

**FINAL ENVIRONMENTAL IMPACT STATEMENT**

For The

**PROPOSED GROUNDFISH ACCEPTABLE BIOLOGICAL  
CATCH AND OPTIMUM YIELD SPECIFICATIONS  
AND MANAGEMENT MEASURES**

**2003 PACIFIC COAST GROUNDFISH FISHERY**

Includes the Regulatory Impact Review and Initial Regulatory Flexibility Analysis

Pacific Fishery Management Council  
7700 NE Ambassador Place, Suite 200  
Portland, Oregon 97220-1384  
(503) 820-2280  
[www.pcouncil.org](http://www.pcouncil.org)

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## COVER SHEET

[x] Final Environmental Impact Statement

### Responsible Agencies (Contacts for further information):

Pacific Fishery Management Council  
7700 NE Ambassador Place, Suite 200  
Portland, OR 97220-1384  
Contact:

Dr. Donald O. McIsaac  
Executive Director  
Telephone: (503) 820-2280

NMFS Northwest Region  
7600 Sand Point Way NE, BIN C15700  
Seattle, WA 98115-0070  
Contact:

Mr. Robert Lohn  
Administrator  
Telephone: (206) 526-6150

**PROPOSED ACTION:** Implementation of calendar year 2003 management measures for federally managed Pacific groundfish fisheries occurring off the coasts of Washington, Oregon, and California.

### Abstract

The purpose of this action is to ensure that Pacific coast groundfish subject to federal management are harvested at optimum yield during 2003 and in a manner consistent with the Pacific Coast Groundfish Fishery Management Plan, the Magnuson-Stevens Fishery Conservation and Management Act, the 10 National Standards enumerated in the Act, and National Standards Guidelines (50 CFR 600 Subpart D) pursuant to the Act. The Pacific Coast Groundfish Fishery Management Plan establishes a framework authorizing the range and type of measures that may be used, enumerates 18 objectives that management measures must satisfy (organized under three broad goals), and describes more specific criteria for determining the level of harvest that will provide the greatest overall benefit to the Nation, or optimum yield. Fisheries subject to management measures include limited entry trawl fisheries, limited entry fixed gear (pot and longline) fisheries, and a variety of other fisheries catching groundfish, either as target species or incidentally, but not license limited under the management framework established in the Pacific Coast Groundfish Fishery Management Plan. Allocations to tribal fisheries in Washington state are also identified. To date, nine groundfish species have been declared overfished by the Secretary of Commerce, and measures to prevent overfishing and rebuild these overfished stocks are a central element of this action. The proposed action establishes harvest guidelines for groundfish species, species groups, and geographic subunits. In order to constrain fisheries to these harvest guidelines management measures for commercial and recreational fisheries are identified. Management measures considered for commercial fisheries include two-month cumulative landing limits for species, species groups and geographic subunits for limited entry trawl and fixed gear sectors, and fisheries not license limited under the Pacific Coast Groundfish Fishery Management Plan; and gear restrictions to reduce bycatch of overfished species and reduce habitat impacts. Management measures considered for recreational fisheries include bag limits, size limits and fishing seasons, which vary by state. In addition, area closures based on depth and intended to reduce bycatch of species apply to both commercial and recreational fisheries that are likely to catch these species. These closures vary by geographic area and time of year.



## EXECUTIVE SUMMARY

This environmental impact statement (EIS) provides background information about, and analysis of, harvest specifications and management measures for fisheries covered under the Pacific Coast Groundfish Fishery Management Plan (FMP) and developed by the Pacific Fishery Management Council (Council).

These measures must conform to the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), which is the principal legal basis for fishery management within the U.S. Exclusive Economic Zone. In addition to addressing Magnuson-Stevens Act mandates, this document also contains the analyses required by the National Environmental Policy Act (NEPA), the Regulatory Flexibility Act (RFA), and Executive Order (EO) 12866, which requires an analysis similar to the RFA. For brevity, this document is referred to as an EIS, although it addresses these additional mandates and may also be considered an Initial Regulatory Flexibility Analysis (IRFA) pursuant to the RFA, and a Regulatory Impact Review (RIR) pursuant to EO 12866.

The alternatives address the implementation of management measures for federally-managed Pacific groundfish fisheries occurring off the coasts of Washington, Oregon, and California in 2003. This proposed action is needed to constrain commercial and recreational harvests to levels that will ensure groundfish stocks are maintained at, or restored to, sizes and structures that will produce the highest net benefit, while balancing environmental and social values. The action is designed to ensure that federally-managed Pacific coast groundfish are harvested at optimum yield during 2003. Optimum yield is defined as harvest that is either at maximum sustained yield (MSY) or consistent with a rate that achieves an abundance at MSY within federal rebuilding guidelines. Chapter 5 of this EIS describes how the proposed action is consistent with the FMP and the Magnuson-Stevens Act.

The FMP provides a framework for the range and type of measures that may be used. It lists 18 objectives and describes specific criteria for determining the level of harvest that will provide the greatest overall benefit to the Nation (termed "optimum yield" or OY). The FMP describes the decision-making process the Council must follow, and the parallel process that National Marine Fisheries Service uses to translate Council recommendations into regulations. NEPA-mandated environmental impact assessment is a central component of this process. Every year since 1990, the Council has set Pacific coast groundfish harvest specifications and management measures designed to achieve those harvest specifications, as set out in the FMP.

Harvest specifications and management measures for 2003 are shaped by new assessments for bocaccio, canary rockfish, yelloweye rockfish, sablefish, and Pacific whiting. The 2003 groundfish management regime is also affected by rebuilding targets and time frames for overfished species such as lingcod, Pacific ocean perch, darkblotched rockfish, and widow rockfish. Harvest specifications for other species are not under consideration for 2003, and are thus not analyzed in this document. Management measures that affect abundant or non-assessed species may be changed for 2003, depending on their interactions and co-occurrence with overfished and assessed species. Council policy is to discourage or prevent targeting of overfished groundfish species. The Council also recommends management policies to reduce the incidental catch of overfished species taken in fisheries targeting healthier stocks. These management measures are based on "the best available science," the second National Standard in the Magnuson-Stevens Act. Preventing overfishing and rebuilding overfished stocks is a primary objective, but it is balanced against the competing goal in the FMP to maximize the value of the groundfish resource. Striking this balance between conservation and direct social benefits is another way to understand the purpose of this action.

### EIS Alternatives

Five alternatives are developed for analysis through the Council process. A *No Action Alternative* is identified for comparative analytical purposes. These alternatives represent different tradeoffs between risks to stock rebuilding objectives and short-term socioeconomic consequences for West Coast fishers and fishing communities. The alternatives describe different harvest levels and management measures. Management measures are structured to constrain fishing to the harvest levels identified in the alternatives.

The alternatives are based on data developed during a formal stock assessment review process (the STAR process) under the auspices of the Council's Scientific and Statistical Committee (SSC). The acceptable biological catch (ABC) is determined for each stock and stock complex by applying estimated, or proxy, MSY harvest rates to estimates of exploitable biomass. The total catch OY is the management target for each stock and complex. OY alternatives in this EIS are determined by precautionary reductions of the ABC that are designed to rebuild stocks to a level that supports MSY.

The *No Action Alternative* consists of the same OYs and management measures specified for the beginning of 2002. While this alternative is much more restrictive than management in previous years, it would constrain West Coast fisheries less than the other alternatives considered for 2003. However, this alternative does not conform to the latest scientific evidence guiding the rebuilding of some overfished groundfish stocks and risks further declines in stock biomass.

The *Low OY Alternative* sets harvest levels at a rate that has an 80% probability of rebuilding overfished stocks to the target level in the maximum allowable rebuilding period and a sablefish harvest level that predicts continued stock growth in the next ten years. Under *the Low OY Alternative*, most fishing activities on the U.S. West Coast within the 0 fm to 150 fm depth zone that have a chance of taking overfished shelf rockfish species as bycatch would be prohibited or restructured. There would be zero tolerance for bocaccio bycatch south of Cape Mendocino, California, and almost no tolerance for yelloweye rockfish bycatch north of 36° N latitude.

The *High OY Alternative* sets harvest levels at a rate that has a 50% probability of rebuilding overfished stocks in the maximum allowable time frame and an optimistic sablefish harvest level that assumes recruitment is environmentally driven. This is the highest harvest allowed for overfished groundfish species under the National Standards Guidelines. There would be a near-zero tolerance for bocaccio bycatch south of Cape Mendocino; however, a higher level of harvest would be allowed to avoid significant socioeconomic impacts compared to the *Low OY Alternative*. Fisheries north of Cape Mendocino would be less constrained than under the *Low OY Alternative*; yet constraints are significantly greater than under the *No Action Alternative*.

The Council's Ad Hoc Allocation Committee specified the *Allocation Committee OY Alternative* at its August 2002 meeting. Harvest levels under this alternative fall between the *Low OY* and *High OY Alternatives* and are based on probabilities of rebuilding overfished species intermediate to *the Low OY Alternative* and *High OY Alternative*. The relative effect of depth-based management is analyzed under this alternative. Although depth-based management is contemplated under all alternatives analyzed in this EIS (except the *No Action Alternative*), the effect is only analyzed under this alternative.

The Council adopted the *Council-preferred OY Alternative* at its September 9-13, 2002, meeting in Portland, Oregon. It is the same as the *Allocation Committee OY Alternative*, except that it allows a higher harvest of sablefish north of Point Conception. While this is less than the estimated OY that could be set under the management framework, it provides greater socioeconomic benefits than the OY specified under the *Allocation Committee OY Alternative*.

## **Affected Environment**

Chapter 3 describes the environment affected by these management measures. It provides details about West Coast geography, bathymetry, ocean currents, and climate; the various stocks of groundfish and where they occur; and essential fish habitat. The chapter also describes the current status of the overfished stocks, as well as other stocks that are affected by actions contemplated for the West Coast groundfish fisheries. There is also a description of the affected socioeconomic environment, including all the affected fisheries and fishing communities. Groundfish fisheries include limited entry trawl, limited entry fixed gear, directed open access, incidental open access, charter, recreational, and tribal fisheries. Affected markets and the structure and values of fishing communities are described. Finally, this chapter addresses current safety issues in the groundfish fisheries.

In this EIS, all socioeconomic effects of the alternatives, including the *No Action Alternative*, are compared to a baseline period. For commercial groundfish fisheries, including tribal fisheries, the baseline period is November 2000 through October 2001. The baseline period for recreational fisheries is the year 2001.

## Effects of the Alternatives

No Action Alternative. This alternative would have the biggest negative impact on the physical habitat of all the alternatives since it allows a higher fishing effort.

The harvest levels under this alternative are above rebuilding thresholds, according to the best available science. There would be a low probability of recovery for bocaccio and canary rockfish. This alternative poses the greatest risk for rebuilding all of the overfished species.

Under the *No Action Alternative*, commercial fishers would receive \$7 million less in direct exvessel revenues compared to the baseline 2001 baseline used in the economic analysis. Buyers and processors would experience the change as a reduction in the availability of \$5.8 million dollars worth of raw product and the profits associated with processing that product, compared to baseline conditions. There would likely be a loss in capacity and employment. The cumulative effects would be significant when added to past declines. Future declines are more likely if current harvests are unsustainable, given current policies for the management of overfished species.

The effects on recreational fisheries of the *No Action Alternative* have not been explicitly quantified, however, the 2002 seasons probably resulted in a change in effort equal to approximately half of the change projected in going from the 2001 baseline to the *Council-preferred OY Alternative* for the 2003 fishery. If harvests under this alternative are unsustainable, more severe restrictions would be likely in the future.

The income impacts on communities for the *No Action Alternative* were not analyzed. However, it is likely that income would fall below the baseline conditions with the decline in commercial landings and recreational activity. Under the *No Action Alternative*, exvessel revenue for the commercial fishery is projected to be 3% lower than in the 2001 base period. The three percent decline provides an indicator of the order of magnitude of the difference in fishery-related income impacts that would be expected for coastal communities. On the recreational side the decline for the *No Action Alternative* (relative to the 2001 baseline) is expected to be roughly one half the 10% decline projected for the *Council-preferred OY Alternative* (relative to the 2001 baseline).

This alternative poses the greatest risk of higher bycatch, because the direct catch would be higher for most species. There would be no depth-based restrictions, allowing fishing to occur in areas where overfished species are caught. Cumulatively, this alternative poses a high risk of overfishing species that are already considered overfished.

The management regime would not significantly change under this alternative. However, there would be increased uncertainty, because management would not be based on the latest science. Over time, management would be forced to rely on more complex measures to deal with the effects of overfishing.

Low OY Alternative. Under the *Low OY Alternative*, there would be a reduction of fishing-related habitat impacts in closed areas, with a possible intensification of impacts in open areas. This would have the biggest positive impact of all alternatives on the physical environment due to reduction in fishing pressure.

Harvest levels for overfished species (except for bocaccio) under the *Low OY Alternative* range between 52% and 100% probability of timely recovery. Under this alternative, bocaccio rebuilding (which would require zero harvest) is just under the threshold for rebuilding specified in the National Standards Guidelines (NSGs). Bocaccio would have an estimated 49% probability of rebuilding in the maximum time allowed, while the NSGs specify a threshold of 50%. However, there would be a 90% probability of no population decline in the next 100 years.

Under this alternative, commercial fisheries would lose \$60 million in direct exvessel revenues compared to the 2001 baseline. Buyers and processors would experience the change as a reduction in the availability of \$60 million dollars worth of raw product and the profits associated with processing that product, compared to baseline conditions. There would be a potential for permanent reduction in capacity, loss of skilled labor, and a permanent loss of markets. The negative economic impacts would be significant when added to past

declines. There may be some increases in the future with recovery of overfished stocks, however, mixed stock fisheries will limit harvest rates to those which can be sustained by the least productive stock in the complex.

Recreational trips would be expected to decline by 763,000 trips. Direct, indirect, and induced personal income associated with the recreational groundfish fisheries would be expected to decline by \$64 million under this alternative compared to the 2001 baseline. This is also a significant impact. While future revenues should increase as stocks recover, there would be a potential loss of recreational and community infrastructure.

Under this alternative, there would be disruption in communities related to the loss of commercial fishing activities associated with \$274 million of personal income and the loss of recreational fishing activities associated with \$64 million of personal income. These coastal communities are also experience the effects of economic events external to the fishery, effects which are often negative.

This alternative poses the lowest risk of bycatch of all the alternatives, due to lower harvest levels and conservative depth-based restrictions. In the long term, lower bycatch would ensure that overfished species were harvested only within rebuilding parameters.

Management would be more complex under this alternative, as with all the alternatives that rely on depth-based restrictions. Enforcement costs would increase, and there is a likelihood that future management measures would be equally or more complex.

*High OY Alternative.* Under the *High OY Alternative*, there would be a reduction of fishing-related habitat impacts in closed areas, with a possible intensification of impacts in open areas. Due to higher estimated fishing pressure, this would have the greatest impact on habitat of all alternatives except the *No Action Alternative*.

This alternative specifies the maximum allowable harvest that is consistent with NSG rebuilding thresholds (except for bocaccio). This alternative specifies a 50% probability of rebuilding within the time allowed for all the overfished species analyzed in this EIS (except bocaccio). Bocaccio harvest under this alternative (#20 mt) has a 33% to 49% probability of timely recovery depending on actual harvests. This conforms to a >80% probability of no stock decline in the next 100 years.

Under this alternative, commercial fisheries would lose \$6 million in direct ex-vessel revenues compared to the 2001 baseline. Buyers and processors would experience the change as a reduction in the availability of \$6 million dollars worth of raw product and the profits associated with processing that product, compared to baseline conditions. There would likely be a loss in capacity and employment. Effects would be significant when added to past revenue decline, but would cause a considerably lower impact than the *Low OY Alternative*.

Recreational trips would be expected to decline by 16,000 trips. Direct, indirect, and induced personal income associated with the recreational groundfish fisheries would be expected to decline by \$1 million under this alternative compared to the 2001 baseline.

Under this alternative, there would be disruption in communities related to the loss of commercial fishing activities associated with \$16 million of personal income and the loss of recreational fishing activities associated with \$1 million of personal income. These coastal communities are also experience the effects of economic events external to the fishery, effects which are often negative.

Under the *High OY Alternative*, bycatch would be highest of all the action alternatives. However, due to depth-based restrictions, bycatch would be lower than under the *No Action Alternative*.

Management would be more complex under this alternative, as with all the alternatives that rely on depth-based restrictions. Enforcement costs would increase, and there is a likelihood that future management measures would be equally or more complex.



*Allocation Committee OY Alternative (not depth-based)*. Under this alternative, there would be a significant reduction of fishing effects on habitat in closed areas, with a possible intensification of effects in open areas.

This alternative specifies harvest levels that would lead to a 52% to 92% probability of recovery of overfished species (except for bocaccio) within the allowable time frame. The probability of recovery of bocaccio would depend on the actual harvest, but there would likely be a negative effect on bocaccio recovery. There would be a >80% probability of no population decline for bocaccio within 100 years.

Under this alternative, commercial fisheries would lose \$28 million in direct exvessel revenues compared to the 2001 baseline. Buyers and processors would experience the change as a reduction in the availability of \$28 million dollars worth of raw product and the profits associated with processing that product, compared to baseline conditions. There would be a moderate-to-severe loss of capacity and skilled labor in the hardest-hit ports. Effects would be significant when added to past revenue decline, would cause a considerably lower impact than the *Low OY Alternative* and considerably higher impact than the *Allocation Committee OY Alternative (depth-based)*.

Recreational trips would be expected to decline by 18,000 trips. Direct, indirect, and induced personal income associated with the recreational groundfish fisheries would be expected to decline by \$1 million under this alternative compared to the 2001 baseline.

Under this alternative, there would be disruption in communities related to the loss of commercial fishing activities associated with \$53 million of personal income and the loss of recreational fishing activities associated with \$1 million of personal income. These coastal communities are also experience the effects of economic events external to the fishery, effects which are often negative.

Bycatch rates would remain near the rates in the *No Action Alternative*, because the lack of depth-based restrictions would allow fishing in areas where overfished species are abundant. However, total bycatch would likely be moderate, and similar to that under the *Allocation Committee OY Alternative (depth-based)* and the *Council-preferred OY Alternative*. Cumulatively, there would be a low risk of overfishing, especially of already overfished stocks.

The lack of depth-based restrictions under this alternative makes the management complexity similar to that of the *No Action Alternative*.

*Allocation Committee OY Alternative (depth-based)*. This restriction would reduce negative effects on habitat in closed areas, and would possibly intensify effects in open areas. Overall, habitat impacts would be slightly reduced under this alternative.

This alternative would have approximately the same effects on species rebuilding as the *Allocation Committee OY Alternative (not depth-based)*.

Under this alternative, commercial fisheries would lose \$15 million in direct exvessel revenues compared to the 2001 baseline. Buyers and processors would experience the change as a reduction in the availability of \$15 million dollars worth of raw product and the profits associated with processing that product, compared to baseline conditions. There would be substantially less impact than under the *Allocation Committee OY Alternative (not depth-based)*. Effects would be significant when added to past revenue decline, would cause a considerably lower impact than the *Low OY Alternative* and somewhat higher impact than the Council preferred alternative.

The impact on recreational groundfish fisheries is the same as under the *Allocation Committee OY Alternative (not depth-based)* - a reduction of 18,000 angler trips and decline in associated personal income of \$1 million, as compared to the 2001 baseline.

Under this alternative, there would be disruption in communities related to the loss of commercial fishing activities associated with \$40 million of personal income and the loss of recreational fishing activities associated with \$1 million of personal income. These coastal communities are also experience the effects of economic events external to the fishery, effects which are often negative.

The depth-based restrictions under this alternative are more conservative than under the *High OY Alternative*, likely reducing coastwide bycatch rates. There would be a low risk of overfishing, especially of already overfished stocks.

The management regime under this alternative would be affected similarly to other alternatives relying on depth-based restrictions.

*The Council-preferred OY Alternative.* The effects on habitat of this alternative would be the same as for the *Allocation Committee OY Alternative (depth-based)*. Closed areas would benefit, while open areas might undergo more intense effects.

This alternative would have approximately the same effects on species rebuilding as the *Allocation Committee OY Alternative (not depth-based)* and the *Allocation Committee OY Alternative (depth-based)*. Darkblotched rockfish and Pacific ocean perch are managed more conservatively since the trawl fishery would be more restricted in the 150 fm to 250 fm depth zone. Harvest levels would lead to a 52% to 92% probability of recovery of overfished species (except for bocaccio) within the allowable time frame. The probability of recovery of bocaccio would depend on the actual harvest, but there would likely be a negative effect on bocaccio recovery. There would be a >80% probability of no population decline for bocaccio within 100 years.

Under this alternative, commercial fisheries would lose \$13 million in direct exvessel revenues compared to the 2001 baseline. Buyers and processors would experience the change as a reduction in the availability of \$13 million dollars worth of raw product and the profits associated with processing that product, compared to baseline conditions. This would cause a moderate loss of capacity and skilled labor in the hardest-hit ports. However, short term adverse impacts would be lower than for all the alternatives other than the *High OY* or *No Action Alternatives*. The negative economic impact is significant when added to past revenue declines. Effects would be significant, particularly when added to past revenue decline. There may be some increases in the future with recovery of overfished stocks, however, mixed stock fisheries will limit harvest rates to those which can be sustained by the least productive stock in the complex unless better ways are found to limit bycatch or reduce bycatch mortality..

Recreational trips would be expected to decline by 303,000 trips. Direct, indirect, and induced personal income associated with the recreational groundfish fisheries would be expected to decline by \$25 million under this alternative compared to the 2001 baseline.

Under this alternative, there would be disruption in communities related to the loss of commercial fishing activities associated with \$35 million of personal income and the loss of recreational fishing activities associated with \$25 million of personal income. These coastal communities are also experience the effects of economic events external to the fishery, effects which are often negative.

Depth-based restrictions and harvest specifications would lead to a slightly lower bycatch rates than under the *Allocation Committee OY Alternative (depth-based)* and significantly lower than under the *High OY Alternative*.

The management regime under this alternative would be affected similarly to other alternatives relying on depth-based restrictions. Enforcement costs would increase, and there is a likelihood of future complex management measures.

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## Acronyms and Glossary

### A

<b>ABC</b>	Acceptable biological catch – see below
<b>Acceptable biological catch</b>	Refers to the allowable catch for a species or species group, based on its estimated abundance. The ABC is used to set the upper limit of the annual total allowable catch and is calculated by applying the estimated or proxy harvest rate that produces maximum sustainable yield to the estimated exploitable stock biomass.
<b>Alternatives</b>	Different suites of optimum yields and management measures that could be implemented to manage groundfish fisheries. This EIS analyzes the environmental impacts of each alternative.

### B

<b>B<sub>0</sub></b>	Unfished biomass; the estimated size of a fish stock at equilibrium in the absence of fishing.
<b>B<sub>25%</sub></b>	25% of unfished biomass. This is the Council's threshold for declaring a stock overfished or the Minimum Stock Size Threshold.
<b>B<sub>40%</sub></b>	40% of unfished biomass. This is the Council's threshold for declaring a stock rebuilt or the size of the stock estimated to produce MSY. This is also referred to as B <sub>MSY</sub> .
<b>Best available science</b>	The term “best available science” comes from the second National Standard listed in the Magnuson-Stevens Act and is the informational standard mandated for decision-making.
<b>Biological opinion</b>	A scientific assessment issued by the National Marine Fisheries Service, as required by the Endangered Species Act for listed species.
<b>Biomass</b>	The total weight of a group (or stock) of fish. The term biomass means total biomass (age one and above) unless stated otherwise.
<b>BiOp</b>	Biological opinion (see above)
<b>B<sub>MSY</sub></b>	The biomass that produces the maximum sustainable yield.
<b>BO</b>	Biological opinion (see above)
<b>BRD</b>	Bycatch reduction device (finfish excluders, etc.). These are devices incorporated in fishing gears designed to reduce the take of non-target species.
<b>Bycatch</b>	Fish which are harvested in a fishery, but which are returned to the sea rather than being sold, kept for personal use, or donated to a charitable organization. Bycatch + landed catch = total catch or total estimated fishing-related mortality.

### C

<b>CA</b>	California
<b>California Bight</b>	The region of concave coastline off Southern California between the headland at Point Conception and the U.S./Mexican border, and encompassing various islands, shallow banks, basins and troughs extending from the coast roughly 200 km offshore.
<b>CALCOFI</b>	California Cooperative Fishery Investigation
<b>California Rockfish Conservation Area</b>	The CRCA is defined as, (1) Ocean waters 20 fm to 250 fm between Cape Mendocino and Point Reyes and 20fm to 150 fm between Point Reyes and the U.S.-Mexico Border, and (2) the Cowcod Conservation Areas. The purpose of the CRCA is to regulate all gear types that have a potentially significant affect on rebuilding of overfished rockfish species south of Cape Mendocino.
<b>Catch per unit of effort</b>	The quantity of fish caught (in number or in weight) with one standard Unit of fishing effort; (e.g., number of fish taken per 1,000 hooks per day or weight of fish, in tons, taken per hour of trawling). CPUE is often considered an index of fish biomass (or abundance). Sometimes referred to as catch rate. CPUE may be used as a measure of economic efficiency of fishing as well as an index of fish abundance.

<b>CCA</b>	Cowcod Conservation Area(s) - see below
<b>CDFG</b>	California Department of Fish and Game
<b>CEQ</b>	Council on Environmental Quality
<b>Cetaceans</b>	Marine mammals of the order <i>Cetacea</i> . Includes whales, dolphins and porpoises.
<b>CFR</b>	Code of Federal Regulations – see below
<b>cm</b>	centimeter
<b>Coastal pelagic species</b>	Coastal pelagic species are schooling fish, not associated with the ocean bottom, that migrate in coastal waters. They are usually planktivorous (plankton-eating) and the main forage of higher level predators such as tuna, salmon, most groundfish, and man. Examples are herring, squid, anchovy, sardine, and mackerel.
<b>Coastal Zone Management Act</b>	An act of federal law with the main objective to encourage and assist states in developing coastal zone management programs, to coordinate state activities, and to safeguard regional and national interests in the coastal zone.
<b>Code of Federal Regulations</b>	A codification of the regulations published in the <i>Federal Register</i> by the executive departments and agencies of the federal government. The CFR is divided into 50 titles that represent broad areas subject to federal regulation. Title 50 contains wildlife and fisheries regulations.
<b>Cohort</b>	In a stock, a group of fish generated during the same spawning season and born during the same time period. Also, in cold and temperate areas, where fish are long-lived, a cohort corresponds usually to fish born during the same year (a year class).
<b>Commercial fishing</b>	Fishing in which the fish harvested, either whole or in part, are intended to enter commerce through sale, barter, or trade.
<b>Co-occurring stocks</b>	Stocks of different fish that swim or school near one another, and may be caught together.
<b>Council</b>	Pacific Fishery Management Council
<b>Cowcod Conservation Area(s)</b>	Two areas located in the Southern California Bight southwest of Santa Monica to the California-Mexico border that encompass roughly 4,300 nm <sup>2</sup> of habitat where the highest densities of cowcod occur. These areas are closed to bottom fishing in order to rebuild the cowcod stock to B <sub>MSY</sub> .
<b>CPFV</b>	Commercial passenger fishing vessel or charterboat operating in waters off California
<b>CPS</b>	Coastal pelagic species - see above
<b>CPUE</b>	Catch per unit of effort - see above
<b>CRCA</b>	California Rockfish Conservation Area - see above
<b>Cumulative limit</b>	The total allowable amount of a species or species group, by weight, that a vessel may take and retain, possess, or land during a period of time. Fishers may take as many landings of a species or species complex as they like as long as they do not exceed the cumulative limit that applies to the vessel or permit during the designated period.
<b>CZMA</b>	Coastal Zone Management Act - see above

## D

<b>DEIS</b>	Draft environmental impact statement
<b>Demersal</b>	Living in close relation with the sea floor.
<b>Density dependence</b>	The degree to which recruitment changes as spawning biomass changes.
<b>Derby fishery</b>	A fishery of a few days' or weeks' duration during which fishers compete to take as much catch as they can before the fishery closes.
<b>DTS</b>	Dover sole/thornyhead/trawl-caught sablefish complex

## E

<b>EA</b>	Environmental assessment – see below
<b>EC</b>	Enforcement Consultants – see below
<b>EEZ</b>	Exclusive economic zone – see below

<b>EFH</b>	Essential fish habitat – see below
<b>ExFP</b>	Exempted fishing permit – see below
<b>EIS</b>	Environmental impact statement – see below
<b>El Niño Southern Oscillation</b>	Abnormally warm ocean climate conditions, which in some years affect the Eastern coast of Latin America (centered on Peru) often around Christmas time. The anomaly is accompanied by dramatic changes in species abundance and distribution, higher local rainfall and flooding, massive deaths of fish and their predators. Many other climatic anomalies around the world are attributed to consequences of El Niño.
<b>Endangered Species Act</b>	An act of federal law that provides for the conservation of endangered and threatened species of fish, wildlife, and plants. When preparing fishery management plans, councils are required to consult with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service to determine whether the fishing under a fishery management plan is likely to jeopardize the continued existence of an ESA-listed species, or to result in harm to its critical habitat.
<b>Enforcement Consultants</b>	A Council committee that provides advice on enforcement of fishery regulations.
<b>ENSO</b>	El Niño Southern Oscillation – see above
<b>Environmental assessment</b>	As part of the National Environmental Policy Act (NEPA) process, an EA is a concise public document that provides evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact.
<b>Environmental impact statement</b>	As part of the National Environmental Policy Act (NEPA) process, an EIS is an analysis of the expected impacts resulting from the implementation of a fisheries management or development plan (or some other proposed action) on the environment. EISs are required for all fishery management plans as well as significant amendments to existing plans. The purpose of an EIS is to ensure that the fishery management plan gives appropriate consideration to environmental values in order to prevent harm to the environment.
<b>EO 12866</b>	A Federal executive order that, among other things, requires agencies to assess the economic costs and benefits of all regulatory proposals and complete a Regulatory Impact Analysis (RIA) that describes the costs and benefits of the proposed rule and alternative approaches, and justifies the chosen approach. See RIR.
<b>EO</b>	Executive Order
<b>ESA</b>	Endangered Species Act
<b>Essential fish habitat</b>	Those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity.
<b>Exclusive economic zone</b>	A zone under national jurisdiction (up to 200-nautical miles wide) declared in line with the provisions of the 1982 United Nations Convention of the Law of the Sea, within which the coastal State has the right to explore and exploit, and the responsibility to conserve and manage, the living and non-living resources.
<b>Exempted fishing permit</b>	A permit issued by National Marine Fisheries Service that allows exemptions from some federal fishing regulations in order to study the effectiveness, bycatch rate, or other aspects of an experimental fishing gear or technique.
<b>Exploitable biomass</b>	The biomass that is available to a unit of fishing effort. Defined as the sum of the population biomass at age (calculated as the mean within the fishing year) multiplied by the age-specific availability to the fishery. Exploitable biomass is equivalent to the catch biomass divided by the instantaneous fishing mortality rate.

## F

<b>F</b>	The rate of fishing mortality.
<b>Fathom</b>	Six feet.

<b>FEAM</b>	Fishery economic assessment model – see below
<b>Federal Register</b>	The <i>Federal Register</i> is the official daily publication for Rules, Proposed Rules, and Notices of Federal agencies and organizations, as well as Executive Orders and other Presidential documents. Fisheries regulations are not considered final until they are published in the <i>Federal Register</i> .
<b>Fish stock</b>	A population of a species of fish from which catches are taken in a fishery. Use of the term “fish stock” usually implies that the particular population is more or less isolated from other stocks of the same species, and hence self-sustaining.
<b>Fishery economic assessment model</b>	FEAM uses historical landings data, information on industry cost and margin structure (vessels and processors), and income multipliers generated by IMPLAN ( <a href="#">MIG 2000</a> ) to produce estimates of “regionalized” local income impact after deducting for leakage of payments to non-residents and to non-local suppliers, wholesalers, and manufacturers.
<b>Fishery management plan</b>	A plan, and its amendments, that contains measures for conserving and managing specific fisheries and fish stocks.
<b>Fishing community</b>	A community which is substantially dependent on or substantially engaged in the harvest or processing of fishery resources to meet social and economic needs. Includes fishing vessel owners, fishing families, operators, crew, recreational fishers, fish processors, gear suppliers, and others in the community who depend on fishing.
<b>Fishing year</b>	January 1 through December 31.
<b>Fishing</b>	The catching, taking, or harvesting of fish; the attempted catching, taking, or harvesting of fish; any other activity that can reasonably be expected to result in the catching, taking, or harvesting of fish; any operations at sea in support of, or in preparation for, any of these activities. This term does not include any activity by a vessel conducting authorized scientific research.
<b>Fixed gear</b>	Fishing gear that is stationary after it is deployed (unlike trawl or troll gear which is moving when it is actively fishing). Within the context of the limited entry fleet, “fixed gear” means longline and fishpot (trap) gear. Within the context of the entire groundfish fishery, fixed gear includes longline, fishpot, and any other gear that is anchored at least at one end.
<b>fm</b>	fathom (6 feet)
<b>FMP</b>	fishery management plan – see above
<b><math>F_{MSY}</math></b>	The fishing mortality rate that maximizes catch biomass in the long term.
<b>FWS</b>	U.S. Fish and Wildlife Service
<b><math>F_{x\%}</math></b>	The rate of fishing mortality that will reduce female spawning biomass per recruit to x percent of its unfished level. $F_{100\%}$ is zero, and $F_{35\%}$ is a reasonable proxy for $F_{MSY}$ .

## G

<b>GAP</b>	Groundfish Advisory Subpanel – see below
<b>GF</b>	Groundfish
<b>GMT</b>	Groundfish Management Team – see below
<b>Groundfish Advisory Subpanel</b>	The Council established the GAP to obtain the input of the people most affected by, or interested in, the management of the groundfish fishery. This advisory body is made up of representatives with recreational, trawl, fixed gear, open access, tribal, environmental, and processor interests. Their advice is solicited when preparing fishery management plans, reviewing plans before sending them to the Secretary, and reviewing the effectiveness of plans once they are in operation.
<b>Groundfish Management Team</b>	Groundfish management plans are prepared by the Council's GMT, which consists of scientists and managers with specific technical knowledge of the groundfish fishery.

## H



<b>Harvest guideline(s)</b>	A numerical harvest level that is a general objective, but not a quota. Attainment of a harvest guideline does not require a management response, but it does prompt review of the fishery.
<b>Harvest specifications</b>	The detailed regulations that make up management measures – for example, trawl footrope size, depth limits, net mesh size, etc.
<b>HG</b>	Harvest guideline(s) – see above
<b>High seas</b>	All waters beyond the EEZ of the United States and beyond any foreign nation's EEZ, to the extent that such sea is recognized by the United States.
<b>Highly migratory species</b>	In the Council context, highly migratory species in the Pacific Ocean include species managed under the HMS Fishery Management Plan: tunas, sharks, billfish/swordfish, and dorado or dolphinfish.
<b>HMS</b>	Highly migratory species – see above

## I

<b>ICB</b>	Information Collection Budget
<b>IFQ</b>	Individual fishing quota. See individual transferable quota.
<b>IMPLAN</b>	IMPact Analysis for PLANning - a regional economic impact model
<b>Incidental catch or incidental species</b>	Groundfish species caught when fishing for the primary purpose of catching a different species.
<b>Individual transferable (or tradeable) quota</b>	A type of quota (a part of a total allowable catch) allocated to individual fishermen or vessel owners and which can be sold to others.
<b>Initial regulatory flexibility analysis</b>	An analysis required by the Regulatory Flexibility Act (see RFA).
<b>INPFC</b>	International North Pacific Fishery Commission – see below
<b>International North Pacific Fishery Commission</b>	International North Pacific Fisheries Commission (INPFC) areas are also used to define fishing areas. The INPFC was established in 1952 and dissolved in 1993, but the areas defined by the Commission are still commonly used in marine fisheries management.
<b>International Pacific Halibut Commission</b>	A Commission responsible for studying halibut stocks and the halibut fishery. The IPHC makes proposals to the U.S. and Canada concerning the regulation of the halibut fishery.
<b>IPHC</b>	International Pacific Halibut Commission – see above
<b>IRFA</b>	Initial regulatory flexibility analysis – see above
<b>ITQ</b>	Individual transferable (or tradeable) quota – see above

## JKL

<b>LE</b>	Limited entry – see below
<b>Limited entry fishery</b>	A fishery for which a fixed number of permits have been issued in order to limit participation.
<b>Local depletion</b>	Local depletion occurs when localized catches take more fish than can be replaced either locally or through fish migrating into the catch area. Local depletion can occur apart from the status of the overall stock, and can be greater than decreases in the entire stock.

## M

<b>m</b>	meters
<b>M</b>	Instantaneous natural mortality rate (as opposed to F, fishing mortality rate) or the rate of mortality not related to fishing.
<b>Magnuson-Stevens Fishery Conservation and Management Act</b>	The MFCMA, sometimes known as the “Magnuson-Stevens Act,” established the 200 nm fishery conservation zone (EEZ), the regional fishery management council system, and the process and mandates for regulating marine fisheries in the EEZ.
<b>Marine Mammal Protection Act</b>	The MMPA prohibits the harvest or harassment of marine mammals, although permits for incidental take of marine mammals while commercial fishing may be issued subject to regulation.

<b>Marine Recreational Fisheries Statistical Survey</b>	A national survey conducted by National Marine Fisheries Service to estimate the impact of recreational fishing on marine resources.
<b>Maximum fishing mortality threshold</b>	A threshold fishing mortality rate identified in the National Standard Guidelines above which constitutes overfishing.
<b>Maximum sustainable yield</b>	An estimate of the largest average annual catch or yield that can be continuously taken over a long period from a stock under prevailing ecological and environmental conditions . Since MSY is a long-term average, it need not be specified annually, but may be reassessed periodically based on the best scientific information available.
<b>MBTA</b>	Migratory Bird Treaty Act
<b>MFMT</b>	Maximum fishing mortality threshold – see above
<b>MHHW</b>	Mean higher high water level or the average of the highest of two daily high tides in the Pacific Ocean (i.e., high tide line)
<b>Minimum stock size threshold</b>	A threshold biomass used to determine if a stock is overfished. The Council proxy for MSST is $B_{25\%}$ .
<b>mm</b>	Millimeter
<b>MMPA</b>	Marine Mammal Protection Act – see above
<b>MOU</b>	Memorandum of Understanding
<b>MRFSS</b>	Marine Recreational Fisheries Statistics Survey – see above
<b>MRPZ</b>	Marine resources protection zone
<b>MSA</b>	Magnuson-Stevens Fishery Conservation and Management Act (also known as Magnuson-Stevens Act) – see above
<b>MSST</b>	Minimum stock size threshold – see above
<b>MSY</b>	Maximum sustainable yield (see above).
<b>mt</b>	Metric ton = 2,204.62 pounds.
<b>N</b>	
<b>National Standards Guidelines</b>	Guidelines issued by National Marine Fisheries Service to provide comprehensive guidance for the development of fishery management plans and amendments that comply with the national standards of the Magnuson-Stevens Act. These guidelines are found in Title 50, Code of Federal Regulations, part 600.
<b>National Environmental Policy Act</b>	Passed by Congress in 1969, NEPA requires Federal agencies to consider the environment when making decisions regarding their programs. Section 102(2)(C) requires Federal agencies to prepare an Environmental Impact Statement (EIS) before taking major Federal actions that may significantly affect the quality of the human environment. The EIS includes: the environmental impact of the proposed action, any adverse environmental effects which cannot be avoided should the proposed action be implemented, alternatives to the proposed action, the relationship between local short-term uses of the environment and long-term productivity, and any irreversible commitments of resources which would be involved in the proposed action should it be implemented.
<b>National Marine Fisheries Service</b>	A division of the U.S. Department of Commerce, National Ocean and Atmospheric Administration (NOAA). NMFS is responsible for conservation and management of offshore fisheries (and inland salmon). The NMFS Regional Director is a voting member of the Council.
<b>NAO</b>	NOAA Administrative Order
<b>NSG</b>	National Standards Guidelines – see above
<b>NE</b>	Northeast
<b>Nearshore</b>	“Nearshore” is defined (by the California Nearshore Fishery Management Plan) as the area from the high-tide line offshore to a depth of 120 ft (20 fm).
<b>NEPA</b>	National Environmental Policy Act – see above
<b>Neritic</b>	Inhabiting coastal waters primarily over the continental shelf, generally

	over bottom depths equal to or less than 183 meters (100 fm) deep.
<b>NMFS</b>	National Marine Fisheries Service – see above
<b>NOAA</b>	National Oceanic and Atmospheric Administration
<b>NOI</b>	Notice of Intent
<b>NS</b>	Nearshore – see above

## O

<b>OA</b>	Open access. See below.
<b>Oceanic</b>	Inhabiting the open sea, ranging beyond the continental and insular shelves, beyond the neritic zone.
<b>ODFW</b>	Oregon Department of Fish and Wildlife
<b>OMB</b>	Office of Management and Budget
<b>Open-access fishery</b>	The segment of the groundfish fishery or any other fishery for which entry is not controlled by a limited entry permitting program.
<b>OSP</b>	Optimum sustainable population
<b>OSP</b>	Oregon State Police
<b>Overfished</b>	Any stock or stock complex whose size is sufficiently small that a change in management practices is required to achieve an appropriate level and rate of rebuilding. The term generally describes any stock or stock complex determined to be below its overfished/rebuilding threshold. The default proxy is generally 25% of its estimated unfished biomass; however, other scientifically valid values are also authorized.
<b>Overfishing</b>	Fishing at a rate or level that jeopardizes the capacity of a stock or stock complex to produce MSY on a continuing basis. More specifically, overfishing is defined as exceeding a maximum allowable fishing mortality rate (or the MFMT). For any groundfish stock or stock complex, the maximum allowable mortality rate will be set at a level not to exceed the corresponding MSY rate ( $F_{MSY}$ ) or its proxy (e.g., $F_{35\%}$ ).
<b>Optimum yield</b>	The amount of fish that will provide the greatest overall benefit to the Nation, particularly with respect to food production and recreational opportunities, and taking into account the protection of marine ecosystems. The OY is developed on the basis of the Maximum Sustained Yield from the fishery, taking into account relevant economic, social, and ecological factors. In the case of overfished fisheries, the OY provides for rebuilding to a level that is consistent with producing the Maximum Sustained Yield for the fishery and is typically a prescribed harvest level less than the ABC.
<b>OY</b>	Optimum yield – see above

## P

<b>PacFIN</b>	Pacific Coast Fisheries Information Network. A database managed by the Pacific States Marine Fisheries Commission that provides commercial fishery information for Washington, Oregon, and California.
<b>Pacific decadal oscillation</b>	A long-term, El Niño-like pattern of Pacific climate variability.
<b>PBR</b>	Potential biological removal – see below
<b>PDO</b>	Pacific decadal oscillation – see above
<b>Pelagic</b>	Inhabiting the water column as opposed to being associated with the sea floor; generally occurring anywhere from the surface to 1000 meters (547 fm). See also epipelagic and mesopelagic.
<b>Permit stacking</b>	The registration of more than one limited entry permit for a single vessel, where a vessel is allowed additional catch for each additional permit registered for use with the vessel.
<b>PFMC</b>	Pacific Fishery Management Council
<b>POP</b>	Pacific ocean perch
<b>Potential biological removal</b>	The maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population.

<b>PRA</b>	Paperwork Reduction Act
<b>Preferred alternative</b>	The alternative that is identified as preferred by the authors of an environmental impact statement or environmental assessment. It is identified to indicate which alternative is likely to be selected, thereby helping the public focus its comments.
<b>Processing</b>	The preparation or packaging of fish to render it suitable for human consumption, retail sale, industrial uses, or long-term storage, including but not limited to cooking, canning, smoking, salting, drying, filleting, freezing, or rendering into meal or oil, but not heading and gutting unless additional preparation is done.

## Q

<b>Q</b>	The selectivity of fishing gear or the ratio of fish caught by the gear to those actually present.
<b>QSM</b>	Quota species monitoring is a PacFIN database that monitors the cumulative landings of species managed either with individual OYs or OYs prescribed for a species complex (grouping of species in a single management unit). The GMT uses quota species monitoring to develop inseason groundfish fishery management recommendations to attempt to attain, but not exceed, prescribed OYs.
<b>Quota</b>	A specified numerical harvest objective, the attainment (or expected attainment) of which causes closure of the fishery for that species or species group.
<b>R</b>	Recruits or recruitment. This is the estimated production of new members to a population as measured at a specific life stage.
<b>R/S</b>	Recruits per spawner
<b>R<sub>0</sub></b>	Level of unfished recruitment
<b>Rebuilding</b>	Implementing management measures that increase a fish stock to its target size.
<b>RecFin</b>	Recreational Fishery Information Network. A database managed by the Pacific States Marine Fisheries Commission that provides recreational fishery information for Washington, Oregon, and California.
<b>RFA</b>	Regulatory Flexibility Analysis, or Regulatory Flexibility Act – see below

<b>Regulatory Flexibility Analysis (or Act)</b>	Anytime an agency publishes a notice of proposed rule making, an RFA is required. It describes the action, why it is necessary, the objectives and legal basis for the action, a description of who will be impacted by the action, and a description of the projected reporting, record-keeping, and other compliance requirements of the proposed rule. The types of entities subject to the rule, and the professional skills required to prepare the report or record, must also be described.
<b>RIR</b>	Regulatory Impact Review – See Regulatory Flexibility Analysis.
<b>Rulemaking</b>	The process of developing Federal regulations which occurs in several steps, including publishing proposed rules in the <i>Federal Register</i> , accepting comments on the proposed rule, and publishing the final rule. An “advanced notice of proposed rulemaking” is published when dealing with especially important or controversial rules.

## S

<b>SAFE</b>	Stock assessment and fishery evaluation. See below.
<b>SFA</b>	Sustainable Fisheries Act of 1996 that amended the Magnuson-Stevens Act with stricter stock conservation standards including the prescribed rules for rebuilding overfished marine fish populations.
<b>Southern California bight</b>	See California Bight
<b>Spawning biomass</b>	The biomass of mature female fish at the beginning of the year. If the production of eggs is not proportional to body weight, then this definition is construed to be proportional to expected egg production.

<b>Scientific and Statistical Committee</b>	An advisory committee of the PFMC made up of scientists and economists. The Magnuson-Stevens Act requires that each council maintain an SSC to assist in gathering and analyzing statistical, biological, ecological, economic, social, and other scientific information that is relevant to the development of fishery management plans.
<b>SSC</b>	Scientific and Statistical Committee – see above
<b>STAR Panel</b>	Stock Assessment Review Panel
<b>STAR</b>	Stock assessment review
<b>STAT</b>	Stock Assessment Team
<b>Stock Assessment and Fishery Evaluation (SAFE)</b>	A SAFE document is a document prepared by the Council that provides a summary of the most recent biological condition of species in the fishery management unit, and the social and economic condition of the recreational and commercial fishing industries, including the fish processing sector. It summarizes, on a periodic basis, the best available information concerning the past, present, and possible future condition of the stocks and fisheries managed in the FMP.
<b>SWFSC</b>	Southwest Fisheries Science Center (NMFS)

## T

<b>TAC</b>	Total allowable catch
<b>Target fishing</b>	Fishing for the primary purpose of catching a particular species or species group (the target species).
<b>T<sub>MAX</sub></b>	The maximum time period to rebuild an overfished stock according to National Standard Guidelines
<b>T<sub>MIN</sub></b>	The minimum time period to rebuild an overfished stock according to National Standard Guidelines
<b>Total catch OY</b>	Total catch optimum yield. The landed catch plus discard mortality.

## U

<b>U and A</b>	Usual and accustomed
<b>USCG</b>	U.S. Coast Guard
<b>USFWS</b>	U.S. Fish and Wildlife Service

## VWXYZ

<b>VMS</b>	Vessel monitoring system
<b>WA</b>	Washington
<b>WCSPA</b>	West Coast Seafood Processors Association
<b>WDFW</b>	Washington Department of Fish and Wildlife
<b>WOC</b>	Washington, Oregon and California