

National Park Service  
U.S. Department of the Interior



Social Science Program

Programmatic Approval for NPS-Sponsored Public Surveys

1.	<b>Project Title:</b> Exploring RMNP Visitors' Information Sources, Communications, and Perceptions of Wildlife Management Practices	<b>Submission Date</b>	8/30/2011
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2.	<b>Abstract:</b> A survey of a purposeful sample of 700 visitors entering Rocky Mountain National Park by vehicles will be conducted in Fall 2011 to understand their (a) knowledge of elk biology and elk impact on vegetation; (b) awareness of proposed management practices—fencing, lethal controls, birth control methods, averse culling—i.e., controlled hunting; (c) perceptions and attitudes toward the elk and vegetation management practices; and (d) understanding elk and vegetation management practices. Participants will be recruited at the Beaver Meadows and Fall River entrances during the peak of the elk bugling season (mid- September to mid-October) by seeking volunteers who would be willing to complete a 20-minute mail survey about two weeks after their visit to RMNP. The survey will be conducted using Dillman's (2007) Tailored Design Method; we will use four contacts after volunteers' visit to RNMP.
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(not to exceed 150 words)

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## Project Information

5. **Park(s) For Which Research is to be Conducted:** Rock Mountain National Park

6. **Survey Dates:** 9/15/2011 to 2/15/2012

7. **Type of Information Collection Instrument (Check ALL that Apply)**

☒ Mail-Back Questionnaire

☐ On-Site

Questionnaire

☐ Face-to-Face

Interview

☐ Telephone

Survey

☐ Focus

Groups

Other (explain):

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.*

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

*Legal Justification: The National Park Service Act of 1916, 38 Stat 535, 16 USC 1, et seq., requires that the National Park Service (NPS) preserve the national parks for the use and enjoyment of present and future generations. At the field level, this includes activities such as resource preservation, public education, facility maintenance and operation, and physical developments that are necessary for public use, health, and safety.*

Over the last 50 years, the Rocky Mountain National Park (RMNP) elk population has grown to the extent that it is having detrimental effects on the park vegetation and ecosystems (NPS, EIS, December 2007). With the increased numbers, elk have damaged vegetation in the riparian zones in both the summer and winter elk ranges. Therefore, the National Park Service finalized a 20 year, flexible elk management plan in February 2008. It called for the reduction of the impact of elk herd to reduce its overgrazing. The plan called for lethal methods, fertility-reduction techniques, fencing areas of selected willow and aspen stands, aversive conditioning of elk, and using unsuppressed weapons for culling to reduce the elk population to between 1,600 and 2,100 animals by the end of the plan.

RMNP staff members have provided stakeholders information about the elk and vegetation management plan through public meetings, news releases to the local media, the RMNP Website

(<http://www.nps.gov/romo/parkmgmt/elkvegetation.htm>), signage in RMNP, articles in RMNP publications, public presentations, exhibits, videos, interviews with local, regional and national media, education programs, and other education and communications.

Empirical data are needed to better understand the current stakeholders' understanding of the elk and vegetation management so that RMNP staff can provide more effective communications and education programs.

9. **Survey Methodology:**  
(Use as much space as needed; if necessary include additional explanation on a separate page.)

**(a) Respondent Universe:**

A purposeful sample of RMNP visitors (18 years old and older) entering the primary entrances to RMNP during the peak of the elk bugling season between mid-September and mid-October.

**(b) Sampling Plan/Procedures:**

Volunteer recruiters and the research team will approach every 26th car entering the Fall River and Beaver Meadows entrances to Rocky Mountain National Park during the sampling period (see below) during the height of the elk bugling season.

Early fall snowstorms, although rare, and other inclement weather can reduce visitors coming to RMNP during the elk bugling season. Thus, we plan to sample Saturday (Sept. 24, 2011), Sunday (Sept. 25, 2011) and Wednesday (Sept 28, 2011). We estimate that sampling every 26th car will yield about 595 volunteer participants. If not, we will sample again beginning Saturday (Oct. 1, 2011), Sunday (Oct.2, 2011), Wednesday (Oct. 5, 2011), and continue sampling October 8, 9, & 12, 2011 until we reach a sample of 630 volunteer participants.

The recruiters will provide a brief explanation of the project to the occupants of the vehicle, give them a cover letter explaining the project, and ask if they are willing to help with the study. If they agree, the recruiter will ask the person, above 18 years old, in the group with the most recent birthday to complete the information/ contact form.

The contact form requests volunteers provide their name, address, telephone, e-mail address, and the number of people in their vehicle. For each vehicle approached, recruiters will observe and record the number of passengers, estimated ages and gender. Further, for the individuals not willing refusing to participate with the project we will ask three questions that will allow us to compare for bias with answers to the same question:

- (1) number of days spent in RMNP in the last three years,
- (2) awareness of willow conditions in RMNP and
- (3) number of times view RMNP's Website in the last three years.

These data will be recorded and used to check for non-response bias.

**(c) Instrument Administration:**

The survey will be conducted according to Dillman's (2007) Tailored Design Method (TDM). After the initial contact in the park, the sampled visitors will be contacted four times. The first mailing will be about two weeks after visitors are contacted in RMNP. This mailing will include a packet containing a personalized letter; a stamped, addressed, return envelope; and the questionnaire. The survey contains a control number for tracking respondents. A reminder/thank you letter will be sent to all participants two weeks after the first mailing. Two weeks after that, the third mailing to non-respondents only will include another personalized letter, replacement questionnaire, and a stamped, return envelope. A final letter will be sent to non-respondents.

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

Based on reviews of other surveys of park visitors using similar methods, we anticipate a 60% response rate for the mail survey. Face-to-face intercept interviews are generally high for park studies, for example 86% (Jaakson & Shin, 1993) and 99% (Boulware, 2004). Because the onsite contact represents a minimal burden on visitors, we anticipate that about 85% of the visitors in 700 vehicles will agree to volunteer (n=595) to complete the questionnaire. The mail-back portion of the NPS VSP visitor surveys generally achieved response rates of 50% to 75%. Steward, Fix, & Manfredo (2004) obtained a 52% response rate on mail survey on the public's perception of the Rocky Mountain National Park Elk and Vegetation management Plan.

We estimate 630 Park visitors will volunteer to help with the study. We will send them the mail survey using the Dillman process (outlined above). Assuming a 60% response rate, the final sample size will be 378 respondents. For finite populations of 400, the 95% confidence interval of about +/- 5.2% for questions with dichotomous responses.

	Number of Contacts	Expected Response Rate	Expected Number of Responses	Margin of Error +/- %
<b>Initial onsite contacts</b>	700	90%	630	4.4
<b>Agreeing to Participate</b>	630	60%	378	5.2

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

For each vehicle approached, recruiters will observe and record the number of passengers, their estimated ages, and gender on a sampling log, see enclosed form. For the individuals refusing to participate in the project, we will ask three questions that will allow us to compare for bias with answers to the same question: (1) number of days spent in RMNP in the last three years, (2) awareness of willow conditions in RMNP and (3) number of times view RMNP's Website in the last three years. These data will be

recorded and used to check for non-response bias.

For each vehicle approached, recruiters will observe and record the number of passengers, their estimated ages, and gender; the data will be recorded and used to check for non-response bias.

Respondents and non-respondents will be compared on these characteristics. The report will document the results of the non-response bias check and discuss implications for interpreting the results.

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

The questionnaire, letters, and forms were peer reviewed by NPS managers, Colorado State university professors, and research scientists. We pre-tested the survey with 5 visitors. The questions were developed specifically for this project, except for the standard questions provided by the National Park Service Social Science unit.

- 10. Burden Estimates:** With a response anticipated rate of 90%, we plan to approach 700 individuals. We expect that the initial contact time will be at least five minutes for each person agreeing to participate (630 x 5 minutes = 53 hours). This includes the time that it will take those individuals who to participate in the survey, record contact information.

We expect that 70 (10%) people will refuse to participate in the study, for those individuals we will ask them to answer 3 questions, from the survey that will be used for the non-response bias check, and record their reason for refusal. This is estimated to take no more than 2 minutes per response to complete each session (70 x 2 minutes = 2 hours).

For those who agree to participate (n=630) we expect that 60% (n=378) (will complete and return the survey, with that, an additional 20 minutes will be required to complete the follow through (378 response x 20 minutes = 126 hours). The total burden for this collection is estimated to be 180.33 hours.

Estimated number agreeing to participate in the study	630	Estimated Time (mins.) to Complete Initial Contact	5	Estimated Burden Hours	53
Estimated number of refusals	70	On-site Refusal/ nonresponse	2	Estimated Burden Hours	2
Expected number of responses	378	Time to complete and return surveys	20	Estimated Burden Hours	126
<b>Total Burden Hours</b>					<b>181</b>

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| 11. | <b>Reporting Plan:</b> Our data analysis will include frequencies, percentages, means, and standard deviations for questions/variables. We will run reliability scores on the scale questions and use analysis of variance when comparing different demographic groups. We will provide a final report to the Rocky Mountain National Park staff on the survey results. We will provide electronic copies to the NPS Social Science Division for inclusion in the Social Science Studies Collection |
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