

**West Coast Commercial Fishing Vessel Cost Earnings Survey
Responses to Supplemental Questions for PRA Clearance
OMB Review of Individual Instruments**

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 all non-tribal commercial fishing vessels with (1) at least \$1,000 of West Coast landings during 2009, (2) no limited entry permit, and (3) groundfish, salmon, crab, or shrimp landings accounting for at least 33% of revenue. Landings data obtained through the Pacific Coast Fisheries Information Network (PacFIN) system indicate that there were 2017 vessels in the population of interest.

Sampling and Other Respondent Selection Methods

This survey sample will include all 2017 members of the survey population. That is, there will be no sampling to determine which vessels in the population of interest receive the survey. Each of the 2017 members of the survey sample will be assigned to either the in-person sample or the mail sample. All members of the survey population for which a telephone number is available will be assigned to the in-person sample, from which data will be collected through an in-person interview. All members of the survey population for which a telephone number is not available will be assigned to the mail sample, from which data will be collected through a mail questionnaire. A search of public records is expected to produce telephone numbers for 60% of the vessel owners in the survey population. As a result, the in-person sample contains 1210 vessel owners, and the mail sample contains 807 vessel owners.

Expected Response Rate

The Northwest Fisheries Science Center (NWFSC) and Pacific States Marine Fisheries Commission (PSMFC) have fielded three previous cost earnings surveys among West Coast vessel owners. The limited entry survey fielded in 2005 and 2006 utilized in-person interviews for a census of the survey population and obtained a 58% response rate. The open access groundfish and salmon troller survey fielded in 2007 obtained a 39% response rate from in-person interviews and a 25% response rate from telephone interviews. An update to the limited entry survey conducted this year is in the final stages of fielding, so a response rate is not yet available: at this time a preliminary overall response rate appears similar to the 58% obtained by the previous limited entry survey.

In each of these previous surveys, response rates have been positively related to the scale of vessel operations. Higher response rates are consistently obtained from vessel owners who had higher levels of landings. The survey population consists of the open access groundfish and salmon troller vessels covered by the 2007 survey, plus crabbers/shrimpers not covered by the previous survey (i.e., crabbers and shrimpers with no salmon or groundfish landings) and salmon netters. Because of the large size of operations for crabbers which make up nearly half of the vessels being added to the previous survey population, the expected response rate is somewhat

higher than the 39% previously obtained from the in-person interview sample for the 2007 survey. For this survey, a response rate of 60% is expected from the in-person interview sample. Since the in-person interview sample is expected to contain 1210 vessels (based on the assumption of obtaining telephone numbers for 60% of the vessels in the survey population), a total of 726 responses from vessels in the interview sample is expected.

The expected response rate from vessel owners in the mail sample is considerably lower. Vessel owners have consistently expressed their dislike for mail surveys, finding them too impersonal. Given the dislike of vessel owners for mail surveys and the fact that respondents can only be prompted for responses through additional mailings, a response rate of 25% is expected from the 807 vessels in the mail sample. A total of 202 responses is expected from the 807 members of the mail sample.¹

A total of 928 responses (726 from the interview sample and 202 from the mail sample) is expected from the 2017 vessels in the survey population. This implies an overall survey response rate of 46%.

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

The population of interest for this survey is all non-tribal commercial fishing vessels with (1) at least \$1,000 of West Coast landings during 2009, (2) no limited entry permit, and (3) at least one 33% of revenue from groundfish, salmon, crab, or shrimp landings. Active fishing vessels are defined as having at least \$1,000 of West Coast (Washington, Oregon, and California) landings during 2008. All 2017 vessels in the population will receive the survey.

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

¹ Data collection has been limited to in-person interviews and mail questionnaires without any attempt to collect data via telephone interviews (as was done in the cost earnings survey of the open access groundfish and salmon troller fleets conducted in 2007). The NWFSC and PSMFC found that conducting telephone interviews (1) involved substantial up front costs due to the cost of developing a CATI (computer aided telephone interview) questionnaire from the survey instrument and (2) response rates for the telephone interview sample was not significantly higher than the response rate expected from a mail survey. Response rates from previous cost earnings surveys on the West Coast suggest that fishermen place a high value on in-person contact, and a telephone call is not viewed as being significantly different from a letter in the mail. As a result, the NWFSC and PSMFC have chosen to focus available budget dollars on conducting in-person interviews which have a proven record of generating response rates. Because of budget constraints and the high cost of conducting in-person interviews, the 807 vessel owners for which telephone numbers are not available are not being offered the option of calling to schedule an in-person interview. Offering such an option would not only create considerable uncertainty regarding survey fielding costs, but would also make it difficult to implement survey fielding in sweep pattern (where fielding begins at one end of the West Coast and gradually moves along the coast in an effort to minimize backtracking by interviewers and fielding costs). Sending mail surveys to all vessel owners not having a telephone number with follow-up mailings will give everyone in the survey population an opportunity to respond to the survey, generate additional survey response information, and preserve most of the survey funding for conducting in-person interviews.

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 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 characteristics and landings (location, timing, 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 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 respondent’s mean values. While we do not have any information about the cost variables which will be collected in the survey, we do already know revenue from West Coast landings for all members of the survey population. Using this revenue data, we can calculate the number of vessels from which revenue data would be needed in order to infer revenue for the entire population of vessels, based on the mean value and variation in revenue across vessels. The following table shows the number of responses (and corresponding response rate) needed to get a response sample mean for per vessel landings revenue within 10%, 15%, and 25% of the population mean of per vessel annual landings revenue 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%
2017	1324	926	472	66%	46%	23%

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 46%. Since 928 response are expected, this survey is expected to provide estimates within 15% of survey population means at the 95% confidence level. *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 subcontractors will field the survey. For members of the in-person sample, 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 (i) see first-hand the data being collected by the survey prior to in-person interviews and (ii) collect the requested data prior to the in-person interview. About two weeks after the letter/questionnaire mailing, PSMFC will begin making telephone calls to schedule in-person interviews with survey recipients for data collection. During the following three weeks, up to six additional attempts will be made to contact each member of the survey population until an interview data is scheduled.

PSMFC will send a letter to all 807 members of the mail sample describing the survey and its purpose. The letter will also include a copy of the questionnaire and a self addressed stamped envelope for returning the questionnaire. About two weeks after the mailing, PSMFC will send a reminder letter to all non-respondents. A second reminder letter will be send about four weeks after the initial mailing to non-respondents. A copy of the questionnaire will be included in all reminder letters.

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

Expected Dates of Survey Implementation

Seasonal patterns of activity vary by vessel, depending upon the species targeted most frequently and geographic location. Vessels targeting groundfish are most active during the summer months while crabbers are most active between December and February. The period between March and May avoids peak season for most members of the survey population. The target period for survey fielding begins in March 2010.

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 surveys of the limited entry fleet, and will also be used during this survey:

1. The survey is short, consisting of only four pages in written form.
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. Data will be collected through in-person interviews whenever a telephone number is available for the vessel owner. In-person interviews typically have higher response rates than mail or telephone surveys.
4. There will be extensive follow-up telephone calls and mailings after the initial letter/questionnaire mailing in order to schedule in-person interviews and obtain responses. These follow-up telephone calls to non-respondents in the in-person sample will be distributed among weekend/weekday and day/evening time periods to maximize the likelihood of reaching the contact person. About one week after the questionnaire is mailed to all members of the survey population, attempts to schedule in-person interview dates by telephone will begin. Up to six attempts to schedule an interview will be made for each member of the in-person survey. Up to three attempts (including the initial mailing) will be made to obtain responses from each member of the mail survey sample.

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 provide an indication if whether the data collected through the survey on fixed cost items such as repair, maintenance, and improvements 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 consumption vary between survey respondents and non-respondents.

Tests for non-response bias will be based not only on vessel physical characteristics, but also on vessel landings. PacFIN provides vessel level information on West Coast (Washington, Oregon, and California) landings by date, species, 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 targeted, location 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 landings, dollar value and weight of groundfish landings, dollar value and weight of whiting landings, dollar value and weight of crab landings, dollar value and weight of shrimp landings, and dollar value and weight of salmon landings.

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

National Marine Fisheries Service (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 cost earnings data for 2008 and 2009 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, 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 open access groundfish and salmon trawler survey fielded in 2007. Since the survey development process for the prior surveys has already been documented in prior Office of Management and Budget (OMB) submissions, it is provided in a footnote in this document.²

The process of reviewing and updating the previous questionnaire began with distribution of the previous questionnaire to a group of economists and survey researchers employed by the National Oceanic and Atmospheric Administration's (NOAA's) Northwest Fisheries Science Center (NWFSC), NOAA's Northwest Regional Office (NWR), NOAA's Southwest Fisheries Science Center (SWFSC), and the Pacific States Marine Fisheries Commission (PSMFC). Changes made to the survey include (1) adding parts h through o of question 11 in response to comments from survey respondents that the previous survey did not capturing all cost categories with our previous survey, and (2) adding question 17 about fuel use per day on groundfish trips to provide trip level information on groundfish trips for both labor expenses and fuel expenses (the two major expense categories on a trip level).

These changes were reviewed with industry participants and personnel who serve as industry representatives on advisory committees to the Pacific Fisheries Management Council. The wording and content of questions was revised until deemed acceptable by both agency economists and industry participants and representatives.

² Survey development for the previous open access groundfish and salmon trawler survey 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 survey and survey content were developed through a series of meetings by representatives of the (NWFSC), Northwest Regional Office (NWR), Southwest Fisheries Science Center (SWFSC), 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.

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

Use of Survey Results

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. 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. Analysis of data collected by previous surveys conducted by the NWFSC and PSMFC has played a key role in evaluating the likely impact (in terms of vessel consolidation and cost reduction) of implementing a catch share management regime in the limited entry trawl fishery, the economic impact of the 2006 reductions in salmon harvest on the economic welfare of fishery participants. Another key factor is the development of an IMPact analysis for PLANning, Minnesota IMPLAN Group (IMPLAN) based regional economic model, for evaluation of the effect of fishery management measures on economic conditions in coastal communities.

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:

Carl Lian
Northwest Fisheries Science Center
2725 Montlake Boulevard East
Seattle, WA 98112
(206) 302-2414 (voice)
(206) 860-6792 (fax)
carl.lian@noaa.gov (email)

Principal Investigator:

Dave Colpo
Pacific States Marine Fisheries Commission
205 SE Spokane Street
Portland, OR 97202
(503) 595-3100 (voice)
(503) 595-3232 (fax)
dave_colpo@psmfc.org (email)

7. Estimated burden and number of respondents.

Reviewing the survey, collecting requested data, and completing the survey (either through an in-person interview or the mail questionnaire) is expected to take one hour per respondent. A total of 928 responses are expected from the in-person sample and the mail sample. As a result, the survey is expected to impose a total of 928 burden hours on the west coast limited entry trawl fleet.