



## PROGRAMMATIC REVIEW AND CLEARANCE PROCESS FOR NPS-SPONSORED PUBLIC SURVEYS



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*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.*

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**SUBMISSION DATE: 03-07-2019**

**PROJECT TITLE: Visitor's experience with lighting and night skies in Grand Teton National Park**

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**ABSTRACT:** (not to exceed 150 words)

This study seeks to understand visitor's experiences in Grand Teton National Park (GRTE), at night with both traditional and wildlife friendly lighting. On-site interviews will be conducted from June to August of 2019. 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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**PRINCIPAL INVESTIGATOR CONTACT INFORMATION:**

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**PARK OR PROGRAM LIAISON CONTACT INFORMATION:**

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**PROJECT INFORMATION:**

Where will the collection take place? Colter Bay in Grand Teton National Park

Sampling Period Start Date: July 1, 2019      Sampling Period End Date: August 31, 2019

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: iPad 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.*

Colter Bay is the brightest area in the park outside of the Jackson Hole airport, with most artificial light produced from 32 streetlights. These lights not only affect the behavioral patterns of insects, mammals, and birds, but the visitor experience to the area as well. These traditional artificial lights degrade visitor's ability to adapt to dark environments, as well as easily transition from lit to dark areas. Traditional lights also reduce the opportunity for visitors to experience dark skies. In recent years, there has been a large increase in attendance and interest in the astronomy programs offered by interpretative staff at the Colter Bay Visitor Center and Amphitheatre, indicating that viewing the night sky is a desired and sought after visitor experience. This summer, new lights will be installed at Colter Bay. Each light will have the option to cast a traditional white light, or a red hued wildlife-friendly light. To understand the effects of different lighting on the visitor experience in regards to safety, night vision, and viewing dark skies, a treatment and control study design will be implemented. Each week throughout the summer, the 36 streetlights will be alternated from traditional white light to wildlife-friendly lights. Under each lighting condition, visitors will be surveyed to better understand how the lighting is affecting their experience in Colter Bay at night.

This is the first study of its kind to investigate the effects of lighting on the experience of GRTE visitors at night. Being that viewing dark skies are a key experience GRTE has to offer, the results of this study will only be used to help inform managers how current lighting scenarios are affecting visitor experiences at night in this park.

**SURVEY METHODOLOGY**

**(A) Respondent Universe:**

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 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 July 1 to August 31, 2019.

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

Potential respondents will be intercepted at two locations: 1) near the Colter Bay amphitheater, and 2) near the Colter Bay general store. These locations are able to capture individuals who are camping in the Colter Bay area, as well as others who are partaking in a short-term evening/night visit to Colter Bay. There will be a total of 50 sampling days at each location that will be stratified by day of the week. Participants will be surveyed as they exit the Colter Bay area at the end of their visit.

**Table 1. Example On-site Sampling Schedule**

Location	Sampling Days Per Site		
	July 2019	August 2019	TOTAL
Colter Bay Amphitheatre	12	13	25
Colter Bay General Store	13	12	25
<b>TOTAL</b>	<b>25</b>	<b>25</b>	<b>50</b>

Due to the differing nature of the two sample sites, it is anticipated that 6 visitor contacts will be made each sampling day at the Colter Bay Amphitheatre, or 150 visitor contacts during the sampling period. It is anticipated that 12 visitor contacts will be made each sampling day at the Colter Bay General Store, or 300 visitor contacts during the sampling period. Overall, on the sampling days during the sampling period, it is estimated that a total of 450 visitor contacts will be made.

**Table 2. Estimated Number of Visitor Contacts during Sampling Period**

Location	Estimated Number of Visitor Contacts		
	July 2019	August 2019	TOTAL
Colter Bay Amphitheatre	72	78	150
Colter Bay General Store	156	144	300
<b>Total</b>	<b>228</b>	<b>222</b>	<b>450</b>

On each sampling day, two trained researchers will be stationed at one of the locations for two and a half hours between 8 p.m. and 10:30 p.m. Two researchers will be stationed to recruit a random sample of visitors as they exit the sampling locations. 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.

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**(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 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., gender, activity, group size, number of adults and children in group, and potential language barrier, time, 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 PI.

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

*Hello, my name is \_\_\_\_\_. I am conducting a short interview for Grand Teton National Park to better understand visitor's experiences in Colter Bay at night. Your participation is voluntary and your responses will be anonymous. Your responses will help the managers to understand more about the experiences visitors are seeking in relation to the night sky. Park plans will be developed based upon the experiences people have here in Colter Bay at night. In total, it will take you about 8 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 this evening?*
- *Are you camping in Colter Bay 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 Level:**

We expect to contact at least 450 visitors during the sampling period. It is estimated that 80% (n=360) will be willing to participate in the surveys. These estimates are based on previous research with visitors to the Colter Bay Visitor Center in GRTE conducted in the summer of 2017 (Lawhon, et al., 2018). This same research employed an on-site survey and received a response rate of 81.7%. Given that this study is sampling a similar population in the same location, a response rate of 80% 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 (360 completed surveys) 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. Sampling and recruiting efforts will conclude at the end of the sampling period.

Respondent Group	Initial Contacts	Acceptance 80%	Non-respondents (Soft refusals) 20%	Non-response survey 80%	Hard Refusals 20%
Colter Bay Amphitheatre	150	120	30	24	6
Colter Bay General Store	300	240	60	48	12
<b>TOTAL</b>	450	360	90	72	18

**(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 this evening?*
- *Are you camping in Colter Bay 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
- gender
- activity
- group size
- number of adults and children in group
- and 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:**

The questions included in the survey instrument were designed, reviewed and pretested by the following: PI, GRTE staff, NPS staff with the Natural Sounds and Night Skies Division, 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 Pennsylvania 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 450 potential participants. We expect that the initial contact time for all visitors will take at least one minute per person. We expect 80% (n=360) will agree to complete the survey. We estimate that it will take an additional 8 minutes per person to complete the survey (360 x 10 minutes = 60 hours). We expect that 20% (n = 90) of all visitors contacted will refuse to participate in the study. For those individuals, we will record their reason for refusal and ask them to answer the non-response check questions. Based upon our estimated response rate of all of the people that refuse to take the survey 80% (n=72) will agree to answer the non-response check questions and 20% (n=18) will give a “hard refusal” and walk away. We anticipate that it will about one minute plus the initial contact time to complete the non-response questions (72 x 3 minute = 3.6 hours).

The total annual burden for this collection will be 64 hours.

	Responses	Completion Time * (minutes)	Burden Hours**
Completed questionnaire	360	10	60
Non-response survey	72	3	4
Total burden requested under this ICR:	<b>0</b>		<b>64</b>

\* Initial Contact time added to completion time

\*\* Rounded

**REPORTING PLAN:**

A final technical report will be delivered to the park managers and staff at GRTE. 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 Coordinator, National Park Service, 1201 Oakridge Dr., Fort Collins, CO 80525.