



Programmatic 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.

**Do not revise any part of this
form**

General Information	
Project Title: Visitor Perceptions with Lighting and Night Skies in National Parks	Submission Date: 4/1/2022
Abstract (not to exceed 150 words)	
At Colter Bay in Grand Teton National Park (GRTE), lighting with the option of traditional (white light) or wildlife friendly (red hued light) lighting was installed in the summer of 2019. Other research has shown that wildlife friendly lighting is beneficial to both wildlife and humans by enabling people to adapt to dark environments and transition easily from lit to dark areas. It also increases the opportunity for visitors to experience dark night skies. This study seeks to understand visitor's perceptions and preferences of lighting at night with both traditional and wildlife friendly lighting by employing on-site surveys with visitors. With the knowledge of the 2019 study, this study looks to expand on location by deploying in both GRTE and Acadia National Park (ACAD). On-site surveys will be conducted from June to August of 2022. All adults (aged 18 and older) in the sampling area during the sampling period will be eligible to participate in the survey.	
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Project Information

Where will the collection take place? (Name of NPS Site)

In the Colter Bay developed area of Grand Teton National Park and in the Blackwoods Campground and Jordan Pond in Acadia National Park.

Sampling Period Start Date: 06/01/2022**Sampling Period End Date:** 08/31/2022**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 Tablet computer**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.

Artificial light at night is a ubiquitous feature across NPS units, yet very little is understood about the impacts of artificial light at night on park resources and visitors' experiences. Recent research suggest that lighting may have a cascading effect on insect and other wildlife, and newer lighting technologies could reduce or eliminate these impacts. However, visitor responses to these newer technologies, including changes in intensity and color, have not yet been explored. GRTE and ACAD represent two different parks, in two different geographies/ecosystems that would benefit from improved lighting design for wildlife and humans. Both parks have robust visitation at night including overnight stays at campgrounds and interpretation programming at night.

Specifically, this study will focus on Colter Bay at GRTE and Blackwoods Campground and Jordan Pond at ACAD. In GRTE, Colter Bay is the brightest area in the park after the Jackson Hole airport, with many different types of artificial lighting. Colter Bay has a campground, visitor center, night interpretive programs, and other visitor services. Newly designed, mid-height mobile lighting stations with the three different light types with the newest LED technology will be deployed in and around Colter Bay to test the response of insects and bats. Two of the same lighting units will be used to examine visitor responses to these same lighting units at various settings matching the units used for insects and bats.

In ACAD, the Blackwoods Campground and Jordan Pond features areas that provide popular night sky viewing opportunities. Newly design low-height mobile lighting units with two different lighting types will be deployed in much the same ways as GRTE, with a pairing of settings for visitors and insects/wildlife. The mobile lighting units for visitors will be located at Blackwoods Campground where there is a trail located that leads to a beach where night sky viewing is common. Mobile lighting stations will also be located at Jordan ponds, an area with high levels of biodiversity, to test visitor responses to lighting.

To understand visitor's preference in regards to color and brightness of the lights in Colter Bay, Blackwoods, and Jordan Pond, respondents will be asked to participate in a short survey. In the survey, participants will be asked to direct a technician to change one of the lighting units to their preferred color and brightness of the lights, as well as questions regarding their preference to different management actions, demographics, and trip characteristics.

Being that viewing dark skies are a key experience GRTE and ACAD has to offer, the results of this study will help inform managers exactly how the lighting is affecting experience in this park, as well as visitor's preferences. The results will also help inform decisions regarding lighting in other areas of GRTE, ACAD, and other park units.

Survey Methodology

a. Respondent Universe

The respondent universe include participants at both Colter Bay in GRTE, and Blackwoods and Jordan Pond in ACAD.

The interpretation division at Colter Bay offers 2 evening programs 7 nights a week and averages 160 people attending programs each evening. Additionally, Colter Bay has a large campground that includes 339 individual campsites, which is often full each night from June to August. Visitor services in Colter Bay are open in the evenings until 10pm.

Approximately 49,600 are in the area people between June and August. The respondent universe will be all adults (18 years old and older) in the Colter Bay area in the evenings (dusk until 10:30pm) from June 1 to August 31, 2022.

Blackwoods Campground offers a 10-minute walk to the ocean that is popular for night sky viewing. This campground offers 281 individual campsites, which is often full each night from early May to Mid-October. Jordan Pond is a popular visitor location while also containing high levels of biodiversity, thus important for understanding appropriate lighting conditions that promote positive visitor experiences while protecting the ecosystem. The respondent universe will be all adults (18 years old and older) in the Blackwoods Campground or Jordan Pond areas in the evenings (dusk until 10:30 pm) from June 1 to August 31, 2022.

b. Sampling Plan/Procedures:

Potential respondents will be intercepted near the Colter Bay amphitheater in GRTE and along the trail segments in Blackwoods Campground and Jordan Pond in ACAD. These locations can capture individuals who are camping in the Colter Bay area and Blackwoods/Jordan Pond area, as well as others who are partaking in a short-term evening/night visit to Colter Bay or ocean viewing. There will be a total of 36 sampling days at each Park that will be stratified by day of the week.

Table 1. Example On-site Sampling Schedule

Location	Sampling Days per period	Number of visitors contacted	Anticipated Completed On-site Surveys
Colter Bay (GRTE) - June 2022	12	144	100
Colter Bay (GRTE) - July 2022	12	144	100
Colter Bay (GRTE) - August 2022	12	144	100
Blackwoods (ACAD) - June 2022	6	72	51
Blackwoods (ACAD) - July 2022	6	72	51
Blackwoods (ACAD) - August 2022	6	72	51
Jordan Pond (ACAD) - June 2022	6	72	51
Jordan Pond (ACAD) - July 2022	6	72	51
Jordan Pond (ACAD) - August 2022	6	72	51
TOTAL	72	864	606

It is anticipated that 12 visitor contacts will be made each sampling day at each park, or 864 visitor contacts during the sampling period.

On each sampling day, two trained researchers will be stationed at the sampling site near the [Colter Bay Amphitheatre/Blackwoods Campground/Jordan Pond] for two and a half hours between 8 p.m. and 11:00p.m. Two researchers will be stationed to recruit a random sample of visitors as they exit the sampling location. One visitor group will be intercepted by one researcher, and the other researcher will standby for safety purposes or to answer any non-participating visitor questions. If researchers are unable to meet their sampling quota for the month, which will be

assessed mid-month each month, additional day(s) will be instated, and the sampling procedures will continue as described above. Sampling will not occur on holidays or days with expected abnormal visitation (e.g., Independence Day), as to not skew the sample.

c. Instrument Administration

Visitors who agree to participate will be asked to complete an on-site survey with the researcher. This process will continue throughout the sampling period. Individuals or groups who are unwilling, unable, or are not part of the sample to participate in the study (e.g., visitors under the age of 18) will be thanked for their consideration. All survey questions have previously been approved either in the Colter Bay 2019 study (OMB Control Number: 1024-0224) or during the Pennsylvania State University lighting study (OMB Control Number 1024-0224)

All visitors refusing to complete the full interview will be asked if they would be willing to answer questions that will be used to check for non-response bias. In addition to the responses to the non-response bias questions, additional characteristics (i.e., activity, group size, number of adults and children in group, potential language barrier, time, and location) will be documented in a study log. If the potential participant agrees to take part in the study, the interviews will be administered by trained researchers working under the supervision of the primary investigator.

The researchers will use the following sample script when working with potential respondents:

Hello, my name is _____. I am conducting a short interview for Grand Teton National Park/Acadia National Park to better understand visitor's perceptions of the lighting in Colter Bay/Blackwoods/Jordan Pond at night. Your participation is voluntary and your responses will be anonymous. Your responses will help the managers to understand more about visitors perceptions of lighting and the night sky. Park plans will be developed based upon the experiences people have here in Colter Bay/Blackwoods Campground/Jordan Pond at night. In total, it will take you about 5 minutes to complete to complete a short interview. Would you be willing to participate?"

If NO: *Do you mind if I ask two very quick questions?*

- *What activity were you doing in Colter Bay/Blackwoods/Jordan Pond this evening?*
- *Are you camping in Colter Bay/Blackwoods/Jordan Pond this evening?*

Thank you for your time and consideration. I hope you enjoy your visit.

If YES: *"Thank you. Before we start, who in your group is at least 18 years old and has the closest birthday? Would you be willing to participate in the study? "*

The surveyor will then provide the instructions for completing the survey.

d. Expected Response Rate/Confidence Levels

We expect to contact at least 864 visitors during the sampling period. It is estimated that 70% (n=606) will be willing to participate in the surveys. These estimates are based on previous research with visitors to the Colter Bay at night in GRTE conducted in the summer of 2019 (Freeman, et al., 2020). This same research employed an on-site survey at night in Colter Bay and received a response rate of 66%. Given that this study is sampling a similar population in the same location, a response rate of 70% is believed to be an achievable goal.

For quantitative outdoor recreation related surveys, it is recommended that the sample size be approximately 300 respondents (Vaske, 2008). The current sample estimates for this study (at least 300 completed surveys at each park) are with the recommended number and viewed as acceptable. The results of this collection will not be used to generalize any population beyond the individuals participating in this study during this sampling period or speculate about any areas beyond GRTE and ACAD. Sampling and recruiting efforts will conclude at the end of the sampling period.

e. Strategies for dealing with potential non-response bias

All visitors contacted who do not agree to participate will also be asked to provide responses to the following questions that will serve as the non-response bias check:

- *What activity were you doing in [Colter Bay/ Blackwoods Campground/Jordan Pond] this evening?*
- *Are you camping in [Colter Bay/ Blackwoods Campground/Jordan Pond] this evening?*

In addition to the non-response survey questions, the surveyor will also record the following observational data for all non-respondent (including the "hard refusals")

- day, time, and location of contact
- group size
- activity
- number of adults and children in group
- potential language barrier

This process will continue throughout the sampling period at each of the study locations. This information will be used to determine any non-response bias. Any non-response bias will be reported in final reports.

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, reviewed and pretested by the following: PI, GRTE staff, ACAD staff, Natural Sounds and Night Skies staff, as well as staff at Boise State University and the Pennsylvania State University. Based on peer-reviews, survey questions were reduced and truncated, to include approved pool of known questions/topics, and therefore reduce burden time. Pre-testing for clarity and estimated burden time was conducted with staff at the Boise State University. The final draft of the survey includes all edits and correction obtained from the pretest efforts.

Burden Estimates

During the sample period, we plan to approach 864 potential participants. We expect that the initial contact time for all visitors will take at least one minute per person. We expect 70% (n=606) will agree to complete the survey. We estimate that it will take an additional 11 minutes per person to complete the survey (606 x 11 minutes = 111 hours).

Total burden hours for this collection will be 129 hours.

	Estimated Total Number	Estimation of Time to Complete (minutes)	Estimation of Burden to Complete (hours)
On-site Refusal/nonresponse	258	2	9
Responses	606	12	121
Total	0		0

Reporting Plan

A final technical report will be delivered to the park managers and staff at GRTE and ACAD. The report will contain a description of the study purpose and key findings. The final report will include frequency distributions and descriptive statistics, where appropriate, and a thematic analysis of open-ended questions. A final copy of the report will also be transmitted to the NPS Social Science Division for archiving in the Social Science Studies Collection.

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 Officer, National Park Service, 12201 Sunrise Valley Drive Reston, Virginia 20192.