

**SUPPORTING STATEMENT
WEST COAST LIMITED ENTRY GROUND FISH FIXED GEAR
ECONOMIC DATA COLLECTION
OMB CONTROL NO.0648-0369**

Project Title: West Coast Limited Entry Groundfish Fixed Gear Economic Data Collection

Justification under OMB Generic Clearance:
(Economic Survey of US Commercial Fisheries, OMB Control No. 0648-0369)

This request is for a one-time survey of the West Coast Limited Entry groundfish fixed gear fleet which has been developed based on previously approved question categories as outlined in the generic clearance (0648-0369) supporting statement

Commercial fisheries economic data collections implemented by the Northwest Fisheries Science Center (NWFSC) have contributed to legally mandated analyses required under the Magnuson-Stevens Fishery Conservation and Management Act (MFCMS), the National Environmental Policy Act (NEPA), the Regulatory Flexibility Act (RFA), and Executive Order 12866 (E.O. 12866). Economic data collections have also supported analysis of the size and distribution of economic benefits used in fisheries management, such as economic analysis of the groundfish trawl catch shares program presented in the trawl rationalization Environmental Impact Statement (EIS).

Surveys implemented by the NWFSC since 2005 have covered West Coast harvesters, processors, and coastal communities. These surveys have focused on the federally managed groundfish and salmon fisheries as well as the closely related crab and shrimp fisheries. This document describes a data collection covering catcher vessels operate with a limited entry groundfish permit that has a fixed gear (longline and/or pot) endorsement.¹ During 2012 there were 169 vessels active on the West Coast that held a federal groundfish limited entry permit with a fixed gear endorsement. These 169 vessels landed \$46.5 million of fish on the West Coast, including \$25.3 million of groundfish (including \$22.5 million of sablefish) and \$16.6 million of crab.

This survey will collect data for the 2011 and 2012 fiscal years through in-person interviews, telephone interviews, mail responses, and on-line responses. Based on previous economic data collection from this population, the NWFSC expects most survey respondents to respond through an in-person interview.

Because over one-half of the members of the survey population have a limited entry groundfish permit with a sablefish endorsement and participate in the primary sablefish fishery. This fishery has been managed using a catch shares management regime since 2001.² Data collected by this survey is needed not only to monitor the performance of the primary sablefish catch shares management regime, but also to determine if the implementation of catch shares management in

¹ Vessels landing fish with a limited entry permit having a trawl endorsement are subject to a mandatory data collection program approved in OMB 0648-0618.

² The West Coast has two fisheries managed with a catch shares management system --- the primary sablefish fishery and the groundfish trawl fishery.

the groundfish trawl fishery has had an economic effect on participants in the limited entry groundfish fixed gear fishery.³

1. The potential respondent universe and any sampling or other respondent selection method to be used and the expected response rate.

Potential Respondent Universe

The population of interest for this survey is the owners of all active commercial fishing vessels holding a West Coast (Washington, Oregon, and California) limited entry groundfish permit with a fixed gear endorsement, that were active during 2012. The fixed gear endorsement may be for the use of longline gear and/or pots. Active fishing vessels are defined as having at least \$1,000 of West Coast landings (over all species and gear types) during 2012. Vessels with less than \$1,000 landings are considered to have too low a level of activity to provide useful cost earnings data. Fishticket data obtained through the PacFIN (Pacific Coast Fisheries Information Network) system indicates that there are 169 vessels in the survey population.

While vessels associated with a limited entry groundfish fixed gear permit are covered by the survey described in this document, vessels associated with a limited entry groundfish trawl permit are covered by a mandatory data collection as part of the West Coast trawl rationalization catch shares program. Because the trawl and fixed gear components of the West Coast groundfish species target many of the same species of groundfish, management measures in one fishery can affect the economic performance of the other fishery. As a result, it is desirable to coordinate economic data collection in the trawl and fixed gear components of the West Coast limited entry groundfish fishery. The data collection described in this document covers the same period (2011 and 2012) as the mandatory base year economic data collection already approved by OMB for the West Coast limited entry trawl groundfish fishery.

Sampling and Other Respondent Selection Methods

This survey will be performed on a census of the 169 vessels in the survey population. That is, there will be no sampling to determine which vessel owners in the population of interest receive the survey. The survey sample and the survey population are identical.

Expected Response Rate

The NWFSC has conducted three previous economic cost earnings surveys of the limited entry fixed gear fleet. A survey fielded during 2006 obtained a 58% response rate. A second survey fielded during 2009 obtained responses from 50% of vessel owners. The third survey conducted in 2011 obtained responses from 55% of vessel owners. Since the survey fielding protocol for this survey is similar to the protocol used during the 2011 survey, a 55% response rate is expected for this survey. With a survey sample of 169 vessels, this implies 93 survey responses.

³ Sablefish is a major source of revenue for participants in both the groundfish trawl fishery and the limited entry fixed gear fishery. With the implementation of catch share management in the groundfish trawl fishery during 2011, participants in that fishery can use trawl quota to harvest sablefish with fixed gear. As a result, there is reason to be concerned about the impact of the catch shares management regime in the groundfish trawl fishery on participants in the limited entry fixed gear fishery.

2. Data collection procedures, including the statistical methodology for stratification and sample selection, the estimation procedure, the degree of accuracy needed for the intended purpose, expected dates of survey implementation, and any unusual problems requiring specialized sampling procedures.

Stratification and Sample Selection

There is no stratification and sample selection in the survey design. All members of the survey population are included in the survey sample.

Estimation Procedures

NMFS needs to measure the economic performance of catcher vessels in the West Coast limited entry groundfish fixed gear fishery in order to meet legal and regulatory requirements, support fisheries management decision making, and undertake economic research. Currently available cost earnings data from non-survey sources is very limited and does not meet these needs. This survey collects the data that is needed (but not currently available from other sources) to construct key economic performance measures such as profitability, quasi-rents, capacity utilization, efficiency, and economies of scale.

The data gathered and performance measures constructed will be used to address a wide range of issues; these issues include (but are not limited to) the economic effects of catch share management in the trawl sablefish fishery on the fixed gear sablefish fishery, the economic performance of the catch shares program in the primary sablefish fishery (all participants in the primary sablefish fishery are members of the survey population for the information collection described in this document), regional economies, and net benefits to the nation, as well as how the distribution of those measure may have changed. While the data will be used to comply with legal and regulatory requirements, these requirements do not specify a level of data accuracy.

Much of the data requested will be used to compute total (or average) revenue, cost, variable cost net revenue (revenue minus variable costs), and total cost net revenue (revenue minus fixed and variable costs). This information is useful in and of itself to help understand the economic condition of the fishery and how it may have changed. Such data summaries are the type of information that fishery managers, participants and the public commonly wish to have provided. These data summaries will also be used in a regional economic impact model that has been developed by the NWFSC. A basic input to this model is the average expenditure (by cost category) as a percentage of revenue. The output of the regional economic impact model is used by NMFS and the Pacific Fisheries Management Council (PFMC) to report on the economic contribution of the fishery to regional economies.

To understand the relationships between net revenue and the variables we collect that affect quasi-rents/profits, econometric models will be used. NWFSC analysts will use the data collected by this survey to construct statistical models that characterize the determinants and factors affecting the costs and revenues of limited entry fixed gear vessels. These statistical

techniques can be used to disentangle the influence of particular economic variables on net revenue from “policy” or “management” variables that change directly as a result of managers’ choices over policies or regulations. Examples of economic variables include the prices of fuel, materials, or other inputs used in fishing and processing.

Desired Accuracy Needed for the Intended Purpose

Important objectives of survey design include data accuracy and data precision. Data precision is discussed in the next sub-section. Measuring and minimizing non-response bias (an important aspect of assuring accurate data) is addressed under Question 3. The degree of accuracy needed is not established by economic theory or legislative mandates. Data collected through this survey will be used for both statistical inference of population values from sample respondents and for estimation of econometric models used for policy making purposes. While more accurate data is clearly preferred, standards do not exist regarding the accuracy of data required for estimation of an econometric model. Factors such as the minimization of model specification error also contribute to the quality of the empirical results obtained using survey data. It is not possible to state a level of accuracy that is required for all uses and applications of data collected by this survey.

As discussed in the response to Question 3, data on vessel physical characteristics and landings (location, timing, gear, species, weight, and revenue) is available for both survey respondents and non-respondents, and will be used to test the representativeness of survey respondents. This data will also be used to adjust the models and/or data for any non-response bias that is detected.

Desired Precision and Response Rate

The desired degree of precision, and corresponding desired response rate, depends upon the application for which the data is being used. Some applications may use data from all survey respondents, while others applications will only use data from vessels that operate in specific fisheries or geographic locations.

A basic application of the survey data will be the inference of population mean values from the observed sample mean values. The following table shows the number of responses (and corresponding response rate) needed to get a response sample mean within 10%, 15%, and 25% of the population mean at the 95% confidence level. In this calculation, revenues associated with West Coast landings (which are known for all vessels) are used as a proxy for revenues from other sources and for expenditures (which are not known and are the focus of this survey).

N Population	N 10%	N 15%	N 25%	Response Rate 10%	Response Rate 15%	Response Rate 25%
169	103	69	34	61%	41%	20%

As shown in the accompanying table, having a sample mean within 15% of the population mean at the 95% confidence level requires a response rate of 41%. The expected 55% response rate

allows calculation of a sample mean within 15% of the population mean. At least two reasons can be identified for desiring higher response rates than those needed to support inference of population means from sample means:

1) Data from this survey will be used to develop a variety of economic models covering applications such as fleet efficiency and fishery participation. In these applications, error will arise not only from the representativeness of data used for model development, but also from model specification and estimation. Since it is not possible to completely avoid specification and estimation error in model development, there is good reason to desire a higher response rate and higher degree of accuracy in the data collection process.

2) Future applications of the data may require further disaggregating the population into smaller groups according to factors such as state of operation or species targeted. Identification of all such future disaggregated data needs is not possible at the present time. A higher response rate and higher degree of accuracy in the current data collection process will facilitate such future population disaggregation.

Survey Fielding

The PSMFC and its subcontractor will field the survey. The PSMFC will send an initial mailing with a cover letter, a copy of the questionnaire, and an explanation of how data collected by the survey will be used by economists. This will provide survey recipients with an opportunity to see first-hand the data being collected by the survey. Survey recipients will receive a self-address stamped envelope for responding to the survey by mail, instructions for using an on-line response site if they would prefer to respond on-line, and information on the in-person and telephone interview procedure.

About one week after the initial mailing, attempts to contact all non-respondents via telephone will begin (telephone numbers are available for all members of the survey population). It is anticipated that at the time these calls begin, most survey recipients will not have responded to the survey. These calls will be made by an expert recruiter with the objective of getting the survey recipient to agree to participate in the survey, and determining the response method (mail, on-line, or in-person interview). For those choosing an in-person interview, an interview time and location will be scheduled.

For purposes of survey fielding, information on the vessel owner name, mailing address, and telephone number will be taken from federal permit and vessel registration files.

Expected Dates of Survey Implementation

The NWFSC intends to field the survey during November and early December 2013. This schedule avoids the primary sablefish season (April 1 to October 31), in which over half of the vessels in the survey population participate. It also avoids the busiest months of the crab season (December to February). As a result, fielding the survey during November and early December 2013 is a good time for maximizing survey response. Because some members of the survey

population operate in Alaska during this period, it is expected that data will be collected from a few vessels during January 2014.

3. The methods used to maximize response rates and address non-response. The accuracy and reliability of the information collected must be shown to be adequate for the intended uses.

Methods Used To Maximize Response Rates

A number of methods were used to maximize survey response during the previous survey of the limited entry groundfish fixed gear fleet, and will be used during this data collection.

- 1) The survey is short, consisting of only seven pages.
- 2) Respondents are asked only to provide information about major cost and earnings categories, thus avoiding what may seem to survey respondents like unnecessary detail.
- 3) Survey recipients will not only have the option of responding through in-person interviews, but will also have the option of responding via mail or an on-line questionnaire.
- 4) Extensive discussions have been held with members of the limited entry fleet in an on-going effort to clarify questions. Revenue and cost categories on the questionnaire correspond to the financial records maintained by vessel owners as much as possible.
- 5) Initial telephone contact will be made by an expert recruiter, and there will be extensive follow-up telephone calls and mailings for non-respondents. Previous surveys of the limited entry fleet have demonstrated the value of using an expert recruiter to make the first telephone contact and schedule the interview time and location. Follow-up telephone calls will be distributed among weekend/weekday and day/evening time periods to maximize the likelihood of reaching the contact person. Up to six attempts to contact survey recipients will be made for each member of the survey population. When contacted, survey recipients will be offered the choice of responding through an in-person interview, on-line survey, or mail survey.

Addressing Non-Response

Testing for non-response bias will be based on the considerable amount of data that is available for all members of the survey population. Variables that will be used for non-response bias testing fall into the categories of vessel physical characteristics and vessel landings. Vessel physical characteristics such as length provide an indication of whether the data collected through the survey on fixed cost items such as repair and maintenance is likely to differ for survey respondents and survey non-respondents. Other vessel characteristics such as engine horsepower indicate whether variable costs such as fuel vary between survey respondents and non-respondents.

Tests for non-response bias will be based not only on vessel physical characteristics, but also on West Coast (Washington, Oregon, and California) landings. PacFIN provides vessel level information on West Coast landings (weight and dollar value) by date, species, gear type, and port for all vessels in the survey population. As a result, it is possible to compare respondents and non-respondents with regard to seasonal patterns, species landed, and location of landings.

Data on vessel landings makes possible a comparison between respondents and non-respondents of species landed, port of landings, and gear type. Available landings data will allow testing for differences between respondents and non-respondents for total dollar value and weight of total landings, dollar value and weight of groundfish landings, dollar value and weight of crab landings, dollar value and weight of shrimp landings, dollar value and weight of salmon landings, and dollar value and weight of highly migratory species (primarily tuna) landings.

While PacFIN provides information on West Coast landings, information on landings in Alaska is provided by the Alaska Fisheries Information Network (AKFIN). NWFSC employees do not have full access to AKFIN data, and as a result it is not possible to compare respondents and non-respondents Alaska landings by revenue, weight, species, gear type, time of year, and port. While NWFSC employees do not have full access to AKFIN data, it is possible for NWFSC employees to obtain information on which members of the limited entry groundfish fixed gear fleet landed fish in Alaska during 2011 and 2012. As a result, it is possible to compare the percentage of respondents and non-respondents participating in Alaska fisheries (although it is not possible to compare the pounds landed, revenue earned, species harvested, or gear used in Alaska by respondents and non-respondents due to the limited access to AKFIN data).

If non-response bias is detected, procedures will be used to reweight the data or the estimated model to correct for any known bias.

Adequacy of Accuracy and Reliability of Information for Intended Uses

NMFS needs to measure the economic performance of West Coast commercial fisheries in order to meet legal and regulatory requirements, support fisheries management decision making, and undertake economic research. Currently available limited entry fixed gear fleet cost earnings data for 2011 and 2012 from non-survey sources is very limited and does not meet these needs. The NWFSC's Cost Earnings Program will collect the additional data that is needed to construct key economic performance measures such as profitability (as measured by variable cost net revenue and total cost net revenue), capacity utilization, efficiency, productivity, and economic impacts. The data gathered and performance measures constructed will be used to address a wide range of issues; these issues include (but are not limited to) the effect of alternative catch share programs and predicting fishery participation under alternative regulatory regimes. While the data will be used to comply with legal and regulatory requirements, these requirements do not specify a level of data accuracy.

4. How the survey instrument was developed, including the steps taken to validate the questionnaire design.

The survey instrument is an updated version of the survey instrument used for the previous three limited entry fixed gear surveys. This updating facilitates using data collected from this data collection with data collected through the limited entry groundfish trawl survey, while staying within the framework of the 0648-0369 approved questions. Since the survey development process for the prior limited entry fixed gear surveys has already been documented in prior OMB submissions, it is provided in a footnote in this document.⁴

Since the previous limited entry fixed gear survey in 2011 (which collected data for the 2009 and 2010 fiscal years), the NWFSC EDC program has completed fielding of a mandatory surveys collecting 2011 fiscal year data from catcher vessels in the groundfish trawl fishery, and is currently fielding a survey collecting 2012 fiscal year data from catcher vessels in the groundfish trawl fishery. The questionnaire submitted for this data collection from the limited entry fixed gear fleet starts with the questionnaire used two years ago, and makes changes needed to maintain consistency with the groundfish trawl fishery EDC questionnaire. This approach insures that data from the mandatory EDC survey and the voluntary survey of the limited entry fixed gear fleet is consistent, while minimizing changes to the questionnaire that survey recipients received two years ago.

5. The reporting and use of the results of the survey.

Use of Survey Results

The NMFS needs to measure the economic performance of West Coast commercial fisheries in order to meet legal and regulatory requirements, support fisheries management decision making,

⁴ Survey development for the previous limited entry fixed gear surveys began with the formulation of the Cost Earnings Program Plan. This plan outlines the reasons for collecting cost earnings data, identifies the population(s) of interest among west coast vessel owners, and prioritizes data needs. Based on this long-term plan, objectives for this data collection were developed through a series of meetings by representatives of the (NWFSC), Northwest Regional Office (NWR), Southwest Fisheries Science Center (SWC), and Pacific States Marine Fisheries Commission (PSMFC). These meetings identified key objectives as collecting data which could be used to measure fisheries profitability, economic impacts, efficiency, and economic benefits of regulatory measures. The academic literature, both within and outside of fisheries, was reviewed in order to determine the data requirements of models which would likely be used to measure fisheries profitability, economic impacts, efficiency, and economic benefits of regulatory measures.

This process allowed prioritization of data needs and choice of survey content. After survey content was determined, a draft questionnaire was prepared. This draft questionnaire was discussed with members of the limited entry trawl fleet by PSMFC personnel. In addition, NOAA personnel provided a presentation on survey content and timing to the Pacific Fisheries Management Council Groundfish Advisory Panel (a group of fishing industry members including harvesters and processors) and the Council's Scientific and Statistical Committee (a group responsible for reviewing the methodology used in scientific and statistical studies) . Comments received through these discussions and presentations improved questionnaire content and format.

Since some groundfish species (such as sablefish) are targeted by both the limited entry groundfish trawl fishery and the limited entry groundfish fixed gear fishery, data from the two different data collections is sometimes used in the same analysis. As a result, it is important to maintain consistency between the mandatory EDC program in the trawl fishery and this data collection in the limited entry fixed gear fishery. The questionnaire submitted as part of this data collection has been developed to be consistent with the catcher vessel questionnaire used in the EDC program.

and undertake economic research. The NWFSC's Cost Earnings Program is an on-going program that collects data, which when combined with other existing sources of data, provides data that is needed to construct key economic performance measures such as profitability, capacity utilization, efficiency, productivity, and regional economic impacts. The data gathered and performance measures constructed will be used to address a wide range of issues; these issues include (but are not limited to) the effect gear switching in the limited entry sablefish fishery under catch shares and the economic impact of fisheries management measures on economic conditions in coastal communities.

Analysis based on data from the previous limited entry fixed gear has already been incorporated into the NWFSC's input-output model (IO-PAC). This model requires information on expenditures by fishing vessel owners in order to estimate the economic impact of changing harvest levels or other fisheries restrictions. Results from IO-PAC are used in the Pacific Fisheries Management Council's Groundfish Specifications process which helps determine groundfish harvest levels for groundfish species on the West Coast. Data collected in this survey will be used to update this analysis.

Reporting of Survey Results

A descriptive summary of results from the survey will be prepared and posted on the PSMFC web site. This summary will include descriptive statistics (such as mean and standard deviation) of the various cost and earnings categories being collected. This descriptive summary will also be distributed to survey respondents via paper mail.

Survey results will be reported over time through a series of studies prepared for fisheries management. It is anticipated that results will also be reported through academic publications, presentations at conferences, and technical guides. All reporting of survey results will conform to data confidentiality requirements.

Information Quality Guidelines and Confidentiality

It is anticipated that the information collected will be disseminated to the public or used to support publicly disseminated information. As explained in the previous paragraphs, the information gathered has utility. NMFS will retain control over the information and safeguard it from improper access, modification, and destruction, consistent with NOAA standards for confidentiality, privacy, and electronic information. In particular, the data collected will be kept confidential as required by section 402(b) of the Magnuson-Stevens and NOAA Administrative Order 216-100, Confidentiality of Fisheries Statistics, and will not be released for public use except in aggregate statistical form without identification as to its source.

The information collection is designed to yield data that meet all applicable information quality guidelines. Prior to dissemination, the information will be subjected to quality control measures and a pre-dissemination review pursuant to Section 515 of Public Law 106-554.

6. Contact information for agency coordinator and principle investigator.

Agency Coordinator:

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7. Estimated burden and number of respondents.

Reviewing the survey, collecting requested data, and completing the survey (whether through an in-person interview, telephone interview, mail questionnaire, or on-line questionnaire) is expected to take three hours per respondent. With a survey population of 169 and an expected response rate of 55%, a total of 93 responses are expected. The expected burden hours on the public are 279.