



# Background: Groundfish

The groundfish managed under the Pacific Coast Groundfish Fishery Management Plan (FMP) include more than 90 different species that, with a few exceptions, live on or near the bottom of the ocean. These are made up of the following species:

- **Rockfish.** This category includes over 64 species in the family Scorpaenidae, including widow, yellowtail, canary, shortbelly, and vermilion rockfish; bocaccio, chilipepper, cowcod, yelloweye, thornyheads, scorpionfish, and Pacific ocean perch.
- **Flatfish.** The FMP covers 12 species of flatfish, including various soles, starry flounder, turbot, and sanddab.
- **Roundfish.** The six species of roundfish included in the FMP are lingcod, cabezon, kelp greenling, Pacific cod, Pacific whiting (hake), and sablefish.
- **Sharks and skates.** The six species of sharks and skates are leopard shark, soupfin shark, spiny dogfish, big skate, California skate, and longnose skate.
- **Other species.** These include ratfish, finescale codling, and Pacific rattail grenadier.



*Canary rockfish (ODFW)*



*A lingcod guarding his nest*

## The Fishery and Gear

Since there is such a wide variety of groundfish, many different gear types are used to target them. While the trawl fishery harvests most groundfish, they can also be caught with troll, longline, hook and line, pots, gillnets, and other gear.

The West Coast groundfish fishery described in the FMP has four components:

- **Limited entry.** This component is comprised of fishers with limited entry permits. The limited entry program limits the number of vessels allowed to participate in a fishery. This sector is, in turn, divided into limited entry trawl (for those fishers using trawl gear such as bottom and pelagic trawl nets) and limited entry fixed gear (for those fishers using fixed gear, such as longlines, traps or pots).

- **Open access.** This component of the groundfish fishery allocates a portion of the harvest to fishers targeting groundfish without limited entry permits, and fishers who target non-groundfish fisheries that incidentally catch groundfish. Trawl gear may not be used in the directed groundfish open access fishery. Trawl gears for target species such as pink shrimp, California halibut, ridgeback prawns, and sea cucumbers are exempted from this rule. The Council is considering a license limitation program for the directed open access fishery.
- **Recreational.** This component includes anglers targeting groundfish species and others who target non-groundfish species but who incidentally take groundfish.
- **Tribal.** This component is made up of tribal commercial fishers who have a federally recognized treaty right to fish in their “usual and accustomed” fishing areas. These tribes, all located in Washington state, include the Quinault, Hoh, Quileute, and Makah. Formal allocations to these tribes exist for sablefish, Pacific whiting, and black rockfish. Other groundfish species’ allocations for this sector are decided by biennial Council action.

## The Management Context

Groundfish are managed through a number of measures including harvest guidelines, quotas, trip and landing limits, area restrictions, depth restrictions, size limits, seasonal closures, and gear restrictions (such as minimum mesh size for nets and small trawl footrope requirements for fishing on the continental shelf south of 40°10' N. latitude, and selective flatfish trawls on the shelf north of 40°10' N. latitude). All sectors of the groundfish fishery are constrained by the need to rebuild groundfish species that have been declared overfished. The Council has approved FMP amendments to incorporate rebuilding plans for these species.

Because of the low biomass of some species, the overall groundfish harvest has been significantly reduced. This has led the Council to question the ability of the groundfish resource to support current levels of participation in the fishery. The Council’s Groundfish Fishery Strategic Plan, Transition to Sustainability, calls for sharp reductions in fleet capacity across all sectors of the commercial groundfish fishery in order to manage sustainable fisheries. The Strategic Plan’s aim is to ensure that West Coast groundfish resources are fished sustainably while making the groundfish fleets more economically viable.

The groundfish FMP contains the rules for managing the groundfish fishery. It outlines the areas, species, regulations, and methods that the Council and the Federal government must follow to make changes to the fishery. The FMP also creates guidelines for the biennial process of setting harvest levels. As of February 2007, 20 amendments to the plan have been implemented. Important amendments include Amendment 4, a complete rewrite that replaced the original document; Amendment 6, which set up a license limitation program for vessels taking the vast majority of the groundfish harvest; Amendment 16, incorporating rebuilding plans for overfished species, and Amendment 17, implementing a multi-year management schedule.

Below are three general processes used to regulate groundfish harvests. Since these processes can take up to six months, they may be streamlined for some decisions.

- **The process for controversial or complex issues takes at least three Council meetings.** Proposals for management measures may come from the public, from advisory groups, or from Council members. If the Council wants to pursue these proposals, it asks for other possible solutions to the problem being addressed and then directs the Groundfish Management Team and/or Council staff to prepare an analysis. At the next meeting, the Council reviews the analysis and chooses a range of alternatives and possibly a preferred alternative. The analysis is then made available for public review, and the Council makes a final

decision at the next meeting.

- **The annual management process was recently changed.** In 2002, the Council adopted Amendment 17 to the groundfish FMP, which changes the groundfish management process to a multi-year schedule so that measures can be established for two years rather than one. This will provide more time for the Council and National Marine Fisheries Service (NMFS) to work on other critical groundfish issues and more time for public comment. Amendment 17 was approved by NMFS and went into effect in 2003.

Biennial management began with the 2005-2006 management period. A three-meeting process (November, April, and June) was used to prepare the biennial management measures for 2007-2008. In November 2005, the Council set preliminary harvest levels and management measures. In April 2006, the Council set final harvest levels and refined management measures. And in June 2006, the Council decided on final management measures. The process repeats for the 2009-2010 period.

The Council can review harvest levels during the two-year management period in order to consider whether new science or assessment information should be used to alter harvest levels. The Council also included an option for managing whiting on an annual basis.

- **Routine inseason adjustments and trip limit decisions (decisions to attain but not exceed optimum yields) are made at Council meetings throughout the year.** Only routine decisions can be made at a single meeting; all other decisions require at least two meetings.

After considering Council recommendations and public comments, NMFS publishes the adopted regulations, thereby putting them into effect. For non-routine and biennial management decisions, NMFS publishes a Federal Register notice and provides a public comment period before finalizing the recommendations.

## Advisory bodies

Several advisory bodies help the Council make decisions related to groundfish management. The **Groundfish Management Team** (GMT) is involved throughout the decision-making process. The GMT is made up of representatives from the three coastal state fishery agencies (Washington, Oregon, and California), the tribes, and NMFS. The GMT monitors catch rates, recommends harvest regulations and annual limits, and analyzes the impacts of various management measures. GMT members present information to the Groundfish Advisory Subpanel (GAP) and Council. GMT meetings are open to the public.

**The Groundfish Advisory Subpanel** advises the Council on policies that affect the groundfish fishery and the public. The panel includes commercial and recreational fishers, tribal representatives, charterboat owners and operators, fishing organization representatives, processors, environmental organization representatives, and a public at-large representative. Each major commercial gear group is represented. GAP meetings are held at most Council meetings. The GAP does not vote on issues, but operates by consensus and through majority and minority position statements that are offered as advice to the Council. GAP meetings are open to the public and public comment is generally accepted during the meetings.

**The Groundfish Allocation Committee** (GAC) is charged with developing options for allocating certain groundfish species among the commercial and recreational sectors and among gear groups within the commercial sector. The purpose of the GAC is to distribute the harvestable surplus among competing interests in a way that resolves allocation issues on a short- or long-term basis. The GAC is composed of voting members who sit on the Council (one representative each from the state management agencies, NMFS, Pacific States Marine Fisheries Commission, and the Council Chair). NOAA Legal Counsel provides legal advice. In addition, there are seven non-voting members representing the non-whiting trawl, whiting trawl, fixed gear, open access, and

recreational sectors; conservation groups; and processors.

**The Scientific and Statistical Committee (SSC)** is a group of scientists from state and federal agencies, academic institutions, and other sources. The SSC prepares and reviews FMPs and other documents. Among other duties, the SSC identifies scientific resources required to develop FMPs and amendments; provides a multi-disciplinary review of FMPs and amendments, and advises the Council on their scientific content; helps the Council evaluate scientific information; and makes recommendations on the composition of technical advisory bodies. The SSC has subcommittees that focus on salmon, groundfish, highly migratory species, coastal pelagic species, marine reserves, and economics.

## Status of Groundfish

Seven species of West Coast groundfish are currently considered “overfished” by NMFS. They include widow rockfish, canary rockfish, yelloweye rockfish, darkblotched rockfish, bocaccio, Pacific ocean perch, and cowcod. Rockfish are long-lived, late maturing, and slow-growing species. These traits make them particularly vulnerable to overfishing.

Pacific whiting was declared overfished in 2002 and subsequently removed from the overfished list in 2004. Lingcod were also declared overfished in 1999, but were rebuilt and taken off the overfished list in 2005.

“Overfishing” and “overfished” are defined in the Pacific Coast Groundfish FMP for each species or species complex. According to the FMP’s definition, a stock (or fish population) is overfished when its spawning stock abundance declines to 25% of its estimated “virgin biomass” (the spawning population size if the stock had never been fished; biomass is the weight of a population of fish). Once a stock is declared overfished, measures must be taken to rebuild stock abundance to a level that supports maximum sustained yield (MSY). For most West Coast groundfish stocks, that level is defined as 40% of the stock’s virgin, unfished abundance. “Overfishing” is defined as a harvest rate that is predicted to cause a stock to decline to an overfished level. The Magnuson-Stevens Fishery Conservation and Management Act (MSA), and FMP require management measures that end overfishing.

The MSA also requires that the Council rebuild an overfished stock within ten years, if the stock’s biology allows it to be rebuilt within this relatively short timeframe. Rebuilding the currently overfished rockfish species is projected to take significantly longer. If a stock cannot be rebuilt within ten years, then the maximum allowable time to rebuild the stock is the time to rebuild the stock in the absence of fishing, plus one mean generation time. (Mean generation time is the time it takes for a sexually mature female to replace herself in the population).

Historically, these species were taken by trawl, hook and line, and sport gear. Trawl catches of rockfish have been reduced by the small footrope restrictions put in place on the shelf since 2000 and the selective flatfish trawls mandated on the shelf north of 40°10’ N. latitude since 2005, which keep trawlers out of most rockfish habitat. Overfished shelf rockfish species are still incidentally caught with commercial and sport line gear, but are now much less common in bottom trawl catches. Depth-based restrictions have been adopted to reduce harvest of overfished groundfish, to end overfishing, and to rebuild these stocks. In addition, closures to protect essential fish habitat for groundfish were implemented in 2005.

## What data are used to assess groundfish stocks?

Groundfish stock assessments use a variety of data sources. Data collected from the fishing industry such as historical catches, catch-per-unit-effort, trawl and charter logbooks, and port sampling are commonly used to

assess stocks. Information from sources outside the fishing industry are also used. These sources include NMFS trawl surveys, measures of larval abundance in California, and any other data that helps assessment scientists understand the status and productivity of stocks. A rigorous assessment review process has been developed to ensure that assessments are done properly and use the best available data.

The most current groundfish stock assessments are available on the Council's web page at [www.pcouncil.org](http://www.pcouncil.org). Follow the links for Fishery Management> Groundfish>Stock Assessments.

## Management toolbox

The Council has used all of the following methods to control fishing in the groundfish fleet.

- **Landing limits** are used to control landings in order to avoid closing a fishery prematurely. Landing limits for overfished groundfish stocks are designed to remove incentives to target these stocks while allowing fishermen to land unavoidable bycatch.
- **Mesh size regulations** are used to increase or decrease net mesh size, thereby increasing or decreasing the size of fish retained in the net. Mesh size in fish traps and pots also affects the size of fish retained in the trap.
- **Trawl modifications** limit areas available for trawling and allow some non-target species to escape. Footrope size limits are used to prevent trawlers from operating in rocky reef areas. Small footrope gear does not allow the larger rollers designed to go over rocks and other obstacles. Rather than risk losing or damaging gear, fishermen using small footropes avoid rocky reef areas. Selective flatfish trawl gear uses a lower rise (the height between the footrope and headrope) and a cut-back headrope, providing an opening at the leading edge of the top of the net. This gear type has a demonstrated ability to selectively harvest flatfish species while allowing many rockfish to avoid capture by escaping over the cut-back headrope.
- **Quotas** are specified harvest limits and, in the Council context, are called total catch optimum yields (OYs). Once OYs are met, the fishery is closed. OYs may be specified for an area, gear type, time period, species, or species group. The Council is currently considering an individual transferable quota system for trawl-caught groundfish. For more information, see <http://www.pcouncil.org/groundfish/gfifq.html>.
- **Escape ports and panels** constructed of biodegradable materials are used in fish traps and pots to allow fish to escape if the trap or pot is lost or unattended for a long period of time.
- **Size limits** are used to control the harvest of fish. Size limits are often used to protect either juvenile fish or older, larger stock. Size limits are less effective with rockfish, which have a low survival rate once brought to the surface.
- **Bag limits** are one of the most common methods used to control recreational harvest. They are used to share the available catch among a large number of anglers, and to prevent waste.
- **Time/area closures** and conservation areas have been used extensively in the West Coast groundfish fishery. Time/area closures work best with species that are seasonally available, such as whiting, or to protect sedentary species like rockfish. They have been used to limit the groundfish harvest and to help rebuild overfished cowcod in California. Depth-based time/area closures are now commonly used to control groundfish harvest on the West Coast.
- **Essential fish habitat (EFH) closures** were put into place in 2005 to protect groundfish habitat. There are three types of closed areas: bottom trawl closed areas, bottom contact closed areas, and a bottom trawl footprint closure. The 34 bottom trawl closed areas are closed to all types of bottom trawl fishing gear. The

bottom trawl footprint closure affects areas in the exclusive economic zone (EEZ, 0-200 miles offshore) between 1,280 meters (700 fathoms) and the outer extent of the EEZ. The 17 bottom contact closed areas are closed to all types of bottom contact gear intended to make contact with bottom during fishing operations, which includes fixed gear, such as longline and pots. For more information, see <http://tinyurl.com/dxzxe>.

- **Effort control** includes all measures that restrict fishing activities, such as OYs, closures, seasons, capacity reduction, and license limitations. The term is also used to describe limited entry programs and individual transferable quotas. The trawl and fixed gear fisheries currently have a limited entry program.
- **Other forms of effort control** include restrictions on the number of units of gear (hooks, pots and traps) or restrictions on the size and configuration of trawls or lengths of longlines.

For more information...

- See the “groundfish” section of the Council website (below).
- Contact a staff officer for groundfish: John DeVore ([john.devore@noaa.gov](mailto:john.devore@noaa.gov)).
- Contact members of the Council, the Groundfish Advisory Subpanel, the Groundfish Allocation Committee, or the Groundfish Management Team, or attend their public meetings. Rosters and schedules are available on the Council website.

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