

SUPPORTING STATEMENT
U.S. Department of Commerce
National Oceanic & Atmospheric Administration
Pacific Coast Groundfish Fishery Rationalization Social Study
OMB Control No. 0648-0606

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 respondent universe for this study includes those individuals, partners, businesses, etc., that have any connection to the Pacific Coast Groundfish and Whiting Fisheries. These are the fisheries that have been rationalized. Types of respondents expected include fishermen, vessel owners, vessel operators, former groundfish limited entry permit owners, groundfish quota share permit owners/holders, quota allocation recipients, crew aboard groundfish/whiting vessels, mothership operations, catcher-processor operations, shoreside processors, any other at-sea processors, first receivers/buyers, observers, and other individuals who are stakeholders in the fishery such as partners or spouses. In addition, the survey/interview pool will include any businesses that are directly tied to the groundfish/whiting communities through the supply of commercial items to include, but are not limited to net suppliers, fuel suppliers, equipment suppliers, etc.

The survey will be a census of the groundfish trawl/fixed gear fishery as described; that is, all individuals who meet the descriptions above. The only known numbers are the vessel owners, previous limited entry permit holders, quota allocation recipients, and previous study participants as this is the only information tracked. As a result, all other counts of the number of respondents are estimates. Calculations have been developed to estimate the number of respondents. Values for these calculations come from a combination of published data, previous data collection efforts (2010 & 2012), and information from personal communications. The Northwest Regional Office provides several tables to include Individual Fishing Quota (IFQ) Vessel Accounts which show the vessel names and the vessel owners names, the Quota Share Permit Owners, and a list of IFQ First Receiver Site Licenses which show the processors whom hold those site licenses. Information such as the estimates of how many crew are on vessels came from personal communications during the pilot/study review process with NMFS employees and industry members, continued communication with observers, as well as from participant observation and inquiries during previous data collection efforts. The combination of this information is utilized to estimate the number of crew on participating vessels that will be part of the survey respondent group. This is believed to be the most accurate process to estimate the field of respondents.

Another sector of the study population, processors, is not as clear as the vessel owners and permit holder. Initially these estimates were based primarily on the literature. These new estimates are adjusted and account for experience and observations during the prior data

collection efforts. Please note that the processing sector has been, and continues to be, very difficult to access and unwilling to participate in any large number. The Pacific Fishery Management Council documents describe shoreside processors for both the trawl groundfish species and whiting species in the (PFMC and NMFS 2009). The data identified a list of possible processors on the west coast. For this research, the processors were confirmed and assumptions remain that each processor has at least one owner, if not multiple owners. An approach to contact the owner(s) of each processor and conduct a census of the processor owner population will be taken.

Description	No. Companies	No. of Estimated Respondents	Estimated Response Rate 60%
Vessel Owners/ Quota Share Permit Holders		230	138
Prior Permit Owners Only		49*	29
Crew Estimate ^o		160	54
Shoreside Processors Owners (CA, OR, & WA) [†]	71	90	27
Shoreside Processors Employees (CA,OR &WA) [†]	71	50	15
Industry Supply Company Owners and Employees	15	45	27
Misc. Fishermen/Processors – Interviews ONLY		60	36
Observers		50	30
Fishery Related Organizations – Meetings	10	10	6
Misc Others		80	48
Total		824	410

*Some vessels and permits are co-owned, but both owner names are not listed in the permit data, so additional respondents were added to account for vessels with more than one boat owner.

[†] As previously indicated, these numbers have been updated based on the response types from the previous data collections and they include a few adjustments for new entries to the fishery.

^oCrew estimates have been adjusted downwards based on knowledge from the prior data collection efforts from 2010, 2012, and including preliminary observations from the 2015/2016 data collection effort. Due to the nature of the program consolidating the fishery, fewer crew are working, there is high turnover in crew, crew are hard to track down for participation, or have a higher rate of decline to participate. Owners are more stable as even if they sell their boats - they still own and lease their quota. Owners are still accessible. Additionally, the requirement of observers on board reduces the number of crew on smaller vessels, reducing the crew count. A new study is currently being designed specifically to target crew.

⁺ An average response rate was calculated as 60%. For the vessel owner/quota share permit holders of the estimated respondents (200) a 64% response rate is estimated. For the crew and processing sector respondents a 30% response rate is estimated. Personal communications and experience during prior data collection efforts suggest access to processor sector personnel and crew is increasing difficult. As a result, a lower response rate is projected from this pool of respondents.

Multiple sub-populations of the study, where no list of individuals exists, are that of vessel crew, processor employees, suppliers, service providers, and spouses that are active in the fishery. Access to these individuals will be sought through various means. First, contact information from previous data collection efforts will be checked to see if it is still current. Crew have a tendency to move and change contact information frequently. Where information has changed or new personnel have entered the fishery, we will initiate previous methodologies to contact crew and processor employees. We will contact vessel owners, quota share permit owners, and processor owners and ask for lists of employees and/or for permission to contact their employees. In past data collection efforts we had some success working with the NMFS Observer and Survey programs as key informants to reach crew aboard vessels. We will continue to strengthen this connection, as observers do change over time as well. There are

various community organizations related to this fishery; for example, the Newport Fishermen's Wives, Inc. We will continue to work closely with these organizations to reach members whom are fishermen and processor employees. Working with all these individuals has helped increase participation in our research, increased knowledge of our research in local communities, and strengthened working relationships with community members as they collaborate with us to support our research efforts. All individuals who complete the survey/interview process will be shown the compiled lists and asked if there are other crew/staff not listed. These methods have increased access to applicable participants in the past and will be pursued in the future.

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.

As previously mentioned in Question B.1, the approach to this study is to conduct a census of the study population. Individuals who meet the study criteria will be provided an opportunity to participate in the research. The sample selection will therefore not contain a random sample or other statistical representation of the study population and their associated statistical analysis. Sample selection will be based solely on the criteria of the individuals' participation and having an active role in the Pacific Coast Groundfish Trawl Fishery, where those expected roles have been previously addressed in Question B.1.

Data collection will occur primarily through in-person survey administration and semi- to unstructured interviews. Researchers will discuss the research with study participants, administer the surveys, and be available to answer any questions, code the surveys for anonymity and confidentiality, and collect all the surveys upon completion. In the event individuals are unavailable to meet in person, various options will be available to participate. Hard copy surveys can be provided either in person or via mail; electronic versions will be available either for distribution via email or accessible over the internet. In the event of any mailing costs to return the survey, postage paid envelopes will be provided as appropriate.

It is expected that a 60% response rate will be sufficient to properly represent the study population. This response rate is based on a similar study conducted by the principal investigator with the same collection methodologies as well as prior data collection efforts in 2010 and 2012, and 2015/2016 ([Russell and Schneider-Ruff 2014](#), [Russell et al. 2014](#), [Russell, Van Oostenburg, and Vizek 2018](#)). Analysis of the results will be conducted to include the response rate for each question. This is an important aspect of the research as the option to skip questions is being provided as an additional layer of confidentiality. The strength and accuracy each piece of data will therefore be represented through the response rate of the question, in addition to the overall response rates.

Additionally, return respondents are determined by identifying those whom have participated in all surveys. Statistical analysis can be run on this sub-population of respondents to provide representation of change over time. These analysis can then be compared to the entire data set, or to sub-analysis by role or community to compare for differences. Typical statistics applied include descriptive statistics, Cochran's Q test to analyze differences between years for dichotomous response variables, and this is an extension of the chi-squared test for three or more

([Mcnemar 1949](#)). We utilize the Friedman's test to analyze differences between years for ordinal response variables as this is a non-parametric extension of repeated measures and allows for comparison of three or more repeated measurements ([Sheldon, Fillyaw, and Thomson 1996](#)).

Non-response calculations are carefully tabulated and further informed by detailed record keeping. We are able to inform our non-response by tracking the reasons for which participants do not respond in several categories and report those categories. For example, in 2015/2016 our non-response category for health/death dramatically increased the non-response rate. These calculations are published along with all other response rate information in our technical documents and readily available for distribution upon request.

Data collection is not planned to be conducted on an annual basis. The first study year was 2010; a supplemental data collection was conducted in 2012, a third data collection was conducted in 2015/2016. Each of these past efforts was directly linked to management actions in the program. The focus of this research is to measure changes in the communities over time. Conducted at specific time increments, it can also link changes to specific management actions. For example, the release of quota shares for trading was prohibited upon implementation of the program and implemented in January of 2014. It is not expected that there will be a great advantage to conducting the research in annual increments. Social changes often take longer to ascertain and measure. As management actions continue to be changed, time is needed to allow community members to adjust to changes before a clear understanding of impacts can be determined. This program has currently concluded the 5-year review process. Changes that may be implemented post this review may continue to alter the sociocultural dynamics in affected communities. Discussions with various NMFS personnel and academic partners indicated agreement that proceeding to a 5-year rotation of data collection will yield the most successful results for future data collection efforts. In addition, this approach, as opposed to an annual approach, will reduce the burden on the research participants significantly.

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.

Various steps have been, and will continue to be, taken to maximize response rates.

As a reminder, no statistical sampling methodology is intended for this study population, there is no specific sampling frame applied in this case.

The first step to increase response rates has been taken in the form of working with industry members in a pilot study and providing the opportunity for them to review and contribute to the development of the survey tool. Industry members selected are all key participants in various aspects of the industry, to include geographically diverse locations within the fishery, diverse roles within the industry, as well as diverse knowledge of the fishery. Each industry member has been invited to continue to work with the study principal investigator to discuss the best approach to reach study participants. Several of the industry members are committed to serving as key informants, gatekeepers, and primary contacts to many others in the industry. These individuals assist in the communication of the research, have access to literature about the study

to be distributed to their constituents, and assist researchers in the field to coordinate with study participants. The action of working with industry members and including them in the survey design and study and points of contact has increased the response rate dramatically.

Additional efforts to increase response rate include in-person survey administration whenever possible. It has been the experience of other research efforts that conducting the research in person and collecting completed surveys immediately, dramatically increases response rates ([Russell and Schneider-Ruff 2014](#), [Rea and Parker 1997](#), [Robson 2002](#)). In addition, the individuals participating in the research have the opportunity to communicate with the researcher and provide additional information that is of concern to them to be included in the data set.

Contact has also been made with other key members of NMFS, academia, and industry to better understand the study universe and to work together to collect a more complete data set. Communication with NMFS Northwest Regional Office, NMFS Observer program personnel, NMFS survey program personnel, NMFS Alaska Fisheries Science Center personnel, NMFS SWFSC personnel, other NMFS field personnel, Oregon Sea Grant Personnel, and California Sea Grant personnel are included in collaborative efforts of this research. These efforts have increased the background knowledge available to the researchers, provided additional key informants and gatekeepers to the industry, and have provided a support network throughout the West Coast to conduct this research. This network of information available to the researchers has contributed to an increased response rate. An example of how this will work is through coordinating our approach of fishermen with observers. This coordination will serve two functions: 1) access to vessel schedules, and 2) gatekeeper assistance. The observers work with fishermen on a daily basis and they will have knowledge of the boats schedules, which would direct the researchers to be available to conduct the research at the most appropriate times for the survey respondents. It would reduce the contact burden and extensive scheduling calls and capture the targeted respondents when they are most available. In addition, the observers know the individuals of research interest personally. Collaborating with the observers and arranging for introductions between researchers and study participations by the observers will likely increase the willingness of study participants to work with researchers.

Additionally, as this research effort has been underway for multiple years, we have established good relationships with community members by maintaining high levels of communication with them and working with them in their communities. We return to communities with results, participate in workshops requesting feedback of posters and preliminary results, and have increased local community knowledge of our research. As a result, during data collection efforts, community members are willing to participate and further support efforts to recruit other community members for inclusion in the study, increasing participation rates.

Multiple options will be provided to study participants to participate in the research. For individuals who are willing to work with us but don't want to fill out the survey, researchers will conduct an interview and complete the survey per the participants' responses. For those who don't want to complete the entire survey, a section completion guide directs the participants as to which sections are most important to complete for the role the individual plays in the industry, limiting the sections the participant needs to complete. It is also clearly communicated that the individuals can stop their participation at any time, stop the completion of the survey at any time, or skip any questions of concern at any time, without any personal consequence. For those individuals who are not interested in the survey at all but are willing to participate in an

interview, researchers will limit their data collection to interviews. If a participant is willing to give us only a few minutes of their time, we will ask the questions outlined in Sections A and B of the survey instrument. These sections are estimated to take approximately 5 minutes to complete. These responses will be used to analyze non-response 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.

A full review of the study description, the study methodology, and the survey instrument has been undertaken. NMFS personnel, Pacific Fisheries Management Council personnel, and other federal personnel in various regions have reviewed the survey tool and provided comments on both the survey tool and the study. As previously discussed in Question 3, key industry members were provided a description of the research, discussed the research with the principal investigator, and reviewed the survey tool in a pilot study. Communication with reviewers is being maintained to 1) communicate changes to the survey tool as a result of the reviews, and 2) to lay the framework for the deployment of researchers into the field to conduct the research.

Information received from industry members and other NMFS personnel was found to be invaluable to the development and maintenance of the survey tool. As a result, updates of the survey tool were made to improve the tool. Their continued participation in this research is expected to contribute greatly to its success.

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.

The internal NMFS design, development, and review team including statistical analysis included Dan Holland (206) 302-1752; Dr. Karma Norman, Social Scientist, NWFSC (206) 302-2418; Todd Lee, Economist, NWFSC (retired); Carl Lian, Economist, NWFSC (206) 302-2414; Frank Lockhart (206) 526-6142; Aja Szumylo (206) 526-4746; Jim Seger, PFMC (503) 820-2416.

The primary individuals expected to collect the data include Suzanne Russell, social scientist, principal investigator, NWFSC, and others to be identified. The team has typically included three researchers in California, one to two in Oregon, and 3 to 4 based out of Washington but travel to all locations needed to collect data. Individuals who are expected to analyze the data include Suzanne Russell (206) 860-3274 and possible others to be identified.

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