



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:

PROJECT TITLE: Rocky Mountain National Park Backcountry Visitor Study: Hikers and Anglers

ABSTRACT: (not to exceed 150 words)

In parks and protected areas, the management of informal trails is a challenge since little is currently known about the factors influencing informal trail creation, particularly the motivations, preferences and associated behaviors of off-trail visitors. Recently, Rocky Mountain National Park (ROMO) and Utah State University (USU) have conducted several research projects examining visitor use and experience issues in off-trail locations. Research findings suggest that when visitors depart from maintained trails, resource impacts such as informal trails frequently form. In addition, surveys of park visitors in ROMO suggest that visitors have thresholds of tolerance for the occurrence and proliferation of off-trail impacts. The research proposed here will advance the overall knowledge of off-trail use and impacts by examining backcountry users and their associated use characteristics. This study will help identify a range of potential indicators of quality and the general characteristics of backcountry users at key backcountry lake destinations in ROMO.

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PROJECT INFORMATION:

Where will the collection take place? Rocky Mountain National Park (ROMO)

Sampling Period Start Date: July 1, 2017 Sampling Period End Date: August 1, 2017

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: Apple iPad

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.

Increasing visitation to national parks, including Rocky Mountain National Park (ROMO), has spurred recent research efforts by Utah State University (USU). Many of these projects have examined issues of visitor use and experience in off-trail settings (D'Antonio et al., 2013; D'Antonio and Monz 2016; Kidd et al., 2016). These and other studies suggest that when visitors travel away from maintained or designated trails, vegetation loss and soil erosion frequently occur, resulting in informal trails and visitor created sites. Additional surveys of visitors in the Bear Lake area of ROMO suggest that there may be thresholds of acceptability for the occurrence and proliferation of informal trails, and that many informal trails in the Bear Lake area exceeded acceptable levels (D'Antonio et al., 2013). Off-trail use and associated impacts are concerns in the Bear Lake area because within this region are many backcountry lakes that are popular destinations for two key user groups in ROMO -- day hikers and anglers (Scott Esser, personal communication, 5 April 2017).

The proposed information collection supports the importance of understanding and managing off-trail use and its associated impacts. However, managing informal trails is especially challenging because little is currently known about the motivations, preferences, and behaviors of backcountry visitors in off-trail settings. This information collection will investigate the characteristics, preferences and behavior of backcountry users, specifically day hikers and anglers, to advance the understanding of off-trail use and impacts.

The data will be used to provide clear rationale for robust indicators and data-driven standards that the National Park Service can use in planning and management efforts. This study will collect the following data about backcountry users in ROMO:

- Demographics: a descriptive profile of backcountry visitors, specifically hikers and anglers.
- Behavior: a description of how backcountry visitors are using off-trail areas in relation to backcountry lake destinations.

- Preferences and motivations: identification of associations between visitor preferences and backcountry lake destinations.

This collection will be administered during the summer of 2017 and will include qualitative and descriptive data collection in order to:

- To inform development of potential indicators of quality for visitor experience.
- Describe visitor use travel patterns and related natural resource conditions.
- Inform visitor use management and strategic planning efforts.

SURVEY METHODOLOGY

(A) Respondent Universe

The respondent universe for this collection will be all adults (18 years and older, English proficient, and not staying in the backcountry overnight) within the following subgroups:

- Backcountry Anglers and Hikers: All anglers and hikers who visit popular backcountry lake destinations during the month of July 2017 in ROMO.

(B) Sampling Plan / Procedures:

Sampling will occur on randomly selected days during the sampling period between July 1 and August 1, 2017. Within this 30-day window, we will systematically sample backcountry anglers and hikers at the three locations listed below:

- Bear Lake trailhead
- Fern Lake trailhead
- Glacier Gorge trailhead

Sampling days will be stratified by weekdays and weekend days at the Bear Lake, Fern Lake, and Glacier Gorge trailheads. Each sampling day will also be stratified by morning (7am-1pm) and evening (1pm-7pm) hours during the day. A USU researcher will staff each trailhead listed above for five days between July 1 and August 1 2017. Three of the five days at each site will be devoted to sampling backcountry anglers. The remaining two days at each site will be devoted to sampling backcountry day hikers (Table 1). This will reduce unnecessary complexity of the sampling procedures and reduce the potential for incorrect survey administration.

Backcountry Anglers

Backcountry anglers, for the purpose of this study, are day use visitors (i.e. not backpacking) who participate in fishing activities in lakes accessed from the Bear Lake, Fern Lake and Glacier Gorge trailheads. Backcountry anglers will be identified at these trailheads by the presence of specialized gear, such as fishing poles, waders, and tackle. Anglers will be intercepted on two weekdays and one weekend day at each of the three sampling locations to maximize the number of potential responses from this visitor group (Table 1).

Backcountry Hikers

Backcountry hikers, for the purpose of this study, are visitors who participate in day hikes (i.e. not backpacking) to lake destinations from the Bear Lake, Fern Lake, and Glacier Gorge trailheads. Backcountry hikers will be identified as visitors without specialized gear such as climbing ropes, or fishing tackle. Hikers will be intercepted on one weekday and one weekend day at each of the three sampling locations (Table 1).

Table 1: On-site sampling days per location for backcountry anglers and hikers.

Respondent Group	Locations						TOTAL
	Bear Lake		Fern Lake		Glacier Gorge		
	Week Day	Week End	Week Day	Week End	Week Day	Week End	
Backcountry Anglers	2	1	2	1	2	1	9
Backcountry Hikers	1	1	1	1	1	1	6
TOTAL	3	2	3	2	3	2	15

In a study of ROMO visitors, Blotkamp et al. (2011) found in that 8% of all respondents (n=755), fished during their visit. Though more recent data on the number of visitors to ROMO who fish is unavailable, in 2016, the total visitation to ROMO during the month of July was 73,000 (National Park Service (NPS), 2017). The number of anglers to visit ROMO in July 2017 is estimated at 8% of 73,000. Given that not every fishing location within the park will be sampled, and to ensure the feasibility of this study, a 5% sample of the angler population is proposed here, which will result in approximately 292 initial angler contacts.

In the same study, approximately 57% of survey respondents (n=755) reported that they participated in day hikes in ROMO (Blotkamp, et al. 2011). The hiker population for July 2017 is estimated at 57% of 73,000. Because this study will sample at only three trailheads, and to ensure the feasibility of the study, a 1% sample of the total day hiker population is proposed here, which will in approximately 416 initial hiker contacts.

Newman and others (2010) reported that Glacier Gorge and Bear Lake trailheads received around 1,300 and 1,000 visitors per day respectively in 2008. These daily visitation estimates were used to determine the number of initial contacts proposed for each location (Table 2). Given the total number of initial contacts (n=708) and the proportion of daily visitation at Glacier Gorge compared to Bear Lake, the largest number of initial contacts will be made at Glacier Gorge (n=320) and fewer initial contacts at Bear Lake (n=251). Due to parking limitations at the Fern Lake trailhead, the lowest number of initial contacts will be made here (n=137). This strategy will result in approximately 146 angler contacts across all weekdays and 146 angler contacts across all weekend days (Table 3). Approximately 207 hikers will be contacted across all weekdays and 209 hikers will be contacted across all weekend days (Table 3).

Table 2: Estimated number of initial angler and hiker contacts per site during July 2017.

Respondent Group	Estimated Number of Visitors Contacted						TOTAL
	Bear Lake (n=251)		Fern Lake (n=137)		Glacier Gorge (n=320)		
	Week Day	Weekend Day	Week Day	Weekend Day	Week Day	Weekend Day	
Backcountry Anglers	52	52	29	29	65	65	292
Backcountry Hikers	73	74	39	40	95	95	416
TOTAL	125	126	68	69	160	160	708

Table 3: Estimated number of initial angler and hiker contacts for days of the week during July 2017.

Respondent Group	July		TOTAL
	Week Day	Weekend Day	
Backcountry Anglers	146	146	292
Backcountry Hikers	207	209	416
TOTAL	353	355	708

(C) Instrument Administration:

Initial GPS and Survey Invitation

Researchers will intercept both backcountry anglers and hikers, through direct personal contact as they arrive at the trailhead using a random intercept method. Anglers and hikers who chose to participate in the study will interact with researchers both before their trip into the backcountry, and after their trip, when they are leaving the trail. The same protocol will be followed for both anglers and hikers, and they will be referred to jointly as visitors and participants. Starting at the beginning of each sampling day -- either 7am or 1pm -- researchers will intercept every n^{th} backcountry visitor to arrive at the trailhead. Once a visitor is intercepted, they will be invited to carry a global positioning system (GPS) unit during their visit *and* complete a self-paced, post-experience electronic questionnaire upon their return to the trailhead. A hard copy of the Letter of Information will be made available.

If a group is intercepted, only one member of the group over 18 years of age will be solicited to minimize visitor burden and response bias. If multiple members of the group are over the age of 18, the one with the closest, upcoming birthday will be selected for participation to minimize the potential for leader bias. Due to GPS battery limitations, participants must be day visitors only. Participants must also be proficient in reading, writing and speaking English. Researchers will inform visitors that their participation is voluntary and information collected is anonymous. If a visitor declines to carry a GPS unit, information used for non-response bias testing will be recorded as described in Section E.

Visitors intercepted will be read the following script:

“Hello, my name is [Researcher’s name]. I am from Utah State University, conducting research for the National Park Service to understand more about your experiences in the park today. The answers you provide will help inform future management decisions. This study consists of two parts: The first part involves carrying a GPS unit with you on your trip today. The second part consists of answering a few survey questions on an iPad when you return to the trailhead. Your participation is voluntary and all responses will be kept anonymous. Would you be willing to participate?”

- If they decline, the researcher will ask the non – response questions described in section E.
- If the non-response questions are refused, the researcher will thank them for their time and end contact.

If they accept, a researcher will then ask, *“have you (or – has any member of your group) been asked to participate in this survey before?”*

- If they have already been asked to participate, then the researcher will thank them for agreeing to participate and end contact.
- If they have not been previously asked to participate then, *“Thank you for agreeing to participate. Are you at least 18 years old (or- who in your group is at least 18 years old and has the next birthday)?”*

Proceed with GPS unit administration.

GPS Unit Administration

If a visitor agrees to carry a GPS unit during their visit *and* complete a post-experience questionnaire, a researcher will program a small GPS unit and give it to the participant to clip to a pack or clothing. Participants will be instructed to return the GPS unit when they arrive back at the trailhead, after their trip to the backcountry. Participants will also be instructed on how to return the GPS unit if a researcher is not present. One locked drop-box will be provided at each trailhead for visitors to return GPS units if they exit the trail after the researchers have left the site. In the event that a participant mistakenly leaves the park before returning the GPS, each unit is equipped with instructions for mail-back return. After receiving GPS return instructions and a GPS unit is securely fastened to a pack or clothing, the participant will enter the trail system, leaving the sampling area, and begin their chosen recreational activity.

Survey Instrument Invitation

When visitors carrying GPS units are exiting the trail system after their trip, they will return the GPS unit to the researchers. At this time, a researcher will give the participant an iPad and remind them to complete the self-paced, electronic survey instrument via the Qualtrics application. If a visitor agrees to carry a GPS unit but upon returning it, declines to participate in the survey, information used for non-response bias testing will be recorded as described in Section E.

Participants returning GPS units will be read the following script:

“Thank you for participating with the GPS portion of the study, would you still be willing to complete the survey questions?”

- If they decline, the researcher will ask the non-response questions described in section E.
- If the non-response questions are refused, the researcher will thank them for their time and end contact.

If they accept, the researcher will proceed with survey administration.

Survey Instrument Administration

After receiving verbal consent, researchers will provide instruction to the participant on how to complete the electronic questionnaire. Responses are selected within the iPad based Qualtrics application by touching the appropriate ‘buttons’ on the screen. Responses are automatically saved within the application. If the participant is with a group, the researcher will instruct individual who carried the GPS unit to complete the survey. Participants will complete the survey while at the trailhead. Surveys will consist of open-ended, close-ended, and participatory mapping questions. All questions are derived from the approved Pool of Known Questions (NPS, 2015). The participatory mapping questions ask the respondent to indicate specific locations on a map embedded in the electronic survey instrument within the Qualtrics application. After participants complete the electronic questionnaire, they will be thanked for their participation, return the iPad to the researchers, and leave the sampling area. Survey responses will be linked to GPS tracks by a unique identifier, but no personally identifiable information will be collected about the participant. Potentially, some GPS tracks may not have associated survey responses if a visitor declines to take the survey after carrying a GPS unit, or if a visitor returns the GPS unit after the researcher has left the sampling area for the day.

Researchers will be trained in all aspects of GPS programming, operation, and track saving. Researchers will also be trained and certified by Utah State University on every aspect of on-site surveying, including: administering questionnaires, verbal survey administration if visitors prefer, avoiding sampling bias, and handling all types of public interaction and outdoor situations, especially regarding the safety of visitors and the researchers. Quality control will be ensured by monitoring GPS and survey administration, and data downloading after each sampling period.

(D) Expected Response Rate / Confidence Level:

Recent research from Grand Teton National Park using direct contact methods and iPad based surveys resulted in response rates between 73-85% (Newman, Taff, Newton, & Abbott, 2015). Additionally, research conducted at ROMO in 2009, where a random sample of backcountry hikers in the Bear Lake area were asked about their perceptions on a paper survey, resulted in a 60% response rate (n =408) over an eight day sampling period (D’Antonio, et al, 2012). Studies utilizing visitor GPS tracking have reported response rates over 80% (D’Antonio & Monz, 2016; Hallo, Manning, Valliere & Budruk, 2004; Kidd, et al, 2015). Because visitors will be invited to both carry a GPS and complete a survey for this study, the expected response rate reflects an average of survey response rates and GPS tracking response rates

(73%). The initial contacts listed in Table 4 are justified in section B above. We expect to obtain 100 responses at the Fern Lake trailhead, 183 responses at the Bear Lake trailhead, and 233 responses at the Glacier Gorge trailhead. These acceptance rates include both backcountry anglers and hikers, totaling 516 estimated responses (Table 4).

Table 4. Expected on-site acceptance rates for each sampling location.

Location	Initial Contacts	Acceptance 73%	Non-respondents (Soft refusals) 27%	Non-response survey 35%	Hard Refusals 65%
Fern Lake Trailhead	137	100	37	13	24
Bear Lake Trailhead	251	183	68	24	44
Glacier Gorge Trailhead	320	233	87	31	57
TOTAL	708	516	192	68	125

Backcountry Anglers: We plan to contact at least 292 potential angler participants on-site during the sampling period. Based upon previous research we are estimating that 73% (n=213) will be willing to carry a GPS unit and complete the on-site survey (Table 5).

Backcountry Hikers: We plan to contact at least 416 potential day hiker participants on-site during the sampling period. Based upon previous research we are estimating that 73% (n=303) will be willing to carry a GPS unit and complete the on-site survey (Table 5).

Respondent Group	Initial Contacts	Acceptance 73%	Non-respondents (Soft refusals) 27%	Non-response survey 35%	Hard Refusals 65%
Backcountry Anglers	292	213	79	28	52
Backcountry Hikers	416	303	113	40	73
TOTAL	708	516	192	68	125

Table 5. Expected on-site acceptance rates for all backcountry visitors intercepted.

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

These questions and training in administration will be provided to all USU staff who interact with visitors. The following questions will be asked to all visitors intercepted who refuse to participate in the study, i.e. decline to carry a GPS and/or decline to complete the survey. All refusals will be recorded on a log sheet and non-response questions will be recorded within the Qualtrics application by a USU researcher. To determine if any bias exists between respondents and non-respondents, non-respondents will be asked the following questions:

1) What is your main constraint for not participating in this survey? _____

2) What is the primary activity you intended to participate in today? _____

3) Are you a permanent resident or citizen of the United States?

Yes - What is your zip code? _____

No - What is your country of origin? _____

4) Have you visited RMNP before today?

- Yes
 No

(F) Description of any pre-testing and peer review of the methods and/or instrument. Please also describe any results of the pretesting efforts.

The survey instrument was tested with <9 people who represent the ROMO user types and peer reviewed through communication with NPS staff and fellow USU researchers.

BURDEN ESTIMATES:

The angler and hiker electronic questionnaires are expected about 10 minutes to complete. The administration and return of the GPS unit is expected to take no more than an additional 5 minutes. While visitors are carrying the GPS unit with them during their trip, they are not expected to do anything with the unit. Additionally, visitor trips vary in length, for which we do not have estimates. As such, the GPS visitor burden is calculated *only* for the initial administration and return tasks.

We expect to invite approximately 708 visitors to participate in the study across the sampling period. Of the visitors who are intercepted, approximately 516 visitors (73%) in total are expected to participate in the study by carrying a GPS unit and completing an on-site survey (516 x 15 minutes = 129 hours). It is estimated that 192 (27%) will to refuse to participate in the study, however of those 68 visitors will at least answer the non-response check questions which are estimated to take less than one minute (68 x 1 minute = 1 hour). The total burden for this collection is estimated to be 130 hours.

Estimated visitor burden

	Responses	Completion Time * (minutes)	Burden Hours
Combined Onsite Interviews		<i>Initial Contact time added to completion time</i>	
Completed Interviews	516	15	129
Non-response bias Check:	68	1	1
Total burden requested under this ICR	0		130

REPORTING PLAN:

Results of this study will be provided to Rocky Mountain National Park and the National Park Service Social Science Branch as a Natural Resources Technical Report. Results will be published in a scientific journal as appropriate.

References

- Blotkamp, A., W. F. Boyd, D. Eury, S. J. Hollenhorst. (2011). Rocky Mountain National Park: Summer 2010. Natural Resource Report NPS/NRSS/SSD/NRR—2011/121/107587. National Park Service, Fort Collins, Colorado.
- D'Antonio, A., Monz, C. (2016). An Assessment of Informal Trails and Visitor-Created Sites in Rocky Mountain National Park, Colorado: Bouldering Impacts in the Chaos Canyon and Emerald Lake Areas. Utah State University. 19p.
- D'Antonio, A., Monz, C. (2016). The influence of visitor use levels on visitor spatial behavior in off-trail areas of dispersed recreation use. *Journal of Environmental Management*, 170, 79-87.
- D'Antonio, A., Monz, C.A., Newman, P., Lawson, S., Taff, D. (2013). Enhancing the utility of visitor impact assessment in parks and protected areas: A combined social-ecological approach. *Journal of Environmental Management*. 124: 72-81
- D'Antonio, A., Monz, C., Newman, P., Lawson, S., Taff, D. (2012). The effect of local ecological knowledge, minimum-impact knowledge and prior experience on visitor perceptions of the ecological impacts of backcountry recreation. *Environmental Management* 50, 542-554.
- Hallo, J., Manning, R., Valliere, W., Budruk, M. (2004). A case study comparison of visitor self-reported and GPS recorded travel routes. Proceedings of the 2004 Northeastern Recreation Research Symposium, GTR-NE-326; 172-177.
- Kidd, A., Graham, R., and Monz, C. (2016). Visitor Use on Longs Peak: A Preliminary Assessment in Rocky Mountain National Park, Colorado: Report of Findings. Utah State University. 26p.
- Kidd, A., Monz, C., D'Antonio, A., Manning, R., Reigner, N., Goonan, K., Jacobi, C. (2015). The effect of minimum impact education on visitor spatial behavior in parks and protected areas: An experimental investigation using GPS-based tracking. *Journal of Environmental Management* 162, 53-62.
- National Park Service. (2017). Recreation visits by month (1979-Current Calendar Year). Available from: <https://irma.nps.gov/Stats/Reports/Park/ROMO>
- National Park Service. (2015). Programmatic clearance for NPS-sponsored public surveys: Pool of known questions. Available from: <https://www.nature.nps.gov/socialscience/expedited.cfm#Review>
- Newman, P., Taff, D., Newton, J., & Abbott, L. (2015). Informing visitor use strategies for the Moose-Wilson Corridor, Grand Teton National Park: Technical report-summer 2014 data. Available from: <https://www.nps.gov/grte/learn/management/upload/Final-PSU-Report-and-Review.pdf>
- Newman P, Lawson S, Monz C (2010) Integrated approach to transportation and visitor use management at Rocky Mountain National Park. National Park Service Report, Estes Park, pp 72–105

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.