



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: 4-16-2014

Project Title: Boulderers' perceptions of Leave No Trace in Rocky Mountain National Park: Improving resource conditions and visitor experiences

Abstract (not to exceed 150 words)

Currently, there is limited, if any, research regarding the social aspects of "boulderers". Bouldering is the practice of climbing small rock formations or boulders that are short enough in height that ropes and gear are not necessary. Bouldering activity has led to ecological damage (e.g. trampled vegetation, tree cutting, rock removal, etc.) and potential social impacts (e.g., crowding, noise, user-conflicts) in Rocky Mountain National Park (ROMO); therefore, park managers are seeking greater understanding of this user-group. Specifically, they are interested in understanding boulderers' perceptions of Leave No Trace-related (the most prominent minimum impact educational strategy used in parks and protected areas) behaviors, in an effort to minimize ecological and social resource degradation. The objective of this study is to investigate ROMO boulderers' attitudes, beliefs, and awareness of prescribed Leave No Trace ethics/practices and management objectives for protecting resource and social conditions in the park.

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Project Information

Where will the collection take place? **Rocky Mountain National Park at Emerald Lake and Lake Haiyaha in the Bear Lake Corridor**

Sampling Period

Start Date: July 6, 2015

End Date: July 31, 2015

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.

Currently, there is limited, if any, research regarding the social aspects and the impacts of bouldering in protected areas. Bouldering is the practice of climbing small rock formations or boulders that are short enough in height that ropes and gear are not necessary. The route up a boulder is commonly referred to as a "boulder problem," and rarely exceeds 15-20 feet in height. Bouldering falls are short, but frequent. And, because ropes are not utilized in bouldering, relying on crash pads and fellow boulderers to act as "spotters" is common practice. As such, boulderers usually climb in groups (typically 2-6) to ensure having enough spotters to climb safely.

In 2013, nearly two-thirds of the 7.5 million estimated rock climbers were considered to be boulderers and/or indoor gym climbers. Bouldering's growing popularity has been attributed to the low cost of entry, accessibility, and mainstream publicity. Compared to other forms of climbing, the equipment needed for bouldering is a small investment. A person interested in bouldering can gain access to the sport by simply buying a pair of specialized rock climbing shoes. As bouldering continues to gain in popularity and participation, more climbing opportunities are being discovered within both public and private lands. It therefore becomes increasingly important that park and recreation managers be aware of the natural and social impacts associated with bouldering.

The recent increase in bouldering activity in Rocky Mountain National Park (ROMO) has led managers to seek a greater understanding of this user group. This activity results in ecological degradation including vegetation loss, soil erosion, resource removal and/or modification, as well as potential social impacts (e.g. crowding, increased anthropogenic noise, and human to human conflicts). Park managers have requested this study to investigate boulderers' perceptions (attitudes, beliefs, and awareness) of prescribed Leave No Trace ethics/practices and management objectives for protecting ecological resource and social conditions in the park. The results of this collection will be used to inform management strategies used to protect ecological resources, minimize social impacts, and provide opportunities for this unanticipated recreational experience.

Survey Methodology

(a) Respondent Universe:

The respondent universe for this collection will be all adult boulderers (18 years and older) visiting ROMO's Lake Haiyaha and Emerald Lake from July 6 to July 31, 2015.

(b) Sampling Plan/Procedures:

An on-site survey will be administered at two locations in the park: 1) Lake Haiyaha, and 2) Emerald Lake. We will sample a total of 16 days between July 6 and July 31, 2015. The days will be evenly stratified by day of the week, time, and location. On each sampling day, trained research assistants will intercept a random sample of boulderers ($n =$ approximately 12 boulderers per day; equating to $n =$ approximately 200 boulderers in total) at the assigned sampling locations between 8 a.m. and 7 p.m. Sampling and recruiting efforts will conclude after the designated 16 days of sampling, even if respondents are not able to intercept the estimated 200 boulderers.

(c) Instrument Administration:

A Survey will be administered by trained research assistants working under the supervision of the PI and ROMO staff. The research assistant will read the survey instructions to all participating respondents. Subsequently the respondent will be handed the paper survey and asked to complete and return the survey on site to the researcher. Individuals or groups who are unwilling or unable to participate will be thanked for their consideration. All interactions (i.e., time, location, group composition, etc.) will be documented in a survey log.

Visitors who are unwilling or unable to participate in the study will be asked the following question:

1. "How many years have you been bouldering in Rocky Mountain National Park?"

The surveyors will also capture additional observational information:

- time of contact,
- gender,
- group size,
- potential language barrier

This information combined with the question above will be used to determine any non-response bias. This process will continue throughout the sampling period at each of the study locations. The research assistant(s) will use the following script when working with potential respondents:

Hello, I am conducting a study for Rocky Mountain National Park to better understand boulderers' perceptions of Leave No Trace-related practices here in the Park. Your participation is voluntary and your responses will be anonymous. In total, it will take about 12 minutes to complete. Would you be willing to participate?

If NO: Do you mind telling me how long (in years) you have been bouldering in Rocky Mountain National Park? Thank you for your time and consideration. I hope you enjoy your visit.

If YES: Thank you for your willingness to assist with this study. Here is a statement about this study and how your responses will be used. (An information card will contain text concerning the Paperwork Reduction Act Statement and also the burden estimate statement for this collection - will be handed to the respondent)

(d) Expected Response Rate/Confidence Levels:

A total of 200 visitors will be contacted during the sampling period. It is estimated that 75% (n=150) will be willing to participate in the surveys. These estimates are based on the limited previous research regarding climbing and bouldering in this and other NPS units. Based upon these sample estimates, it is expected that results will be representative of boulderers within ROMO (with a 95% confidence interval that the survey findings will be accurate to within ±5 percentage points); we will not attempt to generalize the results to boulderers beyond the park.

Location	Number of Initial Contacts	Expected Response Rate	Expected Number of Responses	Margin of Error +/- %	Confidence Level
Lake Haiyaha	100	75%	75	+/-5%	95%
Emerald Lake	100	75%	75	+/-5%	95%
TOTAL	200	75%	150	+/-5%	95%

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

The number of refusals will be recorded, reported, and screened for non-response bias using a non-response question during the initial contact (i.e., “How many years have you been bouldering in Rocky Mountain National Park?”), which will be combined with other observed visitor information (i.e., time of contact, gender, group size/composition, potential language barrier). Data from the study will be analyzed for non-response bias by comparing participating groups’ characteristics to non-participating groups’ characteristics gathered on the corresponding surveyor’s log sheets. Any implications of non-response bias for park planning and management will be reported.

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

The questions included in the survey instrument were designed and reviewed by the following: PI, research staff and graduate students, scientists in the Recreation, Park, and Tourism Management Department at Pennsylvania State University with expertise in survey research; Rocky Mountain National Park staff (Dr. David Pettebone and Mike Lukens); staff at the Leave No Trace Center for Outdoor Ethics (Ben Lawhon and Jason Grubb); Social Scientist and former professional boulderer Dr. Adam Gibson; bouldering expert at the Access Fund (Travis Herbert); author of bouldering guidebook for ROMO (Jamie Emerson); owner of regional bouldering gym, the Spot (Dan Howley); and owner of bouldering gear manufacturer, Organic Climbing (Josh Helke). Based on peer-reviews, survey questions were reduced and truncated, to only include approved pool of known questions/topics, and therefore reduce burden time. Pre-testing for clarity and estimated burden time was conducted with undergraduate and graduate students at Pennsylvania State University’s Social Science Acoustics Laboratory.

Burden Estimates

We plan to approach 200 people perceived to be bouldering in Rocky Mountain National Park. We expect that the initial contact time will take one minute per person ($200 \times 1 \text{ minutes} = 3 \text{ hours}$). We expect that 25% ($n=50$) of visitors will refuse to participate in the study. For those individuals, we will record their reason for refusal and ask them to answer a non-response check question. This is estimated to take about one minute to complete ($50 \times 1 = <1 \text{ hour}$).

From the 200 originally contacted, we expect that 75% ($n=150$) will agree to complete the survey. This will take an additional 12 minutes to complete ($150 \times 12 \text{ minutes} = 30 \text{ hours}$).

The total burden for this collection is estimated to be 34 hours.

Estimated Total Number of Contacts	
Initial Contacts	200
On-site Refusal/ nonresponse	50
Responses	150

Estimation of Time (minutes)	
Initial Contact	1
On-site Refusal/ nonresponse	1
To complete response	12

Estimation of Burden (hours)	
Initial Contact	3
On-site Refusal/ nonresponse	<1
To complete response	30
Total	34 hrs.

Reporting Plan

A final technical report will be delivered to the ROMO park managers and staff. The report will contain a description of the study purpose and key findings. Frequency distributions and descriptive statistics will be included for all survey variables. A final copy of the report will also be transmitted to the NPS Social Science Division for archiving in the Social Science Studies Collection.