

PACIFIC COAST GROUND FISH FISHERY MANAGEMENT PLAN

**FOR THE CALIFORNIA, OREGON, AND
WASHINGTON GROUND FISH FISHERY**

Underline/Strikethrough reflecting changes under Amendment 28 (EFH/RCA changes)

September 2018 Preliminary Draft

**PACIFIC FISHERY MANAGEMENT COUNCIL
7700 NE AMBASSADOR PLACE, SUITE 101
PORTLAND, OR 97220
(503) 820-2280
(866) 806-7204
WWW.PCOUNCIL.ORG**

MONTH YEAR

Changes to the FMP since Amendment 4 (July 1993)

Current Chapters	Previous Chapters (July 1993 Version)	Summary of Amendment Changes
Chapter 1 Introduction	Chapter 1 Introduction	Updated by Amendment 18
Chapter 2 Goals and Objectives	Chapter 2 Goals and Objectives	Amendments and additions, no substantial change in organization. (Amendments 12, 13, 16-1, 17, 18, and 24.)
Chapter 3 Areas and Stocks Involved	Chapter 3 Areas and Stocks Involved	Amendments and additions, no substantial change in organization. (Amendment 16-1.) Specification of Ecosystem Component (EC) species added under Amendment 24. EC species shared by all four west coast FMPs added under Amendment 25. Re-designated big skate as an actively managed species under Amendment 27.
Chapter 4 Optimum Yield	Chapter 4 Optimum Yield	Substantially changed and expanded by Amendment 16-1, which moved and revised material on determining OFL, OY, precautionary thresholds, and rebuilding overfished species that was in Chapter 5 into this chapter. Amendments 16-2 and 16-3 add rebuilding plan summaries to section 4.5.4. Amendment 16-4 revises rebuilding plans in section 4.5.4. Substantially changed and expanded by Amendment 23, which provided material on specifying OFLs, redefined ABCs, ACLs, and ACTs.
Chapter 5 Specification and Apportionment of Harvest Levels	Chapter 5 Specification and Apportionment of Harvest Levels	Substantially changed by Amendment 16-1, which moved material to Chapter 4, as noted above. Discussion of DAH, DAP, JVP, and TALFF deleted. (Also Amendments 12, 13, 17, and 18.) Substantially changed by Amendment 23, which incorporated new National Standard 1 guidelines and mandates of the 2006 reauthorization of the Magnuson-Stevens Act. Default harvest control rule process added under Amendment 24.

Current Chapters	Previous Chapters (July 1993 Version)	Summary of Amendment Changes
Chapter 6 Management Measures	Chapter 6 Management Measures	Substantially reorganized and changed by Amendment 18 and 19. (Also Amendments 10, 11, 13, 16-1, 17, 20, 21, 23, and 24.) <u>Chapter 6 changed to reflect Amendment 28: 1) Elimination of the trawl RCA off Oregon and California, 2) changed configuration of EFH closed areas, and 3) Closure of bottom contact fishing deeper than 3500m.</u>
	Chapter 7 Experimental Fisheries	Renumbered Chapter 8
	Chapter 8 Scientific Research	Renumbered Chapter 9
Chapter 7 Essential Fish Habitat		New Chapter created by Amendment 19 from substantially revised material previously in Chapter 6. <u>Updated to reflect new EFH conservation area configuration under Amendment 28, and to remove review/revision process from FMP text.</u>
Chapter 8 Experimental Fisheries		Renumbered and revised by Amendment 18.
Chapter 9 Scientific Research		Renumbered, no other changes.
	Chapter 9 Restrictions on Other Fisheries	Deleted with material incorporated into Chapter 6.
Chapter 10 Procedures for Reviewing State Regulations	Chapter 10 Procedures for Reviewing State Regulations	Background section revised by Amendment 18.
	Chapter 11 Appendices	Published under separate cover.
	Chapter 12 Management Measures that Continue in Effect with Implementation of Amendment 4	Deleted with material incorporated into Chapter 6.
	Chapter 13 References	Moved to an unnumbered section at the end of the document.
Chapter 11 Groundfish Limited Entry	Chapter 14 Groundfish Limited Entry	Renumbered; Amendment 15 modification to section 11.2.12, current section 11.5 inserted as new. Revisions under Amendment 20 including the removal of Amendment 15 text in section 11.2.12. Changed and expanded by Amendment 21.
References		Previously Chapter 13

Current Chapters	Previous Chapters (July 1993 Version)	Summary of Amendment Changes
Guide to Appendices		Previously Chapter 11 contained descriptive information brought forward from the original FMP. This material moved to Appendix A. Three new appendices (B-D) were added by Amendment 19. Appendix E by Amendment 20. Appendix F by Amendment 16 rebuilding plans. <u>Amendment 28 re-organized some Appendices</u> [Details to be added]

A note on other annotations: Amended parts of the FMP subsequent to Amendment 4, which substantially revised the original FMP, are denoted at the end of chapters or sections by amendment number.

CHAPTER 1 INTRODUCTION

CHAPTER 2 GOALS AND OBJECTIVES

CHAPTER 3 AREAS AND STOCKS INVOLVED

CHAPTER 4 PREVENTING OVERFISHING AND ACHIEVING OPTIMUM YIELD

CHAPTER 5 PERIODIC SPECIFICATION AND APPORTIONMENT OF HARVEST LEVELS

CHAPTER 6 **MANAGEMENT MEASURES**

6.1 Introduction

6.2 General Procedures for Establishing and Adjusting Management Measures

This FMP establishes three framework procedures through which the Council is able to recommend the establishment and adjustment of specific management measures for the Pacific Coast groundfish fishery. The *points of concern framework* allows the Council to develop management measures that respond to resource conservation issues; the *socioeconomic framework* allows the Council to develop management measures in response to social, economic, and ecological issues that affect fishing communities. The *habitat conservation framework* allows the Council to modify the number, extent, and location of areas closed to bottom trawling in order to protect EFH. Criteria associated with each framework form the basis for Council recommendations, and Council recommendations will be consistent with them. The process for developing and implementing management measures normally will occur over the span of at least two Council meetings, with an exception that provides for more timely Council consideration under certain specific conditions.....

6.2.1 Routine Management Measures Overview

6.2.2 Resource Conservation Issues—The Points of Concern Framework

6.2.3 Non-biological Issues—The Socioeconomic Framework

6.2.4 The Habitat Conservation Framework

The primary mechanism for providing habitat protections in Council-managed fisheries is via the EFH provisions in the MSA and detailed at 50 CFR 600.805 – 600.930. The elements of EFH should be reviewed periodically and revised if warranted, based on new or newly-available information. Councils may establish closed areas to certain types of fishing, to protect important habitats. In order to protect EFH from the adverse effects of fishing, the Council has identified areas that are closed to bottom trawling (see Sections 6.8 and 7.4). These areas are described in Federal regulations and may be modified through the full rulemaking process as described under Section 6.2 D. At the outset of a periodic review, the Council shall will establish a set of objectives and a scope for the review and revision process, consistent with COP 22 and federal regulatory guidance on EFH, an EFH Oversight Committee (OC). At the request of the Council, the EFH OC would The Council would initiate a review of information, including any new and newly-available information relevant EFH. If warranted, the Council could consider modifying groundfish EFH elements currently in place, including the areas currently closed to bottom trawling, and could consider EFH elements that were not included previously, and recommend to the Council the elimination of existing areas or the addition of new areas, or modification of the extent and location of existing areas. In making its recommendation to the Council, the committee determination, the Council should consider, but is not limited to considering, the best available scientific information about:

1. The importance of habitat types to any groundfish FMU species for their spawning, breeding, feeding, or growth to maturity.
2. The presence and location of important habitat (as defined immediately above).
3. The presence and location of habitat that is vulnerable to the effects of bottom trawl fishing.
4. The presence and location of unique, rare, or threatened habitat.

5. The socioeconomic and management-related effects of closures, including changes in the location and intensity of bottom trawl fishing effort, the displacement or loss of revenue from fishing, and social and economic effects to fishing communities attributable to the location and extent of closed areas.

~~When making its recommendation to the Council, the committee may also include in its recommendations proposed changes in the designation of HAPCs consistent with the proposed modification of the location and extent of areas closed to bottom trawling. For example, if a current closed area, which is also identified as a HAPC, is recommended for elimination, the committee may recommend whether or not to retain the HAPC designation. Any such recommendation with respect to a HAPC would trigger the process for the modification of HAPCs (by FMP amendment) described in Section 7.3.2. Upon receipt of a recommendation from the committee considering advisory body, NMFS, and staff reports, the Council will decide whether to begin the rulemaking process described in Section 6.2 D for establishing, adjusting, or removing discretionary management measures intended to have a permanent effect.~~

6.2.5 Indian Treaty Rights

Treaties with a number of Pacific Northwest Indian tribes reserve to those tribes the right of taking fish at their usual and accustomed fishing grounds and stations (U & A) in common with other citizens of the United States. NMFS has determined that the tribes that have groundfish U & A in the area managed by this FMP are the Makah, Hoh, and Quileute Tribes, and the Quinault Indian Nation. Several tribal fisheries exist for species covered by the FMP. The Federal government has accommodated these fisheries through a regulatory process, found at 50 CFR 660.324. Until such time as tribal treaty rights are finally adjudicated or the regulatory process is modified or repealed, the Council will continue to operate under that regulatory process to provide recommendations to the Secretary on levels of tribal groundfish harvest.

[Amendment 18, 24]

6.3 Allocation

6.4 Standardized Total Catch Reporting and Compliance Monitoring Program

6.5 Bycatch Mitigation Program

6.6 Gear Definitions and Restrictions

The Council uses gear definitions and restrictions to protect juvenile fish (trawl mesh size), to disable lost gear so that it no longer catches fish (biodegradable escape panels for pots), to slow the rates of catch in particular sectors (recreational fisheries hook limits), to reduce bycatch of non-target species (trawl configuration requirements), and to protect marine habitat (trawl roller gear size restrictions). Gear types permitted for use in the west coast groundfish fisheries in Federal waters are listed in Federal regulations at 50 CFR 660.302 and in a nationwide list of fisheries at 50 CFR 600.725. No vessel may fish for groundfish in Federal waters using any gear other than those authorized in Federal regulations. Gear definitions and restrictions for both the commercial and recreational fisheries may be revised using either the specifications-and-management-measures rulemaking process (Section 6.2 C.) or the full rulemaking process (Section 6.2 D.). When developing revisions to gear definitions and restrictions, the Council shall consider the expense of such revisions to fishery participants and the time required for participants to work with gear manufacturers to meet new requirements.

6.6.1 Commercial Fisheries

This FMP authorizes the use of trawls, pots (traps), longlines, hook-and-line (mobile or fixed) and setnets (gillnets and trammel nets) as legal gear for the commercial harvest of groundfish.

6.6.1.1 Prohibitions

The use of setnets is prohibited in all waters north of 38° N latitude.

Bottom trawl gear with footropes larger than eight inches in diameter is prohibited shoreward of a line approximating the 100 fm depth contour. This boundary line is defined in Federal regulations by precise latitude-longitude coordinates (see 50 CFR 660, Subpart C). ~~Trawl footrope diameter restrictions originated as a rockfish bycatch reducing measure, as discussed in Section 6.6.1.2. Footropes of diameters larger than 8 inches have been prohibited for use in the nearshore area in order to minimize bycatch, but the FMP had not set a formal boundary line for their use prior to 2006. Amendment 19 to the FMP requires permanent closure of the area shoreward of the 100 fm depth contour, a mandatory EFH protection measure~~ Bottom trawl gear with a footrope diameter larger than 19 inches is prohibited in the fishery management area.

The use of dredge gear is prohibited in the fishery management area.

The use of beam trawl gear is prohibited in the fishery management area.

States may implement parallel measures within their state waters (0-3 nm).

Groundfish fishing (often based on gear type) may be subject to depth, area, or seasonal restrictions as described in Federal regulations at 50 CFR 660.

6.6.1.2 Trawl Gear

Trawl gear is a cone or funnel-shaped net, which is towed or drawn through the water by one or two vessels. Trawls are used both on the ocean bottom and off bottom. They may be fished with or without trawl doors. They may employ warps or cables to herd fish. Trawl gear includes roller, bottom, and pelagic (mid-water) trawls, and as appropriate, trawls used to catch non-groundfish species but which incidentally intercept groundfish. Trawl gear is complex, usually constructed from several panels of mesh and engineered with varying ropes, chains, and trawl doors to target particular sizes, shapes, or species of fish. The Council has historically worked with the trawl industry and the states, usually through the issuance of EFPs, to develop new trawl gear restrictions or modifications intended to accomplish one or more FMP goals, usually the reduction of bycatch. The following discussion of the Council's efforts to modify trawl gear provides examples of the types of trawl gear modifications that may be made to meet FMP goals, but does not limit the range of future trawl gear restrictions.

In the early-mid 1990s, the Council engaged the trawl industry in a series of discussions on modifying trawl nets to minimize juvenile fish bycatch. Since 1995, bottom trawl nets have been required to be constructed with a minimum mesh size of 4.5 inches, and pelagic trawl nets with a minimum mesh size of three inches. Minimum net mesh sizes are intended to allow immature fish to pass through trawl nets. To ensure the success of minimum mesh size restrictions in allowing juvenile fish to escape trawl nets, the Council also developed restrictions preventing trawlers from using a double-walled codend. Further restrictions related to this objective include prohibitions on encircling the whole of a bottom trawl net with chafing gear and restrictions on the minimum mesh size of pelagic trawl chafing gear (16 inches).

In 2000, the Council began to distinguish between large and small footrope trawl gear. Large footrope gear is bottom trawl gear with a footrope diameter larger than eight inches, including any material (rollers, bobbins, etc.) encircling the footrope. Small footrope gear is bottom trawl gear with a footrope diameter of eight inches or smaller. Pelagic trawl gear is required to have unprotected footrope gear and is not permitted to be encircled with chains, rollers, bobbins, or other material. Initially, the Council used the distinction between large and small footrope gear to prohibit large footrope use for less abundant, nearshore, and continental shelf species. Large footrope gear allows trawlers to access rockier areas by bouncing the bottom of the trawl net over larger obstructions without tearing. Allowing only small footrope gear in nearshore and shelf areas was intended to reduce trawl access to newly-designated overfished species and their rockier habitats.

~~Since the Council introduced Rockfish Conservation Areas (RCAs, Section 6.8.2) in 2002 (initially through emergency rulemaking and later through permanent regulations), large footrope trawl gear has been prohibited inshore of the western boundary of the trawl RCA. RCA boundary lines are set to approximate ocean bottom depth contours and the western boundary of the trawl RCA has not been shallower than a line approximating the 150 fm depth contour. (See Section 6.8.2 for the use of RCAs as a management tool.) Six of the eight overfished species are continental shelf species and this restriction on the use of large footrope gear continues to reduce trawler access to rocky nearshore habitat. Over time, these footrope size restrictions, coupled with restricted landing limits, have re-configured trawl activities in the nearshore area so that they primarily target the more abundant flatfish species.~~
In 2002 the Council introduced Rockfish Conservation Areas (RCAs, Section 6.8.2), initially through emergency rulemaking and later through permanent regulations, as a catch control mechanism, primarily for overfished species. Large footrope trawl gear had been prohibited inshore of the trawl RCA (typically the line approximating 100 fm). In 2018, the trawl RCA was removed offshore of Oregon and California, but remains in place offshore of Washington. However, large footrope gear will still be prohibited shoreward of the 100 fm contour, coastwide.

In 2005, the Council introduced new trawl gear requirements for small footrope trawl gear north of 40°10' N latitude. Trawlers operating inshore of the Trawl RCA are required to use selective flatfish trawl gear, which is configured to reduce bycatch of rockfish while allowing the nets to retain flatfish. Selective flatfish trawl nets have an ovoid trawl mouth opening that is wider than it is tall and the headropes on these nets are recessed from the trawl mouth. This combination of a flattened oval shape and a recessed headrope herds flatfish into the trawl net while allowing rockfish to slip up and over the headrope, without entering the net. Groundfish trawlers worked with the State of Oregon to develop these nets in order to have greater access to healthy flatfish stocks. The Council is working with the State of California to determine whether the selective flatfish trawl net is also effective at reducing the bycatch of southern overfished species in fisheries targeting more abundant southern stocks.

As part of a suite of measures intended to mitigate the adverse effects of fishing in groundfish EFH, the eight inch footrope restriction described here is made permanent, as listed in Section 6.6.1.1. A 100 fm management line, the shoreward boundary of the trawl RCA when the permanent measure was implemented, is identified as the seaward extent of the prohibition.

6.6.1.3 Non-trawl Gear

Non-trawl gear includes all legal commercial gear other than trawl gear. Fixed gear (anchored non-trawl gear) includes longline, pot, set net, and stationary hook-and-line gear. Fixed gear must be marked, individually or at each terminal end as appropriate, with a pole, flag, light, and radar reflector attached to each end of the set, and a buoy clearly identifying the owner. In addition, fixed gear shall not be left

unattended for more than seven days. Reporting of fixed gear locations is not required, but fixed gear fishermen are encouraged to do so with the U.S. Coast Guard. Reporting of fixed gear will facilitate compensation claims by fishermen who have lost fixed gear.

Since 1982, groundfish traps have been required to be constructed with biodegradable escape panels in such a manner that an opening of at least eight inches in diameter results when the escape panel deteriorates. These biodegradable panels ensure that if a trap is lost or not attended for extended periods of time, it will not continue to fish. Gear that has been lost and continues to capture fish while it is unattended is often referred to as ghost fishing gear.

Mesh size in fish pots (traps) also affects the size of fish retained in the trap. By increasing the minimum mesh size in all or part of the trap, small fish may be allowed to escape. There are no minimum mesh size requirements for groundfish pot vessels. However, sablefish is the primary trap gear target species and fishermen are usually paid more per pound for larger-sized sablefish. Thus, there are few incentives for trap fishermen to use smaller mesh sizes.

6.6.2 Recreational Fisheries

Recreational fishing is fishing with authorized gear for personal use only, and not for sale or barter. The only types of fishing gear authorized for recreational fishing are hook-and-line and spear. The definition of hook-and-line gear for recreational fishing is the same as for commercial fishing. Hook limits, restrictions on the number of hooks that may be used per fishing line, or on the size or configuration of hooks used in a recreational fishery, have been established as routine management measures under Section 6.2.1. Hook limits are used in the recreational fishery to either constrain recreational fishery effort by limiting the number of hooks per fishing line, or to select for certain species by limiting the size of hooks used.

6.6.3 Bottom-contact Gear

In order to mitigate the adverse impacts of fishing on groundfish ~~EFH~~habitat, the Council may impose restrictions on a range of gear types collectively termed bottom-contact gear. These are gear types that are designed or modified to make contact with the sea floor during normal use. This includes, but is not limited to, beam trawl, bottom trawl, dredge, fixed gear, set net, demersal seine, dinglebar gear, and other gear (including experimental gear) designed or modified to make contact with the bottom. Gear used to harvest bottom-dwelling organisms (e.g., by hand, rakes, or knives) are also considered bottom-contact gear for the purpose of regulation. Other gear, midwater trawl gear for example, although it may occasionally make contact with the sea floor during deployment, is not considered a bottom contact gear because the gear is not designed for bottom contact, is not normally deployed so that it makes such contact, nor is such contact normally more than intermittent. Similarly, vertical hook-and-line gear that during normal deployment is not permanently in contact with the bottom would not be considered bottom-contact gear. For the purpose of regulation, specified legal gear types may be designated bottom contact or non-bottom-contact.

6.7 Catch Restrictions

6.8 Time/Area Closures

The Council uses a variety of time/area closures to control the directed rate of catch of targeted species, to reduce the incidental catch of non-target, protected (including overfished) species; and to prevent fishing in specified areas in order to mitigate the adverse effects of such activities on groundfish ~~EFH~~habitat. Time/area closures vary by type both in their permanency and in the size of area closed. When the Council

sets fishing seasons (Section 6.8.1) it generally uses a combination of latitude lines and depth zones extending from shore to the EEZ boundary to close large sections of the EEZ for part or all of a fishing year to one or more fishing sectors.

RCAs (Section 6.8.2), by contrast, are ~~coastwide~~ fishing area closures bounded on the east and west by lines connecting a series of coordinates approximating a particular depth contour. RCAs are gear-specific and their eastern and western boundaries may vary during the year. RCAs also may be polygons that are closed to fishing for a brief period (less than one year) in order to provide short-term protection for the more migratory overfished or other protected species. Groundfish fishing areas (GFAs) (Section 6.8.3) are enclosed areas of high abundance of a particular species or species group and may be used to allow targeting of a more abundant stock within that enclosed area. Long-term bycatch mitigation closed areas (Section 6.8.4) have boundaries that do not vary by season and are not usually modified annually or biennially. Ecologically important habitat closed areas (Section 6.8.5) and the bottom trawl footprint closure (Section 6.8.6) are established in order to mitigate the adverse effects of fishing on EFH. MPAs (Section 6.8.7) are longer-term, discrete closed areas with unchanging boundary lines that may apply to one or more fishing sectors. Because the RCAs, the Yelloweye Rockfish Conservation Area, and the Cowcod Conservation Areas have all been implemented to protect overfished groundfish species, they are collectively referred to in Federal regulations as GCAs.

The coordinates defining the boundaries of time/area closures are published in Federal regulations. In order to ensure consistency between the areas named in this FMP (see below) and corresponding areas defined in Federal regulations, the Council may publish in the groundfish SAFE or other publication detailed specifications for these time/area closures, by means of maps, lists of coordinates, or other descriptors.

6.8.1 Seasons

Fishing seasons are closures of all or a portion of the West Coast EEZ for a particular period and time of year. Seasons may be used to constrain the rate of fishing on a targeted species, to encourage targeting of a more abundant stock during periods of higher aggregation, or to limit catch of a protected species during its spawning season. Seasons may be for the entire fleet, for particular sectors within the fleet, for regions of the coast, or for individual vessels. Designation and adoption of seasons must be made through either a specifications-and-management-measures rulemaking (Section 6.2 C) or a full rulemaking (Section 6.2 D).

Seasons have been used to manage the commercial Pacific whiting trawl and LE fixed gear fisheries. The non-tribal whiting fishery is divided into three sectors: catcher boats that deliver to shorebased processing plants, catcher vessels that deliver to motherships at sea, and at-sea catcher-processors. Each of these sectors is managed with its own season. The shorebased sector also includes an early season for waters off California, to allow vessels in that area to access whiting when it is migrating through waters off California. The LE fixed gear sablefish fishery is managed with a seven-month season, April through October. Outside the primary seasons for both whiting and fixed gear sablefish, incidental catch allowances of these species are provided to allow retention of incidental catch.

In addition to the whiting and sablefish seasons, intended to constrain the directed catch of the target stocks within a particular period, commercial fisheries may be constrained by season to protect overfished species.

Recreational fisheries also may be managed with fishing seasons, either to constrain the directed catch of target species or to reduce the incidental catch of protected species. Fishing seasons with one or more closed periods during the fishing year are intended to reduce catch rates of both more abundant and protected stocks. Seasonal closures are used off all three states—in combination with bag limits, RCAs, and other measures—to prevent recreational fisheries from exceeding allowable harvest levels.

6.8.2 Rockfish Conservation Areas

In September 2002, NMFS implemented an emergency rule at the Council's request to implement a Darkblotched Rockfish Conservation Area to close continental shelf/slope waters north of 40°10' N latitude. Since January 2003, the Council has used coastwide RCAs, which vary by gear type, to reduce the incidental catch of overfished species in waters where they are more abundant. ~~Of the eight currently overfished species, six are continental shelf species, and RCAs have primarily been designed to close continental shelf waters.~~ Appendix F describes the role RCAs play in this FMP's overfished species rebuilding plans.

Different gear types have greater or lesser effects on different overfished species. Thus, RCAs are designed to be gear-specific to better target protection for the species most affected by each gear group. For example, darkblotched rockfish and Pacific ocean perch are continental slope species that are most frequently taken with trawl gear, which means that the Trawl RCA must extend out to greater depths in order to protect these species. Under Amendment 28, the Council took action to remove the groundfish trawl RCA off Oregon and California, but the trawl RCA is a management measure that remains in place off Washington. Yelloweye rockfish, in contrast, is more frequently taken with hook-and-line gear, which means that both the commercial and recreational hook-and-line fisheries require yelloweye rockfish protection measures as part of that species' rebuilding plan. The Non-Trawl RCA is concentrated over the continental shelf, while the recreational fisheries use season closures and MPAs to reduce yelloweye rockfish bycatch.

RCAs are typically bounded on the east and west by lines drawn between a series of latitude/longitude coordinates approximating certain depth contours. An RCA may also be a polygon, designated by lines drawn between a series of latitude/longitude coordinates, which is closed to fishing for some period less than a year in duration. Some RCAs may extend to the shoreline. Although both the eastern and western RCA boundaries have changed over time for all of the gear groups, the area between the trawl RCA boundary lines approximating the 100 fm and 150 fm depth contours has remained closed since January 2003. Adopted potential RCA boundary lines are described in Federal regulations at 50 CFR 660.71-74. The size and shape of the RCAs may be adjusted inseason via the routine management measures process (Section 6.2.1) by using previously adopted potential RCA boundary lines. Designation and adoption of new potential RCA boundary lines must be made through either a specifications-and-management-measures rulemaking (Section 6.2 C) or a full rulemaking (Section 6.2 D).

6.8.2 Block Area Closures

Block Area Closures (BACs) are a groundfish bottom trawl-specific management tool introduced as part of Amendment 28. BAC boundary lines are latitudes and depth contour approximations described in Federal regulations at 50 CFR 660.11 and 71-74. BACs (one or more) may be closed or reopened inseason via the routine management measures process (Section 6.2.1) using latitude and longitude boundary lines defined in regulation. One or more of those polygons, as necessary may be closed to groundfish bottom trawl gear to control harvest of groundfish species or to reduce the catch of protected species. BACs are intended as a catch control mechanism, not for habitat protection.

6.8.3 Groundfish Fishing Areas

6.8.4 Long-term Bycatch Mitigation Closed Areas

6.8.5 Ecologically Important Habitat Closed Areas

The Council has identified discrete areas that are closed to fishing with specified gear types, or are only open to fishing with specified gear types. These ecologically important habitat closed areas are intended to mitigate the adverse effects of fishing on groundfish EFH. They may be categorized as bottom trawl closed areas (BTCAs) and bottom contact closed areas (BCCAs). For the purpose of regulation each type of closed area should be treated differently. For the purposes of BTCAs, the definition of bottom trawl gear in Federal regulations applies (see also Section 6.6.1.2). For the purposes of BCCAs, the definition of bottom contact gear in this FMP (Section 6.6.3) and in Federal regulations applies. As part of Amendment 28, the Council took action to revise the suite of BTCAs.

The extent and configuration of these areas do not vary seasonally and they are not usually modified through inseason or biennial management actions. For this reason, they may be considered MPAs (Section 6.8.7). The location and extent of these areas are described by a series of latitude-longitude coordinates enclosing a polygon published in permanent Federal regulations. For areas closed to bottom trawl gear, the habitat conservation framework may be used to eliminate such closed areas or modify their location or extent. Modification of permanent regulations describing these closed areas would require full notice-and-comment rulemaking as described at Section 6.2 D. As of June 30, 2006 (see 50 CFR 660.306(h)), there are 50 such closures:

Bottom Trawl Closed Areas

Off of Washington:

1. Olympic 2
2. Biogenic 1
3. Biogenic 2*
4. Grays Canyon*
5. Biogenic 3
6. Willapa Canyonhead†
7. Willapa Deep†

Off of Oregon:

1. Astoria Canyon*
2. Nehalem Bank/Shale Pile*
3. Garibaldi Reef N†
4. Garibaldi Reef S†
5. Siletz Deepwater*
6. Daisy Bank/Nelson Island*
7. Newport Rockpile/Stonewall Bank*
8. Heceta Bank*
9. Deepwater off Coos Bay
10. Arago Reef†
11. Bandon High Spot*
12. Rogue Canyon
13. Rogue River Reef†

Off of California:

1. Brush Patch†
2. Trinidad Canyon†
3. Mad River Rough Patch†
4. Samoa Deepwater†
5. Eel River Canyon_{*}
6. Blunts Reef_{*}
7. Mendocino Ridge_{*}
8. Delgada Canyon_{*}
9. Tolo Bank
10. Navarro Canyon†
11. Point Arena North
12. Point Arena South Biogenic Area_{*}
13. The Football†
14. Gobblers Knob†
15. Point Reyes Reef†
16. Cordell Bank/Biogenic Area_{*}
17. Rittenburg Bank†
18. Farallon Islands/Fanny Shoal_{*}
19. Farallon Escarpment†
20. Half Moon Bay
21. Pescadero Reef†
22. Pigeon Point Reef†
23. MBNMS S. of Davenport†
24. Monterey Bay/Canyon_{*}
25. Point Sur Deep_{*}
26. Big Sur Coast/Port San Luis_{*}
27. La Cruz Canyon†
28. West of Piedras Blancas SMCA†
29. East San Lucia Bank
30. Point Conception
31. Hidden Reef/Kidney Bank
32. Catalina Island
33. Potato Bank_{*}
34. Cherry Bank
35. Cowcod Conservation Area East
36. Southern California Bight†

**These areas were modified as part of Amendment 28.*

†These areas were added as part of Amendment 28.

For the purpose of regulating the use of fishing gear in BTCAs in waters off of California, Scottish seine (or fly dragging) gear is not considered bottom trawl gear. The Scottish seine method deploys a weighted rope on the sea bottom in a large polygonal shape, attached to a codend net. The rope is pulled across the bottom, herding the fish towards the codend, which is then hauled back to the vessel.

Bottom Contact Closed Areas

Off of Oregon:

1. Thompson Seamount
2. President Jackson Seamount

Off of California:

1. Cordell Bank (within 50 fm isobath)
2. Harris Point
3. Richardson Rock
4. Scorpion
5. Painted Cove
6. Davidson Seamount (fishing below 500 fm prohibited, see below)
7. Anacapa Island
8. Carrington Point
9. Judith Rock
10. Skunk Point
11. Footprint
12. Gull Island
13. South Point
14. Santa Barbara

All of the BCCAs off of California occur within the Cordell Bank, Monterey, or Channel Islands National Marine Sanctuaries. Mitigation measures implemented under Magnuson-Stevens Act authority are also intended to support the goals and objectives of these sanctuaries. In the case of Davidson Seamount, it is unlawful for any person to fish with bottom contact gear, or any other gear that is deployed deeper than 500 fm, within the area defined in Federal regulations. Closing the water column below 500 fm to fishing in addition to prohibiting fishing that contacts the bottom addresses Sanctuary goals and objectives while practicably mitigating the adverse effects of fishing on groundfish EFH.

Maps showing the locations of these closures and coordinates defining their boundaries, as published in Federal regulations, appear in Appendix C.

6.8.6 Bottom Trawl Footprint Closure

As a precautionary measure, to mitigate the adverse effects of fishing on groundfish EFH, the West Coast EEZ seaward of a line approximating the 700 fm isobath is closed to bottom trawling to the outer extent of groundfish EFH (3,500 m, see Section 7.2, or the seaward boundary of the EEZ). This is called the footprint closure because the 700 fm isobath is an approximation of the historic extent of bottom trawling in the management area. This closure is therefore intended to prevent the expansion of bottom trawling into areas where groundfish EFH has not historically been adversely affected by bottom trawling. Because this closure applies to an area where bottom trawling effort has been limited or nonexistent, the socioeconomic impacts of this closure are modest. In Amendment 28, the boundary line that approximates the 700 fm isobath had small changes to the latitude and longitude coordinates offshore of Monterey Bay, CA. The changes to latitude and longitude coordinates closed an additional approximately 6 mi² and reopened slightly less than 1 mi².

6.8.7 Marine Protected Areas

Executive Order (EO) 13158 on MPAs was signed on May 26, 2000. This EO defines MPAs as “any area of the marine environment that has been reserved by Federal, state, territorial, tribal, or local laws or regulations to provide lasting protection to part or all of the natural or cultural resources therein.” Under this FMP, MPAs include all marine areas closed to fishing for any or all gear group(s), by the FMP or implementing Federal regulations for conservation purposes, and which have stable boundaries over time (thereby providing lasting protection). In 2005, the Marine Protected Areas Federal Advisory Committee on Establishing and Managing a National System of Marine Protected Areas made several

recommendations on specifying this definition of MPA. They define lasting protection as enduring long enough to enhance the conservation, protection, or sustainability of natural or cultural marine resources. The minimum duration of “lasting” protection ranges from ten years to indefinite, depending on the type and purpose of MPA. The use of the term “indefinite” indicates permanent protection while recognizing that an MPA designation and level of protection may change for various reasons, including changes in the resources so protected and in how society values those resources. Although all of the time/area closures described in Sections 6.8.2-6.8.6 may be modified through full notice-and-comment rulemaking, most either are practically permanent (portions of the GCAs) or are intended to be permanent (habitat closed areas and the trawl footprint closure). These time/area closures offer lasting protection and may be considered MPAs. New MPAs may be established or these MPAs may be revised through either a specifications-and-management-measures rulemaking (Section 6.2 C) or a full rulemaking (Section 6.2 D). [Amendment 18, 19]

6.8.8 Deep Water Bottom Contact Gear Closure

Amendment 28 to the Groundfish FMP established a Deep Water Bottom Contact Gear Closure in the EEZ in waters deeper than 3500m (the deepest extent of EFH), but still inside the EEZ, which are not identified as groundfish EFH. Amendment 28 closed these waters to all bottom contact groundfish gear, primarily to protect deep sea corals. Because these waters are outside of Groundfish EFH, the closure will be implemented via MSA discretionary authorities in Sections 303(b)(2).

Exceptions could be made to this prohibition, but only if a permittee or vessel owner were to apply for and receive approval from the Council to do so via a groundfish EFP. Fishing with bottom contact gear without an EFP could only be authorized through an FMP amendment and changes in regulation. Issuance of an EFP would follow the groundfish EFP process described in Council Operating Procedure 19, Protocol for Consideration of Exempted Fishing Permits for Groundfish Fisheries. NMFS, in considering approval of an EFP, must ensure that the activities are consistent with applicable laws, including measures to protect EFH.

6.9 Measures to Control Fishing Capacity, Including Permits and Licenses

CHAPTER 7 **ESSENTIAL FISH HABITAT**

7.1 How This FMP Addresses Provisions in the Magnuson-Stevens Act Relating to Essential Fish Habitat

The Magnuson-Stevens Act (as amended by the Sustainable Fisheries Act) requires FMPs to “describe and identify essential fish habitat..., minimize to the extent practicable adverse effects on such habitat caused by fishing, and identify other actions to encourage the conservation and enhancement of such habitat” (§303(a)(7)). The Magnuson-Stevens Act defines EFH as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” NMFS interpreted this definition in its regulations as follows: “waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish, and may include areas historically used by fish where appropriate; “substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities; “necessary” means “the habitat required to support a sustainable fishery and the managed species’ contribution to a healthy ecosystem”; and “spawning, breeding, feeding, or growth to maturity” covers the full life cycle of a species. For the purposes of identifying groundfish EFH, artificial structures are excluded from the definition of substrate unless designated as HAPC in this FMP (Section 7.3); notwithstanding other criteria, HAPCs are part of groundfish EFH under the descriptive criteria listed in Section 7.2 of this FMP.

The description and identification of EFH must include habitat for an individual species, but may be designated for an assemblage of species, if appropriate to the FMP. Regulations at 50 CFR 600, Subpart J provide further guidance on these required FMP contents. These guidelines recommend that FMPs identify HAPCs, which are specified areas of EFH meeting the criteria described in Section 7.3 of this FMP.

In addition to requiring FMPs to include practicable measures to minimize to the extent practicable the adverse effects of fishing on EFH, the Magnuson-Stevens Act also provides a mechanism for NMFS and the Council to address non-fishing impacts to EFH.

These requirements are addressed as follows:

- Section 7.2 provides a succinct description of groundfish EFH. Appendix B to this FMP provides detailed descriptions of EFH for groundfish FMU species, including maps showing EFH for individual groundfish species/life stages.
- Section 7.3 describes the groundfish HAPCs that have been identified by the Council, including the criteria used to identify those areas.
- Section 7.4 provides an overview of the management measures available to the Council for minimizing the adverse impacts of fishing to EFH. Measures adopted by the Council are described in the appropriate sections of Chapter 6. Appendix C describes an assessment methodology for the effects of fishing on Pacific Coast groundfish EFH. This provides the basis for determining the need for management measures.
- Section 7.5 describes how Federal agencies must consult with NMFS and/or the Council about any ongoing or proposed action they may authorize, fund, or undertake that may adversely affect any EFH. If the action would adversely affect EFH, NMFS will provide recommendations to conserve EFH. In support of these consultations, Appendix D describes non-fishing effects on EFH and recommended conservation measures.
- Section 7.6 describes how the Council will support habitat-related monitoring and research activities through the ongoing management program. Such programs will help close the knowledge

gap about many Pacific Coast groundfish species' habitat needs. In support of appropriate monitoring and research, Appendix B identifies many of those data gaps and makes suggestions regarding future research efforts, including needed research on fishing and non-fishing impacts to groundfish EFH.

Protecting, conserving, and enhancing EFH are long-term goals of the Council, and these EFH provisions of the FMP are an important element in the Council's commitment to a better understanding, and conservation and management, of Pacific Coast groundfish populations and their habitat needs.

7.2 Description and Identification of Essential Fish Habitat for Groundfish

The Pacific Coast Groundfish FMP manages 90-plus species over a large and ecologically diverse area. Information on the life histories and habitats of these species varies in completeness, so while some species are well-studied, there is relatively little information on certain other species. Information about the habitats and life histories of the species managed by the FMP will certainly change over time, with varying degrees of information improvement for each species. For these reasons, it is impractical for the Council to include descriptions identifying EFH for each life stage of the managed species in the body of the FMP. Therefore, the FMP includes a description of the overall area identified as groundfish EFH and describes the assessment methodology supporting this designation. Life histories and EFH identifications for each of the individual species are provided in Appendix B, which will be revised and updated to include new information as it becomes available. Such changes will not require FMP amendment. This framework approach is similar to the Council's stock assessment process, which annually uses the SAFE document or the NEPA document analyzing proposed harvest specifications and management measures to update information about groundfish stock status without amending the FMP. Like the SAFE or specifications NEPA document, any EFH updates will be reviewed in a Council public forum.

The overall extent of groundfish EFH for all FMU species is identified as all waters and substrate within the following areas:

- Depths less than or equal to 3,500 m (1,914 fm) to mean higher high water level (MHHW) or 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.
- Seamounts in depths greater than 3,500 m as mapped in the EFH assessment geographic information system (GIS).
- Areas designated as HAPCs not already identified by the above criteria.

This EFH identification is precautionary because it is based on the currently known maximum depth distribution of all life stages of 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. For example, there were insufficient data to derive habitat suitability probability (HSP) values for all species/life stages. Furthermore, the data used to determine HSP values is subject to continued refinement. While recognizing these limitations, the 100 percent 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. While precautionary, groundfish EFH still constitutes an area considerably smaller than the entire West Coast EEZ. Figure 7-1 shows the extent of this EFH identification.

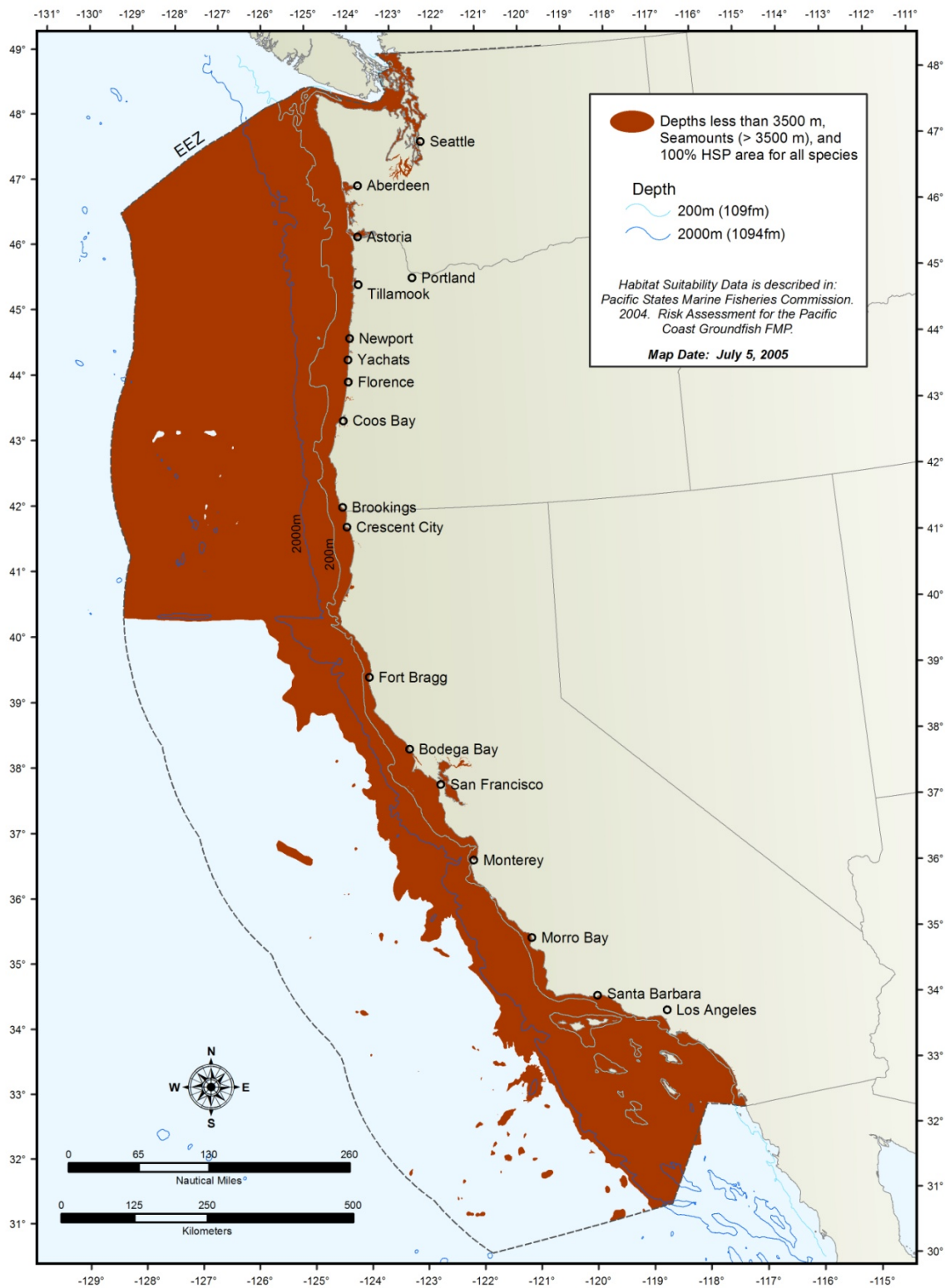


Figure 7-1. Groundfish EFH.

7.2.1 Use of Habitat Suitability Probability to Identify EFH

The HSP, mentioned above, provides more evaluative detail about EFH for groundfish species. It was developed by NMFS and their outside contractors through a modeling and assessment process (MRAG Americas Inc., *et al.* 2004). This assessment differs slightly from the approach in the guidelines to organize the information necessary to describe and identify EFH. The guidelines recommend organizing the information by kind of data, and then suggest describing EFH based on the highest level of data. The HSP approach is a more sophisticated method to analyze the information and provides a better way to scientifically analyze the information used to describe and identify EFH. The model considers basic pieces of information used to describe and identify EFH: location, depth, and substrate. It then determines areas used by the different life stages of groundfish, provides profiles for individual species by life stage, combines them in a GIS analysis into an ecosystem level set of fish assemblages, and predicts groundfish habitat. By using this approach to analyzing the information, HSP provides a better method to analyze the EFH information and develop the description and identification of EFH than the method outlined in the guidelines at 50 CFR 600.815. This is because it takes advantage of computer analyses of a large amount of information that is organized in such a way that it provides a clear understanding of the relationship between groundfish and habitat. The EFH Model used to develop HSP values for individual groundfish species/life stage is further described in Appendix B.

The assessment consolidates the best available ecological, environmental, and fisheries information into various databases, including a GIS and the habitat use database (HUD). The following types of data were used in this process to identify groundfish EFH:

- Geological substrate (GIS);
- Estuaries (GIS);
- Canopy kelp (GIS);
- Seagrass (GIS);
- Structure-forming invertebrate information;
- Bathymetric data (GIS);
- Latitude (GIS);
- Information on pelagic habitat;
- Data quality (GIS and other databases); and
- Information on the functional relationships between fish and habitat (including a literature review consolidated in the HUD).

Ideally, EFH would be defined by delineating habitat in terms of its contribution to spawning, breeding, feeding, growth to maturity, and production; however, comprehensive data on these functions are not available. Because of these data limitations, a model was developed to predict an overall measure of the suitability of habitat in particular locations for as many groundfish species as possible. This model uses available information on the distribution and habitat-related density of species. Where possible, the suitability of habitat was measured using the occurrence of fish species in NMFS trawl survey catches. For species not well represented in the trawl catches, information from the scientific literature was used.

The model characterizes habitat in terms of three variables: depth, latitude, and substrate (both physical and biogenic substrate, where possible). For the purposes of the model, these three characteristics provide a reasonable representation of the essential features of habitat that influence the occurrence of fish. Depending on these characteristics and the observed distributions of fish in relation to them, each location (a parcel or polygon of habitat in the GIS) is assigned a suitability value between zero and 100 percent. This is the HSP, which was calculated for as many species and life stages in the FMU as possible, based on available data. These scores and the differences between scores for different locations are then used to

develop a proxy for the areas that can be regarded as “essential.” The higher the HSP, the more likely the habitat is suitable for the habitat needs of a given groundfish species.

The EFH assessment model provides spatially explicit estimates of HSP for 160 groundfish species/life stage combinations, including the adults of all FMU species. Distribution ranges for depth and latitude were derived where possible from in-situ observations of occurrence in NMFS trawl survey catches. Where survey data were insufficient, depth and latitude ranges were extracted from reports and papers in the scientific literature. Preferences for substrate types were also taken from the scientific literature. The HSP values for each habitat polygon are mapped using GIS software. EFH regulations at 50 CFR 600, Subpart J suggest that inferences may be made about the extent of EFH, through appropriate means, where data are lacking to determine EFH for each species and life stage. Such is the case for the current EFH identification, which infers that no groundfish species/life stage will occupy EFH beyond the currently-known maximum depth for groundfish species, the basis for identifying EFH out to a maximum depth of 3,500 m. This inference is based on the supposition that the life history characteristics of species for which information is unavailable are sufficiently similar to the characteristics of those species for which information is available such that the identified groundfish EFH encompasses all species.

HSP values, assigned to discrete areas represented by the polygons in the GIS, can be used to better understand where favorable groundfish habitat occurs. The EFH identification described above, all waters and bottom areas in depths less than 3,500 m, is a precautionary approach encompassing the maximum range of groundfish species within the management area, based on the best scientific information. As noted above, this precautionary identification has been adopted because there is not enough information to determine the relative value of different habitats for all groundfish species/life stages. Therefore, EFH for all groundfish is identified in a manner that provides the greatest opportunity to apply conservation measures. Within this precautionary EFH identification it is recognized that HSP values provide additional information about groundfish EFH. For this reason all areas assigned an HSP value greater than 0 percent for any given species are included as a subset of this broader, precautionary identification of groundfish EFH. The model and resulting HSP values also can be used to support future habitat-related management decisions, which may involve considering tradeoffs between management effects on different habitats. For example, these tradeoffs could be compared with respect to the suitability (HSP value) of different areas potentially affected by the management action.

In addition to supporting the description and identification of EFH 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.

As new data become available, they can be incorporated into the assessment to refine and improve HSP modeling. The Council supports and coordinates this effort through its standing committees and any ad hoc committees that may be formed for this purpose.

7.3 Habitat Areas of Particular Concern

EFH guidelines published in Federal regulations (50 CFR 600.815(a)(8)) identify HAPCs as types or areas of habitat within EFH that are identified based on one or more of the following considerations:

- 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 type; and

- The rarity of the habitat type.

Based on these considerations, the Council has designated both areas and habitat types as HAPCs. In some cases, HAPCs identified by means of specific habitat type may overlap with the designation of a specific area. The HAPC designation covers the net area identified by habitat type or area. Designating HAPCs facilitates the consultation process described in Section 7.5 by identifying ecologically important, sensitive, stressed, or rare habitats that should be given particular attention when considering potential non-fishing impacts. Their identification is the principal way in which the Council can address these impacts.

HAPCs based on habitat type may vary in location and extent over time. For this reason, the mapped extent of these areas offers only a first approximation of their location. Defining criteria of habitat-type HAPCs are described below, which may be applied in specific circumstances to determine whether a given area is designated as a groundfish HAPC. HAPCs include all waters, substrates, and associated biological communities falling within the area defined by the criteria below.

Figure 7-2 is a map showing the location of these HAPCs. For HAPCs defined by habitat type, as opposed to discrete areas, this map offers a first approximation of their location and extent. The precision of the underlying data used to create these maps, and the fact that the extent of HAPCs defined by key benthic organisms (canopy kelp, seagrass) can change along with changes in the distribution of these organisms, means that at fine scales the map may not accurately represent their location and extent. Defining criteria are provided in the following descriptions of HAPCs, which can be used in conjunction with the map to determine if a specific location is within one of these HAPCs. The areas of interest HAPCs are defined by discrete boundaries. The coordinates defining these boundaries are listed in Appendix B.

7.3.1 Designated HAPC

Figure 7-2 shows the location and extent of the HAPC described below.

7.3.1.1 Estuaries

7.3.1.2 Canopy Kelp

7.3.1.3 Seagrass

7.3.1.4 Rocky Reefs

7.3.1.5 Areas of Interest

Areas of interest are discrete areas that are of special interest due to their unique geological and ecological characteristics. The following areas of interest are designated HAPCs:

- Off of Washington: All waters and sea bottom in state waters from the three nautical mile boundary of the territorial sea shoreward to MHHW;
- Off of Oregon: Daisy Bank/Nelson Island, Thompson Seamount, President Jackson Seamount; and
- Off of California: all seamounts, including Gumdrop Seamount, Pioneer Seamount, Guide Seamount, Taney Seamount, Davidson Seamount, and San Juan Seamount; Mendocino Ridge; Cordell Bank; Monterey Canyon; specific areas in the Federal waters of the Channel Islands National Marine Sanctuary; specific areas of the Cowcod Conservation Area.

The Washington State waters HAPC encompasses a variety of habitats important to groundfish, including

other HAPCs such as rocky reef habitat supporting juvenile rockfish (primarily north of Grays Harbor) and estuary areas supporting numerous economically and ecologically important species, including juvenile lingcod and English sole. Sandy substrates within state waters (primarily south of Grays Harbor) are important habitat for juvenile flatfish. A large proportion of this area is also contained within the Olympic Coast National Marine Sanctuary and three offshore national wildlife refuges, which provide additional levels of protection to these sensitive nearshore coastal areas.

Seamounts and canyons are prominent features in the coastal underwater landscape, and may be important in rockfish management because “rockfish distributions closely match the bathymetry of coastal waters” (Williams and Ralston 2002).

Seamounts rise steeply to heights of over 1,000 m from their base and are typically formed of hard volcanic substrate. They are unique in that they tend to create complex current patterns (Lavelle, *et al.* 2003; Mullineaux and Mills 1997) and have highly localized species distributions (de Forges, *et al.* 2000). Seamounts have relatively high biodiversity and up to a third of species occurring on these features may be endemic (de Forges, *et al.* 2000). Because the faunal assemblages on these features are still poorly studied, and species new to science are likely to be found, human activities affecting these features need careful management. Currents generated by seamounts retain rockfish larvae (Mullineaux and Mills 1997; Dower and Perry 2001) and zooplankton, a principal food source for rockfish (Genin, *et al.* 1988; Haury, *et al.* 2000). Several species observed on seamounts, such as deep sea corals, are particularly vulnerable to anthropogenic impacts (Monterey Bay National Marine Sanctuary 2005).

Canyons are complex habitats that may provide a variety of ecological functions. Shelf-edge canyons have enhanced biomass due to onshore transport and high concentrations of zooplankton, a principal food source of juvenile and adult rockfish (Brodeur 2001). Canyons may have hard and soft substrate and are high relief areas that can provide refuge for fish, and localized populations of groundfish may take advantage of the protection afforded by canyons and the structure-forming invertebrate megafauna that grow there (Monterey Bay National Marine Sanctuary 2005). A canyon in the North Pacific was observed to have dense aggregations of rockfish associated with sea whips (*Halipteris willemoesi*), while damaged sea whip “forests” had far fewer rockfish (Brodeur 2001).

Daisy Bank is a highly unique geological feature that occurs in Federal waters due west of Newport, Oregon and appears to play a unique and potentially rare ecological role for groundfish and large invertebrate sponge species. The bank was observed in 1990 to support more than 6,000 juvenile rockfish per hectare; a number thirty times higher than those observed on adjacent banks during the same study period. The same study also indicated that Daisy Bank seems to support more and larger lingcod and large sponges than other nearby banks (Mark Hixon, pers. comm., August 2004).

Discrete areas at Cordell Bank and the Channel Island National Marine Sanctuary, and the Cowcod Conservation Areas, are designated HAPCs because they are afforded high levels of protection through their inclusion in a National Marine Sanctuary and/or designation as an ecologically important closed area (see Section 7.4). These designations both reflect and enhance their value as groundfish habitat.

Defining characteristics: As noted above, the shoreward boundary of the Washington State waters HAPC is defined by MHHW while the seaward boundary is the extent of the three-mile territorial sea. The remaining area-based HAPCs are defined by their mapped boundaries in the EFH assessment GIS. The coordinates defining these boundaries may be found in Appendix B to this FMP.

7.3.2 — Process for Modifying Existing or Designating New HAPCs

~~Recognizing that new scientific information could reveal other important habitat areas that should be~~

designated HAPCs or call into question the criteria for existing HAPCs, the Council may designate a new HAPC or modify or eliminate an existing HAPC through the process described below. This process allows organizations and individuals to petition the Council at any time to consider a new designation, or modify or eliminate an existing designation, and ensures, provided they submit the required information described below, their proposal will be considered by the Council. The process includes the following elements, which may be described in more detail in Council Operating Procedures:

1. A petitioner submits a proposal to eliminate or modify an existing HAPC, or designate a new HAPC, by letter to the Chairman and Executive Director of the Council. Proposals must include a description of: (a) for a new HAPC, the location of the HAPC, defined by specified geographic characteristics such as coordinates, depth contours, or distinct biogeographic characteristics; (b) for a new HAPC, how the HAPC meets the criteria specified in regulations at 50 CFR 600.815 (a)(8), or for changes to an existing HAPC, how such a change would better meet these criteria; and (c) a preliminary assessment of potential biological and socioeconomic effects of the proposed change or new designation.
2. Council/NMFS staffs determine whether the proposal contains the mandatory components outlined in step one. If this technical review determines that the proposal is inadequate, staff return it to the petitioner for revision and resubmission. If it is determined adequate, staff forward it to the Council for full consideration over three Council meetings as described below.
3. At the first meeting, the Council establishes a timeline for consideration, including merit review by the EFH OC and the SSC.
4. At the second meeting, the EFH OC and SSC provide their merit review to the Council. Depending on the results of this review, the Council directs staff to begin developing any documentation necessary for implementation. The proposal is also to be forwarded to other advisory bodies for additional review.
5. At the third meeting the Council receives advisory body reports, reviews implementing documentation, and decides whether to approve an FMP amendment for Secretarial review.

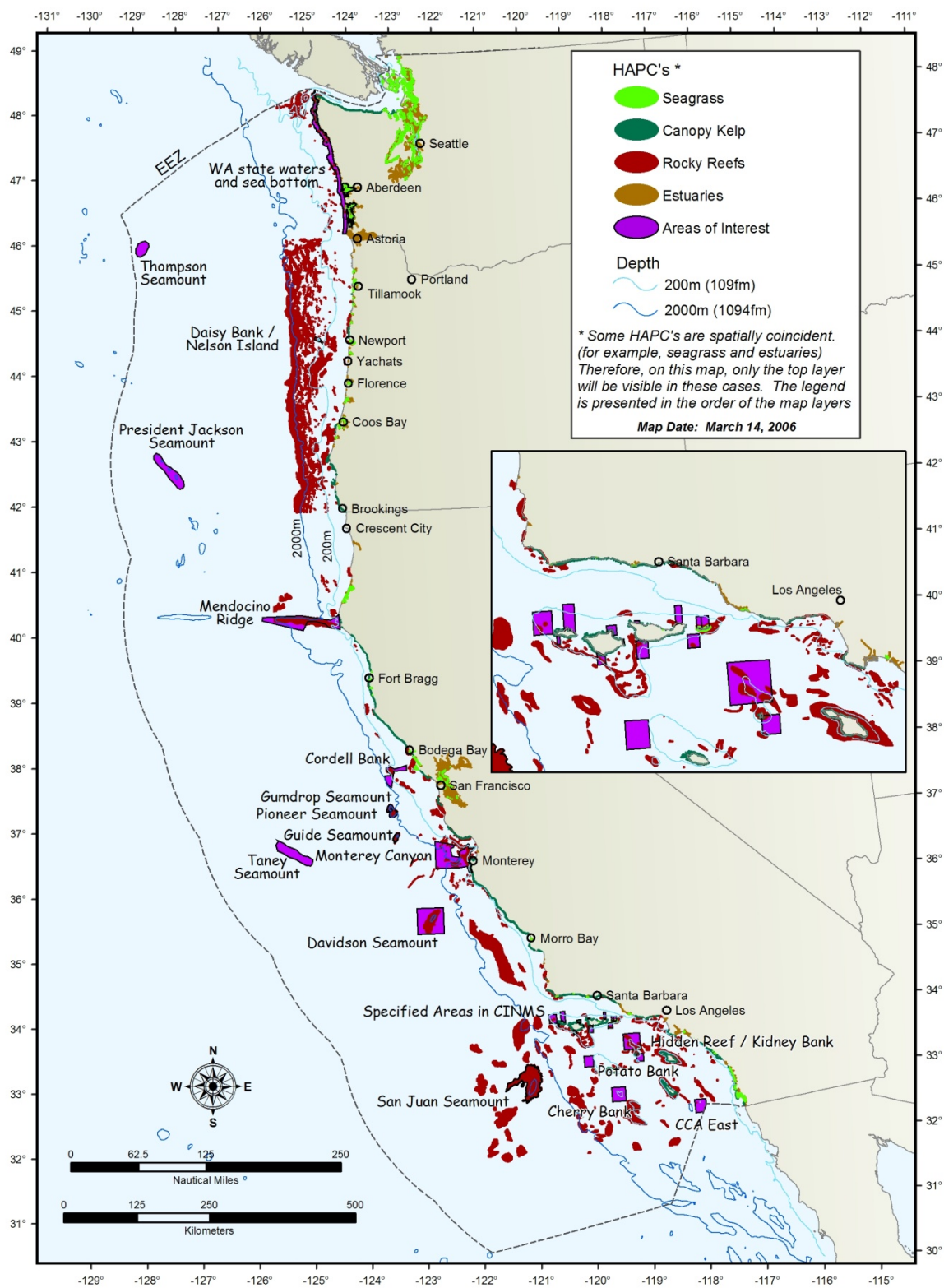


Figure 7-2. Groundfish HAPCs.

7.4 Management Measures to Minimize Adverse Impacts on Essential Fish Habitat from Fishing

Chapter 6 describes the range of measures available to the Council for managing groundfish fisheries. These include measures with permanent effect and those that may be periodically adjusted in concert with the specification of harvest levels described in Chapter 5. Management measures are typically established through Federal rulemaking, using one of the procedures described in Section 6.2. Some of the management measures described in Chapter 6 have been implemented specifically to mitigate adverse impacts to EFH while others may have another primary purpose (such as bycatch reduction) but may have a corollary mitigating effect on adverse impacts to EFH. Those measures specifically intended to conserve EFH are summarized below by reference to the relevant section in Chapter 6.

Three broad categories of management measures are recognized as being effective for mitigating adverse impacts to EFH: gear modifications, closed areas, and overall reductions of fishing effort (National Research Council 2002). Section 6.6 defines legal groundfish gear and describes restrictions on their use. The Council has established several prohibitions and restrictions on gear to mitigate adverse impacts to EFH. These include restrictions on trawl footrope size and prohibition of the use of dredges and beam trawls in the management area. Section 6.8 describes time/area closures, including the trawl footprint closure and ecologically important habitat closures, implemented to mitigate adverse impacts to EFH. The bottom trawl footprint closure prohibits the use of bottom trawl gear in depths greater than 700 fm to the outer extent of groundfish EFH (3,500 m) or the seaward extent of the EEZ, preventing the expansion of the use of this gear type into area where its historical use has been limited. Additional ecologically important habitat areas are also closed to specified gear types shoreward of the trawl footprint boundary. These are areas that are thought to be especially ecologically important or vulnerable to the effects of fishing based on information about substrate type, topography, and the occurrence of biogenic habitat. Section 6.9 describes the range of measures available to control fishing capacity. Reductions in fishing capacity, which may be loosely defined as the number, size, and configuration of vessels participating in a fishery, may reduce overall fishing effort. Reducing fishing effort is relevant to mitigating the effects of fishing on EFH if the ~~aerial-spatial~~ temporal extent of gear contact with EFH is reduced. Although the rationale for measures that result in capacity reduction may be to prevent overfishing, reduce bycatch, or increase economic efficiency, they may have a corollary mitigating effect for EFH impacts. The Council will consider any such mitigating effects when developing capacity reduction programs or measures.

In determining whether it is practicable to minimize an adverse effect from fishing, the Council will consider whether, and to what extent, the fishing activity is adversely affecting EFH, the nature and extent of the adverse effect on EFH, and whether management measures are practicable. The Council will consider the long-term and short-term costs and benefits to the fishery and to EFH, along with any other factors consistent with National Standard 7.

As described in Section 6.2.5, Indian treaty rights apply in U & A grounds of the Makah, Hoh, and Quileute Tribes, and the Quinault Indian Nation. In recognition of the sovereign status and co-manager role of these Indian tribes over shared Federal and tribal fishery resources, the regulations at 50 CFR 660.324(d) establish procedures that will be followed for the development of regulations regarding tribal fisheries within the U & A grounds. They state that the agency will develop regulations in consultation with the affected tribe(s) and insofar as possible, with tribal consensus. Application of management measures intended to mitigate the adverse impacts of fishing on EFH within U & A grounds will be subject to these procedures.

7.5 EFH Coordination, Consultation, and Recommendations

The Magnuson-Stevens Act (§305(b)) also provides a mechanism for NMFS and the Council to address non-fishing impacts to EFH. Federal agencies are required to consult with NMFS on all activities, and

proposed activities, authorized, funded, or undertaken by the agency that may adversely affect EFH, whether it occurs within or outside EFH. (For example, certain terrestrial activities may adversely affect EFH.) NMFS must provide recommendations to conserve EFH to Federal agencies undertaking such activities. Federal agencies must respond within 30 days of receiving conservation recommendations from NMFS, describing measures to avoid, mitigate, or offset the impact of the proposed action on EFH. If the response is inconsistent with NMFS' conservation recommendations, the agency will explain why it did not follow them.

NMFS must also provide recommendations to conserve EFH to state agencies if it receives information on their actions. However, they are not required to initiate consultation with NMFS, nor are they required to respond to any recommendations provided by NMFS.

The Council may provide recommendations on actions that may affect habitat, including EFH. Such recommendations may include measures to avoid, minimize, mitigate, or otherwise offset adverse effects on EFH resulting from actions or proposed actions authorized, funded, or undertaken by that agency. The Council will encourage Federal agencies conducting or authorizing work that may adversely affect groundfish EFH to minimize disturbance to EFH. The Council must provide recommendations if the action is likely to substantially affect salmon habitat or EFH.

Whenever possible, EFH consultations will be combined with other interagency consultations and environmental review procedures, which may be required under the ESA, Clean Water Act, NEPA, Fish and Wildlife Coordination Act, Federal Power Act, Rivers and Harbors Act, or other statutes. EFH consultation may be either programmatic (concerning agency programs or policies) or project-specific. Programmatic consultations involve broad Federal actions as defined under NEPA (40 CFR 1502.4(b)), such as the adoption of new programs or policies. Programmatic actions may encompass several project-specific actions sharing common geographic scope, project elements, or timing. When appropriate, NMFS will use programmatic consultations to consider related projects, thereby eliminating repetitive discussions and helping to focus on the appropriate level of analysis. Considering the broad geographic scope of groundfish EFH, this approach can help address a wide variety of related development activities while also considering their cumulative effects.

7.6 Review and Revision of Essential Fish Habitat Descriptions and Identification

The Council will review the EFH description and identification, HAPC designations, and information on fishing impacts and non-fishing impacts included in this FMP ~~at least every five years~~ periodically, as described in COP 22. New information may be included in the ~~annual~~ SAFE document or similar document and, if necessary, the FMP may be amended. The Council may schedule more frequent reviews in response to recommendation by the Secretary or for other reasons.

7.7 Habitat-related Research and Monitoring

The five-year review cycle described above accommodates progress in scientific understanding of marine habitat. New data on the habitat needs of groundfish species will improve the assessment model described in Section 7.2.1. Better information about the location, function, and consequences of human activity on habitat underpins efforts to conserve EFH and could enable more precise quantification of adverse impacts to EFH resulting from human activities, including fishing. The Council supports the use of existing research and monitoring programs to increase scientific understanding about EFH. Where practicable, these programs may be supplemented or modified to gather habitat-related information. Habitat-related research recommendations can be found in the Council's Research and Data Needs document.

Currently, groundfish LE trawl vessels are required to record information on the time and location of fishing activities, along with estimates of catch composition, in a logbook. Some of these data are entered into the PacFIN data system and may be accessed by managers. Information on fishing location has proved invaluable to managers. These data show the spatial distribution of fishing effort, which can be used to evaluate what EFH area may be adversely affected by fishing. The Council supports expansion of the logbook program to cover other fishery sectors besides groundfish LE trawl, where practicable. The Council also supports entering more of the existing information gathered by means of logbooks, such as the haul back position of trawl tows, into the data system.

This FMP authorizes the use of VMS programs. As of 2004, specified groundfish LE permitted vessels were required to carry VMS transceivers in order to enforce the RCAs. Because the ecologically sensitive area closures and bottom trawl footprint closure (see Sections 6.8 and 7.4) apply to vessels beyond those holding groundfish LE permits, the Council will consider expansion of this requirement to other fishery sectors, as appropriate, to effectively enforce habitat related closed areas. VMS data also could be valuable in continuing efforts to assess the effects of fishing on EFH if information on track lines of trawl or fixed gear sets could be accessed for research purposes.

Establishing research sites, unaffected by fishing, could be used in comparative studies to better understand the effects of fishing on habitat. Area closures established to manage bycatch, promote stock rebuilding, protect habitat, and for other reasons, offer opportunities to measure the length of time needed for habitat features and function to recover. Over time, these sites could also be compared with sites where fishing is ongoing in order to research the effects of fishing. The Council will support, through the work of its advisory bodies, such as the Habitat Committee, efforts to identify discrete sites within closed areas in order to focus research efforts. By encouraging research at identified sites, results can be more easily compared. Such a system or research sites should include a representative sample of habitat types in order to allow comparison of the effects of fishing across these different types.

[Amended: 11, 19 (all Chapter 7)]