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 potential respondent universe is all U.S. households (approximately 106 million according to the 2000 Census). A stratified random sample of approximately 800 Alaska households and 4,200 non-Alaska U.S. households will be used. Alaskan households are oversampled to ensure the inclusion of their preferences, since they are potentially more directly affected by actions to protect Steller sea lions and are likely to have more familiarity with Steller sea lions. The non-Alaska U.S. household sample is larger, recognizing the importance of sample size considerations for the ultimate goal of generating reliable national estimates.

For the collection as a whole, a response rate of approximately 57% is anticipated. This is the response rate achieved for the pilot pretest implementation treatment employing a $10 monetary incentive (see Appendix).

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 will use a stratified random sample of approximately 5,000 households purchased from a professional sampling vendor (see footnote 4). The population is stratified into Alaska and non-Alaska households with the Alaska household stratum consisting of approximately 800 households and the non-Alaska stratum consisting of approximately 4,200 households. The advance letter and cover letter accompanying the initial mailing will solicit the participation of a male or female head of household to complete the survey.

For each stratum, a sample of households will be purchased. Up to 15% of the purchased sample may be invalid, leading to valid samples of 680 and 3,570, respectively, for the two strata.

Survey responses will be used to statistically estimate a valuation model using a random utility-based multinomial choice model to assess the statistical significance of the set of attributes as contributors to the respondent's preferences for protecting Steller sea lions. Given the expected response rates, the sample sizes described above should be sufficiently large for this modeling and for data analysis generally. Assuming a conservative sample size estimate of 2100, each with three stated preference choice question responses per respondent (i.e., responses to Q10, Q11, and Q12), will result in 6300 (non-independent) observations. This provides a very large amount of observations with which to estimate the valuation function. To our knowledge, this sample size exceeds most, if not all, sample sizes for peer reviewed public good valuation studies. Summary statistics (means, medians, standard deviations, minimums, and maximums) will be calculated for responses to questions as well.

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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.

Numerous steps have been, and will be, taken to maximize response rates and deal with non-response behavior. These efforts are described below.

Maximizing Response Rates

The first step in achieving a high response rate is to develop an appealing questionnaire that is easy for respondents to complete. Significant effort has been spent on developing a good survey instrument. Experts on economic survey design and stated preference techniques were hired to assist in the design and testing of the survey. The current survey instrument has also benefited from input on earlier versions from several focus groups and one-on-one interviews (verbal protocols and cognitive interviews), and peer review by experts in survey design and non-market valuation, and by scientists who study Steller sea lions, other marine mammals, and fisheries. In the focus groups and interviews, the information presented was tested to ensure key concepts and terms were understood, figures and graphics (color and black and white) were tested for proper comprehension and appearance, and key economic and design issues were evaluated. In addition, cognitive interviews were used to ensure the survey instrument was not too technical, used words people could understand, and was a comfortable length and easy to complete. The result is a high-quality and professional-looking survey instrument.

The implementation techniques that will be employed are consistent with methods that maximize response rates. Implementation of the mail survey will follow the Dillman Tailored Design Method (2000), which consists of multiple contacts. The specific set of contacts that will be employed is the following:

  i. An **advance letter** notifying respondents a few days prior to the questionnaire arriving. This will be the first contact for households in the sample.
  ii. An **initial mailing** sent a few days after the advance letter. Each mailing will contain a personalized cover letter, questionnaire, and a pre-addressed stamped return envelope. The initial mailing will also include a $10 incentive.
  iii. A **postcard follow-up reminder** to be mailed 5-7 days following the initial mailing.
  iv. **A follow-up phone call** to encourage response. Individuals needing an additional copy of the survey will be sent one with another cover letter and return envelope.
  v. A second full mailing will be sent using USPS certified mailing to all individuals who have not returned the survey to date, including individuals who we were unable to contact in the first phone interview.

Non-respondents

To better understand why non-respondents did not return the survey and to determine if there are systematic differences between respondents and non-respondents, those contacted in follow-up phone call(s) and identified as non-respondents will be asked a few questions to gauge their

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reasons for not responding to the mail survey. These include select socioeconomic and demographic classification questions and a few attitudinal questions. Information collected from non-respondents will aid in improving the survey implementation and to correct for non-response bias.

Specific steps that will be employed to assess the presence and extent of non-response bias are the following:

- As a first step, demographic characteristics collected from respondents and non-respondents will be used in two comparisons: a comparison of respondents to non-respondents and a comparison of respondents to U.S. Census data. For respondents, age, gender, income, and education information will be available from the completed survey. The same information will be available from non-respondents who participate in the telephone interview. A comparison of the demographic differences may indicate how respondents and non-respondents are different with respect to these characteristics. We will also compare demographic information for survey respondents with U.S. Census data to evaluate sample representativeness on observable data.

- A parallel type of comparison will be made with respect to answers to the attitudinal questions asked of respondents and non-respondents. One of these questions is the General Social Survey question (Q2 in the mail surveys and Q1 in the telephone interview). The distribution of responses to this question by respondents and non-respondents will be evaluated for the two groups and compared with the GSS survey results for the most recent occurrence of this question. Q1 in the mail surveys and Q2 in the telephone interview are the same and thus allow another means to compare respondents and non-respondents. The demographic and attitudinal question comparisons will enable us to assess how similar respondents and non-respondents are to each other and to the general population (except for the non-GSS attitudinal questions).

- Another step that will be taken to evaluate the potential for non-response bias will be the analysis of estimated values from the preference function as a function of time/sample size. This approach essentially seeks to assess whether the estimated economic values stabilize as additional sample is added over time. In some surveys, estimated economic values (i.e., willingness to pay) decrease for respondents who return the survey later, perhaps reflecting that early responders may be more interested in the topic and thus have higher values. By analyzing how WTP changes during response waves, we can evaluate the potential presence and significance of this effect on population wide estimates.

After taking the steps above, we will evaluate the potential magnitude of potential non-response bias on the valuation results. If the potential is large, we will evaluate additional actions, such as employing the approach of Cameron, Shaw, and Ragland (1999) (or newer approaches along these lines) to explicitly account for sample selection in the model estimates. Their approach extends the general Heckman (1979) sample selection bias correction model to the specific case of mail survey non-response bias. The approach involves using zip code level Census data as explanatory variables in the sample selection decision to explain an individuals' propensity to respond to the survey.

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.

Several focus groups with fewer than ten members of the general public were conducted during the survey design phase (prior to the formal pretest) to test concepts and presentation of elements of the survey. These focus groups were conducted in Seattle and Denver. The survey instrument was then further evaluated and revised using input from one-on-one interviews conducted in Anchorage, Denver, Sacramento, and Rockville (Maryland). Both verbal protocol (talk aloud) and self-administered interviews were conducted, both with follow-up debriefing by team members. Moreover, the survey design and implementation plan have benefited from reviews conducted by academics with expertise in economic survey design and implementation.

More recently, a focus group held in Seattle was conducted to further evaluate the changes made to the survey instrument since the formal pretest.

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.

Several individuals were consulted on the statistical aspects of the design:

Dr. David Layton
Associate Professor of Public Affairs
University of Washington
(206) 324-1885

Dr. Robert Rowe
Chairman of the Board
Stratus Consulting, Inc.
(303) 381-8000

Dr. Roger Tourangeau
Director, Joint Program in Survey Methodology
University of Maryland and
Senior Research Scientist, Survey Research Center
University of Michigan

Dr. Dan Lew
Economist
NOAA Fisheries
(206) 526-4252

Dr. David Layton, Dr. Robert Rowe, Dr. William Breffle (Stratus Consulting) and Dr. Dan Lew will be involved in the analysis of the data.

PA Consulting conducted the pilot pretest implementation under OMB Control No.: 0648-0511, but no contractor has been selected for the full implementation yet.

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