South Atlantic Fishery Management Council
Users Guide to
Essential Fish Habitat Designations

Final Draft
November 2011

Purpose and Scope of this Guide

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) requires and the federal fishery management councils and NOAA Fisheries to designate Essential Fish Habitat (EFH) for species managed under federal fishery management plans. This requirement includes designation of Essential Fish Habitat -Habitat Areas of Particular Concern (EFH-HAPCs), which are subsets of EFH based on the ecological importance, susceptibility to human-induced environmental degradation, susceptibility to stress from development, and rarity of the habitat type. Accordingly in 1998, the South Atlantic Fishery Management Council (SAFMC) developed and enacted amendments to the nine fishery management plans under SAFMC jurisdiction or co-jurisdiction[1]; these amendments were bundled into a single administrative action referred to as a "comprehensive amendment" (SAFMC 1998b). The EFH designations for a later fishery management plan under SAFMC jurisdiction, dolphin and wahoo, appear in that fishery management plan. In addition, new EFH-HAPCs are being designated through CEBA2 for the snapper grouper FMP and coral FMP and EFH for the Pelagic Sargassum Habitat FMP. The technical information to support the EFH designations is synthesized and reported by SAFMC in a report commonly referred to by its abbreviated title *Habitat Plan for the South Atlantic Region* SAFMC (1998a) and in the respective fishery management plans. More recently, the *Fishery Ecosystem Plan of the South Atlantic Region* (SAFMC 2009) reviews and updates this supporting information as required by federal regulations[2].

During development of the *Fishery Ecosystem Plan of the South Atlantic Region*, discussions among SAFMC's advisory panels and partners identified portions of the EFH designations that were not clear and had led to differences in how EFH assessments were developed by federal action agencies. With one exception[3], these differences were minor in that differences did not significantly affect how the NMFS Southeast Regional Office, Habitat Conservation Division

[1] Red drum was managed by SAFMC at the time of these EFH designations. However, in 2008, management of Atlantic red drum was transferred from the Magnuson-Stevens Act to the Atlantic Coast Act, and with that transfer the EFH designations for red drum became void; although NMFS may still use the Fish and Wildlife Coordination Act to comment on the affects of a project to Atlantic red drum.

[2] Specifically, Volume II of *Fishery Ecosystem Plan of the South Atlantic Region* (SAFMC 2009).

[3] The exception is the HAPC designation for golden and blueline tilefish. These species managed within the fishery management plan for the snapper-grouper complex have a life history that differs markedly from other species within this complex. Hence the HAPC designation made for the complex as a whole does not protect habitat for golden and blueline tilefish. An HAPC designation has been proposed and is undergoing review as part of SAFMC's Comprehensive Ecosystem-Based Amendment 2.

(SER HCD), evaluated impacts to EFH or developed conservation recommendations. However it was recognized that clarification of these points would improve efficiency of the EFH program, responsiveness of federal action agencies required to work with NMFS and SAFMC to protect EFH, and the focus of EFH assessments developed by consultants and the general public. For example, a specific item identified for clarification is a more complete listing of state designated nursery habitats (which are EFH under three fishery management plans). This document provides the clarifications requested by the advisory panels. As noted above, the technical information supporting the EFH designations appears in *Fishery Ecosystem Plan of the South Atlantic Region* (SAFMC 2009) and general information on the EFH provisions of the Magnuson-Stevens Act and its implementing regulations (50 CFR 900) can be found at <*insert url*>; these sources should be reviewed for information on the components of EFH assessments, steps to EFH consultations, and other aspects of EFH program operation. The next comprehensive review of SAFMC's EFH program is scheduled for completion by December 2016.

Coral-HAPCs: Please note that this document is limited to HAPCs designated under the EFH provisions of the Magnuson-Stevens Act. Pursuant to the habitat based Fishery Management plan for Coral, Coral Reefs and Live/Hard Bottom Habitat, SAFMC can use its regulatory authority to designate coral-HAPCs which eliminate or reduce the impact of fishing on those habitats,. By itself, the coral-HAPC designation carries no regulatory authority regarding impacts from non-fishing activities. However, because the comprehensive amendment (SAFMC 1998b) included designation of the only two coral-HAPCs in existence at that time as EFH-HAPCs, these coral-HAPCs receive special consideration because of the co-designation. In 2010, SAFMC completed the designation process for five new coral-HAPCs. The Council isco-designating the new coral-HAPC as EFH-HAPCs via Comprehensive Ecosystem-Based Amendment 2. Until co-designation is approved, as discussed on pages X to X, only the hardbottom areas (*i.e.*, not the soft bottom areas) within the coral-HAPCs are co-designated EFH-HAPCs and have special significance within the regulatory process for non-fishing activities.

Fishery Management Plan for the Shrimp Fishery of the South Atlantic Region (1993)

EFH Designation Boundary
SAFMC's EFH designation for shrimp applies to all waters from the EEZ to the landward most influence of the tide, from the Virginia/North Carolina border to the Dry Tortugas in the Florida Keys. Within this area, the specific habitats and locations that are EFH are listed below.
<Map>

Designations in the Comprehensive Amendment for Penaeid Shrimp (SAFMC 1999b)
For penaeid shrimp, Essential Fish Habitat (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 Habitat Plan. Inshore nursery areas include tidal freshwater (palustrine), estuarine, and marine emergent wetlands (e.g., intertidal marshes); tidal palustrine forested areas; mangroves; tidal freshwater, estuarine, and marine submerged aquatic vegetation (e.g., seagrass); and subtidal and intertidal non-vegetated flats. This applies from North Carolina through the Florida Keys.

Areas which meet the criteria for EFH-Habitat Areas of Particular Concern (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.

Clarifications
1. The public and resource agencies have requested a complete list of the state-designated nursery habitats and state identified overwintering areas. Appendix 1 contains a complete list of state-designated nursery habitats. No state-identified overwintering grounds have been indentified for penaeid shrimp.

2. Coastal inlets include the throat of the inlet as well as shoal complexes associated with the inlets. Shoals formed by waters moving landward through the inlet are referred to as flood tidal shoals, and shoals formed by waters moving waterward through the inlet are referred to as ebb tidal shoals.

Designations in the Comprehensive Amendment for Rock Shrimp and Royal Red Shrimp (SAFMC 1999b)
For rock shrimp, Essential Fish Habitat (EFH) consists of offshore terrigenous and biogenic sand bottom habitats from 18 to 182 meters in depth with highest concentrations occurring between 34 and 55 meters. This applies for all areas from North Carolina through the Florida Keys. 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 essential fish habitat because it provides a mechanism to disperse rock shrimp larvae.

Essential Fish Habitat (EFH) for royal red shrimp include the upper regions of the continental slope from 180 meters (590 feet) to about 730 meters (2,395 feet), with concentrations found at depths of between 250 meters (820 feet) and 475 meters (1,558 feet) over blue/black mud, sand, muddy sand, or white calcareous mud. In addition the Gulf Stream is an essential fish habitat because it provides a mechanism to disperse royal red shrimp larvae.

Clarifications

No clarifications with these designations have been requested during EFH consultations.

EFH Designation Boundary
SAFMC's EFH designation for snapper grouper species applies to all waters from the EEZ to the landward most influence of the tide, from the Virginia/North Carolina border to the Dry Tortugas in the Florida Keys. Within this area, the specific habitats and locations that are EFH are listed below.
<Map>

Designations in the Comprehensive Amendment for Snapper Grouper (SAFMC 1999b)
Essential Fish Habitat (EFH) for snapper-grouper species includes coral reefs, live/hard bottom, submerged aquatic vegetation, artificial reefs and medium to high profile outcroppings on and around the shelf break zone from shore to at least 600 feet (but to at least 2000 feet for wreckfish) where the annual water temperature range is sufficiently warm to maintain adult populations of members of this largely tropical complex. EFH includes the spawning area in the water column above the adult habitat and the additional pelagic environment, including *Sargassum*, required for larval survival and growth up to and including settlement. In addition the Gulf Stream is an essential fish habitat because it provides a mechanism to disperse snapper grouper larvae.

For specific life stages of estuarine dependent and nearshore snapper-grouper species, 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.

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

Clarifications
1. The public and resource agencies have requested a complete list of the localities of known or likely periodic spawning aggregations; Appendix 2 contains this list.

2. Coastal inlets include the throat of the inlet as well as shoal complexes associated with the inlets. Shoals formed by waters moving landward through the inlet are referred to as flood tidal shoals, and shoals formed by waters moving waterward through the inlet are referred to as ebb tidal shoals.

3. The public and resource agencies have requested a complete list of the state-designated nursery habitats. Appendix 1 contains a complete list of state-designated nursery habitats.

4. Both golden tilefish and blueline tilefish have habitat requirements that differ substantially from other species managed under the snapper-grouper fishery management plan. Accordingly, the existing designation of HAPC for snapper-grouper species is not germane to golden tilefish and blueline tilefish. The Council through CEBA 2 (SAFMC 2011) is proposing the deepwater snapper grouper MPAs and golden tilefish and blueline tilefish habitat as EFH-HAPCs under the Snapper Grouper FMP as follows:

EFH-HAPCs for golden tilefish to include irregular bottom comprised of troughs and terraces inter-mingled with sand, mud, or shell hash bottom. Mud-clay bottoms in depths of 150-300 meters are HAPC. Golden tilefish are generally found in 80-540 meters, but most commonly found in 200-meter depths.

EFH-HAPC for blueline tilefish to include irregular bottom habitats along the shelf edge in 45-65 meters depth; shelf break; or upper slope along the 100-fathom contour (150-225 meters); hardbottom habitats characterized as rock overhangs, rock outcrops, manganese-phosphorite rock slab formations, or rocky reefs in the South Atlantic Bight; and the Georgetown Hole (Charleston Lumps) off Georgetown, SC.

EFH Designation Boundary
SAFMC's EFH designation for golden crab applies to all waters from the EEZ to the landward most influence of the tide, from the Virginia/North Carolina border to the Dry Tortugas in the Florida Keys. Within this area, the specific habitats and locations that are EFH are listed below. <Map>

Designations in the Comprehensive Amendment for Golden Crab (SAFMC 1999b)
Essential fish habitat (EFH) for golden crab includes the U.S. Continental Shelf from Chesapeake Bay south through the Florida Straits (and into the Gulf of Mexico). In addition, the Gulf Stream is an EFH because it provides a mechanism to disperse golden crab larvae. The detailed description of seven EFH types (a flat foraminferan ooze habitat; distinct mounds, primarily of dead coral; ripple habitat; dunes; black pebble habitat; low outcrop; and soft-bioturbated habitat) for golden crab is provided in Wenner et al. (1987).

There is insufficient knowledge of the biology of golden crabs to identify spawning and nursery areas and to identify EFH-Habitat Areas of Particular Concern (EFH-HAPCs) at this time. As information becomes available, the Council will evaluate such data and identify EFH-HAPCs as appropriate through the framework.

Clarifications
1. The Council views the first sentence as a general, introductory statement to the later specific areas designated as EFH. In addition to the Gulf Stream, seven habitat types provided in Wenner et al. (1987)[4] are EFH for golden crab; those seven habitat-by-depth combinations are:

- Flat foraminiferan ooze habitat (405 to 567 meters). This habitat type is characterized by pteropod-foraminiferan debris mixed with larger shell fragments, a sediment surface mostly covered with a black phosphorite precipitate.
- Distinct mounds, primarily of dead coral at depths of 503 to 555 meters. Coral mounds rose approximately 15 to 23 meters in height above the surrounding sea floor and included several that were thinly veneered with a fine sediment and dead coral fragments, as well as a number that were thickly encrusted with live branching ahermatypic corals, sponges, pennatulids, and crinoids.
- Ripple habitat (320 to 539 meters)
- Dunes (389 to 472 meters)
- Black pebble habitat (446 to 564 meters)
- Low outcrop (466 to 512 meters)
- Soft-bioturbated habitat (293 to475 meters)

[4] Wenner, EL, Ulrich, GF, and Wise, JB. 1987. Exploration for golden crab, *Geryon fenneri*, in the South Atlantic Bight: Distribution, population structure, and gear assessment. Fishery Bulletin. 85: 547-560


South Atlantic Fishery Management Council
"To Conserve and Manage"


NOAA
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE

EFH Designation Boundary
SAFMC's EFH designation for spiny lobster applies to all waters from the EEZ to the landward most influence of the tide, from the Virginia/North Carolina border (although see below) to the Dry Tortugas in the Florida Keys. Within this area, the specific habitats and locations that are EFH are listed below.
<Map>

Designations in the Comprehensive Amendment for Spiny Lobster (SAFMC 1999b)
Essential Fish Habitat (EFH) for spiny lobster includes nearshore shelf/oceanic waters; shallow subtidal bottom; seagrass habitat; unconsolidated bottom (soft sediments); coral and live/hard bottom habitat; sponges; algal communities (*Laurencia*); and mangrove habitat (prop roots). In addition the Gulf Stream is an EFH because it provides a mechanism to disperse spiny lobster larvae.

Areas which meet the criteria for EFH-Habitat Areas of Particular Concern (EFH-HAPCs) for spiny lobster include Florida Bay, Biscayne Bay, Card Sound, and coral/hard bottom habitat from Jupiter Inlet, Florida through the Dry Tortugas, Florida.

Clarifications
1. In practice, the northern limit for inshore benthic habitats designated EFH for spiny lobster is Sebastian Inlet, the northern extent of the offshore benthic habitats designated as EFH for spiny lobster is the area offshore of the St. Johns River.

EFH Designation Boundary
SAFMC's EFH designation for coastal migratory pelagic species applies to all waters from the EEZ to the landward most influence of the tide, from the Virginia/North Carolina border (although see below) to the Dry Tortugas in the Florida Keys. Within this area, the specific habitats and locations that are EFH are listed below.
<Map>

Designations in the Comprehensive Amendment for Coastal Migratory Pelagic Species (SAFMC 1999b)
Essential Fish Habitat (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 is an essential fish habitat 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.

Areas which meet the criteria for EFH-Habitat Areas of Particular Concern (EFH-HAPCs) include sandy shoals of Capes Lookout, Cape Fear, and Cape Hatteras from shore to the ends of the respective shoals, but shoreward of the Gulf stream; The Point, The Ten-Fathom Ledge, and Big Rock (North Carolina); The Charleston Bump and Hurl Rocks (South Carolina); The Point off Jupiter Inlet (Florida); *Phragmatopoma* (worm reefs) reefs off the central east coast of Florida; nearshore hard bottom south of Cape Canaveral; The Hump off Islamorada, Florida; The Marathon Hump off Marathon, Florida; The "Wall" off of the Florida Keys; Pelagic *Sargassum*; and Atlantic coast estuaries with high numbers of Spanish mackerel and cobia based on abundance data from the ELMR Program. Estuaries meeting this criteria for Spanish mackerel include Bogue Sound and New River, North Carolina; Bogue Sound, North Carolina (Adults May-September salinity >30 ppt); and New River, North Carolina (Adults May-October salinity >30 ppt). For Cobia they include Broad River, South Carolina; and Broad River, South Carolina (Adults & juveniles May-July salinity >25ppt).

Clarifications
1. Coastal inlets include the throat of the inlet as well as shoal complexes associated with the inlets. Shoals formed by waters moving landward through the inlet are referred to as flood tidal shoals, and shoals formed by waters moving waterward through the inlet are referred to as ebb tidal shoals.

2. The public and resource agencies have requested a complete list of the state-designated nursery habitats. Appendix 1 contains a complete list of state-designated nursery habitats.

The Fishery Management Plan for Coral, Coral Reefs, and Live/Hard Bottom Habitats of the South Atlantic Region (1995)

EFH Designation Boundary
This fishery management plan is administered by SAFMC Management Council. SAFMC's EFH designation for coral and coral reefs applies to all waters from the EEZ to the landward most influence of the tide, from the Virginia/North Carolina border (although see below) to the Dry Tortugas in the Florida Keys. Within this area, the specific habitats and locations that are EFH are listed below.
<Map>

Designations in the Comprehensive Amendment for Coral and Coral Reefs (SAFMC 1999b)
A. Essential Fish Habitat (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 m depth, subtropical (15°-35° C), oligotrophic waters with high (30-35o/oo) salinity and turbidity levels sufficiently low enough to provide algal symbionts adequate sunlight penetration for photosynthesis. Ahermatypic stony corals are not light restricted and their essential fish habitat includes defined hard substrate in subtidal to outer shelf depths throughout the management area.

B. EFH for *Antipatharia* (black corals) includes rough, hard, exposed, stable substrate, offshore in high (30-35o/oo) 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.

Areas which meet the criteria for EFH-Habitat Areas of Particular Concern (EFH-HAPCs) for coral, coral reefs, and live/hard bottom include The 10-Fathom Ledge, Big Rock, and The Point (North Carolina); Hurl Rocks and The Charleston Bump (South Carolina); Gray's Reef National Marine Sanctuary (Georgia); The *Phragmatopoma* (worm reefs) reefs off the central east coast of Florida; Oculina Banks off the east coast of Florida from Ft. Pierce to Cape Canaveral; nearshore (0-4 meters; 0-12 feet) hard bottom off the east coast of Florida from Cape Canaveral to Broward County); offshore (5-30 meter; 15-90 feet) hard bottom off the east coast of Florida from Palm Beach County to Fowey Rocks; Biscayne Bay, Florida; Biscayne National Park, Florida; and the Florida Keys National Marine Sanctuary.

Clarifications

1. <Several fishery management plans refer in different ways to coral, coral reef, or hardbottom in their EFH designations. The public and resource agencies have requested a more uniform application of these terms in the designations. Guidance on how this might be done is needed from the advisory panels.>

Appendix 1. State-Designated Nursery Areas.

The table below references the state regulations that designate areas that serve as nursery habitat and warrant special protection under state law. These areas are "state-designated nursery habitat" under the EFH or EFH-HAPC designations for penaeid shrimp, snapper grouper species, and coastal migratory pelagic species.

Designation	Regulation	Comments
North Carolina		
Inland Primary Nursery Areas	15A NCAC 10C .0503	
Primary Nursery Areas	15A NCAC 03R .0103	
Permanent Secondary Nursery Areas	15A NCAC 03R .0104	
Secondary Nursery Areas	15A NCAC 03R .0105	
Strategic Habitat Areas and Critical Habitat Areas	Coastal Habitat Protection Plan, Chapter 8	None as of November 30, 2010
Crab Spawning Sanctuaries	15A NCAC 03R .0110	
Oyster Sanctuaries	15A NCAC 03R .0117	
Outstanding Resource Waters	15A NCAC 02B .0225	
South Carolina		
Outstanding Resource Waters	DHEC R. 61-69	Only coastal counties included as state designated nursery grounds
Outstanding National Resource Waters	DHEC R. 61-68	None coastal as of November 30, 2010
Georgia		
Outstanding National Resource Waters	391-3-6-.03	None as of November 30, 2010
Florida		
Outstanding Florida Waters	62-302.700, F.A.C.	Only State Aquatic Preserves included as state-designated nursery grounds

Excerpts from the North Carolina Administrate Code (NCAC) appear on the following pages. These excerpts identify the specific locations of the state-designated nursery areas in North Carolina waters.

Appendix 1 (continued). State-Designated Nursery Areas—South Carolina.

In South Carolina, DHEC R. 61-69 designated Outstanding Resources Waters. Those estuarine Outstanding Resources Waters within coastal counties are state-designated nursery areas; the table below lists those estuarine Outstanding Resources Waters.

Waterbody	County	Description
Bass Creek	Beaufort	The entire creek tributary to May River
Bull Creek	Beaufort	The entire creek tributary to the Cooper River and May River
Callawassie Creek	Beaufort	The entire creek tributary to the Colleton River
Chechessee Creek	Beaufort	The entire creek tributary to the Colleton River and the Chechessee River
Colleton River	Beaufort	The entire stream tributary to the Chechessee River
Cooper River	Beaufort	The river form New River to Ramshorn Creek
May River	Beaufort	The entire stream tributary to Calibogue Sound
Okatie River	Beaufort	The entire river tributary to Colleton River
Sawmill Creek	Beaufort	The entire creek tributary to Colleton River
Adams Creek	Charleston	The entire creek tributary to Bohicket Creek
Bailey Creek	Charleston	The entire creek tributary to St. Pierre Creek
Big bay Creek	Charleston	The entire creek tributary to the South Edisto River
Bohicket Creek	Charleston	The entire creek tributary from North Edisto River to Church Creek
Bull's Bay	Charleston	The entire Bay
Bullyard Sound	Charleston	The entire Sound
Cape Romain Harbor	Charleston	The entire Harbor
Caper's Inlet	Charleston	The entire stream tributary to the Atlantic Ocean
Church Creek	Charleston	That portion of the creek from Wadmalaw Sound to Ravens Point
Copahee Sound	Charleston	The entire Sound
Dawho River	Charleston	The entire river from The South Edisto River to the North Edisto River
Fishing Creek	Charleston	From its headwaters to a point 2 miles from its mouth
Fishing Creek	Charleston	From a point 2 miles from its mouth to its confluence with St. Pierre Creek
Fishing Creek	Charleston	The entire creek tributary to Dawho River
Frampton Creek	Charleston	The entire creek tributary to Frampton Inlet
Frampton Inlet	Charleston	The entire inlet tributary to the Atlantic Ocean
Garden Creek	Charleston	The entire creek tributary to Toogoodoo Creek
Gibson Creek	Charleston	The entire creek tributary to Wadmalaw River

Intracoastal Waterway	Charleston	That portion of the waterway from Gibson Creek to the confluence of Wadmalaw Sound and Stono River
Intracoastal Waterway	Charleston	From Dawho River to Gibson Creek
Jeremy Inlet	Charleston	The entire inlet tributary to the Atlantic Ocean
Leadenwah Creek	Charleston	The entire creek tributary to the North Edisto River
Long Creek	Charleston	The entire creek tributary to Steamboat Creek
Waterbody	**County**	**Description**
Lower Toogoodoo Creek	Charleston	From a point 3 miles from its mouth to its confluence with Toogoodoo Creek
Mark Bay	Charleston	The entire Bay
Mcleod Creek	Charleston	The entire creek tributary to the North Edisto River (Also called Tom Point Creek)
Milton Creek	Charleston	The entire creek tributary to St. Pierre Creek
Mud Creek	Charleston	The entire creek tributary to the South Edisto River
North Edisto River	Charleston	From its headwaters to the Intracoastal Waterway
North Edisto River	Charleston	From Steamboat Creek to the Atlantic Ocean
Ocella Creek	Charleston	The entire creek tributary to the North Edisto River
Oyster House Creek	Charleston	The entire stream tributary to Wadmalaw River
Price Inlet	Charleston	The entire stream tributary to the Atlantic Ocean
Privateer Creek	Charleston	The entire creek tributary to the North Edisto River
Russell Creek	Charleston	The entire creek tributary to Dawho River
Sand Creek	Charleston	The entire creek tributary to Steamboat Creek
Scott Creek	Charleston	The entire creek from Big Bay Creek to Jeremy Inlet
Shingle Creek	Charleston	The entire creek tributary to St. Pierre Creek
South Creek	Charleston	The entire creek tributary to Ocella Creek
St. Pierre Creek	Charleston	The entire creek tributary to the South Edisto River
Steamoat Creek	Charleston	The entire creek tributary to the North Edisto River
Store Creek	Charleston	The entire creek tributary to St. Pierre Creek
Swinton Creek	Charleston	The entire creek tributary to Lower Toogoodoo Creek
Tom Point Creek	Charleston	The entire creek tributary to the North Edisto River (Also Called McLeod Creek)
Toogoodoo Creek	Charleston	The entire creek tributary to the North Edisto River
Townsend River	Charleston	The entire river tributary to Frampton Inlet
Wadmalaw River	Charleston	The entire river from Wadmalaw Sound to the North Edisto River
Wadmalaw Sound	Charleston	The entire sound
Westbank Creek	Charleston	The entire creek tributary to the North Edisto River

Whooping Island Creek	Charleston	The entire creek tributary to Steamboat Creek
Edisto River	Charleston, Colleton	From U.S. 17 to its confluence with the Dawho River and the South Edisto River
South Edisto River	Charleston, Colleton	From Dawho River to Mud Creek
Alligator Creek	Colleton	The entire creek tributary to the South Edisto River
Mosquito Creek	Colleton	That portion of the creek from Bull Cut to the South Edisto River
Sampson Island Creek	Colleton	The entire creek tributary to the South Edisto River
Bass Hole Bay	Georgetown	The entire bay between Old Man Creek and Debidue Creek
Bly Creek	Georgetown	The entire creek tributary to Old Man Creek
Bob's Garden Creek	Georgetown	The entire creek tributary to Jones Creek
Waterbody	**County**	**Description**
Boor Creek	Georgetown	The entire creek between Jones Creek and Wood Creek
Bread and Butter Creek	Georgetown	The entire creek tributary to Town Creek
Clambank Creek	Georgetown	The entire creek tributary to Town Creek
Cooks Creek	Georgetown	The entire creek between Old Man Creek and Debidue Creek
Crabhaul Creek	Georgetown	The entire creek tributary to Old Man Creek
Debidue Creek	Georgetown	That portion of the ck from confluence with Cooks Ck to North Inlet and all tidal cks including those on western shore between Bass Hole Bay & Cooks Ck
Duck Creek	Georgetown	The entire creek tributary to Jones Creek
Jones Creek	Georgetown	That portion of the creek from a point midway between its confluence with Duck Creek and Noble Slough to North Inlet
North Inlet	Georgetown	The entire inlet tributary to the Atlantic Ocean
North Santee River	Georgetown	From 1000 feet below the Intracoastal Waterway to the Atlantic Ocean
Old Man Creek	Georgetown	The entire creek tributary to Town Creek
Sea Creek Bay	Georgetown	The entire bay tributary to Old Man Creek
Sixty Bass Creek	Georgetown	That portion of the creek from a point 0.4 mile from its confluence with Town Creek to North Inlet
South Santee River	Georgetown	From 1000 feet below the Intracoastal Waterway to the Atlantic Ocean
Town Creek	Georgetown	That portion of the creek from its eastern confluence with Clambank Creek to North Inlet
Wood Creek	Georgetown	The entire creek between Boor Creek and Jones Creek

Little Pee Dee River	Horry, Marion	That portion from the confluence with Lumber River to the confluence with Great Pee Dee River

Appendix 1 (continued). State-Designated Nursery Areas—Florida.

In Florida, Florida Administrative Code (F.A.C) 62-302.700 designates Outstanding Florida Waters. Those estuarine Outstanding Florida Waters that are Florida State Aquatic Preserves within estuarine waters are state-designated nursery areas; the table below lists those estuarine Outstanding Florida Waters, see F.A.C. 62-302.700 (9)(h). The Florida Department of Environmental Protection provides GIS data to show precise boundaries <*insert url*>.

Florida State Aquatic Preserve	County
Banana River (as mod. 8-8-94)	Brevard
Biscayne Bay (Cape Florida)	Miami-Dade and Monroe
Biscayne Bay (Card Sound) (12-1-82)	Miami-Dade and Monroe
Coupon Bight	Monroe
Fort Clinch State Park	Nassau
Guana River Marsh (8-8-94)	St. Johns
Indian River Malabar to Vero	Brevard, Palm Beach and Indian River
Indian River Malabar to Vero (additions)	Brevard, Palm Beach and Indian River
Indian River Vero Beach to Ft. Pierce (as mod. 10-4-90)	Indian River and St. Lucie
Jensen Beach to Jupiter Inlet (as mod. 10-4-90)	Martin, Palm Beach and St. Lucie
Lignumvitae Key	Monroe
Loxahatchee River-Lake Worth Creek (as mod. 8-8-94)	Martin and Palm Beach
Mosquito Lagoon	Volusia and Brevard
Nassau River-St. Johns River Marshes	Nassau and Duval
North Fork, St. Lucie	St. Lucie and Martin
Pellicer Creek	St. Johns and Flagler
Tomoka Marsh	Volusia and Flagler

Appendix 2. Localities of known or likely periodic spawning aggregations of snapper grouper species.

<under development, will be based on SAFMC's GIS Web Services>