

# COVER SHEET

## Essential Fish Habitat Designation and Minimization of Adverse Impacts

Proposed Action: Amend the Pacific Coast Groundfish FMP, pursuant to section 303(a)(7) of the Magnuson-Stevens Act, to (1) describe and identify essential fish habitat (EFH) for the fishery, (2) designate Habitat Areas of Particular Concern, (3) minimize to the extent practicable the adverse effects of fishing on EFH, and (4) identify other actions to encourage the conservation and enhancement of EFH. The project area for this action extends from the seaward boundary of the Pacific Coast Exclusive Economic Zone shoreward to the inland extent of estuaries.

Type of Statement: Final Environmental Impact Statement

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**Abstract:** This environmental impact statement (EIS) evaluates the effects of a comprehensive strategy to conserve and enhance essential fish habitat (EFH) for fish managed under the *Pacific Coast Groundfish Fishery Management Plan* (FMP). The comprehensive strategy to conserve EFH, including its identification and the implementation of measures to minimize, to the extent practicable, adverse impacts to EFH from fishing, must be consistent with provisions in the Magnuson-Stevens Fishery Conservation and Management Act and implementing regulations. Implementation of the strategy may require that the groundfish FMP be amended to describe any change in the EFH identification and description, among other things. New regulations may also be required to implement minimization measures. Preparation of this EIS stems from a 2000 court order in *American Oceans Campaign et. al. v. Daley et. al.*, Civil Action No. 99-982 (GK)(D.D.C. September 14, 2000), which requires NMFS and the Pacific Fishery Management Council, to prepare an EIS to evaluate the effects of fishing on EFH and identify measures to minimize those impacts, to the extent practicable. This final EIS (FEIS) includes an analysis of a reasonable range of alternatives, identification of the final preferred alternative, responses to comments, and appropriate revisions to the draft document. After publication of the FEIS a 30-day "cooling off" period ensues before the responsible official may sign a record of decision and implement the proposed action. NMFS must approve any FMP amendment and implementing regulations by May 6, 2006.

## Executive Summary

### INTRODUCTION

This environmental impact statement (EIS) evaluates the effects of alternatives for a comprehensive strategy to conserve and enhance essential fish habitat (EFH) for fish managed under the *Pacific Coast Groundfish Fishery Management Plan* (groundfish FMP). The comprehensive strategy to conserve and enhance EFH, including its identification and the implementation of measures to minimize, to the extent practicable, adverse impacts to EFH from fishing, is required by the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and implementing regulations. The MSA is the principal legal basis for fishery management within the Exclusive Economic Zone (EEZ), which extends from the outer boundary of the territorial sea to a distance of 200 nautical miles from shore. Implementation of the strategy may require that the groundfish FMP be amended to describe any change in the EFH identification and description, among other things. New regulations may also be required to implement minimization measures.

Preparation of this EIS stems from a 2000 court order in *American Oceans Campaign et. al. v. Daley et. al.*, Civil Action No. 99-982 (GK)(D.D.C. September 14, 2000) (*AOC v. Daley*), which required NMFS and the Pacific Fishery Management Council (PFMC, or the Council), to prepare an EIS to evaluate the effects of fishing on EFH and identify measures to minimize, to the extent practicable, those impacts. NMFS published a draft EIS for public comment on February 11, 2005, after working closely with the Council. The public comment period on the draft ended on May 11, 2005. The Pacific Fishery Management Council identified a final preferred alternative at their June 13-17, 2005, meeting in Foster City, California. This final EIS (FEIS) includes an analysis of a reasonable range of alternatives, the identification of the final preferred alternative, responses to comments on the DEIS and appropriate revisions to the draft document. After the FEIS is published, a 30-day “cooling off” period ensues before the responsible official may sign a record of decision (ROD) and implement the proposed action. NMFS must approve any FMP amendment and implementing regulations by May 6, 2006.

### The Proposed Action

*The proposed action* is to ensure compliance with section 303(a)(7) of the Magnuson-Stevens Act by amending the Pacific Coast Groundfish FMP to (1) describe and identify essential fish habitat (EFH) for the fishery, (2) designate Habitat Areas of Particular Concern, (3) minimize to the extent practicable the adverse effects of fishing on EFH, and (4) identify other actions to encourage the conservation and enhancement of EFH.

*The purpose of proposed action* is: first, to provide the Council and NMFS with the information they need to better account for the function of Pacific Coast groundfish EFH when making fishery management decisions; second, to ensure that this EFH is capable of sustaining groundfish stocks at levels that support sustainable fisheries; and third, that EFH is a healthy component of fully functioning ecosystems.

*The proposed action is needed* because the Council and NMFS have not had the tools to consider habitat and ecosystem function, and their relation to other biological and socioeconomic conditions affecting the groundfish fishery, in management decision-making. The West Coast groundfish fishery suffers from numerous challenges. Although identifying and conserving EFH cannot address all these problems, the proposed action will allow managers to provide solutions in a more comprehensive way, including consideration of EFH. Among the problems facing the

fishery are overcapacity, or too many boats chasing too few fish and declining stock sizes, the latter of which led the Secretary of Commerce to declare nine groundfish stocks overfished;<sup>1</sup> and changing ocean conditions, which may have contributed to the failure of some groundfish stocks to replace themselves (recruitment failure). An overriding problem has been the challenge of managing fisheries with limited scientific data. This increases the risk that decisions exacerbate the kinds of fishery- and stock-related problems just identified. NMFS and the Council will be able to use information on EFH to consider the importance of habitat when making decisions on fishery management.

In the Magnuson-Stevens Act, Congress found that “one of the greatest long-term threats to the viability of commercial and recreational fisheries is the continuing loss of marine, estuarine, and other aquatic habitats” and “habitat considerations should receive increased attention for the conservation and management of fishery resources of the United States.” Furthermore, one of the long-term goals for the groundfish fishery, adopted by the Council in its strategic plan, is “to protect, maintain, and/or recover those habitats necessary for healthy fish populations and the productivity of those habitats” (PFMC 2000).

## Background

NMFS and the Council used a scientific risk assessment process to analyze information for the four parts of the proposed action. Acting on the advice of the National Research Council’s (NRC) Committee on the Ecosystem Effects of Fishing (NRC 2002), NMFS and the Council have engaged in a public process to develop a comprehensive risk assessment (Appendix A) to determine if EFH-related problems exist, and if so, which of these problems could be appropriately considered through the Council and NEPA processes. The risk assessment focuses on the identification of EFH, threats to its health and function, and the delineation of gaps in the available data, which if filled would improve the risk assessment and support its ongoing use. Once the risk assessment was completed, the following problem statement was developed, in order to highlight the issues that this EIS is intended to resolve:

*Based on the results of the risk assessment, public input received during scoping, and the legal mandate from the Magnuson-Stevens Act, the Council, NMFS, and partner organizations have developed the following objectives for this EIS:*

- *consider alternatives for the identification and description of EFH;*
- *consider alternatives for the designation of Habitat Areas of Particular Concern (HAPC);*
- *consider alternatives for minimization of adverse effects of fishing on EFH;*
- *address gaps in available data; and,*
- *identify other actions to encourage the conservation of EFH.*

The Pacific Coast groundfish fishery encompasses the management institutions and processes used to manage diverse fishery sectors, which are defined by regulations, gear type, and target

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<sup>1</sup> One of these stocks, Pacific whiting, has subsequently been declared rebuilt.

species. Although not bearing directly on EFH identification and description and impact minimization, the discussion here provides the context for the implementation of any such measures. Depletion of several groundfish species, and the implementation of measures needed to recover those stocks, has resulted in a reduction in allowable groundfish landings: from 277,848 mt in 1998 to 155,646 mt in 2002, or a 44% contraction (PFMC 2004). Measures to minimize the adverse effects of fishing on EFH broadly involve reducing fishing effort or fleet capacity, regulating the use and configuration of fishing gear, or closing areas to fishing (NRC 2002). Although not specifically directed at EFH impacts, the Council and NMFS have already implemented measures in all three of these categories.

### **ALTERNATIVES INCLUDED IN THE EIS**

Four categories of alternatives are included in the EIS: (A) Identifying and describing EFH, (B) designating habitat areas of particular concern (HAPCs), (C) mitigating the adverse effects of fishing, and (D) research and monitoring. The alternatives in each category are described below. The Council selected its final preferred alternative from those described in the DEIS, in some cases modifying them in the process. The final preferred alternative is described separately.

#### **Alternatives to Identify and Describe EFH**

##### **Alternative A1: No Action**

The no action alternative would maintain the current EFH identification and description, incorporated into the groundfish FMP by Amendment 11 in 1998, which is all waters from the mean higher high water line, and the upriver extent of saltwater intrusion in river mouths, along the coasts of Washington, Oregon, and California to the seaward boundary to the U.S. EEZ.

The FMP groups the various EFH descriptions into seven units called composite EFHs. This approach focuses on ecological relationships among species and between the species and their habitat, reflecting an ecosystem approach in defining EFH.

##### **Alternative A.2: Depths less than 3,500 m (Component of the Final Preferred Alternative)**

In this alternative, EFH would be identified as 100% of the area where Habitat Suitability Probability (HSP<sup>2</sup>) is greater than zero for all species and any additional area in depths less than or equal to 3,500 m (1,914 fm). By including areas out to the 3,500 m depth curve, this alternative includes all habitats where groundfish have been observed with the addition of 100 m depth as a precautionary adjustment in case of unobserved fish.

##### **Alternative A.3: 100% HSP Area**

Designate 100% of the area where HSP is greater than zero for all species.

##### **Alternative A.4: HSP<sup>1</sup> Based on Management Status**

Designate the upper 90% of the HSP area of overfished species HSP, upper 80% of the HSP area for precautionary zone species, and upper 60% of the HSP area for all other groundfish, and all seamounts. HSP refers to the probability that the habitat is suitable for a managed species.

Alternative A.5: 70% HSP<sup>1</sup> Area

Designate the upper 70% of the area where HSP is greater than zero. HSP refers to the probability that the habitat is suitable for a managed species.

Alternative A.6: 30% HSP<sup>2</sup> Area

Designate the upper 30% of the area where HSP is greater than zero for all species. HSP refers to the probability that the habitat is suitable for a managed species.

**DEIS Alternatives to Designate HAPC**

Alternative B.1: No Action

No HAPCs are currently designated for groundfish. Choosing this alternative would maintain no HAPC designations.

Alternative B.2: Estuaries (Component of the Final Preferred Alternative)

Estuaries are protected nearshore areas such as bays, sounds, inlets, and river mouths, influenced by ocean and freshwater.

Alternative B.3: Canopy Kelp (Component of the Final Preferred Alternative)

Areas where kelp has been documented and mapped would be designated as HAPC. GIS data for the floating kelp species, *Macrocystis* spp. and *Nereocystis* sp., are available from state agencies in Washington, Oregon, and California.

Alternative B.4: Seagrass (Component of the Final Preferred Alternative)

Seagrass species found on the West Coast of the U.S. include eelgrass (*Zostera* spp., *Ruppia* sp.) and surfgrass (*Phyllospadix* spp.). These grasses are vascular plants, not seaweeds, forming dense beds of leafy shoots year-round in the lower intertidal and subtidal areas. Eelgrass is found on soft-bottom substrates in intertidal and shallow subtidal areas of estuaries. Surfgrass is found on hard-bottom substrates along higher energy coasts.

Alternative B.5: Core Habitat

This alternative designates core areas, defined as the upper 10% of area with an HSP greater than 0%, for the juvenile and adult life history stages of overfished and precautionary zone groundfish species. HSP refers to the probability that the habitat is suitable for a managed species.

Alternative B.6: Rocky Reefs (Component of the Final Preferred Alternative)

This alternative designates all rocky reef areas. Rocky habitat may be composed of bedrock, boulders, or smaller rocks such as cobble and gravel.

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<sup>2</sup> HSP refers to the probability that the habitat is suitable for a managed species.

**Alternative B.7: Areas of Interest (Component of the Final Preferred Alternative)**

This alternative would designate areas that are of special interest due to their unique geological and ecological characteristics, such as Olympic Coast National Marine Sanctuary (NMS), Thompson Seamount, and the Cowcod Conservation Area(s).

**Alternative B.8: Oil Production Platforms (Component of the Final Preferred Alternative)**

This alternative designates areas around oil production platforms in Southern California waters. There are 27 such platforms (CARE 2004) of which 23 are in federal waters and four are in California state waters. 22 platforms in federal water and one platform in state water are considered for HAPC designation.

**Alternative B.9: Process for New HAPC Designations (Component of the Final Preferred Alternative)**

This alternative establishes a streamlined process for designating new HAPCs, based on proposals submitted to the Council. The process would allow organizations and individuals to petition the Council at any time to consider a new designation and ensures that the Council will consider their proposal, provided they submit specified information.

**Alternatives to Minimize Adverse Impacts to EFH**

**Alternative C.1: No Action**

There is a broad range of regulatory measures in effect on the West Coast, including areas that are closed to fishing or non-fishing activities, fishing gear restrictions, and measures to reduce fishing effort which may have a beneficial effect on EFH. These measures would be maintained.

**Alternative C.2: Depth-based Gear-specific Restrictions (Component of the Final Preferred Alternative)**

This alternative contains three options, which vary by the areas closed to large footrope trawl gear and fixed gear. The footrope runs along the bottom of the net opening and its size is regulated to dictate the maximum size of rollers that can be affixed to the footrope. Without larger footrope gear, bottom trawl nets snag more easily on rough, irregular terrain; thus restrictions on footrope size discourage fishing in rocky areas.

**Alternative C.3: Close Sensitive Habitat**

Area closures are defined using gear and habitat specific sensitivity and recovery index values. Habitat areas above index value thresholds for any gear type would be closed to all fishing. This alternative has four options, specifying the closed areas by various index values and a threshold value on higher historic trawl effort are excluded from closure.

**Alternative C.4: Prohibit the Geographic Expansion of Fishing (Component of the Final Preferred Alternative)**

Under this alternative, areas that have not been fished recently (2000-2002) would be closed to fishing to protect areas that are potentially pristine. This alternative has two options applying to either bottom trawling or all bottom-tending gear types.

#### Alternative C.5: Prohibit a Krill Fishery

This alternative would designate krill as a component of EFH as part of this EIS and prohibit fisheries that target it.

#### Alternative C.6: Close Hotspots

This alternative prohibits trawling in hotspot areas defined as habitat that has high probability of being EFH for a large number of groundfish. Areas that are associated with a high HSP value for 50 or more species/lifestage combinations would be closed to bottom trawling.

#### Alternative C.7: Close Areas of Interest (Component of the Final Preferred Alternative)

This alternative closes the areas of interest HAPCs designated under Alternative B.7 to fishing by specified gear types. (The 21 areas of interest listed under Alternative B.7 are underwater features, such as seamounts and submarine areas, or are currently under some form of protection.) This alternative has two options, which would close areas of interest to either bottom trawling or all bottom-contact fishing.

#### Alternative C.8: Zoning Fishing Activities

Under this alternative NMFS limits the use of bottom-tending fishing gear to specified zones where the agency determines that such activities can be conducted without altering or destroying a significant amount of habitat. Areas deeper than the 2,000 m (1,094 fm) are closed to bottom contact gear and additional areas in shallower depths are considered for closure during a five-year transition period, creating areas zoned for specific gear types. This alternative has two options, which differ based on the types of gear considered for zoning.

#### Alternative C.9: Gear Restrictions (Component of the Final Preferred Alternative)

This alternative includes specific gear modifications and prohibitions. Eight different gear modifications and prohibitions are separate options under this alternative.

#### Alternative C.10: Central California No-trawl Zones (Component of the Final Preferred Alternative)

This alternative is based on a project being undertaken by two environmental advocacy organizations, The Nature Conservancy (TNC) and Environmental Defense Fund (EDF). It involves a public-private partnership under which private funds are used to purchase groundfish limited entry trawl licenses and vessels in concert with the designation, through the Council and NMFS, of no-trawl zones off the central California coast.

#### Alternative C.11: Relax Gear Endorsement Requirements

Vessels holding a groundfish limited entry permit account for a large portion of groundfish landings. Currently, limited entry permits include a gear endorsement specifying the type of gear the permit holder may use. Under this alternative, gear endorsements are relaxed but the sablefish endorsement is not. This would allow permit holders to switch gear types, providing fishermen greater flexibility in changing strategies based on prevailing conditions in the fishery.

Alternative C.12: Close Ecologically Important Areas to Bottom Trawl (Component of the Final Preferred Alternative)

This alternative would close a network of areas to bottom trawling; set a maximum footrope size of eight inches on bottom trawl gear within open area; require Vessel Monitoring Systems on all bottom trawl vessels with positions recorded every five minutes; increase onboard observer coverage on bottom trawl vessels to a level determined to be necessary by NOAA to estimate annual bycatch of habitat-forming invertebrates; establish a process for setting a limit on the bycatch of habitat-forming invertebrates; require ongoing research including comprehensive benthic mapping.

Alternative C.13: Close Ecologically Important Areas to Bottom-contacting Gear (Component of the Final Preferred Alternative)

Under this alternative, the areas identified in Alternative C.12 are closed to all bottom-contacting gear types, defined as both fixed gear (longlines, pots, and traps) and bottom trawl.

Alternative C.14: Close Ecologically Important Areas to Fishing

Under this alternative, the areas identified in Alternative C.12 are closed to all fishing.

**DEIS Research and Monitoring Alternatives**

Alternative D.1: No Action

NMFS conducts extensive fishery-related research relevant to groundfish and has a variety of methods to monitor these fisheries. Section 7.1 in the 2005-2006 groundfish harvest specifications FEIS (PFMC 2004) describes groundfish monitoring programs carried out by NMFS, the states, and tribes, and is hereby incorporated by reference. Current monitoring programs especially relevant to the alternatives described here include the limited entry trawl logbook program, the West Coast Groundfish Observer Program, and VMS covering limited entry trawl and fixed gear vessels. These programs are primarily intended to monitor discards and landings of groundfish and to enforce current harvest limits and area restrictions. There is no component specifically intended to monitor the effects of fishing on EFH.

Alternative D.2: Expanded Logbook Program (Component of the Final Preferred Alternative)

Under this alternative vessels in all commercial sectors, including recreational charter (for hire) vessels, will participate in an expanded logbook program. This alternative has two options for how an expanded program would be implemented.

Alternative D.3: Expanded Vessel Monitoring System (Component of the Final Preferred Alternative)

This alternative will identify expansion of the Vessel Monitoring Program to cover all West Coast groundfish commercial and recreational charter vessels.



#### Alternative D.4: Research Reserve System (Component of the Final Preferred Alternative)

This alternative will establish a system of designated research areas within areas closed to fishing to foster habitat-related research and comparison of fished areas with unfished areas.

#### **THE FINAL PREFERRED ALTERNATIVE**

The elements of the final preferred alternative are described according to the same four categories used to organize alternatives in the DEIS. As noted above, the preferred alternative contains elements drawn from alternatives in each of these categories.

#### **Identification and Description of EFH**

The preferred alternative identifies EFH as all waters and substrate in depths less than or equal to 3,500 m, to the upriver extent of saltwater intrusion, defined as upstream and landward to where ocean-derived salts measure less than 0.5 ppt during the period of average annual low flow, and areas associated with seamounts in depths greater than 3,500 m. The 100% HSP area, all of which occurs in depths less than 3,500 m, constitutes a part of EFH for all species and life stages within the Groundfish FMP. This EFH identification is precautionary because it is based on the currently known maximum depth distribution of all life stages of fishery management unit (FMU) species. This precautionary approach is taken because uncertainty still exists about the relative value of different habitats to individual groundfish species/life stages, and thus the actual extent of groundfish EFH. While recognizing these limitations, the 100% HSP area, all of which occurs in depths less than 3,500 m, is identified as a part of groundfish EFH, recognizing that the best scientific information demonstrates this area is particularly suitable groundfish habitat for all species and life stages within the Groundfish FMP, even if they are not specifically included in the HSP model. Additionally, there is a lack of information on the value of seamounts, in depths greater than 3,500 m, to groundfish. Designating these seamounts is also precautionary because they may prove to be essential to certain life stages of fish in the groundfish fishery.

This component of the final preferred alternative is based on Alternative A.2.

#### **Habitat Areas of Particular Concern (HAPCs) Designations**

The preferred alternative identifies the following HAPCs:

- Estuaries (Alternative B.2)
- Canopy kelp (Alternative B.3)
- Seagrass (Alternative B.4)
- Rocky reefs (Alternative B.6)
- Areas of interest (modification of Alternative B.7). Not all of the areas of interest described in Alternative B.7 were incorporated into the preferred alternative. In addition, the final preferred alternative includes some areas not identified in Alternative B.7.
- Oil production platforms (modification of Alternative B.8). This component of the final preferred alternative includes 13 of the 27 oil production platforms identified in Alternative B.8.

The preferred alternative also includes a component substantially based on Alternative B.9 (process for new HAPC designations). It differs from Alternative B.9 in that the process would also allow consideration of the modification or elimination of existing HAPCs.

### **Minimize Adverse Fishing Impacts to EFH**

The component of the final preferred alternative intended to mitigate the adverse effects of fishing on groundfish EFH comprises management measures in three categories: (1) gear modifications, (2) closed areas, and (3) promotion of reductions in fishing effort.

#### ***Gear Modifications and Prohibitions***

The preferred alternative includes the following gear modifications and prohibitions:

- Prohibit bottom trawl roller gear with a footrope diameter greater than 19 inches on bottom trawl gear throughout the EEZ (modification of Alternative C.9.1).
- Prohibit bottom trawl roller gear with a footrope diameter greater than eight inches eastward of a line approximating the 100 fathom depth contour (modification of Alternative C.2.1).
- Prohibit dredge gear (Alternative C.9.5).
- Prohibit beam trawl gear (Alternative C.9.6).

Restrictions in state waters will be implemented by state law, as appropriate. Although dependent on state regulation, the restrictions on dredge and beam trawl gear are not intended to apply in internal waters (Puget Sound, San Francisco Bay, etc.).

#### ***Closed Areas***

The final preferred alternative contains two types of closed areas: a “trawl footprint” closure and ecologically important closed areas.

**Footprint Closure:** This component of the final preferred alternative is a modification of the trawl footprint closure described under Alternative C.4. Under that alternative, areas that were not trawled from 2000 to 2003 would be permanently closed to bottom trawl. The final preferred alternative closes depths greater than 700 fathoms to bottom trawl.

**Ecologically Important Closed Areas:** This component of the final preferred alternative is a modification and combination of Alternative C.10, C.12, and C.13. It also includes a new procedural element that was not described in the DEIS applicable to areas closed to bottom trawl, which would allow reconsideration of these areas upon the receipt of new scientific information. Ecologically important closed areas are sited shoreward of 700 fathoms in the area not already closed to bottom trawl with the footprint closure and include areas closed to bottom trawl and all bottom-contacting gear types.

#### ***Effort Reduction***

The final preferred alternative incorporates the element of Alternative C.10 involving public-private partnerships under which private funds are used to purchase groundfish limited entry trawl licensees by adding language to the FMP by amendment. The proposed language notes the

Council will support such efforts, as feasible, through their consideration of actions upon which the execution of contracts may be contingent.

### **Research and Monitoring**

Elements of Alternatives D.2-D.4, addressing EFH-related research and monitoring were incorporated into the final preferred alternative, although these elements will not be implemented as part of the proposed action evaluated in this EIS. Rather, they are identified as programmatic elements, either expressing priorities and objectives (expansion of the logbook program, research reserves) or identifying another process as the vehicle for implementation (expansion of VMS).

Expanded Logbook Program: The preferred alternative would amend the groundfish FMP to indicate Council support for an expanded logbook program, to the degree practicable (modification of Alternative D.2).

Expanded Vessel Monitoring System: Expansion of the current Vessel Monitoring System (VMS) program currently is being considered by the Council as part of a separate action. Under that action the Council will consider expanding the VMS requirement to a range of trawl and nontrawl fisheries including, in order to support EFH conservation objectives, all bottom trawl vessels (modification of Alternative D.3).

Research on the Impacts and Results of Bottom Trawl Closed Areas: The preferred alternative makes focusing research on the impacts and results of closing areas to bottom trawl a Council priority (modification of Alternative D.4).

### **APPLICATION OF THE ALTERNATIVES TO TRIBES**

NMFS does not intend for any of the alternatives described below to apply to tribal fisheries in usual and accustomed (u&a) grounds described in 50 C.F.R. 660.324(c). NMFS will continue to work with the tribes to ensure that within the u&a grounds, adequate measures are in place to protect EFH and HAPCs. In the future, in the event that it is determined that additional measures need to be developed, NMFS would follow the procedures outlines in 50 C.F.R. 660.324(d).

### **ENVIRONMENTAL CONSEQUENCES OF THE ALTERNATIVES**

#### **Environmental Consequences of the Alternatives to Identify and Describe EFH**

Designation of EFH, in accordance with section 303(a)(7) of the Magnuson-Stevens Act, does not in and of itself have any direct environmental or socioeconomic affects. However, EFH designation is likely to result in indirect environmental and socioeconomic affects.

Actions taken by a Council to minimize adverse effects of fishing on EFH may include fishing equipment restrictions, time or area closures, harvest limits, or other measures. Any such measures would be designed to reduce ongoing effects to EFH and/or promote recovery of disturbed habitats. These measures may result in socioeconomic effects for the affected sectors of the fishing industry, but will be designed to promote sustainable fisheries and long-term socioeconomic benefits.

Second, Federal and state agency actions that may adversely affect EFH trigger consultation and/or recommendations under sections 305(b)(2)-(4) of the Act. Under section 305(b)(2) of the Magnuson-Stevens Act, each federal agency must consult with NMFS regarding any action

authorized, funded, or undertaken by the agency that may adversely affect EFH. The EFH regulations require that federal agencies prepare EFH Assessments as part of the consultation process (50 CFR 600.920(e)). Under section 305(b)(4)(A) of the Act, NMFS must provide EFH Conservation Recommendations to federal and state agencies regarding any action that would adversely affect EFH. Under section 305(b)(3) of the Act, Councils may comment on and make recommendations to federal and state agencies regarding any action that may affect the habitat, including EFH, of a fishery resource under Council authority.

EFH recommendations from NMFS or a Council to federal or state agencies are non-binding. Nevertheless, as a result of EFH coordination, consultations, and recommendations, Federal or state agencies may decide to restrict various activities to avoid or minimize adverse effects to EFH. Such restrictions could result in project modifications that lead to higher costs for the applicants for federal or state permits, licenses, or funding. It would be speculative to predict the specific socioeconomic effects of future restrictions on development that may be imposed by agencies that authorize, fund, or undertake actions that may adversely affect EFH. Moreover, such agencies typically evaluate socioeconomic effects and other public interest factors under NEPA and other applicable laws before taking final action on any given activity. NMFS conducts approximately 6,000 EFH consultations and related EFH reviews nationwide every year, and is unaware of substantial project delays or significant increases in costs resulting from EFH consultations. Habitat conservation resulting from EFH consultations is expected to support healthier fish stocks and more productive fisheries over the long-term, with associated environmental and socioeconomic benefits. EFH consultations may also lead to indirect benefits for other species that use the same habitats as federally managed species of fish and shellfish.

Costs associated with consultations will likely vary depending on the number of species associated with an EFH designation, and the amount of habitat designated as EFH. If an entity chooses not to participate in consultations, then the EFH designation will ultimately have no effect on that entity. If consultations result in conservation recommendations, then there are likely to be increased costs in the short-term and possibly in the long-term depending on the amount of offsetting benefits realized from enhanced habitat productivity resulting from EFH designation. The designation process may negatively affect agencies if consultations use increased agency time and resources in addition to those currently required for the ESA process.

### ***Environmental Consequences of the final preferred Alternative component for EFH Identification and Description***

The final preferred alternative for describing EFH represents a significant refinement over the status quo in that the entire EEZ would no longer be described as EFH. The final preferred alternative would describe 59.2% of the EEZ as EFH which equates to 48,719,109 ha (142,042 square miles) in addition to state waters such as bays and estuaries.

The generic consequences of the final preferred alternative are described in Section 4.2.1. The specific data elements used to formulate the alternative are expected to be used during consultation activities and improve the quality of conservation recommendations. For instance, conservation recommendations for a project proposed in a specific area can now be based on analyses of HSP, habitat types, and other information sources available from the preferred alternative. In addition to supporting the delineation of suitable habitat for the individual species and life stages, these assessment-related techniques can be used as a basis for an ecosystem approach to management. For example, the HSP profiles for individual species/life stages can be combined by GIS analyses into ecosystem-level fish assemblages to investigate and predict environmental consequences of proposed projects. The specific conservation recommendations

for non-fishing activities which may result from the implementation of the final preferred alternative are fully described in appendix 14 to the Risk Assessment. The consequences of the final preferred alternative to describe EFH are considered Environmentally Positive (E+).

The final preferred alternative for describing EFH does not encompass the entire EEZ and as such may limit the geographic extent of specific components of the final preferred alternative measures to minimize adverse impacts to EFH that would otherwise apply throughout the EEZ. Those specific components approved by the Council that could be interpreted to include areas seaward of EFH are: (1) footprint closure in which bottom trawling would be prohibited seaward of 700 fathoms; (2) ban of dredge gear; (3) ban of beam trawl gear; and, (4) ban of trawl roller gear greater than 19". An analysis of the area that would be excluded from the implementation of these components is shown in Figure 4-29. NMFS has decided to apply the measures throughout the EEZ, including areas that would not be described as EFH, for purposes of the final preferred alternative. Management measures to minimize adverse impacts on EFH could apply in the EEZ in areas not described as EFH, if there is a link between the fishing activity and adverse effects on EFH. NMFS will highlight this issue in the Notice of Availability for the FMP Amendment and Proposed Rule to implement the measures and request public comment and additional information that would support or not support including non-EFH areas in the management measures.

### **Environmental Consequences of the Alternatives to Designate HAPCs**

Designation of HAPCs, like designation of EFH generally, does not have any direct environmental or socioeconomic effect, but may result in indirect effects greater than those associated with EFH because resource managers and regulators are likely to place a high priority on protecting areas that have been designated as HAPCs. HAPCs are used by NMFS and the Councils to focus conservation and management efforts on particularly valuable or vulnerable subsets of EFH. Although HAPC designation does not convey any higher regulatory standards for minimizing adverse effects of fishing or conducting EFH consultations, NMFS and the Councils may apply more scrutiny to fishing and non-fishing activities that affect HAPCs as compared to EFH. NMFS and the Council may be more risk averse when developing management measures to minimize adverse effects of fishing on HAPCs, and when recommending measures to federal and state agencies to minimize adverse effects of non-fishing activities on HAPCs. The potential environmental and socioeconomic affects from management measures to protect HAPCs would be comparable to those described for EFH. As with EFH, conservation of HAPCs is expected in the long-term to support healthier fish stocks and more productive fisheries over the long-term, which, in turn, will provide added environmental and socioeconomic benefits. If an entity participates in consultations with NMFS, then it is possible that increased costs associated with time and effort expended in consultation may occur, though most nearshore consultations involving groundfish may be merged with ESA listed salmon consultations and any cost incurred may be borne through the ESA process.

### ***Environmental Consequences of the final preferred Alternative Component to Designate HAPCs***

The final preferred alternative to designate HAPC incorporates components of Alternatives B.2, B.3, B.4, B.6, B.7, B.8 and B.9. The generic consequences of the final preferred alternative to designate HAPC are described in Sections 4.3.1 and 4.3.3. The final preferred alternative to designate HAPC represents a significant change from the status quo under which there are no HAPC designations. Under the final preferred alternative, approximately 4.51% of the EEZ would be designated as HAPC which equates to 3,711,978 ha (10,822 square miles). Due to the

generic consequences of designating HAPC, the final preferred alternative is considered Environmentally Positive (E+).

### **Practicability and Environmental Consequences of the Alternatives to Minimize Adverse Effects to EFH**

All alternatives—except the status quo alternative—are expected to have positive effects to the ecological environment and, therefore, positive effects to non-consumptive users of marine resources. However, some alternatives within this EIS have aspects which may make implementation impracticable to industry, while other alternatives may not be feasible to implement on the part of management agencies.

Impact minimization alternatives C.2.1 and C.2.2, if the fixed gear components were implemented, are likely to also close the West Coast Dungeness crab fishery which is likely to translate into a loss of over \$100 million to the nation annually. Depending on how impact minimization alternative C.11 would be implemented, this alternative may make it unfeasible for management agencies to predict catch levels and to stay within—or achieve—management targets. The trawl and fixed gear “bycatch models” may be dramatically compromised if analysts are unable to predict the use of gear types by fishing vessels. This alternative may be feasible for management agencies to implement if a periodic gear declaration and grace period is put in place.

Other alternatives can be considered practicable from the standpoint of population and ecosystem effects and from the standpoint of non-consumptive users of marine resources since these other alternatives have positive environmental effects due to habitat protections. It is unknown whether these other alternatives are practicable from the standpoint of industry and agencies since the amount of revenues at risk does not necessarily equate to lost revenues, and potential management boundaries and requirements have not been clearly defined at this stage. However this EIS analyzes a range of alternatives for use in contrasting potential social and economic effects with habitat protections. Additionally, while some of the alternatives may be practicable individually, they become impracticable when added to the final preferred alternative.

### ***Practicability and Environmental Consequences of the Minimize Adverse Effects to EFH Component of the final preferred Alternative***

The final preferred alternative represents a significant change from the status quo under which there are no measures in place to minimize adverse fishing effects on EFH. Under the final preferred alternative, a combination of gear restrictions, effort reduction, and closed areas would be implemented to protect a broad range of habitat types, species, and provide protection over both the Oregonian and San Diego zoographic provinces and is considered Environmentally Positive (E+). These management measures are practicable because they provide protection of EFH while having minimal cost to the fishing industry and other parts of the public sector.

### **Environmental Consequences of the Research and Monitoring Alternatives**

The research and monitoring alternatives are expected to provide environmental benefits when compared to the status quo by improving the information available to scientists and managers on the function of habitat and how it is affected by fishing. These alternatives are likely to require additional resources on the part of management agencies, and may put fishing revenues at risk or require industry to bear additional costs.

Over the long term, positive benefits may result from increased information on the relationship between habitat and living marine resources, and spatial fishing effort. Additional spatial information would assist agencies in making better fisheries management decisions, and this may translate into additional fishing opportunities, less risk of exceeding management targets, or a greater understanding of the relationship between fishing and habitat. A research reserve system may increase the amount of knowledge relating habitat to fish and other living marine resources, and this may result in improvements in stock status (e.g. fewer precautionary zones and overfished stocks), higher fishery yields, and improved resources for marine-based education.

***Environmental Consequences of the Research and Monitoring Component of the final preferred Alternative***

The final preferred alternative for research and monitoring incorporates components of D-2, D.3, and D.4. The research and monitoring elements of the final preferred alternative are expected to increase the amount of information available for EFH related decisions and regulations. The final preferred alternative is considered Environmentally Positive (E+).

**SUMMARY OF THE ENVIRONMENTAL CONSEQUENCES OF THE ALTERNATIVES**

The table below summarizes the environmental consequences of the alternatives to minimize adverse effects to EFH. To interpret the table, the following abbreviations are used:

- 0 = No Change
- E+ = Environmentally Positive
- E- = Environmentally Negative
- U = Unknown

**Summary of the Environmental Consequences of the Alternatives.**

Environmental Component	Impacts Minimization Alternatives															
	Final Pref. Alt.	C.1	C.2	C.3	C.4	C.5	C.6	C.7	C.8	C.9	C.10	C.11	C.12	C.13	C.14	
Marine Habitat, Ecosystem, Marine Resources	E+	0	E+	E+	E+	E+	E+	E+	E+	E+	E+	E+	U	E+	E+	E+
Protected Species	U	0	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Trawl Fisheries	E+/U/O	0	E-	E-	0	0	E-	E-	E-	E-	U	E-/E+	E-	E-	E-	E-
Fixed Gear Fisheries	E+/U/O	0/U	E-	E-/E+	0	0	E-	E-/0	0/E-	E-	U	E-/E+	0	E-	E-	E-
Recreational Fisheries	U/E+	0	0	0	0	0	E-	0/E-	0/E-	E-	U	0	0	0	0	E-
Other Fisheries	E+/U/O	0	0	E-	0	0	E-	0/E-	0/E-	E-	U	0	0	0	0	E-
Tribal Fisheries	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Consumers	U	0	E-	0	0	0	0	0	0	0	U	0	0	0	0	0
Safety	U	0	U	E+	E+	0	E+	E+	U/E+	0	U	U	0	0	0	0
Buyers and Processors	U	0	E-	0	0	0	U	0	U	0	0	0/E+	U	U	U	U
Communities	U	0	E-	0	0	0	U	0	U	0	U	0/E+	U	U	U	U
Management and Enforcement	E-	0	U	E-	E-	E-	E-	E-	E-	E-	E-	E-	E-	E-	E-	E-
Non-Fishing Activities	U	0	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Non-Fishing Values	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U



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- Appendix H - Updated Groundfish Life Histories Descriptions (can be found in Appendix I)**
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