

**Supporting Statement B for
Paperwork Reduction Act Submission
Kodiak National Wildlife Refuge Bear Viewing Survey**

OMB Control Number 1018-XXXX

- 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 government units, households, or persons) in the universe covered by the collection and in the corresponding sample must be provided in tabular form for the universe as a whole and for each of the strata in the proposed sample. Indicate expected response rates for the collection as a whole. If the collection has been conducted previously, include the actual response rate achieved.**

This is a one-time data collection. As the first data collection of this nature on the Kodiak Refuge, estimates are based on anticipated visitation according to most recent Refuge trends. The universe for initial sampling is the approximately 2,000 individuals who will travel to the Kodiak National Wildlife Refuge during the summer of 2016 for the purpose of viewing bears. We expect 1,520 responses to Phase 1 (a 5-question survey card addressing viewing location and willingness to respond to online survey) by accounting for 5% of visitors who do not travel with a commercial air taxi or guide (reducing the sampling rate to 95%) and an anticipated 80% response rate for cards.

Assuming an 80% response rate for Phase 1 with 80% of respondents expressing willingness to participate in an online survey, the anticipated sample size for Phase 2 is 1,216 individuals. With a goal of a 60% response rate (based on the 71% response rate for the 2010-11 National Wildlife Refuge Visitor Survey, which also included a mail survey option), we calculated 730 responses for the online survey.

	Bear Viewers (Individuals)	Anticipated Sample	Anticipated Sampling Rate	Anticipated Response Rate	Anticipated Responses
Phase 1	2,000	2,000	.95	.80	1,520
Phase 2	1,520	1,216	100	.60	730

- 2. Describe the procedures for the collection of information including:**
- * **Statistical methodology for stratification and sample selection,**
 - * **Estimation procedure,**
 - * **Degree of accuracy needed for the purpose described in the justification,**
 - * **Unusual problems requiring specialized sampling procedures, and**
 - * **Any use of periodic (less frequent than annual) data collection cycles to reduce burden.**

Total population sampling will be utilized for surveying bear viewers above the age of 18 on the Kodiak Refuge throughout the summer 2016 season to ensure a sufficient sample size across all viewing locations. All bear viewers who travel with a commercial air taxi operator will receive a survey card that invites them to provide an email address for the online survey. Given the

anticipated nonresponse for the online survey (we do not anticipate a response rate higher than 60% based on a 71% response rate for the 2010-11 National Wildlife Refuge Visitor Survey that combined online and mail surveys), all participants who provide contact information will be sent an invitation for the survey. Initial survey cards will allow for comparison of which percentage of visitors for each viewing location within the Refuge can or opt to take the survey online. Nonresponse for Phase 1 will be measured by commercial operators who report how many viewers they transport each day and how many cards they receive back.

Since the Kodiak Refuge is only accessible by boat or floatplane, there is no entrance booth to provide an estimate of visitor numbers and where they travel within the Refuge. The initial survey cards will collect a set of data on this information for refuge planning purposes. The common link among almost all bear viewing visitors is that they must hire a private air taxi operator to bring them onto the refuge. All commercial operators that are permitted on the Refuge have agreed to distribute survey cards to their clients upon return from bear viewing trips. Many operators already invite clients to provide feedback on the quality of their trip upon return to the town of Kodiak, where all air taxis have offices and seating areas for their guests. Postcards will be distributed to and collected from clients before they leave the air taxi premises. In addition, private lodge owners who serve as bear viewing guides will have survey cards available at their remote lodges for the rare cases when clients fly their own airplanes. Finally, the Kodiak Refuge Visitor Center in downtown Kodiak will also serve as a drop-off point for survey cards in case clients accidentally depart the air taxi offices before returning their cards. Blank survey cards will also be available at the visitor center for any visitors who have traveled to the Refuge on their own plane without encountering a guide. All bear-viewing visitors will be invited to fill out a survey card, but participation is strictly voluntary. This two-phase survey reduces the public burden while on their short trips to the Refuge, as the short, expensive trips and often poor weather conditions are not conducive to completing a longer survey onsite.

Since permitted air taxi operators and guides play a crucial role in successful distribution and collection of the first phase of the survey, the Refuge will hold a mandatory training before remote lodge owners and guides depart to the field for the season. This training will cover how to identify a bear-viewing client, the strictly voluntary nature of the study, ethics including only involving individuals above the age of 18, how to explain the study to the public, and where to direct members of the public should they have questions or concerns about the nature of the study.

Due to an estimation of less than 1,500 survey cards collected for the season and anticipated nonresponse, online invitations will be sent to all individuals above the age of 18 who provide an email address in order to produce the large sample size necessary for successful linear regression analysis (Pallant, J. 2013. *SPSS survival manual*. McGraw-Hill Education (UK).

3. Describe methods to maximize response rates and to deal with issues of nonresponse. The accuracy and reliability of information collected must be shown to be adequate for intended uses. For collections based on sampling, a special justification must be provided for any collection that will not yield "reliable" data that can be generalized to the universe studied.

Participation in the original survey card is voluntary, but due to the extremely short nature of the survey and explanation of the study by trained commercial air taxi operators, the response rate is expected to be above 80% for the initial survey. To address coverage error, non-pilot guides and private lodges hosting bear viewers will have survey cards on for the small percentage of individuals who travel on their own floatplanes rather than hiring a commercial air taxi. Finally, Refuge staff will be stationed at the Frazer Fish Pass viewing site (where the majority of half-

day viewers travel to view bears). Here, the ranger onsite will discuss the survey with visitors on the viewing pad and invite them to fill out a card after their plane ride back to town. Since the viewing platform concentrates visitors in a confined area, similar sites in other parts of Alaska have been successful for high-density visitor interaction research (Whittaker, D. 2008. Capacity norms on bear viewing platforms. *Human Dimensions of Wildlife* 2:2, 37-49.). Response rates have been shown to benefit from showing positive regard to respondents and making it easy to respond (Dillman, Don A., Jolene D. Smyth and Leah M. Christian. 2009. *Internet, Mail, and Mixed Mode Surveys: The Tailored Design Method*. New York: John Wiley and Sons.). Consequentially, interaction with Refuge staff and permitted guides and operators should encourage participation in the five-question survey cards.

The second phase of the survey will invite participants to an online link to the more in-depth Qualtrics survey using the email addresses voluntarily supplied on the initial 5-question survey cards. Online invitations will be sent out two to three weeks after survey cards are received to give visitors sufficient time to travel home while allowing accurate recall of events on their viewing trips. Reminders will be sent 3 and 7 days after the initial invitation, and all who submit an online response will receive an automatic "thank you" email.

There may be some visitors who do not have Internet access to complete the survey, which contributes to nonresponse error where there is a difference in characteristics among participants who choose to respond and the targeted members of the population who choose not to participate or cannot participate in the chosen method. While providing a mail survey option could potentially be more inclusive to the whole population, budget, time, and international restrictions for visitors from other countries make a mail survey infeasible for the scope of this study. Additionally, in the first National Wildlife Refuge Survey conducted across 52 wildlife refuges in the United States in 2010, 40% of respondents who initially indicated preference for a mail survey ended up completing the survey online, which suggests that visitors may have more comfort with online methods than they initially indicate (Sexton et al. 2011). The clientele who can afford to travel to the refuge suggests a level of social affluence that could be correlated with ease of access to the Internet. Initial survey cards will indicate how many visitors are unable to participate in the online survey due to lack of internet access, and if this number exceeds 10% of the total population, methods will need to be reevaluated for future studies. Kaplowitz, Hadlock, and Levine (2004) found that response rates to online surveys were comparable to those of mail surveys when the online surveys were preceded by an advanced postcard notification in the mail. Therefore, it is conceivable that the initial pre-survey given on site could have similar effects on response rate for online surveys as an advanced mail notification. Finally, the original survey cards allow for comparison of online survey data based on viewing location to account for non-response among these group categories.

Kaplowitz, M. D., Hadlock, T. D., & Levine, R. 2004. A comparison of web and mail survey response rates. *Public opinion quarterly*, 68(1), 94-101.

Sexton, N. R., Miller, H. M., & Dietsch, A. M. 2011. Appropriate uses and considerations for online surveying in human dimensions research. *Human Dimensions of Wildlife*, 16(3), 154-163.).

- 4. Describe any tests of procedures or methods to be undertaken. Testing is encouraged as an effective means of refining collections of information to minimize burden and improve utility. Tests must be approved if they call for answers to identical questions from 10 or more respondents. A proposed test or set of tests may be submitted for approval separately or in combination with the main collection of information.**

Both phases of the survey were tested by less than 10 individuals: 4 within the U.S. Fish and Wildlife Service, 3 faculty at Utah State University, and 2 additional volunteers. Testing addressed flow of survey questions and clarity of content.

5. Provide the name and telephone number of individuals consulted on 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.

<p><i>Individual primarily responsible for data collection and analysis for agency:</i></p>	<p><i>Under the close supervision of:</i></p>
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<p><i>Methods and analysis will also be reviewed by two additional committee members:</i></p>	
<p>Dr. Mark Brunson Utah State University Department of Environment and Society Mark.Brunson@usu.edu (435) 797-2458</p>	<p>Dr. Courtney Flint ← Utah State University ← Department of Sociology Courtney.Flint@usu.edu (435) 797-8635</p>
<p><i>Methods and plan for analysis also reviewed and approved by:</i></p>	
<p>Natalie Sexton Human Dimensions Branch, Chief U.S. Fish and Wildlife Service--National Wildlife Refuge System natalie_sexton@fws.gov (970) 266-2935</p>	