SUPPORTING STATEMENT
NMFS OBSERVER PROGRAMS' INFORMATION THAT CAN BE GATHERED ONLY THROUGH QUESTIONS
OMB CONTROL NO. 0648-0593

B. COLLECTIONS OF INFORMATION EMPLOYING STATISTICAL METHODS

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

The information will be collected for a fishing vessel from its Federal permit holder, captain, or crew; or it will be collected for a fish processing plant from its manager or staff. Therefore, fishing vessels and processing plants are the entities for which information will be collected. The potential respondent universe is the set of fishing vessels and fish processing plants that operate in the fisheries with NMFS observer programs. It is estimated that on average there will be approximately 10,956 active fishing vessels and 900 fish processing plants in such fisheries in 2012-2015. From this universe, the sample sizes are expected to be 4,141 active fishing vessels and about 155 processing plants; however, observers are expected to be deployed at only 20 processing plants, all of which are in Alaska. Other fish processing plants in the sample will be contacted and on average asked less than one question per trip for the fishing vessels delivering to the plant. Some questions are asked once a trip, some are asked several times during a trip to collect haul/set specific information, and others are only asked on trips for which the information cannot be collected readily through direct observation or through nonstandardized oral communication in connection with such direct observations. For the purpose of this collection, all the information collected for or associated with a single trip or deployment to a fish processing plant is considered one response. For example, the pre-deployment information, the information provided to an observer, the information in a completed observer evaluation survey, and any reimbursement and data release information provided for a specific trip is considered to be one response. Therefore, the expected number of responses (19,904) is the sum of the number of observed trips and the number of observer deployments or data collections from fish processing plants. Similarly, some information is expected to be provided for each observed vessel (i.e., each vessel with an observer for one or more trips) and for each observed or contacted fish processing plant; therefore the total number of respondents is expected to be 4,161.

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.

Statistical Methodology for Stratification and Sample Selection

Fisheries may occur year-round, or may be seasonal in nature. Before an observer program is implemented for a fishery, coverage levels and sampling methods are determined. Resources generally do not allow the deployment of observers on all fishing vessels and all trips in an observed fishery. Because only a portion of the vessels or trips is observed, observer programs have developed methods to achieve a representative sample. Due to variations in fisheries (e.g. gear types used, length of fishing trip, area of fishery), the sampling methods vary between programs. Specific details by fishery are presented in Attachment B.

In general, programs identify primary, secondary, and tertiary sampling units (e.g. vessel, trip, and haul/set) and establish sampling frames to meet coverage requirements. Coverage levels for fisheries may be specified by regulation, determined by available resources and program costs, or set to meet certain precision targets (e.g. 30% coefficient of variation (CV) for protected species).

The vessel sampling frame is often derived from a list of active fishing vessels or fishing permits. Programs may stratify the sample by area, gear type, calendar quarter, and/or other variables. Vessel selection methods include census; stratified random sampling (with or without replacement); systematic random sampling, or ad hoc sampling, including at times opportunistic sampling. Once a vessel has been selected for coverage, an observer is assigned to a trip. Observers stay with the vessel for the entire trip. Sampling may occur for all hauls/sets, or observers may use sampling schemes (e.g. a random breaks table) to determine which hauls/sets to sample or sub-sample.

The Estimation Procedures

Some types of information, such as the safety, pre-deployment, and gear or vessel characteristics information, are not collected for statistical estimation purposes, other than perhaps for stratification purposes, but rather to provide vessel, haul, or trip-specific information. For example, the safety information is used to ensure that a vessel meets observer program's safety standards before an observer is deployed to or embarks on a specific vessel. Similarly, pre-deployment information (e.g. the expected date, time, and location of a vessel's departure) is used to ensure that observers can be effectively and efficiently deployed.

Other information collected from the observed vessels and trips will be used to estimate biological variables (e.g., catch and bycatch) and economic variables (e.g., variable operating cost and employment) for the fishery as a whole. In this case, the estimation process relies on the stratification of observed vessels and trips, as well as unobserved vessel and trips, based on physical and operational characteristics of the both sets of vessels and trips. Often ratio estimators are used and applied by stratum. For example, the ratio of discarded catch to landed catch for observed trips and estimates of landings for all trips from landings reports is often used to estimate the discarded catch associated with all landings. Other estimates are based on multivariate functional relationships that are estimated based on data for observed vessel and trips and then applied to other vessels and trips. These are but two generic methods that make use of the observer information for estimation purposes. The methods, which can vary by program, circumstances (e.g. the availability of auxiliary information for all trips and vessels), and the variable(s) to be estimated, typically are subject to external review. That review can include a Council's Scientific and Statistical Committee or the review that is required for a paper to be accepted for publication.

The Degree of Accuracy Needed For the Purpose Described In the Justification

The desired degree of accuracy, and corresponding desired sample size and response rate, depend upon the application for which the data are being used. A basic application of the survey data will be the inference of unobserved population or sub-population mean values from the observed sample mean values. The expected sample sizes and response rates, which are limited by a variety of factors, will result in estimates that are sufficiently accurate for many purposes. For example, given a population of 1,450 vessels in the Federally managed Northeast fisheries covered by the Northeast Fisheries Observer Program and assuming a margin of error of 5% and a confidence level of 90%, the minimum sample size is 229 vessels. If the confidence levels are increased to 95% and 99%, minimum sample sizes increase to 304 and 456, respectively. The largest of these minimum sample size scenarios (a sample size of 456) can be reached with a response rate of about 41.5% of the 1,100 fishing vessels in the Federally managed fisheries that are expected to be observed on average in 2013-2015. The other 238 fishing vessels that will be observed will be in state managed fisheries.

Two reasons can be identified for desiring higher response rates than those needed to support inference of population means from sample means. First, data from this survey will be used to develop a variety of economic models covering applications such as fleet efficiency and fishery participation. In these applications, error will arise not only from how well the data used for model development represents the population, but also from model specification and estimation. Because it is not possible to completely avoid specification and estimation error in model development, there is good reason to desire a higher response rate and higher degree of accuracy in the data collection process. Second, future applications of the data may require further disaggregating the population into smaller groups according to factors such as state of operation, gear type, or vessel size. Identification of all such future disaggregated data needs is not possible at the present time. A higher response and higher degree of accuracy in the current data collection process will facilitate such future population disaggregation.

Any Unusual Problems Requiring Specialized Sampling Procedures

There are multiple objectives for observer programs and both the nature of and priority for specific objectives can differ by observer program or by fishery. Meeting the diverse objective of a specific observer program can require specialized sampling procedures. Similarly, the objective of providing useful estimates of the bycatch of endangered species, where such bycatch consists of rare events, can require specialized sampling procedures. The specifics of the specialized sampling procedures used in the various NMFS observer programs can be found in Attachment B.

Any Use of Periodic (Less Frequent Than Annual) Data Collection Cycles To Reduce Burden

The observer information is used to estimate variables that can change substantially by area, season, and year. Therefore, the objectives for collecting observer data cannot be met by less frequent data collection.

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

Methods Used To Maximize Response Rates

A number of methods have been used to maximize response rates. First, most of the information will be collected directly by an observer on the fishing vessel at a time that it is convenient for the captain/crew. Second, a relatively small number of questions will be asked at any one time. Third, the observers are trained to help the captain/crew understand the purpose and need of the data collection and how data will be kept confidential. Fourth, respondents typically are asked to provide only information that is readily available to them and maintained for their own purposes. Fifth, extensive outreach activities will also help the response rate. Informing the fishing industry about the purpose and need for the collection will be important to the success of the survey. Typically, outreach will occur on a number of levels: (1) news articles in trade magazines such as Commercial Fisheries News and National Fisherman and handouts made available at Council meetings and other fishing industry meetings will describe the purpose and need of the collection (2) similar information will be presented at fishing industry meetings; (3) on board observer interactions with fishermen; (4) a summary of data received in the previous collection will be made available to the target population; and (5) letters to permit holders are used to inform them of a new observer requirement or changes to the existing programs. Sixth, while the collection of economic information is voluntary for some observer programs, being associated with the observer program will increase the amount of attention it gets, and thus improve response rates over, for example, either an interview conducted by someone not associated with the fishery or a separate mail survey. Seventh, plain, coherent, and unambiguous terminology that is understandable to respondents is used. Eighth, responding to some of the

questions (e.g., the safety questions) is mandatory for all programs and responding to all of the questions is mandatory for some observer programs.

Strategy to Address Non-Response

A considerable amount of information is currently available about the physical and operational characteristics for the fishing vessels in the collection population. This information, which is available from other collections, will be used to compare that population with respondents, and to make any adjustments for systematic bias in survey response. Those other collections include: (1) landings reports or vessel logbook programs that provide individual vessel landing information, in both pounds landed and value of landings, by species, port, and gear, and often trip level effort data for all vessels in the survey population; (2) vessel monitoring systems (VMS) that provide additional operational characteristics; and (3) vessel permit systems and state and Coast Guard vessel registrations programs that provide information on the physical characteristics (e.g., gross tonnage, length, engine power, hull material, and year built) of individual fishing vessels. As a result, it is possible to compare respondents and non-respondents with regard to operational characteristics (e.g., seasonal patterns, species landed, and location of landings) and physical characteristics.

Adequacy of Accuracy and Reliability of Information for Intended Uses

NMFS needs to measure the biological and economic performance of Federally managed fisheries and to conduct effective observer programs in order to meet legal and regulatory requirements, support fisheries management decision making, and undertake biological and economic research. For many fisheries, observer programs provide the best source of some of the biological and economic information required for those purposes. The economic data are critical for constructing key economic performance measures such as profitability, capacity utilization, efficiency, productivity, and economic impacts. The data gathered and performance measures constructed will be used to address a wide range of issues. While the data will be used to comply with legal and regulatory requirements, these requirements do not specify a level of data accuracy. Minimum target response sizes for each population stratum are based on the objective of having a sample mean within 15% of the population mean at the 95% confidence level. It is believed that this provides a sufficient level of precision for inference of population means from sample means. As explained in the response to question 2, even greater precision is highly desirable for other anticipated applications of the data.

Due to the methods that have been used to maximize response rates and to address non-response bias, the collections have in the past and are expected to continue to yield "reliable" data that can be generalized to the universe studied.

4. Describe any tests of procedures or methods to be undertaken. Tests are encouraged as effective means to refine collections.

No pilot surveys will be necessary. These are not new collection programs and extensive efforts were undertaken both to develop this collection and to improve it over time.

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 required information is provided below by Observer Program.

National Observer Program

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Observer Providers certified to provide groundfish observers in Alaska. These companies employ the observers who collect information for the Agency.

Alaskan Observers, Inc.
130 Nickerson, Suite 206
Seattle, WA 98109

MRAG Americas Inc.
1810 Shadetree Circle
Anchorage, AK 99502

NWO, Inc.
P.O. Box 624
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Saltwater, Inc.
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TechSea International
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Further information on the Observer Providers is available at:
http://www.afsc.noaa.gov/FMA/observer_providers.htm

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Five Observer Providers are certified to provide groundfish observers in Alaska. These companies employ the observers who actually collect information for the Agency, they are:

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MRAG Americas Inc.
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