

## SUPPORTING STATEMENT

### NMFS ALASKA REGION CHINOOK SALMON ECONOMIC DATA REPORT (CHINOOK SALMON EDR)

OMB CONTROL NO. 0648-0633

#### 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.**

Submission of each of the three forms in the Chinook salmon EDR is required for the entire universe of potential respondents (a census of the entire population for each); thus, NMFS anticipates a response rate of 100 percent. The respondent universe varies for each of the three new forms.

NMFS requires only the owners of the AFA-permitted vessels to submit the Vessel Fuel Survey; it is estimated at or below 110, because some persons own multiple vessels.

For the Vessel Master Survey, masters fill out the form and owners send them in to NMFS. NMFS did a count of all of the State of Alaska Commercial Fisheries Entry Commission (CFEC) permits that were associated with AFA vessels as a rough proxy of how many masters to be involved. It is possible that each vessel master on each vessel that participated in the pollock fishery could be included for a respondent universe of up to 185 individuals. The number of entities that could supply these data may be substantially reduced if the owners of the vessels that are named in an IPA supply these forms for multiple vessels.

For the Compensated Transfer Report (CTR), there could be transactions from the vessel owners, the CDQ groups, and representatives for cooperatives, IPAs, and Chinook receiving entities. The representative for AFA vessel owners that are subject to an agreement for receiving Chinook salmon PSC may also be part of the respondent universe for the CTR, if these representatives are involved in the buying and selling of Chinook salmon PSC. The universe of these owners will be known by November 1 of each year, but is estimated to be 200 individuals.

For each AFA vessel that is not covered in an agreement, but that participated in the pollock fishery, the respondent will be the owner named on a Federal Fisheries Permit. Some of the vessel owners may also provide the name of a representative established by the IPA, AFA cooperative, or CDQ group to submit these forms. Those respondents are either named on a permit application or would be named by November 1 of each year for each vessel.

**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.**

All information collected in this Chinook salmon EDR is collected through a census of the population of vessels and persons authorized to catch pollock in the Bering Sea. Thus, sample selection methods are not applicable to this action.

NMFS will use census data from these collections to develop a descriptive (qualitative) analysis and quantitative or tabular comparisons to evaluate the effects of Amendment 91. Where data are available, NMFS may also apply descriptive statistics or other statistical analyses to examine whether:

- ◆ Chinook salmon PSC has been reduced,
- ◆ Incentives have changed fishing behavior during high and low Chinook salmon PSC encounter rates, or
- ◆ If pollock fishing location and Chinook salmon PSC locations have changed as a result of Amendment 91.

Regression analysis with a small number of variables or multi-variable statistical analysis may be applied to this data with the intent to assess the variability and explanatory power of two or more variables in a function. This regression analysis will also provide important insight into the distribution of data and potential accuracy of variables or of variables that require further verification.

Chinook salmon PSC transaction data reported in the CTR may be further examined with regression analysis by applying observed transaction prices and quantities traded by vessel. For example, it may be possible to estimate the frequency with which Chinook salmon transactions occur based upon the type or characteristics of vessels, during periods where members of an IPA approach the performance standard based on their proportion of the 47,591 Chinook salmon PSC in no more than two out of seven consecutive years. To conduct this statistical analysis, the variables used from the CTR and other data sources may include the number of transactions, total value of each transaction, vessel characteristics, and membership in a given AFA sector, AFA cooperative, or IPA. These statistical procedures could provide insight as to whether some vessels are either unable to avoid Chinook salmon PSC, or have a higher valued use of Chinook salmon PSC than other vessels and choose to purchase Chinook salmon PSC.

Fuel use and fuel cost from the Vessel Fuel Survey and vessel movement data from revisions to NMFS logbooks and landing reports may be examined with regression analysis to determine if the increase or decrease in selected travel costs can be estimated from data on bycatch incentives imposed by an AFA sector or cooperative and from other existing information. These estimates may also be compared during intervals of time where various types of incentives and

combinations of incentives are imposed, and can be compared with various conditions in the fishery (such as weather and sea conditions) that may impact vessel movements. Examples of some of the independent variables that might be tested in a regression analysis of travel costs include: general type of incentive; where and when the incentive is imposed; fuel costs; and distance traveled in response to an incentive, pollock catch, and Chinook salmon PSC.

**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.**

As discussed in Question 2, this collection will be applied annually to a census of vessel owners who participate in the AFA Bering Sea pollock fishery. NMFS explicitly identified in Amendment 91 the entities required to supply the data. The collection is mandatory, so non-response error is anticipated to be extremely small. The fuel data supplied on the Vessel Fuel Survey will not represent primary data (actual fuel used by date and event). The Vessel Fuel Survey data represents masters' estimates based on the type of actions they took to respond to Amendment 91; some response error may occur.

Sources of error or incomplete information may also be present in the Chinook salmon PSC prices reported for each transfer in the CTR form. For example, if a transfer of Chinook salmon PSC is accompanied by both monetary and a non-monetary compensation, the owner of a vessel may have some control over when prices are reported and whether the reported price can be attributed to Chinook salmon PSC.

Measuring and minimizing non-response bias is an important aspect of assuring accurate data. The degree of accuracy needed for the Chinook salmon EDR is not established by statistical theory or legislative mandates. The Council specifically identifies this collection as improving the amount of data available to analyze the effectiveness of the Amendment 91 for reducing Chinook salmon PSC to the extent practicable and to assess any changes in the yield of pollock. Data collected through these EDR forms will be used for simple deterministic comparisons, statistical inference by vessel type and cooperative, as well as 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 statistical models. The statistical analysis applied to this data may range from simple descriptive statistics, to more sophisticated regression and spatial analysis to assess the effectiveness of Amendment 91.

The major tool for minimizing errors, improving accuracy, and resolving any missing data or non-response of Chinook salmon EDR data is through verification procedures developed by NMFS economists and analysts. These measures would help NMFS to verify data submitted in the CTR, the Vessel Master Survey, and the Vessel Fuel Survey. The principal means to verify data and resolve questions would be through validation of data submitted in these three surveys against supporting records. NMFS would contact the Chinook salmon EDR submitter and request oral or written confirmation of data submissions. The person submitting the Chinook

salmon EDR would need to respond within 20 days of NMFS's information request. Responses after 20 days could be considered untimely and could result in a violation and enforcement action.

For the CTR, a NMFS-approved auditor would review the CTR data submitted and may request financial documents substantiating the data submitted in the Chinook salmon EDR. An auditor/accounting specialist would be subject to strict confidentiality requirements.

**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 Council held two industry meetings in 2009 to review and recommend data to be collected in each of the three new reports/surveys. While the meetings were not a formal pretest of the data reports, several fields in the reports/surveys were significantly revised as a result of the meetings. In addition, some members of the AFA trawl sectors have voluntarily submitted individual comments on previous versions of the forms developed for each report/survey.

In each meeting these draft data forms were reviewed by members of the AFA sector, North Pacific Fishery Management Council staff, Alaska Fisheries Science Center (AFSC) staff, and other NMFS staff. On June 21, 2010, AFSC held an industry workshop in Juneau to review the proposed reports/surveys. That workshop did not include formal pretests of the data forms, but resulted in some additional changes to the data forms.

**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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## REFERENCES

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- NMFS. 2009. Regulatory Impact Review, Amendment 91. National Marine Fisheries Service Alaska Regional Office. Juneau, AK. December 2009.  
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