



8. **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, development, operations, management, education, and interpretive activities.*

Maintaining a high quality experience on the carriage roads is an important park goal affected by visitor behaviors and visitor use levels. The purpose of this study is to determine if behavioral standards of quality established for the carriage roads have been violated.

Crowding and behaviors on the carriage roads were studied intensively in the mid-1990s because of visitor complaints about the number and behaviors of visitors and management concerns about a rapid increase in use. In 1997, Acadia National Park (ACAD) park staff applied the Visitor Experience Resource Protection (VERP) framework to the carriage roads and established indicators and standards for crowding and four problem behaviors (Jacobi 1997). The behavior indicator established was the percent of visitors experiencing more than 2 occurrences of a behavior per unit of time in either the High Use Zone or the Low Use Zone (Jacobi 2007). The behaviors and their standards are shown in the table below.

Behavior	Standard-High Use Zone	Standard-Low Use Zone
Failure to warn when passing from behind	Not > 5%	Not > 5%
Bicycle speed	Not > 10%	Not > 5%
Dogs off leash	Not > 5%	Not > 5%
Obstructing the road	Not > 10%	Not > 5%

Since 1997, the park has monitored the numbers of visitors on the carriage roads annually and behaviors every 3 - 4 years (see Jacobi 2005, 2007, and 2011), and compared results to established standards and past monitoring efforts.

Past monitoring has shown that measured conditions have sometimes violated the behavior standards (Jacobi 2011). A close approach or violation of standards would prompt management action, as it did in 2011 based on our 2010 report. This request is to continue the periodic survey of visitors that will enable park staff to continue to manage the carriage roads for a high quality visitor experience.

9. **Survey Methodology:** **a) Respondent Universe:** The respondent universe for this collection will be all visitors 16 years old & older using the carriage roads for at least 15 minutes.

as much space as needed; if necessary include additional explanation on a separate page.)

The sampling period will be July 1 to August 31, 2013.

**(b) Sampling Plan/Procedures:** A representative sample of carriage road users will be contacted to participate in the survey. The sample will be stratified by location of entry and time of day. Sampling will be based on carriage road census data developed in 2001-2002 and designed to contact an equal number of visitor groups who have spent at least 15 minutes in either the high use zone or the low use zone of the carriage roads. There is no stratification by day of week because we know from census data that weekday and weekend visitation are equivalent during the peak summer season.

The High Use Zone consists of the carriage road segments connecting intersections 1-10 and 14-17. This zone covers the Paradise Hill, Witch Hole Pond, Eagle Lake, Jordan Pond, and Bubble Pond areas. Temporally, the High Use Zone includes only the hours between 10:00 a.m. and 5:00 p.m., and only the days between June 20 and Labor Day, plus two days each of the Memorial and Columbus Day weekends. All three conditions (location, time of day, and time of year) must occur together to define the High Use Zone. The low use zone consists of all locations and times other than those of the high use zone (Jacobi 1997).

Times and survey locations are shown in the table below (from Jacobi 2011).

Zone	Times	Locations
Low use	7:00 am – 10:00am 5:00 pm – 7:00 pm	Eagle Lake, Visitor Center, Duck Brook Bridge, Bubble Pond, Jordan Pond
Low use	10:00 am – 1:30 pm 1:30 pm – 5:00 pm	Brown Mountain, Parkman Mountain
High use	10:00 am – 1:30 pm 1:30 pm – 5:00 pm	Eagle Lake, Visitor Center, Duck Brook Bridge, Bubble Pond, Jordan Pond

In each case we will make an equal number of contacts before. Each sampling day, we will vary the exact time we start administering questionnaires so collection is distributed across all the hours of the time strata (see table above).

We will approach 525 visitor groups exiting the carriage roads for participation in the survey, selecting one adult volunteer (over age 16) from each group randomized by closest birth date. Of those, we expect approximately 95% or 500 individuals to respond. We expect to sample for 50 days. The daily number of contacts will vary based on the census data and sampling plan, but not exceed a total of 525 for the sampling period.

**(c) Instrument Administration:**

Visitor parties will be approached as they exit the carriage roads at a sampling location. Interviewers will identify themselves and tell visitors the park is monitoring the visitor experience on the carriage roads. The interviewer will state that completing the questionnaire is voluntary and will take about three minutes. If a visitor party refuses to participate the interviewer will record the activity type and residency (non-response data), and the next party exiting will be immediately approached. If they agree to participate, the interviewer will

remain with the respondent, collect the completed instrument, and then immediately approach the next party exiting the carriage roads. Using carriage road maps, interviewers will assist respondents with Question 1 about their route on the carriage roads.

*Hi. My name is Charlie Jacobi and I'm a ranger here at the park. Have you folks got a moment? It looks like you've just finished a ride/walk on the carriage roads... How long were you out?*

- If less than fifteen minutes, then: *Thank you, but we were looking for people who visited longer than that for possible participation in a visitor survey.*
- If more than fifteen minutes, then: *If you are interested, we would like to find out about your experience on the carriage roads through a brief questionnaire that takes about three minutes to complete.*

*Your participation is voluntary. If you would like to help, we ask that the adult from your group with the closest birth date to today to participate. Participants will be thanked for their help when finished.*

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**(d) Expected Response Rate/Confidence Levels:**

We will approach 525 visitor parties approximately evenly distributed between the two use zones. Five hundred responses are expected (about 250 for each zone). This is a 95% response rate, similar to previous carriage road research and monitoring studies (Jacobi 2011, 2007, 2005). With a confidence level of 95%, the margin of error is +/- 6.5 percentage points (for 250 respondents).

Number of Initial Contacts	Expected Response Rate	Expected Number of Responses	Margin of Error +/- %
525	95%	500	6.5%

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

We will observe or ask non-respondents for their primary activity (walking, biking, running, equestrian) and residency (permanent, summer, or not a resident of Mount Desert Island) to compare with the sample and report any differences and any implications concerning park management.

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

All of the questions in this survey have been used in previously OMB approved surveys used at ACAD and are consistent with the topic areas covered in the currently approved NPS Pool of Known Questions (OMB Control Number 1024 - 0224). An explanation of the use of the questions related to the topic areas are explained in a shaded box above each of the questions.

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10 **Burden Estimates:** We plan to approach at least 525 individuals during the sampling period. With an anticipated response rate of 95%, we expect to receive 500 total responses for this collection.

We expect that the initial contact time will be at least one minute per person (525 x 1 minute = 9 hours). We expect that 25 (4.8%) visitors will refuse to participate during the initial on-site contact, for those individuals we will record their reason for refusal and ask them to answer the two questions that will be used for the non-response check. This is estimated to take no more than 1 minute (25 x 1 minute = 1 hour) to complete each session.

For those who agree to participate, we expect that 500 will complete and return the survey, with that, an additional 3 minutes will be required to complete the follow through (500 response x 3 minutes = 25 hours). The burden for this collection is estimated to be 35 hours.

Estimated Number of Contacts		Estimation of Time (minutes)		Estimation of Respondent Burden (hours)	
Total Number of Initial Contacts	525	Estimated Time to Complete Initial Contact	1	Estimated Burden	9
Estimated number of on-site refusals	25	On-site Refusal/nonresponse	1	Estimated Burden	1
Total Number of Responses)	500	Time to complete and return surveys	3	Estimated Burden	25
				<b>Total Burden</b>	<b>35</b>

11. **Reporting Plan:** An in-house technical report will be prepared and accessioned into the park bibliography. A copy of this report will also be submitted as required to the National Park Service Social Science Program.

#### Literature Cited

- Jacobi, C. (2011). Monitoring visitor capacity for Acadia National Park carriage roads: 2010 (crowding and behaviors). Acadia National Park Natural Resources Report Number 2011-1. January. 33pp.
- Jacobi, C. (2007). Monitoring visitor capacity for Acadia National Park carriage roads: 2006 (crowding and behaviors). Acadia National Park Natural Resources Report Number 2007-1. February. 33pp.
- Jacobi, C. (2005). Monitoring carrying capacity on Acadia National Park carriage roads: 2003 (crowding and behaviors). Acadia National Park Natural Resources Report Number 2005-4. April. 34pp.
- Jacobi, C. (1997). Applying the visitor experience resource protection process to Acadia National Park carriage roads: a summary of research and decision-making. Acadia National Park Natural Resources Report Number 97-10. December. 23pp.