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: 12/19/2016

Project Title: Impacts of Sound on Visitors' Experience in Denali National Park Front-Country

Abstract (not to exceed 150 words)

Over the last decade, Denali National Park and Preserve (DENA) has developed a comprehensive park-wide inventory of the park's acoustic resources. These efforts have largely focused on quantifying the physical properties of Denali's soundscape, and have collected and analyzed sound pressure level, acoustic events, and sound source audibility data. Previous research assessed acoustic impacts to visitor experiences within DENA's backcountry. However, little is known about the impacts of anthropogenic sound on visitors' experience of the front-country areas (entrance area) of the park, where anthropogenic noise is prevalent. This study will focus specifically on soundscapes in DENA's front-country, which is needed to fill knowledge gaps and inform management of the current status in visitor's acoustic experiences and expectations while visiting DENA's front-country. Results from this study will aid in efforts to protect the social environments of DENA that contribute to positive visitor experience, including natural and anthropogenic sounds.

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Project Information		
Where will the collection take place? (Name of NPS Site)	Denali National Park and Preserve (DENA)	
Sampling Period	**Start Date: June 1, 2017**	**End Date: August 31, 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 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.

A fundamental goal of the National Park Service Natural Sounds and Night Skies Division (NSNSD) is to protect, maintain and restore natural soundscape resources throughout the National Park System. Using the most innovative science and technology NSNSD works to develop new approaches to safeguard natural sounds and identify management solutions to restore these resources. Managers at Denali National Park recognize the importance of strategies to safeguard soundscapes; however, they acknowledge their need to understand the effects of sounds on visitor experiences and expectations.

Although the NPS has a solid reputation for measuring and monitoring natural, ambient, and human-caused sound levels in parks for more than 20 years, there is an emerging need for new studies that specifically focus on visitor's experiences, perceptions and attitudes related to sounds. Research suggests that visitors consider their experiences related to natural sounds (i.e., sounds of nature and natural quiet) as an important reason for retreating to parks. Although there have been many studies evaluating sounds in National Parks there are no recent in Denali's front country.

This proposed study will use two questionnaires to examine how sounds affect visitor experiences. We will ask questions to determine what sounds visitors detect and how they feel about those sounds. The information from this collection will help managers to understand effects of sounds on visitor experiences in area of high visitor use and competing recreational use activities.

Survey Methodology

(a) Respondent Universe:

The respondent universe for this collection will be all adult visitors over 18 years of age recreating in DENA's front country from June 20, 2017 to August 15, 2017. For the purpose of this study, the front-country refers to the area of DENA that is visited by day users, accessible by personal vehicles, offers visitor facilities, and is primarily used by visitors who are not part of a commercial tour.

(b) Sampling Plan/Procedures:

The sampling period will occur on randomly selected days during the 30 days of the sampling period between June 20 and August 15, 2017. Within this 30 day window we will systematically sample of all visitors at the three locations listed below:

- Denali Visitor Center
- Triple Lakes (South Trailhead)
- Riley Creek Campground

Location	Sampling Days Per Site		
	June	July	August
Denali Visitor Center	**8**	**15**	**7**
Triple Lakes (South Trailhead)	**8**	**15**	**7**
Riley Creek Campground	**8**	**15**	**7**

The sample design is based on the 2015 NPS Visitation Statistics. We will randomly intercept visitors at 10 minute intervals (dependent upon visitor traffic). Sampling days will be stratified by day of the week and locations between the hours of 8:00 AM and 5:00 PM. There will be two versions of the survey instrument and each survey will be administered an equal number of times (15 days for **Survey A** and 15 days for **Survey B**). After the first group is selected, every*3rd* group or person will be selected to participate in the survey. Questionnaires will be completed and returned on site. This process will continue each day throughout the sampling period. If the visitor refuses, information used for non-response bias testing will be recorded as described in the section below.

(c) Instrument Administration:

During the sampling period, trained surveyors will ask every 3rd visitor/group exiting the sampling location if they would be willing to participate in a visitor survey. Visitors who are unwilling or unable to participate in the survey will be asked two questions that will be used to assess non-response bias, and thanked for their consideration. The initial contact with visitors who are willing to participate, and who have not previously participated, will be used to explain the purpose of the study and to provide instructions. This should take approximately 1 minute. At the end of the initial contact the surveyor will hand the visitor a laminated (re-usable) copy of the questionnaire and will instruct them to provide verbal responses that will be recorded by the surveyor using a tablet computer.

There are two separate versions of the survey instruments. All question related to visitor characteristics and demographics will be the same in both versions of the survey, however:

- **Survey A** - will evaluate the effects of both natural and anthropogenic sounds
- **Survey B** - will only evaluate the effects aircraft sounds

The research assistant will use the following script to solicit participation:

Hello, my name is _____. I am a researcher at Penn State University. Managers here at Denali are interested in how visitors respond to a variety of sounds in the park. I am asking a randomly sample of visitors to take a short survey that will gather information about perceptions of different sounds in the park. Your participation is voluntary and your responses will be anonymous. This should only take about 15 minutes to complete. Would you be willing to participate?"

If NO: *"Would you mind if I ask you two questions?*

- *What is the primary activity you are planning to do during your visit?*
- *Are there any sounds that you've found particularly annoying during your visit?*

Thank you for your response. This will help us to know a little about visitors experience the park. . I hope you enjoy your visit."

If YES: *"Thank you. Who in your group (who is at least 18 years old) has the next birthday? Would you be willing to participate in the study?*

Have you or anyone in your group already taken this survey at any time during your visit? (anyone taking the survey will be deemed ineligible at this point)

Once eligibility is established, the surveyor will provide the instructions for completing the survey and will begin the process.

(d) Expected Response Rate/Confidence Levels:

A total of 860 visitors will be approached during the sampling period. During the 30 say sampling period each survey will be randomly administered an equal number of times. Based upon a 70% respondent rate, we propose the following sampling effort for both surveys.

Denali 2017 Front country Survey Expected Response Rates

	June Number of visitors		July Number of visitors		August Number of visitors	
	Initial Contact	**Total number of Respondents**	**Initial Contact**	**Total number of Respondents**	**Initial Contact**	**Total number of Respondents**
Survey A	125	88	215	150	90	63
Survey B	125	88	215	150	90	63
TOTAL	**250**	**0**	**0**	**0**	**180**	**0**

Previous studies conducted in the front-country of National Park locations have elicited similar response rates (for example: Stack et al., 2011; Lelaina et al., 2011; Taff et al., 2014). Additionally, experts in the field have concluded that the estimated sample size, given this unique and under-studied user-group, typically allows generalization with a 95% confidence interval that the survey findings will be accurate to within ±5 percentage points.

Response rates based upon total estimated

		number of all visitor contacted				
		Initial Contacts	Acceptance 70%	Non-respondents (Soft refusals) 20%	Non-response survey 70%	Hard Refusals 30%
Survey A		430	301	86	60	26
Survey B		430	301	86	60	26
	Total	**0**	**0**	**0**	**0**	**0**
					% soft refusals	

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

For both Instruments A and B: The surveyors will capture observational information in the survey log from interactions with visitors that do not agree to participate:

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

We anticipate that 20% (n=172) of the all visitors contacted will refuse to complete the full survey, however of those we expect that at least 120 visitors will agree to answer two questions taken directly from the survey that will serve to evaluate any non-response bias. The questions to be used are:

- *What is the primary activity you are planning to do during your visit?*
- *How much did man-made sounds interfere with your enjoyment during your time in Denali's front country? (Please select one)*

Much less than I expected	Less than I expected	About as much as I expected	More than I expected	Much more than I expected
1	2	3	4	5

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

This collection will employ similar sampling methods and survey instruments as used in the currently approved DENA backcountry collection. The questions included in the survey instrument were reviewed and pretested by the following:

- Research staff and graduate students, scientists in the Recreation, Park, and Tourism Management Department at Pennsylvania State University with expertise in survey research, and
- DENA Management Team

Upon completion of the review, it was suggested that an effort to reduce respondent burden was necessary. With that, the questions in the initial versions of the survey were reduced and

truncated, to only include questions from the currently approved *NPS Pool of Known Questions* (OMB Control Number 1024-0224). Finally, in order to address clarity and to establish the respondent burden a pre-test was conducted with <9 graduate students at Pennsylvania State University.

Burden Estimates

We expect that the initial contact time with 860 visitors will take no more than one minute per person (860 x 1 minute = 14 hours). We expect that after the initial contact 70% (*n=602*) of all visitors contacted will agree to complete the full version of Survey A or B. This will take an additional 15 minutes to provide instructions, complete and return (602 x 15 minutes = 151 hours).

Of all of the visitors contacted we anticipate that 120 will agree to complete the non-response bias survey. This is estimated to take about one minute to complete (120 x 1 minute = 2 hours).
For the remaining 52 visitors refusing to participate in the study, we will record their reason for refusal (if given) in the study log.

The total estimated respondent burden for this collection is 167 hours.

Estimated Total Number	
Initial Contacts	860
Nonresponse Bias Survey	120
Completed Responses	602

Estimation of Time (minutes)	
Initial Contact	1
Nonresponse Bias Survey	1
To complete response	15

Estimation of Burden (hours)	
Initial Contact	14
Nonresponse Bias Survey	2
To complete response	151
Total Hours	**167**

Reporting Plan

Response frequencies will be tabulated and measures of central tendency computed (e.g., mean, median, mode, as appropriate). Reponses will also be coded and used to describe visitor thresholds' to anthropogenic sounds, and their experience in the DENA front-country when exposed to certain sounds. The survey results will be compiled and entered into master DENA front-country acoustics database. Reports with visitor frequencies and descriptive statistics regarding visitor experience in DENA backcountry will be given to specific to DENA divisions (who have indicated an interest in the results). The draft report will be reviewed by colleagues and chief of Resources and the final Natural Resource Technical Series (NRTS) report will be presented to the Denali Management Team and posted as a Natural Resource Report in the NPS Data Store (https://irma.nps.gov/DataStore/Reference/Profile/). The report will be peer reviewed to scientific integrity of the work. Hard copies will be available on request. The report will be archived with the NPS Social Science Program for inclusion in the Social Science Studies Collection as required by the NPS Programmatic Approval Process.

References:

Marin, L., Newman, P., Manning, R., Vaske, J., Stack, D. (2011). Motivation and acceptability norms of human-caused sound in Muir Woods National Monument. *Leisure Sciences*. I33(2): 147-161.

Stack, D., Newman, P., Manning, R., Kristrup, K. (2011). Reducing visitor noise levels at Muir Woods National Monument using experimental management. *Acoustical Society of America*. 129 (3): 1375-1380.

Taff, D., Newman, P., Lawson, S., Bright, A., Marin, L., Gibson, A., Archie, T. (2014). The role of messaging on acceptability of military aircraft sounds in Sequoia National Park. *Applied Acoustics*. 84: 122-128.