

Essential Fish Habitat:

**New Marine Fish Habitat Conservation Mandate for
Federal Agencies**



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Executive Summary

The 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) set forth a new mandate for the National Marine Fisheries Service (NMFS), regional fishery management councils (FMC), and other Federal agencies to identify and protect important marine and anadromous fish habitat. The EFH provisions of the MSFCMA support one of the Nation's overall marine resource management goals - maintaining sustainable fisheries. Essential to achieving this goal is the maintenance of suitable marine fishery habitat quality and quantity. The FMCs, with assistance from NMFS, have delineated "essential fish habitat" (EFH) for managed species. As new FMPs are developed, EFH for newly managed species will be defined as well. Federal action agencies which fund, permit, or carry out activities that may adversely impact EFH are required to consult with NMFS regarding the potential effects of their actions on EFH, and respond in writing to NMFS or FMC recommendations. In addition, NMFS and the FMCs may comment on and make recommendations to any state agency on their activities which may effect EFH.

On December 19, 1997, interim final rules were published in the Federal Register (Vol. 62, No. 244) which specify procedures for implementation of the EFH provisions of the MSFCMA. These rules address, in detail, the coordination, consultation, and recommendation requirements of the MSFCMA. Measures recommended by NMFS or an FMC to protect EFH are advisory, not proscriptive.

Within the area encompassed by the NMFS Southeast Region, EFH has been identified for hundreds of marine species covered by 20 fishery management plans (FMPs), under the auspices of the Gulf of Mexico, South Atlantic, or Caribbean FMC or the NMFS. Generic FMP amendments delineating EFH for species managed by the three FMCs were completed in early 1999. In addition, EFH for some species managed by the Mid-Atlantic FMC have been identified to extend as far south as the Florida Keys.

Wherever possible, NMFS intends to use existing interagency coordination processes to fulfill EFH consultations for Federal agency actions that may adversely affect EFH. Provided certain regulatory specifications are met, EFH consultations will be incorporated into interagency procedures established under the National Environmental Policy Act, Endangered Species Act, Clean Water Act, Fish and Wildlife Coordination Act, or other applicable statutes. If existing processes cannot adequately address EFH consultation requirements, appropriate new procedures should be developed in cooperation with the NMFS. Programmatic consultations may be implemented or General Concurrences may be developed when program or project impacts are individually and cumulatively minimal in nature.

Moreover, NMFS will work closely with Federal agencies on programs requiring either expanded or abbreviated individual project consultations.

An effective, interagency EFH consultation process is vital to ensure that Federal actions are consistent with the MSFCMA resource management goals. The NMFS will strive to work with action agencies to foster an understanding of EFH consultation requirements and identify the most efficient interagency mechanisms to fulfill agency responsibilities.

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New Marine Fish Habitat Conservation Mandate for Federal Agencies

Introduction

This document has been prepared by the Southeast Regional Office of the National Marine Fisheries Service (NMFS) to provide an overview of the Essential Fish Habitat (EFH) provisions of the Magnuson- Stevens Fishery Conservation and Management Act (MSFCMA) and implementing rules. The following pages provide a brief legislative and regulatory background, introduce the concept of EFH, and describe consultation requirements. Consistent with elements of the NMFS's National Habitat Plan, Strategic Plan, and Habitat Conservation Policy, this document is intended to: provide a mechanism for information exchange; foster interagency discussion and problem-solving; and enhance communication and coordination among the NMFS, regional fishery management councils (FMC), and affected state and Federal agencies. Ultimately, improved interagency coordination and consultation will enhance the ability of the agencies to sustain healthy and productive marine fishery habitats.

Legislative and Regulatory Background

The 1996 amendments to the MSFCMA (excerpted at Appendix 1) set forth a new mandate to identify and protect important marine and anadromous fisheries habitat. The FMCs, with assistance from NMFS, are required to delineate EFH in fishery management plans (FMP) or FMP amendments for all Federally managed fisheries. Federal action agencies which fund, permit, or carry out activities that may adversely impact EFH are required to consult with NMFS regarding potential adverse effects of their actions on EFH, and respond in writing to NMFS and FMC recommendations. In addition, NMFS is directed to comment on any state agency activities that would impact EFH.

The purpose of addressing habitat in this act is to further one of the Nation's important marine resource management goals - maintaining sustainable fisheries. Achieving this goal requires the long-term maintenance of suitable marine fishery habitat quality and quantity. Measures recommended to protect EFH by NMFS or an FMC are advisory, not proscriptive. An effective EFH consultation process is vital to ensuring that Federal actions are consistent with the MSFCMA resource management goals.

Guidance and procedures for implementing the 1996 amendments of the MSFCMA were provided through interim final rules established by the NMFS in 1997 (50 CFR Sections 600.805 - 600.930). These rules specify that FMP amendments be prepared to describe and identify EFH and identify appropriate actions to conserve and enhance those habitats. In addition, the rules establish procedures to promote the protection of EFH through

interagency coordination and consultation on proposed Federal and state actions.

EFH Designation

The MSFCMA requires that EFH be identified for all fisheries which are Federally managed. This includes species managed by the FMCs under Federal FMPs, as well as those managed by the NMFS under FMPs developed by the Secretary of Commerce. Applicable FMP authorities, along with some of the species covered by those FMPs, are listed in Appendices 2 - 5 for the major ecoregions of the NMFS Southeast Region. Species listed are those for which data were adequate to define and map EFH. The listed species under each FMC's authorities collectively occur throughout the areas managed by the respective FMCs, therefore, inclusion of species for which life history data are limited would not encompass a greater geographic area. Note that Appendix 3 lists species managed by the South Atlantic FMC, as well as some species managed by the Mid-Atlantic FMC for which EFH has been identified to extend as far south as the Florida Keys in the South Atlantic area.

EFH is defined in the MSFCMA as "...those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The rules promulgated by the NMFS in 1997 further clarify EFH with the following definitions: **waters** - aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; **substrate** - sediment, hard bottom, structures underlying the waters, and associated biological communities; **necessary** - the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and **spawning, breeding, feeding, or growth to maturity** - stages representing a species' full life cycle. EFH may be a subset of all areas occupied by a species. Acknowledging that the amount of information available for EFH determinations will vary for each species, the rules direct the FMCs to use the best information available, to take a risk averse approach to designations, and to be increasingly specific and narrow in their delineations as more refined information becomes available.

The areas designated as EFH by the Gulf of Mexico, South Atlantic, and Caribbean FMCs are generalized in Appendix 6. Additional sources of information, useful for preparing EFH assessments, and to further one's understanding of EFH designations and Federally managed fishery resources are available through the NMFS and FMCs. Appendix 8 provides citations for published Fishery Management Plan amendments and identifies web sites containing information on the MSFCMA, the NMFS interim final rules for the implementation of EFH designation and consultation provisions, and data on specific managed fisheries and associated habitats. NMFS and FMC points of contact are identified in Appendix 9.

The rules also direct FMCs to consider a second, more limited habitat designation for each species in addition to EFH. Habitat Areas of Particular

Concern (HAPCs) are described in the rules as subsets of EFH which are rare, particularly susceptible to human-induced degradation, especially ecologically important, or located in an environmentally stressed area. In general, HAPC include high value intertidal and estuarine habitats, offshore areas of high habitat value or vertical relief, and habitats used for migration, spawning, and rearing of fish and shellfish. Areas identified as HAPC by the NMFS and each of the three southeastern Fishery Management Councils are presented in Appendix 7. For a complete description of designated HAPCs the reader should reference the appropriate FMP amendment. HAPCs are not afforded any additional regulatory protection under the MSFCMA; however, Federal actions with potential adverse impacts to HAPCs will be more carefully scrutinized during the consultation process and will be subject to more stringent EFH conservation recommendations.

Designating the boundaries of EFH has taken careful and deliberate consideration by the FMCs. The effort to identify and delineate EFH in the various fishery management plans was a rigorous process that involved numerous state and Federal agencies and the public at large. The Gulf of Mexico, South Atlantic, and Caribbean FMCs each have produced a generic management plan amendment to designate EFH for all fisheries managed by the respective FMC. For general planning purposes, Figures 1 - 3 depict boundaries as a consolidation of all identified EFH within the Southeast Region of the NMFS. Reference should be made to each of the FMP amendments for a species-specific descriptions of EFH.

Besides delineating EFH, the FMP amendments produced by each of the councils identify and describe potential threats to EFH, which include threats from development, fishing, or any other sources. Also identified are recommend EFH conservation and enhancement measures. FMCs are required to implement management measures to minimize, to the extent practicable, any adverse impacts to EFH caused by fishing gears. Guidelines used in the development of EFH amendment sections for each of these issues are included in the EFH rules.

EFH Consultations

In the regulatory context, the most important provisions of the MSFCMA for conserving fish habitat are those which require Federal agencies to consult with NMFS when any activity proposed to be permitted, funded, or undertaken by a Federal agency may have adverse impacts on designated EFH. The consultation requirements in the MSFCMA direct Federal agencies to consult with NMFS when any of their activities may have an adverse effect on EFH. The EFH rules define an **adverse effect** as “any impact which reduces quality and/or quantity of EFH...[and] may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species’ fecundity), site-specific or habitat wide impacts, including individual, cumulative, or synergistic consequences of actions.”

The consultation provisions have caused some concern among Federal action agencies regarding potential increases in workload and the regulatory burden

on the public. NMFS has addressed these concerns in the EFH rules by emphasizing and encouraging the use of existing environmental review processes and time frames. Provided the specifications outlined in the rules are met, EFH consultations should be incorporated into interagency procedures previously established under the National Environmental Policy Act, Endangered Species Act, Clean Water Act, Fish and Wildlife Coordination Act, or other applicable statutes.

To incorporate EFH consultations into coordination, consultation and/or environmental review procedures required by other statutes, three criteria must be met:

- (1) The existing process must provide NMFS with timely notification of the action;
- (2) Notification of the action must include an *EFH Assessment* of the impacts of the proposed action as outlined in the EFH rules; and
- (3) NMFS must have completed a written *finding* that the existing coordination process satisfies the requirements of the MSFCMA.

An *EFH Assessment* is a review of the proposed project and its potential impacts to EFH. As set forth in the rules, *EFH Assessments* must include: (1) a description of the proposed action; (2) an analysis of the effects, including cumulative effects, of the action on EFH, the managed species, and associated species by life history stage; (3) the Federal agency's views regarding the effects of the action on EFH; and (4) proposed mitigation, if applicable. If appropriate, the assessment should also include the results of an on-site inspection, the views of recognized experts on the habitat or species affects, a literature review, an analysis of alternatives to the proposed action, and any other relevant information.

Once NMFS learns of a Federal or state activity that may have an adverse effect on EFH, NMFS is required to develop EFH conservation recommendations for the activity, even if consultation has not been initiated by the action agency. These recommendations may include measures to avoid, minimize, mitigate, or otherwise offset adverse effects on EFH and are to be provided to the action agency in a timely manner. The MSFCMA also authorizes FMCs to comment on Federal and state projects, and directs FMCs to comment on any project which may substantially impact EFH. The MSFCMA requires that Federal agencies respond to EFH conservation recommendations of the NMFS and FMCs in writing and within 30 days. Consultations may be conducted through programmatic, general concurrence, or project specific mechanisms. Evaluation at a programmatic level may be appropriate when sufficient information is available to develop EFH conservation recommendations and address all reasonably foreseeable adverse impacts under a particular program area. General Concurrences can be utilized for categories of similar activities having minimal individual and cumulative impacts. Programmatic and General Concurrence consultations

minimize the need for individual project consultation in most cases because NMFS has determined that the actions will likely result in no more than minimal adverse effects, and conservation measures would be implemented. For example, NMFS might agree to a General Concurrence for the construction of docks or piers which, with incorporation of design or siting constraints, would minimally affect Federally managed fishery resources and their habitats.

Consultations at a project-specific level are required when critical decisions are made at the project implementation stage, or when sufficiently detailed information for development of EFH conservation recommendations does not exist at the programmatic level. To facilitate project-specific consultations, NMFS and the action agency should discuss how existing review or coordination processes can be used to accomplish EFH consultation. With agreement on how existing coordination mechanisms will be used, the NMFS will transmit a *findings* letter to the action agency describing the conduct of EFH consultation within existing project review frameworks.

Project specific consultations must follow either the abbreviated or expanded procedures. Abbreviated consultations allow NMFS to quickly determine whether, and to what degree, a Federal action may adversely impact EFH, and should be used when impacts to EFH are expected to be minor. For example, the abbreviated consultation procedure would be used when the adverse effect of an action or proposed action could be alleviated through minor design or operational modifications, or the inclusion of measures to offset unavoidable adverse impacts.

Expanded consultations allow NMFS and a Federal action agency the maximum opportunity to work together in the review of an activity's impact on EFH and the development of EFH conservation recommendations. Expanded consultation procedures must be used for Federal actions that would result in substantial adverse effects to EFH. Federal action agencies are encouraged to contact NMFS at the earliest opportunity to discuss whether the adverse effect of a proposed action makes expanded consultation appropriate. In addition, it may be determined after review of an abbreviated consultation that a greater level of review and analysis would be appropriate and that review through expanded consultation procedures should be employed. Expanded consultation procedures provide additional time for the development of conservation recommendations, and may be appropriate for actions such as the construction of large marinas or port facilities and activities subject to preparation of an environmental impact statement.

The MSFCMA mandates that a Federal action agency must respond in writing to EFH conservation recommendations from NMFS and FMCs within 30 days of receiving those recommendations. The rules require that such a response be provided at least 10 days prior to final approval of the action, if a decision by the Federal agency is required in fewer than 30 days. The response must include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with NMFS conservation

recommendations, the agency must explain its reasons for not following the recommendations, including the scientific rationale for any disagreements with NMFS over the anticipated effects of the proposed action and the measures needed to offset such effects.

The regulations provide an important opportunity to resolve critical and outstanding EFH issues prior to an action agency rendering a final decision. When an agency decision is inconsistent with NMFS conservation recommendations, the NMFS Assistant Administrator may request a meeting with the head of the agency to further discuss the project and achieve a greater level of protection of EFH and Federally managed fisheries. The process for higher level review of proposed actions is not specified in the regulations, rather it is to be addressed on an agency-by-agency basis. In keeping with NMFS's effort to minimize the regulatory burden of EFH consultation requirements, review by the Assistant Administrator and action agency representative should be streamlined and highly focused.

Conclusion

The EFH mandates of the MSFCMA represent a new effort to integrate fishery management and habitat management by stressing the dependency of healthy, productive fisheries on the maintenance of viable and diverse estuarine and marine ecosystems. Federal action agencies are required to consult with the NMFS whenever a construction, permitting, funding, or other action may adversely affect EFH. The EFH consultation process will ensure that Federal agencies explicitly consider the effects of their actions on important habitats, with the goal of supporting the sustainable management of marine fisheries. The NMFS is committed to working with Federal and state agencies to implement these mandates effectively and efficiently, with the ultimate goal of sustaining of the Nation's fishery resources.

Comments, questions, and suggested revisions may be directed to Rickey Ruebsamen (EFH Coordinator), 9721 Executive Center Drive, N. St. Petersburg, FL 33702; phone: 727/570-5317; email: ric.ruebsamen@noaa.gov.

Appendix 1. Selected Text from the Magnuson-Stevens Fishery Conservation and Management Act (As Amended Through October 11, 1996)

16 U.S.C. 1854 note, 1855
M-S Act §§ 304 note, § 305

SEC. 305. OTHER REQUIREMENTS AND AUTHORITY
16 U.S.C. 1855
104-297

(b) FISH HABITAT.

(1) (A) The Secretary 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 essential fish habitat 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. The Secretary shall set forth a schedule for the amendment of fishery management plans to include the identification of essential fish habitat and for the review and updating of such identifications based on new scientific evidence or other relevant information.

(B) The Secretary, 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 essential fish habitat, the adverse impacts on that habitat, and the actions that should be considered to ensure the conservation and enhancement of that habitat.

(C) The Secretary shall review programs administered by the Department of Commerce and ensure that any relevant programs further the conservation and enhancement of essential fish habitat.

(D) The Secretary shall coordinate with and provide information to other Federal agencies to further the conservation and enhancement of essential fish habitat.

(2) 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 essential fish habitat identified under this Act.

(3) Each Council--

(A) 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 essential fish habitat, of a fishery resource under its authority; and

(B) 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 essential fish habitat, of an anadromous fishery resource under its authority.

(4) (A) 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 essential fish habitat identified under this Act, the Secretary shall recommend to such agency measures that can be taken by such agency to conserve such habitat.

(B) Within 30 days after receiving a recommendation under subparagraph (A), a Federal agency shall provide a detailed response in writing to any Council commenting under paragraph (3) 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.

Appendix 2. Fishery Management Plans and Managed Species for the Gulf of Mexico.

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

Shrimp Fishery Management Plan

brown shrimp - *Penaeus aztecus*
pink shrimp - *P. duorarum*
royal red shrimp - *Pleoticus robustus*
white shrimp - *Penaeus setiferus*

Red Drum Fishery Management Plan

red drum - *Sciaenops ocellatus*

Reef Fish Fishery Management Plan

black grouper- *Mycteroperca bonaci*
gag grouper - *M. microlepis*
gray snapper - *Lutjanus griseus*
gray triggerfish - *Balistes capriscus*
greater amberjack - *Seriola dumerili*
lane snapper - *L. synagris*
lesser amberjack - *S. fasciata*
red grouper - *Epinephelus morio*
red snapper - *L. campechanus*
scamp grouper - *M. phenax*
tilefish - *Lopholatilus chamaeleonticeps*
yellowtail snapper - *Ocyurus chrysurus*
vermillion snapper - *Rhomboplites aurorubens*

Stone Crab Fishery Management Plan

stone crab - *Menippe spp.*

Spiny Lobster Fishery Management Plan

spiny lobster - *Panulirus argus*

Coral and Coral Reef Fishery Management Plan

varied coral species and coral reef communities
comprised of several hundred species

Coastal Migratory Pelagic Fishery Management Plan

bluefish - *Pomatomus saltatrix*
dolphin - *Coryphaena hippurus*
cobia - *Rachycentron canadum*
king mackerel - *Scomberomorus cavalla*
little tunny - *Euthymus alleteratus*
Spanish mackerel - *S. maculatus*

Appendix 3. Fishery Management Plans and Managed Species for the South Atlantic Region.

SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

Shrimp Fishery Management Plan

brown shrimp - *Penaeus aztecus*
pink shrimp - *P. duorarum*
rock shrimp - *Sicyonia brevirostris*
royal red shrimp - *Pleoticus robustus*
white shrimp - *Penaeus setiferus*

Red Drum Fishery Management Plan

red drum - *Sciaenops ocellatus*

Snapper Grouper Fishery Management Plan

blackfin snapper - *Lutjanus buccanella*
blueline tilefish - *Caulolatilus microps*
gray snapper - *L. griseus*
greater amberjack - *Seriola dumerili*
jewfish - *Epinephelus itajara*
mutton snapper - *L. analis*
red porgy - *Pagrus pagrus*
red snapper - *L. campechanus*
scamp - *Mycteroperca phenax*
silk snapper - *L. vivanus*
snowy grouper - *E. niveatus*
speckled hind - *E. drummondhayi*
vermilion snapper - *Rhomboplites aurorubens*
yellowedge grouper - *E. flavolimbatus*
warsaw grouper - *E. nigrilus*
white grunt - *Haemulon plumieri*
wreckfish - *Polyprion americanus*

Coastal Migratory Pelagics Fishery Management Plan

dolphin - *Coryphaena hippurus*
cobia - *Rachycentron canadum*
king mackerel - *Scomberomorus cavalla*
Spanish mackerel - *S. maculatus*

Golden Crab Fishery Management Plan

golden crab - *Chaceon fenneri*

Spiny Lobster Fishery Management Plan

spiny lobster - *Panulirus argus*

Coral and Coral Reef Fishery Management Plan

varied coral species and coral reef communities comprised of several hundred species

Calico Scallop Fishery Management Plan

calico scallop - *Argopecten gibbus*

MID-ATLANTIC FISHERY MANAGEMENT COUNCIL

Summer Flounder, Scup, and Black Sea Bass Fishery Management Plan

black sea bass - *Centropristus striata*

scup - *Stenotomus chrysops*

summer flounder - *Paralichthys dentatus*

Bluefish Fishery Management Plan

bluefish - *Pomatomus saltatrix*

Atlantic Surfclam and Ocean Quahog Fishery Management Plan

ocean quahog - *Artica islandica*

surfclam - *Spisula solidissima*

Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan

Atlantic butterfish - *Peprilus triacanthus*

Atlantic mackerel - *Scomber scombrus*

long finned squid - *Loligo peales*

short finned squid - *Illex illecebrosus*

Dogfish Fishery Management Plan

spiny dogfish - *Squalus acanthias*

Appendix 4. Fishery Management Plans and Managed Species for the Caribbean Region.

CARIBBEAN FISHERY MANAGEMENT COUNCIL

Reef Fish Fishery Management Plan

banded butterflyfish - *Chaetodon striatus*
coney - *Epinephelus fulvus*
gray snapper - *Lutjanus griseus*
queen triggerfish - *Balistes vetula*
mutton snapper - *L. analis*
nassau grouper - *E. striatus*
red hind - *E. guttatus*
redtail parrotfish - *Sparisoma chrysopteron*
schoolmaster - *L. apodus*
silk snapper- *L. vivanus*
squirrelfish - *Holocentrus ascensionis*
sand tile fish - *Malacanthus plumieri*
trunkfish - *Lactophrys quadricornis*
yellowtail snapper - *Ocyurus chrysurus*
white grunt - *Haemulon plumieri*

Spiny Lobster Fishery Management Plan

spiny lobster - *Panulirus argus*

Queen Conch Fishery Management Plan

queen conch - *Strombus gigas*

Coral Fishery Management Plan

varied coral species and coral reef communities comprised of several hundred species

Appendix 5. Species Managed under the Federally-Implemented Fishery Management Plans.

NATIONAL MARINE FISHERIES SERVICE

Billfish

blue marlin - *Makaira nigricans*
longbill spearfish - *Tetrapturus pfluegeri*
sailfish - *Istiophorus platypterus*
white marlin - *T. albidus*

Swordfish

swordfish - *Xiphias gladius*

Tuna

albacore - *Thunnus alalunga*
Atlantic bigeye - *T. obesus*
Atlantic yellowfin - *T. albacares*
skipjack - *Katsuwonus pelamis*
western Atlantic bluefin - *T. thynnus*

Sharks

Atlantic angel shark - *Squatina dumerili*
Atlantic sharpnose shark - *Rhizoprionodon terraenovae*
basking shark - *Cetorhinus maximus*
bigeye sand tiger - *Odontaspis noronhai*
bigeye sixgill shark - *Hexanchus vitulus*
bigeye thresher shark - *Alopias superciliosus*
bignose shark - *Carcharhinus altimus*
blacknose shark - *C. acronotus*
blacktip shark - *C. limbatus*
blue shark - *Prionace glauca*
bonnethead - *Sphyrna tiburo*
bull shark - *C. leucas*
Caribbean reef shark - *C. perezii*
Caribbean sharpnose shark - *R. porosus*
common thresher shark - *A. vulpinus*
dusky shark - *C. obscurus*
finetooth shark - *C. isodon*
Galapagos shark - *C. galapagensis*
great hammerhead - *S. mokarran*
lemon shark - *Negaprion brevirostris*
longfin mako shark - *Isurus paucus*
narrowtooth shark - *C. brachyurus*
night shark - *C. signatus*
nurse shark - *Ginglymostoma cirratum*
oceanic whitetip shark - *C. longimanus*
porbeagle shark - *Lamna nasus*
sandbar shark - *C. plumbeus*
sand tiger shark - *O. taurus*
scalloped hammerhead - *S. lewini*
sharpnose sevengill shark - *Heptranchias perlo*
shortfin mako shark - *I. oxyrinchus*
silky shark - *C. falciformis*
sixgill shark - *H. griseus*
smalltail shark - *C. porosus*
smooth hammerhead - *S. zygaena*
spinner shark - *C. brevipinna*
Tiger shark - *Galeocerdo cuvieri*
whale shark - *Rhinocodon typus*
white shark - *Carcharodon carcharias*

Appendix 6. Essential Fish Habitat Identified in Fishery Management Plan Amendments of the Gulf of Mexico, South Atlantic, Caribbean and Mid-Atlantic Fishery Management Councils. (Generally, EFH for species managed under the NMFS Billfish and Highly Migratory Species plans falls within the marine and estuarine water column habitats designated by the councils)

Gulf of Mexico FMC

Estuarine areas

- Estuarine emergent wetlands
- Mangrove wetlands
- Submerged aquatic vegetation
- Algal flats
- Mud, sand, shell, and rock substrates
- Estuarine water column

Marine areas

- Water column
- Vegetated bottoms
- Non-vegetated bottoms
- Live bottoms
- Coral reefs
- Artificial reefs
- Geologic features
- Continental Shelf features
- West Florida Shelf
- Mississippi/Alabama Shelf
- Louisiana/Texas Shelf
- South Texas Shelf

South Atlantic FMC

Estuarine areas

- Estuarine emergent wetlands
- Estuarine scrub/shrub mangroves
- Submerged aquatic vegetation
- Oyster reefs & shell banks
- Intertidal flats
- Palustrine emergent & forested wetlands

Aquatic beds

Estuarine water column

Marine areas

Live/Hard bottoms

Coral & coral reefs

Artificial/manmade reefs

Sargassum

Water column

Caribbean FMC

Estuarine areas

Salt marshes

Mangrove wetlands

Intertidal flats/salt ponds

Soft bottom lagoons

Mud flats

Sandy beaches

Rocky shores

Marine areas

Water column

Seagrass

Non-vegetated bottoms

Coral reefs

Algal plains

Geologic features

Live bottoms

Mid-Atlantic FMC

Estuarine areas

Seagrass

Creeks

Mud bottom

Estuarine water column

Marine areas

Water column

Appendix 7. Geographically Defined Habitat Areas of Particular Concern Identified in Fishery Management Plan Amendments Affecting the Southeast and Caribbean Areas.

Gulf of Mexico

Florida

Apalachicola National Estuarine Research Reserve
Dry Tortugas (Fort Jefferson National Monument)
Florida Keys National Marine Sanctuary
Florida Middle Grounds
Rookery Bay National Estuarine Research Reserve

Alabama

Weeks Bay National Estuarine Research Reserve

Texas/Louisiana

Flower Garden Banks National Marine Sanctuary

Mississippi

Grand Bay

South Atlantic

Area-wide

Council-designated artificial reef special management zones
Hermatypic coral habitat and reefs
Hard bottoms
Hoyt Hills
Sargassum habitat
State-designated areas of importance to managed species
Submerged aquatic vegetation

North Carolina

Big Rock
Bogue Sound
Pamlico Sound at Hatteras/Ocracoke Islands
Capes Hatteras, Fear and Lookout (sandy shoals)
New River
The Ten Fathom Ledge
The Point

S. Atlantic (cont)

South Carolina

Broad River

Charleston Bump

Hurl Rocks

Georgia

Gray's Reef National Marine Sanctuary

Florida

Blake Plateau (manganese outcroppings)

Biscayne Bay

Biscayne National Park

Card Sound

Florida Bay

Florida Keys National Marine Sanctuary

Jupiter Inlet Point

Mangrove habitat

Marathon Hump

Oculina Bank

Phragmatopoma (worm) reefs

The Wall (Florida Keys)

Caribbean

Area-wide

Estuaries

Nearshore reefs and other hard bottoms

U.S. Virgin Islands

Hind Bank

Appendix 8. Sources of EFH and Related Resource Information.

Fishery Management Plan Amendments

Caribbean Fishery Management Council. 1998. Essential Fish Habitat (EFH) generic amendment to the Fishery Management Plans (FMPs) of the U.S. Caribbean including a draft environmental assessment. Caribbean Fishery Management Council. San Juan, Puerto Rico. 2 vols.

Gulf of Mexico Fishery Management Council. 1998. Public hearing draft generic amendment for addressing Essential Fish Habitat requirements in the following fishery management plans of the Gulf of Mexico: Shrimp Fishery of the Gulf of Mexico, United States Waters; Red Drum Fishery of the Gulf of Mexico; Reef Fish Fishery of the Gulf of Mexico; Coastal Migratory Pelagic Resources (Mackerels) in the Gulf of Mexico and South Atlantic; Stone Crab Fishery of the Gulf of Mexico; Spiny Lobster in the Gulf of Mexico and South Atlantic; Coral and Coral Reefs of the Gulf of Mexico (includes environmental assessment). Gulf of Mexico Fishery Management Council. Tampa, FL.

Mid-Atlantic Fishery Management Council. 1998. Amendment 1 to the bluefish fishery management plan. Mid-Atlantic Fishery Management Council. Dover, DE. 2 vols.

Mid-Atlantic Fishery Management Council. 1998. Amendment 8 to the Atlantic mackerel, squid, and butterfish fishery management plan. Mid-Atlantic Fishery Management Council. Dover, DE.

Mid-Atlantic Fishery Management Council. 1998. Amendment 12 to the Atlantic surfclam and ocean quahog fishery management plan. Mid-Atlantic Fishery Management Council. Dover, DE.

Mid-Atlantic Fishery Management Council. 1998. Amendment 12 to the summer flounder, scup, and black sea bass fishery management plan. Mid-Atlantic Fishery Management Council. Dover, DE.

National Marine Fisheries Service. 1998. Billfish essential fish habitat (EFH) pre-draft materials for the billfish fishery management plan amendment. National Marine Fisheries Service. Silver Spring, MD.

National Marine Fisheries Service. 1998. Highly migratory species essential fish habitat (EFH) pre-draft materials for the highly migratory species fishery management plan amendment. National Marine Fisheries Service. Silver Spring, MD.

South Atlantic Fishery Management Council. 1998. Final habitat plan for the South Atlantic region: Essential Fish Habitat requirements for Fishery Management Plans of the South Atlantic fishery Management Council: The Shrimp Fishery Management Plan, The Red Drum Fishery Management Plan, The Snapper Grouper Fishery Management Plan, The Coastal Migratory Pelagics Fishery Management Plan, The Golden Crab Fishery Management Plan, The Spiny Lobster Fishery Management Plan, The Coral, Coral Reefs, and Live/Hard Bottom Habitat Fishery Management Plan, and The Calico Scallop Fishery Management Plan. South Atlantic Fishery Management Council. Charleston, SC.

EFH Related Web Sites

South Atlantic EFH	http://www.safmc.noaa.gov
Gulf of Mexico FMC	http://www.gulfcouncil.org
Gulf of Mexico EFH	http://galveston.ssp.nmfs.gov/efh/
Caribbean EFH Resources	http://christensenmac.nos.noaa.gov/briefing.html
Caribbean FMC	http://www.caribbeanfmc.com
EFH Rules	http://www.nmfs.noaa.gov/habitat/efh
NMFS Southeast Region	http://caldera.sero.nmfs.gov
Highly migratory pelagic and billfish resource EFH	http://www.nmfs.gov/sfa/hms/Final.html

Appendix 9. Points of Contact for Essential Fish Habitat Activities within the Southeast Region of the National Marine Fisheries Service.

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