



PROGRAMMATIC REVIEW AND CLEARANCE PROCESS FOR NPS-SPONSORED PUBLIC SURVEYS



The scope of the Programmatic Review and Clearance Process for NPS-Sponsored Public Surveys is limited and will only include individual surveys of park visitors, potential park visitors, and residents of communities near parks. Use of the programmatic review will be limited to non-controversial surveys of park visitors, potential park visitors, and/or residents of communities near parks that are not likely to include topics of significant interest in the review process. Additionally, this process is limited to non-controversial information collections that do not attract attention to significant, sensitive, or political issues. Examples of significant, sensitive, or political issues include: seeking opinions regarding political figures; obtaining citizen feedback related to high-visibility or high-impact issues like the reintroduction of wolves in Yellowstone National Park, the delisting of specific Endangered Species, or drilling in the Arctic National Wildlife Refuge.

SUBMISSION DATE: August 1, 2018

PROJECT TITLE: Human Dimensions of Wildlife Study in Isle Royale National Park: Visitor perceptions of human-moose (*Alces alces*) interactions

ABSTRACT: (not to exceed 150 words)

Isle Royale National Park, known for its long-standing wolf-moose study, has seen a drastic increase in its moose population as the wolf population has declined in recent years. In addition to the increase in moose, the island has also seen a rise in visitors since 2014. These two rising populations pose a risk of increased human-moose interactions on the island. This study will aim to (1) determine how visitors of Isle Royale perceive risks posed by moose; (2) quantify human-moose interactions (including total count of interactions, as well as characteristics and details of interactions); and (3) provide feedback to the National Park Service (NPS) to enhance interpretation and communication with visitors. Additionally, these data will provide a baseline dataset to understanding human-moose interactions prior to the reintroduction of wolves to the island, as wolf presence has been shown to shift moose activity toward human dominated areas on the island.

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PROJECT INFORMATION:

Short IC Title: Visitor perceptions of human-moose (*Alces alces*) interactions in Isle Royale National Park

Where will the collection take place? Isle Royale National Park

Sampling Period Start Date: 9/1/2018 Sampling Period End Date: 9/1/2018

Segment 1	Segment 2
9/1-30/2018	6/1/2019 – 9/1/2019

Type of Information Collection Instrument: (Check ALL that Apply)

- Mail-Back Questionnaire Face-to-Face Interview Focus Groups
 On-Site Questionnaire Telephone Survey
 Other (List)

Will an electronic device be used to collect information? No Yes – Type of Device:

SURVEY JUSTIFICATION:

Social science research in support of park planning and management is mandated in the NPS Management Policies 2006 (Section 8.11.1, "Social Science Studies"). The NPS pursues a policy that facilitates social science studies in support of the NPS mission to protect resources and enhance the enjoyment of present and future generations (National Park Service Act of 1916, 38 Stat 535, 16 USC 1, et seq.). NPS policy mandates that social science research will be used to provide an understanding of park visitors, the non-visiting public, gateway communities and regions, and human interactions with park resources. Such studies are needed to provide a scientific basis for park planning and development.

Human-wildlife interactions are an important area of research for the National Park Service. Isle Royale National Park (ISRO) is home to one of the largest moose populations in the country and lists human-wildlife conflict as one of their highest research priorities (Isle Royale, 2009, page 20). Across the United States, conflicts between moose and humans have resulted in injuries and trauma. In Utah, in 2017, a near-fatal interaction between a woman and a cow moose resulted in severe injury (Noble, 2017). Additionally, McDonald et al. (2012) argued that human-moose conflicts are substantially underreported. Isle Royale provides a unique opportunity to study people’s perceptions of moose and the risks associated with human-moose interactions.

The remote island wilderness of Lake Superior is vital for the ecological and recreational value that draws many visitors to the park. Over time, wolf predation has driven moose populations closer to human settlements, which serve as artificial refugees because wolves are less likely to approach these areas. In September 2017, three bull moose were walking and browsing in occupied campgrounds at Rock Harbor, while visitors looked on and took pictures. While this event was exciting for the viewers present, it was also a risky situation because this interaction occurred during the rutting season when bull moose are more likely to be unpredictable and aggressive.

The few studies investigating public perceptions of moose-human interactions, found that people tend to underestimate the danger and risk of contact with moose in the wild (McDonald et al, 2012). This study of human-moose interactions at Isle Royale National Park (ISRO) will help managers understand the public’s perception of the risk related to moose interactions. The questions in the collection will investigate the level and how often human-moose interactions occur, and how people behave during a moose encounter. Additionally, the decision to reintroduce wolves back to the island in late 2018 or early 2019 may drive more moose into human-dominated areas on the island resulting in an increase in human-moose conflict. The information from this study will assess visitor perceptions and help identify the best management strategies based on the visitors’ responses.

SURVEY METHODOLOGY:

(A) Respondent Universe:

The respondent universe for this study will be all adults (individuals over the age of 18 years old) visiting Isle Royale National Park and returning to the mainland via the Ranger III ferry on four random days in September 2018 and again for 28 random days starting June 1 through September 1, 2019 .

(B) Sampling Plan / Procedures:

The sample period for this collection will be in two segments (Table 1). The first segment will consist of four days in September 2018. The second segment be 28 random days starting June 1 and ending in September 30, 2019. The sample is divided into two segments because the Ranger III ferry typically discontinues service in mid-September. The ferry generally resumes service for park visitors in June. A questionnaire will be administered to all adult passengers (18 years and older) aboard the Ranger III during the return trip from Isle Royale National Park to the location of the park headquarters, Houghton, MI. Due to the limited sampling period and the number of potential respondents, we will use a census sampling method for this collection.

Table 1. Sampling Schedule - Number of days per month.

	2018	2019				Total
Location	September	June	July	August	September	
Ranger III Passenger Ferry	4	8	8	8	4	32

On-Board Questionnaire

All adult passengers aboard the Ranger III ferry will be approached and asked to complete a six (6) minute questionnaire. The return trip from Isle Royale to Houghton, MI occurs two times per week (Wednesdays and Saturdays). The trip takes 5 hours, which allows ample time for the researchers to administer the survey. Based on the 2017 Isle Royale transport numbers, the Ranger III ferry averaged 119 passengers per voyage, of which 87% (n=104) were adults. Using this estimate combined with 32 sampling days, we expect to contact at least 3,312 people (Table 2).

Table 2. Estimated Number of Visitor Contacts during Sampling Period

Location	2018	2019				
	September 4 days	June 8 days	July 8 days	August 8 days	September 8 days	Total 32 days
Ranger III Passenger Ferry (n=109)	414	828	828	828	414	3,312

(C) Instrument Administration:

This collection will use an on-site questionnaire to collect information. Respondents are expected to complete and return the questionnaire to the research assistants before exiting the ferry. While on the boat, a team of research assistants will approach each adult passenger and ask them to participate in the study. All passengers agreeing to participate will be handed the questionnaire that includes an introduction and the purpose of the research. A version of the following script will be used to introduce the researcher and the study:

“We are conducting a survey for Isle Royale National Park in conjunction with Michigan Technological University. The park staff is interested in understanding more about visitor experiences and perceptions of moose while on the on the island. Your participation is voluntary and your responses are completely anonymous. The questionnaire should take you about 6 minutes to complete. Would you be willing to participate?”

- If the visitor’s response is NO, the assistant will ask about the main activity they participated in during their trip to Isle Royale National Park and if they encountered any moose while on Isle Royale.
- If the visitor’s response is If YES, the assistant will thank them for agreeing to participate and will explain that questionnaire includes a brief introduction that provides some further information about the study. Once they are finished, that will be asked to return the completed questionnaire to the research assistant or park staff on the boat, or to place it in the collection box on the lower level as they exit the boat.

(D) Expected Response Rate / Confidence Level:

Over the survey period, we anticipate that at least 3,312 visitors will be approached and asked to complete a survey. Based on a previous survey on visitor experiences on ISRO we have calculated the response rate for this collection using the average of the response rates from the surveys conducted on the Ranger III from 2011, 2013 and 2016. Taking the averages of these three survey we estimate the response rate for this collection to be 68% (n=2,252) (Table 3). Based on

this sample size, the results will not be used to generalize any visitor experiences beyond those in the Isle Royale visitor population traveling off the island on the Ranger III.

Table 3. Estimated Response Rate of Participants

Location	Initial Contacts	Response Rate 68%	Non-respondents (Soft refusals) 32%	Non-response survey 68%	Hard Refusals 32%
Ranger III Passenger Ferry	3,312	2,252	1,060	721	339

(E) Strategies for dealing with potential non-response bias:

All individuals unwilling or unable to participate in the study will be asked if they would be willing to answer two non-response bias questions taken directly from the survey. These responses will help assess if there is any non-response bias in the study.

- “What was the main activity that you participated in during your trip to Isle Royale National Park?”
- “Did you encounter a moose while on Isle Royale?”

In addition to the responses to these questions, the following visitor characteristics will be recorded:

- presence or absence of children,
- language barriers, and
- lake conditions/indications of sea sickness.

Finally, for individuals completely refusing to participate in the study, we will attempt collect the following data: 1) lake conditions (as an indicator of sea sickness), 2) gender presentation, 3) location on the boat, and 4) presence or absence of children. Any non-response bias and the limitations will be reported in the final report.

(F) Description of any pre-testing and peer review of the methods and/or instrument:

Questions included in the questionnaire were designed and reviewed by faculty in the Department of Social Sciences at Michigan Technological University and the National Park Service staff of Isle Royale. The questionnaire was pre-tested by 5 Michigan Tech undergraduate students in the Human Dimensions of Natural Resources course who had visited Isle Royale. We made minor changes to the questionnaire after pre-testing which included reorganizing the order of the questions so demographic questions are at the end of the questionnaire and minor word changes for clarity. Pre-testing allowed us to estimate the average burden to participants and clarify wording within the questionnaire.

BURDEN ESTIMATES:

The estimated respondent burden for this collection is 275 hours (Table 4). We plan to contact at least 3,312 people and receive 2,252 completed questionnaires (Table 4). Based on our pretesting efforts, the time to make the initial contact, explain the purpose of the study, and determine participation is typically one minute. The average time to complete the questionnaire was 6 minutes. The anticipated respondent burden is estimated by multiplying the number of respondents (n=2,252) by the initial contact (1 minute) plus the average time to complete to return the questionnaire (6 minutes).

We expect that of all of the people approached on the boat, approximately 32% of them will refuse to take the questionnaire, however 68% (n=721) individuals will agree to at least answer the non-response bias questions which should take less than one minute. For the remaining 339 individuals completely refusing to participate in the study, we will make one final attempt to ask them to answer non-response bias questions and their reason for refusal.

Table 4: Estimated respondent burden for on-board questionnaire

Category	Responses	Completion Time * (minutes)	Burden Hours
On-site Contacts			
Completed Questionnaires	2,252	7	263
Non-response Question	721	1	12
Total	2,973	<i>Contact time added to completion time</i>	275

REPORTING PLAN:

A final report will be disseminated to park managers and staff of ISRO National Park at the end of the data collection period. This report will provide an overview of the study including the total number of questionnaires collected. Descriptive and statistical analyses will be included, as will any relevant findings and conclusions from the study. We will also send a copy of the final report to the NPS Social Science Division for archiving in the Social Science Studies Collection. A full write-up and analysis of the data will be submitted for publication to the peer-reviewed journal *Human Dimensions of Wildlife*.

REFERENCES:

- Isle Royale (2009). *Strategic Plan for Scientific Research in Isle Royale National Park*. Retrieved from <https://www.mtu.edu/forest/about/outreach/isleroyaleinstitute/strategic-plan-scientific-research.pdf>
- McDonald, A., Rea, R., & Hesse, G. (2012). *Perceptions of Moose-Human Conflicts in an Urban Environment*. *Alces*, pp. 123-130.
- Noble, M. (2017, October 25). A moose attacked a woman in Utah, officials say. And now they're looking for where the victim went. *The Salt Lake Tribune*. <https://www.sltrib.com/news/2017/10/25/injured-woman-found-on-utah-trail-was-likely-attacked-by-a-moose-officials-say/>.

NOTICES

Privacy Act Statement

General: This information is provided pursuant to Public Law 93-579 (Privacy Act of 1974), December 21, 1984, for individuals completing this form.

Authority: National Park Service Research mandate (54 USC 100702)

Purpose and Uses: This information will be used by The NPS Information Collections Coordinator to ensure appropriate documentation of information collections conducted in areas managed by or that are sponsored by the National Park Service.

Effects of Nondisclosure: Providing information is mandatory to submit Information Collection Requests to Programmatic Review Process.

Paperwork Reduction Act Statement

We are collecting this information subject to the Paperwork Reduction Act (44 U.S.C. 3501) and is authorized by the National Park Service Research mandate (54 USC 100702). This information will be used by The NPS Information Collections Coordinator to ensure appropriate documentation of information collections conducted in areas managed by or that are sponsored by the National Park Service. All parts of the form must be completed in order for your request to be considered. We may not conduct or sponsor and you are not required to respond to, this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number. OMB has reviewed and approved The National Park Service Programmatic Review Process and assigned OMB Control Number 1024-0224.

Estimated Burden Statement

Public Reporting burden for this form is estimated to average 60 minutes per collection, including the time it takes for reviewing instructions, gathering information and completing and reviewing the form. This time does not include the editorial time required to finalize the submission. Comments regarding this burden estimate or any aspect of this form should be sent to the Information Collection Clearance Coordinator, National Park Service, 1201 Oakridge Dr., Fort Collins, CO 80525.