4.9 Essential Fish Habitat and Essential Fish Habitat Areas of Particular Concern

A non-regulatory aspect of this CE-BA 2 is refining the lists of Council-designated Essential Fish Habitat (EFH) and Essential Fish Habitat-Habitat Areas of Particular Concern (EFH-HAPC). The following presents a description of the Council's habitat conservation (EFH) mandates, a summary of the existing and proposed EFH and EFH-HAPC designations for managed species, and a listing of maps that have been created and are being served through the Council's Habitat and Ecosystem Internet Map Server and EFH Service.

The EFH Mandate and EFH Final Rule

Essential Fish Habitat is defined in the Magnuson-Stevens Act as "all waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity". Regional Fishery Management Councils are directed to describe and identify EFH for each federally managed species, attempt to minimize the extent of adverse effects on habitat caused by fishing and non-fishing activities, and identify actions to encourage conservation and enhancement of those habitats. It is required that EFH be based on the best available scientific information.

The definition for EFH may include habitat for an individual species or an assemblage of species, whichever is appropriate within each FMP. For the purpose of interpreting the definition of EFH: "waters" includes aquatic areas and their associated physical, chemical, and biological properties that are utilized by fish. When appropriate this may include areas used historically. Water quality, including but not limited to nutrient levels, oxygen concentration, and turbidity levels is also considered to be a component of this definition. Examples of "waters" that may be considered EFH, include open waters, wetlands, estuarine habitats, riverine habitats, and wetlands hydrologically connected to productive water bodies.

"Necessary", relative to the definition of EFH, means the habitat required to support a sustainable fishery and a healthy ecosystem, while "spawning, breeding, feeding, or growth to maturity" covers a species full life cycle. In the context of this definition the term "substrate" includes sediment, hardbottom, structures underlying the waters, and associated biological communities. These communities could encompass mangroves, tidal marshes, mussel beds, cobble with attached fauna, mud and clay burrows, coral reefs, and submerged aquatic vegetation. Migratory routes such as rivers and passes serving as passageways to and from anadromous fish spawning grounds should also be considered EFH. Included in the interpretation of "substrate" are artificial reefs and shipwrecks (if providing EFH), and partially or entirely submerged structures such as jetties.

The NOAA Fisheries Service assists the Councils in implementing EFH by assessing the quality of available data in a four-level system:

Level 1: species distribution data for all or part of its geographic range;
Level 2: data on habitat-related densities or relative abundance of the species;
Level 3: data on growth, reproduction, and survival rates within habitats; and

Level 4: production rates by habitat.

In addition to EFH the Councils must identify EFH- HAPCs within EFH. In determining which areas should be designated as HAPCs the area must meet one or more of the following criteria:

1) Ecological function provided by the habitat is important;
2) Habitat is sensitive to human-induced environmental degradation;
3) Development activities are or will be stressing the habitat type; and
4) Habitat type is rare.

Council Habitat Responsibilities as Defined in the Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Act, Public Law 104-208, reflects the new Secretary of Commerce and Fishery Management Council authority and responsibilities for the protection of essential fishery habitat. Section 305 (b) Fish Habitat, indicates the Secretary (through NOAA Fisheries Service) shall, within 6 months of the date of enactment of the Sustainable Fisheries Act, establish by regulation guidelines to assist the Councils in the description and identification of EFH in fishery management plans (including adverse impacts on such habitat) and in the consideration of actions to ensure the conservation and enhancement of such habitat. In addition, the Secretary (through NOAA Fisheries Service) shall: set forth a schedule for the amendment of fishery management plans to include the identification of EFH and for the review and updating of such identifications based on new scientific evidence or other relevant information; in consultation with participants in the fishery, shall provide each Council with recommendations and information regarding each fishery under that Council's authority to assist it in the identification of EFH, the adverse impacts on that habitat, and the actions that should be considered to ensure the conservation and enhancement of that habitat; review programs administered by the Department of Commerce and ensure that any relevant programs further the conservation and enhancement of EFH; and the Secretary shall coordinate with and provide information to other Federal agencies to further the conservation and enhancement of EFH.

The Act specifies that each Federal agency shall consult with the Secretary with respect to any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken, by such agency that may adversely affect any EFH identified under the Act. Additional provisions specify that each Council: may comment on and make recommendations to the Secretary and any Federal or State agency concerning any activity authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken, by any Federal or State agency that, in the view of the Council, may affect the habitat, including EFH, of a fishery resource under its authority; and shall comment on and make recommendations to the Secretary and any Federal or State agency concerning any such activity that, in the view of the Council, is likely to substantially affect the habitat, including EFH, of an anadromous fishery resource under its authority. If the Secretary receives information from a Council or Federal or State agency or determines from other sources that an action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken, by any State or Federal agency would

adversely affect any EFH identified under the Act, the Secretary shall recommend to such agency measures that can be taken by such agency to conserve such habitat. Within 30 days after receiving a recommendation, a Federal agency shall provide a detailed response in writing to any Council commenting and the Secretary regarding the matter. The response shall include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on such habitat. In the case of a response that is inconsistent with the recommendations of the Secretary, the Federal agency shall explain its reasons for not following the recommendations.

The South Atlantic Council's current process for reviewing and commenting on projects is described in Appendix A of the Habitat Plan (SAFMC 1998a).

On December 19, 1997, an interim final rule was published in the Federal Register to implement the EFH provisions of the Magnuson-Stevens Act. This rule establishes guidelines to assist the Councils and the Secretary of Commerce in the description and identification of EFH in fishery management plans, including identification of adverse impacts from both fishing and non-fishing activities on EFH, and identification of actions required to conserve and enhance EFH. The regulations also detailed procedures the Secretary (acting through NOAA Fisheries Service), other Federal agencies, State agencies, and the Councils would use to coordinate, consult, or provide recommendations on Federal and State activities that may adversely affect EFH. The intended effect of the rule was to promote the protection, conservation, and enhancement of EFH. On January 17, 2002, the Final Rule for EFH was published with an effective date of February 19, 2002. This rule supersedes the interim final rule with the main changes being in the procedures for consultation, coordination, and recommendations on permit activities and guidelines for EFH information in FMPs. The final rule provides more clear guidelines for prioritizing and analyzing habitat effects for managed species. The final rule retains the four tiered level for data division applied in identifying EFH. The final rule provides more flexibility in designating EFH when information is limited and allows Councils to use available distribution information as well as presence/ absence data. It also allows informed decision based on similar species and other life stages.

The Fishery Ecosystem Plan (SAFMC, 2009a) updates EFH information in the Habitat Plan (SAFMC 1998a) and presents refined information on habitat requirements (by life stage where information exists) for species managed by the Council including information on environmental and habitat variables that control or limit distribution, abundance, reproduction, growth, survival, and productivity of the managed species.

The Council, in working with the Habitat and Coral Advisory Panels and through a series of workshops, identified available environmental and fisheries data sources relevant to the managed species that would be useful in describing and identifying EFH. The EFH workshop process utilized habitat experts at the State, Federal, and regional level to participate in the description and identification of EFH in the South Atlantic region.

Based on the ecological relationships of species and relationships between species and their habitat, the Council took an ecosystem approach in designating EFH in the Habitat

Plan and Comprehensive Ecosystem-Based Amendment and in refining the information presented in the FEP (SAFMC, 2009a) for managed species and species assemblages. This approach is consistent with NMFS guidelines and broader goals for ecosystem management. Through the existing habitat policy, the Council directs the protection of EFH types and the enhancement and restoration of their quality and quantity.

The EFH Final Rule

The Final EFH Rule requires FMPs to include maps that display, within the constraints of available information, the geographic locations of EFH or the geographic boundaries within which EFH for each species and life stage is found. Maps should identify the different types of habitat designated as EFH to the extent possible. Maps should explicitly distinguish EFH from non-EFH areas and should be incorporated into a geographic information system (GIS) to facilitate analysis and presentation. While GIS, in combination with models that examine habitat requirements, can be used as a tool for designating EFH, data availability do not support such use at this time for the South Atlantic. Instead, the best use of GIS within the South Atlantic is visualizing where EFH occurs within the constraints of available information.

Mapping efforts require accuracy standards for location and thematic content as well as designation of minimum mapping units (i.e., the smallest area that the map will depict for a thematic category, such as seagrass). Mapping standards for EFH have not yet been set. While technological improvements within the surveying and remote sensing communities are rapidly increasing location and thematic accuracy, designation of minimum mapping units for EFH has not progressed similarly since enactment of the EFH Final Rule. Within the South Atlantic, especially for estuaries, the data available for mapping the locations of EFH are not at a geographic scale suitable for use in most EFH consultations. For example, data on the location of salt marshes that have a minimum mapping unit of one acre usually will not show fringe marshes, which are the subject of many EFH consultations. As additional information becomes available, it is advisable to develop minimum mapping units for the specific habitat types that are designated as EFH. These standards also might be tiered to account for geographic realm (e.g., riverine, estuarine, coastal, and offshore areas), life stages, data rich versus data poor species, and number of species within a FMP.

EFH 5 Year Review

Activities associated with the first 5 year review included the updating and expansion of the Habitat Plan (SAFMC 1998a) into the first Fishery Ecosystem Plan (SAFMC 2009a), the development of Comprehensive Ecosystem-Based Amendment 1 (SAFMC 2009b) and this Amendment. NMFS is in the process of providing a summary report highlighting these activities.

Maps of EFH and EFH-HAPCs

The Council has developed an Internet Map Server (IMS) for displaying EFH and HAPCs within the constraints of available data and technology. The IMS contains GIS layers showing the distribution and geographic limits of EFH by life history stage (**Figure 4-XX**). The IMS is largely based on information developed by the Council,

Florida Fish & Wildlife Research Institute, NOAA Fisheries Service Southeast Fisheries Science Center, North Carolina Division of Marine Fisheries, and South Carolina Department of Natural Resources. The datasets provided vary in accuracy, scale, completeness, extent of coverage, and origin. Many were consolidated and homogenized from other sources. The Council encourages use of these data and urges users to thoroughly review the metadata and original source documentation prior to interpreting the data. It is the user's responsibility to ensure data are used in a manner consistent with their intended purpose and within stated limitations.

As new data become available, the Council will update the IMS to ensure the public has the best available spatial depictions of the EFH descriptions in the Comprehensive EFH Amendment (SAFMC 1988b) and future Comprehensive Ecosystem-Based Amendments. While the Council believes spatial depictions of EFH and HAPCs are informative, textual descriptions within the Comprehensive EFH Amendment (SAFMC 1988b) are the ultimate source for determining the limits of EFH and HAPCs. The IMS can be found at:
://ocean.floridamarine.org/efh_coral/ims/viewer.htm.

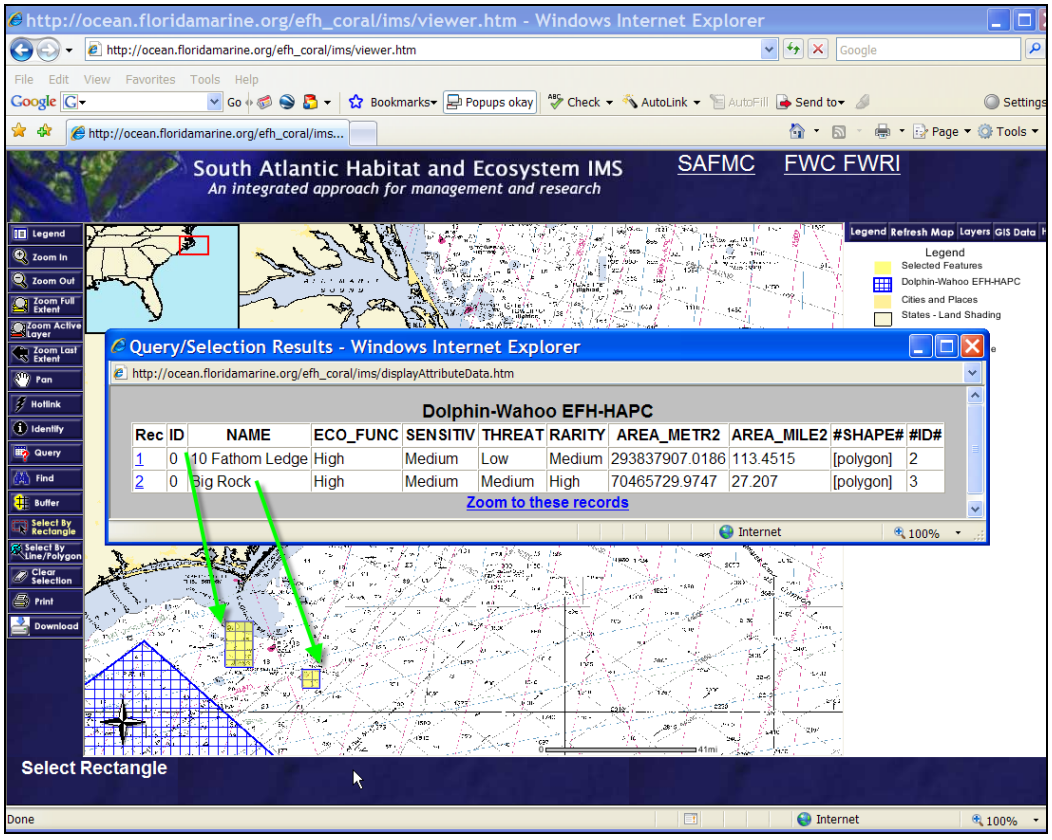

Figure 4-XX. Sample screen shot of spatial presentation of EFH-HAPCs on South Atlantic Habitat and Ecosystem Internet Map Server.

The Habitat Plan (SAFMC 1998a) and FEP (SAFMC, 2009a) present information on adverse effects from fishing and describes management measures the Council has implemented to minimize adverse effects on EFH from fishing. The conservation and enhancement measures implemented by the Council to date may include ones that eliminate or minimize physical, chemical, or biological alterations of the substrate, and loss of, or injury to, benthic organisms, prey species and their habitat, and other components of the ecosystem. The Council has implemented restrictions on fisheries to the extent that no significant activities were identified in the review of gear impact conducted for the NOAA Fisheries Service by Auster and Langton (1998) that presented available information on adverse effects of all fishing equipment types used in waters described as EFH. The Council has already prevented, mitigated, or minimized most adverse effects from most fisheries prosecuted in the south Atlantic EEZ.

The Council considered evidence that some fishing practices may have an identifiable adverse effect on habitat and addressed those pertaining to deepwater coral ecosystems in Comprehensive Ecosystem-Based Amendment 1 (CE-BA1) (SAFMC 2009b). The Council has already used many of the options recommended in the guidelines for managing adverse effects from fishing including: fishing equipment restrictions; seasonal and areal restrictions on the use of specified gear; equipment modifications to allow the escape of particular species or particular life stages (e.g., juveniles); prohibitions on the use of explosives and chemicals; prohibitions on anchoring or setting equipment in sensitive areas; prohibitions on fishing activities that cause significant physical damage in EFH; time/area closures including closing areas to all fishing or specific equipment types during spawning, migration, foraging, and nursery activities; designating zones as Marine Protected Areas to limit adverse effects of fishing practices on certain vulnerable or rare areas/species/life history stages, such as those areas designated as HAPCs; and harvest limits.

The FEP (SAFMC, 2009a) identifies non-fishing related activities that have the potential to adversely affect EFH quantity or quality. Examples of these activities are dredging, fill, excavation, mining, impoundment, discharge, water diversions, thermal additions, actions that contribute to non-point source pollution and sedimentation, introduction of potentially hazardous materials, introduction of exotic species, and the conversion of aquatic habitat that may eliminate, diminish, or disrupt the functions of EFH. Included in the FEP is an analysis of how fishing and non-fishing activities influence habitat function on an ecosystem or watershed scale. This information presents available information describing the ecosystem or watershed and the dependence of managed species on the ecosystem or watershed. An assessment of the cumulative and synergistic effects of multiple threats, including the effects of natural stresses (such as storm damage or climate-based environmental shifts), and an assessment of the ecological risks resulting from the impact of those threats on the managed species' habitat is included.

General conservation and enhancement recommendations are included in Volume IV of the FEP. These include recommending the enhancement of rivers, streams, and coastal areas; protection of water quality and quantity; and recommendations to local and State

organizations to minimize destruction/degradation of wetlands, restore and maintain the ecological health of watersheds, and replace lost or degraded EFH.

The Council will periodically review and update EFH information and revise the FEP as new information becomes available. NMFS should provide some of this information as part of the annual Stock Assessment and Fishery Evaluation (SAFE) report. A complete update of the FEP and assessment of EFH information will also be conducted as recommended in the guidelines in no longer than 5 years.

The Council established a framework procedure whereby additional EFH and EFH-HAPCs designations would be accomplished. This is described in Section 4.2.8 of the Comprehensive EFH Amendment (SAFMC 1998b).

The Council's Comprehensive Ecosystem-Based Amendment 1 (SAFMC 2009b), contains spatial information on designated EFH and Essential Fish Habitat-Habitat Areas of Particular Concern (EFH-HAPCs). This information was required by the EFH Final Rule in 2002. Through the CE-BA 2, the Council intends to amend Council Fishery Management Plans (FMPs) as needed to revise existing and possibly designate new EFH and EFH-HAPCs as required by the EFH Final Rule.

Proposed List of New Essential Fish Habitat Areas of Particular Concern:
The Council designated EFH-HAPCs to emphasize they are subsets of EFH. EFH-HAPCs on their own do not carry regulatory authority; however, the FMPs under which they were designated may include regulations that protect habitat from fishing impacts. The HAPCs and FMPs were developed together with the intent of providing additional protection to the HAPCs. EFH-HAPCs include general habitat types (e.g., submerged aquatic vegetation) and geographically defined areas of ecological importance (e.g., Charleston Bump)
Four criteria are used to select candidate sites for EFH-HAPC designation:

1. Rare (R)
2. Particularly susceptible to human-induced degradation (S)
3. Especially ecologically important (E)
4. Or located in an environmentally stressed area (ES)

The following list presents proposed new EFH-HAPCs, the FMP(s) under which they would potentially be designated and EFH-HAPC criteria met by each:

- Golden tilefish habitat (100m-300m) (Snapper Grouper) R, S, E
- Mouth of Altamaha River including oyster reefs and marsh (Snapper Grouper and Coastal Migratory Pelagics) S, E, ES
- All live bottom from shoreline out to 10 miles for black sea bass (Snapper Grouper) R, S, E, ES

- All waters classified as Outstanding Resource Waters (Coastal Migratory Pelagics and Snapper Grouper) R, S, E
- Indian River Lagoon (Snapper Grouper and Coastal Migratory Pelagics) S, ES
- Lake Worth Lagoon (Snapper Grouper and Coastal Migratory Pelagics) S, ES
- Cape Canaveral scallop grounds (Shrimp) E
- Broward staghorn coral stand (Coral, Snapper Grouper) S, R, ES
- North Carolina Strategic Habitat Areas (Snapper Grouper and Coastal Migratory Pelagics) R, S, E, ES
- Bulls Bay South Carolina (Snapper Grouper, Coastal Migratory Pelagics and Shrimp - nursery areas) E, ES
- Ashepoo, Combahee and Edisto Basin South Carolina (Snapper Grouper, Coastal Migratory Pelagics and Shrimp - nursery areas) S, E
- Deepwater MPAs (Snapper Grouper – deepwater species/snowy grouper, golden tilefish) R, E
- The Charleston Bump and the Point (Sargassum) R, E
- Proposed Deepwater Coral HAPCs (Coral) R, E

Preliminary List of New Essential Fish Habitat:

1. Top ten meters of the water column in the South Atlantic EEZ (*Sargassum*)

Table 4-XX. Existing and Proposed EFH and EFH-HAPCs for south Atlantic Managed Species

Line	Habitat/Location	CMPs	Coral	Spiny Lobster	Golden Crab	S/G Complex	Rock Shrimp	Penaeid Shrimp	Sargassum
	Designations Based on Geography								
1	Cape Lookout (sandy shoals) (NC)	HAPC							
2	Cape Fear (sandy shoals) (NC)	HAPC							
3	Cape Hatteras (sandy shoals) (NC)	HAPC							
4	The Point (NC)	HAPC				HAPC			HAPC
5	Ten Fathom Ledge (NC)	HAPC	HAPC			HAPC			
6	Big Rock (NC)	HAPC	HAPC			HAPC			
7	Bogue Sound (NC)	HAPC							
8	New River (NC)	HAPC							
9	Hoyt Hills (NC)					HAPC-wreckfish			
10	Charleston Bump (SC)	HAPC	HAPC			HAPC			HAPC
12	Bulls Bay (SC)	HAPC				HAPC		HAPC	
13	ACE Basin (SC)	HAPC				HAPC		HAPC	
14	Hurl Rocks (SC)	HAPC							
15	Bogue Sound (SC)	HAPC							
16	Broad River (SC)	HAPC							
17	Grays Reef NMS (GA)		HAPC						
18	Altamaha River mouth (including oyster reefs and marsh) (GA)	HAPC				HAPC			
19	Oculina Bank (FL)		HAPC						
20	Oculina Bank HAPC (FL)					HAPC			
21	Blake Plateau manganese nodules (FL)					HAPC			
22	Shelf current systems near Cape Canaveral (FL)						EFH		
23	Cape Canaveral Scallop Grounds (FL)						HAPC		
24	The Point off Jupiter Inlet (FL)	HAPC							
25	Indian River Lagoon (FL)	HAPC				HAPC			
27	Lake Worth Lagoon (FL)	HAPC				HAPC			
29	Biscyane Bay and Biscyane Bay NP (FL)		HAPC	HAPC					
30	Card Sound (FL)			HAPC					
31	Florida Bay (FL)			HAPC					
32	The Hump off Islamorada (FL)	HAPC							
33	Marathon Hump (FL)	HAPC							
34	The "Wall" off Florida Keys (FL)	HAPC							
35	Florida Keys NMS (FL)		HAPC						
36	Worm reefs off central east Florida (FL)	HAPC	HAPC						
37	NSHB South of Cape Canaveral (FL)	HAPC							
38	NSHB (<4 m) South of Cape Canaveral to Ft. Pierce (FL)		HAPC						
39	OSHB (5-30 m) Palm Bch Co. to Fowey Rocks (FL)		HAPC						
40	Coral and HB Jupiter Inlet to Dry Tortougas (FL)			HAPC					
44	Broward staghorn coral stand (FL)		HAPC			HAPC			
47	Gulf Stream Current	EFH		EFH	EFH	EFH	EFH		

Table 4-XX (cont.). Existing and Proposed EFH and EFH-HAPCs for south Atlantic Managed Species.

Line	Habitat/Location	CMPs	Coral	Spiny Lobster	Golden Crab	S/G Complex	Rock Shrimp	Penaeid Shrimp	Sargassum
48	**Designations Based Loosely on Geography**								
49	State designated nursery habitats (e.g., PNA, SNA)	EFH				HAPC		HAPC	
50	State identified overwintering areas							HAPC	
51	Council-designated Artificial Reef Mgmt Zones					HAPC			
52	Artificial reefs					EFH			
53	Offshore habitats used for spawning and growth							EFH	
54	Interconnecting water bodies							EFH	
55	NC Strategic Habitat Areas	HAPC				HAPC			
56	Deepwater MPAs					HAPC*			
57	Designated Outstanding Resource Waters (NC)	HAPC				HAPC			
58	**Designations Based on Habitat**								
59	Tidal palustrine forested areas							EFH	
60	Tidal emergent wetlands (freshwater, estuarine, marine)					Estuarine		EFH	
61	Mangrove habitat			EFH		HAPC		EFH	
64	Subtidal and intertidal non-vegetated flats							EFH	
65	SAV (freshwater, estuarine, marine)					SRV		EFH	
66	SAV					EFH			
67	Seagrass habitat			EFH		HAPC			
68	Tidal creeks					EFH			
69	Barrier island ocean-side waters, surf to shelf break	EFH							
70	High salinity bays, estuaries, and seagrass	Cobia							
71	Coastal inlets	EFH				HAPC		HAPC	
72	Sandy shoals of capes and offshore bars	EFH							
74	Sponges			EFH					
73	Marcoalgae (Laurencia)			EFH					
74	Unconsolidated bottom			EFH					
75	Nearshore shelf/oceanic waters			EFH					
76	Shallow subtidal bottom			EFH					
77	Coral and HB			EFH					
78	Live/hard bottom					EFH			
79	NSHB					HAPC			
80	Coral reefs					EFH			
81	Hermatypic coral habitats and reefs					HAPC			
82	Rock outcrops, medium to high profile, to 600/2000					EFH			
83	Water column above spawning areas					EFH			
84	Locations of known or likely periodic spawning					HAPC			
85	Offshore HB where spawning normally occurs					HAPC			
87	All live bottom shore to 10 miles					HAPC Black Sea Bass			
88	High profile rocky bottom	EFH							
89	Golden tile fish habitat (100m-300m)					HAPC Golden Tile Fish			
90									
91	Muddy, silty bottom subtidal to outer shelf		Pennatulacea						
92	Hard substrate subtidal to outer shelf		Ahermatypic						
93	Rough, hard, exposed stable bottom subtidal to outer shelf		Octocorals*						
94	Rough, hard, exposed stable bottom >18 m, >30 ppt, adequate light		Black Coral						
95	Rough, hard, exposed stable bottom, PB Co. to FL reef tract, subtidal to 30 m, >3		Hermatypic						
96	Sand bottom 18 to 182 m (especially X)						EFH		
97	Continental slope 180 to 730 m (especially X)								
98	Sargassum	HAPC				EFH			
99	Continental Shelf Chesapeake Bay to Florida Straits				EFH				
100	Top 10m of water								EFH

Establishing New EFH and EFH-HAPCs

The designation of new EFH and EFH-HAPCs would not result in direct impacts to the region's fishery resources. Rather, EFH and EFH-HAPC designation under this action would provide an opportunity for the Council to protect EFH from fishing activities in the EEZ and to review and recommend EFH conservation measures to protect habitat from non-fishing activities which are undertaken, authorized, or funded by Federal agencies. Similarly, designation of EFH and EFH-HAPCs would require Federal agencies to consult with NOAA Fisheries Service and the Council on activities which may adversely affect that habitat.

Designation of new EFH and EFH-HAPC will require the Council to consider all operations or actions that might interact with or affect the EFH, and may trigger a consultation for any activity that may affect the habitat. The direct effects of additional regulatory consideration would be the financial costs of a protracted regulatory process. Additional effects would accrue to any restrictions imposed as a result of the evaluation of impact of these activities. A consultation may incur costs associated with production delays, project/activity design modification, or mitigation measures. Since any restrictions that may subsequently be placed on these activities are unknown at this time, it is not possible to explicitly describe their effects.

There will be few social impacts from establishing new EFH and EFH-HAPCs. The social impacts will most likely come from future actions that are associated with such designations. In some cases, protection of habitat may mean restrictions in areas where harvesting presently takes place.

It is worth noting that identification of EFH will alter the process by which permits for activities which impact EFH and EFH-HAPCs are issued. The potential for increased restrictions, mitigation, and permitting requirements may have impacts upon the behavior of individuals and agencies seeking permits. The nature and extent of those impacts are unknown and will undoubtedly vary depending upon the individual and/or agency.

4.9.1 Action X. Amend the Shrimp Fishery Management Plan (FMP) to designate new Essential Fish Habitat-Habitat Areas of Particular Concern (EFH-HAPCs).

Alternative 1. No action. Do not amend the Shrimp FMP to designate new Essential Fish Habitat-Habitat Areas of Particular Concern (EFH-HAPCs). The following existing designations would remain in effect.

4.9.1.1 Penaeid Shrimp Essential Fish Habitat

For penaeid shrimp, EFH includes inshore estuarine nursery areas, offshore marine habitats used for spawning and growth to maturity, and all interconnecting water bodies as described in the Council Habitat Plan (SAFMC 1998a). Inshore nursery areas include tidal freshwater (palustrine), estuarine, and marine emergent wetlands (e.g., intertidal marshes); tidal palustrine forested areas; mangroves; tidal freshwater, estuarine, and marine submerged aquatic vegetation (e.g., seagrass); and subtidal and intertidal non-vegetated flats. This applies from North Carolina through the Florida Keys.

4.9.1.2 Rock Shrimp Essential Fish Habitat

For rock shrimp, EFH consists of offshore terrigenous and biogenic sand bottom habitats from 18 to 182 meters (59-597 feet) in depth with highest concentrations occurring between 34 and 55 meters (111-180 feet). This applies for all areas from North Carolina through the Florida Keys. EFH includes the shelf current systems near Cape Canaveral, Florida which provide major transport mechanisms affecting planktonic larval rock shrimp. These currents keep larvae on the Florida Shelf and may transport them inshore in spring. In addition the Gulf Stream is an EFH because it provides a mechanism to disperse rock shrimp larvae.

Three penaeid species (white shrimp, *Litopenaeus setiferus*; brown shrimp, *Farfantepenaeus aztecus*; and pink shrimp, *Farfantepenaeus duorarum*) and one deepwater species (rock shrimp, *Sicyonia brevirostris*) are included in the shrimp fishery management unit. Additional information on species in the shrimp fishery is included in Volume II of the FEP.

4.9.1.3 Penaeid Shrimp Essential Fish Habitat-Habitat Areas of Particular Concern

Existing EFH-HAPCs for penaeid shrimp include all coastal inlets, all State-designated nursery habitats of particular importance to shrimp (for example, in North Carolina this would include all Primary Nursery Areas and all Secondary Nursery Areas), and State-identified overwintering areas.

Estuarine tidal creeks and salt marshes that serve as nursery grounds are perhaps the most important habitats occupied by penaeid shrimp. The major factor controlling shrimp growth and production is the availability of nursery habitat. Remaining wetland habitat must be protected if present production levels are to be maintained. In addition, impacted habitats must be restored if future production is to be increased. Other areas of specific concern are the barrier islands since these land masses are vital to the maintenance of estuarine conditions needed by shrimp during their juvenile stage. Passes between barrier islands into estuaries also are important since the slow mixing of sea water and fresh water are also of prime importance to estuarine productivity.

In North Carolina, EFH-HAPCs include estuarine shoreline habitats since juveniles congregate here. Seagrass beds, prevalent in the sounds and bays of North Carolina and Florida, are particularly critical areas. Core Sound and eastern Pamlico Sound, based on a preliminary aerial survey funded through the Albemarle-Pamlico Estuarine Study, have approximately 800 square kilometers (200,000 acres) of seagrass beds making North Carolina second only to Florida in abundance of this type of habitat (Department of Commerce 1988b). In subtropical and tropical regions shrimp and spiny lobster postlarvae recruit into grass beds from distant offshore spawning grounds (Fonseca *et al.* 1992).

South Carolina and Georgia lack seagrass beds. Here, the nursery habitat of shrimp is the high marsh areas with shell hash and mud bottoms. In addition, there is seasonal movement out of the marsh into deep holes and creek channels adjoining the marsh system during winter. Therefore, the area of particular concern for early growth and development encompasses the entire estuarine system from the lower salinity portions of the river systems through the inlet mouths.

4.9.1.4 Rock Shrimp Essential Fish Habitat - Habitat Areas of Particular Concern

In the Comprehensive EFH Amendment (SAFMC 1998b), no EFH-HAPCs were identified for rock shrimp; however, it was noted that deepwater habitat (e.g., the expanded Oculina Bank HAPC) serves as nursery habitat and protects the stock by providing a refuge for rock shrimp.

Alternative 2. Amend the Shrimp FMP to designate the new Essential Fish Habitat-Habitat Areas of Particular Concern (EFH-HAPCs):

Sub-Alternative 2a. Cape Canaveral, Florida, scallop grounds (for rock shrimp)
Detailed information on rock shrimp life history and use of bottom habitat associated with the scallop grounds off Cape Canaveral Florida is included in Volume II of the FEP.

Sub-Alternative 2b. Bulls Bay, South Carolina (for penaeid shrimp)
Detailed information on penaeid shrimp life history and use of habitat associated with Bulls Bay, South Carolina is included in Volume II of the FEP**.**

Sub-Alternative 2c. Ashepoo, Combahee and Edisto (ACE) Basin, South Carolina (for penaeid shrimp).

Detailed information on penaeid shrimp life history and use of habitat associated with the ACE Basin, South Carolina is included in Volume II of the FEP**.**

Note: The following option presented at scoping is already included in an existing designation of EFH-HAPCs for shrimp: intertidal oyster reefs.

Proposed areas which also meet the criteria for EFH-HAPCs for shrimp include Cape Canaveral, FL Scallop Grounds, Bulls Bay, SC and the Ashepoo, Combahee and Edisto (ACE) Basin, SC. Section 600.815 (a) (8) of the final rule on EFH determinations recognizes that subunits of EFH may be of particular concern. A summary evaluation of the existing and proposed EFH-HAPC as it relates to the criteria is shown in **Table 4-11**.

Table 4-11. Summary evaluation of the existing and proposed EFH-HAPC for shrimp as it relates to the criteria.

EFH-HAPC and Criteria Evaluation	Ecological Function	Sensitivity to Environmental Degradation	Threat from Development Activities	Rarity of Habitat
Coastal inlets	High	Low	Medium	Medium
State-designated nursery habitats	High	High	Medium	High
State-identified overwintering habitats	Medium	Low	Medium	Medium
High marsh areas with shell hash and mud bottom in SC and GA	High	Medium	Medium	Medium
Bull's Bay, SC	High	Medium	Medium	Medium
ACE Basin, SC	High	High	High	Medium

4.9.1.5 GIS for Shrimp Fishery Management Plan EFH and EFH-HAPCs

The Council has mapped the locations of EFH and EFH-HAPCs for shrimp within the constraints of available information. To obtain copies of these maps, please visit the Council's Habitat and Ecosystem Internet Map Server at .safmc.net. While the Council believes spatial depictions of EFH and EFH-HAPCs are informative, textual descriptions are the ultimate source for determining the limits of EFH and EFH-HAPCs.

4.9.2 Action X. Amend the Snapper Grouper Fishery Management Plan (FMP) to designate new Essential Fish Habitat-Habitat Areas of Particular Concern (EFH-HAPCs).

Alternative 1. No action. Do not amend the Snapper Grouper FMP to designate new Essential Fish Habitat-Habitat Areas of Particular Concern (EFH-HAPCs). The following existing designations would remain in effect.

Of the 98 species managed by the Council, 73 are included in the snapper grouper complex. The latter includes the families Serranidae (sea basses and groupers), Polyprionidae (wreckfish), Lutjanidae (snappers), Sparidae (porgies), Haemulidae (grunts), Carangidae (jacks), Malacanthidae (tilefishes), Balistidae (triggerfishes), Labridae (wrasses), and Ephippidae (spadefishes). Several of the species in this complex inhabit deepwater habitats or depend on them for a portion of their life cycle (i.e., spawning). Many are slow-growing, late-maturing and long-lived. A more detailed description of the biology and habitat utilization of species in the snapper grouper complex is included in Volume II of the FEP.

4.9.2.1 Snapper Grouper Essential Fish Habitat

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

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

4.9.2.2 Snapper Grouper Essential Fish Habitat - Habitat Areas of Particular Concern

Existing EFH-HAPCs for species in the snapper grouper management unit include medium to high profile offshore hardbottoms where spawning normally occurs; localities of known or likely periodic spawning aggregations; near shore hardbottom areas; The Point, The Ten Fathom Ledge, and Big Rock (North Carolina); The Charleston Bump (South Carolina); mangrove habitat; seagrass habitat; oyster/shell habitat; all coastal inlets; all state-designated nursery habitats of particular importance to snapper grouper (e.g., Primary and Secondary Nursery Areas designated in North Carolina); pelagic and benthic *Sargassum*; Hoyt Hills for wreckfish; the Oculina Bank Habitat Area of Particular Concern; all hermatypic coral habitats and reefs; manganese outcroppings on the Blake Plateau; and Council-designated Artificial Reef Special Management Zones (SMZs).

Alternative 2. Amend the Snapper Grouper FMP to designate the following Essential Fish Habitat-Habitat Areas of Particular Concern (EFH-HAPCs):

Note: The following options presented at scoping are already included in existing designations of EFH-HAPCs: intertidal oyster reefs, shelf-edge reefs, hardbottom and reef tract between Port Everglades and Hillsborough Inlet, FL; hardbottom and reef tract from Broward/Palm Beach County line northward to Lake Worth Inlet, FL; Bathtub Reef (worm reefs); Horseshoe Reef and Gulf Stream Reef (Palm Beach County, FL); hardbottom and reef tract from Port St. Lucie to Cape Canaveral, FL; Broward County Staghorn Coral, 17th Century stony corals off Hollywood, FL; Ridge complex off southeast Florida; shelf-edge reefs; and North Inlet, SC.

Sub-Alternative 2a. Golden tilefish habitat (100m-300m)
Detailed information on golden tilefish life history and use of habitat is included in the Habitat Plan (SAFMC 1998a) and Volume II of the FEP**.**

Sub-Alternative 2b. Mouth of the Altamaha River including oyster reefs and marsh
Detailed information on estuarine dependant snapper grouper species life history and use of habitat associated with the mouth of the Altmaha River is included in Volume II of the FEP**.**

Sub-Alternative 2c. All live bottom from shoreline out to 10 miles for black sea bass
Detailed information on black sea bass life history and use of habitat from shore to 10 miles offshore is included in Volume II of the FEP**.**

Sub-Alternati-ve 2d. All waters classified as Outstanding Resource Waters
Detailed information on the use of estuarine habitats is included in Volume II of the FEP**.**

Sub-Alternative 2e. North Carolina Strategic Habitat Areas;
Detailed information on estuarine dependant snapper grouper species life history and use of habitat associated with North Carolina's Strategic Habitat Areas is included in Volume II of the FEP and in the North Carolina Habitat Plan**.**

Sub-Alternative 2f. Bulls Bay, SC
Detailed information estuarine dependant snapper grouper species life history and use of habitat associated with Bulls Bay, South Carolina is included in Volume II of the FEP**.**

Sub-Alternative 2g. Ashepoo, Combahee and Edisto (ACE) Basin, SC;
Detailed information on estuarine dependant snapper grouper species life history and use of habitat associated with the ACE Basin, South Carolina is included in Volume II of the FEP**.**

Sub-Alternative 2h. Deepwater Marine Protected Areas (MPAs).
Detailed information on estuarine dependant snapper grouper species life history and use of habitat associated with the Deepwater Snapper Grouper Marine Protected Areas is included in Volume II of the FEP and Amendment 14 to the Snapper Grouper FMP**.**

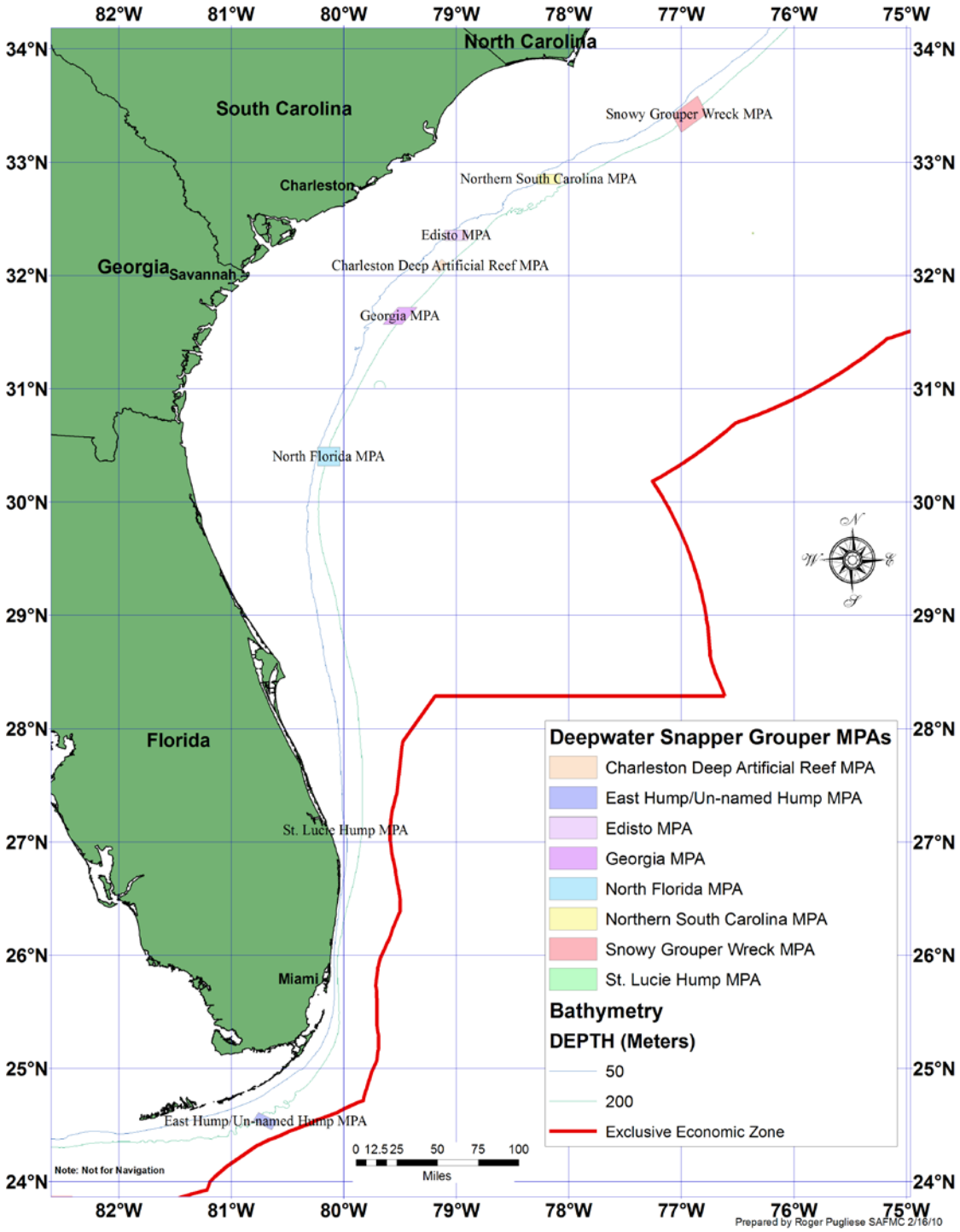

Figure X. Deepwater Snapper Grouper Marine Protected Areas.

Areas that meet the criteria for existing and proposed EFH-HAPCs include habitats required during each life stage (including egg, larval, postlarval, juvenile, and adult stages). **Table 4-12** below is a summary evaluation of the EFH-HAPC as it relates to the criteria.

Table 4-12. Summary evaluation of the existing and proposed EFH-HAPC for snapper grouper as it relates to the criteria.

EFH-HAPC and Criteria Evaluation	Ecological Function	Sensitivity to Environmental Degradation	Threat from Development Activities	Rarity of Habitat
The Point, NC	Medium	Low	Medium	High
The Ten Fathom Ledge, NC	High	Low	Low	High
Big Rock, NC	High	Low	Medium	High
Charleston Bump, SC	High	Low	Medium	High
Mangrove habitat	High	High	High	High
Seagrass habitat	High	High	High	High
Oyster/shell habitat	High	Medium	High	High
All coastal inlets	Medium	Low	Medium	Medium
All state-designated nursery habitats	High	High	High	High
Pelagic and benthic Sargassum	High	Low	Low	High
Hoyt Hills (wreckfish)	High	Low	Medium	High
Oculina HAPC, FL	High	Medium	Low	High
All hermatypic coral habitats and reefs	High	High	Low	High
Manganese outcroppings of the Blake Plateau	High	Low	Medium	High
Artificial reef SMZs	Medium	Low	Low	High
Golden Tilefish Habitat (100m-300m)	High	Low	Medium	High
Mouth of the Altamaha including oyster reefs and marsh	High	Medium	High	Medium
Live-bottom from shore to 10 miles offshore (black seabass)	High	Medium	Medium	High
State Outstanding Resource Waters	High			
North Carolina Strategic Habitat Areas	High	High	High	High
Bulls Bay, SC	Medium	Medium	Medium	Medium
ACE Basin SC	High	High	Medium	Medium
Deepwater Marine Protected Areas	High	Low	Medium	Medium

4.9.2.3 GIS for Snapper Grouper Fishery Management Plan EFH and EFH-HAPCs

The Council has mapped the locations of EFH and EFH-HAPCs for snapper grouper species within the constraints of available information. To obtain copies of these maps, please visit the Council's Habitat and Ecosystem Internet Map Server at .safmc.net. While the Council believes spatial depictions of EFH and EFH-HAPCs are informative, textual descriptions are the ultimate source for determining the limits of EFH and EFH-HAPCs.

4.9.3 Action X. Amend the Coastal Migratory Pelagics Fishery Management Plan (FMP) to designate new Essential Fish Habitat-Habitat Areas of Particular Concern (EFH-HAPCs).

Alternative 1. No action. Do not amend the Coastal Migratory Pelagics FMP to designate new Essential Fish Habitat-Habitat Areas of Particular Concern (EFH-HAPCs). The following existing designations would remain in effect.

Managed jointly with the Gulf of Mexico Fishery Management Council, the Coastal Migratory Pelagics fishery includes king mackerel (*Scomberomorus cavalla*), Spanish mackerel (*Scomberomorus maculatus*), cero mackerel (*Scomberomorus regalis*), cobia (*Rachycentron canadum*), and little tunny (*Euthynnus alletteratus*). A more detailed description of the biology and habitat utilization of species in the coastal migratory pelagic fishery is included in Volume II of the FEP.

4.9.3.1 Coastal Migratory Pelagics Essential Fish Habitat

Existing EFH for coastal migratory pelagic species includes sandy shoals of capes and offshore bars, high profile rocky bottom and barrier island ocean-side waters, from the surf to the shelf break zone, but from the Gulf Stream shoreward, including *Sargassum*. In addition, all coastal inlets, all State-designated nursery habitats of particular importance to coastal migratory pelagics (for example, in North Carolina this would include all Primary Nursery Areas and all Secondary Nursery Areas).

For cobia, EFH also includes high salinity bays, estuaries, and seagrass habitat. In addition, the Gulf Stream, which occurs within the EEZ is an EFH because it provides a mechanism to disperse coastal migratory pelagic larvae. For king and Spanish mackerel and cobia EFH occurs in the South Atlantic and Mid-Atlantic Bights.

Refer to Volume II of the FEP: Habitat and Species (SAFMC, 2009a) for a more detailed description of habitat utilized by the managed species.

4.9.3.2 Coastal Migratory Pelagics Essential Fish Habitat - Habitat Areas of Particular Concern

Existing EFH-HAPCs include sandy shoals of Cape Lookout, Cape Fear, and Cape Hatteras from shore to the ends of the respective shoals, but shoreward of the Gulf stream; The Point, The

Ten-Fathom Ledge, and Big Rock (North Carolina); The Charleston Bump and Hurl Rocks (South Carolina); The Point off Jupiter Inlet (Florida); *Phragmatopoma* (worm reefs) reefs off the central east coast of Florida; nearshore hardbottom south of Cape Canaveral; The Hump off Islamorada, Florida; The Marathon Hump off Marathon, Florida; The "Wall" off of the Florida Keys; Pelagic *Sargassum*; and Atlantic coast estuaries with high numbers of Spanish mackerel and cobia based on abundance data from the ELMR Program. Estuaries meeting this criteria for Spanish mackerel include Bogue Sound and New River, North Carolina: Bogue Sound, North Carolina (Adults May-September salinity >30 ppt); and New River, North Carolina (Adults May-October salinity >30 ppt). For cobia they include Broad River, South Carolina; and Broad River, South Carolina (Adults & juveniles May-July salinity >25ppt).

Alternative 2. Amend the Coastal Migratory Pelagics FMP to designate new Essential Fish Habitat-Habitat Areas of Particular Concern (EFH-HAPCs):
Note: The following options presented at scoping are already included in existing designations of EFH-HAPCs: intertidal oyster reefs, shelf-edge reefs, hardbottom and reef tract between Port Everglades and Hillsborough Inlet, FL; hardbottom and reef tract from Broward/Palm Beach County line northward to Lake Worth Inlet, FL; Bathtub Reef (worm reefs); Horseshoe Reef and Gulf Stream Reef (Palm Beach County, FL); hardbottom and reef tract from Port St. Lucie to Cape Canaveral, FL; 17th Century stony corals off Hollywood, FL; Ridge complex off southeast Florida; shelf-edge reefs; and North Inlet, SC.

Sub-Alternative 2a. Mouth of the Altamaha River including oyster reefs and marsh
Detailed information on estuarine dependant coastal migratory species life history and use of habitat associated with the mouth of the Altamaha River is included in Volume II of the FEP**.**

Sub-Alternative 2b. All waters classified as Outstanding Resource Waters
Detailed information on the use of estuarine water column habitats is included in Volume II of the FEP**.**

Sub-Alternative 2c. Lake Worth Lagoon, Florida
Detailed information estuarine dependant coastal migratory pelagic species life history and use of habitat associated with Lake Worth, Florida is included in Volume II of the FEP**.**

Sub-Alternative 2d. Indian River Lagoon, Florida
Detailed information estuarine dependant coastal migratory pelagic species life history and use of habitat associated with Indian River Lagoon, Florida is included in Volume II of the FEP**.**

Sub-Alternative 2e. North Carolina Strategic Habitat Areas
Detailed information on estuarine dependant coastal migratory pelagic species life history and use of habitat associated with North Carolina's Strategic Habitat Areas is included in Volume II of the FEP and in the North Carolina Habitat Plan**.**

Sub-Alternative 2f. Bulls Bay, South Carolina
Detailed information on estuarine dependant migratory pelagic species life history and use of habitat associated with Bulls Bay, South Carolina is included in Volume II of the FEP**.**

Sub-Alternative 2g. Ashepoo, Combahee and Edisto (ACE) Basin, South Carolina Detailed information on estuarine dependant migratory pelagic species life history and use of habitat associated with the ACE Basin, South Carolina is included in Volume II of the FEP**.**

A summary evaluation of the existing and proposed EFH-HAPC as it relates to the criteria is presented in **Table 4-13**.

Table 4-13. Summary evaluation of the EFH-HAPC for coastal migratory pelagics as it relates to the criteria.

EFH-HAPC and Criteria Evaluation	Ecological Function	Sensitivity to Environmental Degradation	Threat from Development Activities	Rarity of Habitat
Sandy shoals of Cape Lookout, Cape Fear and Cape Hatteras (from shore to the end of shoals but shoreward from Gulf Stream)	Medium	Low	Medium	Medium
The Point, NC	Medium	Low	Medium	High
The Ten Fathom Ledge, NC	Medium	Low	Medium	Medium
Big Rock, NC	Medium	Low	Low	Medium
Charleston Bump, SC	Medium	Low	Medium	Medium
Hurl Rocks, SC	Medium	Low	Medium	Medium
The Point off Jupiter Inlet, FL	Medium	Low	Low	Low
Phragmatopoma (worm reefs) reefs off central E. coast of FL	High	Medium	Medium	High
nearshore hardbottom south of Cape Canaveral, FL	High	High	High	High
The Hump off Islamorada, FL	Medium	Low	Low	Medium
The Marathon Hump, FL	High	Low	Low	Medium
Pelagic Sargassum	High	Low	Low	Medium
Bogue Sound and New River estuaries, NC (Spanish mackerel)	High	High	High	Medium
Broad River, SC (cobia)	High	High	High	Medium
Mouth of the Altamaha including oyster reefs and marsh	High	Medium	Medium	Medium
State Outstanding Resource Waters	High	High	Medium	High
Indian River Lagoon, FL	Medium	Medium	Medium	Medium
Lake Worth Lagoon	High	High	High	Medium
North Carolina Strategic Habitat Areas	High	High	High	High
Bulls Bay, SC	High	Medium	High	Mediuim
ACE Basin SC	High	High	Medium	Medium

4.9.3.3 GIS of Coastal Migratory Pelagics Fishery Management Plan EFH and EFH-HAPCs

The Council has mapped the locations of EFH and EFH-HAPCs for coastal migratory pelagic species within the constraints of available information. To obtain copies of these maps, please visit the Council's Habitat and Ecosystem Internet Map Server at .safmc.net. While the Council

believes spatial depictions of EFH and EFH-HAPCs are informative, textual descriptions are the ultimate source for determining the limits of EFH and EFH-HAPCs.

4.9.4 Action X. Amend the Coral, Coral Reefs and Live/Hardbottom Habitat Fishery Management Plan (Coral FMP) to designate new Essential Fish Habitat-Habitat Areas of Particular Concern (EFH-HAPCs).

Alternative 1. No action. Do not amend the Coral FMP to designate new Essential Fish Habitat-Habitat Areas of Particular Concern (EFH-HAPCs). The following existing designations would remain in effect.

4.9.4.1 Coral, Coral Reefs and Live/Hardbottom Habitat Essential Fish Habitat

EFH for corals (stony corals, octocorals, and black corals) must incorporate habitat for over 200 species. EFH for corals include the following:

A. EFH for hermatypic stony corals includes rough, hard, exposed, stable substrate from Palm Beach County south through the Florida reef tract in subtidal to 30 meters (98 feet) depth, subtropical (15-35°C; 59-95°F), oligotrophic waters with high (30-35 ppt) salinity and turbidity levels sufficiently low enough to provide algal symbionts adequate sunlight penetration for photosynthesis. Ahermatypic stony corals are not light restricted and their EFH includes defined hard substrate in subtidal to outer shelf depths throughout the management area.

B. EFH for Antipatharia (black corals) includes rough, hard, exposed, stable substrate, offshore in high (30-35 ppt) salinity waters in depths exceeding 18 meters (54 feet), not restricted by light penetration on the outer shelf throughout the management area.

C. EFH for octocorals excepting the Order Pennatulacea (sea pens and sea pansies) includes rough, hard, exposed, stable substrate in subtidal to outer shelf depths within a wide range of salinity and light penetration throughout the management area.

D. EFH for Pennatulacea (sea pens and sea pansies) includes muddy, silty bottoms in subtidal to outer shelf depths within a wide range of salinity and light penetration.

Refer to Volume II of the FEP: Habitat and Species (SAFMC in prep.) for a more detailed description of habitat utilized by the managed species.

4.9.4.2 Coral, Coral Reefs, and Live/hardbottom Habitat Essential Fish Habitat - Habitat Areas of Particular Concern

Existing EFH-HAPCs for coral, coral reefs, and live/hardbottom include: The 10-Fathom Ledge, Big Rock, and The Point (North Carolina); Hurl Rocks and The Charleston Bump (South Carolina); Gray's Reef National Marine Sanctuary (Georgia); The *Phragmatopoma* (worm reefs) reefs off the central east coast of Florida; *Oculina* Banks off the east coast of Florida from Ft.

Pierce to Cape Canaveral; nearshore (0-4 meters; 0-12 feet) hardbottom off the east coast of Florida from Cape Canaveral to Broward County; offshore (5-30 meters; 15-90 feet) hardbottom off the east coast of Florida from Palm Beach County to Fowey Rocks; Biscayne Bay, Florida; Biscayne National Park, Florida; and the Florida Keys National Marine Sanctuary.

Alternative 2. Amend the Coral FMP to designate new Essential Fish Habitat-Habitat Areas of Particular Concern (EFH-HAPCs):

Sub-Alternative 2a. Broward County (FL) staghorn coral stand.
Detailed information on staghorn life history is included in Volume II of the FEP**.**

Sub-Alternative 2b. Deepwater Coral Habitat Areas of Particular Concern (Figure X)
Detailed information on Deepwater Coral Habitat Areas of Particular Concern is included in Volume II of the FEP and CE-BA1 (SAFMC 2009b)**.**

The management unit for coral includes coral belonging to the Class Hydrozoa (fire corals and hydrocorals) and coral belonging to the Class Anthozoa (sea fans, whips, precious corals, sea pens and stony corals). Coral reefs constitute hardottoms, deepwater banks, patch reefs and outer bank reefs as defined in the Coral, Coral Reefs and Live/Hardbottom Habitat FMP (SAFMC 1982). In addition, live rock comprises living marine organisms, or an assemblage thereof, attached to a hard substrate, including dead coral or rock (but excluding individual mollusk shells). Additional information on deep and shallow water corals is included in Volume II of the FEP.

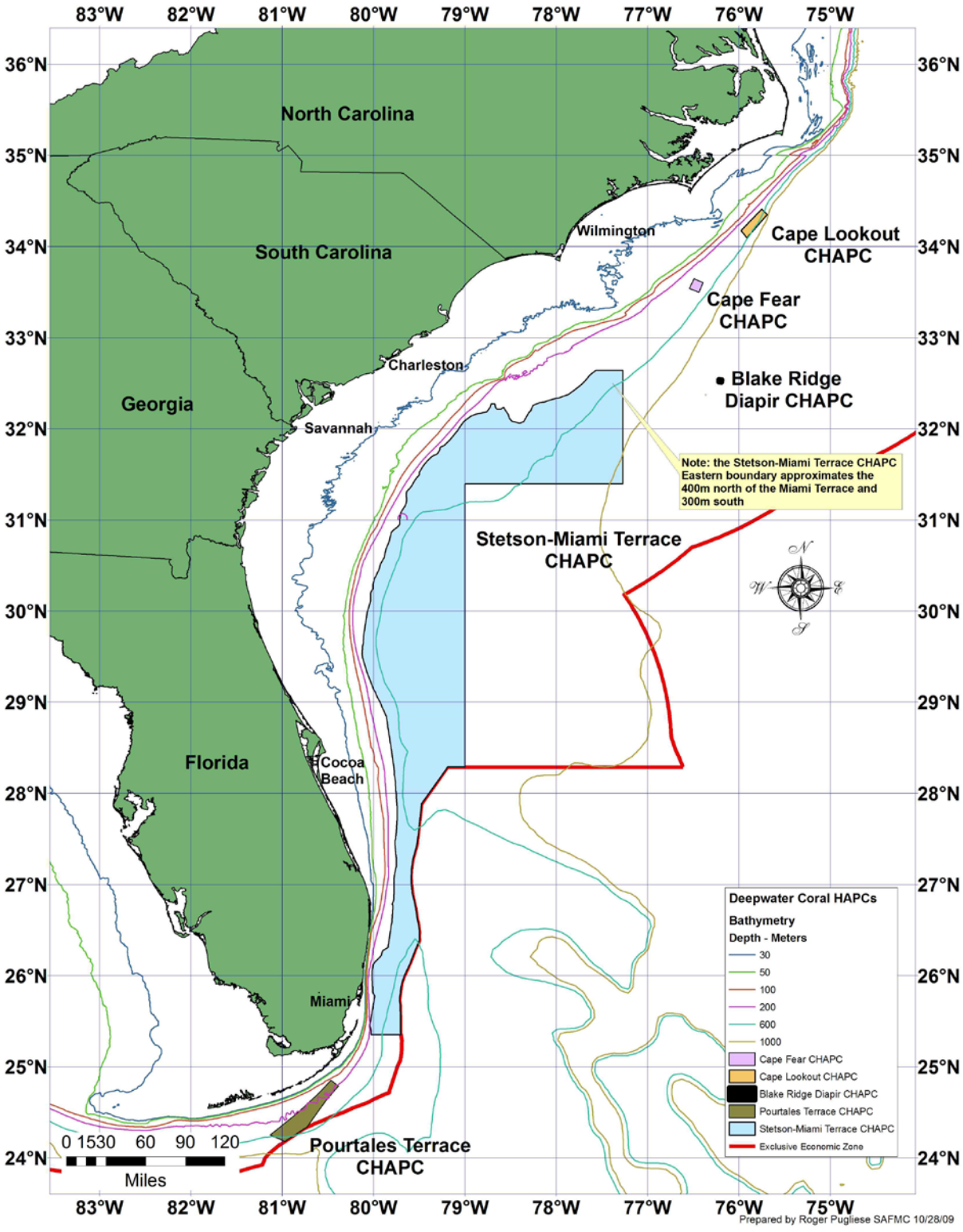

Figure X. Deepwater Coral Habitat Areas of Particular Concern (SAFMC 2009a).

A summary evaluation of the existing and proposed EFH-HAPC as it relates to the criteria is in **Table 4-15.**

Table 4-15. Summary evaluation of the EFH-HAPC for coral, coral reefs and live hardbottom habitat as it relates to the criteria.

EFH-HAPC and Criteria Evaluation	Ecological Function	Sensitivity to Environmental Degradation	Threat from Development Activities	Rarity of Habitat
Ten Fathom Ledge, NC	Medium	Low	Medium	Medium
Big Rock, NC	Medium	Low	Medium	Medium
The Point, NC	Medium	Low	Medium	Medium
Hurl Rocks, SC	Medium	High	High	Medium
Charleston Bump, SC	Medium	Low	Medium	Medium
Gray's Reef NMS, GA	High	Low	Low	Medium
Phragmatopoma worm reefs, FL	Medium	High	Medium	High
Oculina Banks from Ft. Pierce to Cape Canaveral, FL	High	Low	Low	High
Nearshore hardbottom off from Cape Canaveral to Broward County, FL	High	Medium	High	Medium
Offshore hardbottom from Palm Beach County to Fowey Rocks, FL	High	Low	Medium	Medium
Biscayne Bay, FL	Medium	Low	Medium	Medium
Biscayne National Park, FL	Medium		Medium	Low
Florida Keys NMS, FL	High	High	High	High
Broward Staghorn coral stand	High	High	Medium	High
Deepwater Marine Protected Areas	High	Low	Medium	Medium

4.9.4.3 GIS for Coral, Coral Reefs and Live Hardbottom Habitat Fishery Management Plan EFH and EFH-HAPCs

The Council has mapped the locations of EFH and EFH-HAPCs for coral, coral reefs and live hardbottom habitat within the constraints of available information. To obtain copies of these maps, please visit the Council's Habitat and Ecosystem Internet Map Server at .safmc.net. While the Council believes spatial depictions of EFH and EFH-HAPCs are informative, textual descriptions are the ultimate source for determining the limits of EFH and EFH-HAPCs.

4.9.5 Action X. Amend the Fishery Management Plan (FMP) for Pelagic *Sargassum* Habitat to designate new Essential Fish Habitat (EFH) and Essential Fish Habitat-Habitat Areas of Particular Concern (EFH-HAPCs).

Alternative 1. No action. Do not amend the *Sargassum* FMP to designate Essential Fish Habitat (EFH). The Council must designate EFH for all managed species including Pelagic *Sargassum* Habitat.

Alternative 2. Amend the *Sargassum* FMP (SAFMC 1998) to designate the following Essential Fish Habitat (EFH) and Essential Fish Habitat-Habitat Areas of Particular Concern (EFH-HAPCs):

Sub-Alternative 2a. EFH for Pelagic *Sargassum* encompasses the top ten meters of the water column in the South Atlantic EEZ.

Limiting the EFH identification to the upper 10 m of the surface was recommended by NMFS in the development of the FEIS (NMFS 2002) for the Pelagic *Sargassum* Habitat FMP. This area is the upper 10m of the surface of the area shown in Figure X.

Biological Impacts

The identification of EFH for pelagic *Sargassum* would not result in direct impacts to the biological resources of the west-central Atlantic Ocean. Rather, EFH designation under this option would provide a future opportunity for the Council to establish regulations to protect EFH from fishing activities in the EEZ and to review and recommend EFH conservation measures to protect surface waters from non-fishing activities which are undertaken, authorized, or funded by Federal agencies. Similarly, designation of pelagic *Sargassum* EFH would require Federal agencies to consult with NMFS on activities which may adversely affect that habitat.

In consideration of conditions limiting growth and survival of *Sargassum* and the known utilization of large rafts of *Sargassum* by early life stages of Federally managed fisheries and other marine species (Table 4), this alternative EFH designation only would encompass the uppermost 10 m of the marine water column.

Designation of near-surface oceanic and nearshore habitats as EFH for pelagic *Sargassum*, as an action independent of any others, would not impact the biological quality of those habitats. However, designation would provide an additional mechanism by which the Council could manage or influence man's activities which could cause or lead to the degradation of *Sargassum* EFH.

Economic Impacts

The identification of EFH for pelagic *Sargassum* will not have any direct economic impacts. However, this measure will enable the Council to protect essential fish habitat effectively and take timely actions when necessary which could lead to increased net economic benefits to society. Identification of EFH will require the Council to consider all operations or actions that might interact with or affect the EFH, and may trigger a consultation for any activity that may affect the habitat. The direct effects of additional regulatory consideration would be the financial costs of a protracted regulatory process. Additional effects would accrue to any restrictions imposed as a result of the evaluation of impact of these activities. A consultation

may incur costs associated with production delays, project/activity design modification, or mitigation measures. Since any restrictions that may subsequently be placed on these activities are unknown at this time, it is not possible to explicitly describe their effects.

Social Impacts

There would be few social impacts from this measure. The social impacts would most likely come from the actions that were associated with such a designation. The assumption would be that such designation would provide protection for habitat. In that case, the social impacts would be positive in the long-term. However, in some cases, protection of habitat may mean harvesting restrictions in areas where harvesting presently takes place or other actions which may impose constraints on those who harvest habitat. This would certainly impose negative short-term impacts that may be mitigated in the long term if productivity is increased.

Conclusion

Implementation of Sub-Alternative 2a would provide an additional resource concern by which the Council could intercede in Federal actions to further the conservation of EFH and dependent Federally-managed fisheries. Currently, areas considered for designation as EFH for pelagic *Sargassum* already have been specified as EFH for one or more of the various Council and NMFS managed fisheries: shrimp, snapper grouper, dolphin and wahoo, coastal migratory pelagics, and highly migratory species.

Alternative 3. Amend the *Sargassum* FMP to designate the following Essential Fish Habitat-Habitat Areas of Particular Concern (EFH-HAPCs):

Sub-Alternative 3a. The Charleston Bump Complex

The Charleston Bump (Figure X) is a bottom feature of great topographic relief located southeast of Charleston South Carolina (Sedberry et al., 2000) The Bump complex includes a quasi-permanent, cyclonic eddy the "Charleston Gyre" with attendant upwelling of nutrient-rich deep water sets-up in the wake of the "Charleston Bump". Upwelling results in persistent primary and secondary production that results in an important, if not essential feeding environment for larvae of fishes and the adults that congregate to spawn there. The hydrodynamics of the eddy, thermal fronts associated with the Gulf Stream and the benthic habitat contribute to attract pelagic fish and retain and concentrate larvae, juvenile, prey for larger fish (Sedberry et al., 2000) and pelagic *Sargassum*. Therefore this area is an EFH-HAPC for all life pelagic *Sargassum*.

Sub-Alternative 3b. The Point, NC.

"The Point" off Cape Hatteras (Figure X) is also highly productive due to the confluence of as many as four water masses. Adults of highly migratory species congregate in this area, while the diversity of larval fishes found there is truly astounding (Table 18b of the Habitat Plan (SAFMC, 1998b).

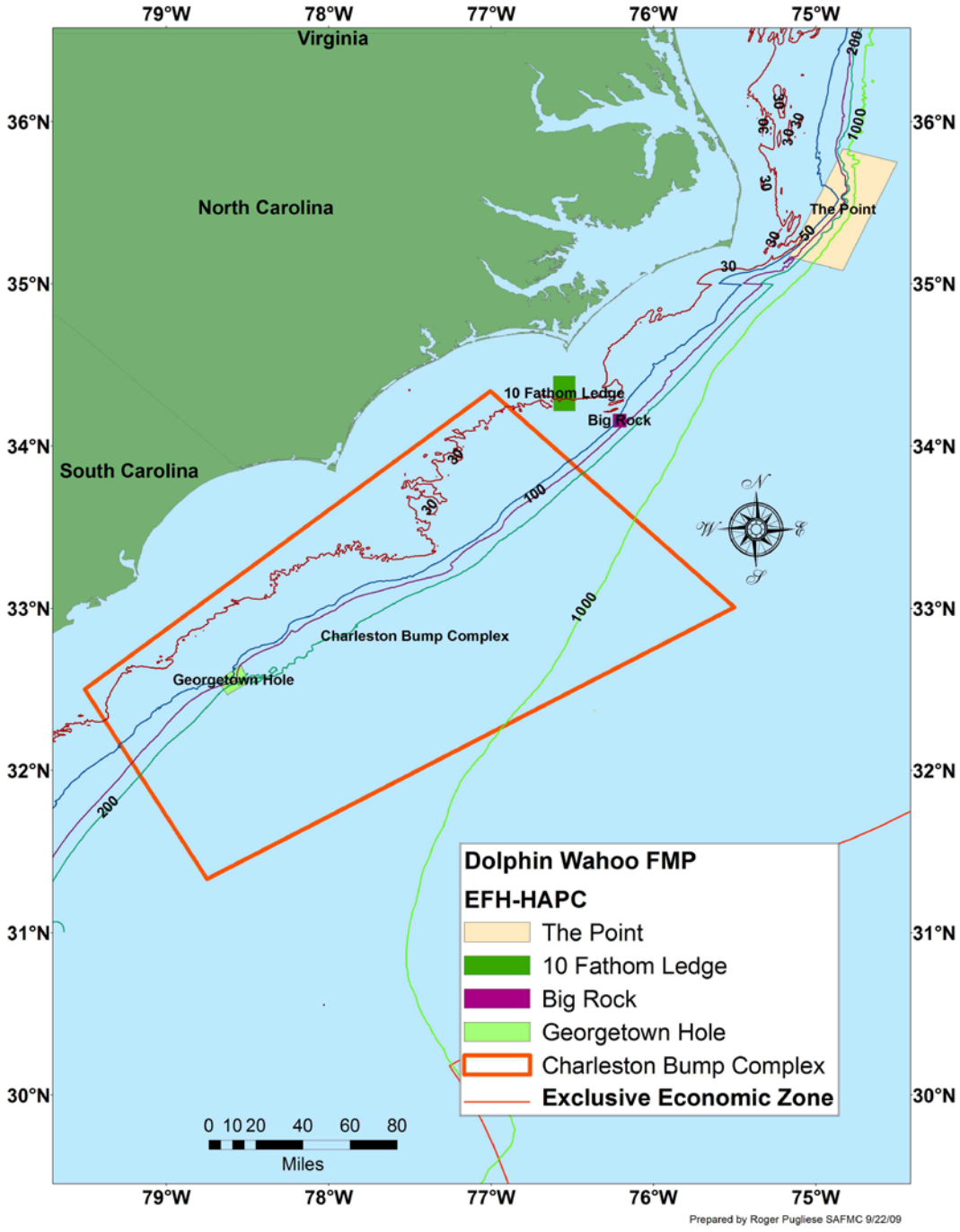

Figure X. "The Charleston Bump Complex" and "The Point" Essential Fish Habitat-Habitat Areas of Particular Concern (Source: Dolphin Wahoo FMP SAFMC 2002).

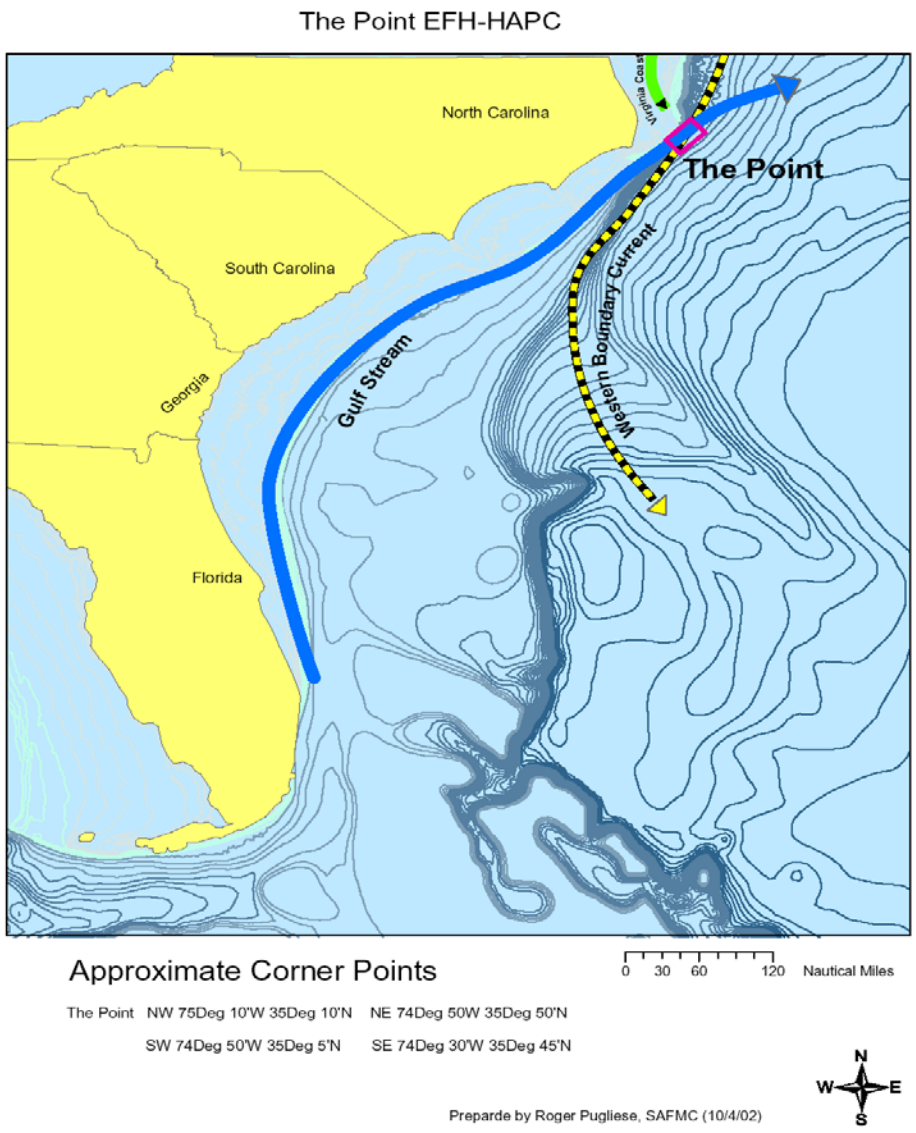

Figure X. "The Point" Essential Fish Habitat-Habitat Area of Particular Concern (Source: Dolphin Wahoo FMP SAFMC 2002).