SUPPORTING STATEMENT Part B
COLLECTIONS OF INFORMATION EMPLOYING STATISTICAL METHODS
U.S. Department of Commerce
National Oceanic & Atmospheric Administration
Economic Surveys of Specific US Commercial Fisheries
OMB Control No. 0648-0773

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Introduction

Because the five responses in Part B are specific to each of the 16 information collections included in this bundled information collection request, we provide a set of five responses one fishery at a time. The responses reflect the current planned schedule for each collection. If a collection is delayed, the years stated in those responses are placeholders for the actual year the collection will occur, the year of the data to be collected and the year(s) of landings data that NMFS will use to identify the population for that collection. NMFS expects any such delays will not significantly affect the corresponding population and sample sizes.

1. NWFSC: West Coast Limited Entry Groundfish Fixed Gear Fisheries Economic Data Collection

Note: The Northwest Fisheries Science Center (NWFSC) conducted this information collection in 2023 to collect information for 2021 and 2022 and plans to conduct it again in three to five years. Because the results of the information collected for 2021 and 2022 data are not final, the following responses do not include the response rate for that survey.

1.1   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 government units, households, or persons) in the universe covered by the collection and in the corresponding sample are to be provided in tabular form for the universe as a whole and for each of the strata in the proposed sample. Indicate expected response rates for the collection as a whole. If the collection had been conducted previously, include the actual response rate achieved during the last collection.

Potential Respondent Universe

We made no changes in the procedures or statistical methodology of the collection since the last approval. 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 202X-202X+1. The fixed gear endorsement is 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 202X-202X+1. 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 Pacific Coast Fisheries Information Network (PacFIN) indicates that there are 130 vessels in the survey population in 2021-2022.

Sampling and Other Respondent Selection Methods

Based on 2021-2022 data, this survey will be performed as a census of the 130 vessels in the expected 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 five 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. The most recent survey of this population, which we conducted in 2019, achieved a response rate of 59%. Based on these prior efforts, we expect a 55% response rate for this survey. With a survey population of 130 vessels, this implies 72 survey respondents and responses. Results from some of the previous surveys can be found in Lian (2010, 2012a).

Survey Population	Survey Sample	Expected Responses	Expected Response Rate
130	130	72	55%

1.2 Describe the procedures for the collection of information including:

- Statistical methodology for stratification and sample selection,

- Estimation procedure,

- Degree of accuracy needed for the purpose described in the justification,

- Unusual problems requiring specialized sampling procedures, and

- Any use of periodic (less frequent than annual) data collection cycles to reduce burden.

Fielding, stratification, and sample selection

The NWFSC and its subcontractor will field the survey. To field the survey, information on the vessel owner name, mailing address, and telephone number will be taken from federal permit and vessel registration files. The NWFSC will send an initial mailing with a cover letter, a copy of the questionnaire, and an explanation of how economists will use the data collected by the survey. This will provide survey recipients with an opportunity to see first-hand the data being collected by the survey, an idea of the length of the survey, and a copy in front of them when the survey is conducted. Then, a surveyor calls to gauge interest, and sets an appointment for either a phone or in-person interview. Having respondents talk to a trained interviewer also provides more consistent survey responses.

About one week after the initial mailing, attempts to contact all non-respondents via telephone will begin (the federal limited entry permit information includes telephone numbers for all members of the survey population). An expert recruiter who has performed nine previous cost earnings surveys on the West Coast will make these calls. The recruiter will contact survey recipient to encourage participation, answer questions about the survey, and help determine the most suitable response method (mail, telephone, or in-person interview). For those choosing an in-person interview, an interview time and location will be scheduled.

This fielding approach has been followed for the previous five times the survey has been conducted. The success for some of the previous efforts is documented in Lian (2010, 2012a).

Because of the success of these previous efforts using the same methods, changes to the procedures or statistical methodology seemed inappropriate.

Estimation Procedure

NMFS will use much of the data requested to estimate total (or average) revenue, cost, variable cost net revenue (revenue minus variable costs), and total cost net revenue (revenue minus fixed and variable costs). Such estimates are useful in understanding the economic conditions of the fishery and how those conditions have changed. Fishery managers, fishery participants and the public commonly want this type of information. Additionally, NMFS and the Council can use these estimates and the data on which they are based in predicting the effects on those conditions of changes in regulatory, market and environmental conditions. These estimates will also be used in the IO-PAC model (Leonard, 2011) 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 PFMC to report on the economic contribution and impacts of the fishery to regional economies.

Degree of Accuracy Needed for Intended Purpose

We will use the data collected through this survey for statistical inference of population values from sample respondents and for estimation of econometric models used for fisheries management. Neither economic theory nor legislative mandates establish the degree of accuracy needed for these intended uses. All else being equal, we prefer more accurate data; however, we expect this survey will provide sufficiently accurate and useful data for these intended uses and we believe the correct choices have been made with respect to the tradeoff between data accuracy and data collection costs. Assuming a response rate of 55%, we expect to obtain 72 complete and usable surveys from a population of 130. This would, for example, allow us to report the critical sample mean of the proportion of total vessel revenues that is paid to crew with a margin of error of 18.3% of the population mean with a 95% confidence interval for the entire fishery[1].

Unusual problems requiring specialized sampling procedures

We do not expect unusual problems in this survey. It will be the sixth survey of this population.

Periodic Data Collection Cycle to Reduce Burden

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.

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[1] An important metric for utilizing these data to estimate economic impacts is the proportion of total vessel revenues that is paid to crew. In the most recent collection for this population, we had a mean of 0.279 with std. error (SE) of 0.0390. With a finite population correction factor, the associated margin of error for a 95% confidence interval for the mean ratio cost is +/- $1.96*SE*\sqrt{((N-n)/N)}$. With an expected 72 complete responses (n) from a population (N) of 130 and assuming we obtain similar values for the mean and std. error, the margin of error would be 0.51, which is 18.3% of the mean.

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

Methods Used To Maximize Response Rates

Over the five 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) Discussions have been held with members of the limited entry fleet over the last five iterations of this collection 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

We will base testing for non-response bias on the considerable amount of data available for all members of the survey population. The variables we will use 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 are 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. 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 by quantity landed, and location of landings. If we detect non-response bias, we will use procedures to reweight the data or the estimated model to correct for any known bias. The tests that will be performed are detailed from a prior collection effort of this population in Lian (2010, 2012a).

Adequacy of Accuracy and Reliability of Information for Intended Uses

Among other things, the response to the previous question (Question 1.2) describes the degree of accuracy needed for the purpose described in the response to Question 1.2. That response describes the specific uses the agency plans for the data collected.

1.4   Describe any tests of procedures or methods to be undertaken. Testing is encouraged as an effective means of refining collections of information to minimize burden and improve utility. Tests must be approved if they call for answers to identical questions from 10 or more respondents. A proposed test or set of tests may be submitted for approval separately or in combination with the main collection of information.

This will be the sixth iteration of this collection. Prior to the first collection in 2005, the NWFSC performed extensive outreach to industry for the purposes of testing the survey instrument for clarity and feasibility of completing the survey. The survey instrument has been refined over time in response to feedback received from respondents. As a result, no specific testing was performed for this collection.

1.5   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.

Allen Chen (PI)
Northwest Fisheries Science Center
2725 Montlake Blvd. East
Seattle, WA 98112-2097
Phone: 206-302-1762

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

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2. NWFSC: West Coast Open Access Groundfish, Non-tribal Salmon, Crab, and Shrimp Fisheries Economic Data Collection

2.1 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 government units, households, or persons) in the universe covered by the collection and in the corresponding sample are to be provided in tabular form for the universe as a whole and for each of the strata in the proposed sample. Indicate expected response rates for the collection as a whole. If the collection had been conducted previously, include the actual response rate achieved during the last collection.

Potential Respondent Universe

We made no changes in the procedures or statistical methodology of the collection since the last approval. 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 202X-202X+1, (2) no limited entry groundfish permit during 202X-202X+1, and (3) at least one trip targeting open access groundfish, salmon, crab or shrimp, which is determined by a majority (>50%) of revenue from one of the four species groups. There were 1,935 vessels in the survey population in 2019.

Sampling and Other Respondent Selection Methods

The NWFSC has conducted four previous economic cost earnings surveys of the open access fleet. A survey fielded during 2007 obtained a 32% response rate. A second survey fielded during 2010 obtained a 45% rate. A third survey fielded in 2014 achieved a response rate of 44%. The most recent survey of this population was conducted in 2021 and achieved a response rate of 43%. Based on these prior efforts, we expect a 45% overall response rate for this information collection. From the population of 1,935 vessels, we expect to sample 1,006 vessels as discussed below. With a survey response rate of 45%, this implies 453 survey responses.

Vessels will be identified for inclusion in the survey population using fish-ticket landings data contained in PacFIN. Based on the landings criteria in 2019, there are 1,935 vessels in the survey population. Of this population, we will select 1,006 vessels via stratified random sampling. Vessel registration data provide the name, address and phone number for each vessel owner in the survey population. These phone numbers are then used as contact information for the survey. If phone numbers are not available, they are obtained from a public records search using the vessel owner name and address. Of those vessel owners for whom a telephone number is available, vessels are selected via stratified random sampling based on state, species, gear, and vessel size. 51 percent of each category is randomly selected; note a discrete number of vessels is required and we round up to the next whole vessel.

Expected Response Rate

Previous cost and earnings surveys of the open access fleet provide insight into how vessels will be contacted and expected response rates for each method. Based on the last iteration of this collection, we expect to contact approximately 51.9% of the sample, or 1,006 vessel owners. The

expected response rate is approximately 45%.

Survey Population	Sample	Sample Size	Expected Response Rate	Expected Responses
1,935	Stratified random	1,006	45%	453

2.2   Describe the procedures for the collection of information including:

● Statistical methodology for stratification and sample selection,

● Estimation procedure,

● Degree of accuracy needed for the purpose described in the justification,

● Unusual problems requiring specialized sampling procedures, and

● Any use of periodic (less frequent than annual) data collection cycles to reduce burden.

Fielding, stratification, and sample selection

The NWFSC and its subcontractors will field the survey. For the 1,006 members of the sample, the NWFSC will send an initial mailing with a cover letter, a copy of the questionnaire, and an explanation of how economists will use the data collected by the survey. This will provide survey recipients with an opportunity to see first-hand the data being collected by the survey prior to in-person interviews and collect the requested data prior to an interview. About one week after the initial mailing, attempts to contact all recipients via telephone will begin. An expert recruiter who has performed nine previous cost earnings surveys on the West Coast will make these calls. The recruiter will contact survey recipients to encourage participation, answer questions about the survey, and help determine the most suitable response method (telephone, or in-person interview). For those choosing an in-person interview, an interview time and location will be scheduled.

Because of the management need for data at the state level, the collection utilizing stratified random sampling where the strata are state, species targeted, gear used, and vessel size of vessels in the population. The IO-PAC model (Leonard, 2011), which utilizes these data to produce economic impacts of changes in Federal fishing regulations, requires accurate data at the state level. There is heterogeneity in species targeted in commercial fishing operations in this population from Washington to California. This heterogeneity in species targeted could affect the costs of operating. Stratified random sampling was chosen over simple random sampling to: 1) increase precision of the population (Cochran, 1977), 2) increase precision for the subgroups (Lohr 1999), 3) lower sampling errors and improve coverage of the population (Daniel 2011, McLennan 1999), and 4) allow comparisons across strata and inferences within strata (Daniel 2011, McLennan 1999).

This general fielding approach has been followed for the previous three times the survey has been conducted. The success of a previous effort is documented in Lian (2012b). Because of the success of these previous efforts using the same methods, changes to procedures or statistical methodology seemed inappropriate.

Estimation Procedure

The corresponding section of the response to Question 1.2 applies to this fishery too.

Degree of Accuracy Needed for Intended Purpose

With the exception of the following text, the corresponding section of the response to Question 1.2 applies to this fishery too.

Assuming a response rate of almost 45%, we expect to obtain 453 complete and usable surveys from a population of 1,935. This would, for example, allow us to report the critical sample mean of the proportion of total vessel revenues that is paid to crew with a margin of error of 10.2% of the population mean with a 95% confidence interval for the entire fishery[2].

Unusual problems requiring specialized sampling procedures

We do not expect unusual problems in this survey. It will be the fourth survey of this population.

Periodic Data Collection Cycle to Reduce Burden

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.

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

Methods Used To Maximize Response Rates

Over the three 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) Discussions have been held with members of the open access fleet over the last three iterations of this collection in an on-going effort to clarify questions. Revenue and cost categories on the

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[2] An important metric for utilizing these data to estimate economic impacts is the proportion of total vessel revenues that are paid to crew. In the most recent collection of this population the mean of 0.193 with std. error of 0.0115. With a finite population correction factor, the associated margin of error for a 95% confidence interval for the mean ratio cost is +/- $1.96 * SE * \sqrt[\square]{(N-n)/N}¿¿$. With an expected 453 complete responses from a population of 1,935 and assuming we obtain similar values for the mean and std. error, the margin of error would be 10.2%.

questionnaire correspond to the financial records maintained by vessel owners as much as possible.

<u>Strategy to Address Non-Response</u>

With the exception of the following text, the corresponding section response under Question 1.3 applies to this fishery too.

If we detect non-response bias, we will use procedures to reweight the data or the estimated model to correct for any known bias. The tests that will be performed are detailed from a prior collection effort of this population in Lian (2012b).

<u>Adequacy of Accuracy and Reliability of Information for Intended Uses</u>

Among other things, the response to the previous question (Question 2.2) describes the degree of accuracy needed for the purpose described in the response to Question 1.2. That response describes the specific uses the agency plans for the data collected.

2.4 Describe any tests of procedures or methods to be undertaken. Testing is encouraged as an effective means of refining collections of information to minimize burden and improve utility. Tests must be approved if they call for answers to identical questions from 10 or more respondents. A proposed test or set of tests may be submitted for approval separately or in combination with the main collection of information.

This will be the fifth iteration of this collection. The first collection was performed in 2007 and utilized the same survey instrument utilized in the survey of the limited entry fleet. The survey instrument has been refined over time in response to feedback received from respondents. As a result, no specific testing was performed for this collection.

2.5 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.

Allen Chen (PI)
Northwest Fisheries Science Center
2725 Montlake Blvd. East
Seattle, WA 98112-2097
Phone: 206-302-1762

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

3 PIFSC: American Samoa Pelagic Longline Fishery Economic Data Collection

3.1 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 government units, households, or persons) in the universe covered by the collection and in the corresponding sample are to be provided in tabular form for the universe as a whole and for each of the strata in the proposed sample. Indicate expected response rates for the collection as a whole. If the collection had been conducted previously, include the actual response rate achieved during the last collection.

Potential Respondent Universe

The potential respondent universe for this survey includes the owners or operators of all the active American Samoa longline vessels because they are the only individuals who can supply the requested economic data for this fishery. According to the mandatory federal logbooks submitted to the National Marine Fisheries Service, 10 vessels were active in the American Samoa longline fleet during 2024.

Sampling and Other Respondent Selection Methods

The whole population of longline fishermen in American Samoa will be included in this survey, so no sampling or other respondent selection method will be used.

Expected Response Rate

The three previous cost data surveys and the associated cost-earnings studies of the Hawaii longline fleet demonstrated high response rates and data quality through in-person interviews; therefore, we will use the same approach to collect data to ensure a high response rate and high quality of data. Pan (2019)[3] achieved a 77% response rate, Arita and Pan (2009)[4] achieved an 88% response rate, and O'Malley and Pooley (2002)[5] achieved an 82% response rate. Given the similar survey instruments, sample composition, and survey methodology among this proposed survey and the pervious cost-earnings surveys, we expect an 80% response rate and the total number of respondents is estimated to be 8 (10*80%).

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[3] Pan M. 2019. Cost-earnings study and economic performance analysis of the American Samoa longline pelagic fishery—2016 operation and recent trends. NOAA Tech Memo. NMFS-PIFSC85, 35 p. doi:10.25923/jemx-6804.

[4] Arita S and Pan M. 2013. Cost-earnings study of the American Samoa longline fishery based on vessel operations in 2009. PIFSC Working Paper WP-13-009.

[5] O'Malley J and Pooley S. 2002. A description and economic analysis of large American Samoa longline vessels. Joint Institute for Marine and Atmospheric Research, SOEST Publication 02-02, JIMAR Contribution 02-345. University of Hawaii at Manoa. Honolulu.

Table 3.1 Response Rate from Previous Cost-Earnings Studies of the American Samoa Longline Fleet.

	2002	2009	2016	Expected
Population	22	26	13	10
Number Interviewed	18	23	10	8
Response Rate	82%	88%	77%	80%

3.2   Describe the procedures for the collection of information including:

● Statistical methodology for stratification and sample selection,

● Estimation procedure,

● Degree of accuracy needed for the purpose described in the justification,

● Unusual problems requiring specialized sampling procedures, and

● Any use of periodic (less frequent than annual) data collection cycles to reduce burden.

We made no changes in the procedures or statistical methodology of the collection since the last approval.

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 the American Samoa longline fleet in order to meet legal and regulatory requirements, support fisheries management decision-making, and undertake economic research. The last available cost-earnings data are for 2016. Fishery and economic conditions and regulations have changed since then. This survey will collect data needed (but not currently available from other sources) to provide an updated baseline of cost-earnings relationships at the vessel level for the American Samoa longline fishery based on 2021 operation and to construct key economic performance measures such as operating costs, fixed costs, labor cost, revenue, and profit. The previous cost-earnings studies (2002, 2009, and 2016) collected the costs data through in-person interviews, while revenue data were compiled from fishermen's logbooks, cannery prices and market prices monitored by the American Samoa Department of Marine & Wildlife Resources (DMWR) Boat-based Creel Survey Program.

NMFS will use much of the data requested to estimate total and average cost, revenue, and profits of individual vessels and the fishing fleet. Such estimates are useful in understanding the economic conditions of the fishery and how they have changed. Fishery managers, fishery participants and the public commonly want this type of information. Additionally, NMFS and the Council can use these estimates and the data on which they are based in predicting the effects on those conditions of changes in regulatory, market and environmental conditions.

Desired Accuracy Needed for the Intended Purpose

The desired degree of precision, and corresponding desired response rate, depend upon the application for which the data are being used. Some applications may use data from all survey respondents, while others applications will only use data from vessels that target specific species. A basic application of the survey data could be the inference of the population mean values from the observed sample mean values.

Using the data from the 2016 cost-earnings study of the American Samoa longline fleet, the margin of error for estimation of the population mean of fishing expenses (the sum of annual variable costs, annual labor costs and annual fixed costs) at the 95% confidence level is 9%[6]. This level of precision will provide good estimation of fishing expenses, revenues, and profitability in general. NMFS will use the data collected for descriptive statistics and economic analyses purposes.

Unusual problems requiring specialized sampling procedures

We do not expect unusual problems in this survey.

Periodic Data Collection Cycle to Reduce Burden

NMFS intends to field the survey for this fishery once every 5 to 7 years to reduce the time burden and cost. However, due to a variety of factors that affect the appropriate frequency for this survey, it is requesting approval to conduct this survey as frequently as once every three years.

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

Methods Used To Maximize Response Rates

We used a number of methods to maximize survey response during the previous cost-earnings surveys of the American Samoa longline fleet, which we will use during this survey. First, NMFS economist Minling Pan will do outreach before the data collection when she visits American Samoa to conduct the field survey for the American Samoa longline fishing trip cost expenditure survey. Second, the survey is short, consisting of only seven pages. Third, the questions and format of the proposed survey are similar to the previous cost-earnings surveys of the American Samoa longline fisheries. The interview form was tested and implemented successfully in the previous studies and their high response rates indicate that the previous surveys were well received. Fourth, respondents are asked only to provide information about

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[6]We used the following formula to estimate the margin of error: e $=1.96\ s/\sqrt{n}$, where: e=margin of error, s=sample standard deviation, n= sample size, and 1.96 denotes the critical value for 95% significance level.

major cost categories, thus avoiding what may seem to survey respondents like unnecessary detail. Fifth, we will contract with a local field worker in American Samoa to conduct interviews. Ideally, we will collaborate with the existing local fishery field staff who are already familiar with surveying methodologies as well as with the fishermen. Sixth, the participation of the survey is voluntary and the interviewer is trained to request permission to conduct the interview. If the interviewer feels the fisherman does not want to participate, the interviewer will immediately terminate the interview and thank the fisherman for his/her time. This approach respects island customs and cultural etiquette across the Pacific Islands Region and will ensure the agency maintains a good relationship with the local fishing communities. Given the small, tight-knit, island fishing communities in American Samoa, this will avoid any negative impact to survey participation by other fishermen and negative impacts on future survey participation. Seventh, interviews will be conducted at times and places that are convenient for fishermen. This will minimize any potential disruption to fishermen's fishing practices.

Addressing Non-Response

The expected response rate is about 80% and we expect the responses will be representative. In an initial effort to deal with non-response in American Samoa, the interviewer will attempt several times to conduct interviews, e.g. rotate between different time of day and different days of week. In addition, we will base testing for non-response bias on the considerable amount of data available for all members of the survey population.

The variables used for non-response bias testing fall into the categories of vessel physical characteristics and landings (location, timing, gear, species, target types (tuna or swordfish), and CPUE (number caught per 1000 hooks)). 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 are likely to differ for survey respondents and 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 also include target types. Costs are likely to differ between tuna and swordfish targeted trips due to different gear types and so do revenues due to price difference among species. As a result, it is possible to compare respondents and non-respondents for costs and total dollar value landed with regard to target types. If we detect non-response bias, we will make an effort to contact under-represented groups and use procedures 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 the American Samoa longline fleet in order to meet legal and regulatory requirements, support fisheries management decision-making, and undertake economic research. The last available cost-earnings data are for 2016. Fishery and economic conditions and regulations have changed since then. This survey will collect data needed (but not currently available from other sources) to provide an updated baseline of cost-earnings relationships at the vessel level for the American Samoa longline fishery based on 2021 operation and to construct key economic performance measures such as operating costs, fixed costs, labor cost, revenue, and profit. The previous cost-earnings studies (2002, 2009, and 2016)

collected the costs data through in-person interviews, while revenue data were compiled from fishermen's logbooks, cannery prices and market prices monitored by the American Samoa Department of Marine & Wildlife Resources (DMWR) Boat-based Creel Survey Program.

NMFS will use much of the data requested to estimate total and average cost, revenue, and profits of individual vessels and the fishing fleet. Such estimates are useful in understanding the economic conditions of the fishery and how they have changed. Fishery managers, fishery participants and the public commonly want this type of information. Additionally, NMFS and the Council can use these estimates and the data on which they are based in predicting the effects on those conditions of changes in regulatory, market and environmental conditions.

The expected response rate is about 80% and we expect the responses will be representative. In an initial effort to deal with non-response in American Samoa, the interviewer will attempt several times to conduct interviews, e.g. rotate between different time of day and different days of week. In addition, we will base testing for non-response bias on the considerable amount of data available for all members of the survey population.

For a description of the specific uses the agency plans for the data collected, see the response to Part A, Question 1.2.

3.4 Describe any tests of procedures or methods to be undertaken. Testing is encouraged as an effective means of refining collections of information to minimize burden and improve utility. Tests must be approved if they call for answers to identical questions from 10 or more respondents. A proposed test or set of tests may be submitted for approval separately or in combination with the main collection of information.

The survey instrument is similar to the one used in the previous three cost-earnings studies of the American Samoa longline fishery. The survey has been reviewed and pre-tested with federal staff of the PIFSC and WPRFMC, many of whom work very closely with longline fishermen in our target population and are aware of concerns they may have. All comments were considered in the design of the final survey instrument.

3.5 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.

Dr. Minling Pan, a PIFSC economist and project lead, was consulted on the statistical design. Dr. Minling Pan can be reached at 808-725-5349. Researchers at PIFSC will collect, enter and analyze the data under the supervision of NMFS economists. NMFS economists and WPRFMC staff will use the data for regulatory analysis.

4 PIFSC: Hawaii Pelagic Longline Fishery Economic Data Collection

4.1 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 government units, households, or persons) in the universe covered by the collection and in the corresponding sample are to be provided in tabular form for the universe as a whole and for each of the strata in the proposed sample. Indicate expected response rates for the collection as a whole. If the collection had been conducted previously, include the actual response rate achieved during the last collection.

Potential Respondent Universe

We will survey the owners or operators of the Hawaii-based longline vessels that were active during 2027 because they are the only individuals who can supply the requested economic data for this fishery. According to the mandatory federal logbooks submitted to NMFS by captains after each fishing trip, 150 vessels were active in the Hawaii-based longline fleet during 2024. The number of active vessels has remained nearly unchanged in the past five years (ranging from 140 vessels to 150 vessels).

Sampling and Other Respondent Selection Methods

This survey will be performed on a census of the 150 vessels in the survey population. The five previous cost data surveys and the associated cost-earnings studies of the Hawaii longline fleet demonstrated high response rates and data quality through in-person interviews; therefore, we will use the same approach to collect data to ensure a high response rate and high quality of data.

Expected Response Rate

The expected response rate is 84%. We expect this response rate for several reasons. First, four of the five previous cost data surveys and the associated cost-earnings studies of the Hawaii longline fleet (1993, 2000, 2005, 2012, and 2022) obtained response rates of at least 79% and an average rate of 84% (see Table 4.1). The exception was the 2022 survey that had an unusually low response rate due to the unexpected delay in scheduling the survey associated with the COVID 19 pandemic. Second, the number of active vessels has remained stable in the past five years. Given the similar population, we anticipate the response rate will be very close to the average of the past response rates. Third, the survey form will be essentially the same as the one used in the previous cost-earnings studies.

Table 4.1 Response Rate from Previous Cost-Earnings Studies of the Hawaii Longline Fleet.

	1993	2000	2005	2012	2022	Expected
Population	122	74	124	129	144	150
Number Interviewed	101	62	98	115	60	126
Response Rate	83%	84%	79%	89%	42%	84%

4.2   Describe the procedures for the collection of information including:

- Statistical methodology for stratification and sample selection,

- Estimation procedure,

- Degree of accuracy needed for the purpose described in the justification,

- Unusual problems requiring specialized sampling procedures, and

- Any use of periodic (less frequent than annual) data collection cycles to reduce burden.

We made no changes in the procedures or statistical methodology of the collection since the last approval.

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

With the exception of the additional information provided below, the corresponding section of the response to Question 3.2 applies to this fishery too.

NMFS needs to measure the economic performance of Hawaii based longline fleet in order to meet legal and regulatory requirements, support fisheries management decision-making, and undertake economic research. The last available cost-earnings data are for 2012. Fishery and economic conditions and regulations have changed since then. This survey will collect data needed to provide an updated baseline of cost-earnings relationships at the vessel level for the Hawaii longline fishery based on 2027 operation and to construct key economic performance measures such as operating costs, fixed costs, labor cost, revenue, and profit. The previous cost-earnings studies (1993, 2000, 2005, 2012, and 2022) collected the costs data through in-person interviews, while revenue data were compiled from fishermen's logbook and dealer data.

Desired Accuracy Needed for the Intended Purpose

With the exception of the additional information provided below, the corresponding section of the response to Question 3.2 applies to this fishery too.

Using the data from the 2012 cost-earnings study of the Hawaii longline fleet, the margin of errors for estimation of the population means of annual variable costs and annual fixed costs at the 95% confidence level are 5% and 7%, respectively[7].

Unusual problems requiring specialized sampling procedures

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[7] We used the following formula to estimate the margin of error: $e = 1.96 \, s/\sqrt{n}$, where e=margin of error, s=sample standard deviation, n= sample size, and 1.96 denotes the critical value for 95% significance level.

We do not expect unusual problems in this survey.

Periodic Data Collection Cycle to Reduce Burden

NMFS intends to field the survey for this fishery once every 5 to 7 years to reduce the time burden and cost. However, due to a variety of factors that affect the appropriate frequency for this survey, it is requesting approval to conduct this survey as frequently as once every three years.

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

Methods Used To Maximize Response Rates

We used a number of methods to maximize survey response during the previous cost-earnings surveys of the Hawaii longline fleet, which we will use during this survey. First, outreach will be done before the data collection to inform vessel permit holders about the upcoming survey. Second, the survey is short, consisting of only five pages. Third, the interview form was tested and implemented successfully in the previous studies. The interview form is essentially the same as the form used in the previous cost-earnings studies in 1994, 2005, and 2012. The high response rates indicate that the previous surveys were well received. Fourth, respondents are asked only to provide information about major cost categories, thus avoiding what may seem to survey respondents like unnecessary detail. Fourth, translators will be used during interviews for non-English speaking respondents, as the Hawaii longline fishermen are composed of three ethnic groups, including American, Vietnamese-American, and Korean-American. A Vietnamese-English and a Korean-English translator will be hired to ensure successful in-person interviews. Sixth, the participation of the survey is voluntary and the interviewer is trained to request permission to conduct the interview. If the interviewer feels the fisherman does not want to participate, the interviewer will immediately terminate the interview and thank the fisherman for his/her time. This approach respects island customs and cultural etiquette across the Pacific Islands Region and will ensure the agency maintains a good relationship with the local fishing communities. Given the small, tight-knit, island fishing communities in Hawaii, this will avoid any negative impact to survey participation by other fishermen and negative impacts on future survey participation. Seventh, interviews will be conducted at times and places that are convenient for fishermen. This will minimize any potential disruption to fishermen's fishing practices.

Addressing Non-Response

The expected response rate is about 84% and we expect the responses will be representative. The response rate in 2022 survey was low due to the unexpected delay in survey schedule. In an initial effort to deal with non-responses, the interviewer will attempt several times to conduct

interviews, e.g. rotate between different time of day and different days of week. In addition, we will test for non-response bias on the considerable amount of data available for all members of the survey population.

The variables used for non-response bias testing fall into the categories of vessel physical characteristics and landings (location, timing, gear, species, target types (tuna or swordfish), and CPUE (number caught per 1,000 hooks)). 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 are likely to differ for survey respondents and 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 also include target types. Costs are likely to differ between tuna and swordfish targeted trips due to different gear types and so do revenues due to price difference among species. As a result, it is possible to compare respondents and non-respondents for costs and total dollar value landed with regard to target types. If we detect non-response bias, we will make an effort to contact under-represented groups and use procedures to reweight the data or the estimated model to correct for any known bias.

<u>Adequacy of Accuracy and Reliability of Information for Intended Uses</u>

With the exception of the additional information provided below, the corresponding section of the response to Question 3.3 applies to this fishery too.

NMFS needs to measure the economic performance of Hawaii based longline fleet in order to meet legal and regulatory requirements, support fisheries management decision-making, and undertake economic research. The last available cost-earnings data are for 2022. Fishery and economic conditions and regulations have changed since then. This survey will collect data needed to provide an updated baseline of cost-earnings relationships at the vessel level for the Hawaii longline fishery based on 202X operation and to construct key economic performance measures such as operating costs, fixed costs, labor cost, revenue, and profit. The previous cost-earnings studies (1993, 2000, 2005, 2012, and 2022) collected the costs data through in-person interviews, while revenue data were compiled from fishermen's logbook and dealer data. Based on the data from the 2022 cost-earnings study of the Hawaii longline fleet, we expect our survey sample will allow us to estimate sample means within a 5% and 7% margin of error for the population means of annual variable costs and annual fixed costs at the 95% confidence level, respectively[8].

4.4   Describe any tests of procedures or methods to be undertaken. Testing is encouraged as an effective means of refining collections of information to minimize burden and improve utility. Tests must be approved if they call for answers to identical questions from 10 or more respondents. A proposed test or set of tests may be submitted for approval separately or in combination with the main collection of information.

The survey instrument is similar to the survey instruments used in the previous four cost-

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[8] We used the following formula to estimate the margin of error: $e = 1.96\ s/\sqrt{n}$, where e=margin of error, s=sample standard deviation, n= sample size, and 1.96 denotes the critical value for 95% significance level.

earnings studies of the Hawaii longline fishery. The survey has been reviewed and pre-tested with federal staff of the PIFSC and WPRFMC, many of whom work very closely with longline fishermen in our target population and are aware of concerns they may have. All comments were considered in the design of the final survey instrument.

4.5   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.

Dr. Minling Pan, a PIFSC economist and project lead, was consulted on the statistical design. Dr. Minling Pan can be reached at 808-725-5349. Vietnamese and Korean speaking translators will be hired to collect the data under the supervision of NMFS economists.
Researchers at PIFSC will enter and analyze the data under the supervision of NMFS economists. NMFS.

5   PIFSC: Hawaii Small Boat Fishery Economic Data Collection

5.1   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 government units, households, or persons) in the universe covered by the collection and in the corresponding sample are to be provided in tabular form for the universe as a whole and for each of the strata in the proposed sample. Indicate expected response rates for the collection as a whole. If the collection had been conducted previously, include the actual response rate achieved during the last collection.

Potential Respondent Universe

The potential respondent universe in Hawaii is 879 small boat commercial fishers according to the Hawaii Division of Aquatic Resources' record of Commercial Marine License (CML) holders in 2020.

Fishers who catch fish for commercial purposes are required to apply for a Hawaii Commercial Marine License (CML) from the State of Hawaii. The list of CML holders provides a population of commercial fishers in the State of Hawaii. The State of Hawaii Division of Aquatic Resources (HDAR) provided the population for this study. It included 879 fishers who held a State of Hawaii CML and with the following criteria that we considered comprising the small boat fishery: fishers who caught, landed, and sold at least one marine life using small vessels during 2020 and with valid mailing address; but excluded charter, longline, aquarium, and precious coral fisheries.

Sampling and Other Respondent Selection Methods

We will survey the population, in order to achieve enough responses for data analysis by segment, such as county, fishing motivation, gear, and sub-fishery.

Expected Response Rate

The last two cost-earning surveys of the Hawaii small boat fishery in 2021 (Chan 2023)[9] and 2014 (Chan and Pan 2017)[10] achieved a 40% and 47% response rate, respectively. For a conservative estimate, we expect a 40% response rate and the number of respondents is estimated to be 352 (879×40%).

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[9] Chan HL. 2023. Economic and social characteristics of the Hawaii small boat fishery 2021. U.S. Dept. of Commerce, NOAA Technical Memorandum NOAA-TM-NMFS-PIFSC-138, 178 p. https://doi.org/10.25923/2s7e-7m45

[10] Chan HL, Pan M. 2017. Economic and social characteristics of the Hawaii small boat fishery 2014. U.S. Dept. of Commerce, NOAA Technical Memorandum NOAA-TM-NMFS-PIFSC-63, 97 p. https://doi.org/10.7289/V5/TM-PIFSC-63.

Table 5.1.1 Response Rate from Previous Cost-Earnings Studies of the Hawaii Small Boat Fishery

	2010	2014	2021
Population	1,009	1,763	879
Number of responses by mail	519	733	228
Number of responses by online survey	-	91	122
Response Rate	51%	47%	40%

Table 5.1.2 Expected Population and Sample Sizes, Number of Respondents, and Response Rate for the Hawaii Small Boat Fishery

	Expected
Population	879
Sample Size	879
Number of Respondents	352
Response Rate	40%

5.2   Describe the procedures for the collection of information including:

● Statistical methodology for stratification and sample selection,

● Estimation procedure,

● Degree of accuracy needed for the purpose described in the justification,

● Unusual problems requiring specialized sampling procedures, and

● Any use of periodic (less frequent than annual) data collection cycles to reduce burden.

Following the same approach as the 2021 Hawaii small boat cost-earnings survey, we will conduct a census survey of the population (active small boat Commercial Marine License holders). This is to ensure we will have enough responses to conduct analysis by segment.

Stratification and Sample Selection

We will survey the entire population of the fishers who held a State of Hawaii CML and with the following criteria that we consider comprising the small boat fishery: fishers who caught, landed, and sold at least one marine life using small vessels during 202x and with valid mailing address; but excluded charter, longline, aquarium, and precious coral fisheries.
Estimation Procedures

With the exception of the additional information provided below, the corresponding section of the response to Question 3.2 applies to this fishery too.

NMFS needs to measure the economic performance of the Hawaii small boat fishery in order to meet legal and regulatory requirements, support fisheries management decision making, and

undertake economic research. The last available cost-earnings data are for 2020 fishing operation. Fishery and economic conditions and regulations have changed since then. This survey will collect data needed to provide an updated baseline of cost-earnings relationships at the vessel level for the Hawaii small boat fishery based on 202X operation and to construct key economic performance measures such as operating costs, fixed costs, revenue, and profit.

Much of the data requested will be used to compute total and average cost, revenue, and profits, and to evaluate the economic and social characteristics of the small boat fishery for different segments (e.g. sub-fishery, county, primary gear type, self-identified fisherman type, etc.). Those estimates and socioeconomic characteristics are useful in understanding the socioeconomic conditions of the fishery and how they have changed.

Desired Accuracy Needed for the Intended Purpose

With the exception of the additional information provided below, the corresponding section of the response to Question 3.2 applies to this fishery too.

Using data from the 2021 cost-earnings study of the Hawaii small boat fishery, the margin of errors for estimates of the population means of annual variable costs and annual fixed costs at the 95% confidence level is 1%[11].

Unusual problems requiring specialized sampling procedures

We do not expect unusual problems in this survey.

Periodic Data Collection Cycle to Reduce Burden

NMFS intends to field the survey for this fishery once every 5 to 7 years to reduce the time burden and cost. However, due to a variety of factors that affect the appropriate frequency for this survey, it is requesting approval to conduct this survey as frequently as once every three years.

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

Methods Used To Maximize Response Rates

To maximize response rates, the survey will be conducted through mixed methodology including a mail component using a modified Dillman's Total Design Method and an online survey component. The mail methodology will consist of four-wave mailings, including: (a) a personalized letter inviting the potential respondents to participate the online survey, (b) the first

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[11] We used the following formula to estimate the margin of error: $e = 1.96\, s/\sqrt{n}$, where e=margin of error, s=sample standard deviation, n= sample size, and 1.96 denotes the critical value for 95% significance level.

mailing of survey booklet with personalized cover letter and pre-addressed stamped return envelope, (c) a reminder postcard of the mail survey mailed a week after the first survey mailing, and (d) the second mailing of survey booklet with cover letter to non-respondents three weeks after the reminder postcard. Besides filling out the survey in hard copy, the respondents have an option to fill out the survey online, and respondents will have their own password to login to the survey. A toll free number to NMFS economists will be provided to respondents for technical support or questions about the survey. We will conduct outreach activities before implementing the survey to ensure fishers are aware of it, e.g., advertisement in the Hawaii fishing magazine, presentation at the plan team meetings.

Addressing Non-Response

To deal with non-response, we will use a reminder postcard and a second mailing of survey booklet for the mail methodology. In addition, we will base testing for non-response bias on the considerable amount of data available for all members of the survey population. To test the representativeness of survey respondents, we will use data on primary gear usage (handline, troll, spear, etc.), which are available in the Hawaii CML records) for both survey respondents and non-respondents. Based on the previous cost-earnings studies on the Hawaii small-boat fisheries, gear type is one of the key factors that determine the variations of the costs and earnings among boats. Costs are likely to differ among gear types due to different trip length and fishing method. Different gear types usually target different species and revenues are likely to differ due to price difference among species. As a result, it is possible to compare respondents and non-respondents for costs and total dollar value landed with regard to gear types. If we detect non-response bias, we will make an effort to contact under-represented groups and use procedures to reweight the data or the estimated model to correct for any known bias.

Adequacy of Accuracy and Reliability of Information for Intended Uses

With the exception of the additional information provided below, the corresponding section of the response to Question 3.3 applies to this fishery too.

As discussed in the response to Part B, Question 5.2, our survey sample will allow us to estimate sample means within a 1% margin of error for the population means of annual variable costs and annual fixed costs at the 95% confidence level, respectively.

Justification if Data Collection Based on Sampling Will not Yield Reliable Data

Because the data collection will be based on the census of population with an expected response rate of 40%, we expect the data collection to yield reliable data. We address the methods of testing for and, if necessary, correcting for non-response bias in response to Question 5.2.

5.4 **Describe any tests of procedures or methods to be undertaken. Testing is encouraged as an effective means of refining collections of information to minimize burden and improve utility. Tests must be approved if they call for answers to identical questions from 10 or more respondents. A proposed test or set of tests may be submitted for approval separately or in combination with the main collection of information.**

The survey instrument is an updated version of the survey instrument used in the last cost-earnings study of the Hawaii small boat fishery. The survey instrument has been reviewed and pre-tested with federal staff of the PIFSC. All comments were considered in the design of the final survey instrument.

5.5 **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.**

Justin Hospital, the PIFSC Supervisory Economist, was consulted on the statistical design and analysis. He can be reached at 808-725-5399. An outside contractor will be used to implement the data collection. Researchers at PIFSC will enter and analyze the data under the supervision of NMFS economists. NMFS economists and WPRFMC staff will use the data for regulatory analyses.

6 PIFSC: American Samoa Small Boat Fishery Economic Data Collection

6.1   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 government units, households, or persons) in the universe covered by the collection and in the corresponding sample are to be provided in tabular form for the universe as a whole and for each of the strata in the proposed sample. Indicate expected response rates for the collection as a whole. If the collection had been conducted previously, include the actual response rate achieved during the last collection.

Potential Respondent Universe

The potential universe in the American Samoa small-boat fishery is about 60 fishermen. This is based on the average number of small boats (20 boats) from the boat-based creel survey in 2020-2022 and the average number of fishermen per boat (3 fishermen).

Sampling and Other Respondent Selection Methods

The whole population of small boat fishermen will be targeted, so no sampling or other respondent selection method will be used.

Expected Response Rate

The past response rate for the economic trip cost survey from the boat-based creel survey interviews in American Samoa in 2011-2018 was 84%. We expect the same response rate for the small boat population and the number of respondents is estimated to be 50 (60*84%). During the 2021 American Samoa small boat survey a total of 33 responses were received, although it is worth noting that this was implemented during the COVID-19 pandemic, so we would expect additional responses in future implementation, due to more fishers being active and fewer logistical challenges.

Table 6.1 Response Rate for the Previous Economic Trip Cost Survey Add-on to the Creel Survey (2011-2018)

Creel survey: number of trips intercepted	60
Response rate	84%
Expected responses	50

6.2   Describe the procedures for the collection of information including:

 ● Statistical methodology for stratification and sample selection,

 ● Estimation procedure,

 ● Degree of accuracy needed for the purpose described in the justification,

 ● Unusual problems requiring specialized sampling procedures, and

● Any use of periodic (less frequent than annual) data collection cycles to reduce burden.

We made no changes in the procedures or statistical methodology of the collection since the last approval.

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

With the exception of the additional information provided below, the corresponding section of the response to Question 3.2 applies to this fishery too.

NMFS needs to measure the economic performance of the American Samoa small boat fishery in order to meet legal and regulatory requirements, support fisheries management decision making, and undertake economic research. The last available cost-earnings data are for 2020. Fishery and economic conditions and regulations have changed since then. This survey will collect data needed to provide an updated baseline of cost-earnings relationships at the vessel level for the American Samoa small boat fishery based on 2027 operation and to construct key economic performance measures such as operating costs, fixed costs, revenue, and profit.

Desired Accuracy Needed for the Intended Purpose

With the exception of the additional information provided below, the corresponding section of the response to Question 3.2 applies to this fishery too.

Using trip cost data collected from the economic trip cost survey add-on to the creel survey between 2011 and 2019 in American Samoa, the annual average margin of error for the estimation of the population mean of variable cost at the 95% confidence level is 8%[12]. This level of precision will provide good estimation of fishing expenses, revenues, and profitability in general. NMFS will use the data collected for descriptive statistics and economic analyses purposes.

Unusual problems requiring specialized sampling procedures

We do not expect unusual problems in this survey.

Periodic Data Collection Cycle to Reduce Burden

NMFS intends to field the survey for this fishery once every 5 to 7 years to reduce the time burden and cost. However, due to a variety of factors that affect the appropriate frequency for this survey, it is requesting approval to conduct this survey as frequently as once every three years.

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[12] We used the following formula to estimate the margin of error: $e = 1.96\ s/\sqrt{n}$, where e=margin of error, s=sample standard deviation, n= sample size, and 1.96 denotes the critical value for 95% significance level.

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

Methods Used To Maximize Response Rates

We will take several steps to maximize the response rates. First, we will contract with local field worker in American Samoa to conduct interviews. Ideally, we will collaborate with the existing boat-based data collection program in American Samoa to hire local field staff who are already familiar with surveying methodologies as well as with the fishermen. Second, the participation of the survey is voluntary and interviewers are trained to request permission to conduct the survey. If the interviewer feels the fisherman does not want to participate, the interviewer will immediately terminate the interview and thank the fisherman for his/her time. This approach respects island customs and cultural etiquette across the Pacific Islands Region and will ensure the agency maintains a good relationship with the local fishing communities. Given the small, tight-knit, island fishing communities in American Samoa, this will avoid any negative impact to survey participation by other fishermen and negative impacts on future survey participation. Third, interviews will be conducted at times and places that are convenient for fishermen. This will minimize any potential disruption to fishermen's fishing practices. Fourth, a local speaking interviewer will be contracted to conduct the in-person interviews to minimize the language barrier and burden on non-English speaking fishermen. Fifth, we will pre-test the survey with five fishermen in American Samoa to make sure the question wording is easy to understand.

Addressing Non-Response

To deal with non-response in American Samoa, interviewers will attempt several times to conduct interviews, e.g. rotate between different time of day and different days of week. In addition, we will base testing for non-response bias on the considerable amount of data available for all members of the survey population. Data on gear usage (handline, troll, spear, etc.) are available for both survey respondents and non-respondents from the boat-based creel survey, and these data will be used to test the representativeness of survey respondents. Based on the previous cost-earnings studies on small-boat fisheries in the Pacific islands, gear type is one of the key factors that determine the variations of the costs and earnings among boats. Costs are likely to differ among gear types due to different trip length and fishing method. Different gear types usually target different species and revenues are likely to differ due to price difference among species. As a result, it is possible to compare respondents and non-respondents for costs and total dollar value landed with regard to gear types. If non-response bias appears evident in our survey responses, we will make an effort to contact groups that are under-represented to get a balance among different groups. In addition, we will use procedures to reweight the data or the estimated model to correct for any known bias.

<u>Adequacy of Accuracy and Reliability of Information for Intended Uses</u>

With the exception of the additional information provided below, the corresponding section of the response to 3.3 applies to this fishery too.

NMFS needs to measure the economic performance of the American Samoa small boat fishery in order to meet legal and regulatory requirements, support fisheries management decision making, and undertake economic research. Currently, cost-earnings data are outdated and cannot meet these needs.

As discussed in the response to Question 6.2, our survey sample will allow us to estimate the sample mean of variable cost within an 8% margin of error for the population mean at the 95% confidence level.

6.4   Describe any tests of procedures or methods to be undertaken. Testing is encouraged as an effective means of refining collections of information to minimize burden and improve utility. Tests must be approved if they call for answers to identical questions from 10 or more respondents. A proposed test or set of tests may be submitted for approval separately or in combination with the main collection of information.

We will pre-test the survey with five fishermen in American Samoa to make the survey easier to understand and complete.

6.5   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.

Justin Hospital, the PIFSC Supervisory Economist, was consulted on the statistical design and analysis. He can be reached at 808-725-5399. An outside contractor will be used to implement the data collection. Researchers at PIFSC will enter and analyze the data under the supervision of NMFS economists. NMFS economists and WPRFMC staff will use the data for regulatory analyses.

7 PIFSC: American Samoa, Guam, and The Commonwealth of The Northern Mariana Islands Small Boat-Based Fisheries Economic Data Collection (an add-on to each of three creel surveys)

7.1 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 government units, households, or persons) in the universe covered by the collection and in the corresponding sample are to be provided in tabular form for the universe as a whole and for each of the strata in the proposed sample. Indicate expected response rates for the collection as a whole. If the collection had been conducted previously, include the actual response rate achieved during the last collection.

Potential Respondent Universe

The potential respondent universe in terms of number of active small boats is difficult to estimate because there are no definitive measures of small boat fishing participation in the three island areas. The most relevant estimation of the active vessels is based on the creel survey programs administered by American Samoa Department of Marine and Wildlife Resources (DMWR), Guam Department of Agriculture's Division of Aquatic and Wildlife Resources (DAWR), and CNMI government Department of Lands and Natural Resources' Division of Fish & Wildlife (DFW). The potential universe in American Samoa small boat fishery was about 11–12 boats, this is based on the number of small boats landing pelagic species in 2021 and 2022[13]. In Guam and the CNMI, the estimated number of boat owners between 2018 and 2022 ranged from 463 to 566 in Guam, and from 71 to 117 in the CNMI (Chan 2024)[14].

Sampling and Other Respondent Selection Methods

Since the trip-level economic surveys are add-on to the existing creel survey data collection program, the statistical methods related to sampling for the trip-level economic surveys follow the creel survey data collection program design (https://inport.nmfs.noaa.gov/inport/item/5612). Details of the creel survey sampling methodologies are documented in Oram et al. (2011a, 2011b, 2011c)[15]. The sampling frame of the Boat-based Interview in the creel survey was

[13] WPRFMC, 2023. Annual Stock Assessment and Fishery Evaluation Report for the Pacific Pelagic Fisheries Fishery Ecosystem Plan 2022. T Remington, M Fitchett, A Ishizaki (Eds.). Honolulu: Western Pacific Regional Fishery Management Council.

[14] Chan, Hing Ling. (2024). Economic contributions of small boat fisheries in Guam and the CNMI. U.S. Dept. of Commerce, NOAA Technical Memorandum NMFS-PIFSC-160 29 p. doi: 10.25923/nsxb-my70

[15] Oram R, Tuisamoa N, Tomanogi J, Sabater M, Quach MMC, Hamm DC, and Graham C. 2011a. American Samoa boat-based creel survey documentation. Online at http://www.wpcouncil.org/wp-content/uploads/2015/08/American-Samoa-boat-based_Final_3_7_11_KB.pdf [accessed 27 November 2017].
Oram R, Flores T Jr, Tibbatts B, Gutierrez J, Gesner JP, Wusstig S, Quach MMC, Hamm DC, and Tao P. 2011b. Guam boat-based creel survey documentation. Online at http://www.wpcouncil.org/wp-content/uploads/2015/08/Guam_boat_based_Final_3_4_11_KB.pdf [accessed 27 November 2017].
Oram R, Roberto R, Trianni M, Quach MMC, Hamm DC, and Tao P. 2011c. Saipan boat-based creel survey documentation. Online at

developed by WPacFIN and the three local fisheries agencies as described in Supporting Statement Part A, Question 7.4. Interviews are conducted several times a month (4 to 10 times) using a systematic random sampling protocol at sites (ramps/docks) that are actively used for launching fishing boats. Sample dates are drawn for monthly sampling, which continues throughout the year. Each selected sample date contains two shifts: AM and PM. In addition, opportunistic interviews are conducted one to two times per month when there is not enough interview data for a particular fishing method. Opportunistic data are collected on non-scheduled survey dates at sample ports and sometimes other areas. These opportunistic surveys adjust the possible sampling bias resulting from "the scheduled creel surveys". The data collection efforts are organized and carried by the local fisheries agencies. An interview is conducted during the shift time by well-trained fisheries staff at the scheduled site when fishermen return from their fishing trip.

Expected Response Rate

The detailed sampling design and response rate for the economic survey are shown in Table 7.1. The creel survey intercept sample sizes and expected response rate of economic survey are calculated based on the average number of creel surveys completed and the average responses of economic surveys among the creel surveys in CNMI (2011-2023), American Samoa (2011-2023), and Guam (2013-2023), respectively.

The actual response rate of the economic survey from the creel survey in terms of boat coverage was 75% in American Samoa, 47% in CNMI, and 40% in Guam. In addition, the actual response rate of the economic survey from the creel survey in terms of fishing trip was 78% in American Samoa, 78% in CNMI, and 27% in Guam. Based on these response rates, we are confident that we can expect relatively high response rates for the future.

Table 7.1 Sampling Design & Response Rate for the Economic Add-on to the Creel Survey

Add-on (economic forms) to creel survey	Guam	CNMI	American Samoa
Estimated number of respondent universe (boats)	463–566	71–117	11–12
Creel survey intercept sample (boats)	227	118	12
Expected response rate	40%	47%	75%
Target number of economic surveys (boats)	91	55	9
Creel survey intercept sample (trips)	579	145	181
Expected response rate	27%	78%	78%
Target number of economic surveys (trips)	158	113	141

7.2 Describe the procedures for the collection of information including:

- Statistical methodology for stratification and sample selection,

- Estimation procedure,

- Degree of accuracy needed for the purpose described in the justification,

- Unusual problems requiring specialized sampling procedures, and

- Any use of periodic (less frequent than annual) data collection cycles to reduce burden.

Stratification and Sample Selection

The sampling methodology of the proposed survey will follow that used for the Boat-based Interview, as our survey is an 'add-on' portion to the creel survey. The Boat-based Creel Survey programs in the three island areas have been running for over 30 years. The creel survey is conducted several times a month, based on random sampling by type of day (weekday/weekend/ holiday) at sites that are actively used for launching fishing boats, throughout the year on an ongoing basis. Details of the survey locations, minimum survey days and shift times are shown in Appendix B. An interview is conducted by well-trained fisheries staff at the scheduled site and time when fishermen return from their fishing trip. If possible, all boats returning to the ramps/docks during the sample shift time will be interviewed, in the order of arriving time. When too many boats return at the same time and cannot all be interviewed, staff prioritize interviews so that boats fishing with the least-encountered fishing methods for the past month are interviewed first.

Estimation Procedures

The NMFS needs to measure the trip-level economic performance of American Samoa, Guam, and the CNMI small boat fisheries in order to meet legal and regulatory requirements, support fisheries management decision making, and undertake economic research. This survey collects the data that is needed (but not currently available from other sources) to continue updating our knowledge of fishing expenses in these three island areas, so that the trends of fishing expenses in each island areas can be maintained and the regional comparisons of fishing expenses can be supported.

The data collected will be used to generate statistical description of fishing trip costs in the three island areas in general and by major fishing method. The estimated trip costs are useful to help understand the economic conditions of the fishery and how they may have changed. Such data summaries are the type of information that fishery managers, participants, and the public commonly wish to have provided. The data summaries on trip cost structure and trends were included in Council's Annual Stock Assessment and Fishery Evaluation Reports by the Western Pacific Fishery Management Council.

Desired Accuracy Needed for the Intended Purpose

Using the trip cost data collected between 2011 and 2023 for each island area, the annual average

margin of errors for estimation of the population mean of trip cost at the 95% confidence level are 13% for Guam, 10% for American Samoa, and 12% for CNMI[16]. This level of accuracy will provide good estimation of fishing expenses in general. The data collected will be used for economic analyses. Detailed economic analyses are described in Supporting Statement Part A, Question 1.2.

Unusual problems requiring specialized sampling procedures

We do not expect unusual problems in this survey.

Periodic Data Collection Cycle to Reduce Burden

NMFS intends to field the survey following the same sampling methodology of the boat-based creel survey, which is to conduct the survey several times a month (4 to 10 times) using a systematic random sampling protocol at sites that are actively used for launching fishing boats.

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

Methods Used to Maximize Response Rates

Several steps will be taken to maximize the response rates. First, all staff members are trained in in-person interviewing techniques to make sure the survey is administered properly. This includes requesting permission to do the interview. Second, the participation is voluntary. If the interviewers feel the fisherman does not want to participate, they immediately terminate the survey and thank the fisherman for the time. This approach is respectful of island customs and cultural etiquette across the Pacific Islands Region and will ensure the agency maintains a good relationship with the local fishing communities. Given the small, tight-knit, island fishing communities in the three island areas, this will avoid any negative impact to survey participation by other fishermen and negative impacts on future survey participation. Third, the survey is short in length, only five major trip cost item questions and one question about engine type will be asked; the estimated time to complete the questions is 5 to 10 minutes. Fourth, because of the long history of the creel survey with the economic data having been collected in the past few years, the interviewers have already established good relationships with small boat fishermen and fishermen are familiar with the questions being asked. Finally, we are planning to produce a brochure summarizing the economic data from previous years and distribute it to the fishermen during their community meetings as one of the outreach activities so fishermen may have better understand how the data are presented and used in publications. We feel that sharing the

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[16]   The margin of error for each island area is estimated using the trip cost data for 2011-2023 in the formula $e = 1.96 \times s/\sqrt{n}$. Each year's trip cost data were used to calculate the sample standard deviation "s", the number of responses "n", and the margin of error "e" at 95% confidence level for each year. Then, an average of the margin of errors across 2011-2023 was calculated for each island area.

information can build trust within the community and encourage fishermen to participate in data collection and provide additional incentive to fishermen for survey participation. The response rate in Guam was the lowest across the three island areas, we contacted the offshore biologist in DAWR, Thomas Flores, Jr., who is managing the offshore boat-based creel survey program about the issue and he confirmed that he would remind his staff to encourage fishermen to respond to the economic questions.

Addressing Non-Response

Based on the previous years' data collection, the trip-level economic surveys received high response rates. The trips with economic data compared to the total creel survey responses in terms of fishing trip was 78% in American Samoa, 78% in CNMI, and 27% in Guam. In addition, we collected a large number of economic surveys in all years (113–158 surveys per year on average in each island area). In addition, opportunistic creel surveys are conducted if not enough interview data are available for a particular fishing method. This helps to supplement data for the less common fishing methods. Since the add-on economic surveys are voluntary, there are non-responses. Trip costs are likely to differ among fishing methods due to different trip length and target. Therefore, it is possible to compare respondents and non-respondents with regard to fishing method. If there is a significant difference in the fishing method between the two groups, weights can be applied when estimating the average fishing expenses for the less representative groups.

Adequacy of Accuracy and Reliability of the Information for Intended Uses

Because the fishing expense data will be collected right after the fishing trip is completed, it is expected that the fisherman will have good recall and can provide accurate data of the fishing expenses. From the interviews with the creel data, survey managers (Supporting Statement Part A, Question 7.8), they all agreed fishermen are able to provide accurate answers.

In addition, to ensure the quality of the collected data, all staff in the creel survey programs undergo quality assurance and quality control training for data handling, backing up the database, and archiving the raw data.

Based on the actual economic survey response rates, we should have an adequate sample size for reliable estimates of fishing expenses. As mentioned in Supporting Statement Part B, Question 7.2, the margin of errors for estimation of the population mean of trip cost at the 95% confidence level are 10% for Guam, 8% for American Samoa, and 8% for CNMI.

For a description of the specific uses the agency plans for the data collected, see the response to Question 1.2 in Part A.

7.4   Describe any tests of procedures or methods to be undertaken. Testing is encouraged as an effective means of refining collections of information to minimize burden and improve utility. Tests must be approved if they call for answers to identical questions from 10 or more respondents. A proposed test or set of tests may be submitted for approval separately or in combination with the main collection of information.

This economic survey has been conducted in the three island areas for nine years; there is no need to pre-test the survey.

7.5   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.

Dr. Minling Pan, economist and project lead, employed by the NMFS, was consulted on the statistical design. Dr. Minling Pan can be reached at 808-725-5349. The creel survey fieldworkers/crews in the three local agencies are collecting the data (as listed in supporting Statement Part A, Question 7.4). NMFS economists will oversee the data collection program, and NMFS economists, WPRFMC staff, and the local agencies will use the data for regulatory analysis.

8   PIFSC: Mariana Archipelago Small Boat Fishery Economic Data Collection

8.1   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 government units, households, or persons) in the universe covered by the collection and in the corresponding sample are to be provided in tabular form for the universe as a whole and for each of the strata in the proposed sample. Indicate expected response rates for the collection as a whole. If the collection had been conducted previously, include the actual response rate achieved during the last collection.

Potential Respondent Universe

There is no robust licensing or reporting requirements in these island areas, so the potential respondent universe is defined in terms of the estimated number of active small fishing boats in 2023 in Guam and the CNMI. Due to data limitations, estimates for 2024 will not be available in time to inform survey implementation. Table 8.1 shows the estimated number of active small fishing boats in the two island areas. We use pelagic boats as a proxy for active boats given this targeting behavior is ubiquitous across the region. The estimated combined survey population (boats) is 573. We will survey the operators and crew of those vessels because they are the only individuals who can supply the requested economic data for this fishery.

Table 8.1 Estimated Number of Pelagic Small Fishing Boats.

	Estimated Number of Active Vessels
Guam (2023)	466
CNMI (2023)	112 *(77 boats on Saipan + an estimated 35 boats on Tinian and Rota based on past fieldwork)*
Total	578

Source: Western Pacific Region Status of the Fisheries 2023
https://www.wpcouncil.org/wp-content/uploads/2024/08/WPRFMC_StatusoftheFisheries_2023_WEB.pdf

Sampling and Other Respondent Selection Methods

For the data collection, we plan to use similar methodologies as in prior cost-earnings studies in this region and we will use a contracted outside vendor to administer the survey (Hospital and Beavers 2012: https://repository.library.noaa.gov/view/noaa/4420; Hospital and Beavers 2014: https://repository.library.noaa.gov/view/noaa/4773). The majority of the surveys in the last two cost-earnings studies (2011 and 2018) were completed in-person by fishers who attended community meetings, with additional surveys either conducted in-person facilitated by an interviewer, or distributed and collected by the contractor for fishers who were unable to attend the community meetings but willing to fill out the survey voluntarily (Table 8.2). This may include intercept fishers at fishing ports, the Guam Fishermen's Cooperative Association (GFCA), fishing clubs, and roadside vendors. The community meetings were well attended by fishers representing the diversity of the small boat fishing population, and nearly all fishers who attended the community meetings completed the survey, so sampling through the community

meetings is not expected to generate too much sampling bias and non-response bias. Multiple meetings were scheduled at convenient evening times in central locations to maximize accessibility for all fishers. In addition, a contractor with a good understanding of and strong connections with the local fishing communities will administer the survey. The data collection in 2025 will last several months, allowing ample time for us to collect a representative sample of fishers in Guam and the CNMI. These are small, tight-knit, island fishing communities. From the feedback of knowledgeable members of these communities, we have received assurances and support that our samples from the past data collections were representative of active members of the Guam and CNMI fishing communities. We will also consult with the knowledgeable members of local fishing communities during the data collection process in 2025 to ensure the data we collected are representative.

Anyone who has fished from a boat in the past year (2024) is eligible to participate in the survey and no sampling or other respondent selection methods will be used, as there is no viable sampling frame to draw from because no existing contact information or permitting systems are available for active small boat fishers in Guam and the CNMI.

Table 8.2 Number of Respondents from Past Studies.

Survey implemented in 2011 [2,3]	Guam	CNMI
Completed Surveys from Community Meetings	111	100
Completed Surveys from In-Person Volunteer Participants	36	12
Total Completed Surveys	147	112
Estimated Number of Active Vessels in 2010-2011	454	157
Percent of Estimated Number of Active Vessels Responded	**32%**	**71%**
Survey implemented in 2018 [4,5]		
Total Completed Surveys	110	68
Estimated Number of Active Vessels in 2018	398	110
Percent of Estimated Number of Active Vessels Responded	**28%**	**62%**

[2] Hospital and Beavers (2012), [3] Hospital and Beavers (2014), [4] Dombrow et al. (*currently in NMFS/PIFSC editorial review*), [5] Dombrow et al. (*currently in NMFS/PIFSC editorial review*)

Expected Response Rate

The data for the previous cost-earnings studies of the CNMI and Guam small boat fisheries (Hospital and Beavers, 2012, 2014) were successfully collected by a contractor and it achieved exceptional responses: 147 and 110 surveys were collected in Guam in 2011 and 2018 respectively, and 112 surveys and 68 surveys were collected in the CNMI in 2011 and 2018, respectively. Nearly all fishers who attended the community meetings completed the surveys in 2011.

Regarding non-respondents, it is difficult to estimate the coverage of the survey sample because there are no definitive measures of small boat fishing participation in the Marianas and no robust licensing and reporting requirements. Estimation of active vessels across the region is developed by the Western Pacific Fisheries Information Network (WPacFIN) based on the creel survey

programs administered by the Guam Division of Aquatic and Wildlife Resources (DAWR) and the CNMI Division of Fish and Wildlife (DFW). In 2019, WPacFIN estimated that there were 454 active vessels in Guam and 122 in the CNMI in 2010-2011 and 398 and 75 active vessels in Guam and the CNMI, respectively in 2018. However, WPacFIN's estimates for the CNMI only include the island of Saipan; there is also small boat fishing in Tinian and Rota. During 2011, due to fieldwork at the time, it was estimated that there were 15 small boats in the island of Tinian and 20 small boats in the island of Rota. Therefore, the total number of small boats in the CNMI was estimated to be 157 in 2010-2011 and 110 in 2018. This converts to a 32% and 28% of estimated active vessels responding in Guam in 2011 and 2018, respectively, and 71% and 62% of estimated active vessels responded in the CNMI in 2011 and 2018, respectively (Table 4).

Given similar survey populations and their positive experience and participation with past surveys (2011 and 2018), and support from a contracted outside vendor, we expect similar response rates with the 2025 survey implementation, estimated at approximately 30% for Guam and 67% for the CNMI (an average of 2011 and 2018, respectively – Table 8.2). This would result in estimated survey response of approximately 140 surveys on Guam and 75 surveys in the CNMI (approximately 52 surveys on Saipan with an additional 23 surveys across Tinian and Rota, based on past experience on these islands).

8.2   Describe the procedures for the collection of information including:

● Statistical methodology for stratification and sample selection,

● Estimation procedure,

● Degree of accuracy needed for the purpose described in the justification,

● Unusual problems requiring specialized sampling procedures, and

● Any use of periodic (less frequent than annual) data collection cycles to reduce burden.

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

The NMFS needs to measure the economic performance of Marianas Archipelago small boat fisheries in order to meet legal and regulatory requirements, support fisheries management decision-making, and undertake economic research. The last available cost-earnings data was in 2017. Fisheries and economic conditions and regulations have changed since then. This survey collects the data that is needed (but not currently available from other sources) to provide an updated baseline of cost-earnings relationships at the vessel level for Marianas Archipelago small boat fisheries based on 2023 operation and to construct key economic performance measures such as operating costs, fixed costs, revenue, and profit.

Much of the data requested will be used to compute total and average cost, revenue, and profits,

and to evaluate the economic and social characteristics of the small boat fisheries in different segments (e.g. primary fish target, highliner vs. non-highliner, etc.). The estimated cost-earnings information and socioeconomic characteristics are useful to help understand the socioeconomic conditions of the fisheries and how they may have changed. Such data summaries are the type of information that fishery managers, participants, and the public commonly wish to have provided.

Desired Accuracy Needed for the Intended Purpose

Using the Marianas cost-earnings survey data collected in 2011, the margin of errors for estimation of the population means of annual variable costs and annual fixed costs at the 95% confidence level are 4% and 3%, respectively. This level of precision will provide good estimation of fishing expenses, revenues, and profitability in general. NMFS will use the data collected for descriptive statistics and economic analyses[17]. This level of accuracy will provide good estimation of fishing expenses, revenues, and profitability in general. The data collected will be used for descriptive statistics and economic analyses. Detailed economic analyses can be found in Supporting Statement Part A, Question 1.2.

Unusual problems requiring specialized sampling procedures

We do not expect unusual problems in this survey.

Periodic Data Collection Cycle to Reduce Burden

The NMFS intends to field the survey once every 5 to 8 years to reduce burden. However, due to a variety of factors that affect the appropriate frequency for this survey, it is requesting approval to conduct this survey as frequently as once every three years.

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

Methods Used to Maximize Response Rates

A number of methods were used to maximize survey response during the previous Marianas cost-earnings surveys, and will be used during this survey. First, before the administration of the survey, outreach will be conducted during the fishery management council meetings and other public meetings for fishing community members to introduce the upcoming survey to encourage survey participation. Second, we keep the survey as short as we can while maintaining consistency across years. This proposed cost-earnings survey is nearly identical to previous cost-earnings survey of Marianas small-boat fisheries but we have shortened it slightly. We tried to focus on the main questions related to costs, earnings, and fishing characteristics and eliminate any unnecessary questions that appeared in the previous survey. The interview form was tested

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[17] We used the following formula to estimate the margin of error: $e = 1.96 s/\sqrt{n}$, where e=margin of error, s=sample standard deviation, n= sample size, and 1.96 denotes the critical value for 95% significance level.

and implemented successfully in the previous studies and it was shown that the previous surveys were feasible given their high response rates. Third, we will use the same methodology that was implemented successfully in recent cost-earnings surveys in the Marianas, which includes using a contractor who has strong connections with the fishing communities and is familiar with the logistics and culture in doing fieldwork in the Marianas to administer the survey. Fourth, given the timely feedback of results in 2012 through research summary brochures and the distribution of survey reports to all fishers that completed the survey, as well as providing additional copies of results to local fishery agencies, we feel that we have built a trust within the community. Fifth, participation in the survey effort is voluntary, and interviewers are trained to request permission to do the survey using culturally appropriate approaches. If the interviewer feels the fisher does not want to participate, he will immediately terminate the survey and thank the fisher for the time. This approach is respectful of island customs and cultural etiquette across the Pacific Islands Region and will ensure the agency maintains a good relationship with the local fishing communities. Given the small, tight-knit, island fishing communities in the Marianas, this will avoid any negative impact to survey participation by other fishers and impacts to future survey participation. Sixth, interviews will be conducted at times and places that are convenient to fishers. This will minimize any potential disruption to fishers' fishing practices. Seventh, in-person interviews may be conducted in first languages, where appropriate, to accommodate literacy and language barriers.

Addressing Non-Response

In the past, community meetings were well attended by fishers that represented the small boat fishing population very well, and nearly all fishermen who attended the community meetings completed the survey. If for some reason the participation and responses from the community meetings are low compared with the previous cost-earnings studies and the estimated number of active vessels, the contractor will reach out to non-respondents to encourage survey participation. Since the contractor has strong connections with the local fishing communities and experience in doing fieldwork in the Marianas, the contractor will be able to reach out to non-respondents via individually scheduled interviews, at times and places that are convenient to fishers. These places include fishing ports, fishermen's cooperative association, fishing clubs, roadside vendor, etc.

Adequacy of Accuracy and Reliability of Information for Intended Uses

This study will collect data that are needed to: 1) construct key economic performance measures (e.g., operating costs, fixed costs, revenue); 2) evaluate the economic and social characteristics of the small boat fisheries in different segments (e.g. primary fish target, highliner vs. non-highliner, etc.) and 3) provide an updated baseline of cost-earnings analysis and to support comprehensive analysis of changes in producer surplus and financial profit that are attributable to alternative regulatory actions by the Western Pacific Fishery Management Council (WPFMC). The data gathered and performance measures constructed will be used to address a wide range of issues.

The estimated cost-earnings information and socioeconomic characteristics are useful to help understand the socioeconomic conditions of the fisheries and how they have changed. Such data

summaries are the type of information that fishery managers, participants, and the public commonly wish to have provided.

As discussed in the response to Question 8.2, our survey sample will allow us to estimate sample mean within 4% and 3% margin of error for the population means of annual variable costs and annual fixed costs at the 95% confidence level, respectively. NMFS will use the data collected for descriptive statistics and economic analyses[18]. This level of accuracy will provide good estimation of fishing expenses, revenues, and profitability in general. The data collected will be used for descriptive statistics and economic analyses.

8.4   Describe any tests of procedures or methods to be undertaken. Testing is encouraged as an effective means of refining collections of information to minimize burden and improve utility. Tests must be approved if they call for answers to identical questions from 10 or more respondents. A proposed test or set of tests may be submitted for approval separately or in combination with the main collection of information.

As this survey is very similar to multiple successful past data collections for these fisheries, survey testing is not necessary. Nevertheless, in the past, we have pretested the survey through expert review, with PIFSC staff in the Marianas and WPFMC staff, intimately familiar with fishing practices and the fishing community to make sure the instrument is easy to understand and complete.

8.5   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.

Justin Hospital, Supervisory Economist, employed by the NMFS, was consulted on the statistical design and analysis. He can be reached at justin.hospital@noaa.gov or 808-725-5399. A contractor will be used to implement the data collection. Researchers at PIFSC analyze the data under the supervision of NMFS economists. NMFS economists and WPFMC staff will use the data for regulatory analyses.

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[18] We used the following formula to estimate the margin of error: $e = 1.96 \, s/\sqrt{n}$, where e=margin of error, s=sample standard deviation, n= sample size, and 1.96 denotes the critical value for 95% significance level.

9 SEFSC: USVI F Small-Scale Commercial Fisheries Economic Data Collection

9.1   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 government units, households, or persons) in the universe covered by the collection and in the corresponding sample are to be provided in tabular form for the universe as a whole and for each of the strata in the proposed sample. Indicate expected response rates for the collection as a whole. If the collection had been conducted previously, include the actual response rate achieved during the last collection.

Potential Respondent Universe

The absence of federal fishing licenses in the U.S. Caribbean required us to draw on the list of licensed fishermen from the USVI Division of Fish and Wildlife. The list of licensed fishermen for 2023/24 included 308 licensed fishermen (167 in St. Croix district and 141 in St. Thomas and St. John district).

Sampling and Other Respondent Selection Methods

We plan to contact 308 commercial fishermen in USVI in the survey year (Table 9.1), if we receive sufficient funds. If partial funding is received, then we plan to use a stratified random sample, where each stratum corresponds to a district (i.e. St. Thomas/St. John and St. Croix). The sample size of each stratum will be proportionate to the population size of the stratum.

Expected Response Rate

We anticipate an 82% response rate, drawing from Kojis et al.'s (2017) similar study in the U.S. Caribbean.[19] To generate comprehensive fishery estimates, we will apply district-specific weights based on the number of fishermen in each area. This approach helps counteract potential non-response bias that could arise from varying response rates across districts, ensuring our final estimates are more representative of the entire fishery.

Table 9.1 Population size, sample size, expected response rate, and number of expected completed surveys per strata for the USVI survey.

Strata (District)	Population Size (2024)	Expected Response Rate	Expected Number of Completed Surveys per Strata
St. Thomas/St. John	141	0.82	116
St. Croix	167	0.82	137
Total	308	0.82	253

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[19] Kojis, B., N. Quinn, and J. Agar 2017. Census of licensed fishermen of the U.S. Virgin Islands (2016). NOAA Technical Memorandum NMFS-SEFSC-715, 160 p. doi: 10.7289/V5/TM-SEFSC-715

9.2   Describe the procedures for the collection of information including:

- Statistical methodology for stratification and sample selection,

- Estimation procedure,

- Degree of accuracy needed for the purpose described in the justification,

- Unusual problems requiring specialized sampling procedures, and

- Any use of periodic (less frequent than annual) data collection cycles to reduce burden.

Stratification and Sample Selection

We will use voluntary surveys to gather costs, earnings, and related information from fishers in the U.S. Virgin Islands (USVI). The population will be stratified by district to better capture the economic performance of the small-scale fleet, which varies geographically due to the spatial and temporal availability of various finfish and shellfish species. Our sampling frame was obtained from the USVI Division of Fish and Wildlife.

A list containing fishermen's names, addresses, and phone numbers will be provided to the contractor.

Estimation Procedures

NMFS will use the collected data for both descriptive and analytical purposes, primarily to paint a comprehensive picture of fishery participants' socio-economic characteristics in fishery management plans. The data collections will be stratified across the two districts. Descriptive statistics, including means and medians, will be calculated to provide a clear snapshot of the fishery's current socio-economic state. To delve deeper into policy impacts, inferential statistical methods such as chi-square tests and ANOVA will be employed. These techniques will allow us to examine the effects of past policies and assess potential outcomes of future policy proposals across various user groups and coastal regions, accounting for spatial variations in the fishery landscape.

Degree of Accuracy Needed for Intended Purpose

Neither economic theory nor legislative mandates establish the degree of accuracy needed for these intended uses. While higher accuracy is preferred, we expect this survey to provide sufficiently accurate and useful data for the intended purposes. Using the figures in Table 9.1. and response rates from Kojis et al. 2017, we could report the sample mean of fishermen's income share from fishing with a 2% margin of error at a 95% confidence interval for the entire fishery.[20]

Unusual Problems Requiring Specialized Sampling Techniques.

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[20] With a finite population correction factor, the associated margin of error for a 95% confidence interval for the mean ratio cost is +/- 1.96 $⟦CV⟧\_X \sqrt{((N-n)/(n(N-1)))}$.

No unusual problems requiring specialized sampling techniques are anticipated based on our experience surveying in the region.

Periodic Data Collection Cycles to Reduce Burden.

To reduce burden, NMFS plans to field the survey once every 6 years but requests approval to conduct it as frequently as once every three years if necessary.

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

Methods Used To Maximize Response Rates

We have and will take several steps to maximize response rates and to deal with non-response. First, the interviewers must have considerable survey experience and familiarity with local fishing communities and practices. Second, the in-person interviews will be conducted at a time and place very convenient for the fishermen. This will minimize any potential disruption to their fishing practices. Third, respondents will be asked to provide information about major gear and cost categories only, thus avoiding what respondents often perceive as unnecessary detail. Last, surveys will be available in English and Spanish to further reduce any burden to non-English speaking fishermen.

Strategy to Address Non-Response

In addition to the response maximizing strategies outlined above, NMFS will test for non-response bias by considering the response rates by district and weight the survey responses to reflect the underlying population when conducting its analysis for the USVI as a whole.

Adequacy of Accuracy and Reliability of Information for Intended Uses

Among other things, the response to the previous question (Question 9.2) describes the degree of accuracy needed for the purpose described in the response to Part A, Question 1.2. That response describes the specific uses the agency plans for the data collected.

9.4 Describe any tests of procedures or methods to be undertaken. Testing is encouraged as an effective means of refining collections of information to minimize burden and improve utility. Tests must be approved if they call for answers to identical questions from 10 or more respondents. A proposed test or set of tests may be submitted for approval separately or in combination with the main collection of information.

We successfully conducted a similar data collection. Therefore, no tests are being planned in this iteration.

9.5   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.

Dr. Scott Crosson will collect the data and do the analysis. Dr. Crosson can be reached at 305-361-4468.

Dr. Juan Agar was consulted on the statistical aspects of the study design. Dr. Juan Agar can be reached at 305-361-4218.

10 SEFSC: Puerto Rico Small-Scale Commercial Fisheries Economic Data Collection

10.1 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 government units, households, or persons) in the universe covered by the collection and in the corresponding sample are to be provided in tabular form for the universe as a whole and for each of the strata in the proposed sample. Indicate expected response rates for the collection as a whole. If the collection had been conducted previously, include the actual response rate achieved during the last collection.

Potential Respondent Universe:

The absence of federal fishing licenses in the U.S. Caribbean required us to draw from the local trip ticket and commercial fishermen census databases to build the sampling frames for Puerto Rico, which should include all commercial saltwater fishermen. The trip ticket database provided us with a list of active fishermen (i.e., actively landing fish) and the censuses supplied us with their most current addresses. In 2016, the Puerto Rico trip ticket databases recorded 1,013 active fishermen, but the Puerto Rico Department of Natural and Environmental Resources (DNER) estimates there are additional 300-500 fishermen that fish part-time and do not report fishery statistics.

Sampling and Other respondent Selection Methods:

We plan to contact all (approximately 1,500) commercial fishermen in Puerto Rico in the survey year (Table 10.1), if we receive sufficient funds. If partial funding is received, then we plan to use a stratified random sample, where each stratum corresponds to a coastal region (i.e. North, South, East, and West). The sample size of each stratum will be proportionate to the population size of the stratum.

Expected Response Rate:

We estimate a response rate of 82% based on Kojis et al.'s (2017) work with a similar methodology in the U.S. Caribbean.[21] Due to the size and regional variation of the Commonwealth of Puerto Rico, we plan to stratify the population by coastal region (i.e., North, South, East and West). To produce fishery-wide estimates, we will weight each coastal region by the number of fishermen in the area to adjust for any differences in response rates by region that could introduce non-response bias for those estimates.

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[21] Kojis, B., N. Quinn, and J. Agar 2017. Census of licensed fishermen of the U.S. Virgin Islands (2016). NOAA Technical Memorandum NMFS-SEFSC-715, 160 p. doi: 10.7289/V5/TM-SEFSC-715

Table 10.1 Population size, sample size, expected response rate, and number of expected completed surveys per strata for the Puerto Rico survey.

	Strata	Estimated Population and Sample Sizes (funds permitting)	Expected Response Rate	Number of Expected Completed Surveys per Strata
Costs & Earnings	North coast	285	0.82	234
	West coast	450	0.82	369
	South coast	375	0.82	307
	East coast	390	0.82	320
Total	Total	1,500	0.82	1,230

10.2   Describe the procedures for the collection of information including:

● Statistical methodology for stratification and sample selection,

● Estimation procedure,

● Degree of accuracy needed for the purpose described in the justification,

● Unusual problems requiring specialized sampling procedures, and

● Any use of periodic (less frequent than annual) data collection cycles to reduce burden.

Stratification and Sample Selection:

We will use voluntary surveys to elicit costs and earnings and related information, and we will stratify the population by coastal region in Puerto Rico. The post-survey-stratification for Puerto Rico is needed because of the relative large size of this island and also to better capture the economic performance of the small-scale fleet which varies geographically due to the spatial (and temporal) availability of various finfish and shellfishes species.

A list containing contact information for commercial fishermen will be provided to the contractor. The list will contain the following information: fisherman's name, address, and phone number.

We have made no changes in the procedures or statistical methodology of the collection nor changed the variables collected since the last approval.

Estimation Procedures:

NMFS will use the data collected for descriptive statistics and analytical purposes. The data collected will be primarily used to describe fishery participants' socio-economic characteristics in fishery management plans. Descriptive (mean, median) and inferential statistics (chi square, ANOVA) will be used to examine the impact of past policies and future policy proposals by user group and coastal region. The procedures for estimating harvesting costs for the fishery as a

whole and for various subcomponents will be based on the standard equations available in various statistical texts. To reduce 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.

Degree of Accuracy Needed for Intended Purposes:

As noted above, neither economic theory nor legislative mandates establish the degree of accuracy required for describing the fishery and its participants in fishery management plans and amendments and for conducting socio-economic analyses. All else being equal, we prefer data that are more accurate; however, we expect this survey will provide sufficiently accurate and useful data for these intended purposes. Using the figures reported in Table 10.1, which are based on the response rates from Kojis et al 2017[22], we could report the sample mean of the share of fishermen's income derived from fishing with a margin of error of 2% of the population mean with a 95% confidence interval for the entire fishery.

Unusual Problems Requiring Specialized Sampling Techniques.

We do not anticipate unusual problems that necessitate specialized sampling techniques based on our experience surveying in the region.

Periodic Data Collection Cycles to Reduce Burden.

The NMFS intends to field the survey once every 6 years to reduce burden. However, due to a variety of factors that affect the appropriate frequency for this survey, it is requesting approval to conduct this survey as frequently as once every three years.

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

Methods Used To Maximize Response Rates:

We have and will take several steps to maximize response rates and to deal with non-response. First, the contractor to be hired must have considerable survey experience and familiarity with local fishing communities and practices. Second, the in-person interviews will be conducted at times and places convenient for fishermen. This will minimize any potential disruption to their fishing practices. Third, respondents will be asked to provide information about major gear and cost categories only, thus avoiding what respondents often perceive as unnecessary detail. Last, surveys will be available in English and Spanish to further reduce any burden to non-English speaking fishermen. The contractor will be fluent in both English and Spanish.

Strategy to Address Non-response

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[22] With a finite population correction factor, the associated margin of error for a 95% confidence interval for the mean ratio cost is +/- 1.96 $⟦CV⟧\_X \sqrt{((N-n)/(n(N-1)))}$.

In addition to the response maximizing strategies outlined above, we plan to deal with non-response using callbacks and two-phase sampling procedures as described in textbooks such as Lohr's (see, Lohr's, S., 1998. Sampling: design and analysis).

Adequacy of Accuracy and Reliability of Information for Intended Uses.

As noted earlier neither economic theory nor legislative mandates establish the degree of accuracy required for describing the fishery and its participants in fishery management plans and amendments and for conducting socio-economic analyses. The response to Question 10.2 describes the degree of accuracy and reliability needed for the purpose described in the response to Part A, Question 1.2. That response also describes the specific uses the agency plans for the data collected.

10.4   Describe any tests of procedures or methods to be undertaken. Testing is encouraged as an effective means of refining collections of information to minimize burden and improve utility. Tests must be approved if they call for answers to identical questions from 10 or more respondents. A proposed test or set of tests may be submitted for approval separately or in combination with the main collection of information.

We have successfully conducted this data collection before. No tests are planned in this iteration.

10.5   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.

Dr. Juan Agar was consulted on the statistical aspects of the study design. NMFS social scientists and CFMC staff will use the data collected for regulatory analysis. Dr. Juan Agar can be reached at 305-361-4218.

Dr. Manoj Shivlani, Department of Marine Ecosystems and Society, University of Miami, Miami, Florida 33149. Dr. Shivalani can be reached at 305-968-7136.
The field contractors/interviewers are yet to be determined.

11 SEFSC: Gulf of America Inshore Shrimp Fishery Economic Data Collection

11.1   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 government units, households, or persons) in the universe covered by the collection and in the corresponding sample are to be provided in tabular form for the universe as a whole and for each of the strata in the proposed sample. Indicate expected response rates for the collection as a whole. If the collection had been conducted previously, include the actual response rate achieved during the last collection.

Potential Respondent Universe

The population of interest is all vessels fishing for penaeid and rock shrimp in the State and inshore waters of the Gulf of America, i.e., Florida, Alabama, Mississippi, Louisiana, and Texas, during one calendar year, which do not have a federal shrimp permit. No sampling frame exists for this population. Instead, the frame must be tediously assembled in collaboration with the state fish and wildlife departments. Licenses that grant the right to harvest shrimp commercially in state waters are issued to individuals for specific vessels in Alabama, Florida, Mississippi, and Texas and to individuals for use on any vessel in Louisiana. To define a consistent population of commercial shrimpers in state waters, the survey effort will begin in 202X by identifying all commercial fishermen who landed shrimp commercially in 202X-1 using state trip ticket records in the four states where records are available: Texas, Louisiana, Alabama, and West Florida. In Mississippi, where trip ticket landing records for shrimp are not available, potential survey participants will be identified as those individuals holding a Mississippi resident commercial shrimp vessel license. We will remove all license holders whose names and addresses appeared on the list of federal shrimp vessel permit holders to create a sampling frame consisting only of state inshore shrimpers. Due to many known issues across the five states, the resulting sampling frame provides a rough approximation of the true population, and includes a substantial amount of non-active participants/vessels. However, a better approximation has not been identified. As of 2012 (see also Table 11.1), the last time this sampling frame was assembled, the sampling frame contained 4,042 unique vessels.

Sampling and Other Respondent Selection Methods

Due to the management and political importance attributed to delineation by state, and the unequal sizes of the states' inshore shrimp fleets, we will stratify the total population by state and sample with different inclusion probabilities. Vessels from Louisiana receive a substantially lower probability as Louisiana accounts for over two thirds of all vessels, i.e., we intend to oversample all the other states. In total, funding-permitting, we plan to randomly sample 1,500 vessels in five state strata.

Expected Response Rate

We expect a response rate of 31% based on the response rate obtained in previous costs and

earnings survey following a similar methodology[23]. For that survey, they had "A total of 437 questionnaires were returned for a raw response rate of 30.9 percent." While this seems low, the inshore commercial shrimp fisheries in the Gulf are very fluid with ill-defined participants and the sampling frame is a rough approximation. The state-level license lists are quite patchy and contact information often is out of date by the time we receive it. In previous effort, we received a substantial number of responses from respondents who we deemed ineligible, often because their shrimp fishing was for subsistence or recreational purposes only. A small non-response survey indicated that many non-respondents considered themselves commercial shrimp fishermen and averaged a similar number of annual shrimp trips as the respondents. They simply chose not to participate, especially in Louisiana.

Table 11.1 Population size, sample size, expected response rate, and number of expected completed surveys per strata for the inshore shrimp survey.

Strata	Population Size (in 2012)	Sample Size/Sub-population Size	Survey Sample	Expected Response Rate	Number of Expected Completed Surveys per Strata
Florida	166	0.6667	111	0.31	34
Alabama	114	0.6667	76	0.31	24
Mississippi	610	0.6667	407	0.31	126
Louisiana	2,829	0.2443	691	0.31	214
Texas	323	0.6667	215	0.31	67
Total	4,042		1,500	0.31	465

11.2   Describe the procedures for the collection of information including:

● Statistical methodology for stratification and sample selection,

● Estimation procedure,

● Degree of accuracy needed for the purpose described in the justification,

● Unusual problems requiring specialized sampling procedures, and

● Any use of periodic (less frequent than annual) data collection cycles to reduce burden.

Stratification and Sample Selection

For sampling, we will stratify the population by state and then randomly sample in each strata as described earlier, undersampling Louisiana in order to oversample the other four states, which have substantially smaller inshore shrimp fleets.

Estimation Procedures

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[23] Miller, Alexander, and Jack Isaacs. 2014. An Economic Survey of the US Gulf of Mexico Inshore Shrimp Fishery: Descriptive Results for 2021. Gulf States Marine Fisheries Commission Publication, Publication Number 227. Ocean Springs, Mississippi.

NMFS will use the data collected for descriptive statistics and analytical purposes. Descriptive uses include the estimation of average harvesting costs per trip and total harvesting costs for the fleet. The particular sampling design will require some adjustments to ensure consistent estimation of population means and other aggregate statistics. These methods will also correct for the bias if non-response is significant and skewed across the strata.

Degree of Accuracy Needed for Intended Purpose

With a 31% response rate, the procedure of randomly selecting 1,500 vessels from the list of 4,042 is expected to yield a sample of size 465. The formula for the standard error of the sample mean computed from a sample of size n randomly selected from a finite population of size N is $\sigma \sqrt{\frac{N-n}{n(N-1)}}$. With $n = 465$ and $N = 4,042$, the percentage reduction from the population standard deviation σ to the standard error of the sample mean is approximately[24] $1 - \sqrt{\frac{4,042-465}{465(4,041)}} =$ 95.6%. In general, the accuracy for the population level totals and means of the important variables should exceed the standard +/- 10% confidence interval at a 90% significance level for the larger groups. Given the overall uncertainty inherent to policy assessments of economic conditions in fisheries and given the quality and accuracy of other data used, the standard accuracy should suffice.

Unusual problems requiring specialized sampling procedures

We expect none, except for the previously mentioned weighted sampling of vessels by state.

Periodic Data Collection Cycle to Reduce Burden

The Gulf inshore shrimp survey is complementary to the Annual Economic Survey of Federal Gulf and South Atlantic Shrimp Permit Holders (OMB CONTROL NO. 0648-0591) which is conducted each year. The inshore survey is difficult to administer and produces rough results, hence it is only conducted infrequently to provide a rough overview of the economics of the quarter to a third of the overall Gulf shrimp fishery that is not covered by the federal shrimp survey. The inshore survey was previously conducted in 2008 and 2012. To reduce 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.

NMFS intends to field the survey once every 6 years to reduce burden. However, due to a variety of factors that affect the appropriate frequency for this survey, it is requesting approval to conduct this survey as frequently as once every three years.

11.3   Describe methods to maximize response rates and to deal with issues of non-response. The accuracy and reliability of information collected must be shown to be adequate for intended uses. For collections based on sampling, a special justification must be provided for any collection that will not yield "reliable" data that can be generalized to

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[24] This calculation assumes the same variance within strata. It is approximate in case variances across strata are different.

the universe studied.

Methods Used To Maximize Response Rates

The central approach to maximizing the response rate is to make completing the survey a very quick and simple process. Most questions allow for quick recall information, such as an estimated percentage rather than an exact number. We will take every action available to us to facilitate completing and returning the survey by the fishermen. General survey design techniques (Dillman method) and experience from the previous surveys will guide us. Noteworthy actions include, a) timing of the survey during the slow shrimp fishing season (winter and spring) and coinciding with tax time, when business records are being consulted and financial concerns are "top of mind," and b) using plain language and translating the survey into "language" spoken by southeast shrimp fishermen.

With the help of a contractor, the owner of each vessel selected will be contacted by mail in late February/early March 202X. That first mailing will contain a cover letter, the survey instrument and a return envelope. They will be asked to return the completed survey instrument to us in the enclosed, pre-paid envelope. If no response is received by April 30, up to two further letters will be sent (including additional survey instruments). We will also attempt to contact the non-responders by phone and urge them to return the survey. Information will not be collected during the phone call, and a further survey instrument will be sent – by mail, fax, or email – if requested

Strategy to Address Non-Response

We will conduct a small non-response survey to calibrate our results. We will conduct the non-response survey by phone only. We will ask if the survey was received and clarify that it was and is voluntary. If the survey was received, up to three further questions will be asked, depending on the level of cooperation with the phone respondent. First, we wish to ascertain if the vessel fished for shrimp commercially. Second, and only if yes to commercial shrimping, a rough indicator of fishing intensity in 202X-1 (rough count of days at sea), and, finally, the reason the survey was not returned. Table 11.3 includes the expected sample size, response rate, number of respondents, and burden hours for this small non-response survey.

Table 11.3 Expected Sample Size, Response Rate, and Number of Responses Per Strata for the Small Non-Response Survey.

Strata	Main Survey Sample Size	Number of Non-Respondents to Main Survey	Percent To Be Sampled	Number of Non-Respondents To the Main Survey To Be Sampled	Expected Response Rate	Number of Expected Completed Non-Respondent Surveys per Strata	Burden Hours (based on 5 minutes/ response)
Florida	111	77	0.1	8	0.31	3	0.3
Alabama	76	52	0.1	5	0.31	2	0.2
Mississippi	407	281	0.1	28	0.31	9	0.8
Louisiana	691	477	0.1	48	0.31	15	1.3
Texas	215	148	0.1	15	0.31	5	0.4
Total	1,500	1,035	████	104	████	34	2.8

If any major bias is noted in our non-response results, we will evaluate post-stratification methods.

Adequacy of Accuracy and Reliability of Information for Intended Uses

The statistical design and size of this sample survey will allow for valid, if rough, generalizations of the results to the population. We will use the trip ticket data, which are available for four of the five states, to test and adjust for non-response bias for the responses from those states. In addition, we will weight the survey responses to reflect the underlying population when conducting its analysis.

Among other things, the response to the previous question (Question 11.2) describes the degree of accuracy needed for the purpose described in the response to Part A, Question 1.2. That response describes the specific uses the agency plans for the data collected.

11.4   Describe any tests of procedures or methods to be undertaken. Testing is encouraged as an effective means of refining collections of information to minimize burden and improve utility. Tests must be approved if they call for answers to identical questions from 10 or more respondents. A proposed test or set of tests may be submitted for approval separately or in combination with the main collection of information.

The Gulf States Marine Fisheries Commission in collaboration with the Louisiana Department of Wildlife and Fisheries have successfully conducted this data collection in 2008 and 2012. No further tests are being planned in this iteration.

11.5   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.

Individual consulted on the statistical aspects of the design:
Jack Isaacs
Louisiana Dept. of Wildlife and Fisheries
Office of Fisheries
Socioeconomic Research and Development Section
PO Box 98000
Baton Rouge, LA 70898
jisaacs@wlf.la.gov

Persons who will actually have oversight and analyze the information:
Christopher Liese, Ph.D.
National Marine Fisheries Service
Southeast Fisheries Science Center
Social Science Research Group
(305) 365-4109
christopher.liese@noaa.gov

The mail and data entry contractor(s) are yet to be determined.

12 SEFSC: U.S. South Atlantic Region Golden Crab Fishery Economic Data Collection

12.1 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 government units, households, or persons) in the universe covered by the collection and in the corresponding sample are to be provided in tabular form for the universe as a whole and for each of the strata in the proposed sample. Indicate expected response rates for the collection as a whole. If the collection had been conducted previously, include the actual response rate achieved during the last collection.

There are only eleven golden crab permits in existence, and they are currently owned by six individuals in conjunction with their spouses or their corporations. No more than five permit have been active in any of the past five years. Because of this small population, all six permit owners will be contacted. All of the owners responded to the previous implementation of the survey.

12.2   Describe the procedures for the collection of information including:

- Statistical methodology for stratification and sample selection,

- Estimation procedure,

- Degree of accuracy needed for the purpose described in the justification,

- Unusual problems requiring specialized sampling procedures, and

- Any use of periodic (less frequent than annual) data collection cycles to reduce burden.

The survey is of the entire population of active permit owners. Because of the small size of this population, we will take several steps to ensure all active permit holder participate in the survey to ensure the resulting information will not be biased. To make the survey as palatable as possible, we will ask for only expenditure data and cost estimates and the survey is very short.

We will use the data collected through this survey for statistical inference of population values from sample respondents and for estimation of econometric models used for fisheries management. Neither economic theory nor legislative mandates establish the degree of accuracy needed for these intended uses. All else being equal, we prefer more accurate data; however, we expect this survey will provide sufficiently accurate and useful data for these intended uses and we believe the correct choices have been made with respect to the tradeoff between data accuracy and data collection costs.

The NMFS intends to field the survey once every 6 years to reduce burden. However, due to a variety of factors that affect the appropriate frequency for this survey, it is requesting approval to conduct this survey as frequently as once every three years. We have made no changes in the procedures or statistical methodology of the collection since the last approval.

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

Following Dillman (2007)[25], we will use the following plan to achieve a high response rate.

First, we developed a respondent-friendly questionnaire. The permit owners can easily fill in the expenditure forms by looking at the annual tax records for their businesses.

Second, we plan to make multiple contacts (if necessary) by first class mail. These contacts will include: a) a 'pre-notice letter' to alert the respondent about the impending questionnaire; b) a letter with the survey, c) a 'thank you postcard' sent to the respondent a few days after mailing the survey expressing appreciation for taking the time to respond to the survey and indicating that the completed instrument was not received; d) a letter and replacement questionnaire will be mailed to the respondents urging them to collaborate with the data collection, if the completed survey instrument was not received within a few weeks of the earlier mailing.

Third, respondents will be provided first class pre-paid envelopes so that they can easily return their completed questionnaires. In addition, the contractor will personalize the correspondence. Dillman (2007) notes that personalized mailings increase responses rates by 5-11% in multiple-contact general public surveys.

Last, permit owners will be contacted by telephone to remind them of the need for complete and accurate data. If permit owners cannot be reached by phone, the economist in charge of the project may drive to their business location, but this is unlikely to be necessary. The expenses of any respondents who do not respond will modeled using data from the rest of the fleet.

The last time NMFS conducted this information collection, these methods produced a 100% response. They are expected to do the same for the current information collection. Therefore, nonresponse will not be an issue.

Among other things, the response to the previous question (Question 12.2) describes the degree of accuracy needed for the purpose described in the response to Part A, Question 1.2. That response describes the specific uses the agency plans for the data collected.

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25 Dillman, D. A., 2007. Mail and Internet Surveys: The Tailored Design Method 2007 Update with New Internet, Visual, and Mixed-Mode Guide. 2nd Edition. John Wiley & Sons, Inc. Hoboken, NJ.

12.4   Describe any tests of procedures or methods to be undertaken. Testing is encouraged as an effective means of refining collections of information to minimize burden and improve utility. Tests must be approved if they call for answers to identical questions from 10 or more respondents. A proposed test or set of tests may be submitted for approval separately or in combination with the main collection of information.

All of the fleet's active crabbers completed the original implementation of this survey, and the implementation has not changed.

12.5   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.

Dr. Scott Crosson, a social scientist employed by NMFS, can be reached at 305-361-4468, scott.crosson@noaa.gov.

13 SWFSC: West Coast Coastal Pelagic Finfish and Market Squid Fishery Economic Data Collection

Note: The Southwest Fisheries Science Center (SWFSC) is currently conducting this information collection and plans to conduct it again in two to three years.

13.1 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 government units, households, or persons) in the universe covered by the collection and in the corresponding sample are to be provided in tabular form for the universe as a whole and for each of the strata in the proposed sample. Indicate expected response rates for the collection as a whole. If the collection had been conducted previously, include the actual response rate achieved during the last collection.

Potential Respondent Universe

We will send this survey to each owner of a commercial fishing vessel that during 202X or 202Y:

a) operated with a federal West Coast Coastal Pelagic Species (CPS) limited entry (LE) permit, or

b) participated in a West Coast live-bait fishery, or had landings of Coastal Pelagic Species fish on the West Coast (California, Oregon, and Washington), which accounted for the majority of its landings revenue, but did not operate with a limited entry permit for either West Coast groundfish or highly migratory species.

We will use CPS LE permit registrations and PacFIN landings records to identify eligible vessels.

Fish-ticket data from PacFIN indicates that there are 190 vessels in the survey population. These vessels are stratified as follows: 55 vessels in the CPS LE fishery; 7 vessels in the West Coast live bait fishery; and 128 vessels in the CPS open access (OA) fishery.

Vessels participating in the CPS OA fishery, which operated with a limited entry permit for either the West Coast groundfish or highly migratory species fisheries, will be included in the sample population for survey efforts focused on those fisheries. We exclude them from the CPS survey to prevent a vessel and its owner from being included in multiple West Coast surveys even if they participated in multiple West Coast fisheries. This will reduce the burden and cost of the West Coast surveys and increase response rates by decreasing survey fatigue.

Sampling and Other Respondent Selection Methods

This survey will be performed as a census of the 190 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.

Telephone numbers are available in the federal permit files for vessel owners in the CPS fishery with LE permits, but not for the other vessel owners in the CPS fishery. In an attempt to obtain telephone numbers for the latter owners, we will utilize a telephone number matching service to match their names and addresses with their telephone numbers.

<u>Expected Response Rate</u>

Based on the experience of the NMFSC with a matching service, we expect to obtain telephone numbers for 59% of those other vessel owners. For the other 41% of these vessel owners, mail is the only available contact method. Given the distribution of vessel owners between the LE and other CPS fisheries and the experience of the NWFSC, the expected overall response rate is 48%. That experience refers to their ability to find telephone numbers for those without LE permits, as well as their observed response rates by available contact method and type of fishery (LE vs. OA). With a survey population of 190 vessels, this implies approximately 91 survey responses.

Table 13.1 Population, sample size and response estimates for the West Coast Coastal Pelagic Species Fishery (2014 and 2018)

CPS Fishery Sector	Year	Vessel Population	Expected Response Rate	Expected Respondents
CPS LE	2014	50	55%	28
Live Bait	2014	6	45%	3
CPS OA	2014	85	45%	38
2014 Total		**141**	**49%**	**68**
CPS LE	2018	47	55%	26
Live Bait	2018	7	45%	3
CPS OA	2018	65	45%	29
2018 Total		**119**	**49%**	**58**
CPS LE	Combined	55	55%	30
Live Bait	Combined	7	45%	3
CPS OA	Combined	128	45%	58
Combined Total		**190**	**48%**	**91**

13.2   Describe the procedures for the collection of information including:

● Statistical methodology for stratification and sample selection,

● Estimation procedure,

● Degree of accuracy needed for the purpose described in the justification,

● Unusual problems requiring specialized sampling procedures, and

● Any use of periodic (less frequent than annual) data collection cycles to reduce burden.

Fielding, stratification, and sample selection

The SWFSC and its subcontractor will field the survey. To field the survey, information on the vessel owner name, mailing address, and telephone number will be taken from federal permit, state permit, and / or vessel registration files. In cases where telephone numbers are not available in the record, a telephone number matching service will be utilized. The SWFSC will send an initial advance letter mailing. We will follow that with a mailing that includes a cover letter providing an explanation of how data collected by the survey will be used by economists, a copy of the questionnaire, a reply postage pre-paid envelope for responding to the survey by mail, and instructions for responding via telephone interview or with a video call interview. This will provide survey recipients with an opportunity to see first-hand the data being collected by the survey.

About one week after the initial mailing, attempts to contact all non-respondents via telephone will begin, for the part of the population with known telephone numbers. 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 best response method (telephone or video call interview or mail) for a potential respondent. For those choosing a telephone or video call interview, an interview time will be scheduled. For the non-respondents without a known telephone number, we will send a reminder letter about two weeks after the initial mailing. A second reminder letter will be sent about four weeks after the initial mailing to non-respondents without a known telephone number. A copy of the questionnaire will be included in each reminder letter.

Estimation Procedure

NMFS will use much of the data requested to estimate total (or average) revenue, cost, variable cost net revenue (revenue minus variable costs), and total cost net revenue (revenue minus fixed and variable costs). Such estimates are useful in understanding the economic conditions of the fishery and how they have changed. Fishery managers, fishery participants and the public commonly want this type of information. Additionally, NMFS and the Council can use these estimates and the data on which they are based in predicting the effects on those conditions of changes in regulatory, market and environmental conditions. These estimates will also be used in the IO-PAC model (Leonard, 2011) 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 PFMC to report on the economic contribution and impacts of the fishery to regional economies.

Degree of Accuracy Needed for Intended Purpose

We will use the data collected through this survey for statistical inference of population values from respondents and for estimation of econometric models used for fisheries management. Neither economic theory nor legislative mandates establish the degree of accuracy needed for these intended uses. All else being equal, we prefer more accurate data; however, we expect this survey will provide sufficiently accurate and useful data for these intended uses and we believe

the correct choices have been made with respect to the tradeoff between data accuracy and data collection costs. Assuming a response rate of 48%, we expect to obtain 91 complete and usable surveys. The formula for the standard error of the sample mean computed from a sample of size n randomly selected from a finite population of size N is $\sigma \sqrt{\dfrac{N-n}{n(N-1)}}$. With $n = 91$ and $N = 190$, the percentage reduction from the population standard deviation σ to the standard error of the sample mean is approximately[26] $1 - \sqrt{\dfrac{190-91}{91(190-1)}} = 92.4\%$.

<u>Unusual problems requiring specialized sampling procedures</u>

We do not expect unusual problems in this survey. It is based on several successful survey efforts run by the NWFSC on a similar target population.

<u>Periodic Data Collection Cycle to Reduce Burden</u>

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 once every three years.

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

<u>Methods Used To Maximize Response Rates</u>

Over previous cost and earning survey fieldlings by the NWFSC, they developed a set of principles 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 have the options of responding, such as via telephone or video call interviews or by mail.

> 3) Discussions were held with members of the limited entry, live-bait, and open access fleets in an effort to clarify questions. Revenue and cost categories on the questionnaire correspond to the financial records maintained by vessel owners as much as possible.

<u>Strategy to Address Non-Response</u>

The corresponding section of the response to Question 1.3 applies to this fishery too.

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[26] This calculation assumes the same variance within strata. It is approximate in case variances across strata are different.

<u>Adequacy of Accuracy and Reliability of Information for Intended Uses</u>

Among other things, the response to the previous question (Question 13.2) describes the degree of accuracy needed for the purpose described in the response to Part A, Question 1.2. That response describes the specific uses the agency plans for the data collected.

13.4   Describe any tests of procedures or methods to be undertaken. Testing is encouraged as an effective means of refining collections of information to minimize burden and improve utility. Tests must be approved if they call for answers to identical questions from 10 or more respondents. A proposed test or set of tests may be submitted for approval separately or in combination with the main collection of information.

The survey cover letter and questionnaire are based on a similar cost and earnings data collection administered by the NWFSC. The NWFSC has successfully administered nine surveys. Prior to the first collection in 2005, the NWFSC performed extensive outreach to industry for the purposes of testing the survey instrument for clarity and ease of completion. The NWFSC survey instrument has been refined over time in response to feedback received from respondents. The SWFSC CPS survey has been reviewed by members of the PFMC's Coastal Pelagic Species Advisory Subpanel (CPSAS) and survey contractors from prior survey efforts and NMFS colleagues with experience in similar survey efforts.

13.5   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.

A contract to administer this information collection has been awarded.

Consolations with:
Jerry Leonard, PhD
Formerly at Northwest Fisheries Science Center
2725 Montlake Blvd. E.
Seattle, WA 98112
(206) 302-1742
Jerry.Leonard@noaa.gov

James Hilger, PhD
Southwest Fisheries Science Center
8901 La Jolla Shores Drive
La Jolla, CA 92037
(858) 546-7140
James.Hilger@noaa.gov

Agency Coordinator:
Stephen Stohs, PhD
Southwest Fisheries Science Center

8901 La Jolla Shores Drive
La Jolla, CA 92037
(858) 546-7084
 Stephen.Stohs@noaa.gov

14. SWFSC: West Coast Swordfish Fishery Economic Data Collection

14.1.   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 government units, households, or persons) in the universe covered by the collection and in the corresponding sample are to be provided in tabular form for the universe as a whole and for each of the strata in the proposed sample. Indicate expected response rates for the collection as a whole. If the collection had been conducted previously, include the actual response rate achieved during the last collection.

Potential Respondent Universe

The survey population includes fishing vessel owner/operators, processors, and aircraft owner/operators who participated in the commercial West Coast Swordfish Fishery during the 202X-2X+1 and 202X+1-2X+2 seasons, plus recent swordfish fishery participants who are currently inactive. In the 2017-18 season, 55 swordfish permits were issued and approximately 18 deep gillnet (DGN) and 21 harpoon (HPN) vessels actually fished. In the 2018-19 season, 56 swordfish permits were issued and approximately 21 DGN and 14 HPN vessels fished. In the 2019-20 season, 60 swordfish permits were issued and approximately 15 DGN and 16 HPN vessels fished[27]. In addition, a small number of fishermen made deep-set buoy gear or longline landings to the West Coast in recent years.

As of 2000, there were 69 drift gillnet (DGN) vessels and 26 harpoon (HPN) vessels participating in the west coast swordfish fishery, for a total of about 95 vessels (HMS SAFE Report), compared to 15 DGN and 16 HPN vessels reported fishing in 2019. Due to aging of west coast swordfish fishery participants, the majority of current participants were active as of 2000. We thus estimate the number of potential former participants as the difference between the total number of DGN and HPN participants in 2000 less the total for 2019, or 64 vessels.

Sampling and Other Respondent Selection Methods

The current survey will target the active DGN, HPN, longline, and deep set buoy gear vessels for 202X-2X+1 and 202X+1-2X+2. We will also attempt to contact any previous permittees who had DGN or HPN permits during the 2011 survey but are no longer participating in the fishery.

Expected Response Rate

The Southwest Fisheries Science Center (SWFSC) has conducted three previous economic cost earnings surveys of the fleet, under OMB Control No. 0648-0369. A survey fielded during 1999 obtained a 43% response rate. A second survey fielded during 2004 obtained responses from 54% of vessel owner/operators and the third survey conducted in 2010 obtained responses from 36% of DGN and HPN vessel owner/operators.

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[27] Additional 2019-20 data from HMS SAFE Report is available at: https://www.pcouncil.org/hms-commercial-fisheries-descriptions

The targeted survey fielding protocol for this survey would suggest a slightly higher response rate than the last survey. Factors that will generate a higher response rate include very close collaboration with industry leaders to ensure their on-going support, attendance at industry events where surveys can be discussed, and a survey method that includes phone and email follow-up to schedule telephone or video call interviews to administer the survey.

After eliminating double counting due to vessels that participated with multiple gear types, we estimate there are 26 active operators/owners. Based on the response rates for the 2004 and 2011 surveys, the two most recent surveys (see Table 14.1), a 50% vessel response rate is expected for the cost and earnings survey. This would yield approximately 13 completed vessel operator/owner surveys. We expect a 100% response rate from two fish spotters and two processors. Finally, we expect 50% or 32 of the 64 past participants will respond. This results in 49 completed surveys from current and past fishery participants. We anticipate an overall response rate of 51%[28].

Table 14.1 Population, response rate and burden estimates for the West Coast Swordfish Fishery.

Survey Group	Total Target Population	Expected Survey Response Rate	Expected Number of Survey Respondents	Average Burden Hours per Response (Hours)	Total Burden Hours
Current DGN + HPN + Other	26	50%[29]	13	1	13
Fish Spotters and Processors	4	100%	4	1	4
Past Participants	64	50%[30]	32	0.25	8
Total	94	52%[31]	49	0.51[32]	25

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[28] (50% of 26 + 4) /(26 + 4) = 17/30 = 57%

[29] Approximated based on response rates from ICRs in 2004 and 2011.

[30] This estimate is based on the estimate for current participants.

[31] Calculated using the total numbers of respondents and the total population.

[32] Calculated using the total burden hours and the total number of respondents.

14.2 **Describe the procedures for the collection of information including:**

- Statistical methodology for stratification and sample selection,

- Estimation procedure,

- Degree of accuracy needed for the purpose described in the justification,

- Unusual problems requiring specialized sampling procedures, and

- Any use of periodic (less frequent than annual) data collection cycles to reduce burden.

Stratification and Sample Selection

Given the small universe of potential respondents, this survey will be conducted as an attempted census. The desired degree of precision, and corresponding desired response rate, depend upon the application for which the data are being used. Some applications may use data from all survey respondents, while other applications will use data only from vessels that used a specific gear type or operate in a certain geographic location. A basic application of the survey data could be the inference of unobserved population mean values from the observed sample mean values.

Estimation Procedures

The completed responses for vessels will be stratified by vessel size, landings by weight, fishing method and port of registration. A statistical summary of the cost variables collected for each group of survey respondents will be compiled, using the respondent-level mean and variance of each variable to characterize these costs for different groups of industry constituents. We will use these values to characterize the fleet's cost structure for second-stage analysis in productivity or regional economic impact studies.

Degree of Accuracy Needed for Intended Purpose

For an example of anticipated precision of estimates, we consider the case of average variable costs. Results from the 2011 DGN-HPN fishery survey showed a coefficient of variation for reported category: variable costs of $CV_X = \frac{s}{X} = 1.06 \; for \; HPN \; vessels, \wedge \; \dot{\iota} 0.3$ for DGN vessels where X denotes respondent-level variable costs, s is the sample standard deviation and $\underline{X}$ is the sample mean. The formula for the coefficient of variation of mean variable costs estimated from survey results is $CV_{\overline{X}} = \frac{s_{\overline{X}}}{\overline{X}} \sqrt{\frac{N-n}{N-1}} = CV_X \sqrt{\frac{N-n}{n(N-1)}}$, where

the standard error for the sample mean is $s_{\overline{X}} = \frac{s}{\sqrt{n}}$, N is the survey target population size, and n is the survey sample size. The associated margin of error for a 95% confidence interval for the mean variable cost is $+/-1.96 \, CV_X \sqrt{\frac{N-n}{n(N-1)}}$, where 1.96 is the 97.5[th] percentile of a standard normal random variable. With target population sizes of 40 and 20 survey respondents for each

kind of vessel[33] (HPN or DGN), estimated mean variable costs would thus achieve an approximate margin of error of +/- 33% *for HPN vessels* and +/- 13% for DGN vessels with 95% confidence.

The example above is one of many potential examples for the various sample data categories, and the CVs will vary for different sample statistics and may not be the same for this new survey as for the previous one. It is likely that different levels of precision will be obtained for other statistics calculated from survey results.

<u>Unusual problems requiring specialized sampling procedures</u>

We anticipate no unusual problems requiring specialized sampling procedures.

<u>Periodic Data Collection Cycle to Reduce Burden</u>

This is a survey specifically designed to reduce the burden to the respondents. For example, NMFS intends to field the survey no more frequently than once every three years to reduce burden.

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

<u>Methods Used To Maximize Response Rates</u>

We will use a number of methods to maximize survey response rates: First, the survey team will work with industry group representatives to encourage survey participation. Second, respondents are asked to provide only information necessary to perform intended analysis and questions are structured in the most logical fashion to prevent repetition or unnecessary detail. Third, the interview form has been tested and will be implemented based on methods found most effective in those tests. Those methods include: taking advantage of opportunities to test interviews in person at industry events (such as NMFS captain orientation meetings); following up with non-respondents to conduct surveys by phone or email; and Dr. Hanan leveraging close relationships, personal and professional, with industry leaders and individual fishermen forged over 30 years working with the fleet. Fourth, the potential respondents will have three options for providing the requested information. They can provide it by a telephone or video call interview or by mail. Fifth, we will send intended participants a notification letter several weeks in advance of fielding the survey. Sixth, different versions of the survey instrument will be prepared to tailor the survey to different groups of participants, thereby reducing the form to the minimum length necessary to collect the requested information.

<u>Strategy to Address Non-Response</u>

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[33] This example assumes data collection will occur once every three years from target populations of these sizes.

We will base testing for non-response bias on the considerable amount of data available for all members of the survey population. Data on vessel physical characteristics and landings, which are available for both survey respondents and non-respondents from the federal and PacFIN databases, will be used to test the representativeness of survey respondents. No personally identifiable information will be provided to NMFS; the fishermen are aware of this and trust Dr. Hanan to follow through with this stipulation as he has done in previous surveys.

If non-response bias appears evident in our survey results, we will make efforts to contact groups that are under-represented to achieve a balance among different groups (different vessel sizes, fishing methods and levels of participation). If non-response bias still appears evident in our survey responses after such an effort, we will use weighted averages and weighted sums based on the distribution of groups to adjust for the bias.

Adequacy of Accuracy and Reliability of Information for Intended Uses

Among other things, the response to the previous question (Question 14.2) describes the degree of accuracy needed for the purpose described in the response to Part A, Question 1.2. That response describes the specific uses the agency plans for the data collected.

14.4   Describe any tests of procedures or methods to be undertaken. Testing is encouraged as an effective means of refining collections of information to minimize burden and improve utility. Tests must be approved if they call for answers to identical questions from 10 or more respondents. A proposed test or set of tests may be submitted for approval separately or in combination with the main collection of information.

The survey has been reviewed and edited extensively by representatives of the SWFSC with extensive experience in administering surveys in the West Coast commercial fishing industry.

DGN-HPN industry leaders provided a review of the survey and the survey was pretested by commercial swordfish participants. Testing included nine (9) individuals, which therefore did not require prior approval from OMB.

14.5   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.

Agency Coordinator:
Stephen Stohs, PhD
Southwest Fisheries Science Center
8901 La Jolla Shores Drive
La Jolla, CA 92037
(858) 546-7084
Stephen.Stohs@noaa.gov

15. SWFSC: West Coast North Pacific Albacore Fishery Economic Data Collection

15.1   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 government units, households, or persons) in the universe covered by the collection and in the corresponding sample are to be provided in tabular form for the universe as a whole and for each of the strata in the proposed sample. Indicate expected response rates for the collection as a whole. If the collection had been conducted previously, include the actual response rate achieved during the last collection.

Potential Respondent Universe

The West Coast Albacore Fishery that operates off California, Oregon and Washington are required to obtain federal permits. This database will be used to contact potential respondents.

In addition, Pacific Fisheries Information Network, over the past 4 years the number of vessels participating in the fishery has varied from 291 to 399 (https://apex.psmfc.org/pacfin/f?p=501:622:12502332530977). We expect this to be the universe of potential respondents.

In addition, membership databases from two albacore fishing associations and one commission will be used to assist in identifying accurate contact information for email and mailing addresses. These are American Albacore Fishing Association (AAFA), the Western Fishboat Owners Association (WFOA), and Oregon Albacore Commission.

Sampling and Other Respondent Selection Methods

A stratified sampling approach will be utilized, based on known sources of variation among vessels that participate in the fishery. Details are provided in response 15.2.

Expected Response Rate

Based on the response rates achieved in similar voluntary surveys that NMFS has conducted, we expect a 25% response rate for the information collection.

15.2   Describe the procedures for the collection of information including:
   ● Statistical methodology for stratification and sample selection,

   ● Estimation procedure,

   ● Degree of accuracy needed for the purpose described in the justification,

   ● Unusual problems requiring specialized sampling procedures, and

   ● Any use of periodic (less frequent than annual) data collection cycles to reduce burden.

Stratification and Sample Selection

We will use a stratified random sample approach to identify vessels for inclusion in the survey, using vessel size and homeport state as strata. The use of stratification addresses the known large range of variation in vessel size for this fleet, which is known to affect fishing behavior and related costs. A target list of 400 vessels will be randomly selected from the complete list of vessel IDs for harvesters in the fishery, which is expected to yield a sample of 100 completed surveys based on a 25% response rate.

With a 25% response rate, the procedure of randomly selecting 120 vessels from the list of 400 is expected to yield a sample of size 100. The formula for the standard error of the sample mean computed from a sample of size n randomly selected from a finite population of size N is $\sigma \sqrt{\dfrac{N-n}{n(N-1)}}$. With $n =$ 100 and $N = 400$, the percentage reduction from the population standard deviation σ to the standard error of the sample mean is approximately[34] $1 - \sqrt{\dfrac{400-100}{100(400-1)}} = 91.3\%$.

We will create the stratified random sample using the following steps:
1.   The data will be subdivided by a range of vessel size classes (e.g. < 40 ft., 40-65 ft., and > 65 ft.) and homeport state (CA, OR and WA).
2.   The PacFIN database will be queried to assess the number of albacore fishing vessels in each of the nine size/state strata.
3.   Using the annual amounts of albacore landed over the past five years to proxy the cost data items included in this information collection, sample sizes from each of the nine strata will be selected to minimize the variance of total landings for the number of vessels included in the sample frame.
4.   A one-time simulated random selection procedure will be used to choose the vessels to include in the survey sample for the sample sizes identified in step 3. This random selection procedure will be conducted with the R statistical package, using lists of vessel IDs within each stratum obtained from PacFIN, and the 'sample' procedure with 'replace = FALSE' to simulate a random selection without replacement. The advantage of this approach is to obtain a random selection of intended participants within strata, thereby eliminating the bias that could result from using a nonrandom selection procedure.

Alternatives that we considered include conducting a full census of harvesters in the fishery and selecting a simple random sample from all harvesters of record in recent years. With over 400 participating vessels, a full census would be unnecessarily expensive to conduct and burdensome on the fleet to meet the purposes for this information collection. Given a high degree of homogeneity within strata with respect to vessel size, fishing methods and related costs, a sample size of 100 is expected to be large enough to adequately characterize the cost structure across strata, while avoiding the unnecessary cost burden of an attempted census.

A simple random sample could result with problems of non-response bias, in case the response by some strata are strong and others are weak. Stratifying the sample provides an implicit control

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[34] This calculation assumes the same variance within strata. It is approximate in case variances across strata are different.

for non-response bias by obtaining subsamples within strata, which are expected to be more homogeneous with respect to the data items in this information collection than the fleet as a whole.

Estimation Procedures

Initial estimation procedures will consist of producing summary statistics (e.g. mean and standard deviation) within strata for the cost items collected.

We will use these values to characterize the fleet's cost structure for second-stage analysis in productivity or regional economic impact studies.

Degree of Accuracy Needed for Intended Purpose

No specific degree of accuracy is required for the planned analysis, although a smaller sample variance is desirable, other things equal. Stratifying the data by state and vessel size is expected to result in smaller variance within size class, increasing the efficiency of the collection. We expect Step 3 to further increase the efficiency of the collection.

Unusual problems requiring specialized sampling procedures

We do not anticipate any unusual problems requiring specialized sampling procedures

Periodic Data Collection Cycle to Reduce Burden

To reduce the time cost of reporting and the financial cost to the federal government, we intend to collect similar data no more often than once every three years.

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

The survey was originally approved in 1999. In 2024, the survey was presented to representatives of the AAFA and WFOA, the Albacore Research Foundation, and Oregon Albacore Commission for feedback and revisions to consolidate questions and ensure clear, operative language. In addition, feedback was provided by these representatives to encourage participation through association newsletters and word of mouth. Draft questions were provided to multiple users (fisherman, board members, and analysts) for feedback and refinement.

Methods Used To Maximize Response Rates

The survey will be conducted via mailers, online electronic survey and in-person to provide all respondents several choices to participate. To ensure a high response rate (25% or greater) we propose the following methods:

Mailer/return method: A three-stage mailing strategy will be implemented including (a) a first mailing of the survey with personalized cover letter and pre-addressed stamped return envelope (b) mailing of a reminder postcard of the mail survey a week after the first survey mailing, and (c) a second mailing of the survey with cover letter to non-respondents four weeks after the reminder postcard.

Online: A personalized letter with the survey website address and a unique personalized password for survey login could be sent to all fishermen.

In-person (one-on-one): We will contact potential survey respondents to set up interviews during a few set meeting dates in coastal locations that are convenient for fishermen. The surveyor would work privately, one-on-one to enter the information. A copy of the entered data will be returned to the individual who participated in the interview that requests it.

Since this survey has not been conducted for 15 years, we will also utilize three fishing associations/commission to assist us in reaching out to encourage their members to respond and support the effort so that the information gathered will be robust and enhance analytical results. Finally, we intend to provide monetary incentives to the industry in the form of gift cards through a lottery drawing of those respondents that participated in the survey.

Strategy to Address Non-Response

Due to a random relationship between survey response and the information requested in this information collection, we do not anticipate any non-response bias. However, we will base testing for non-response bias on the considerable amount of data available for all members of the survey population. The variables we will use for non-response bias testing fall into the categories of vessel physical characteristics and vessel landings. We will use procedures to reweight the data or the estimated model to correct for any known bias.

Adequacy of Accuracy and Reliability of Information for Intended Uses

Among other things, the response to the previous question (Question 15.2) describes the degree of accuracy needed for the purpose described in the response to Part A, Question 1.2. That response describes the specific uses the agency plans for the data collected.

15.4   Describe any tests of procedures or methods to be undertaken. Testing is encouraged as an effective means of refining collections of information to minimize burden and improve utility. Tests must be approved if they call for answers to identical questions from 10 or more respondents. A proposed test or set of tests may be submitted for approval separately or in combination with the main collection of information.

The statistical procedure used to select the sample is simulation based (details are provided above in response 15.2). The survey questions: 1) reflect input from constituents on what information is relevant to the fishery and available; 2) are based on standard survey methodology used throughout NMFS; and 3) represent a minimal set of questions necessary to meet the

requirements of the intended analysis.

15.5 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.

This survey was developed by the following individuals:

Agency Coordinator:
Stephen Stohs, PhD
Southwest Fisheries Science Center
8901 La Jolla Shores Drive
La Jolla, CA 92037
(858) 546-7084
Stephen.Stohs@noaa.gov

Contractor will be used to implement the data collection, analyze results and development of a final report:
Mr. Brett Wiedoff
PETRA CONSULTING LLC,
5462 SE 57th Ave Portland OR , 97206
(808) 343-0283
bwiedoff@gmail.com

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16. NEFSC: Greater Atlantic Region Commercial Fisheries Economic Data Collection

The Northeast Fisheries Science Center's (NEFSC's) Social Sciences Branch (SSB) plans to collect data for 2026 in 2027 and the following responses reflect that plan. If we have to delay the collection, the years stated in those responses are placeholders for the actual year the collection will occur, the year of the data to be collected, and the years of landings data used to identify eligible vessels by primary gear group.

16.1   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 government units, households, or persons) in the universe covered by the collection and in the corresponding sample are to be provided in tabular form for the universe as a whole and for each of the strata in the proposed sample. Indicate expected response rates for the collection as a whole. If the collection had been conducted previously, include the actual response rate achieved during the last collection.

Potential Respondent Universe

The potential respondent universe consists of the owners of eligible commercial fishing vessels holding a current Greater Atlantic Region federal permit in any fishery. The Greater Atlantic Region stretches along the eastern coast of the U.S. from Maine to North Carolina. To be considered eligible, the vessel must meet two conditions. First, it had to have reported landings of finfish or shellfish for commercial sale through the Vessel Trip Reports (logbooks) or Northeast Seafood Dealer Reporting System during any of the years in the 2025-2026 period. Second, the majority of the trips taken in the last year of activity must have been commercial trips that landed finfish or shellfish for sale. To estimate the number of owners of eligible vessels in the potential respondent universe, we used 2022 data, since a complete data set for 2026 is not yet available. Based on the 2022 data set, there were 2,495 owners with eligible vessels in the potential respondent universe.

Sampling and Other Respondent Selection Methods

All owners of eligible vessels will be in the sample, but we will collect information for only one vessel per owner. About 15-20% of the owners of eligible commercial fishing vessels owned multiple eligible vessels. All vessel owners that own a single eligible vessel will receive a survey for costs associated with that vessel. For owners of multiple eligible vessels, we will select one vessel for the cost survey. The focus on one vessel per owner avoids asking the owners of multiple vessels to fill out multiple surveys, or to fill out a very lengthy survey, which covers multiple vessels.

We will select one vessel at random among the eligible vessels owned by each individual if none of that individual's vessels used one of three least common gear types (i.e., hydraulic dredge, longline or seine gear). For the owner of multiple eligible vessels, in which one vessel used one of those three gear types, we will select that vessel. For the owner of multiple eligible vessels that used one of those gear types, we will select one of those vessels at random. Except in the last case, every eligible vessel that used at least one of those three gear types will be in the sample.

In the latter two cases, we will use this non-random selection process because we want an adequate number of responses for those three gear types so we can summarize data and make inferences for them without having confidentiality problems. There are three reasons we could not meet those objectives using random sampling for all eligible vessels of multi-vessel owners. First, relatively few eligible vessels primarily used hydraulic dredge, longline, or seine gear. Second, as noted below, we expect to have a 30% response rate. Third, due to confidentiality considerations, we cannot provide the public with summaries of survey responses for a specific gear group if there are fewer than three responses for that gear group.

The Greater Atlantic commercial fishing vessel fleet is diverse, with several gear types in use (hydraulic dredge, scallop dredge, bottom and mid-water trawl, gillnet, pot/trap, handgear, longline, and seine gear). Table 16.1.1 depicts the diversity of gears for the 2011, 2012 and 2015 cost surveys (Ardini et al., 2022). Unless otherwise noted, the year of a survey refers to the year for which data were collected, not the following year when the survey was conducted. For example, the 2022 survey collected data for 2022 in 2023.

Table 16.1.1a Survey Population and Sample Size Frequencies, by Strata, for The 2011, 2012, and 2015 Cost Surveys.

Strata	2011			2012			2015		
	Pop	Sample	% Sample	Pop	Sample	% Sample	Pop	Sample	% Sample
Dredge_Large	326	163	50.0%	316	87	27.5%	264	123	46.6%
Dredge_Small	199	100	50.3%	193	88	45.6%	164	119	72.6%
Gillnet_Large	140	70	50.0%	140	64	45.7%	105	96	91.4%
Gillnet_Small	142	71	50.0%	143	65	45.5%	93	84	90.3%
Handgear_Large	271	137	50.6%	227	28	12.3%	137	87	63.5%
Handgear_Small	577	216	37.4%	491	201	40.9%	167	140	83.8%
Longline	42	21	50.0%	54	34	63.0%	55	49	89.1%
Pot/Trap_Large	898	336	37.4%	683	396	58.0%	705	618	87.7%
Pot/Trap_Small	941	353	37.5%	1,112	694	62.4%	1,046	918	87.8%
Seine	13	7	53.8%	13	5	38.5%	12	9	75.0%
Trawl_Large	226	111	49.1%	218	89	40.8%	148	97	65.5%
Trawl_Small	233	118	50.6%	231	123	53.2%	170	149	87.6%
Total	4,008	1,703	42.5%	3,821	1,874	49.0%	3,066	2,489	81.2%

Table 16.1.1b Survey Sample Size Frequencies, by Gear Type, for the 2022 Cost Survey.

Gear Type	Sample (n)	% Sampled*
Multiple Gear	590	100%
Trawl	119	100%
Gillnet	53	100%
Longline	25	100%
Pot and Trap	1,148	100%
Handgear	386	100%
Hydraulic Dredge Big Business	7	100%
Hydraulic Dredge Small Business	7	100%
Scallop Dredge	145	100%
Seine	15	100%
Total	2,495	100%

*Survey sample is equal to the population for all gear groups as survey was a census of vessel owners

For the 2011, 2012, and 2015 cost surveys, there were vessels that derived their harvesting income from more than one gear type. For such a vessel, the gear used to earn the highest percentage of total harvesting revenue in the most recent active year determined its primary gear.

Expected Response Rate

To date, the SSB has collected cost information from commercial fishing vessel owners in four phases. In Phase 1, from 2007-2009, cost surveys were sent annually to vessel owners in the region. Owners were asked to report their costs for the preceding year (e.g., the survey conducted in 2009 requested costs incurred in 2008). In Phase 1, the response rate fell from 20.6% in 2007 to 8% in 2009 (Das, 2013a). After surveying vessel owners for three consecutive years, with a decreasing response rate over time, SSB staff were concerned that survey fatigue had set in for some vessel owners. To alleviate this possibility, no SSB cost surveys were fielded in 2010 or 2011. This two-year window allowed time to revisit the existing survey instrument and to analyze existing survey data (Das, 2013b). Following the two-year break, Phase 2 of survey efforts was implemented through a split-sample survey fielded in 2012 and 2013. For this split survey, a stratified sampling approach was utilized. Strata were determined by the primary gear used and vessel length. Approximately 50% of the eligible vessels were surveyed in 2012 (for costs incurred in 2011) and the other 50% were surveyed in 2013 (for costs incurred in 2012). This means an owner of multiple vessels could have received multiple surveys in either and/or both 2012 and 2013. The adjusted response rate was 28.9% in 2012 and 20.1% in 2013. After Phase 2, the instrument was again revisited during a two-year break over 2014 and 2015. Phase 3 of the survey effort was implemented with a survey fielded in 2016 for costs incurred in 2015. The sampling approach was modified for the 2015 survey. A full census of fishing businesses

was conducted, rather than sampling at the vessel level. Since some businesses owned multiple vessels and only one vessel per business was surveyed, not all vessels were surveyed. The response rate in 2016 was only 6.4%. Phase 4 of the survey effort occurred in 2023 to collect costs incurred by vessel owners during 2022. A census of vessel owners was implemented. For owners of multiple vessels, one of the owners' vessels was selected at random to survey. An exception was made if an individual owned a vessel belonging to a less common gear group (i.e. hydraulic dredge, longline, and seine). In this case, the vessel belonging to the less common gear group was force-chosen to survey. The next survey to be implemented in 2027 to collect costs incurred in 2026 intends to follow a similar sampling strategy as the one implemented in 2023.

All response rates reported above for prior rounds of this data collection were adjusted for non-deliverable surveys and for vessels that were out of scope (e.g., had been sold to another owner, were exclusively charter vessels, etc.). Response rates are summarized in Table 16.1.2.

Table 16.1.2. Total Survey Response Rates and Response Frequencies by Survey Mode for Commercial Fishing Vessel Owners for the 2011, 2012, 2015, and 2022 Cost Surveys.

Sample/Response	2011	2012	2015	2022
Total Sample	1,287	1,778	2,489	2,477
Total Response	372	358	160	367
Response Rate	28.9%	20.1%	6.4%	14.8%
Web Response	67	55	16	187
Mail Response	305	303	144	148
Interview Response	N/A	N/A	N/A	32
Web Response Rate	5.2%	3.1%	0.6%	7.5%
Mail Response Rate	23.7%	17.0%	5.8%	6.0%
Interview Response Rate	N/A	N/A	N/A	1.3%
% Response by Mail	82.0%	84.6%	90.0%	40.3%

Following the low 2015 response rate, focus groups with commercial fishermen were held in the third quarter of 2019 . These focus groups are discussed in greater detail in Section 16.3.

We believe part of the low response was due to challenges with the cost survey instrument itself. When modifying the data collection to address specific problems, other unintended challenges are sometimes created or a conscious decision to take an action involving a trade-off occurs. For example, trying to account for all possible scenarios a vessel owner may have had added complexity and length to the survey instrument.

A number of notable changes supported the increase in the response rate for 2022 relative to 2015. The 2022 cost survey was significantly shorter than the 2015 version, with survey length far more comparable to the 2011 and 2012 versions. The implementation of gear-specific surveys allows the cost survey working group to tailor surveys to specific costs faced by different fleets. Every other NMFS region utilizes this approach in some capacity, either customizing by gear, fishery, or both. The development of the Cost Data Visualization Tool and the Cost Survey landing page, key components of the survey communications plan, is another significant change relative to previous survey implementations. Finally, vessel owners had additional options to respond to the survey, via phone call or virtual interview that did not exist in previous surveys. To support these response options, a contract research tech/social scientist has been hired/added to the survey team.

Part of the challenge of low participation is due to vessel owners' perception that there is no direct benefit to them from participation in the survey. We do not offer financial incentives for survey completion. Input from focus groups has indicated that small, token financial incentives for participation, such as $2-$5, would not increase participation and may decrease it, as some fishermen found small incentive amounts from a regulatory agency wasteful or offensive. Some commercial fishermen expressed a desire for a "guarantee" that taking the survey will directly benefit the fishermen financially, such as aiding the fishermen in the design of regulations or seeing a particular management decision "go their way". The SSB cannot provide this guarantee; the job of SSB staff is to collect, analyze, and communicate economic and social information about the impacts of proposed regulations to the Greater Atlantic Fishing Regional Office (GARFO) and the New England and Mid-Atlantic Fishery Management Councils (NEFMC and MAFMC), but SSB staff are not the ultimate decision makers.

Finally, part of the challenge of maintaining high levels of participation is likely due to relationship issues with NOAA Fisheries generally. For example, objections to mandated observed fishing trips or to catch share management in select regional fisheries may have reduced survey participation. An ongoing challenge for this survey is that participation is voluntary and requires recall or a search for detailed quantitative information. Furthermore, a non-response postcard sent to vessel owners who did not fill out a 2022 cost survey indicated that a lack of trust in NOAA Fisheries is the most common reason for non-response (Conley et al. 2025).

We are anticipating a response rate of 30% for the fourth round of this data collection effort, for which participation will remain voluntary. The methods that will be followed to improve the response rate are explained in Response 16.3. Table 16.1.3 summarizes information on population and sample sizes and on responses to the 2022 cost survey.

Table 16.1.3 - Population Sizes, Sample Size, Response Rate and Number of Respondents from the 2022 Cost Survey.

Eligible Vessel Owner Population Size	Eligible Vessel Population Size	Vessel Owner or Eligible Vessel Sample Size	Expected Response rate	Number of Expected Respondents
2,495	2,495	2,495	30%	749

The eligible vessel population size is the total number of federally-permitted vessels in the Greater Atlantic Region that will be active (had reported landings through dealer or VTR) during the 2025-2026 time period. The placeholder numbers are from the last survey implemented in 2022.

16.2   Describe the procedures for the collection of information including:

● Statistical methodology for stratification and sample selection,

● Estimation procedure,

● Degree of accuracy needed for the purpose described in the justification,

● Unusual problems requiring specialized sampling procedures, and

● Any use of periodic (less frequent than annual) data collection cycles to reduce burden.

<u>Fielding, Stratification, and Sample Selection</u>

A full description of the procedure we will use to field the survey is in the Survey Implementation section of Response 16.3.

As noted in Response 16.1, each eligible vessel owner will be in the sample. However to reduce reporting burden for owners with multiple eligible vessels, we will collect information for only one vessel per owner. We will stratify the vessels into the following nine gear groups.

1) Trawl Gear

2) Scallop Dredge Gear

3) Hydraulic Dredge Gear

4) Gillnet Gear

5) Pot/Trap Gear

6) Handgear Gear

7) Longline Gear

8) Seine Gear

9) Multiple Gear

If a vessel used gear from a single gear group to harvest all of the finfish/shellfish, which contributed to its gross commercial revenues as reported by the Northeast seafood dealer reporting system for the relevant year, we will place the vessel into that gear group. If a vessel used gear from multiple gear groups, we will place the vessel into the multiple gear group. We refer to a vessel's gear group as its "survey gear" because we will use a different version of the survey for each gear group. We define nine gear groups; however, as explained in Responses 16.2 and 16.3, there will be ten versions of the survey. The additional version accounts for the differences between large firm owners and independent owners of hydraulic dredge gear group vessels. For analysis purposes, we will keep track of the gear type that accounted for the majority of gross revenue of each multiple gear group vessel.

Survey results will be summarized by gear group and by vessel length.

This sample selection methodology is similar to that used in the 2022 cost survey.

Estimation Procedure

Prior to any descriptive or inferential analysis, we will follow a data auditing process similar to that employed to data collected for the 2022 survey . The general process was as follows:

- Aggregated cost category assessment:
  - Completed for New/Replacement, Repair/Maintenance, and Upgrade Costs, Vessel Costs, Trip Expenses, Crew Payments, and Overhead Costs sections.
  - Gear-based histograms were created to visually identify possible errors.
  - Values greater than +5 standard deviations from the median by gear type and aggregate cost category were identified as outliers.
  - Outliers were either verified or corrected by contacting the survey participant or replaced with an aggregate cost average when no contact was made.
- Sub-cost category assessment:
  - Completed for all sub-cost categories to major aggregate costs.
  - Gear-based histograms were created to visually identify possible errors and code was generated to compare summary of variables where potential outliers were crosschecked against vessel characteristics and assessed on a case-by-case basis.
- Column switch assessment
  - Completed when a section presented questions in two columns side by side for a specific cost.
    - Trip cost section: participants were asked to provide either their total annual trip cost for the vessel in one column or their average cost for each trip in the next column.
    - Overhead cost section: participants were asked to provide either

their total annual overhead costs for the selected vessel in one column or their total annual costs across all owned vessels in the next column.
- ○ If other sub-cost category questions indicated a systematic issue, with values that were within the range of the column in question (e.g., average fuel costs vs total annual fuel costs), all values in the question were changed to their correct column.
- Miscellaneous data corrections:
  - ○ Each record's vessel characteristics were investigated to discern if a value was truly "extreme" enough to warrant changing, such as vessel size or value.
  - ○ If a vessel owner filled out the survey for a different vessel that they owned – information pertaining to the vessel in the sampling frame and the response dataset were altered to the vessel for which the survey was filled.
  - ○ A comments section at the end of the surveys provided opportunity for the respondent to list other costs, which the survey did not address. In cases where the respondent listed other costs, these items were compared to the appropriate survey sections to ensure costs were not being double-counted, and then were appropriately categorized.
  - ○ In cases where the respondent reported a range of costs, rather than a single value, the average was taken and used for analysis.
  - ○ If the number of trips provided seemed extreme or the magnitude appeared to be off by a factor of 10 (e.g., if 700 was imputed, the number of trips was 70), the values were compared to the number of trips reported on Vessel Trip Reports for these individual vessels.
  - ○ If inconsistent information was provided regarding the number of trips a vessel took, the record was altered to match the information provided in the first answer provided earlier in the survey.
  - ○ If a description provided for "Other" clearly fit into one of the multiple choice options provided, the answer was properly categorized.
  - ○ If column switches were ruled out or not applicable and the value was deemed likely an error after comparing to contextual vessel information, there were protocols to either call the participant if they had checked off their willingness to be contacted with follow-up questions (question asked within the survey) or to replace the value with an average calculated by the gear type.
  - ○ In the case that average total annual costs were calculated and if a particular gear type did not have enough responses for that particular question, the average for all gear types was used. The calculation and replacement of values with averages was completed at the end of the protocol implementation and any value that was to be replaced was excluded from the calculation of the mean.
  - ○ 40 values were flagged for outlier analysis. 5 values were deemed true outliers, but were kept in the final dataset. End users are advised to

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determine a range in data points that fits their research purposes and filter accordingly. The remaining 35 values were adjusted properly based on decision rules described above.

Aggregate results from the survey at the gear-level will be added to the Cost Data Visualization Tool. For any data aggregated over all survey responses, weights will be necessary due to the forced selection of vessels that primarily used longline, mid-water trawl and seine gear (over-sampling). We also expect weighting will be necessary because historically, response rates have varied by gear group. The ability to draw inferences from these data will be informed by the response rates (Lohr, 2019). To date, fixed cost modeling has been challenging given the diversity of the Greater Atlantic commercial fleet, as well as low response to this voluntary effort. The SSB has invested significant staff time and resources into improving response to the cost survey; its efforts are detailed below in Response 16.3. SSB will work on modeling fixed costs leading up to and following the next cost survey implementation in 2027.

Degree of Accuracy Needed for Intended Purpose

We will use the data collected through this survey for statistical inference of population values from sample respondents and for estimation of econometric models used for fisheries management. While neither economic theory nor legislative mandates establish the degree of accuracy needed for these intended uses, we expect this survey will provide accurate and useful data for these uses. Assuming a response rate of 30%, we expect to obtain 749 complete and usable surveys from a survey sample size of 2,495 .

Using data from the 2011 cost survey, the margin of error for estimation of the population mean of vessel fees and insurance at the 95% confidence level is 17%. This level of precision should be adequate for the intended uses of the collected data, which include descriptive statistics and economic analyses, such as estimation of vessel-level profitability.[35]

Unusual Problems Requiring Specialized Sampling Procedures

We do not expect unusual problems requiring specialized sampling procedures. Response 16.1 describes the sampling procedure we will use, which is similar to the procedure used for the 2022 survey.

Periodic Data Collection Cycle to Reduce Burden

To reduce the burden and the potential for survey fatigue, the next survey will be implemented in 2027, four years after the previous implementation. Moving forward, the NEFSC intends on collecting cost information from vessel owners on a 3-4 year-basis.

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[35] We used the following formula to estimate the margin of error: $e = 1.96\, s/\sqrt{n}$, where: e=margin of error, s=sample standard deviation, n= sample size, and 1.96 denotes the critical value for 95% significance level.

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

<u>Methods Used To Maximize Response Rates</u>

Leading up to the 2026 survey, increasing the usability of previously collected cost data is a priority. For the first time, a common variables table has been developed on the Northeast Oracle databases, allowing end-users to query cost survey results from 2011, 2012, 2015, and 2022 from a single table. A comprehensive metadata site on Github has been developed to further increase the utility of Northeast cost data. With improved accessibility and documentation, social scientists in the Northeast region will be able to better integrate cost data into fishery management impact analyses. Furthermore, the Cost Data Visualization Tool has been updated with 2022 survey results, allowing end-users to track cost distributions from 2011, 2012, 2015, and 2022.

Emphasis is also being placed on research and communication. Quantitative information collected in the 2022 survey is being used in the development of a profit site, to be released in 2025. The site will allow end users to view profit distributions by fleet, both primary gear and Fishery Management Plan.

Increased use and communication regarding cost data will benefit future survey participation in a few ways. First, vessel owners will be able to understand how the data they provide is being used to inform management. Second, increased communication and transparency will help build trust between NEFSC and the fishing industry. A non-response postcard sent to vessel owners who did not fill out a 2022 cost survey indicated that a lack of trust in NOAA Fisheries is the most common reason for non-response (Conley et al. 2025).

We are optimistic that these steps will help build on the 2022 survey improvements, which saw response rates increase from 6.4% for 2015 to 14.8% in 2022. These extensive improvements for 2022 are provided below:

Survey Instrument Design

The design of the 2026 gear-based surveys will be similar to the 2022 surveys. Information on improvements to the 2022 survey instrument is provided below.

In the 2006, 2007, 2008, 2011, 2012 , and 2015 cost surveys, a single version of the survey instrument was used for all commercial vessel owners/fishing businesses, regardless of whether the owner had a single vessel or multiple vessels, and regardless of what gear type the vessels used. This was a "one size fits all" approach, which is likely not the correct approach for the very large, diverse fleet in the Greater Atlantic Region. A single version of the survey instrument meant that the instrument needed to accommodate multiple situations, which resulted in a large number of survey questions, some of which did not apply to all owners. The length of the

instrument was undoubtedly a factor in low response. For the 2022 cost survey, ten gear-specific versions of the survey were developed , including two versions for hydraulic dredge gear to differentiate between independent and large firm owners (further details can be found in Response 16.3). Gear specific versions of the survey allow us to exclude questions that would not apply to the selected vessel, thereby increasing the relevance of the survey to the vessel owner and decreasing the length of the survey. The SSB cost survey working group has benefited from significant industry input on the design of the gear-based versions, and in general, industry has been enthusiastic and supportive of this significant change. The gear-based versions were formally pretested in the fall of 2021.

The SSB cost survey working group has also made a significant change to its vessel repair, maintenance, upgrade, and improvement questions. In the previous three rounds of the surveys (2011, 2012, 2015), the instrument asked about repair and maintenance costs separately from upgrade and improvement costs. The rationale behind this distinction was that upgrade and improvement costs are an increase in the value of the capital invested in the vessel and are generally depreciated, while routine repair and maintenance costs are not. Although the instructions in previous rounds of the survey strived to make this distinction clear, vessel owners struggled with the distinction. This added to the cognitive burden placed on the vessel owners. We spoke to economists in other NMFS Fisheries Science Centers and found that, due to issues similar to those encountered by the SSB, their surveys typically do not maintain this distinction. Therefore, the SSB cost survey working group made the decision to drop that distinction, and now inquires about the total of repair/maintenance/upgrade/improvement expenses across specific categories for the selected vessel (propulsion engine, deck equipment and other machinery, hull, fishing gear, wheelhouse electronics, processing and refrigeration, and safety equipment). This cut the questions in this section of the survey by about 50%. This decision may impact the ability of a data user to separate those expenses that increase the value of capital stock vs. those expenses that do not. The issue the cost survey working group faced, however, is we were not confident that owners were correctly drawing this distinction in their responses. In the 2015 survey, a considerable number of responses simply filled in the same value for repair/maintenance and upgrade/improvement, despite clear directions on the distinction between the two.

The changes in other survey sections do not affect the goal of the information collected. Other sections, notably the crew payment section, were streamlined. These changes however do not impact the ability to calculate vessel-level profitability.

This data collection operates on a tight budget, subject to funding timing and amounts. In the past rounds of this data collection, the SSB cost survey working group has had very limited resources to devote to survey design, including the cover of the survey instrument. Since the 2015 survey, the NEFSC has benefitted from the establishment of a new graphic design contract held by the NEFSC's Research Communications Branch (RCB). The SSB has benefited tremendously from the additional funds provided by the RCB for cost survey design and the resulting collaborations among SSB and RCB staff and a professional graphic design firm. Each of the 10 versions of the survey now have a professionally designed cover that includes a vibrant color photo specific to that gear group, the NOAA-NEFSC logo, assurances of confidentiality for survey participation and response, a statement about the importance of participation, and the

OMB Control Number and expiration date. The gear group-specific covers increase the relevance of the survey to commercial fishermen in specific gear groups. In addition, the contents of the survey have been professionally formatted in consultation with SSB and RCB staff and the graphic design firm, keeping the principles discussed in Dillman et al. (2014).

For both the cost survey data collection generally, and the 2022 cost survey in particular, the SSB cost survey working group has sought end-user and industry feedback. We have both conducted presentation and Q&A sessions with SSB economists, as well as talked individually to SSB economists. We have also met with NEFMC staff members about the cost data collection. Industry feedback has been gathered in several ways. In the summer and fall of 2019, we spoke with commercial fishermen in small focus groups in both New England and the Mid-Atlantic about the cost data collection. This informed our efforts to decrease the survey length and increase its relevance, including the development of gear group-based versions. Over the past year, the SSB cost survey working group has been meeting one-on-one by virtual conference with individuals from different gear groups to gather their input on the development of the 10 gear group-based survey versions. We also talked extensively with two MAFMC staff that are the leads on the Federal Management Action Team for the surf clam and ocean quahog fishery. Vessels active in this fishery almost exclusively utilize hydraulic dredge gear. 3-4 large firms that own multiple vessels dominate this fishery. It also includes a few independent owners. Meeting with both industry members, Council and SSB staff involved in the surf clam ocean quahog fishery led us to determine that large firms and independent owners in this fishery would require distinct versions of the survey. Furthermore, the distinct components of hydraulic dredge gear relative to scallop dredge gear supported the development of separate surveys for these two gear groups.

Pre-testing

The pre-testing activities, which took place in the fall of 2021, are discussed at the beginning of Response 16.4.

*Data Collection Mode*s

Two modes of data collection were offered for the 2011, 2012 and 2015 surveys. The survey recipient was asked to either return the survey in hard copy via a provided postage-page reply envelope or complete the survey online using a unique user-name and password. For those three surveys, over 80% of respondents opted to return the survey in hard copy.

For the 2022 cost survey, two additional options for responding to the survey were available. These options are to complete the survey via a phone interview or virtual web conference. These survey interviews were conducted by trained staff working directly with SSB cost survey working group's FTE economists, following a predetermined protocol. The interview options helped increase the 2022 response rate from the previous (2015) survey.

Survey Implementation

The survey methodology protocol follows guidance for mailing and mixed-mode implementation procedures outlined in Dillman et al. (2014, 4th edition). Each owner of an eligible vessel will receive four individual contact letters, which will be mailed to the address listed on their selected vessel's permit application. The first is a pre-notification letter that informs the vessel owner of the cost survey data collection effort and outlines options for participating. This mailing will also include a brochure summary of previous cost survey results and a Frequently Asked Questions (FAQ) sheet. The pre-notification letter will include the web link and an ID code unique to the owner to allow access to the online survey if the vessel owner wants to respond online. The letter also will provide a toll-free telephone number for scheduling a telephone or online interview if the vessel owner wishes to choose to participate via an interview. A second contact letter will be sent a week after the first letter as a reminder of the initial contact. To encourage owners to complete the survey online or via an interview, neither of the first two mailings includes the survey instrument. Two weeks after the second contact letter, a third will be sent to the eligible vessel owner identifying any common difficulties other respondents were facing (if any) in accessing the online survey and reminding respondents of the telephone or virtual interview options for responding to the survey. The third contact letter will be accompanied by a survey packet, which will include a brochure summary of previous cost survey results, a FAQ sheet, survey instructions, the survey instrument (1 of 10 versions), and a postage-paid reply envelope. The fourth and final contact letter will be sent a week to three weeks after the third contact letter to those who have not yet responded to the survey. That mailing will also contain a second survey packet, which will include the second hard copy of the survey in the case that the initial hardcopy survey packet was lost or mistakenly thrown away. Previous implementations of this survey effort have shown relatively high response to the second mailed hard copy of the survey.

For owners that have provided an email address on permit application forms, a five-contact email method will be employed in addition to the mailed contact letters to maximize possible responses. The invitation email will be sent first, describing the effort and will provide a link to the survey and an access code unique to each individual. Three days later, a first reminder email will be sent, followed by two more reminder emails. The second reminder will be sent a week after the first reminder, followed by a third reminder email sent two weeks later. A fourth and final reminder email will be sent a week after the third reminder email.

Telephone recruiting will also be conducted during the survey solicitation period in an effort to increase participation. Phone call recruiting methods, in conjunction with mail and email contacting, were effective during survey pretesting where the majority of participants were directly solicited via phone.

Independent research firms were hired to implement the 2011, 2012, and 2015 cost surveys. The scope of work included survey design, survey printing and mailing, staffing a telephone hotline and email account for questions and concerns, tracking survey response, data entry, and follow-up phone calls to encourage response. Feedback from some fishermen indicated that they would rather speak directly to SSB staff members than to staff from an external research firm that they are not familiar with. In considering this feedback, the SSB cost survey working group made the

decision to make some modifications in survey implementation for 2022 compared to previous efforts. While we still intend on hiring an external firm for mailing of paper surveys and related materials, we have hired a contract research assistant within the SSB. This contractor, under guidance from the SSB cost survey working group FTEs, is responsible for conducting virtual conference and phone interviews for vessel owners who choose those modes for responding to the survey. The contractor also assists the SSB cost survey working group with other implementation tasks, such as survey outreach and summarizing results to be disseminated to respondents.

Outreach, Communication and Dissemination of Results

The SSB cost survey working group has put considerable effort into improving the dissemination of survey results. All data collected will be added to a recently completed common variables table on Oracle, which contains results from the 2011, 2012, 2015, and 2022 surveys. This single table facilitates easier use/accessibility to collected data. All users of raw survey data have a signed NDA in place to ensure this confidential data is used appropriately

The survey team has also released a Cost Data Visualization Tool, containing cost distributions for individual survey questions from the 2011, 2012, 2015, and 2022 surveys. All data collected will be added to this tool, which serves both as a means of disseminating results and increasing communication with industry. In addition, a Survey Landing Page has been developed to increase awareness of cost data collection in the Northeast region.

Leading up to survey implementation, the survey team will be presenting at a variety of forums to increase awareness of how collected data is being used and why participation is important for fisheries management. Presentations will occur at the New England and Mid-Atlantic Fishery Management Councils as well as industry-focused forums. Ahead of the 2022 survey, presentations were given at the Cape Cod Commercial Fishermen's Alliance, Maine Fishermen's Forum, and various Council Advisory Panel and Committee meetings.

Strategy to Address Non-Response

An initiative to research potential non-response bias in the data was initiated in 2024 post the 2022 survey effort. Techniques to identify if non-response is biasing results is the initial step to better understand if non-response impacting the usability of the survey data. It is well documented that non-response does not always indicate bias within the data (Groves & Peytcheva 2008). Data will be investigated using analysis techniques such as the Representativeness Indicator (R-indicator) (Schouten and Cobben 2007; Schouten et al. 2009; Shlomo, Skinner & Schouten et al. 2012; Schouten and Shlomo 2017). This will allow a numeric score to be compared over time as well as identify possible drivers of bias of non-response drivers. Specifically, this method includes creating a vector of vessel characteristics (e.g., Vessel Horsepower, Vessel Gross Tons, Average crew per trip, Vessel age, Categorical variable of home port state) and effort variables (e.g., Vessel total annual revenue, Number of trips taken when last active, Percent of revenues earned by primary gear, Last year active (indicator variable, 2022 or 2021), Multiple gear use (indicator variable), Primary gear based on highest revenues earned when last active (categorical variable) of survey respondents and non-

respondents. The R-Indicator is then calculated as the standard deviation of the response propensities on a scale of 0-1, where 1 is completely unbiased. Preliminary results suggest that those who have higher revenues are more likely to respond to the survey and those from Maine are less likely to respond, however, the preliminary R indicator for the 2022 effort is 0.901. This demonstrates a low impact of response bias in initial trials. In future survey implementations, assessing the representativeness will be a key piece of the post-data collection process to ensure data are used to their maximum potential and bias is addressed if needed. In the case that bias is detected, reweighting techniques, such as Lian (2010, 2012a).can be applied to create more representative means. Lastly, the representativeness work can further help address non-response bias by informing future sampling techniques. The model described above can allow for increasing awareness on where more targeted outreach and effort is needed for certain groups within the larger population and can inform the number of respondents needed to generate accurate cost estimates.

The Greater Atlantic Region has a considerable amount of fisheries data for federally permitted commercial vessels (available through its Northeast Seafood Dealer Reporting System, Vessel Trip Report, and permit databases). These data include information on vessel characteristics, landings and revenues, and allow us to identify the population of eligible commercial vessels. These data allow SSB to compare the survey population with survey respondents.   For example, tests for significant differences between characteristics of responding vessels versus characteristics of non-responding vessels (e.g., vessel length, horsepower, gross tonnage and gross revenue) will be conducted. This procedure was followed for the most recent three data collections (Ardini et al., 2022).

Adequacy of Accuracy and Reliability of Information for Intended Uses

Cost data for Greater Atlantic Region fisheries is necessary in order to meet legal and regulatory requirements, support fisheries management decision-making, and undertake economic research. Data on non-trip costs such as vessel repairs, insurance, and overhead have not been collected since the 2015 survey, limiting the ability of regional economists to use the data for current fishery management actions and research. While the data will be used to comply with legal and regulatory requirements, these requirements do not specify a level of data accuracy. However, as discussed in Response 16.2, our survey sample and the expected response rate will allow us to estimate the population mean of costs within a reasonable margin of error.

16.4   Describe any tests of procedures or methods to be undertaken. Testing is encouraged as an effective means of refining collections of information to minimize burden and improve utility. Tests must be approved if they call for answers to identical questions from 10 or more respondents. A proposed test or set of tests may be submitted for approval separately or in combination with the main collection of information.

Pre-testing of the 2021 cost survey occurred in the fall of 2021. Individual cognitive interviews were conducted via virtual web conference due to uncertainty about COVID-19 pandemic travel restrictions.

The cognitive interviews, or verbal protocol interviews, were used to assess the entire experience of commercial vessel owners taking the cost survey. Each individual session was 90 minutes in length, with nine interviews conducted. Vessel owners were recruited based on recent fishing activity. The focus of these interviews was to understand the fisherman's experience with taking the survey from start to finish; including their reaction to the survey itself as well as accompanying supplemental materials (e.g., cover material, FAQ and instruction sheets). Participants engaged with the survey, speaking aloud as they worked through survey materials, including sharing their thoughts as they encountered and considered each survey question. After the participants individually finished the survey, they were asked to consider several debriefing questions, which vary based on what the participant said during the process of taking the survey. These debriefing questions helped clarify specific points raised by the participant during the cognitive interview and explored unintended effects the survey package may have on the participant. For example, cognitive interviews were critical in identifying specific trip costs to add into the survey instrument. Pre-testing also provided valuable insight regarding the order of survey questions so that the respondent could focus on similar cost categories in order. We also solicited fishing vessel owners' thoughts to inform the development of a SSB cost survey outreach and communication plan that resonates and builds good will with the commercial fishing industry in the Greater Atlantic Region.

Commercial fishing vessel owners that participated in one of these interview sessions held at least one federal permit issued by NOAA's GARFO and owned at least one commercial fishing vessel that was active (landed finfish or shellfish for commercial sale) in 2020 or 2021. In addition, the vessel took at least 50% of its trips for commercial purposes (landed finfish or shellfish for commercial sale) in its most recent year of activity. The SSB provided a list of vessel owners that meet these criteria, along with the vessel owner's contact information, to the firm that recruits individuals to participate in these interviews.

The nine cognitive interviews conducted featured one commercial fishing vessel owner from each of the following categories:

- Owner of a single active vessel, where the vessel was a pot/trap gear group vessel that primarily fished for lobster

- Owner of a single active vessel, where the vessel was a trawl gear group vessel

- Owner of a single active vessel, where the vessel was a gillnet gear group vessel

- Owner of a single active vessel, where the vessel was a scallop dredge gear group vessel

- Owner of one or more active vessels, where the vessels were hydraulic dredge gear group vessels and harvested surf clam and ocean quahogs

- Owner of a single active vessel, where the vessel was a seine gear group vessel

- Owner of a single active vessel, where the vessel was a handgear gear group vessel

- Owner of a single active vessel, where the vessel was a longline gear group vessel

- Owner of multiple vessels, where all vessels were not in the same gear group

16.5   Provide the name and telephone number of individuals consulted on 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.

Gregory Ardini, Economist
Social Sciences Branch
Northeast Fisheries Science Center - NOAA Fisheries
166 Water Street MB19
Woods Hole, MA   02543-1026
Email: Gregory.Ardini@noaa.gov
Phone: 781-752-5921

Samantha Werner, Economist
Social Sciences Branch
Northeast Fisheries Science Center-NOAA Fisheries
166 Water Street MB19
Woods Hole, MA   02543-1026
Email: Samantha.Werner@noaa.gov
Phone: 603-845-6371

Elizabeth Conley, Social Scientist
Ocean Associates Inc. in support of the Northeast Fisheries Science Center- NOAA Fisheries
4007 N. Abingdon St.
Arlington, VA 22207
Email: Elizabeth.Conley@noaa.gov
Phone: 631-219-6479

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