Excerpts from Pacific Coast Groundfish Fishery Management Plan for the California, Oregon, and Washington Groundfish Fishery

6.4 Standardized Total Catch Reporting and Compliance Monitoring Program

Fishery managers participating in the Council process need accurate estimates of total fishing mortality. Total fishing mortality data are needed to set accurate harvest specifications and management measures and to adjust management measures inseason so that ACLs/OYs may be achieved, but not exceeded. Various state, Federal, and tribal catch monitoring systems are used in west coast groundfish management. These are coordinated through the PSMFC. PacFIN (Pacific Fisheries Information Network) is the commercial catch monitoring database, and RecFIN (Recreational Fishery Information Network) is the database for recreational fishery catch monitoring.

Total catch has two major components: fish that are retained, landed, and sold or kept for personal use, and fish that are discarded, either at sea or on shore.[1] This discarded component is what the Magnuson-Stevens Act defines as bycatch.[2] Total catch and total fishing mortality may differ because some bycatch may survive capture and subsequent discard, or release. Bycatch mortality varies depending on the physiology of a particular species, the type of fishing gear used, and how fish are handled from the time of capture until they are released back into the water.

Commercial and recreational groundfish fisheries have been managed through a variety of measures intended to limit catch to the level established by an ACL/OY. These measures include cumulative landing limits for commercial fisheries and bag limits for recreational fisheries (see Section 6.7). When these measures are less restrictive, few constraints are imposed on fisheries and fish are primarily discarded for economic reasons. (In recreational fisheries, an economic discard would be a personal assessment of the desirability of a particular fish or fish species.) When one stock has a comparatively low landing or bag limit in a multispecies fishery, because it is depleted for example, a fisher may discard fish of that stock once the limit is reached in order to continue fishing for other species. Under these conditions, bycatch can be a large portion of total catch and total fishing mortality. With a standardized reporting methodology, managers are better able to track bycatch both inseason and cumulatively, information that is essential to developing management programs to reduce bycatch and bycatch mortality. Therefore, maintaining a standardized reporting methodology to assess the amount and type of bycatch occurring in the fishery, in addition to being required by the Magnuson-Stevens Act (16 U.S.C. 1853(a) (11)), is an important management task. This FMP meets that requirement through a standardized reporting methodology not just for the amount and type of bycatch occurring in the fishery, but for total catch (landed catch plus bycatch mortality) in the fishery.

In order to better monitor and manage bycatch, the Council supports accounting for total catch by specified fishery sectors. Beginning with the 2003 fishing year, as part of its evaluation of proposed management measures, the Council has been projecting total catches by fishery sector. Actual landings and estimated bycatch have also been categorized by fishery sector. Methods to accurately estimate sector- and species-specific total catch are needed to support the Council's bycatch mitigation program (Section 6.5). The

[1] The Magnuson-Stevens Act further defines the term fish to mean "finfish, mollusks, crustaceans, and all other forms of marine animal and plant life other than marine mammals and birds" 16 U.S.C. 1802(12).

[2] Using the term bycatch has led to considerable confusion, because many people use the term synonymously with the concept of incidental catch, or that part of the catch which is not the target of the fishery. In single-species fisheries, incidental catch and discards may be largely coincident. But in multi-species fisheries there may be multiple targets, and species that might be considered incidental are commonly retained, depending on the market and regulatory environment. In this FMP, the Magnuson-Stevens Act definition of bycatch is used, as distinct from incidentally-caught species.

Council relies on a combination of state, tribal, and Federal reporting and monitoring programs to determine total catch. NMFS is responsible for evaluating the adequacy of Federal standardized reporting methodologies for assessing the amount and type of bycatch occurring in a fishery. In 2004, NMFS published *Evaluating Bycatch: A National Approach to Standardized Bycatch Monitoring Programs*, which describes Federal standardized bycatch reporting methodologies and evaluates the adequacies of these methodologies, including those used for the west coast groundfish fisheries. Federal reporting requirements in this fishery are described below.

6.4.1 Total Catch Reporting Methodology

6.4.1.1 Monitoring Total Catch At Sea – Observer and Electronic Monitoring Programs

The Magnuson-Stevens Act defines the term "observer" as "any person required or authorized to be carried on a vessel for conservation and management purposes by regulations or permits under this Act." The Magnuson-Stevens Act also sets out guidelines for vessels carrying observers, observer training requirements, and observer status as Federal employees.

All fishing vessels operating in this management unit, which includes catcher-processors, at-sea processors, and those vessels that directly or incidentally harvest groundfish in waters off Washington, Oregon, and California, may be required to accommodate an observer and/or video electronic-monitoring system for the purpose of collecting scientific data or verifying catch landings and discard used for scientific data collection. These vessels may also be required to accommodate an observer and/or electronic monitoring system for the purpose of estimating total catch inseason to implement a sector- or vessel-specific total catch limit program. Implementation of any observer program or electronic monitoring system will be in accordance with appropriate Federal procedures, including economic analysis and public comment. Any Federal program that requires the collection of information from fishery participants is also subject to the requirements of the Paperwork Reduction Act (PRA).

The Regional Administrator will implement an observer program through a Council-approved Federal regulatory framework. Details of how observer coverage will be distributed across the west coast groundfish fleet will be described in an observer coverage plan that is appropriate to the purpose of the particular observer program goals. An observer coverage plan designed for a scientific data collection program will likely be different from an observer coverage plan designed for a sector- or vessel-specific total catch monitoring program. NMFS will publish an announcement of the authorization of the observer program and description of the observer coverage plan in the *Federal Register*. Development and implementation of an observer program is done through the full rulemaking process at Section 6.2, D.

Electronic monitoring is an automated alternative to some human data collection systems. Electronic monitoring equipment may provide accurate, timely, and verifiable information on some elements of fishing operations at a lower cost than that provided by an at-sea observer. Electronic monitoring is an integrated assortment of electronic components combined with a software operating system. An electronic monitoring system typically includes one or more video cameras, a central processing unit with removable hard drive, and software that can integrate data from other components of a vessel's electronic equipment. The system autonomously logs video and vessel sensor data during the fishing trip without human intervention. When the vessel has completed its fishing operations and returned to port, the video and other data are transferred to a separate computer system for analysis. Video records are typically reviewed by human samplers on shore, but electronic techniques are being developed to automate some of this activity. Electronic monitoring has been tested in various Canadian fisheries and has successfully addressed specific fishery monitoring objectives. NOAA Fisheries began testing electronic monitoring equipment in the 2004 shore-based whiting fishery, in order to determine whether a full-retention program could be adequately monitored by an electronic monitoring system. This FMP authorizes the use of electronic monitoring

programs for appropriate sectors of the fishery. Development and implementation of an electronic monitoring program would be done through the full rulemaking process at 6.2 D.

There may be a priority need for observers on at-sea processing vessels to collect data normally collected at shore-based processing plants. Certain information for management of the fishery may be obtained from logbooks and other reporting requirements, but the collection of some types of data would be too onerous for some fishermen to collect. Processing vessels must be willing to accommodate onboard observers and may be required to provide observers prior to issuance of any necessary Federal permits.

6.4.1.2 Commercial Fisheries

The total catch accounting methodology for commercial groundfish fisheries has two main components: monitoring landed catch through reports by fish processors (fish receiving tickets) and at-sea observer programs to estimate bycatch. Observer coverage rates vary by fishery, with at-sea processors (whiting catcher-processors and motherships) being required to carry one or two observers depending on vessel length. Fishery observers for the remainder of the commercial groundfish fleet are required to carry observers in accordance with the NMFS observer coverage plan. Because non-whiting fishery observers are usually placed aboard only a fraction of the vessels in a given sector, their observations must be expanded using statistical methods in order to estimate total catch across a sector. For some fishery sectors, there may not be any direct observation or reporting of bycatch; in such cases, standard bycatch rates developed using the best scientific information may be used to estimate bycatch. Combining bycatch information with information on landed catch gives an estimate of total catch. The Council uses total catch information in inseason management to determine the relationship between catch at a given point in time and an ACL/ annual OY. Management measures within a given year may be adjusted based on total catch information in order to prevent total catch from exceeding ACL/OY levels. Fishery managers also use historic total catch data in stock assessments and to develop future harvest specifications and management measures.

The owner or operator of any vessel that retains fish harvested in the area managed by this FMP whose port of landing is outside the management area may be required to report those catches in a timely manner through a Federal reporting program. They also may be required to submit a completed fish landing ticket from Washington, Oregon, or California, or an equivalent document containing all of the information required by the state on that fish ticket.

Monitoring Total and Landed Catch

Federal regulations require fishers to sort all species with trip limits, HGs, or ACLs/OYs, including all overfished species. The states also require LE groundfish trawl fishermen to maintain logbooks to record the start and haul locations, time, and duration of trawl tows, as well as the total catch by species market category (i.e., those species and complexes with sorting requirements). Landings are recorded on state fish receiving tickets. Fish tickets are designed by the individual states, but there is an effort to coordinate record-keeping requirements with state and Federal managers through PSMFC. Catch weight by sorted species category, area of catch, vessel identification number, and other data elements are required on fish tickets. Landings are also sampled in port by state personnel, who collect species composition data, otoliths for ageing, lengths, and other biological data. A suspension of at-sea sorting requirements coupled with full retention of catch is allowed in the shoreside whiting fishery under an EFP. Amendment 10 to the FMP authorized this suspension of at-sea reporting requirements through a rulemaking, rather than just through an EFP.

Landings, logbook data, and state port sampling data are reported inseason to the PacFIN database, which is managed by PSMFC. The GMT and PSMFC manage the Quota Species Monitoring (QSM) data set

reported in PacFIN. All landings of groundfish stocks of concern (overfished stocks and stocks below B_{MSY}) and target stocks and stock complexes in west coast fisheries are tracked in QSM reports of landed catch. QSM reports also include bycatch (discard) estimates, allowing them to be used to track total catch. The GMT recommends prescribed landing limits and other inseason management measures to allow Council-managed fisheries to attain, but not exceed, total catch ACLs/OYs of QSM species. Stock and complex landing limits are modified inseason to control total fishing-related mortality; QSM reports and landed catch forecasts are used to control the landed catch component.

Groundfish Observer Programs

Vessels participating in the at-sea Pacific whiting fishery have been carrying observers voluntarily since 1991. NMFS made observer coverage mandatory for at-sea processors in July 2004 (65 FR 31751). These provisions have not only given fishery managers the tools necessary to allow the at-sea Pacific whiting program to operate efficiently while meeting management goals, but have also provided scientists, through the observer coverage, an extensive amount of information on bycatch species in this fishery.

NMFS first implemented the West Coast Groundfish Observer Program in August 2001, placing observers aboard commercial groundfish vessels to monitor discards. By regulation (50 CFR 660.314), all vessels that participate in commercial groundfish fisheries must carry an observer when notified to do so by NMFS or its designated agent. These observers monitor and record catch data, including species composition of retained and discarded catch. Observers also collect biological data, such as fish length, sex, and weight. The program currently deploys observers coastwide on the permitted trawl and fixed gear groundfish fleet, as well as on some vessels that are part of the open-access groundfish fleet. Observers monitor between 10 percent and 20 percent of the catch, as a proportion of total landings. Given the skewed distribution of bycatch in west coast groundfish fisheries, many observations in each sampling strata (gear type and area) are needed to estimate representative bycatch rates.

The FMP does not currently authorize foreign fisheries for groundfish. According to the Magnuson-Stevens Act, observers would be required on any foreign vessels operating in the Exclusive Economic Zone (EEZ).

6.4.1.3 Recreational Fisheries

Recreational catch is monitored by the states as it is landed in port. These data are compiled by the PSMFC in the RecFIN database. The types of data compiled in RecFIN include sampled biological data, estimates of landed catch plus discards, and economic data.

The MRFSS was an integral part of the RecFIN program until recently, and was the principle program used to estimate effort and catches in the recreational fisheries. The MRFSS used field-intercept surveys to estimate catch, and a random phone survey of coastal populations to estimate effort. The results of these two surveys were combined in the RecFIN database to estimate total fishing effort, fishing mortality, and other estimates useful for management. MRFSS was not designed to estimate catch and effort at the level of precision needed for inseason management or assessment. Thus, while MRFSS continues to be used as a nationwide statistical tool for assessing national recreational fisheries data, it is no longer relied upon to support inseason west coast groundfish management. In recent years, the three states, NMFS, and PSMFC have been revamping the way that west coast recreational fisheries data are collected, and estimates are generated so that the data system better supports inseason management. Each state has either improved upon existing sampling projects, such as Washington's Ocean Sampling Program, and Oregon's Ocean Recreational Boat Survey and Shore and Estuary Boat Survey, or developed new sampling programs, such California's Recreational Fisheries Survey. Data collected by these state-sponsored programs are submitted to RecFIN, and form the basis for estimating catch and effort. All three states have accelerated their

reporting rates to RecFIN. Beginning in 2005, the states plan to provide recreational fisheries data within one month of the fishing activity; for example, fisheries data through the end of January would be available at the end of February.

The Washington Department of Fish and Wildlife's Ocean Sampling Program (OSP) generates catch and effort estimates for the recreational boat-based groundfish fishery, which are provided to PSMFC and incorporated directly into RecFIN. The OSP provides catch in total numbers of fish, and also collects biological information on average fish size, which is provided to RecFIN to enable conversion of numbers of fish to total weight of catch. Boat egress from the Washington coast is essentially limited to four major ports (Neah Bay, La Push, Westport, and Ilwaco), which enables a sampling approach to strategically address fishing effort from these ports. Effort estimates are generated from exit-entrance counts of boats leaving coastal ports while catch per unit of effort is generated from angler intercepts at the conclusion of their fishing trip. The goal of the program is to provide information to RecFIN on a monthly basis with a one-month delay to allow for inseason estimates.

The ODFW's Ocean Recreational Boat Survey (ORBS) is responsible for collecting both effort and catch data for the ocean boat portion of the recreational fishery in Oregon. Samplers are stationed in 12 major ports: Astoria, Garibaldi, Pacific City, Depoe Bay, Newport, Florence, Winchester Bay, Charleston, Bandon, Port Orford, Gold Beach, and Brookings. Samplers collect effort information by either conducting exit/entrance counts in the larger ports, or conducting trailer/slip counts in the smaller ports. Upon a vessel's return to port, samplers examine landed catch, collect released information, and collect biological data used to calculate the average size of landed fish by species. The ORBS submits effort and catch estimates to PSMFC's RecFIN program. ODFW in cooperation with PSMFC has developed the Shore and Estuary Boat Survey (SEBS) in order to develop effort and catch estimates for the shore and estuary boat portions of Oregon's recreational fishery. Effort is determined using a license frame-based phone survey. In addition, SEBS is responsible for collecting discard information from the Oregon ocean charter fleet. Samplers act as observers on charter vessels, enumerating releases by species, and taking lengths before fish are released. This information is used to calculate an average size of fish discarded in the recreational fishery.

The CDFG, in cooperation with PSMFC, implemented the California Recreational Fisheries Survey (CRFS) in 2004. CRFS combines the prior MRFSS party and charter vessels (PC) sampling program (California's sampling methodology for private recreational vessels) with several new methodologies specifically designed for CRFS into a single, coordinated, statewide program. This program is designed to produce more timely and accurate catch and effort estimates than were available through the MRFSS program while continuing to provide the comprehensive coverage used in the MRFSS program for all recreational fisheries in both boat (private boats, rental boats, and party/charter boats) and shore (pier, jetty, beach and bank) modes of fishing. CRFS employs the following methodologies for sampling these different modes of recreational fishing:

- Private and rental boats (PR) are divided into primary and secondary sampling sites. Primary sites are sampled using a public launch ramp access point survey for effort and catch at high use sites during daylight hours. These sites are defined as those where 90 percent or more of the catch of important species are landed. Secondary sites are sampled using a roving access point survey for effort and catch. These sites are defined as those sites in a particular month where less than 10 percent of the total catch of important species is landed.
- Man-made (MM) sites, composed of piers, jetties and breakwaters, are sampled using a roving access point survey for catch and effort.
- Beach and Bank sites are sampled using two surveys: a roving access point survey at publicly accessible beaches and banks during daylight hours for catch rates and an angler license database telephone survey for all effort.

- PC vessels are sampled using two surveys: a weekly telephone survey of all PC vessels for effort and onboard sampling for catch.
- Estimates of private access and night fishing effort and catch for PR, MM, and Beach and Bank sites by trip type are derived using the angler license database telephone survey for effort and catch rates from access point surveys for catch.

For all modes of fishing, samplers examine landed catch, collect release information and fishing location, and collect biological data used to calculate the average size of landed fish by species. In addition, samplers act as observers on charter vessels, enumerating releases by species, and taking lengths before fish are released. The data, along with effort information for all modes, are entered by PSMFC into the RecFIN database. Estimates of catch and effort are then generated by PSMFC staff and posted on the RecFIN website. These estimates are greatly improved over those from MRFSS, not only because of the improvements in sampling methodologies, but because of changes in sampling rates, reporting intervals, geographical resolution, and expansion processes. CRFS, which employs a sampling rate in excess of three times that from MRFSS, provides monthly estimates for six geographical regions in California that are expanded from species catch rates based upon trip types and stated target species.

6.4.2 Vessel Compliance Monitoring and Reporting Requirements

In addition to authorizing Federal and state programs to collect total catch data, this FMP authorizes the collection of fisheries data needed for compliance monitoring. The following types of data may be collected through a regulatory program intended to ensure vessel compliance with fishery management measures:

1. Vessel name.
2. Radio call sign.
3. Documentation number or Federal permit number.
4. Company representative and telephone, fax, and/or telex number.
5. Vessel location including daily positions.
6. Check-in and check-out reports giving the time, date, and location of the beginning or ending of any fishing activity.
7. Gear type.
8. Reporting area and period.
9. Duration of operation.
10. Estimated catch by species and area, species disposition (including discards, product type, and weights).
11. Product recovery ratios and products sold (in weight and value by species and product type, and if applicable, size or grade).
12. Any other information deemed necessary for management of the fishery.

Vessels also may be required to maintain and submit logbooks, accurately recording the following information in addition to the information listed above, and for a specified time period: daily and cumulative catch by species, effort, processing, and transfer information; crew size; time, position, duration, sea depth, and catch by species of each haul or set; gear information; identification of catcher vessel, if applicable; information on other parties receiving fish or fish products; and any other information deemed necessary.

Vessels may be required to inform a NMFS enforcement or U.S. Coast Guard office prior to landing or offloading any seafood product. Such vessels may also be required to report prior to departing the Washington, Oregon, and California management area with fish or fish products on board.

This FMP authorizes the use of vessel monitoring system (VMS) programs in order to improve compliance with area and/or season closures. VMS is a tool that is commonly used to monitor vessel activity in relationship to geographical defined management areas where fishing activity is restricted. VMS transceivers installed aboard vessels automatically determine the vessel's location and transmit that position to a processing center via a communication satellite. At the processing center, the information is validated and analyzed before being disseminated for fisheries management, surveillance, and enforcement purposes. VMS transceivers document the vessel's position using Global Positioning System (GPS) satellites. Depending on the defined need, position transmissions can be made on a predetermined schedule or upon request from the processing center. VMS transceivers are designed to be tamper-resistant. The vessel operator is unable to alter the signal or the time of transmission, and in most cases the vessel operator is unaware of exactly when the unit is transmitting the vessel's position. VMS programs used to improve compliance in several fisheries with differing area and/or season closures may require the use of a declaration system. A declaration system in association with VMS requires fishery participants declare their intended fishing activity, allowing enforcement personnel to differentiate between vessels subject to differing area and/or season closures.

New regulatory requirements for the collection of fishery-related data would need to be implemented through the full rulemaking process detailed at Section 6.2 D. Any Federal program that requires the collection of information from fishery participants is also subject to the requirements of the PRA.

[Amendment 18]