

RECORD OF DECISION

FINAL ENVIRONMENTAL IMPACT STATEMENT

For The Generic Essential Fish Habitat Amendment to the following fishery management plans
of the Gulf of Mexico:

SHRIMP FISHERY OF THE GULF OF MEXICO
RED DRUM FISHERY OF THE GULF OF MEXICO
REEF FISH FISHERY OF THE GULF OF MEXICO
STONE CRAB FISHERY OF THE GULF OF MEXICO
CORAL AND CORAL REEF FISHERY OF THE GULF OF MEXICO
SPINY LOBSTER FISHERY OF THE GULF OF MEXICO AND SOUTH ATLANTIC
COASTAL MIGRATORY PELAGIC RESOURCES OF THE GULF OF MEXICO AND
SOUTH ATLANTIC

National Marine Fisheries Service
Southeast Region

Decision To Be Made

This Record of Decision (ROD) documents the decision by the National Marine Fisheries Service (NOAA Fisheries) to proceed with an amendment of the Fishery Management Plans (FMPs) of the Gulf of Mexico Fishery Management Council (Council) pursuant to the mandate contained in Section 303(a)(7) of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). More specifically, the three-part purpose of this decision is to: (1) describe and identify essential fish habitat (EFH) for each fishery; (2) identify other actions to encourage the conservation and enhancement of such EFH; and (3) identify measures to prevent, mitigate, or minimize to the extent practicable the adverse effects of fishing on such EFH.

Introduction

The amended Magnuson-Stevens Act of 1996, also known as the Sustainable Fisheries Act (SFA), included new EFH provisions which require that each existing, and any new, FMP must describe and identify EFH for the fishery, minimize to the extent practicable adverse effects on that EFH caused by fishing, and identify other actions to encourage the conservation and enhancement of that EFH. The Magnuson-Stevens Act defines EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." NOAA Fisheries issued its final EFH regulations (Final Rule) on January 17, 2002. The regulations provide guidelines to fishery management councils for developing the EFH sections of FMPs and establish procedures to be used by NOAA Fisheries and other agencies to consult and coordinate regarding federal and state agency actions that may adversely affect EFH.

In 1999, a coalition of several environmental groups brought suit challenging the agency's approval of the EFH FMP amendments prepared by the Gulf of Mexico, Caribbean, New England, North Pacific, and Pacific Fishery Management Councils (*American Oceans Campaign (AOC) et al. v. Daley et al.*, Civil Action No. 99-982(GK)(D.D.C. September 14, 2000)). The court found that the agency's decisions on the EFH amendments were in accordance with the Magnuson-Stevens Act, but held that the Environmental Assessments (EA) on the amendments were in violation of the National

Environmental Policy Act (NEPA) and ordered NOAA Fisheries to complete new, more thorough NEPA analyses for each EFH amendment in question.

Consequently, NOAA Fisheries entered into a Joint Stipulation with the plaintiff environmental organizations that called for each affected council to complete Environmental Impact Statements (EISs) rather than EAs for the action of minimizing adverse effects of fishing to the extent practicable on EFH. (AOC et al. v. Daley et al., Civil No. 99-982 (GK)(D.D.C. December 5, 2001)). However, because the court did not limit its criticism of the EAs to only efforts to minimize adverse fishing effects on EFH, NOAA Fisheries decided that the scope of this EIS should address all required EFH components as described in Section 303 (a)(7) of the Magnuson-Stevens Act.

The Notice of Intent to prepare an EIS was published on March 19, 2001. In June 2001, the Council held scoping meetings in Corpus Christi and Houston, Texas; Kenner, Louisiana; Biloxi, Mississippi; and Panama City, Key West, and Tampa, Florida. At various times during the development of the EIS, the Council convened its Joint Habitat Advisory Panel, the Science and Statistical Committee, Technical Review Panel and User Review Panel to review drafts of the EIS. The User Review Panel was comprised of representatives from the recreational, charter, commercial, environmental, oil and gas industry, and wetlands property owner sectors. The public was afforded opportunity to participate in the development of the EIS through discussion at the Council's regular meetings in July, September, and November 2002, and January, March, May, and July 2003. Additionally, the Council held a special two-day meeting in June 2003 to review the entire EIS, choose preferred alternatives, and direct the final changes for the Draft EIS that was due for public review beginning in August 2003.

The Notice of Availability (NOA) for the Draft EIS was published on August 29, 2003. During the 90-day public comment period, twelve letters were received at NOAA Fisheries. Comment letters were received from one individual, four regional and national environmental organizations (in one letter), one fishing organization, two corporations, two state agencies, and four federal agency offices.

The NOA for the Final EIS was published on June 25, 2004. The EIS analyzes within each fishery in the Gulf of Mexico a range of alternatives to: (1) describe and identify EFH for the fishery; (2) identify EFH HAPCs within each fishery; and (3) identify measures to minimize to the extent practicable the adverse effects of fishing on such EFH. The EIS contains the scientific methods and data used in the analyses; background information on the physical, biological, human, and administrative environments; and a description of the fishing and non-fishing threats to EFH as well as actions to encourage the conservation and enhancement of EFH.

The lead agency for the EIS is the Southeast Region of NOAA Fisheries. This EIS was prepared in accordance with NEPA. The proposed action requires that an amendment be prepared for the FMPs designating EFH and establishing measures to protect EFH.

Description of Alternatives and Alternatives Considered but not Analyzed in Detail

All the alternatives developed take into account all species managed in the seven FMPs (as amended) of the Gulf Council. Combined, they contain 55 species (excluding coral) in the management units: 43 within the Reef Fish FMP, four within the Shrimp FMP, three within Coastal Migratory FMP, one within the Red Drum FMP, two within the Stone Crab FMP, and two within the Spiny Lobster FMP. The Coral FMP does not list individual species comprising the management unit, but states that the FMP manages all species of the class Hydrozoa (stinging and hydrocorals) and the class Anthozoa

(sea fans, sea whips, precious corals, sea pens, and stony corals). Seven species of coral of the class Hydrozoa and 311 species of the class Anthozoa are referred to specifically in the FMP as occurring in Gulf of Mexico and/or South Atlantic waters.

1. Describe and Identify EFH

EFH must be described and identified for each of the seven FMPs of the Gulf of Mexico. Although the FMPs cover quite different fisheries with different species and hence different habitat requirements, the principles on which EFH are identified in each are broadly similar. In order to take advantage of this similarity and to avoid unnecessary and cumbersome duplication of information under each FMP, a two-stage approach was adopted in developing EFH alternatives. Several conceptual approaches to identifying EFH were identified. Each concept describes the general basis for developing alternatives under each of the FMPs. Specific alternatives for each FMP are therefore elaborated and mapped under each concept. The Council reviewed these concepts, and some were considered and rejected at the concept stage. The number of viable conceptual approaches was limited to a large extent by the available information. In all, eight concepts for describing and identifying EFH were developed.

EFH Concepts

1. No Action (Roll Back) – When applied to the seven FMPs, this would create seven alternatives under which no EFH would be designated. Alternatives under this concept, while useful for providing a baseline against which to judge the consequences of the other alternatives, would not meet the requirements of the Magnuson-Stevens Act.
2. Status Quo – This provides alternatives under each FMP that are the same as the preferred alternative from the 1998 Generic EFH Amendment. The Generic Amendment identified EFH as the most commonly used habitat for 26 selected indicator species across all seven FMPs.
3. List Specific Habitat Types – This concept was considered but rejected because it does not link identification of EFH to the use of habitat at the level of individual species' life stages and therefore does not fulfill the requirements of the EFH guidelines.
4. Known Distributions – Under this concept, EFH is described and identified as those habitats coinciding with the known distributions of all life stages of all species under management. EFH is designated on the basis of available empirical distribution data, plus information on the functional relationships between fish species and habitats, from which broad distributions can be inferred.
5. Habitat-Related Densities – EFH is described and identified as the areas for each FMU species and life stage with the highest relative densities. This concept distinguishes areas of habitat with higher densities from the total range for an individual species and life stage.
6. Functional Relationships Between Species and Habitat – This concept utilized a relational database of habitat utilization information, by species life stage, derived from a comprehensive review of information in the scientific literature.
7. Salinity Range – This concept was considered and rejected and no alternatives were developed under this concept. EFH is described and identified based on a range of salinity corresponding to the preferred range of species and life stages in each FMU. However, salinity preference information is available for only some Gulf FMP species. Also, isohaline lines are dynamic features which change substantially with the tidal, lunar, and seasonal cycles, especially around the Mississippi River area. Even with a substantial spatial and temporal analysis of salinity variations it would be difficult to use salinity as a key factor in identifying EFH.

8. Habitat Suitability Models – This concept was considered but rejected. This concept is a more sophisticated version of Concept 6 and uses habitat suitability modeling developed by the National Ocean Service to infer information about species distribution and possibly relative density. Several limited efforts have been undertaken in the Gulf region to predict the distribution of certain species but no such analyses are currently available for consideration for any species within the seven FMPs nor is it likely to be obtainable in a reasonable timeframe. (Section 4.2 of the EIS contains a discussion of incomplete or unavailable information in accordance with 40 CFR 1502.22.)

Each of the EFH concepts that NOAA Fisheries and the Council agreed to consider further was used to develop specific alternatives under each of the FMPs. Therefore the alternatives correspond to the EFH concepts considered for detailed analysis.

The alternatives explain specifically how EFH is described and identified in each case. In addition, for each FMP, where possible, maps that show the composite EFH for all species and life stages under each FMP are presented in the EIS. Mapping of the alternatives developed under Concepts 4, 5, and 6 for each FMP used Geographic Information System, or GIS, to combine maps of species distribution, habitat distribution and information on species habitat utilization, which are both described in the preceding sections. Each map of EFH for the alternatives developed under Concept 4 is a composite of the EFH based on total distribution of the individual species and life stages within an FMP. These maps combine the empirical distribution and the distribution of habitats used by each species and life stage in the FMU of an FMP determined from the species/life stage/habitat-use database. Each map of EFH for the alternatives developed under Concept 5 is a composite of the EFH based on the highest density of individual species and life stages within an FMP. Each map of EFH for the alternatives developed under Concept 6 is a composite of the EFH of the individual species and life stages within an FMP based on density, if available, and density based on habitat use from the species/life stage/habitat-use database.

No alternatives were developed under concepts 3, 7, and 8 because these were considered and rejected by the Council. Therefore no maps were drawn. No maps were drawn for the alternatives developed under concept 1 because this concept does not describe and identify EFH. Alternatives developed under concept 2, the status quo alternatives, are from the 1998 Generic Amendment. The 1998 Generic Amendment did not provide maps of EFH, although they could be drawn based on the EFH descriptions. However, no new maps were drawn for alternatives under this concept in this EIS.

The following alternatives were developed by applying the above concepts and considered for the Red Drum FMP:

- Alternative 1. (No Action - Roll Back) Do not describe and identify EFH in the Gulf of Mexico for the Red Drum FMP.
- Alternative 2. (Status Quo) EFH for the Red Drum FMP consists of areas of common occurrence for red drum in the Gulf of Mexico: virtually all estuarine areas over sand, soft bottom, submerged aquatic vegetation (SAV), emergent marshes, oyster reefs, hard bottoms and pelagic waters continuing to nearshore and offshore habitats to depths of approximately 22 fathoms.
- Alternative 4. EFH for the Red Drum FMP consists of the Gulf of Mexico waters and substrates extending from the US/Mexico border to the boundary between the areas covered by the Gulf of Mexico Fishery Management Council and the South Atlantic Fishery Management Council out to depths of 22 fathoms, and including all estuaries.

- Alternative 5. EFH for the Red Drum FMP consists of the following Gulf of Mexico estuaries: Mississippi Sound, Chandeleur Sound, Breton Sound, and Lake Pontchartrain; Gulf of Mexico waters and substrates extending from Vermilion Bay, Louisiana to the eastern edge of Mobile Bay, Alabama out to depths of 25 fathoms; Inner Apalachicola Bay estuary out to depths of 5 fathoms; waters and substrates extending from Crystal Beach, Florida to Fort Myers Beach, Florida including Tampa Bay and Charlotte Harbor estuaries out to depths of 5 fathoms.
- Alternative 6. (Preferred/Environmentally Preferred Alternative) EFH for the Red Drum FMP consists of all Gulf of Mexico estuaries; Gulf of Mexico waters and substrates extending from Vermilion Bay, Louisiana to the eastern edge of Mobile Bay, Alabama out to depths of 25 fathoms; waters and substrates extending from Crystal River, Florida to Naples, Florida between depths of 5 and 10 fathoms; waters and substrates extending from Cape Sable, Florida to the boundary between the areas covered by the Gulf of Mexico Fishery Management Council and the South Atlantic Fishery Management Council between depths of 5 and 10 fathoms.

The following alternatives were developed by applying the above concepts and considered for the Reef Fish FMP:

- Alternative 1. (No Action – Roll Back) Do not describe and identify EFH in the Gulf of Mexico for the Reef Fish FMP.
- Alternative 2. (Status Quo) EFH for the Reef Fish FMP consists of the combined areas of common occurrence for 11 selected species (red, gag and scamp grouper; red, gray, yellowtail, and lane snapper; greater and lesser amberjack; tilefish; and gray triggerfish) in the Gulf of Mexico: all estuarine and nearshore habitats, and continuing offshore throughout the Gulf to depths of more than 275 fathoms.
- Alternative 4. EFH for the Reef Fish FMP consists of all Gulf of Mexico estuaries; Gulf of Mexico waters and substrates extending from the US/Mexico border to the boundary between areas covered by the Gulf of Mexico Fishery Management Council and the South Atlantic Fishery Management Council out to depths of 295 fathoms.
- Alternative 5. EFH for the Reef Fish FMP consists of all estuaries on Florida's west coast from Tampa Bay southward, exclusive of Old Tampa Bay and Hillsborough Bay; Gulf of Mexico waters and substrates extending from the US/Mexico border to Freeport, Texas between depths of 50 and 100 fathoms; waters extending from Freeport, Texas to Cape San Blas, Florida between depths of 25 and 100 fathoms; waters extending from Cape San Blas, Florida to Clearwater, Florida between depths of 10 and 100 fathoms; waters extending from Clearwater, Florida to the boundary between areas covered by the Gulf of Mexico Fishery Management Council and the South Atlantic Fishery Management Council out to depths of 100 fathoms.
- Alternative 6. (Preferred/Environmentally Preferred Alternative) EFH for the Reef Fish FMP consists of all Gulf of Mexico estuaries; Gulf of Mexico waters and substrates extending from the US/Mexico border to the boundary between the areas covered by the Gulf of Mexico Fishery Management Council and the South Atlantic Fishery Management Council from estuarine waters out to depths of 100 fathoms.

The following alternatives were developed by applying the above concepts and considered for the Coastal Migratory Pelagics FMP:

- Alternative 1. (No Action - Roll Back) Do not describe and identify EFH in the Gulf of Mexico for the Coastal Migratory Pelagics FMP.
- Alternative 2. (Status Quo) EFH for the Coastal Migratory Pelagics FMP consists of the combined areas of common occurrence for king and Spanish mackerel, cobia and dolphin in the Gulf of Mexico: all estuarine and nearshore habitats continuing offshore throughout the Gulf to depths of approximately 110 fathoms.
- Alternative 4. EFH for the Coastal Migratory Pelagics FMP consists of all Gulf of Mexico estuaries; Gulf of Mexico waters and substrates extending from the US/Mexico border to the boundary between the areas covered by the Gulf of Mexico Fishery Management Council and the South Atlantic Fishery Management Council out to depths of 110 fathoms.
- Alternative 5. EFH for the Coastal Migratory Pelagics FMP consists of the following Gulf of Mexico estuaries: Terrebonne Bay, Timbalier Bay, Bastian Bay, and all estuaries south of the Caloosahatchee River on Florida's west coast; Gulf of Mexico waters and substrates extending from Grand Isle, Louisiana to the tip of the Mississippi River Delta, Louisiana out to depths of 25 fathoms; from Ocean Springs, Mississippi to Cape San Blas, Florida out to depths of 12 fathoms; and from Ft. Myers, Florida to the boundary between the areas covered by the Gulf of Mexico Fishery Management Council and the South Atlantic Fishery Management Council out to depths of 15 fathoms.
- Alternative 6. (Preferred/Environmentally Preferred Alternative) EFH for the Coastal Migratory Pelagics FMP consists of all Gulf of Mexico estuaries; Gulf of Mexico waters and substrates extending from the US/Mexico border to the boundary between the areas covered by the Gulf of Mexico Fishery Management Council and the South Atlantic Fishery Management Council from estuarine waters out to depths of 100 fathoms.

The following alternatives were developed by applying the above concepts and considered for the Shrimp FMP:

- Alternative 1. (No Action - Roll Back) Do not describe and identify EFH in the Gulf of Mexico for the Shrimp FMP.
- Alternative 2. (Status Quo) EFH for the Shrimp FMP consists of the combined areas of common occurrence for brown, white, and pink shrimp in the Gulf of Mexico: all estuarine and nearshore habitats continuing offshore throughout the Gulf to depths of approximately 60 fathoms.
- Alternative 4. EFH for the Shrimp FMP consists of all Gulf of Mexico estuaries; Gulf of Mexico waters and substrates extending from the US/Mexico border to the boundary between the areas covered by the Gulf of Mexico Fishery Management Council and the South Atlantic Fishery Management Council out to depths of 325 fathoms, excluding hard bottom between 90 and 100 fathoms depth south of Louisiana and Texas and excluding hard bottom deeper than 30 fathoms south of 26°N off Florida
- Alternative 5. EFH for the Shrimp FMP consists of all Gulf of Mexico estuaries; Gulf of Mexico waters and substrates extending from the US/Mexico border to eastern Mobile Bay, Alabama out to depths of 60 fathoms; from eastern Mobile Bay to Steinhatchee, Florida between depths of 10 and 25 fathoms; from Steinhatchee, Florida to the boundary between the areas covered by the Gulf of Mexico Fishery Management Council and the South Atlantic Fishery Management Council to depths of 5 fathoms; from Charlotte Harbor to the boundary between the areas covered by the Gulf of Mexico Fishery Management Council and the South Atlantic Fishery Management Council between depths of 10 and 30 fathoms; an area in the US EEZ north of Cuba from Puerto Esperanza to Bahia de Habana between depths of

100 and 325 fathoms; and from Grand Isle to Pensacola Bay between depths of 100 and 325 fathoms.

- Alternative 6. (Preferred/Environmentally Preferred Alternative) EFH for the Shrimp FMP consists of all Gulf of Mexico estuaries; Gulf of Mexico waters and substrates extending from the US/Mexico border to Fort Walton Beach, Florida from estuarine waters out to depths of 100 fathoms; waters and substrates extending from Grand Isle, Louisiana to Pensacola Bay, Florida between depths of 100 and 325 fathoms; waters and substrates extending from Pensacola Bay, Florida to the boundary between the areas covered by the Gulf of Mexico Fishery Management Council and the South Atlantic Fishery Management Council out to depths of 35 fathoms, with the exception of waters extending from Crystal River, Florida to Naples, Florida between depths of 10 and 25 fathoms and in Florida Bay between depths of 5 and 10 fathoms.

The following alternatives were developed by applying the above concepts and considered for the Stone Crab FMP:

- Alternative 1. (No Action - Roll Back) Do not describe and identify EFH in the Gulf of Mexico for the Stone Crab FMP.
- Alternative 2. (Status Quo) EFH for the Stone Crab FMP consists of areas of common occurrence for the stone crab *Menippe mercenaria* throughout the Gulf of Mexico: all estuarine and nearshore habitats continuing offshore to approximate depths of 30 fathoms.
- Alternative 4. EFH for the Stone Crab FMP consists of all Gulf of Mexico estuaries; Gulf of Mexico waters and substrates extending from the US/Mexico border to the boundary between the areas covered by the Gulf of Mexico Fishery Management Council and the South Atlantic Fishery Management Council out to depths of 30 fathoms.
- Alternative 5. EFH for the Stone Crab FMP consists of all Gulf of Mexico estuaries from Charlotte Harbor southward on Florida's west coast; Gulf of Mexico waters and substrates extending from northern Charlotte Harbor to the boundary between the areas covered by the Gulf of Mexico Fishery Management Council and the South Atlantic Fishery Management Council out to depths of 25 fathoms.
- Alternative 6. (Preferred/Environmentally Preferred Alternative) EFH for the Stone Crab FMP consists of all Gulf of Mexico estuaries; Gulf of Mexico waters and substrates extending from the US/Mexico border to Sanibel, Florida from estuarine waters out to depths of 10 fathoms; waters and substrates extending from Sanibel, Florida to the boundary between the areas covered by the Gulf of Mexico Fishery Management Council and the South Atlantic Fishery Management Council from estuarine waters out to depths of 15 fathoms.

The following alternatives were developed by applying the above concepts and considered for the Spiny Lobster FMP:

- Alternative 1. (No Action - Roll Back) Do not describe and identify EFH in the Gulf of Mexico for the Spiny Lobster FMP.
- Alternative 2. (Status Quo) EFH for Spiny Lobster FMP consists of areas of common occurrence for spiny lobster *Panulirus argus*, in the Gulf of Mexico: all estuarine and nearshore habitats continuing offshore to approximate depths of 44 fathoms from the Florida Keys north to approximately Tarpon Springs, FL.
- Alternative 4. EFH for the Spiny Lobster FMP consists of the Gulf of Mexico waters and substrates extending from the US/Mexico border to the boundary between the areas covered

by the Gulf of Mexico Fishery Management Council and the South Atlantic Fishery Management Council from the shoreline to the 100 fathom contour, excluding estuaries west of Cedar Key, Florida and excluding hard bottom south of 27°N deeper than 100 fathoms.

- Alternative 5. EFH for the Spiny Lobster FMP consists of Gulf of Mexico waters and substrates extending from Long Key, Florida to the Dry Tortugas out to depths of 25 fathoms.
- Alternative 6. (Preferred/Environmentally Preferred Alternative) EFH for the Spiny Lobster FMP consists of Gulf of Mexico waters and substrates extending from Tarpon Springs, Florida to Naples, Florida between depths of 5 and 10 fathoms; waters and substrates extending from Cape Sable, Florida to the boundary between the areas covered by the Gulf of Mexico Fishery Management Council and the South Atlantic Fishery Management Council out to depths of 15 fathoms.

The following alternatives were developed by applying the above concepts and considered for the Coral and Coral Reef FMP:

- Alternative 1. (No Action - Roll Back) Do not describe and identify EFH in the Gulf of Mexico for the Coral and Coral Reef FMP.
- Alternative 2. (Status Quo) EFH for the Coral Reef FMP in the Gulf of Mexico consists of: coral reef communities or solitary specimens occurring from nearshore environments to continental slopes and canyons, including the intermediate shelf zones, and primary areas of coral concentration in the East and West Flower Garden Banks and Florida Middle Grounds.
- Alternative 4. (Preferred/Environmentally Preferred Alternative) EFH for the Coral FMP consists of the total distribution of coral species and life stages throughout the Gulf of Mexico including the East and West Flower Garden Banks, Florida Middle Grounds, southwest tip of the Florida reef tract, and predominant patchy hard bottom offshore of Florida from approximately Crystal River south to the Keys, and scattered along the pinnacles and banks from Texas to Mississippi, at the shelf edge.
- Alternative 5. EFH for the Coral FMP could not be developed in the Gulf of Mexico under this alternative due to a lack of density-oriented information for coral life stages.
- Alternative 6. EFH for the Coral FMP is living coral in the Flower Gardens and Tortugas Ecological Reserve

The direct and indirect consequences of the EFH alternatives were considered in the context of the physical, biological, human and administrative environments. The direct and indirect impacts of each alternative are discussed and compared across alternatives in Sections 4.1 of the EIS.

2. Identify Other Actions to Encourage the Conservation and Enhancement of EFH

The EFH regulations encourage regional fishery management councils to designate HAPCs within areas identified as EFH in order to focus conservation priorities on specific habitat areas that play a particularly important role in the life cycles of federally managed fish species. The EFH guidelines list the following considerations in the designation of HAPCs (50 CFR 600.815 (a) (8)):

- The importance of the ecological function provided by the habitat;
- The extent to which the habitat is sensitive to human-induced environmental degradation;
- Whether and to what extent development activities are or will be stressing the habitat; and
- The rarity of the habitat type.

Seven concepts were originally considered for designating HAPCs and two additional concepts were subsequently added and analyzed.

HAPC Concepts

1. No action (Roll Back) – This concept would result in no HAPC designations under the provisions of the EFH regulations.
2. Status quo – This concept would leave existing HAPC designations intact but designate no others.
3. Federally Managed Sites – This concept would designate existing federally designated marine and estuarine managed areas as HAPCs.
4. Spawning sites - This concept would result in confirmed spawning locations for reef fish being designated as HAPCs.
5. Nursery grounds - This concept was considered but rejected because information does not exist to reasonably delineate areas that represent particularly important nursery grounds.
6. Migratory routes - This concept was considered but rejected because information does not exist to reasonably delineate areas that represent particularly important migratory routes.
7. Ecological bottlenecks – No areas were identified under this concept because no objective means of identifying actual locations of ecological bottlenecks is currently available, and this information is generally insufficient to determine if associations with habitat are obligatory. (Section 4.2 of the EIS contains a discussion of incomplete or unavailable information in accordance with 40 CFR 1502.22.)
8. Decision Tree – This concept was developed as a means of identifying HAPCs on the basis of the considerations described in the EFH final rule.
9. Sites of Special Interest – This concept was developed to capture expert opinion on the criteria in the EFH final rule for designating HAPCs. This concept utilizes extensive local knowledge and expert opinion in addition to scientific literature to identify as HAPCs discrete areas of habitat within designated EFH that meet one or more criteria of the EFH final rule.

The following alternatives were developed by applying the above concepts to designate HAPCs:

- Alternative 1. (No Action - Roll Back) Do not identify any HAPCs
- Alternative 2. (Status Quo) HAPC are those general habitat types and specific sites that are listed in the 1998 Generic EFH Amendment; no additional HAPCs are identified.
- Alternative 3. HAPCs would consist of selected existing federally managed marine areas including two National Marine Sanctuaries, four National Estuarine Research Reserves, 31 National Wildlife Refuges, seven National Marine Fisheries Service Critical Habitat Areas Fisheries Management Zones, and three National Park Systems.
- Alternative 4. HAPCs would consist of habitat areas used for spawning aggregations of managed reef fish species that are most in need of protection.
- Alternative 8. HAPCs are identified as habitat parcels that meet one or more of the considerations set out in the EFH final rule based on an analysis of ecological importance, fishing sensitivity, non-fishing sensitivity and stress from development activities, and rarity.
- Alternative 9. (Preferred/Environmentally Preferred Alternative) The following areas are identified as HAPCs: the Flower Garden Banks, Florida Middle Grounds, Tortugas North and South Ecological Reserves, Madison-Swanson Marine Reserve, Pulley Ridge and the following reefs and banks of the Northwestern Gulf of Mexico: Stetson, McNeil, Bright Rezak, Geyer, Mcgrail Bouma, Sonnier, Alderice and Jakkula.

The direct and indirect consequences of the HAPC alternatives were considered in the context of the physical, biological, human and administrative environments. The direct and indirect impacts of each alternative are discussed and compared across alternatives in Section 4.2 of the EIS.

The EFH regulations also require that actions be identified to encourage the conservation and enhancement of EFH. The Magnuson-Stevens Act divides the anthropogenic sources of potential adverse effects on EFH into two main groups: fishing activities and non-fishing activities. While the Council and NOAA Fisheries have control over fishing activities in federal waters and can set regulations as required to balance the needs of the fishing industry, the fish, and habitat conservation, they have no direct control over non-fishing activities or over fishing activities in state/territorial waters. Final decisions on approval and conditions for non-fishing activities remain with the federal agency with responsibility for the action. However, NOAA Fisheries and the Council have important input into the process because the responsible agency must initiate a consultation with NOAA Fisheries for activities that may adversely affect EFH, and the federal action agency must respond in writing to recommendations made by NOAA Fisheries and the Council.

Information does not exist to quantify both fishing and non-fishing impacts on fishery production, and the Council and NOAA Fisheries are not able to predict the results of consultations on non-fishing activities or what habitats will be destroyed or adversely impacted. Section 4.5 discusses the range of conservation recommendations contained in the 1998 Generic Amendment for impacts of fishing in territorial waters as well as individual projects including: docks and piers; boat ramps; marinas; bulkheads and seawalls; cables, pipelines, and transmission lines; transportation projects; navigation channels and boat access canals; disposal of dredged material; impoundments and other water level and flow controls; drainage canals and ditches; oil and gas exploration and production; other mineral mining/extraction; sewage treatment and disposal; steam-electric plants and other facilities requiring water for cooling or heating; and mariculture/aquaculture.

3. Identify Measures to Prevent, Mitigate, or Minimize to the Extent Practicable the Adverse Effects of Fishing on EFH

The Magnuson-Stevens Act and EFH regulations require fishery management councils and NOAA Fisheries to act to prevent, mitigate, or minimize any adverse effects from fishing, to the extent practicable, if there is evidence that a fishing activity adversely affects EFH in a manner that is more than minimal and not temporary in nature. The practicability of the fishing impacts alternatives is considered with regard to the economic and ecological costs and benefits of the resulting management measures.

The EIS evaluates the relative risk of impacts to EFH resulting from fishing activities. This provides the basis for developing alternatives to prevent, mitigate, or minimize adverse effects of fishing on EFH. The evaluation occurred in several steps:

- Prepare habitat maps and identify EFH.
- Determine the sensitivity of EFH to fishing activities.
- Determine the extent of fishing activities (preferably by geographic location).
- Combine the sensitivity and the extent of the fishing activities into a measure of fishing impacts to EFH (preferably by geographic location).
- Using advice from local experts and professional judgment, develop alternatives that potentially reduce the probability of impacts and thereby prevent, mitigate, or minimize adverse effects of fishing on EFH.

The direct and indirect consequences of the fishing impacts alternatives were considered in the context of the physical, biological, human and administrative environments. The results are presented in Section 4.3 of the EIS.

Seven alternatives for preventing, mitigating, or minimizing adverse effects of fishing on EFH are presented. Each alternative represents a package of several individual measures that affect the use of fishing gears allowed under the Gulf of Mexico FMPs. Each alternative has a different set of consequences on the affected environment.

The alternatives presented options for preventing, mitigating, or minimizing all adverse impacts on EFH by federally managed fishing gears in the Gulf of Mexico that are considered to be more than minimal and not temporary. They were developed from the following four conceptual approaches to preventing, mitigating, or minimizing adverse effects of fishing:

- **No Action:** No action alternatives are required by NEPA in part to provide a baseline for the consequences analysis, against which the consequences of all the other alternatives can be compared. Under this concept, no new measures for preventing, minimizing or mitigating adverse effects of fishing on EFH would be introduced. To adopt this concept as the fishing impacts alternative, the Council would have to show that existing management measures adequately minimize, mitigate, or prevent potential adverse fishing impacts for all gears in all FMPs, to the degree practicable using best available scientific information.
- **Gear Modification:** Under this concept, alternatives are developed for modifications to the design and/or use of specific fishing gears that have a high potential of preventing, minimizing, or mitigating the adverse fishing impacts they cause.
- **Gear Restriction:** Alternatives create specific closed areas and closed seasons to prevent, minimize, or mitigate adverse fishing impacts in particular areas and at particular times of the year (as appropriate).
- **Gear Prohibitions:** This is the most restrictive approach to preventing, minimizing or mitigating adverse effects of fishing on EFH. Prohibition of gears on sensitive habitat could occur at two scales. First, prohibit the gear on only the habitats that the gear adversely impacts. This would require mapping of the habitats and drawing enforceable boundaries around the sensitive habitats. Second, prohibit gear throughout the EEZ. Such a prohibition would prevent a gear from adversely affecting a habitat (to the extent it is enforced), but would also prevent use of the gear on habitats where it causes no adverse impact.

For some impacts, there are several options for mitigation spanning all four of these categories. For others, due to the nature of the impact and/or the gear there are essentially only two options: no action or total prohibition.

Alternatives to prevent, mitigate, or minimize adverse effects of fishing on EFH:

- **Alternative 1. (No Action, status quo).** Use existing regulations to prevent, mitigate, or minimize adverse fishing impacts in state and federal waters of the Gulf of Mexico.
- **Alternative 2. Establish minor modifications to fishing gears and a gear closure on sensitive habitat to prevent, mitigate, or minimize adverse fishing impacts in the EEZ with the following action items:**
 1. No bottom trawling over coral reef.

2. Require aluminum doors on trawls.
 3. Limit bottom longline sets to 6 miles in length, limited to 3 sets/day on hard bottom.
 4. Require circle hooks on all vertical lines and allow maximum sinker weights of 2 pounds for bandit rigs and 0.5 pounds for rod and reel, electric rigs, or handlines.
 5. Require use of buoys on all anchors.
- Alternative 3. Establish moderate modifications to fishing gears and a gear closure on sensitive habitat to prevent, mitigate, or minimize adverse fishing impacts in the EEZ. In addition to the restrictions listed in Alternative 2, apply the following action items:
 1. Limit use of tickler chains to one chain with a maximum ¼ inch link diameter.
 2. Limit total trawl headrope length to 180 feet or less.
 3. Limit trawl vessels to 85 feet or less length overall (LOA), and grandfather existing vessels.
 4. Prohibit trotlines when using traps/pots.
 - Alternative 4. (Environmentally Preferred Alternative) Establish major modifications to fishing gears and gear closures on sensitive habitats to prevent, mitigate, or minimize adverse fishing impacts in the EEZ. In addition to the restrictions listed in Alternative 3, apply the following action items:
 1. Limit total trawl headrope length to 120 feet or less.
 2. Limit trawl vessels to 81 feet or less LOA on hard bottom or SAV.
 3. Prohibit use of tickler chains on hard bottom, SAV, sand/shell, and soft sediments.
 4. Prohibit use of all traps/pots and bottom longlines and buoy gear on coral reef.
 5. Prohibit all use of anchors on coral, and require use of mooring buoys if vessels need to "anchor" or maintain a stationary position.
 - Alternative 5. Prohibit gears and fishing activities that have adverse impacts on EFH from the EEZ. Apply the following action items:
 1. Prohibit use of all bottom trawling gear.
 2. Prohibit use of all traps and pots.
 3. Prohibit use of all bottom longline & buoy gear.
 4. Prohibit use of all spears and powerheads.
 5. Prohibit use of all vertical gear.
 6. Prohibit use of all anchors.
 - Alternative 6. (Preferred Alternative) Establish minor modifications to fishing gears and gear closures on sensitive habitat to prevent, mitigate, or minimize adverse fishing impacts in the EEZ with the following action items:
 1. Regulate fishing weights on vertical line fishing gear used over coral reefs in HAPCs.
 2. Prohibit bottom anchoring over coral reefs in HAPCs.
 3. Prohibit use of bottom longlines, buoy gear, and all traps/pots on coral reefs.
 4. Prohibit the use of trawling gear on coral reefs.
 5. Require a weak link in the tickler chain of bottom trawls on all habitats.
 - Alternative 7. Establish some minor modifications to fishing gears and one major gear closure on sensitive live hard bottom habitats to prevent, mitigate, or minimize adverse fishing impacts in the EEZ. Apply the following action items on live hard bottom:
 1. Limit bottom longline sets to 5 miles in length, and to 3 sets/day.
 2. Prohibit trotlines when using traps/pots.
 3. Prohibit all anchoring.
 4. Enact a seasonal closure for shrimp trawl fishing.

The Council and NOAA Fisheries also considered, but rejected, the following actions to prevent, mitigate, or minimize the effects of fishing on EFH:

- Prohibit the use of bottom longlines greater than 2 miles in length, and limit the number of sets to no more than 3 per day on coral.
- Limit the number of active vertical lines (or handlines) to no more than 3 per commercial vessel during any period of active fishing, and limit the number of days per fishing trip to no more than 5.
- Limit the number of individuals fishing with spears or powerheads during commercial or recreational trips to 3 per vessel.

The Council considered these potential actions to have no significant benefit to fish habitats and also found them to be unenforceable, and therefore concluded that these measures are not practicable.

NOAA Fisheries Decision and Factors Considered in the Decision

NOAA Fisheries has decided to proceed with amending the seven FMPs of the Gulf of Mexico with the following Council-preferred alternatives for identifying EFH, identifying HAPCs, and preventing, mitigating, or minimizing the adverse effects of fishing on EFH. This decision was made after careful review of the proposed measures, the associated analyses, and the public comments received on the EIS. In addition, technical, economic, and agency statutory mission considerations were taken into account.

NOAA Fisheries' mission is to provide stewardship of living marine resources through science-based conservation and management and the promotion of healthy ecosystems (*NOAA Fisheries Strategic Plan for FY 2003 – FY 2008*, p. iv). Other than for coral, NOAA Fisheries considered species' density and functional relationships of EFH alternatives because more information is available for that concept than others, and rejected concepts and alternatives that did not sufficiently identify ecological function or relate habitat function to EFH designation. For coral, NOAA Fisheries considered known distributions in designating EFH; adult coral is its own habitat and physical mechanisms retain most coral larvae near spawning sites. In designating HAPCs NOAA Fisheries considered habitat use, sensitivity to fishing and non-fishing activities, and rarity as indicators of particular ecological importance. To minimize the adverse effects of fishing upon EFH, NOAA Fisheries balanced the vulnerability of prospective EFH with the practicability of management measures to protect EFH. NOAA Fisheries considered the ecological function of the EFH and (HAPCs), its vulnerability including sensitivity to fishing activities, as well as the resulting burden on fishermen from alternatives to protect EFH. NOAA Fisheries selected measures with environmental benefits that outweigh potential economic impacts to fishermen.

Preferred EFH Alternative:

The Council selected EFH Alternatives derived from Concept 6 as the preferred alternative for all FMPs except coral. Concept 6 describes and identifies EFH according to functional relationships between life history stages of federally managed species and Gulf of Mexico marine and estuarine habitats. For coral, Alternative 6 included only those areas identified as known, living coral reef (the East and West Flower Garden Banks and the corals in the Dry Tortugas area). The Council selected EFH Alternative 4 as the preferred alternative for coral, which describes and identifies as EFH those habitats coinciding with the known distribution of all life stages of all species of coral under management.

Technical considerations are discussed throughout the EIS, but in particular in the "Methodologies" section, 2.1, (pages 2-2 to 2-81), of the EIS. The EFH Final Rule explains that the information necessary to describe and identify EFH should be organized at four levels of detail, level 4 being the highest and level 1 the lowest:

Level 4—production rates by habitat are available

Level 3—growth, reproduction, or survival rates within habitats are available

Level 2—habitat-related densities of the species are available; and

Level 1—distribution data are available for some or all portions of the geographic range of the species.

Virtually no information at levels 3 and 4 exists for managed species in the Gulf of Mexico, and none that could be used to distinguish between different areas of habitat with sufficient contrast to indicate that one should be identified as EFH and the other should not. Within this framework for identifying EFH, the concepts were developed for identifying EFH and HAPC. The concepts considered and accepted were then applied to each FMP, resulting in the suite of alternatives for each FMP. The alternatives were weighed against the factors described above, and the preferred alternative for each FMP was selected.

The preferred alternative for each FMP is as follows:

- Alternative 6. EFH for the Red Drum FMP consists of all Gulf of Mexico estuaries; Gulf of Mexico waters and substrates extending from Vermilion Bay, Louisiana to the eastern edge of Mobile Bay, Alabama out to depths of 25 fathoms; waters and substrates extending from Crystal River, Florida to Naples, Florida between depths of 5 and 10 fathoms; waters and substrates extending from Cape Sable, Florida to the boundary between the areas covered by the Gulf of Mexico Fishery Management Council and the South Atlantic Fishery Management Council between depths of 5 and 10 fathoms.
- Alternative 6. EFH for the Reef Fish FMP consists of all Gulf of Mexico estuaries; Gulf of Mexico waters and substrates extending from the US/Mexico border to the boundary between the areas covered by the Gulf of Mexico Fishery Management Council and the South Atlantic Fishery Management Council from estuarine waters out to depths of 100 fathoms.
- Alternative 6. EFH for the Coastal Migratory Pelagics FMP consists of all Gulf of Mexico estuaries; Gulf of Mexico waters and substrates extending from the US/Mexico border to the boundary between the areas covered by the Gulf of Mexico Fishery Management Council and the South Atlantic Fishery Management Council from estuarine waters out to depths of 100 fathoms.
- Alternative 6. EFH for the Shrimp FMP consists of all Gulf of Mexico estuaries; Gulf of Mexico waters and substrates extending from the US/Mexico border to Fort Walton Beach, Florida from estuarine waters out to depths of 100 fathoms; waters and substrates extending from Grand Isle, Louisiana to Pensacola Bay, Florida between depths of 100 and 325 fathoms; waters and substrates extending from Pensacola Bay, Florida to the boundary between the areas covered by the Gulf of Mexico Fishery Management Council and the South Atlantic Fishery Management Council out to depths of 35 fathoms, with the exception of waters extending from Crystal River, Florida to Naples, Florida between depths of 10 and 25 fathoms and in Florida Bay between depths of 5 and 10 fathoms.
- Alternative 6. EFH for the Stone Crab FMP consists of all Gulf of Mexico estuaries; Gulf of Mexico waters and substrates extending from the US/Mexico border to Sanibel, Florida from estuarine waters out to depths of 10 fathoms; waters and substrates extending from Sanibel, Florida to the boundary between the areas covered by the Gulf of Mexico Fishery

Management Council and the South Atlantic Fishery Management Council from estuarine waters out to depths of 15 fathoms.

- Alternative 6. EFH for the Spiny Lobster FMP consists of Gulf of Mexico waters and substrates extending from Tarpon Springs, Florida to Naples, Florida between depths of 5 and 10 fathoms; waters and substrates extending from Cape Sable, Florida to the boundary between the areas covered by the Gulf of Mexico Fishery Management Council and the South Atlantic Fishery Management Council out to depths of 15 fathoms.
- Alternative 4. EFH for the Coral FMP consists of the total distribution of coral species and life stages throughout the Gulf of Mexico including the East and West Flower Garden Banks, Florida Middle Grounds, southwest tip of the Florida reef tract, and predominant patchy hard bottom offshore of Florida from approximately Crystal River south to the Keys, and scattered along the pinnacles and banks from Texas to Mississippi, at the shelf edge.

Preferred HAPC Alternatives:

NOAA Fisheries and the Council use HAPCs to focus conservation and management efforts on particularly valuable and/or vulnerable subsets of EFH. The Council selected the alternative developed from HAPC Concept 9, which was developed to capture expert opinion on the criteria contained in the EFH final rule for designating HAPCs.

- Alternative 9: The following areas are identified as HAPCs: the Flower Garden Banks, Florida Middle Grounds, Tortugas North and South Ecological Reserves, Madison-Swanson Marine Reserve, Pulley Ridge and the following reefs and banks of the Northwestern Gulf of Mexico: Stetson, McNeil, Bright Rezak, Geyer, Mcgrail Bouma, Sonnier, Alderice and Jakkula.

Preferred Alternative for Preventing, Mitigating, or Minimizing Adverse Effects of Fishing:

The EIS used specific practicability factors relevant to the EFH final rule requirements to evaluate if the actions to prevent, mitigate, or minimize the adverse effects of fishing were reasonable and capable of being done in light of available technology and economic considerations, and would not impose an unreasonable burden on the fishers. These factors included the nature and extent of the adverse effect on EFH, the long and short-term costs and benefits of potential management measures to EFH, associated fisheries and ecosystems, net economic change to fishers, equity of potential costs to fishing communities, and effects on enforcement, management and administration. Alternative 6 was selected as the preferred alternative.

- Alternative 6. Establish minor modifications to fishing gears and gear closures on sensitive habitat to prevent, mitigate, or minimize adverse fishing impacts in the EEZ with the following action items:
 1. Regulate fishing weights on vertical line fishing gear used over coral reefs in HAPCs
 2. Prohibit bottom anchoring over coral reefs in HAPCs
 3. Prohibit use of bottom longlines, buoy gear, and all traps/pots on coral reefs
 4. Prohibit the use of trawling gear on coral reefs
 5. Require a weak link in the tickler chain of bottom trawls on all habitats

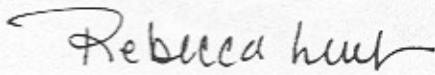
Environmentally Preferred Alternatives:


The Council on Environmental Quality (CEQ) guidance regarding the identification of environmentally preferred alternatives states that ordinarily these are the alternatives that cause the least damage to the biological and physical environment and which best protect, preserve, and enhance historic, cultural, and natural resources. NOAA Fisheries has identified the preferred alternatives for identifying EFH and EFH HAPCs as also being the environmentally preferred alternatives.

With regard to preventing, mitigating, and minimizing the adverse effects of fishing on EFH, Alternative 5, a total prohibition of selected fishing gears, would be most protective of natural resources but would eliminate most fishing in the EEZ. The EFH final rule provides guidance on conducting a practicability analysis on alternatives considered to minimize fishing effects on EFH. To make this determination, the Council and NOAA Fisheries considered the nature and extent of the adverse effects on EFH and the long and short-term costs and benefits of potential management measures to EFH, associated fisheries, and the Nation, consistent with the National Standards. Consistent with the Magnuson-Stevens Act, the Council and NOAA Fisheries selected a preferred alternative (Alternative 6) that minimizes, to the extent practicable, adverse effects of fishing on EFH.

Section 4.4.2.5 of the EIS describes various research efforts on the effects of fishing gear on EFH. As new information becomes available NOAA Fisheries and the Council are directed by the EFH final rule to revise and amend EFH information as warranted. The rule further requires a complete review of all EFH information at least once every five years.

Further information regarding the ROD may be obtained by contacting: David Dale, NOAA Fisheries, 9721 Executive Center Drive North, St. Petersburg, Florida 33702, (727) 570-5736.



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Date