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.

For the U.S. commercial fishing fleet, which includes catcher vessels, catcher-processors and for-hire boats, the potential respondent universe is any boat that holds a federal or state permit or license, although in practice these surveys will primarily focus on boats actively participating in federally-managed fisheries. Based on information from USCG files and federal permit files, it is estimated that there are at least 20,000 federally-permitted fishing boats, and possibly as many as 25,000-30,000 state fishing boats. Each of the economic surveys to be conducted under this OMB authorization will involve a subset of these boats that will vary according to the scope of the particular survey.

The information that will be used to develop the sampling strategy for an economic survey will vary by fishery but will generally come from three types of data collections. The first component of this data is USCG, federal permit and state registration data. This data includes information on vessel characteristics such as vessel length, gross and net tonnages, horsepower and year built. In addition, address information for vessel and processor owners is available.

The second important component of this data is the landings information for individual vessels. In each NMFS region, fish ticket information and dealer data provide additional information on a vessel's fishing trip, including date, port of landing, species, fish condition codes, pounds landed, round pound equivalents and revenue received.

The third component of the data analysts may have available for developing sample strata are logbook programs, which provide detailed trip information on catch (target species, species landed, species discarded, etc.) and effort (gear used, duration or intensity of effort such as hooks used or soak time, crew size, etc.). In addition, because logbook tend to require reporting on all trips, it is possible to distinguish full-time vs. part time operators. Combined, these three information sources provide analysts with a rich data set with which to develop informed sampling plans and ascertain the representativeness of potential respondents.

The NMFS processed product database will be the primary source of data for defining the potential respondent universe and sampling strategy for the processor surveys. This survey collects contact and location information for processor companies and their plants as well as information on monthly employment and the volume and value of processed products. It is mandatory in the Northeast Region for some federally-managed species and voluntary elsewhere.

This processed product database may be supplemented in the Alaska Region by using processor permit and logbook information.

In terms of response rates, sampling strategies developed for recent submissions under this clearance show that obtaining a sample mean within 15% of the population mean at the 95% confidence level requires, on average, a response rate of roughly 50%. Obtaining a sample mean within 10% of the population mean at the 95% confidence level requires, on average, a response rate of roughly 65%.

Under this Clearance, cost earnings surveys were fielded on limited entry trawl vessels during 2005-6 and limited entry fixed gear vessels during 2006. Responses were obtained from 111 of 151 (74%) limited entry vessels and 71 of 122 (58%) limited entry fixed gear vessels. The higher response rate among limited entry trawl vessels was likely due to regulatory events taking place at the time of the surveys, the size of vessel operations, and ownership patterns. When the limited entry trawl survey was fielded in 2005 and 2006, the Pacific Fisheries Management Council was in the early stages of considering an individual transferable quota management regime for the limited entry trawl fishery. Adoption of such management change was generally favored by participants in the fishery, and evaluation of this management change in an Environmental Impact Statement (EIS) depended on having the economic data being collected by the survey. Hence, vessel owners who favored adoption of an individual transferrable quota system had a strong self-interest in responding to the survey. No such management reform was being considered for the limited entry fixed gear fishery.

Based on these results, we anticipate a high response rate for surveys submitted under this clearance, due to lessons learned regarding the use of in-person interviews (see West Coast Limited Entry Trawl and West Coast Fixed Gear Cost Earnings Surveys), telephone follow-up (see West Coast Limited Entry Trawl and West Coast Fixed Gear Cost Earnings Surveys), or, at a minimum, much higher industry involvement and support for the data collection (see California Nearshore Logbook Program). Nevertheless, despite the fact that the expected response rates for each survey submitted under this clearance has exceeded the minimal calculated response rate, each submission also included detailed plans for maximizing response rates and addressing non-response bias, as required in the Supplemental Questions for this generic clearance package.

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 surveys conducted under this clearance will include those conducted in-person, via telephone interview, and mail. Depending upon the size of the respondent universe, the data collection will be conducted as a census or a stratified random sample. Existing data sources such as landings revenue, logbook catch and effort information, and vessel characteristics obtained from permit data will be used to define the sample frame as well as to calculate the desired degree of accuracy and corresponding response rates.

Survey data will be used in combination with other data sources to (a) to assess the economic status of fisheries, (b) to conduct regulatory analyses that describe the effects of regulations on

the fishery, and (c) to estimate behavioral models that provide insights into the nature and extent of management problems (e.g., overcapacity) or predict industry response to changes in regulations.

No unusual problems are anticipated that would require specialized sampling procedures.

Efforts will be made to reduce burden associated with the frequency of data collection as follows:

a. The economic surveys to be conducted under this OMB authorization will typically be rotated among different fisheries from one year to the next, depending on management needs. The expectation is that a fishery will appear in the rotation only once every 2-4 years. If it is deemed necessary to survey a fishery more frequently, the sampling frame will, to the extent practicable, take into account whether a potential respondent had been previously selected to participate in a survey (e.g., sampling with no replacement of previously selected boats may be used, depending upon the statistical validity of this approach in the survey fishery). Overall, this approach will ensure coverage of the different fisheries for which economic data are lacking, while minimizing the burden on participants in any one of those fisheries.

Many vessels participate in multiple fisheries. Therefore, in situations where it is appropriate, surveys will be designed to cover predominant combinations of fisheries rather than single fisheries. Economists and fishery managers will want the data collected in this manner anyway, in order to better understand the economic effect of restrictions in one fishery in terms of the alternative opportunities available to the vessels in other fisheries. Focusing surveys on predominant fishery combinations will also reduce respondent burden, as it will help to avert situations where a vessel is surveyed one year regarding one of its fishery activities and the next year regarding another activity.

Example
This example focuses on the desired degree of accuracy and corresponding required response rate for the West Coast Limited Entry Trawl fishery to illustrate, in a general way, how the economic surveys will be conducted. The potential respondent universe for this survey includes the 218 active commercial fishing vessels that hold a limited entry trawl permit on the west coast. This survey will be performed on a census of the 218 vessels, stratified by those participating in a buyback program (83 vessels) and those not participating in the buyback program (135 vessels).

Desired Degree of Accuracy and Corresponding Response Rates: Important objectives of survey design include data accuracy and data precision (measuring and minimizing non-response bias, an important aspect of assuring accurate data, is addressed under Question 3). The degree of accuracy needed is not established by economic theory or legislative mandates. Data collected through this survey will be used for both statistical inference of population values from sample respondents and for estimation of econometric models used for policy making purposes. While more accurate data is clearly preferred, standards do not exist regarding the accuracy of data required for estimation of an econometric model. Factors such as the minimization of model specification error also contribute the quality of the empirical results obtained using survey data. It is not possible to state a level of accuracy that is required for all uses and applications of data collected by this survey. As discussed in the response to Question 3, data on vessel

characteristics and landings (location, timing, species, weight, and revenue) is available for both survey respondents and non-respondents, and will be used to test the representativeness of survey respondents. This data will also be used to adjust the models and/or data for any response bias that is detected.

The desired degree of precision, and corresponding desired response rate, depends upon the application for which the data is being used. Some applications will use data for the entire limited entry trawl fleet, while others will focus on specific vessel types within a sub-fleet (e.g., large groundfish trawlers). A basic application of the survey data will be the inference of population mean values from the observed sample mean values. The following table shows the number of responses (and corresponding response rate) needed to get a response sample mean within 10%, 15%, and 25% of the population mean at the 95% confidence level. In this calculation, revenues associated with West Coast landings (which are known) are used as a proxy for revenues from other sources and for expenditures (which are not known and are the focus of this survey).

Group	N Population	N 10%	N 15%	N 25%	Response Rate 10%	Response Rate 15%	Response Rate 25%
Non-Buyback	135	79	52	25	58%	38%	18%
Buyback	83	52	36	18	63%	43%	21%

As shown, a sample mean within 15% of the population mean at the 95% confidence level requires a response rate of 38% from non-buyback vessels and 43% from vessels participating in the buyback program.

There are a number of reasons for why a higher degree of precision may be preferred including a) the potential need in the future for additional stratification; and b) the potential need to offset any loss of precision from model specification and estimation error. Nevertheless, based on results obtained from the national employment survey, the response rate for this survey should well exceed the minimal requirements for achieving a sample mean within 15% of the population mean at the 95% confidence level.

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.

In order to enhance response rates and ensure data quality, all economic surveys conducted under this OMB authorization will be planned in close consultation with industry representatives. Industry input will be solicited regarding a variety of issues, including the following:
   a. the best way to introduce the survey to potential respondents,
   b. the preferred elicitation method (e.g., mail questionnaires, telephone or in-person interviews),
   c. the best person to provide survey information (e.g., skipper, vessel owner, vessel owner's accountant) and how to facilitate that person's cooperation,

d. types of data confidentiality assurances needed to make industry comfortable with survey,
e. the best time of year to conduct survey,
f. types of data that may be considered proprietary and ways to overcome this sensitivity,
g. questionnaire formats and data formats that make it easier for respondents to answer survey questions,
h. the most effective way to follow up with people who do not respond to initial solicitation,
i. the most effective ways to communicate survey results back to the industry.

In addition, Dillman's Total Design Method (1978) will also be followed to ensure maximum participation and to minimize non-response bias. Overall, past submissions under this clearance indicate that a 50% response rate will achieve an estimated sample mean within 15% of the population mean with a 95% confidence limit. Given that the recently completed national employment survey, a mail survey, achieved a response rate of 50%, the expected response rates for all of these submissions anticipated exceeding a 50% response rate because they all utilize methods widely regarded to achieve higher response rates than a mail survey. Therefore, each of these surveys should achieve a response rate that will ensure estimated sample means will be accurate. Nevertheless, to ensure that the results are representative of the population being studied survey data will be compared with information from existing data sources (landings revenue, logbook catch and effort data, etc.).If the comparison reveals sampling biases, information obtained from the alternative data source may be used to help devise methods (e.g., post-stratification) for correcting for the bias.

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

All surveys conducted under this OMB authorization will be subject to pretest involving fewer than ten respondents. As part of the pretest, representatives from the fishery being surveyed will be asked to complete a draft version of the questionnaire and to provide feedback regarding the clarity and completeness of the questionnaire and suggestions regarding how the survey can be improved.

5. Provide the name and telephone number of individuals consulted in 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 individuals responsible conducting for designing or conducting data collections for the agency include:
- Northeast NMFS economists: Drew Kitts (508) 495-2231; Barbara Roundtree (508) 495-2240; Eric Thunberg (508) 495-2272;
- Southeast NMFS economists: Jim Waters (252) 728-8710; Larry Perruso (305)-361-4278; Michael Travis (727)-824-5335;
- West Coast NMFS economists: Carl Lian (206) 860-3412; Todd Lee 206-302-2436; Cindy Thomson (831) 420-3911
- Alaska NMFS economists: Ron Felthoven (206) 526-4114, Brian Garber Yonts, (206) 526-6301

- Pacific Islands NMFS economists: Minling Pan (808) 983-5347; Justin Hospital, (808) 983-5347
- Pacific Fishery Management Plan (PFMC) economist: Jim Seger (503) 820-2280.

Analysts include:
- West Coast NMFS economists: Todd Lee (206) 302-2436; Carl Lian (206) 860-3412; Cindy Thomson (831) 420-3911
- Alaska NMFS economists: Ron Felthoven (206) 526-4114, Alan Haynie, (206) 526-4253, Mike Dalton (206) 526-4253
- Southeast NMFS economists: Christopher Liese (305) 365-4109; Jim Waters (252) 728-8710; Larry Perruso (305)-361-4278
- Northeast NMFS economists: Eric Thunberg (508) 495-2272; Scott Steinback: (508) 495-2371
- PFMC economist: Jim Seger (503) 820-2280
- Mid-Atlantic Fishery Management Plan economist: Jose Montanez (302) 674-2331 ext. 12.