to consider the impacts and/or address the inequalities of their policies on minority populations, low-income populations, disadvantaged communities, and/or underserved communities. These requirements are outlined in the following Executive Orders (E.O.).

E.O. 12898 requires federal agencies conduct their programs, policies, and activities in a manner to ensure individuals or populations are not excluded from participation in, or denied the benefits of, or subjected to discrimination because of their race, color, or national origin. In addition, and specifically with respect to subsistence consumption of fish and wildlife, federal agencies are required to collect, maintain, and analyze information on the consumption patterns of populations who principally rely on fish and/or wildlife for subsistence. The main focus of E.O. 12898 is to consider "the disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories…" This E.O. is generally referred to as environmental justice (EJ).

E.O. 13985 requires federal agencies to recognize and work to redress inequalities in their policies and programs that serve as barriers to equal opportunity, including pursuing a comprehensive approach to advancing equity for all, including people of color and others who have been historically underserved, marginalized, and adversely affected by persistent poverty and inequality. Federal agencies must assess how programs and policies perpetuate systemic barriers to opportunities and benefits to people of color and other underserved groups in order to equip agencies to develop policies and programs that deliver resources and benefits equitably to all.

E.O. 13985 provides definitions for equity and underserved communities, which expand the definition of a community from being geographically situated, or place-based, as defined through the Magnuson-Stevens Act, to also include communities that share a particular characteristic (e.g., crew of commercial fishing vessels). Equity means the consistent and systematic fair, just, and impartial treatment of all individuals, including individuals who belong to underserved communities that have been denied such treatment, such as Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality. The term ‘‘underserved communities’’ refers to populations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life, as exemplified by the list in the preceding definition of ‘‘equity.’’

E.O. 14008 calls on agencies to make achieving EJ part of their missions “by developing programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate-related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts.” Census data are available to examine the status of communities with regard to minorities and low-income populations. These data describe geographically based communities (e.g., Key West, Florida) and are descriptive of the total population, not limited to the fishing components of the community. Information is not available at this time to examine the status of underserved populations engaged in South Atlantic fisheries. To help assess whether EJ concerns may be present within regional place-based communities, a suite of indices were created using census data to examine the social vulnerability of coastal communities within the region. The three indices are poverty, population composition, and personal disruption. The variables included in each of these indices have been identified through the literature as being important components that contribute to a community’s vulnerability. Poverty includes poverty rates for different groups; population composition includes more single female-headed households, households with children under the age of five, minority populations, and those that speak English less than well; and personal disruption includes disruptions such as higher separation rates, higher crime rates, and unemployment. Increased rates in the indicators are signs of populations experiencing vulnerabilities. Again, for those communities that exceed the threshold it would be expected that they would exhibit vulnerabilities to sudden changes or social disruption that might accrue from regulatory change.

Figure 3.5.1.1 provides the social vulnerability rankings for place-based communities identified in Section 3.4 as important to private recreational fishing for snapper grouper. Several communities exceed the threshold of one standard deviation above the mean for at least one of the indices (Fort Pierce and Miami, Florida and Manteo, North Carolina). Two of the communities exceed the threshold for multiple indices (Fort Pierce and Miami, Florida). These communities would be the most likely to exhibit vulnerabilities to social or economic disruption resulting from regulatory change.

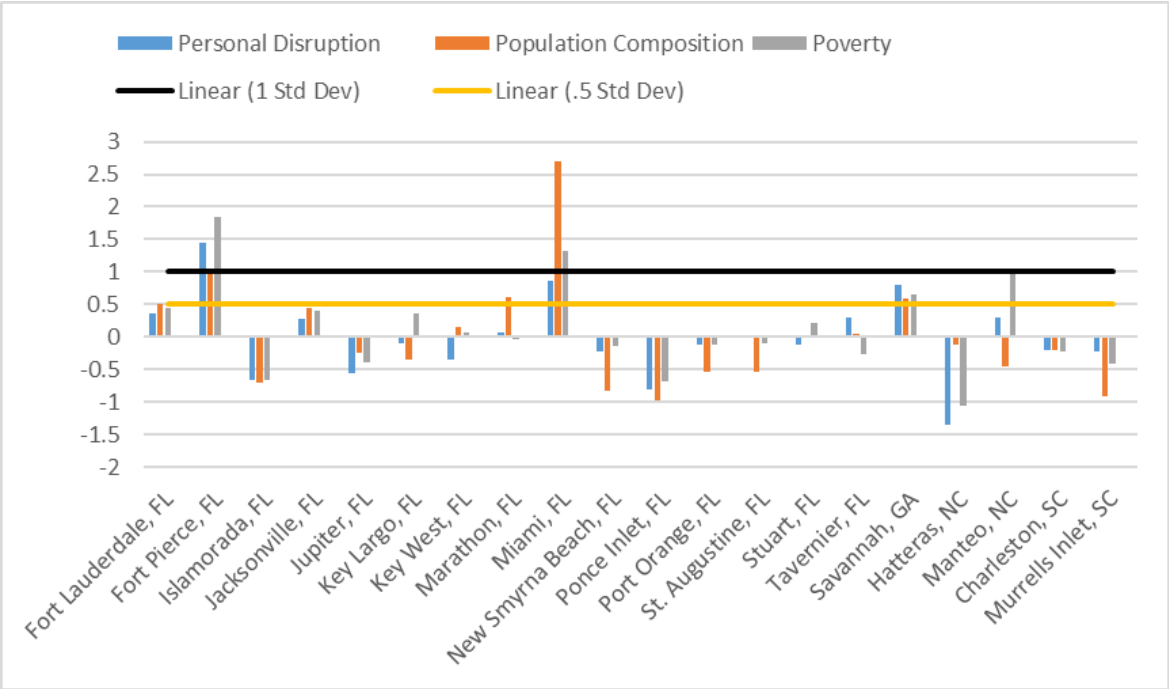

Figure 3.5.1.1. Social vulnerability indices for top recreational communities.
Source: SERO, Community Social Vulnerability Indicators Database 2019.

Although the place-based communities identified in Figures 3.5.1.1 may have the greatest potential for EJ concerns, complete data are not available on the race and income status for those participating in snapper grouper private recreational fishing specifically. The potential effects of the actions on place-based communities and non-place based communities, such as private recreational fishermen are discussed in Sections 4.1.3, 4.2.3, 4.3.3, 4.4.3, and 4.5.3. Although no EJ issues have been identified, the absence of potential EJ concerns cannot be assumed.

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 exclusive economic zone (EEZ), an area extending 200 nm 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 mi 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. The eight appointed members are comprised of 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 (USCG), 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. The Council also established two voting seats for the Mid-Atlantic Council on the South Atlantic Mackerel Committee. 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 (SSC) 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 manages South Carolina's marine fisheries. Georgia's marine fisheries are managed by the Coastal Resources Division of the Department of Natural Resources. The Division of Marine Fisheries Management of the Florida Fish and Wildlife Conservation Commission is responsible for managing Florida's marine fisheries. Each state fishery management agency has a designated seat on the South Atlantic Council. The purpose of state representation at the 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 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 complementary state regulations to conserve coastal species. The ASFMC is also represented at the Council 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.gc.noaa.gov/gces/2019/SE-SSS-Final-6-27-19.pdf/.

Chapter 4. Environmental Effects and Comparison of Alternatives

4.1. Action 1. Establish a private recreational permit requirement in the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region

4.1.1. Biological Effects

Expected effects to snapper grouper species and essential fish habitat

Alternatives

1. (No Action). Do not establish a private recreational permit requirement for vessels or anglers in the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region.

2. Require a federal permit for all vessels to fish for, harvest, or possess snapper grouper species in the South Atlantic exclusive economic zone.

3. Require a federal permit for all private anglers to fish for, harvest, or possess snapper grouper species in the South Atlantic exclusive economic zone.

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

Establishing a permit requirement results in an administrative process, and does not directly affect the physical or biological environment, but could have an indirect effect. Compared to **Alternative 1 (No Action)**, **Alternatives 2** and **3** would be expected to have positive impacts for snapper grouper species in the South Atlantic because requiring a private recreational permit should better identify the universe of private anglers fishing for snapper grouper species.

Improved estimates of recreational fishing effort, which are expected to result from the identification of the universe of private anglers, are expected to reduce uncertainty in recreational catch estimates. Reduced uncertainty in recreational catch estimates should result in higher precision outputs from stock assessments and improved catch monitoring. Positive indirect biological effects would be expected if less uncertain catch estimates help prevent exceeding annual catch limits (ACLs), leading to healthier fish stocks by reducing the likelihood of overfishing.

The actions in this amendment are not expected to negatively impact snapper grouper essential fish habitat (EFH). Fishing effort is not expected to significantly increase as a result of this action, nor are changes in fishing techniques or behavior expected that would affect EFH. The predicted effects on EFH are applicable to all actions in this plan amendment.

Biological benefits, if realized, would be similar under **Alternatives 2** and **3**, followed by **Alternative 1 (No Action)**.

Expected effects to protected species
The actions in this plan amendment would not significantly modify the way in which the snapper grouper fishery is prosecuted in terms of gear types. Therefore, there are no additional impacts on Endangered Species Act (ESA)-listed species or designated critical habitats anticipated as a result of this action (see Section 3.2.5 for a more detailed description of ESA-listed species and critical habitat in the action area). The predicted effects on ESA-listed species and designated critical habitats are applicable to all actions in this plan amendment.

4.1.2. Economic Effects

Alternative 1 (No Action) would not establish a permit requirement for private recreational anglers or vessels when fishing for, harvesting, or possessing snapper grouper species in the South Atlantic exclusive economic zone. Consequently, this alternative would not result in direct economic effects, including any direct or administrative costs. However, **Alternative 1 (No Action)** would forgo potential improvements in landings and effort information for the private component of the recreational sector. Improvements in such data have the potential to positively affect the management of fish stocks, with potential related indirect economic benefits. Improvements in the quality of data on recreational fisheries, such as better estimates of harvest, discards, and effort could improve the management of fish stocks. Such improvements may have positive economic implications for this component of the recreational sector, the recreational sector as a whole, and the commercial sector. For example, better data could enable more accurate estimates of total fishing mortality, effort, and economic benefits derived from the fishery. This would support improved setting and monitoring of annual catch limits, as well as improved forecasts of the expected biological, economic, and social effects of proposed management regulations.

Establishing a permit requirement for private recreational vessels (**Alternative 2**) or anglers (**Preferred Alternative 3**) would result in direct economic effects through increased costs to private recreational participants fishing in the EEZ for snapper grouper species and increased administrative costs when compared to **Alternative 1 (No Action)**. The direct cost to permit holders would include the permit application fee as well as the cost associated with the opportunity cost of the time that it would take to complete and submit a permit application. The current permit application fee for vessel permits issued by the NOAA Fisheries Southeast Regional Office is $25 for the first permit and $10 for each additional permit. It is assumed that most private recreational anglers or vessels do not possess a commercial or for-hire permit, thus the likely cost per permit would be $25. It is anticipated that a private recreational snapper grouper permit would need to be re-issued annually, thus these costs would occur on an annual basis. The number of vessels is notably smaller than the number of anglers fishing in the EEZ for snapper grouper species. Thus, there would be fewer permits issued under **Alternative 2** than **Preferred Alternative 3** resulting in notably lower total direct costs for **Alternative 2** compared to **Preferred Alternative 3**.

There would be potential improvements in landings and effort information for the private component of the recreational sector under both **Alternative 2** and **Preferred Alternative 3**. As previously described, such improvements could positively affect the management of fish stocks, with potential related indirect economic benefits. These potential indirect benefits would be similar between **Alternative 2** and **Preferred Alternative 3**, since both a vessel and an angler

permit would be utilized in a similar manner and likely result in similar potential improvements to recreational data estimates.

In terms of direct economic costs, **Preferred Alternative 3** would result in the highest costs followed by **Alternative 2** and **Alternative 1 (No Action)**. In terms of potential indirect economic benefits, the benefits incurred by **Alternative 2** and **Preferred Alternative 3** would be similar and **Alternative 1 (No Action)** would be comparatively lower than the other two alternatives.

4.1.3. Social Effects

Establishing a federal permit for all vessels (**Alternative 2**) or all private anglers (**Preferred Alternative 3**) participating in the private recreational component of the snapper grouper fishery would aid in identifying the universe of private recreational vessels and anglers, respectively, and could greatly assist in gathering information from these user groups. **Alternative 1 (No Action)** would not have the benefit of an improved understanding of the private recreational component of the snapper grouper fishery.

As there are no qualifying criteria proposed to obtain a federal permit for the recreational component of the snapper grouper fishery, the direct social effects of **Alternative 2** and **Preferred Alternative 3** should be minimal and primarily limited to the increased burden of paperwork created when applying for and renewing a permit. These social effects would be greatest under **Preferred Alternative 3** as they would be experienced by all private anglers participating in the private recreational component of the snapper grouper fishery, followed by **Preferred Alternative 3**, which would only require vessel owners or operators to apply for a permit, and least under **Alternative 1 (No Action)** with no permit. There may be some redundancy between federal and state permit requirements, which may cause additional burden and frustration for individuals who would need to apply for multiple permits (see Section 4.5.3). The highest effects are anticipated to be seen in Florida, which accounts the greatest proportion of private recreational snapper grouper landings (85.1%), followed by North Carolina (6.9%), South Carolina (5.4%), and Georgia (2.6%). Specifically, the communities of Islamorada, Florida; Hatteras, North Carolina; Tavernier, Florida; and Manteo, North Carolina are all highly reliant on recreational fishing activities (Section 3.4).

However, there may be indirect social effects depending on how snapper grouper fishermen perceive a federal recreational permit with regard to fairness and equity. Some snapper grouper stakeholders may support a private recreational permit, feeling that it is not "fair and equitable" to require permits from some of the fisheries sectors (for hire and commercial) and not others (private recreational fishermen). Alternatively, some snapper grouper stakeholders may feel that a private recreational permit is overly burdensome and not necessary to achieve management goals. The Council's Snapper Grouper Advisory Panel (AP) has expressed support for a private recreational permit, making numerous recommendations to the Council over the past few years. Perception of fishing regulations as fair or equitable can influence compliance with regulations and participation in the management process which can indirectly affect management outcomes.

Overall, the social effects from **Alternative 2** and **Preferred Alternative 3** are expected to be positive. The creation of a reliable database that allows for the quantification of the universe of

vessels that fish for snapper grouper species will enhance management procedures by increasing management's efficiency and the body of knowledge available to managers as they make decisions.

4.1.4. Administrative Effects

Alternative 1 (No Action), the status quo alternative, would not be expected to result in a change in administrative effects, as this alternative does not establish a new permit requirement. Compared to **Alternative 1 (No Action)**, **Alternatives 2** and **3** would result in adverse administrative effects for NMFS. The total number of permits that would need to be processed annually would be very high. Due to the higher number of potential recreational anglers that could apply for a permit compared to the number of private recreational fishing vessels in the South Atlantic, adverse administrative effects would be greatest under **Preferred Alternative 3**.

For Actions 1 through 4 Several forms of educational and outreach materials would need to be made available to fishery participants. Other outreach materials such as Fishery Bulletins and the NMFS website would be used to notify fishery participants of the permit requirements.

All fishermen who fish offshore for snapper grouper species are already accustomed to having a state fishing license, so having to secure a permit for federal snapper grouper species should not be a major administrative burden for private recreational anglers. Federal permitting in the southeast has transitioned to an online platform. This would likely also be used for the recreational permit.

Enforcement of this action's implementing regulations would create adverse administrative effects in the short and long-term. Adverse administrative effects would be higher in the short-term as enforcement officers are trained on the species that are covered by the permit. Enforcement personnel would be burdened with an increase in permitted vessels or anglers, which they would have to monitor through limited resources. The ability to interact with anglers on the water will increase the administrative burden and affect overall compliance, depending on the selected alternatives.

Administrative effects would be highest under **Preferred Alternatives 3**, followed by **Alternative 2** and **Alternative 1 (No Action)**.

4.2. Action 2. Specify the species for which a private recreational snapper grouper permit would be required

4.2.1. Biological Effects

Establishing a permit requirement results in an administrative process, and does not directly affect the physical or biological environment, but could have an indirect effect. Compared to **Alternative 1 (No Action)**, **Alternatives 2** through **4** would be expected to have positive impacts for snapper grouper species in the South Atlantic because requiring a private recreational permit should better identify the universe of private anglers fishing for snapper grouper species.

Alternatives

1 (No Action). A federal private recreational permit does not apply to any snapper grouper species.

2. A federal private recreational snapper grouper permit would be required when fishing for, harvesting, or possessing <u>any species in the snapper grouper fishery management unit</u>.

3. A federal private recreational snapper grouper permit would be required when fishing for, harvesting, or possessing <u>any species that is covered by the Florida State Reef Fish Survey</u>.

4. A federal private recreational snapper grouper permit would be required when fishing for, harvesting, or possessing <u>any deepwater species</u>.

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

Snapper grouper are reef-dwelling species that live amongst each other. The multi-species nature of the fishery results in the potential for multiple different species to be harvested on a trip. Including the largest number of potential species under a permit could result in improved data collection, especially for rare event species. Biological benefits, if realized, would be greatest under **Preferred Alternative 2**, followed by **Alternative 3**, **Alternative 4**, and **Alternative 1 (No Action)**.

4.2.2. Economic Effects

Alternative 1 (No Action) would not establish a permit requirement for private recreational anglers or vessels when fishing for, harvesting, or possessing snapper grouper species in the South Atlantic exclusive economic zone. Consequently, this alternative would not result in direct economic effects, including any direct or administrative costs. However, **Alternative 1 (No Action)** would forgo potential improvements in landings and effort information for the private component of the recreational sector. Improvements in such data have the potential to positively affect the management of fish stocks, with potential related indirect economic benefits. Improvements in the quality of data on recreational fisheries, such as better estimates of harvest, discards, and effort could improve the management of fish stocks. Such improvements may have positive economic implications for this component of the recreational sector, the recreational sector as a whole, and the commercial sector. For example, better data would enable more accurate estimates of total fishing mortality, effort, and economic benefits derived from the fishery. This would support improved setting and monitoring of annual catch limits, as well as

improved forecasts of the expected biological, economic, and social effects of proposed management regulations.

Alternatives 2 through **4** would specify the species that would be covered by the private recreational permit requirement established in Action 1. **Preferred Alternative 2** would cover all 55 species found in the snapper grouper fishery management unit (FMU) and would be the most comprehensive of the alternatives considered. **Alternative 3** and **Alternative 4** would cover a subset of these species and are comparatively less comprehensive, with **Alternative 3** covering 13 species and **Alternative 4** covering 10 species (Table 4.2.2.1).

Table 4.2.2.1. Species found within the snapper grouper FMU.*

Species	FL SRFS	DW Species	Species	FL SRFS	DW Species
Black grouper	X		Bank sea bass		
Gag	X		Atlantic spadefish		
Greater amberjack	X		Gray snapper		
Hogfish	X		Graysby		
Mutton snapper	X		Jolthead porgy		
Red grouper	X		Knobbed porgy		
Red snapper	X		Lane snapper		
Vermilion snapper	X		Longspine porgy		
Yellowtail snapper	X		Margate		
Banded rudderfish	X		Nassau grouper		
Lesser amberjack	X		Ocean triggerfish		
Gray triggerfish	X		Red hind		
Almaco jack	X		Red porgy		
Yellowedge grouper		X	Rock hind		
Silk snapper		X	Rock sea bass		
Misty grouper		X	Sailor's choice		
Sand tilefish		X	Saucereye porgy		
Queen snapper		X	Scamp		
Blackfin snapper		X	Scup		
Blueline tilefish		X	Bar Jack		
Golden tilefish		X	Speckled hind		
Snowy grouper		X	Tomtate		
Wreckfish		X	Warsaw grouper		
Black sea bass			White grunt		
Coney			Whitebone porgy		
Cottonwick			Yellowfin grouper		
Cubera snapper			Yellowmouth grouper		
Goliath grouper					

*FL SRFS = species is covered by the Florida State Reef Fish Survey.
*DW Species = species is part of the deepwater complex or considered a deepwater species.

A permit requirement would result in direct economic effects through increased costs to private recreational participants fishing in the EEZ for snapper grouper species and increased administrative costs when compared to **Alternative 1 (No Action)**. The direct cost to permit holders would include the permit application fee as well as the cost associated with the time that it would take to complete and submit a permit application. The current permit application fee for vessel permits issued by the NOAA Fisheries Southeast Regional Office is $25 for the first permit and $10 for each additional permit. It is assumed that most private recreational anglers or vessels do not possess a commercial or for-hire permit, thus the likely cost per permit would be $25. The number of fishery participants that would be required to obtain a private recreational permit would be highest under **Preferred Alternative 2** since it includes the most species. Under **Alternative 3** and **Alternative 4**, fewer permits would likely be issued since fewer species would be covered and the associated total costs to fishery participants and administrative costs would be lower. **Alternative 3** would likely have higher costs than **Alternative 4** since more species would be covered under the permit (Table 4.2.2.1) and there is more targeted effort towards these species (Table 3.3.2.7), thus more fishery participants would need to obtain a permit.

There would be potential improvements in landings and effort information for the private component of the recreational sector under **Alternatives 2** through **4** when compared to **Alternative 1 (No Action)**. As previously described, such improvements could positively affect the management of fish stocks, with potential related indirect economic benefits. **Preferred Alternative 2** is inclusive of the most species, thus has the highest potential utility and potential for indirect benefits. These potential indirect benefits would be lower for **Alternative 3** and **Alternative 4**.

In terms of direct economic costs, **Preferred Alternative 2** would result in the highest overall costs followed by **Alternative 3**, **Alternative 4**, and **Alternative 1 (No Action)**. In terms of potential indirect economic benefits, the benefits would be highest under **Preferred Alternative 2**, followed by **Alternative 3, Alternative 4,** and **Alternative 1 (No Action)**.

4.2.3. Social Effects

The more snapper grouper species that require a permit in order to fish, harvest, or possess the more fishing communities are likely to be affected by the federal permit for private anglers or vessels. The social effects themselves would be similar to those described for establishing a federal permit for the private recreational component of the snapper grouper fishery (**Action 1**) but they would likely be experienced at different levels by different communities based on their engagement in a given fishery. The state of Florida experiences the highest levels of fishing for all snapper grouper species in federal waters, but also for species covered by the Florida State Reef Fish Survey and deep-water species. As such, the communities effected by **Preferred Alternative 2**, **Alternative 3**, and **Alternative 4** are anticipated to be similar to what was presented in Section 4.1.3.

Preferred Alternative 2 would require a permit for all species within the snapper grouper fishery management plan and would be the least complex for private recreational anglers and law enforcement. Additionally, by covering all species in the snapper grouper fishery management plan, the permit would continue to serve the purpose and need even if fishermen preferences or

environmental conditions result in a change in effort to other snapper grouper species in the future.

Alternative 3 and **Alternative 4**, which would only cover a subset of snapper grouper species (species covered by the Florida State Reef Fish Survey and any deepwater species, respectively) add additional complexity which may make it challenging for private recreational fishermen and law enforcement to know that is required on a given fishing trip, decreasing compliance with regulations. Additionally, if fishermen preferences or environmental conditions result in a shift in effort away from species covered under those alternatives, additional management action would be needed to add the permit requirement. Alternatively, snapper grouper fishermen that do not target species covered by the Florida State Reef Fish Survey (**Alternative 3**) or any deep-water species (**Alternative 4**) would not need a permit, reducing the overall burden on the recreational sector.

4.2.4. Administrative Effects

Alternatives 2 through **4** would create adverse administrative effects compared to **Alternative 1 (No Action)**. Several forms of educational and outreach materials would need to be made available to fishery participants. Other outreach materials such as Fishery Bulletins and the NMFS web site would be used to notify fishery participants of the permit requirements.

Enforcement of this action's implementing regulations would create adverse administrative effects in the short and long-term. **Alternatives 2** through 4 would result in higher administrative burden for enforcement officers when compared to Alternative 1 (No Action). Administrative burden would be placed on enforcement officers to prove the target species for a recreational fishing trip with no catch on board (e.g., transiting vs. actively fishing). Enforcement would depend on what gear is on board and what the angler declares as the target species (i.e., trolling for mackerel). **Alternatives 3** and **4** would result in additional administrative burden for enforcement officers because the permit would only be required for select snapper grouper species. This would require increased education and outreach. Adverse administrative effects would be higher in the short-term as enforcement officers are trained on the species that are covered by the permit.

4.3. Action 3. Establish an education component in conjunction with a private recreational snapper grouper permit

4.3.1. Biological Effects

The South Atlantic Fishery Management Council (Council) has invested in substantial outreach and education on best fishing practices. The standard practice to improve survivorship of released fish is to reduce handling and the amount of time a fish is out of the water. Additionally, proper use of descending and venting devices can significantly increase the likelihood of survival of released fish and, in turn, contribute to overall stock productivity and sustainability. More information on the effects of best fishing practices, including descending device use, can be found in Regulatory Amendment 29 to the Fishing Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (SAFMC 2020).

Alternatives

1 (No Action). Do not require an education component for private anglers or vessels to fish for, harvest, or possess snapper grouper species in the South Atlantic exclusive economic zone.

2. Establish and require an education component in conjunction with a private recreational snapper grouper permit to fish for, harvest, or possess snapper grouper species in the South Atlantic exclusive economic zone. The education component would be required before initial issuance of a private recreational permit.

3. Establish and require an education component in conjunction with a private recreational snapper grouper permit to fish for, harvest, or possess snapper grouper species in the South Atlantic exclusive economic zone. The education component would be implemented after the private recreational permit requirement has been established. Completion of the education component would be required:
3a. Before initial reissuance of the permit.
3b. When permit holders are required to complete the education requirement by the issuing authority.

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

Under **Alternative 1 (No Action)**, the Council would continue to conduct outreach and education on best fishing practices opportunistically. **Alternatives 2** and **3** would require private recreational anglers to complete training specific to fishing for snapper grouper species in conjunction with the private recreational permit. If the required training is utilized by recreational anglers, **Alternatives 2** and **3** could provide increased survivorship and reduced mortality of discarded snapper grouper species, thus resulting in both short and long-term positive biological effects to snapper grouper species. Biological benefits, if realized, would be greatest under **Alternative 2**, followed by **Alternative 3**, and **Alternative 1 (No Action)**.

4.3.2. Economic Effects

Alternative 1 (No Action) would not establish an education requirement for private recreational anglers or vessels to fish for, harvest, or possess snapper grouper species in the South Atlantic exclusive economic zone. Consequently, this alternative would not result in direct economic effects, including any direct or administrative costs. However, **Alternative 1 (No Action)** would forgo potential improvements in post release mortality of some snapper grouper species, which

could also lead to forgone economic benefits. An education requirement could lead to improvements in fish handling techniques and fishing practices that have the potential to positively affect post release mortality and fish stocks, with potential related indirect economic benefits. Improvements in fish stocks may have positive economic implications for both this component of the recreational sector, the recreational sector as a whole, and the commercial sector. For example, increases in fish stocks would increase encounter rates and lead to more allowable harvest, which would increase net economic benefits derived from the fishery.

Establishing an education requirement in conjunction with a private recreational snapper grouper permit (**Alternative 2** and **Alternative 3**) would result in direct economic effects through increased costs to private recreational participants fishing in the EEZ for snapper grouper species and increased administrative costs when compared to **Alternative 1 (No Action)**. The direct cost to permit holders would include the opportunity cost of the time that it would take to complete the requirement. These costs would occur sooner under **Alternative 2** than under **Alternative 3**.

There would be potential improvements in post release mortality of some snapper grouper species under both **Alternative 2** and **Alternative 3**. As previously described, such improvements could positively affect the management and availability of fish stocks, with potential related indirect economic benefits. These potential indirect benefits would occur sooner under **Alternative 2** than under **Alternative 3**.

In terms of direct economic costs, **Alternative 2** and **Alternative 3** would result in similar costs followed by **Alternative 1 (No Action)**. In terms of potential economic benefits, the benefits incurred by **Alternative 2** and **Alternative 3** would be similar and **Alternative 1 (No Action)** would be comparatively lower than the other two alternatives.

4.3.3. Social Effects

The short-term direct negative social effects of an education component in the private recreational component of the fishery (**Alternative 2** and **Alternative 3**) would be associated with the time burden of completing the program. The longer the education component takes to complete the more fishing (or other) time must be given by private recreational fishermen. If the education component is virtual, some fishermen that are not familiar with computers or the internet may not be comfortable completing the education component. Additionally, some rural communities participating in the recreational component of the snapper grouper fishery may have unreliable internet making completion of the education component challenging. Alternatively, in-person education components are more time burdensome on participants.

There would be long-term indirect social benefits associated with establishing an education component for the private recreational portion of the snapper grouper fishery. If the education component promotes best fishing practices, as envisioned, it would improve the long-term sustainability of the snapper grouper resource which in turn would improve fishing opportunities for all participants in the snapper grouper fishery.

Finally, there may be indirect social effects depending on how private recreational snapper grouper fishermen perceive the need for an education component. Some fishermen may

appreciate being provided information on best fishing practices and associated regulations while other fishermen may feel the education component is unnecessary as best fishing practices are well known and utilized in snapper grouper fishery.

4.3.4. Administrative Effects

Alternatives 2 and **3** would create adverse administrative effects since they would require extensive additional coordination between the NMFS and the Council, compared to **Alternative 1 (No Action)**. Several forms of educational and outreach materials would need to be developed and made available to fishery participants. These materials could include an online training portal which would require time to develop. Other outreach materials such as Fishery Bulletins and the NMFS website would be used to notify fishery participants of the required training. The development of the education and outreach component would create a substantial short-term impact on the administrative environment. Additionally, NMFS would need to develop a process to verify completion of the required training. **Alternative 2** would create the highest short-term administrative effects due to the shorter timeframe of developing and implementing the education requirements. **Alternative 3** could allow more time to plan and develop educational materials and the training module, which would lower the short-term administrative effects.

Enforcement of this action's implementing regulations would create minimal adverse administrative effects in the short and long-term. The recreational permit would be issued after education requirements are met, so the education component would not impact permit checks by enforcement.

4.4. Action 4. Specify the timing of the education component requirement for the private recreational snapper grouper permit

4.4.1. Biological Effects

Action 3 would require educational requirements in conjunction with a private recreational permit to fish for snapper grouper species. The timing of issuance of the permit is administrative in nature. Any effects on the biological environment from this action regardless of the alternative selected would likely be minimal. However, regular completion of the education component would contribute to the long-term sustainability of the snapper grouper fishery and thus result in positive biological effects. Hence, **Alternative 2** is likely to benefit the biological environment more than the other alternatives considered.

Alternatives

1 (No Action). There is not a required education component for a private angler or vessel to fish for, harvest, or possess snapper grouper species in the South Atlantic exclusive economic zone.

2. Completion of the education component would be required upon each issuance of a federal private recreational snapper grouper permit.

3. Completion of the education component would be required every other year upon issuance of a federal private recreational snapper grouper permit..

4. Completion of the education component would be required upon initial issuance of a federal private snapper grouper recreational snapper grouper permit.

5. Completion of the education component would be required upon initial issuance of a federal private recreational snapper grouper recreational permit and each time that the education component materials are updated.

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

4.4.2. Economic Effects

The economic effects of satisfying the education requirement in Action 4 would be similar to those described for Action 3. Under **Alternative 1 (No Action)** there would not be an education requirement for private recreational anglers or vessels when fishing for, harvesting, or possessing snapper grouper species in the South Atlantic exclusive economic zone. Consequently, this alternative would not result in direct economic effects, including any direct or administrative costs. However, **Alternative 1 (No Action)** would forgo potential improvements in post release mortality of some snapper grouper species, which could also lead to forgone economic benefits.

The education requirement would result in direct economic effects through increased costs to private recreational participants fishing in the EEZ for snapper grouper species and increased administrative costs when compared to **Alternative 1 (No Action)**. The direct costs to permit holders would include the opportunity cost of the time that it would take to complete the requirement. These costs would be incurred at different intervals under **Alternatives 2** through **5**. **Alternative 2** would require the most time, and thus incur the most costs for permit holders since the education requirement would need to be satisfied annually. **Alternative 3** would be comparatively less burdensome from a time and cost perspective, followed by **Alternative 5** and **Alternative 4**.

In terms of direct economic costs, **Alternative 2** would result in the highest anticipated costs followed by **Alternative 3**, **Alternative 5**, **Alternative 4**, and **Alternative 1 (No Action)**.

4.4.3. Social Effects

The social effects associated with the timing of the education component for the private recreational portion of the snapper grouper fishery would be similar to the expected effects of establishing an education component (**Action 3**). The more frequent the requirement to complete an education component the greater the social effects on private recreational fishermen. However, the extent of the impacts would depend on the mechanism for recertification. Assuming the education component could be completed virtually, lost fishing time would occur but would be minimal when compared to an in-person training.

Additionally, more frequent completion of the education component ensures that private recreational fishermen maintain proficiency at best fishing practices and are up to date on new research and management related to the snapper grouper fishery. As such, regular completion of the education component would contribute to the long-term sustainability of the snapper grouper fishery.

Requiring completion of the education component of a federal permit for the private recreational component of the snapper grouper fishery upon each issuance of the permit (**Alternative 2**) would result in the highest level of social effects as it would be the most burdensome on private anglers, followed by **Alternative 3**, **Alternative 4**, and **Alternative 1 (No Action)**.

4.4.4. Administrative Effects

Alternatives 2 through **5** would create adverse administrative effects since it would require extensive additional coordination between the NMFS and the Council, compared to **Alternative 1 (No Action)**. NMFS would need to develop a process to verify completion of the required training. Outreach materials such as Fishery Bulletins and the NMFS web site would be used to notify fishery participants of the required training.

Enforcement of this action's implementing regulations would create minimal adverse administrative effects in the short and long-term. The recreational permit would be issued after education requirements are met, so the education component would not impact permit checks by enforcement.

4.5. Action 5. Establish an exemption to the federal private recreational snapper grouper permit requirement based on permitting by the states.

4.5.1. Biological Effects

Alternative 1 (No Action) and **Alternative 2** and the respective sub-alternatives are not likely to impact the biological environment because the mechanism for implementation is administrative in nature. Any effects on the biological environment from this action regardless of the alternative selected would likely be minimal.

Alternatives

1 (No Action). Do not establish an exemption to the federal private recreational snapper grouper permit requirement to fish for, harvest, or possess snapper grouper species in the South Atlantic region.

2. Establish an exemption to the federal private recreational snapper grouper permit requirement. The National Marine Fisheries Service would certify a state permit as equivalent to a federal private recreational snapper grouper permit provided the state implements equivalent measures that at a minimum include the following:

2a. The same entity as the federal permit.
2b. The same snapper grouper species as the federal permit.
Sub-alternative 2c. The state permit would remain valid for the same period of time as the federal permit.
2d. The state permit would have the same education requirement as the federal permit.

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

4.5.2. Economic Effects

Under **Alternative 1 (No Action)**, there would not a be a federal permit requirement in place for the private component of the recreational sector of the snapper grouper fishery. Thus, there would be no expected change in net economic benefits.

Depending on the preferred alternatives selected in Actions 1 and 2, **Alternative 2** could eliminate the need to obtain a federal and a state permit for private recreational participants in the snapper grouper fishery in states that require such a permit, thus decreasing direct costs for these participants in comparison to **Alternative 1 (No Action)**. This would most likely be applicable to anglers in Florida, as those that are fishing for at least one of 13 snapper grouper species from a vessel currently need to obtain a State Reef Fish Angler designation (Section 1.6). **Alternative 2** has the potential to eliminate the need for anglers in Florida to also purchase a federal private recreational snapper grouper permit if the state program was granted certification. Under this scenario, **Alternative 2** has the potential to reduce costs for private recreational participants in the snapper grouper fishery by eliminating the direct costs to these participants that are described in Action 1 and Action 2. Specifically, there would not be a federal permit application fee nor would there be the cost associated with the time that it would take to complete and submit a federal permit application. Currently, no other states in the South Atlantic region require a snapper grouper species-specific permit on the state level, but similar benefits could also occur should these states decide to implement such a permit in the future.

4.5.3. Social Effects

If a federal permit for the private recreational component of the snapper grouper fishery is established under **Action 1** but a mechanism that would allow states to opt out of the permit is not established, there is a possibility of redundant permits for private recreational fishermen. The more permits required for fishermen to enter into a given fishery the more time fishermen must give up to complete forms and required trainings. Additionally, multiple permits for the same activity may cause confusion among private recreational fishermen and law enforcement, lowering compliance and complicating enforcement efforts.

Under **Alternative 2** there would be no redundancy in requirements between a federal private recreational snapper grouper permit and a similar state permit. Requiring that any state implemented program a set of minimum criteria (**Sub-alternatives 2a** through **2d**) ensures that the social benefits of a private recreational permit (described in **Section 4.1.3**) would still be achieved.

4.5.4. Administrative Effects

Text.

Chapter 5. Council's Choice for the Preferred Alternative

5.1. Action 1. Establish a private recreational snapper grouper permit to fish for, harvest, or possess snapper grouper species in the South Atlantic region

Alternatives

1. (No Action). A federal permit is not required for a private angler or private vessel when fishing for, harvesting, or possessing snapper grouper species in the South Atlantic exclusive economic zone.

2. Require a federal permit for all vessels participating in the private recreational component of the snapper grouper fishery in the South Atlantic exclusive economic zone.

3. **Require a federal permit for all private anglers participating in the private recreational component of the snapper grouper fishery in the South Atlantic exclusive economic zone.**

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

5.1.1. Snapper Grouper Advisory Panel Comments and Recommendations

Text.

5.1.2. Snapper Grouper Permitting Technical Advisory Panel Comments and Recommendations

Text.

5.1.3. Law Enforcement Advisory Panel Comments and Recommendations

Text.

5.1.4. Scientific and Statistical Committee Comments and Recommendations

Text.

5.1.5. Public Comments and Recommendations

Text.

5.1.6. Council's Rationale

Text.

5.2. Action 2. Specify the species that would be covered by a private recreational snapper grouper permit

5.2.1. Snapper Grouper Advisory Panel Comments and Recommendations

Text.

5.2.2. Snapper Grouper Permitting Technical Advisory Panel Comments and Recommendations

Text.

5.2.3. Law Enforcement Advisory Panel Comments and Recommendations

Text.

5.2.4. Scientific and Statistical Committee Comments and Recommendations

Text.

5.2.5. Public Comments and Recommendations

Text.

5.2.6. Council's Rationale

Text.

Alternatives

1 (No Action). A federal permit is not required for a private angler or private vessel when fishing for, harvesting, or possessing snapper grouper species in the South Atlantic exclusive economic zone.

2. A federal private recreational snapper grouper permit would be required when fishing for, harvesting, or possessing <u>any species in the snapper grouper fishery management unit</u>.

3. A federal private recreational snapper grouper permit would be required when fishing for, harvesting, or possessing <u>any species that is covered by the Florida State Reef Fish Survey</u>.

4. A federal private recreational snapper grouper permit would be required when fishing for, harvesting, or possessing <u>any deepwater species</u>.

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

5.3. Action 3. Establish an education component requirement for the private recreational portion of the snapper grouper fishery

Alternatives

1 (No Action). There is not a required education component for a private angler or vessel to fish for, harvest, or possess snapper grouper species in the South Atlantic exclusive economic zone.

2. Establish an education component requirement, in conjunction with a private recreational snapper grouper permit. The education component requirement would be implemented at the same time that a private recreational permit requirement is established.

3. Establish an education component requirement, in conjunction with a private recreational snapper grouper permit. The education component requirement would be delayed until a later date after a private recreational permit requirement has been established.

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

5.3.1. Snapper Grouper Advisory Panel Comments and Recommendations

Text.

5.3.2. Snapper Grouper Permitting Technical Advisory Panel Comments and Recommendations

Text.

5.3.3. Law Enforcement Advisory Panel Comments and Recommendations

Text.

5.3.4. Scientific and Statistical Committee Comments and Recommendations

Text.

5.3.5. Public Comments and Recommendations

Text.

5.3.6. Council's Rationale

Text.

5.4. Action 4. Specify the timing of education component requirements for the private recreational portion of the snapper grouper fishery in the South Atlantic region

Alternatives

1 (No Action). There is not a required education component for a private angler or vessel to fish for, harvest, or possess snapper grouper species in the South Atlantic exclusive economic zone.

2. An education component would need to be completed upon each issuance of a federal private recreational snapper grouper permit.

3. An education component would need to be completed every other year upon issuance of a federal private recreational snapper grouper permit.

4. An education component would need to be completed upon initial issuance of a federal private snapper grouper recreational permit.

5. An education component would need to be completed upon initial issuance of a federal private snapper grouper recreational permit and each time that the education component materials are updated.

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

5.4.1. Snapper Grouper Advisory Panel Comments and Recommendations

Text.

5.4.2. Snapper Grouper Permitting Technical Advisory Panel Comments and Recommendations

Text.

5.4.3. Law Enforcement Advisory Panel Comments and Recommendations

Text.

5.4.4. Scientific and Statistical Committee Comments and Recommendations

Text.

5.4.5. Public Comments and Recommendations

Text.

5.4.6. Council's Rationale

Text.

5.5. Action 5. Establish an exemption to the federal private recreational snapper grouper permit requirement based on permitting by the states.

Alternatives

1 (No Action). Do not establish an exemption to the federal private recreational snapper grouper permit requirement to fish for, harvest, or possess snapper grouper species in the South Atlantic region.

2. Establish an exemption to the federal private recreational snapper grouper permit requirement. The National Marine Fisheries Service would certify a state permit as equivalent to a federal private recreational snapper grouper permit provided the state implements equivalent measures that at a minimum include the following:

2a. The same entity as the federal permit.
2b. The same snapper grouper species as the federal permit.
2c. The state permit would remain valid for the same period of time as the federal permit.
2d. The state permit would have the same education requirement as the federal permit.

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

5.5.1. Snapper Grouper Advisory Panel Comments and Recommendations

Text.

5.5.2. Snapper Grouper Permitting Technical Advisory Panel Comments and Recommendations

Text.

5.5.3. Law Enforcement Advisory Panel Comments and Recommendations

Text.

5.5.4. Scientific and Statistical Committee Comments and Recommendations

Text.

5.5.5. Public Comments and Recommendations

Text.

5.5.6. Council's Rationale

Text.

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, 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. For the proposed actions found in Amendment 46 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 2022 through the present.

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

Past Actions
Text.

Present Actions
Text.

Reasonably Foreseeable Future Actions
Text.

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 (IPCC) 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 Amendment 53 would compound or exacerbate the ongoing effects of climate change on 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

Text.

6.5. Monitoring and Mitigation

Text.

Chapter 7. List of Preparers

Name	Agency/Division	Title
John Hadley	SAFMC	Economist/IPT Lead
Frank Helies	SERO/SF	Biologist/IPT Lead
Myra Brouwer	SAFMC	Deputy Director for Management
Chip Collier	SAFMC	Deputy Director for Science and Statistics
Christina Wiegand	SAFMC	Social Scientist
Dominique Lazarre	SERO/SF	Data Analyst
Jessica Stephen	SERO/SF	LAAP Branch Chief
Russel Dunn	NOAA OAA	National Policy Advisor
Kevin McIntosh	SERO/SF	Permits Office Supervisor
Rick DeVictor	SERO/SF	South Atlantic Branch Chief
Adam Bailey	SERO/SF	Technical Writer and Editor
Karla Gore	SERO/SF	Biologist
Christina Package-Ward	SERO/SF	Social Scientist
David Records	SERO/SF	Economist
Mike Travis	SERO/SF	Economist
Jennifer Lee	SERO/SF	Biologist
David Dale	SERO/HC	Regional EFH Coordinator
John Foster	NOAA OST	Statistician
Rob Andrews	NOAA OST	Biologist
Noah Silverman	SERO/Directorate	Regional NEPA Coordinator
Monica Smit-Brunello	NOAA GC	General Counsel
Shepherd Grimes	NOAA GC	General Counsel
Manny Antonaras	SERO/OLE	Assistant Director
Ken Brennan	SEFSC	Recreational Fisheries Monitoring Branch Chief
Matt Walia	SERO/OLE	Compliance Liaison
David Carter	SEFSC	Economist
Erik Williams	SEFSC	Biologist
Alexander Gordon	SEFSC	Economist

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

Chapter 9. References

Buck, K. M. 2018. Socio-economic profile of the snapper grouper commercial fishery in the South Atlantic region. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, Charleston, S.C. 29405.

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Liese, C. and D.W. Carter. 2017. The economic value of changes in harvest regulations to anglers on charter and private boat trips: results from a choice experiment survey in southeastern US waters. Marine Fisheries Review, 79(3/4), pp.1-11.

National Marine Fisheries Service. 2023. Fisheries Economics of the United States, 2020. U.S. Dept. of Commerce, NOAA Tech. Memo. NMFS-F/SPO-236, 231 p.

Overstreet, E., L. Perruso, and C. Liese. 2018. Economics of the U.S. South Atlantic Snapper-Grouper Fishery - 2016. NOAA Technical Memorandum NMFS-SEFSC-730. 104 p.

SAFMC. 2020. Regulatory Amendment 29 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Environmental Assessment, Regulatory Impact Review, and Regulatory Flexibility Analysis. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, North Charleston, S.C. 29405.

SAFMC. 2023. Comprehensive Amendment Addressing Electronic Reporting for Commercial Vessels (Amendment 54 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region, Amendment 4 to the Fishery Management Plan for the Dolphin and Wahoo Fishery of the Atlantic, Amendment 35 to the Fishery Management Plan for Coastal Migratory Pelagic Resources in the Gulf of Mexico and Atlantic Region, and Amendment 57 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico) with Environmental Assessment, Regulatory Impact Review, and Regulatory Flexibility Analysis. South Atlantic Fishery Management Council, 4055 Faber Place Drive, Ste 201, North Charleston, S.C. 29405.

Souza, P.M., Jr. and C. Liese. 2019. Economics of the Federal For-Hire Fleet in the Southeast - 2017. NOAA Technical Memorandum NMFS-SEFSC-740, 42 p.

Appendix A. Other Applicable Law

1.1 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. Amendment 46 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region 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 plan 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.

1.2 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. Amendment 46 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.

1.3 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 plan 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.

1.4 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.

1.5 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.

1.6 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.

1.7 Executive Order 13158: Marine Protected Areas (MPAs)

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.

1.8 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 USS 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.

1.9 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.

1.10 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.

1.11 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

B.1. Introduction

Text.

B.2. Problems and Objectives

Text.

B.3. Description of Fisheries

Text.

B.4. Effects of Management Measures

Text.

B.5. Public Costs of Regulations

Text.

B.6. Net Benefits of Regulatory Action

Text.

B.7. Determination of Significant Regulatory Action

Text.

Appendix C. Regulatory Flexibility Act Analysis

C.1. Introduction

Text.

C.2. Statement of the Need for, Objective of, and Legal Basis for the Proposed Action

Text.

C.3. Description and Estimate of the Number of Small Entities to Which the Proposed Action Would Apply

Text.

C.4. Description of the Projected Reporting, Record-Keeping and Other Compliance Requirements of the Proposed Action, Including an Estimate of the Classes of Small Entities Which Will Be Subject to the Requirement and the Type of Professional Skills Necessary for the Preparation of the Report or Records

Text.

C.5. Identification of All Relevant Federal Rules, Which May Duplicate, Overlap, or Conflict with the Proposed Action

Text.

C.6. Significance of Economic Impacts on a Substantial Number of Small Entities

Text.

C.7. Description of the Significant Alternatives to the Proposed Action and Discussion of How the Alternatives Attempt to Minimize Economic Impacts on Small Entities

Text.

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

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

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 also to designate subsets of EFH to highlight priority areas within EFH 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.

D.1.1. South Atlantic Council EFH User Guide

The EFH Users Guide developed during the FEP II development process is available through the FEP II Dashboard and provides a comprehensive list of the designations of EFH and EFH-HAPCs for all species managed by the South Atlantic Fishery Management Council (Council) and the clarifications identified during FEP II development. As noted above, additional detailed information supporting the EFH designations appears in FEP, FEP II, and in individual FMPs, and general information on the EFH provisions of the Magnuson-Stevens Act and its implementing regulations (50 CFR 900 Subparts J and K). These sources should be reviewed for information on the components of EFH assessments, steps to EFH consultations, and other aspects of EFH program operation.

D.1.2. South Atlantic Council EFH Policy and EFH Policy Statements Policy for Protection and Restoration of EFH South Atlantic Council Habitat and Environmental Protection Policy

In recognizing that species are dependent on the quantity and quality of their essential habitats, it is the policy of the Council to protect, restore, and develop habitats upon which fisheries species depend; to increase the extent of their distribution and abundance; and to improve their productive capacity for the benefit of present and future generations. For purposes of this policy, "habitat" is defined as the physical, chemical, and biological parameters that are necessary for continued productivity of the species that is being managed. The objectives of the Council policy will be accomplished through the recommendation of no net loss or significant environmental degradation of existing habitat. A long-term objective is to support and promote a net-gain of fisheries habitat through the restoration and rehabilitation of the productive capacity of habitats that have been degraded, and the creation and development of productive habitats where increased fishery production is probable. The

Council will pursue these goals at state, Federal, and local levels. The Council shall assume an aggressive role in the protection and enhancement of habitats important to fishery species and shall actively enter federal decision-making processes where proposed actions may otherwise compromise the productivity of fishery resources of concern to the Council.

D.1.3. South Atlantic Council EFH Policy Statements Considerations to Reduce or Eliminate the Impacts of Non-Fishing Activities on EFH

In addition to implementing regulations to protect habitat from degradation due to fishing activities, the Council in cooperation with NMFS, actively comments on non-fishing projects or policies that may impact fish habitat. The Council established a Habitat Protection and Ecosystem Based Management Advisory Panel (AP) and adopted a comment and policy development process. 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 following Policy Statements:

- EFH Policy Statement on South Atlantic Climate Variability and Fisheries (December 2016)
- EFH Policy Statement on South Atlantic Food Webs and Connectivity (December 2016)
- Protection and Restoration of EFH from Marine Aquaculture (June 2014)
- Protection and Enhancement of Marine Submerged Aquatic Vegetation (June 2014)
- Protection and Restoration of EFH from Beach Dredging and Filling, Beach Re-nourishment and Large Scale Coastal Engineering (March 2015)
- Protection and Restoration of EFH from Energy Exploration, Development, Transportation and Hydropower Re-Licensing (December 2015)
- Protection and Restoration of EFH from Alterations to Riverine, Estuarine and Nearshore Flows (June 2014)
- Policies for the Protection of South Atlantic Marine & Estuarine Ecosystems from Non-Native and Invasive Species (June 2014)
- Policy Considerations for Development of Artificial Reefs in the South Atlantic Region and Protection of Essential Fish Habitat (September 2017)

D.2. Habitat Conservation and Fishery Ecosystem Plans

The Council views habitat conservation as the foundation in the move to Ecosystem Based Fishery Management (EBFM) in the region. The Council has been proactive in advancing habitat conservation through extensive 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) and the FMP for the Sargassum Fishery of the South Atlantic Region. The FMP for the Dolphin and Wahoo Fishery in the Atlantic represents a proactive FMP which established fishery measures and identified EFH in advance of overfishing or habitat impacts from the fisheries.

Building on the long-term conservation approach, the Council facilitated the evolution of the Habitat Plan into the first FEP to provide a clear description and understanding of the fundamental physical, biological, and human/institutional context of ecosystems within which

fisheries are managed and identify information needed and how that information should be used in the context of FMPs. Developing a South Atlantic FEP required a greater understanding of the South Atlantic ecosystem, including both the complex relationships among humans, marine life, the environment and essential fish habitat and a more comprehensive understanding of the biological, social, and economic impacts of management necessary to initiate the transition from single species management to EBFM in the region. To support the move towards EBFM, the 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, economic, and cultural diversity.

D.3. Ecosystem Approach to Conservation and Management of Deep-water Ecosystems

Through Comprehensive Ecosystem-Based Amendment 1, Comprehensive Ecosystem-Based Amendment 2, and Coral Amendment 8, the Council established and expanded deep-water coral HAPCs (CHAPCs) and co-designated them as EFH-HAPCs to protect the largest continuous distribution (>23,000 square miles) of pristine deep-water coral ecosystems in the world from fishing and non-fishing activities.

D.4. FEP II Development

The Council developed FEP II in cooperation with NMFS, as a mechanism to incorporate ecosystem principles, goals, and policies into the fishery management process, including consideration of potential indirect effects of fisheries on food web linkages when developing harvest strategies and management plans. Council policies developed through the process support data collection, model and supporting tool development, and implementation of FEP II. FEP II and the FEP II Implementation Plan provide a system to incorporate ecosystem considerations into the management process.

FEP II was developed employing writing and review teams established from the Council's Habitat Protection and Ecosystem Based Management AP, and experts from state, federal, non-governmental organizations (NGOs), academia and other regional organizations and associations. Unlike the original Plan, FEP II is a living continually developing online information system presenting core sections and sections with links to documents or other online systems with detailed updated information on species, habitat, fisheries and research. A core part of the FEP II development process involved engaging the Council's Habitat Protection and Ecosystem Based Management AP and regional experts in developing new sections and ecosystem-specific policy statements to address South Atlantic food webs and connectivity and South Atlantic climate variability and fisheries. In addition, standing essential fish habitat policy statements were updated and a new artificial reef habitat policy statement was approved. In combination, these statements advance habitat conservation and the move to EBFM in the region. They also serve as the basis for further policy development, consideration in habitat and fish stock assessments and future management of fisheries and habitat. They also support a more comprehensive view of conservation and management in the South Atlantic and identify long-term information needs, available models, tools, and capabilities that will advance EBFM in the region.

D.4.1. FEP II Dashboard (In Transition to New Habitat and Ecosystem Page)

The FEP II Dashboard and associated online tools provided a clear description of the fundamental physical, biological, human, and institutional context of South Atlantic ecosystems within which fisheries are managed. The Council's new website (under development) will include a new Habitat and Ecosystem page where the FEP II Dashboard layout shown below will be refined and integrated.

- Introduction
- South Atlantic Ecosystem
- South Atlantic Habitats
- Managed Species
- Social and Economic
- Essential Fish Habitat
- SAFMC Managed Areas
- Research & Monitoring
- SAFMC Tools

D.5. NOAA EBFM Activities Supporting FEP II

D.5.1. NOAA EBFM Policy and Road Map

To support the move to EBFM, NMFS developed an agency-wide EBFM Policy and Road Map available through Ecosystem page (under revision) of the FEP II Dashboard that outlines a set of principles to guide actions and decisions over the long-term to: implement ecosystem-level planning; advance our understanding of ecosystem processes; prioritize vulnerabilities and risks to ecosystems and their components; explore and address trade-offs within an ecosystem; incorporate ecosystem considerations into management advice; and maintain resilient ecosystems.

D.5.2. FEP II Implementation Plan Structure and Framework

The Implementation Plan is structured to translate approved policy statements of the Council into actionable items. The plan encompasses chapters beginning with an introduction to the policy statement, a link to the complete policy statement, and a table which translates policies and policy components into potential action items. The actions within the plan are recommendations for activities that could support the Council's FEP II policies and objectives.

D.5.3. FEP II Two Year Roadmap

The FEP II Two Year Roadmap draws from the Implementation Plan and presents three to five priority actions for each of the nine approved policy statements of the Council. The Roadmap provides "Potential Partners" and other potential regional collaborators, a focused list of priority actions they could cooperate with the Council on to advance policies supporting the move to EBFM in the South Atlantic region.

D.5.4. Monitoring/Revisions to FEP II Implementation Plan

FEP II and this supporting Implementation Plan are considered active and living documents. The Implementation Plan will be reviewed and updated periodically. The Council's Habitat Protection and Ecosystem Based Management Committee will review, revise and refine those recommendations for Council consideration and approval for inclusion into the implementation plan.

D.6. Regional Habitat and Ecosystem Partners

The Council, with the Habitat Protection and Ecosystem Based Management AP as the foundation, collaborates with regional partners to create a comprehensive habitat and ecosystem network in the region to enhance habitat conservation and EBFM.

Detailed information and links to partners are highlighted online: https://ocean.floridamarine.org/safmc_dashboard/partners.html.

D.7. Regional Ecosystem Modeling in the South Atlantic

D.7.1. South Atlantic Ecopath with Ecosim Model

The Council worked cooperatively with the University of British Columbia and the Sea Around Us project to develop a straw-man and preliminary food web models (Ecopath with Ecosim) to characterize the ecological relationships of South Atlantic species, including those managed by the Council. This effort helped the Council and cooperators identify available information and data gaps while providing insight into ecosystem function. More importantly, the model development process provided a vehicle to identify research necessary to better define populations, fisheries, and their interrelationships. While individual efforts were underway in the South Atlantic, only with significant investment of resources through other programs was a comprehensive regional model further developed.

The current South Atlantic Ecopath with Ecosim (EwE) model provides a more complete view of the system and supports potential future evaluations that may be possible with the model. With the model complete and tuned to the available data it can be used to address broad strategic issues and explore "what if" scenarios that could then be used to address tactical decision-making questions such as provide ecosystem context for single species management, address species assemblage questions, and address spatial questions using Ecospace.

A modeling team comprised of FWRI staff, Council staff and other technical experts as needed, will coordinate with members of the original Ecosystem Modeling Workgroup to maintain and further refine the South Atlantic model.

D.8. Tools supporting Habitat Conservation and EBFM in the South Atlantic Region

The Council developed a Habitat Conservation and Ecosystem Management Section which provided access to the FEP II Digital Dashboard and associated tools which is under development with the new website. Florida's FWRI maintains and distributes GIS data, imagery, and documents relevant to habitat conservation and ecosystem-based fishery management in their jurisdiction. Web Services and spatial representations of EFH and other habitat related layers are accessible through the Council's SAFMC Atlas, a platform for searching and visualizing GIS data relevant to the Council's mission and download of GIS layers and information on regional partners is available through the SAFMC Digital Dashboard. The online systems provide access to the following Services:

i. South Atlantic Fisheries Webservice: Provides access to species distribution and spatial presentation of regional fishery independent data from the Southeast Area Monitoring and Assessment Program (South Atlantic) SEAMAP-SA, the Marine Resources Monitoring, Assessment, and Prediction program (MARMAP), and NOAA Southeast Fishery-Independent Survey (SEFIS).
ii. South Atlantic EFH Webservice: Provides access to spatial representation of EFH and EFH-HAPCs for Council-managed species and Highly Migratory Species.
iii. South Atlantic Managed Areas Service: Provides access to spatial presentations of Council and other managed areas in the region.
iv. South Atlantic Artificial Reefs Web Application: Provides a regional view of artificial reefs locations, contents and imagery associated with programs in the southeastern U.S. overseen by individual states (Florida, Georgia, South Carolina, North Carolina).
v. South Atlantic ACCSP Web Map and Application: The web map displays Atlantic Coastal Cooperative Statistics Program (ACCSP) Statistical Areas representing catch and values of Council-managed species across time with the application displaying charts of landings and values for ACCSP Statistical Areas.

D.9. Ecosystem-Based Action, Future Challenges and Needs

One of the greatest challenges to enhance habitat conservation and EBFM in the region is funding high priority research, including comprehensive benthic mapping and ecosystem model and management tool development. In addition, collecting detailed information on fishing fleet dynamics including defining fishing operation areas by species, species complex, and season, as well as catch relative to habitat is critical for assessment of fishery, community, and habitat impacts and for Council use in place-based management measures. Additional resources need to be dedicated to expanding regional coordination of modeling, mapping, characterization of species use of habitats, and full funding of regional fishery independent surveys (e.g., MARMAP, SEAMAP, and SEFIS) which are linking directly to addressing high priority management needs. Appendix A of the FEP II Implementation Plan highlights research and data needs excerpted from the SEAMAP 5 Year Plan because they represent short and long-term research and data needs that support EBFM and habitat conservation in the South Atlantic Region.

Development of ecosystem information systems to support Council management should build on existing tools (e.g., Regional Habitat and Ecosystem GIS and Arc Services) and provide resources to regional cooperating partners for expansion to address long-term Council needs. NOAA should support and build on the regional coordination efforts of the Council as it transitions to a broader management approach. Resources need to be provided to collect information necessary to update information supporting FEP II, which support refinement of EFH designations and spatial representations and future EBFM actions. These are the highest priority needs to support habitat conservation and EBFM, the completion of mapping of near-shore, mid-shelf, shelf edge, and deep-water habitats in the South Atlantic region and refinement in the characterization of species use of habitats.

Appendix E. Alternatives Considered but Eliminated from Detailed Analysis

Text.

Appendix F. Data Analyses

Analysis of Snapper-Grouper Complex Private Recreational Catch in the Federal Waters of the South Atlantic

LAPP/DM Branch
NOAA Fisheries Service
Southeast Regional Office
October 2023

The South Atlantic Fishery Management Council (Council) is considering requiring private boat anglers to obtain a recreational permit to harvest snapper and grouper species in federal waters of the South Atlantic region. Requests have been made by stakeholders and the Council's Snapper Grouper Advisory Panel to consider implementation of a recreational snapper and grouper permit to improve catch and effort estimates for the private angler fishing fleet in federal waters. To date, only a permit for the federal for-hire component of the recreational sector has been instituted for Snapper Grouper, Dolphin Wahoo, and Coastal Migratory Pelagic species. Amendment 46 to the Snapper Grouper Fishery Management Plan will address the need to better identify the universe of private boat anglers targeting snapper and grouper species in the federal waters of the South Atlantic region. This analysis will investigate landings and catch data for species found within the South Atlantic snapper grouper fishery management unit to identify the species most commonly caught and discarded by recreational private boat anglers fishing in federal waters.

The Marine Recreational Information Program (MRIP) uses the Access Point Angler Intercept Survey (APAIS) to collect dockside catch data from anglers fishing from shore, private boats and for-hire vessels in North Carolina, South Carolina, Georgia, and the east coast of Florida. The Fishing Effort Survey (FES) is used to collect trip information from shore and private boat recreational anglers from a mail survey. The combination of dockside APAIS data and mail survey FES effort data are used to generate catch estimates for species caught by recreational private anglers. The For-Hire Survey (FHS) is used to collect effort information from the for-hire component of the recreational sector. The combination of the dockside APAIS data and FHS effort data are used to generate catch estimates for species caught by the for-hire component of the recreational sector. The Southeast Fisheries Science Center combines the MRIP data from private and charter vessels with the Southeast Regional Headboat Survey (SRHS) to create a complete recreational landings data set (FES ACL Monitoring Dataset – August 23, 2023) for federally managed fish species.

Designation of Top Species

The determination of top species caught or discarded by private anglers fishing in federal waters was approached by evaluating the top species by harvest in weight (lb ww), harvest in numbers and total catch in numbers (harvest + discards). Each metric provides different information about fishing preferences within the private angling fleet. Ranking species by harvest in weight will highlight the most desirable fish being landed, but may skew the list towards species with the least restrictive management measures or that are larger in size. The use of harvest in numbers

will allow the popularity of landed fish to be assessed, without the size of fish skewing the rankings. Total catch in number of fish can highlight the contribution of discards for each species in the same units as harvest in number. Understanding discarding behavior may be important to evaluate, as many management measures are influenced by the magnitude of discards.

The ACL Monitoring Dataset was filtered to include only records for species found within the snapper grouper fishery management unit, caught by private boat anglers fishing in federal waters of the South Atlantic, from 2018 to 2022. This time period was selected to ensure the designation of top species was made based on catch information occurring before and after the COVID-19 pandemic since dockside sampling was suspended or reduced for some portions of 2020 and may not fully represent the fishing behavior exhibited during that time period. The filtered data were averaged by species, for harvest in weight (lb ww), harvest in number of fish and total catch in number of fish, then sorted in decreasing order. The top 10 snapper grouper species for each metric were plotted in tree maps to show the relative contribution of each species (**Figure 1**). Red snapper, gray triggerfish, mutton snapper, yellowtail snapper, vermilion snapper, black sea bass and gray snapper were present on all three top species lists, with the first three responsible for the highest average landings of snapper grouper species in the South Atlantic region. Yellowtail snapper, tomtates, and vermilion snapper were the three most commonly harvested species in numbers of fish. Tomtates are likely not found on the top harvest by weight list, due to their small size. When considering total catch in number of fish, black sea bass, red snapper, and tomtates were the top three species caught or discarded. The final top species list was derived from combining the three top 10 species lists into a single list to represent the top snapper grouper species for the South Atlantic region (**Table 1**). It should be noted that red snapper management is informed by state survey landings data in the South Atlantic region. The short season length for red snapper in federal waters makes the two-month wave sampling design of the MRIP survey incompatible for managing landings from a short pulse fishery. However, it was determined that using the MRIP FES landings for the private boat component of the fishery was most appropriate to ensure all species would be evaluated in the same units and account for catch (harvest and discards) throughout the calendar year. Additionally, MRIP-FES separates the landings by state and federal waters but it is not always possible to distinguish landings from state and federal waters in the state survey estimates of red snapper catch in the South Atlantic region.

Table F-1. Comparison of the top snapper grouper species across three metrics: harvest in weight (lb ww), harvest in numbers of fish or total catch (harvest and discards) in numbers of fish. The values in each column represent the average for each metric, from 2018 to 2022. Italicized species were ranked in the top 10 for all three metrics.

Top Species	Harvest (lb ww)	Harvest (# of fish)	Total Catch (# of Fish)
red snapper	2,855,785	335,083	2,790,544
gray triggerfish	626,045	245,056	501,607
mutton snapper	564,385	112,298	287,004
yellowtail snapper	547,751	533,627	1,194,017
vermilion snapper	527,235	445,970	1,004,126
greater amberjack	478,842	26,835	91,353
black sea bass	326,015	248,431	3,170,921
red grouper	299,006	38,282	90,912
gray snapper	269,941	195,771	344,764
almaco jack	260,186	59,080	235,716
white grunt	222,014	287,900	1,159,362
tomtate	197,788	531,720	1,858,367
lane snapper	122,879	160,292	333,626

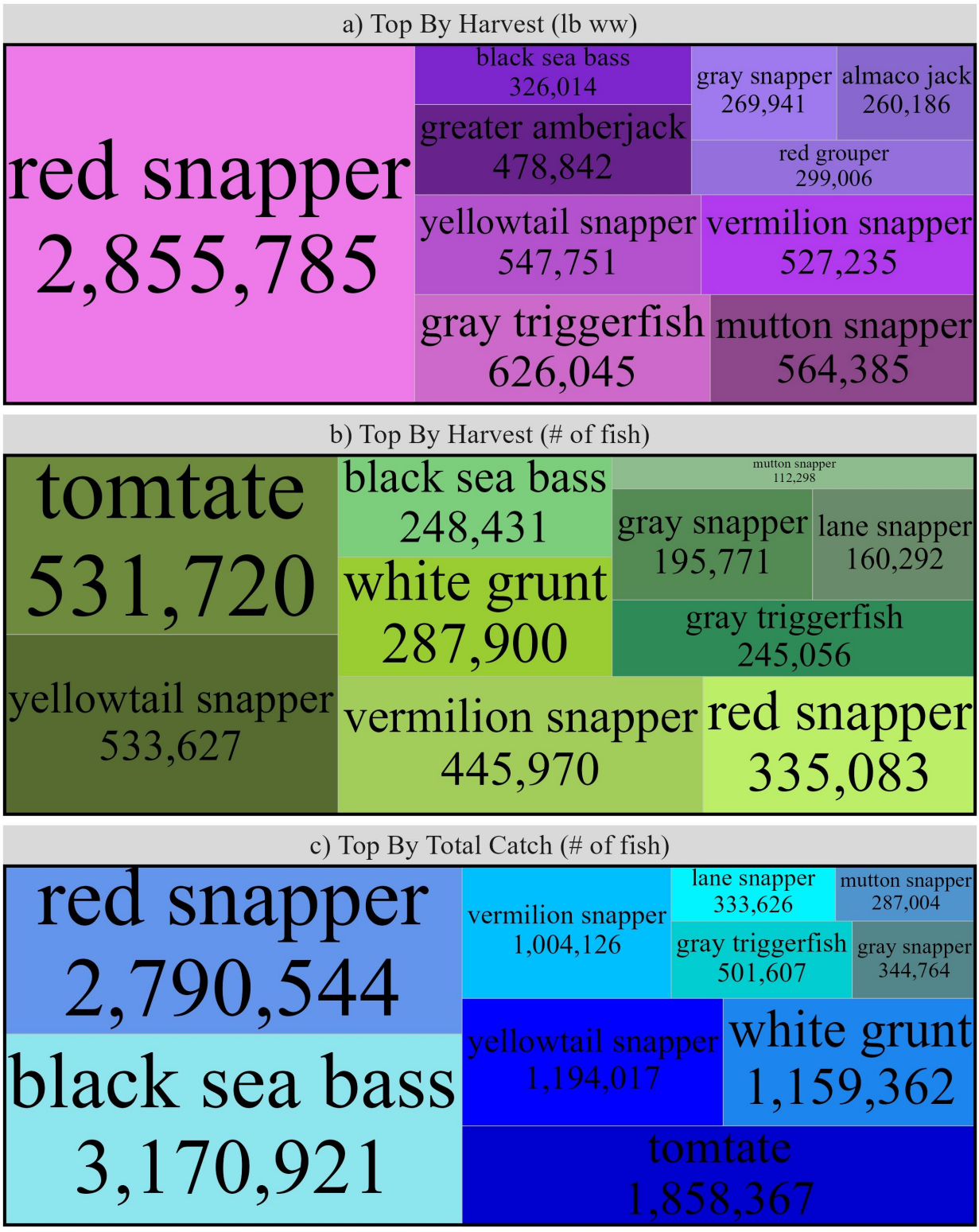

Figure 1. Tree map plots showing the top 10 species in the snapper grouper management unit by harvest in weight (lb ww; shades of purple), harvest in number of fish (shades of green) or total catch in number of fish (shades of blue). The size of each box indicates the average value between 2018 and 2022, by species, for each metric.

Investigation of Top Species Catch Data

The combined top snapper grouper species list was used to investigate the landings histories for these species over a longer time period. While the most recent 5 years of data were used to designate the top species, changes to the landings history for these species may provide context for current landing levels. The calendar year landings (lb ww) for the top 13 species were plotted, by species, for the last ten years (**Figure 2**). Red snapper landings represent the highest landings of an individual species for most years of the time series, with the exception of years when red snapper harvest was prohibited. Landings were presented in multiple panes, grouping species by the magnitude of catch or relatedness of species. Unfortunately no major trends were apparent, as the landings histories overlap for many of the top species caught in federal waters. In addition to investing landing, the discard behavior of the top snapper grouper species was investigated. A stacked plot showing the contributions of harvest and discards for each top species was generated (**Figure 3**). Only the most recent 5 years of data were used when investigating discards, as these discards are most representative of current discarding behavior. Black sea bass, red snapper and tomtates have the highest discard to harvest ratios of the top species. Notably, the harvest of black sea bass in weight and number of fish is very low, compared to the discards.

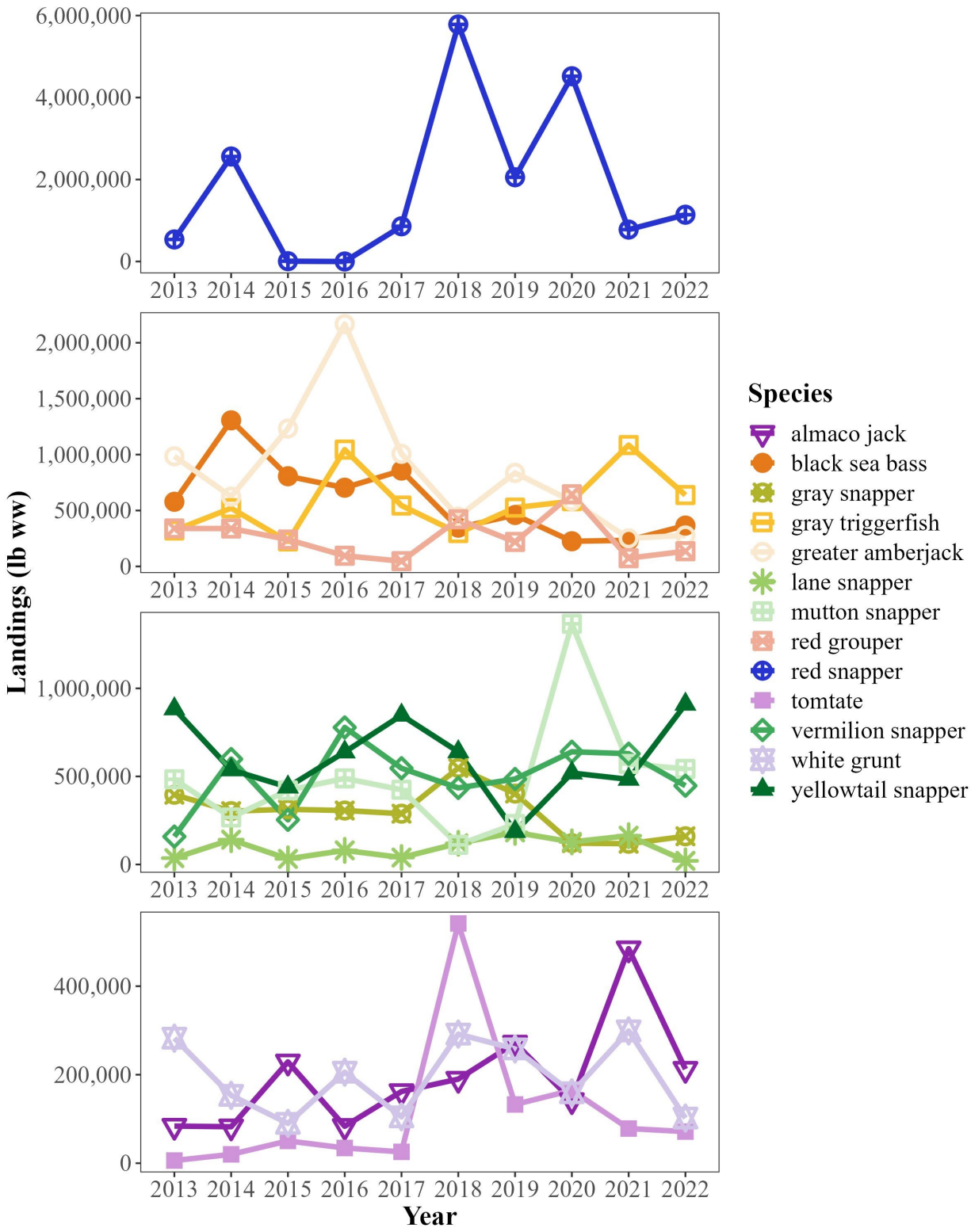

Figure F-2. Landings of the top snapper grouper species caught by private anglers fishing in federal waters of the South Atlantic region, from 2013 to 2022.

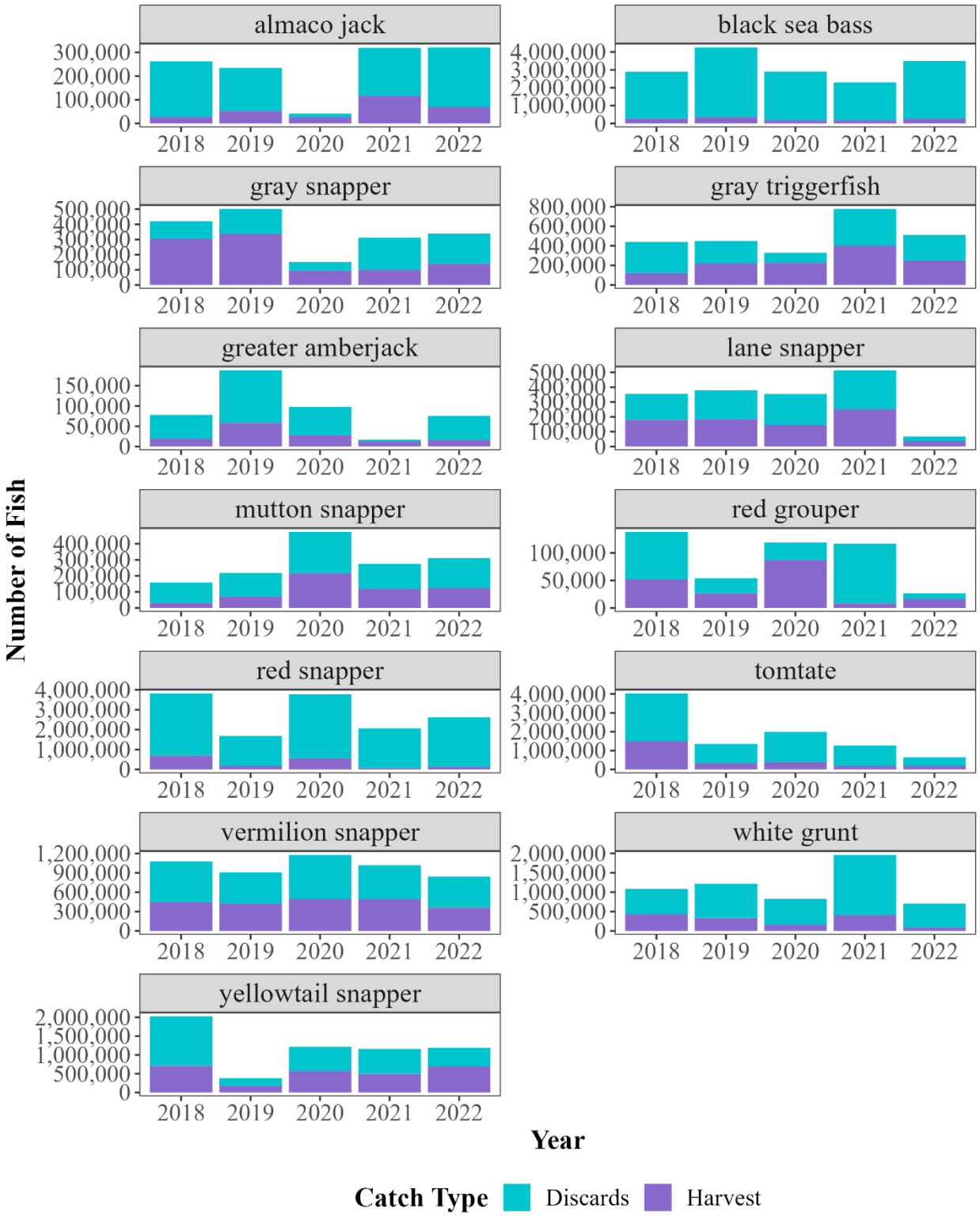
almaco jack
black sea bass
gray snapper
gray triggerfish
greater amberjack
lane snapper
mutton snapper
red grouper
red snapper
tomtate
vermilion snapper
white grunt
yellowtail snapper
Number of Fish
Year
Catch Type
Discards
Harvest

Figure F-3. Stacked bar graph showing total catch, in numbers of fish, for the top snapper grouper species caught in federal waters of the South Atlantic region by private boat anglers. The teal bars represent discards and purple bars represent harvest.

Investigation of Top Species by State

The top snapper grouper species list for the South Atlantic corresponds with the most commonly caught species for the region as a whole, but there are likely geographic differences as a function of latitude. While management is handled at a regional level, it may be important to see how each state contributes to the top species associated with the entire region. The top species analysis discussed above was repeated, generating top 10 species lists by harvest in weight (lb ww), harvest in number of fish, and total catch in number of fish for each state in the South Atlantic region. A table was created for each catch metric, comparing the top 10 species for each state, across all South Atlantic states (**Tables 2-4**), with the value for each species and state corresponding with the average for each metric from 2018-2022.

Table F-2. Comparison of the top snapper grouper species by harvest in weight (lb ww) for each state in the South Atlantic region. The values in each column represent the average harvest in weight from 2018-2022. Italicized species were ranked in the top 10 for all four South Atlantic states.

Top Species By Harvest (lb ww)	NC	SC	GA	FL	Total
red snapper	39,930	48,704	116,848	2,658,289	2,863,771
gray triggerfish	61,797	52,617	9,998	501,633	626,045
mutton snapper	-	564	-	564,272	564,836
yellowtail snapper	-	-	-	547,751	547,751
vermilion snapper	39,253	100,240	21,573	370,484	531,550
greater amberjack	99,247	26,662	1,803	351,129	478,841
black sea bass	112,208	63,830	49,235	100,742	326,015
red grouper	-	-	-	299,006	299,006
almaco jack	8,255	7,709	20,146	243,276	279,386
gray snapper	-	-	441	269,677	270,118
white grunt	35,510	26,930	769	158,804	222,013
gag	47,944	30,975	18,800	111,660	209,379
blueline tilefish	159,201	-	-	42,436	201,637
tomtate	383	1,555	175	195,675	197,788
red porgy	6,351	15,697	4,387	115,395	141,830
atlantic spadefish	620	61,029	2,223	36,273	100,145
cubera snapper	-	22,331	-	13,050	35,381
scamp	8,786	10,697	-	6,186	25,669
banded rudderfish	-	-	5,695	16,426	22,121

Table F-3. Comparison of the top snapper grouper species by harvest in numbers of fish for each state in the South Atlantic region. The values in each column represent the average harvest in numbers of fish from 2018-2022. Italicized species were ranked in the top 10 for all four South Atlantic states.

Top Species By Harvest (# of fish)	NC	SC	GA	FL	Total
yellowtail snapper	-	-	-	533,627	533,627
tomtate	962	3,987	421	526,350	531,720
vermilion snapper	28,803	78,236	16,611	325,642	449,292
red snapper	4,780	7,545	12,414	311,300	336,039
white grunt	30,199	18,683	924	238,094	287,900
black sea bass	76,760	45,495	39,487	86,689	248,431
gray triggerfish	28,947	19,268	4,604	192,237	245,056
gray snapper	-	-	461	195,494	195,955
lane snapper	-	-	-	160,292	160,292
mutton snapper	-	158	-	112,266	112,424
red porgy	3,202	7,317	2,108	58,401	71,028
almaco jack	883	1,612	2,807	56,667	61,969
blueline tilefish	21,558	-	-	9,398	30,956
greater amberjack	5,064	1,422	77	20,272	26,835
atlantic spadefish	336	11,325	937	10,999	23,597
graysby	5,209	3,242	-	8,324	16,775
whitebone porgy	1,289	4,936	274	9,324	15,823
gag	4,684	2,417	1,314	6,500	14,915
banded rudderfish	-	-	1,547	4,028	5,575
queen snapper	-	4,266	-	-	4,266

Table F-4. Comparison of the top snapper grouper species by harvest in total catch (number of fish) for each state in the South Atlantic region. The values in each column represent the average total catch in numbers of fish from 2018-2022. Italicized species were ranked in the top 10 for all four South Atlantic states.

Top Species By Total Catch (# of fish)	NC	SC	GA	FL	Total
black sea bass	682,087	681,398	777,608	1,029,828	3,170,921
red snapper	25,489	82,742	95,518	2,591,893	2,795,642
tomtate	21,804	19,983	22,114	1,794,466	1,858,367
yellowtail snapper	-	-	-	1,194,017	1,194,017
white grunt	107,125	56,861	25,330	970,045	1,159,361
vermilion snapper	57,638	201,831	27,062	723,007	1,009,538
gray triggerfish	44,949	43,835	9,040	403,783	501,607
gray snapper	-	694	30,646	326,238	357,578
lane snapper	-	-	-	333,626	333,626
mutton snapper	-	158	-	286,972	287,130
almaco jack	18,715	5,183	2,807	213,330	240,035
red porgy	21,382	17,456	2,792	77,595	119,225
greater amberjack	9,292	11,013	11,995	59,053	91,353
rock sea bass	35,334	4,446	8,518	-	48,298
atlantic spadefish	336	16,395	2,139	15,322	34,192
blueline tilefish	23,178	-	-	9,766	32,944
bank sea bass	6,843	6,152	10,081	9,495	32,571
banded rudderfish	1,633	10,844	1,547	6,664	20,688

Evaluation of Estimate Precision

Lastly, there was an evaluation of the precision around the estimates for the three metrics used to evaluate top species in the snapper grouper fishery management unit in the South Atlantic region. The percent standard error (PSE) was recorded for each of the regional top snapper grouper species from 2018 to 2022, using the values provided by the NOAA Office of Science and Technology (NOAA S&T – Retrieved October 20, 2023), as these estimates are considered the most rigorous estimates of precision available for the private angling fleet (**Tables 5-7**). In general, harvest estimates (for both weight and numbers) have higher PSE values than the total catch estimates (numbers of fish). This may be due to the increased sample size when adding discarded species. Many of the PSE values fall between 30-50%, which indicates a need for caution when using these estimates. The landings estimates for mutton snapper, red grouper, gray snapper, almaco jack, tomtates, and lane snapper have at least one estimate with a PSE over 50% in the last 5 years, all other species have PSEs that are within the caution range or below.

Table F-5. Percent standard error (PSE) around calendar year harvest estimates (lb ww) for the top species in the snapper grouper fishery management unit harvested in the South Atlantic. Highlighting in yellow indicates an estimate with a PSE value 30 to 50 and should be treated with caution, and values highlighted in red indicates a highly imprecise estimate with a PSE value greater than 50. PSE values were obtained from the NOAA MRIP Query website.

TOP SPECIES	2018	2019	2020	2021	2022
red snapper	28.3	43.3	47.2	46	37.9
gray triggerfish	35.9	34.2	29.7	31.6	34.2
mutton snapper	55.8	57.6	58.7	31.9	36.2
yellowtail snapper	30.3	40.7	45.2	21.2	30.5
vermilion snapper	45	36.6	30.3	26.9	22.9
greater amberjack	38.2	46.3	39.1	46.6	44.5
black sea bass	25.7	27.9	21.3	29.2	28.5
red grouper	77.2	57.7	73.1	59.5	82.5
gray snapper	28.6	56.5	42.3	24.0	33.9
almaco jack	58.4	70.4	48.5	41.3	37.6
white grunt	43.1	36.7	40.8	48	44.3
tomtate	48.2	87.5	43.5	51.7	68
lane snapper	35.0	46.3	55.6	66.3	38.4

Table F-6. Percent standard error (PSE) around calendar year harvest estimates (number of fish) for the top species in the snapper grouper fishery management unit harvested in the South Atlantic. Highlighting in yellow indicates an estimate with a PSE value 30 to 50 and should be treated with caution, and values highlighted in red indicates a highly imprecise estimate with a PSE value greater than 50. PSE values were obtained from the NOAA MRIP Query website.

TOP SPECIES	2018	2019	2020	2021	2022
red snapper	26.8	47.8	44.1	42.7	37.8
gray triggerfish	33.6	37.3	27.4	29.8	37.2
mutton snapper	65.2	51.8	44.2	28.4	32.8
yellowtail snapper	29.5	39.0	50.2	20.7	29.4
vermilion snapper	45.7	31.4	31.5	23.8	23.0
greater amberjack	35.7	37.5	40.2	41.6	39.3
black sea bass	26.6	26.5	21.2	29.0	26.7
red grouper	64.8	64.4	78.9	60.9	79.7
gray snapper	28.3	78.3	38.7	23.1	29.8
almaco jack	73.5	64.0	59.2	39.9	38.1
white grunt	38.4	40.9	40.1	57.3	39.5
tomtate	50.6	88.3	44.3	55.4	68.8
lane snapper	34.5	47.8	53.4	64.4	37.5

Table F-7. Percent standard error (PSE) around calendar year total catch estimates (number of fish) for the top species in the snapper grouper fishery management unit harvested or discarded in the South Atlantic. Highlighting in yellow indicates an estimate with a PSE value 30 to 50 and should be treated with caution, and values highlighted in red indicates a highly imprecise estimate with a PSE value greater than 50. PSE values were obtained from the NOAA MRIP Query website.

TOP SPECIES	2018	2019	2020	2021	2022
red snapper	22.2	23.1	24.9	19.9	32.1
gray triggerfish	26.2	27.3	21.5	22	30.4
mutton snapper	30.3	32.3	32.2	27	21.1
yellowtail snapper	22.6	32	42	18.8	22
vermilion snapper	30	20.3	21.8	21.7	20.4
greater amberjack	43.3	28.7	35.7	32.3	51.9
black sea bass	18.9	17.5	19.3	17.9	32.6
red grouper	36.2	41.2	62.8	48.5	44.2
gray snapper	22.1	56.9	30.1	37.5	29.2
almaco jack	42.4	32.4	42.4	33.4	39.3
white grunt	33.2	27.8	36.2	53.4	24.6
tomtate	31.2	34.8	29.8	44.7	32.5
lane snapper	35.1	29.6	37.3	41.9	29.2

Appendix G. Bycatch Practicability Analysis

G.1. Background

Text.

G.2. Population Effects for the Bycatch Species

Text.

Commercial Sector
Text.

Recreational Sector
Text.

Current Discards
Text.

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
Text.

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

G.4. Ecological Effects Due to Changes in Bycatch

Text.

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

Text.

G.6. Effects on Marine Mammals and Birds

Marine Mammals
Text.

Sea Birds
Text.

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

Text.

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

Text.

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

Research
Text.

Administration
Text.

Enforcement
Text.

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

Text.

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

Text.

G.12. Social Effects

Text.

G.13. Conclusion

Text.

Appendix H. Fishery Impact Statement

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

Actions Contained in Amendment 46 to the FMP for Snapper Grouper Fishery of the South Atlantic Region

Text.

Assessment of Biological Effects

Text.

Assessment of Economic Effects

Text.

Assessment of the Social Effects

Text.

Assessment of Effects on Safety at Sea

Text