

## SUPPORTING STATEMENT

### COMMERCIAL FISHING VESSEL COST AND EARNINGS DATA COLLECTION SURVEY IN THE NORTHEAST REGION

OMB CONTROL NO. 0648-XXXX

#### B. COLLECTIONS OF INFORMATION EMPLOYING STATISTICAL METHODS

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

##### Potential Respondent Universe

The potential respondent universe consists of all active commercial fishing vessels holding a current Northeast Region permit in any fishery. Active fishing vessels are defined as having reported landing fish through the Northeast Seafood Dealer Reporting System during the calendar year of study. Based on 2010 calendar year data, there were 3,199 active vessels in the Northeast Seafood Dealer Reporting System.

##### Sampling and Other Respondent Selection Methods

A sample consisting of 50% of the population of active vessels in the Northeast Dealer Reporting System will be selected each year. In Calendar Year 2010, there were 3,199 active vessels with valid permits. Therefore, in 2011, 1,600 vessels will be asked to participate in the survey. The survey selection process is explained in detail under Question 2. This method of sample selection will continue each year, which in turn implies that the sample size may increase or decrease each year as some vessels become active or inactive or if there is exit/entry from or to the fishery. However, since entry is limited by regulation in most Northeast fisheries, a large variation in the number of vessels entering and exiting the fishery is not expected. In the past five years, vessel owners' population has varied from 2,785 in 2006 to 3,199 in 2010. Therefore, on average the sample size can be expected to be around 1,500 each year.

##### Expected Response Rate

The NEFSC SSB collected annual cost information from commercial fishing vessel owners for Calendar Years 2006, 2007, and 2008. Each year, approximately 2,700 surveys were sent to the universe of active vessels with a Northeast federal permit. However, the overall response rate was low and continuously declined during the period of data collection. Through changes to the data collection methods we are anticipating a response rate of 80% for this collection effort. The methods that will be followed to improve response rates are explained in Question 3.

<u>No. vessels in the sample universe</u>	<u>No. of vessels in the sample</u>	<u>Expected response rate</u>	<u>No of expected respondents</u>
3,199	1,600	80%	1,280

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

The survey is designed to improve coverage and response rates. A stratified sampling method shall be used to select the sample, and vessel owners will have the option to provide their data by mail or via the Web. The vessel-level populations are stratified by gear and length. All vessels are grouped into one of three gear categories: (1) mobile, (2) stationary, and (3) other. Mobile gear includes dredge and trawl gears. Stationary gear includes gillnet, handgear, longline and pot/traps. The other gear group includes all the gears not included in the stationary and mobile gear groups. Next, vessels are put into categories based on length. Two length categories are created for each gear group based on the mean length of the vessels within each gear group. This method of stratification gives us six strata. A random sampling method will be followed to select fifty percent of the populations from each stratum.

Application

A basic application of the survey data will be the inference of unobserved population cost estimates from the observed cost values. Data from this survey will be used to develop a variety of economic models covering applications such as fleet efficiency and fishery participation. For better inference, high response rate and a high degree of accuracy in the data collection process is desired. Question 3 discusses the steps that will be taken to promote high response rates and reduce non-response errors.

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

A considerable amount of effort will be implemented to reduce non-response in order to make meaningful and statistically sound inferences about the population. Dillman et al. (2008) suggested several approaches that can improve response rates. We will follow several of these suggestions to increase response rates in our survey. We explain below the procedures that will be followed to improve response rates.

1. Different mode of communications will be used to contact the survey respondents. Studies have shown that making distinction between modes of contacts improves

response rate in mail surveys (Dillman et al. 1974, 2008; Heberlin and Baumgartner, 1978). Below we explain our different mode of contacts:

- a. A pre-notice letter will be developed and sent to all vessel owners selected to be in the sample. This letter will inform vessel owners about the impending survey and the value and use of this data. In the subsequent years, a data summary will also be included in the pre-notice letter to enlighten the prospective respondents about the general cost structure of the fishery. Research has shown that pre-notice letters improve response rates in mail surveys by 3 to 6 percentage points (Dillman, 1991; Kanuk and Berenson 1975).
  - b. One week following the pre-notice letter, each vessel owner selected as part of the sample will receive a survey instrument and a cover letter. The cover letter will explain the importance of the survey and how responding survey will provide valuable information to NOAA. The cover letter will explain about the online survey instrument. The mail-out package will also contain a monetary incentive of \$5.
  - c. Approximately 2-3 weeks following the first mail-out, a reminder postcard will be sent to the non-respondents. The postcard will provide contact information (phone and email) to respondents to get a replacement copy or information to access the online survey if needed.
  - d. Approximately two weeks following the reminder postcard, SSB will mail out a second copy of the survey to those that still have not responded. The survey will arrive with a cover letter explaining that a second copy is provided to ensure the survey was not lost, and again stress the importance of responding. Once more information to access the online survey will also be provided.
  - e. Two weeks following the mail-out of the second survey copies, a final attempt to contact the non-respondents will be made via telephone.
2. A 1-800 phone line will be set up to address any questions or concerns that the respondents may have regarding the survey.
  3. We expect offering the Web-based survey option will improve response rates. Our rationale is that, many vessel owners store their financial information electronically and can easily access them while filling out the survey form online. It is also more convenient in that a paper form does not have to be physically mailed. NOAA's Alaska Regional Office has been using Web-based surveys for catcher vessels since 2007, and they have witnessed increasing response rates. Dillman (2008) also discusses the potential of mixed mode surveys in improving response rates and reducing non-response errors.
  4. The monetary incentives sent with the initial mailing of the survey is also expected to have positive impact on the response rates. Dillman's third edition (2009) book on mixed-mode surveys reports several studies that showed positive results from using prepaid incentives in establishment surveys.
  5. In addition to the pre-notification letter, SSB also plans to perform outreach regarding the survey. This will include advertising the survey in local publications (e.g., *Commercial*

*Fishing News*) and writing a guest editorial in *Commercial Fishing News* that describes the value of responding to the survey.

6. Finally, an external survey agency specializing in similar data collection surveys will be employed to administer the survey. The survey firm will employ best practices in terms of question sequencing, wording and administering the survey, which is further expected to improve response rates.

After taking all the above steps to increase response rates, a non-response bias check will be conducted post data collection. A considerable amount of information is currently available on vessel characteristics, landings and revenue for the survey population. This information will be used to compare the survey population with survey respondents, and to make adjustments for non-response biases. However, if response rates are lower than expected and a proper non-response bias calculation is not possible, then data from two consecutive years could be combined to generate population estimates. This is possible because vessels' fixed costs are not expected to change significantly between consecutive years provided there are no significant external economic shocks or changes. In addition, respondent feedback and findings from this survey will be used to further improve survey response rates in subsequent years.

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

The survey instrument will be tested with nine vessel owners that will be selected randomly from the sampling frame. Both the web-based and mail survey instruments will be tested. Feedback from the pilot surveys will be used to make any necessary changes.

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

The internal NMFS survey design team consists of Dr. Chhandita Das (508 495-2354), Scott Steinback (508 495-2371), Andrew Kitts (508 495-2231), Dr. Tammy Murphy (508 495-2000).

The primary agency responsible for collecting data will be the survey firm that will be hired to administer the survey. The primary individual expected to analyze the data is Dr. Tammy Murphy; (508) 495-2000.

**REFERENCES:**

Dillman, D. A., Smyth, J. D., Christian, L. M. (2009). *Internet, mail, and mixed-mode surveys: The tailored design method*. (3rd ed.). Hoboken, NJ: John Wiley & Sons.

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Haberlein, T.A and Baumgartner, R (1978), Factors affecting response rates to mailed questionnaires: A quantitative analysis of the published literature. *American Sociological Review*, 43, 447-462.

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