## SUPPORTING STATEMENT U.S. Department of Commerce National Oceanic & Atmospheric Administration Alaska Saltwater Sport Fishing Economic Survey OMB Control No. 0648-0639

## **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. residents who participated in an Alaska sport saltwater fishing trip during 2025. In 2024, approximately 500,000 U.S. residents purchased a Alaska saltwater fishing license—we expect a similar number for 2025. Thus, the population consists of all U.S. residents who could legally saltwater sport fish in Alaska during the year.

A stratified random sample of approximately 7,250 respondents will be selected for the full survey. This sample size represents the maximum number of respondents that can be reached based on the available funds allocated for this study. The primary purpose of this data collection is to gain insight on the behavior of saltwater charter anglers fishing in Alaska. However, we do require some ancillary information on the choice to not go saltwater charter fishing from non-charter saltwater anglers that fished in Alaska. For these reasons, the stratified sample will consist of 6,750 anglers that participated in an Alaskan saltwater charter fishing trip and 500 anglers that did not. In 2023, about 60% of Alaskan saltwater charter fishing trips were taken by non-Alaskans. We account for this by further stratifying the sample to consist of 4,000 non-Alaska U.S. residents that participated in an Alaskan saltwater charter fishing trip, 2,750 Alaska residents that participate in a saltwater charter fishing trip, and 250 Alaska resident license holders that did not participate in a saltwater charter fishing trip, and 250 Alaska resident license holders that did not participate in a saltwater charter fishing trip.

For the collection as a whole, an overall response rate of 35% is anticipated. Results from a meta-analysis suggest that, on average, an 11% reduction in response rates occur when surveys are distributed via mail compared to push-to-web (Wu, et al., 2022). The 2017 Alaska Saltwater Sport Fishing Economic Survey that used similar survey protocols achieved response rates of 54.7% and 45.8% for non-residents and residents, respectively. A 11% reduction due to the change in survey mode suggests a response rate of 43.7% and 34.8% for non-residents and residents, respectively. These rates are consistent with those observed in other push-to-web surveys in the recreation demand literature (Wallen, et al., 2016; Campbell, et al., 2018; Carter, et al., 2025).

Sample Stratum	Population of Alaskan Sport Angling Licenses Issued in 2024 <sup>a</sup>	Sample size (total mailed)	Valid sample size (assuming 10% bad addresses)	Expected returns with \$1 honorarium (assuming 35% response rate)	Expected returns without \$1 honorarium (assuming 25% response rate) <sup>b</sup>
Resident – Charter	49,598	2,750	2,475	866	619
Resident – Non-charter	100,699	250	225	79	56
Non- residents – Charter	211,263	4,000	3,600	1,260	900
Non- residents – Non-charter	140,842	250	225	79	56
Total	502,402	7,250	6,525	2,284	1,631
Telephone follow-up interview <sup>c</sup>	-	-	-	1,000	1,000
Total Number of Responses	-	-	-	3,284	2,631

Table 1: Sample Stratification Breakdown:

<sup>a</sup> 2024 population estimates come from the <u>State of Alaska Department of Fish and Game</u>

<sup>b</sup> We assume a 10% reduction in response rates for surveys without an \$1 honorarium compared to surveys that contain a \$1 honorarium, described further in Question 3.

<sup>c</sup> We assume that up to 1,000 non-respondents will participate in the short telephone non-response followup interview.

# 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 be distributed in the first quarter of 2026. The full implementation will use a stratified random sample of approximately 6,750 U.S. residents who participated in a saltwater charter fishing trip in Alaska in 2025 and 500 U.S. residents who participated in a non-charter saltwater fishing trip in Alaska in 2025. A list of anglers meeting the criteria for each stratum will be provided by the Alaska Department of Fish and Game's Sport Fish License files and the Alaska Department of Fish and Game's Charter Logbook Data in January 2026. For purposes of sampling, the population is divided into four strata: non-Alaska U.S. resident and Alaska resident charter anglers and non-Alaska U.S. and Alaska resident non-charter anglers. Alaskans and non-Alaskans use the fishery resource and participate in the fishery in substantively different ways. Non-Alaskans are more likely to fly or take a cruise ship to Alaska, fish less frequently than

residents, and use charter boat services more often. Residents are more likely to have access to private boats they can use to fish for halibut and other saltwater fish and fish more frequently in saltwater compared to anglers living in other areas of the state (Lew, Lee, and Larson, 2010). These behavioral differences lead to differing spending behavior and may be indicative of differences in preferences for, and expectations of, charter fishing trips in Alaska. Similarly, anglers that participate in an Alaskan saltwater charter fishing trip may have unique preferences from anglers that participate in an Alaskan non-charter saltwater fishing trip. For example, Pacific halibut, the primary species targeted by recreational anglers, have different harvest regulations between charter and non-charter trips. Since the primary purpose of this study is to investigate the economic impact from changes in charter regulations, we need to collect data from non-charter anglers to estimate when non-charter anglers may switch to charter fishing. Consequently, a stratified sampling method is employed to ensure that separate, statistically significant, estimates for each of the four strata can be obtained and differences between the strata can be detected.

The resident charter sample strata will consist of 2,750 anglers and the resident non-charter sample strata will consist of 250 anglers while the non-Alaska charter sample strata will consist of 250 anglers (a total of 7,250 license holders). The samples will be drawn from the Alaska Department of Fish and Game's Charter Logbook Data and the Alaska Department of Fish and Game's Charter Logbook Data and the Alaska Department of Fish and Game's Charter Logbook Data and the Alaska Department of Fish and Game's Charter Logbook Data and the Alaska Department of Fish and Game Sport Fish License files, which contains the names, addresses, e-mail addresses, and phone numbers of all individuals who have participated in a saltwater charter fishing trip in the state and those who purchased a sport fishing license, respectively. Address information will be used to construct the two sampling frames representing resident and non-resident charter anglers. A random sample of charter and non-charter anglers will be selected from each of the Alaska resident and the non-Alaska resident sampling frames. From previous experience, up to 10% of the addresses in the license file may be invalid, leading to valid stratified samples of 2,475 and 3,600 for charter resident and non-resident anglers. We do not expect any unusual problems that will require additional special sampling procedures.

Past versions of this survey have been implemented in a frequent five-year cycle (2007, 2012, 2017). This survey is being issued later than this five-year cycle due to available funding and fulfilling higher priority requests from the North Pacific Fisheries Management Council. This data collection may return to the five-year cycle conditional on the availability of funds and need.

#### **Sample Size Considerations**

Sample sizes for the full implementation were primarily chosen so the expected number of returns by strata, under the assumption of a uniform 35% response rate across samples, was sufficiently large to allow estimation of separate, statistically significant recreation demand and stated preference models for the two charter strata and statistically significant stated preference models for the two non-charter strata. Based on previous experience and other studies in the recreation demand and stated preference valuation literature, the sample sizes proposed above for each subpopulation are sufficient for estimating model parameters with acceptable precision in the random utility-based models that will be employed. Given the expected response rate of 35%

of the valid sample size, the anticipated number of returns for resident and non-resident charter samples are 866 (2,475 x 0.35) and 1,260 (3,600 x 0.35) surveys, respectively, and the anticipated number of returns for Alaska resident and non-Alaska U.S. resident non-charter samples are 79 (225 x 0.35) surveys each.

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 was spent on developing a good survey instrument. The current survey instrument was modified from the 2017 survey, which itself was based on the survey instrument used in the 2012 and 2007 survey (Lew, et al. 2010). Compared to the 2007, 2012, and 2017 survey instrument, the current survey instrument has a significantly improved layout and question wording, as well as added or modified questions that address information gaps realized from analysis of the 2007, 2012, and 2017 survey data. The major change between previous surveys and the current version is the survey implementation. Previous versions of the survey were conducted via paper while the current version will be a push-to-web survey. A number of cognitive interviews were conducted to evaluate the survey instrument and the changes made from the previous surveys. The current survey has also been peer reviewed by experts in survey design, recreational fishing issues, and non-market valuation. In the interviews, the information presented was tested to ensure key concepts and terms were understood, figures were tested for proper comprehension and appearance, and key economic and design issues were evaluated and to ensure the current survey instrument used words and fishing terms people could understand. 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 push-to-web survey will follow the Tailored Design Method (Dillman, Smyth, and Christian, 2014), which consists of multiple contacts. The specific set of contacts that will be employed is the following:

- 1. An **invitation letter** containing a URL, unique password, and instructions. The invitation letter will also include a small incentive.
- 2. An **electronic follow-up** sent via email or text message one week after the invitation letter to be sent 5-7 days following the invitation letter containing login information.
- 3. A **postcard follow-up reminder** to be mailed 5-7 days following the electronic follow-up with login information.
- 4. A **letter follow-up reminder** will be sent to anyone who has yet to complete and return the survey.

5. A **follow-up phone call** to encourage response. Individuals contacted via phone who need, or request new survey links, will be provided with them.

An honorarium of \$1 will be provided to respondents for participating in the mail survey. An honorarium of \$1 was used in the previously-fielded 2007, 2012, and 2017 surveys and has been shown to have a positive effect on response rates across all survey modes (Singer and Ye, 2013). The exact improvement in response rates for surveys with incentives compared to those without are unclear. The literature suggests, however, that a 10% to 20% improvement in response rates can be expected (Dillman, Smyth, and Christian, 2014). Columns 5 and 6 in Table 1 state the number of expected responses with and without a \$1 honorarium when assuming a 10% difference in response rates.

# **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 the follow-up phone call reminder and identified as non-respondents will be asked a few questions to gauge their reasons for not responding to the survey. These include a few socioeconomic and demographic classification questions. Information collected from non-respondents will aid in identifying any systematic differences between respondents and non-respondents and to correct for non-response bias where necessary (e.g., using the Heckman method, or post-stratification weighting). Ignoring information from non-respondents may limit our ability to make generalizations and representative predictions of the population.

Additionally, and as necessary, respondent socio-demographic characteristics will be compared to previous samples drawn from the Alaska sport fishing license holders.

# 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 cognitive interview sessions with fewer than ten members of the general public were conducted during the survey design phase to test the revised survey instruments. These interviews were conducted virtually during 2024. Both verbal protocol (talk aloud) and self-administered interviews were conducted with follow-up debriefing by team members. Moreover, the survey design and implementation plan have benefited from review by individuals with expertise in fishing economic survey design and implementation.

Note that since this survey is an updated version of a previously-fielded survey, we anticipate a formal pretest implementation, as the survey protocols and instruments are similar to those fielded before, and the survey firm that will conduct the survey has used the identical survey implementation protocols in recent surveys with NMFS.

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

Dr. Dan Lew Economist NOAA Fisheries Alaska Fisheries Science Center Dan.lew@noaa.gov Dr. Russel Dame Economist NOAA Fisheries Alaska Fisheries Science Center <u>Russel.A.Dame@noaa.gov</u>

Dr. Russel Dame is responsible for analyzing the data.

#### **References:**

Campbell, R.M., T. J. Venn, and N.M. Anderson (2018). "Cost and Performance Tradeoffs Between Mail and Internet Survey Modes in a Nonmarket Valuation Survey." *Journal of Environmental Management*, 210: 316-327.

Carter, D. W., Lovell, S., Records, D., & Liese, C. (2025). A comparison of recreational fishing demand estimates from a mail-push-incentive versus email-only sampling strategy: Evidence from a survey of Gulf of America anglers. *North American Journal of Fisheries Management*, vqae004.

Dillman, D. A., J. D. Smyth, & L. M. Christian (2014). *Internet, Phone, Mail, and Mixed-Mode Surveys: The Total Design Method.* 4<sup>th</sup> Edition. Hoboken, NJ: John Wiley & Sons.

Lew, D. K., Lee, J., & Larson, D. M. (2010). *Saltwater sport fishing in Alaska: A summary and description of the Alaska Saltwater Sport Fishing Economic Survey, 2007* (NOAA Technical Memorandum NMFS-AFSC-214). U.S. Department of Commerce.

Lew, D. K., & Seung, C. (2010). The economic impact of saltwater sportfishing harvest restrictions in Alaska: An empirical analysis of nonresident anglers. *North American Journal of Fisheries Management*, *30*, 538–551.

Singer, E., & C. Ye (2013) "The Use and Effects of Incentives in Surveys." *The Annals of the American Academy of Political and Social Science*, 645: 112-141.

Wallen, K. E., Landon, A. C., Kyle, G. T., Schuett, M. A., Leitz, J., & Kurzawski, K. (2016). Mode effect and response rate issues in mixed-mode survey research: implications for recreational fisheries management. *North American Journal of Fisheries Management*, 36(4), 852-863.

Wu, M. J., Zhao, K., & Fils-Aime, F. (2022). Response rates of online surveys in published research: A metaanalysis. *Computers in human behavior reports*, *7*, 100206.