SUPPORTING STATEMENT
West Coast Limited Entry Groundfish Fixed Gear Economic Data Collection
OMB CONTROL NO. 0648-xxxx

B. COLLECTIONS OF INFORMATION EMPLOYING STATISTICAL METHODS

1. Describe (including a numerical estimate) the potential respondent universe and any sampling or other respondent selection method to be used. Data on the number of entities (e.g. establishments, State and local governmental units, households, or persons) in the universe and the corresponding sample are to be provided in tabular form. The tabulation must also include expected response rates for the collection as a whole. If the collection has been conducted before, provide the actual response rate achieved.

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 2017. 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 2017. Vessels with less than $1,000 landings are considered to have too low a level of activity to provide useful cost earnings data. Fish ticket 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 catch shares program.

This survey will be performed on a census of the 164 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.

The NWFSC has conducted four 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 and fourth surveys were conducted in 2011 and 2014 and both obtained responses from 55% of vessel owners. Based on these prior efforts we expect a 55% response rate is expected for this survey. With a survey population of 164 vessels, this implies 90 survey responses. The results from these surveys can be found in the NOAA technical memoranda listed in the references.

Survey Population	Survey Sample	Expected Responses	Expected Response Rate
164	164	90	55%

2. Describe the procedures for the collection, including: the statistical methodology for stratification and sample selection; the estimation procedure; the degree of accuracy needed for the purpose described in the justification; any unusual problems requiring specialized sampling procedures; and any use of periodic (less frequent than annual) data collection cycles to reduce burden.

Data Collection Procedures, Sample Selection and Stratification

Data collection and sample selection methods are detailed in questions A12 and B1of this submission. Since we intend to conduct a census, there is no stratification of the population.

Degree of Accuracy Needed for Intended Purpose
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.

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 the IO-PAC 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 and impacts of the fishery to regional economies.   While it is not possible to state a level of accuracy that is required for all uses and applications of data collected by this survey, this survey is expected to provide data useful for this purpose. Assuming a response rate of 55%, we expect to obtain 90 complete and usable surveys. This would allow us to report sample means within 10% of the population mean at 99% confidence across the entire fishery.

With regard to reducing the time cost of reporting, as well as the financial cost to the federal government, we intend to collect similar data no more than every three years.

3. Describe the methods used to maximize response rates and to deal with nonresponse. The accuracy and reliability of the information collected must be shown to be adequate for the intended uses. For collections based on sampling, a special justification must be provided if they will not yield "reliable" data that can be generalized to the universe studied.

Methods Used To Maximize Response Rates

Over the last four times a cost earnings survey was administered for this population, the NWFSC has developed a set of principles that are expected to help maximize survey response during this data collection.

1) Respondents are asked only to provide information about relatively major cost and earnings categories, thus avoiding what may seem to survey respondents like unnecessary detail.

2) Survey recipients will not only have the option of responding through in-person interviews, but will also have the option of responding via telephone or mail.

3) 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.

Strategy to Address 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.

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

4. Describe any tests of procedures or methods to be undertaken. Tests are encouraged as effective means to refine collections, but if ten or more test respondents are involved OMB must give prior approval.

Because this survey effort mirrors a prior effort by the NWFSC, and there are no changes in either the questionnaire or the methods employed, we do not intend to conduct formal tests of our methods.

5. Provide the name and telephone number of individuals consulted on the statistical aspects of the design, and the name of the agency unit, contractor(s), grantee(s), or other person(s) who will actually collect and/or analyze the information for the agency.

Jerry Leonard (P.I.)
Northwest Fisheries Science Center
2725 Montlake Blvd. East
Seattle, WA 98112-2097
Phone: 206-302-1742

Leif Anderson
Northwest Fisheries Science Center
2725 Montlake Blvd. East
Seattle, WA 98112-2097
Phone: 206-302-2403

REFERENCES

Lian, C.E. 2012. West Coast limited entry groundfish cost earnings survey: Protocol and results for 2008. U.S. Dept. Commer., NOAA Tech. Memo. NMFS-NWFSC-121, 62 p.

Hodgson E., I. Kaplan, K. Marshal, J. Leonard, T. Essington, S. Busch, E. Fulton, C. Harvey, A. Hermann, and P. McElhany. (2018). Spatially variable ocean acidification and its consequences in the California Current: interactions between oceanography, food webs, and fishing communities. Ecological Modeling 383.

Richerson K., J. Leonard, D. Holland. (2018). Predicting the economic impacts of the 2017 West Coast salmon troll ocean fishery closure. Marine Policy 95: 142-152.

Seung, C. K., Waters, E. C. and Leonard, J. L. (2014), Assessing multiregional economic impacts of Alaska fisheries: A computable general equilibrium analysis. Review Urban &Regional Devel, 26: 155-173.

Kaplan, I. Leonard, J. (2012). From Krill to Convenience Stores: Forecasting the Economic and Ecological Effects of Fisheries Management on the US West Coast. Marine Policy 36: 947–954.

Leonard, J., and E. Steiner (2017). Initial Economic Impacts of the U.S. Pacific Coast Groundfish Fishery Individual Fishing Quota Program. North American Journal of Fisheries Management 37, 4.

Leonard, J., and P. Watson. (2011). Description of the input-output model for Pacific Coast fisheries. U.S. Dept. Commer., NOAA Tech. Memo. NMFS-NWFSC-111, 64 p.