

**SUPPORTING STATEMENT  
U.S. WEST COAST COMMERCIAL ALBACORE  
FISHERY COST-EARNINGS SURVEY  
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.**

According to the mandatory federal logbooks submitted to National Marine Fisheries Service by captains after each fishing trip, approximately 450 vessels are active in West Coast albacore fishery. This survey will target the approximately 450 active vessels in the fishery by providing surveys via U.S. Postal Service and by email where possible. Based on past such survey response results, an approximate 60% response rate is expected, which would yield approximately 270 completed surveys. The 270 completed responses will be stratified by vessel size, landings by weight, fishing method and port of registration.

The Northwest Fisheries Science Center (NWFSC) has conducted three previous economic cost earnings surveys of the limited entry fixed gear fleet, under OMB Control No. 0648-0369. 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 survey conducted in 2011 obtained responses from 60% of vessel owners.

The targeted survey fielding protocol for this survey would suggest a slightly higher response rate than previous surveys. 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 administered in person (annual member meetings of the AAFA and WFOA) and a survey method that includes phone and email follow-up to non respondents.

Total Target Population	450
Approximate expected survey response rate	60%
Approximate expected # of survey respondents	270
Average burden hours per survey	90 minutes
Total annual burden hours	675

**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 desired degree of precision, and corresponding desired response rate, depends upon the application for which the data is being used. Some applications may use data from all survey respondents, while other applications will use data only from vessels that hold 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. Given a population of approximately 450 vessels and an expected response rate of approximately 60%, a sample of 270 completed surveys would be required. This would yield approximately 270 respondents, and would achieve an appropriate margin of error (+/- 8%) at the 95% confidence interval.

For an example of anticipated precision of estimates, we consider the case of average variable costs. Results from the previous albacore fishery survey showed a coefficient of variation for reported variable

costs of  $CV_X = \frac{s}{\bar{X}} = 0.97$ , where  $X$  denotes respondent-level variable costs,  $s$  is the sample standard deviation and  $\bar{X}$  is the sample mean. The formula for the coefficient of variation of mean variable costs

estimated from survey results is  $CV_{\bar{X}} = \frac{s_{\bar{X}}}{\bar{X}} \sqrt{\frac{N-n}{N-1}} = CV_X \sqrt{\frac{N-n}{n(N-1)}}$ , where  $s_{\bar{X}} = \frac{s}{\sqrt{n}}$  is the standard error for the sample mean,  $N$  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<sup>th</sup> percentile of a standard normal random variable. With a target population size of 450 and 270 survey respondents, estimated mean variable costs would thus achieve an approximate margin of error of +/- 8.0% with 95% confidence.

The example above is one of many potential examples, 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.

This is a one-time survey which aims to collect two years of data, an approach specifically designed to reduce the burden to the respondents.

**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.**

A number of methods will be used to maximize survey response rates. First, the survey team will work with industry group representatives to encourage survey participation. Second, respondents are asked only to provide 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 implemented based on methods found most effective in those tests. Those methods include: taking advantage of opportunities to conduct interviews in person at industry events (such as membership meetings of the WFOA, AAFA and AFRF, the latter of which the team has been formally invited), following up with non-respondents to conduct surveys by phone or email and Lisa Wise Consulting leveraging close relationships, personal and professional, with industry leaders and individual fishermen forged over ten years.

Testing for non-response bias will be based on considerable data available for all members of the survey population. Data on vessel physical characteristics and landings are available for both survey respondents and non-respondents from the federal logbooks, and will be used to test the representativeness of survey respondents. No personally identifiable information will be provided to NMFS.

If non-response bias appears evident in our survey results, efforts will be made 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, weighted averages and weighted sums based on the distribution of groups will be used to adjust 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.**

The survey was reviewed and edited extensively by representatives of NMFS/SWFSC and NWFSC with extensive experience in administering surveys in the West Coast commercial fishing industry. The survey has been reviewed and pre-tested by Dr. Pam Godde, California State University San Marcos, a member of the Lisa Wise Consulting, Inc. team, who has worked closely with albacore fishermen in our target population and is aware of concerns they may have.

The survey was also pretested by commercial albacore fishermen from the roll or pole-and-line (bait boat) fisheries, the major methods deployed in this fishery. Representatives from the major associations in the West Coast commercial albacore industry also had the opportunity to review and comment on the survey. Testing included fewer than nine (9) individuals, therefore did not require prior approval from OMB.

**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.**

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