



Expedited Approval for NPS-Sponsored Public Surveys

1. **Project Title | Submission Date:** Understanding and Managing Soundscapes in National Parks: Sequoia and Kings Canyon National Park Visitor Use Survey

2. **Abstract:** The purpose of this project is to conduct onsite surveys of day use visitors to the Giant Forest and Crabtree areas of Sequoia and Kings Canyon National Parks, and to collect information concerning their perceptions, experiences, and attitudes toward natural and human-caused sounds in the park. The onsite survey will be conducted to represent weekdays and weekends between July 1 and August 30, 2009. The survey results will be used to inform managers of valued visitor experiences pertaining to soundscapes.
(not to exceed 150 words)

3. Principal Investigator Contact Information

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Project Information

5. **Park(s) For Which Research is to be Conducted:**

6. **Survey Dates:** (mm/dd/yyyy) to (mm/dd/yyyy)

7. **Type of Information Collection Instrument (Check ALL that Apply)**

Mail-Back Questionnaire On-Site Questionnaire Face-to-Face Interview Telephone Survey Focus Groups

Other (explain)

8. **Survey Justification: (Use as much space as needed; if necessary include additional explanation on a separate page.)**

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, development, operations, management, education, and interpretive activities.

Protecting natural sounds is an important goal set by the National Park Service in management policy 4.9:

Park natural soundscape resources encompass all the natural sounds that occur in parks, including the physical capacity for transmitting those natural sounds and the interrelationships among park natural sounds of different frequencies and volumes. Natural sounds occur within and beyond the range of sounds that humans can perceive, and they can be transmitted through air, water, or solid materials. The National Park Service will preserve, to the greatest extent possible, the natural soundscapes of parks. The Service will restore to the natural condition wherever possible those park soundscapes that have become degraded by unnatural sounds (noise), and will protect natural soundscapes from any unacceptable impacts (National Park Service Management Policies, 2006).

Although the NPS has been measuring natural ambient and human-caused sound levels in parks for over 20 years, fewer studies have examined visitors' responses and evaluations of natural sounds (Krog & Engdahl, 2005). Research to date has shown that some visitors seek out natural soundscapes as a part of their experience, while anecdotal evidence indicates that other visitors accustomed to urban acoustical environments are uncomfortable in the absence of familiar human-caused sounds. Gramman (1999) suggests that noise interferes with benefits, such as the reduction of stress, that people seek from an experience in nature. Similarly, Anderson, Mulligan, Goodman, and Regan (1983) showed that evaluations of sounds influence the evaluations of their respective settings. Finally, Ouis (2001) states that noise is "more than just a nuisance", but rather it represents "a danger that is real to people's health by producing both physical and psychological stress". While this brief review of important literature shows the relationship between sound and visitor enjoyment, more work is warranted in this area in order build a tool that can measure acoustical data and assess impacts to visitor use and enjoyment. This study begins to address these issues.

The information from this research will enhance park planning and soundscape management efforts by assessing visitor responses to both natural and human-caused sound and identifying potential indicators and standards of quality for

soundscape conditions in parks that can be applied within a Visitor Experience and Resource Protection framework (VERP).

9. **Survey Methodology: (Use as much space as needed; if necessary include additional explanation on a separate page.)**

(a) Respondent universe:

The respondent universe for the visitor survey will be all individuals 18 years of age and older who take a day hike on the trails in the Giant Forest and Crabtree areas of Sequoia and Kings Canyon National Parks during the period July 1 to August 30, 2009. The visitor survey is included as an attachment to this Expedited Approval form (see Attachment 1 – “Understanding and Managing Soundscapes in National Parks: Sequoia and Kings Canyon National Parks Visitor Use Survey.”)

(b) Sampling plan/procedures:

The visitor survey sampling period will occur on a total of 10 randomly selected days between July 1 and August 30, 2009. Sampling days will be stratified by day of the week and location. Furthermore, each trailhead will be sampled an equal number of times. On each sampling day, trained surveyors will be stationed at each selected point from 8am to 4pm. The surveyors will recruit study participants by contacting a random sample of visitor groups as they are walking past the study area and ask them to participate in a listening exercise.

Only one individual from each intercepted group will be asked to participate at a time. Therefore, the surveyor will not distract listeners by talking to people passing by. When the visitor is relaxed and ready to listen, the surveyors will instruct them to close their eyes and listen to the sounds around them, including both human and natural sounds. They will be instructed to open their eyes when they have heard all of the sounds they thought they could hear, and then complete the visitor survey. Instructions for the visitor survey will be posted on the front page; however the surveyors will also explain these instructions before passing out the survey. When the individual finishes the survey, the surveyor will then randomly select another individual to participate in the visitor survey.

(c) Instrument administration:

Visitors selected for the study will be read the following script:

”Hello, my name is _____. I am conducting a survey for the National Park Service to better understand visitor’s attitudes towards sounds at Sequoia and Kings Canyon National Parks. Participation is voluntary and anonymous. Would you be willing to spend a few minutes to answer some important questions regarding your visit here?”

If “NO” then, “Thank you, I hope you enjoy your visit.”

If “YES” then, “Thank you, has any member of your group participated in this survey before?”

If “YES” then, “Thank you for participating in this study but you have already provided us with the information we need. Have a great day.”

If “NO” then, “Thank you for agreeing to participate in this study. The results from this survey will help the National Park Service better understand the relationship between visitor use and soundscapes in Sequoia and Kings Canyon National Parks, as well as protect resources and meet the needs of visitors. This survey will take about 10 minutes to complete.”

A randomly selected member that agrees to participate will be administered the visitor survey. Study participants will be instructed to complete the questionnaire

onsite and address any questions to the surveyor.

The group size and type of activity (i.e., day hiking, backpacking) of all groups who choose not to participate in the survey will be recorded for the purposes of testing for non-response bias within the survey data (see Attachment 2 – “Sequoia and Kings Canyon National Parks Visitor Survey Log”).

(d) Expected response rate/confidence levels:

A total of 375 day-use visitor groups will be contacted during the sampling period. Out of an estimated 375 initial contacts with visitor groups, based on previous and nearly identical studies in Yosemite National Park (Newman 2006) and Grand Teton National Park (Newman 2006), it is expected that 300 (80%) will agree to participate in the survey. The number of refusals will be recorded and reported (see Attachment 2 – “Sequoia and Kings Canyon National Parks Visitor Survey Log”). Based on the day-use survey sample size, there will be 95% confidence that the day-use survey findings will be accurate to within 5.7 percentage points, as well as a power level greater than .80 for any number of statistical test (two-tailed independent samples t-test, multivariate regression), at the .05 alpha-level. Thus, the proposed sample size will certainly be adequate for bivariate comparisons and will also allow for comparisons between study sites and more sophisticated multivariate analysis if deemed necessary.

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

The number of refusals will be recorded, reported, and analyzed for non-response bias (see Attachment 2 – “Sequoia and Kings Canyon National Park Visitor Survey Log”). This will be done by comparing participating groups’ characteristics (group size, activity type – i.e., day hiking, backpacking) to non-participating groups’ characteristics gathered on the corresponding survey refusal log sheets. Results of the non-response analyses will be reported and implications for interpretation of the results discussed.

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

The questions included in this survey were initially designed and reviewed by the principal investigator, research staff and graduate students, scientists from other universities with expertise in survey research methods, and NPS staff. Nearly identical survey instruments were tested in 2006 and 2007 in Yosemite National Park and Grand Teton National Park (OMB #: 1024-0224 NPS #06-043), and in Haleakala National Park (OMB #: 1024-0224 NPS #07-014). Results from these studies are currently under second revisions in peer-reviewed scientific journals.

10.	Total Number of Initial Contacts Expected Respondents:	375	300	11.	Estimated Time to Complete Initial Contact Instrument (mins.):	0.25	10	12.	Total Burden Hours:	52
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13.	Reporting Plan:	<p>A technical study report will summarize results and management recommendations. Data will be analyzed using Statistical Package for Social Sciences (SPSS) version 17.0 to compare and quantify acceptability and personal interpretation of sounds heard at survey sites. These results will also be compared using demographic variables to look for statistical differences between groups. Journal manuscripts and academic papers will also be prepared. Copies of all reports and papers will be archived with the National Park Service Social Science Program for inclusion in the Social Science Studies Collection.</p>
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References

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