



National Park Service
U.S. Department of the Interior

Social Science Program

OMB Control Number 1024-0224
Current Expiration Date:8-31-2014

Programmatic Approval for NPS-Sponsored Public Surveys

Submission Date 1-24-2013

1. **Project Title:** Visitors' perceptions of natural sounds in the backcountry and designated wilderness areas managed by the National Park Service.

2. **Abstract:** Through sound monitoring efforts, parks can learn about the acoustical environment as a whole and identify desirable and appropriate sound sources, as well as those that are undesirable in the park setting. Information gathered can then be used to identify the potential impacts of non-natural sounds. The Natural Sounds and Night Skies Division requested a survey of visitors recreating in wilderness areas to evaluate the perception of sound quality observed during medium-length hikes (e.g. hikes that last several hours versus multiple days and are less than 8 miles in duration). The results of this study will provide information about visitor perception of desirable and appropriate sounds observed while hiking in a national park setting.

(not to exceed 150 words)

3. **Principal Investigator Contact Information**

First Name: Paul **Last Name:** Schomer
Title: Standards Director, Acoustical Society of America
Affiliation: Schomer and Associates, Inc.
Street Address: 2117 Robert Drive
City: Champaign, **State:** IL **Zip code:** 61821
Phone: (217) 359-6602 **Fax:** (217) 359-3303
Email: schomer@schomerandassociates.com

4. **Park or Program Liaison Contact Information**

First Name: Frank **Last Name:** Turina
Title: Program Manager, Policy Planning and Compliance
Office/Division: National Park Service, Natural Sounds and Night Skies Division
Street Address: 1201 Oakridge Drive
City: Fort Collins **State:** CO **Zip code:** 80525
Phone: (970) 225-3530 **Cell:** (970) 631-5260 Cell
Email: frank_turina@nps.gov

Project Information

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

6. **Survey Dates:** June 1, 2013 TO August 17, 2013

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

Mail-Back Questionnaire Other (explain)	<input checked="" type="checkbox"/> On-Site Questionnaire	Face-to-Face Interview	Telephone Survey	Focus Groups
--	--	-----------------------------------	-----------------------------	---------------------

8. **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, development.*

The opportunity to experience natural sounds and silence is becoming rare in our modernized world. National parks are among the last refuges where people can experience natural quiet. Efforts to protect the acoustical environment in our national parks are driven by the Wilderness Act and National Park Service (NPS) management policies. But before any action can be taken, park planners and managers need reliable data about a park's existing acoustical environment. Wilderness Act of 1964 requires the National Park Service (NPS) to preserve the wilderness character of protected wilderness areas; and the NPS Management Policies (2006 section 4.9) and the NPS Director's Order #47 directs park managers to (1) measure baseline acoustic conditions, (2) determine which existing or proposed human-made sounds are consistent with park purposes, (3) set acoustic management goals and objectives based on those purposes, and (4) determine which noise sources are impacting the park and need to be addressed by management. In 1972, the Noise Control Act required the federal government to establish and enforce noise controls in work and other places, including national parks. Subsequent legislation to limit air tours and enforce minimum flight altitudes (to limit noise).

Although the NPS has measured natural, ambient, and human-caused sound levels in parks for more than 20 years, there are few studies that evaluate visitors' perceptions of natural sounds in the backcountry and designated wilderness areas managed by the NPS. To that end, the Natural Sounds and Night Skies Division requested a survey of visitors recreating in wilderness areas to evaluate the perception of sound quality observed during medium-length hikes (e.g. hikes that last several hours versus multiple days and are less than 8 miles in duration). The results of this study will provide information

about visitor perception of desirable and appropriate sounds observed while hiking in a national park setting.

9. **Survey Methodology: (Use as much space as needed; if necessary include additional explanation on a separate page.)** **(a) Respondent Universe:** All adult (16 years and older) entering three identified wilderness trails within Bryce Canyon National Park.

(b) Sampling Plan/Procedures: The sampling period will occur for a total of 30 days between June 1 and August 17, 2013. Within this 30-day window, we will survey concurrently or separately at three locations within the designated wilderness boundary. Sampling days will be stratified by day of the week and location. On each sampling day, one to two trained surveyors will be stationed at one to two of the three locations between 7:00am-2:00pm. The surveyors will recruit study participants by contacting a random sample of visitors as they enter the study areas. On days of high-visitor volume two surveyors will be at one location, but if there are days with low visitor volume, we use one surveyor at each of two locations.

(c) Instrument Administration: During the sampling period, trained surveyors will ask every Nth visitor/group entering 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 which will be used to determine non-response bias, and thanked for their consideration. The visitors willing to participate will be greeted by a surveyor as they approach the entrance to the trail. We will spend about three minutes explaining the purpose of the survey and explaining that we would like for them to complete during their hike

At high-volume locations, a random start time will be selected at the beginning of each sample period and visitor groups will be randomly intercepted approximately every 10 minutes (this sampling interval may be adjusted if and when traffic volume fluctuates). At low-volume locations, all visitor groups will be contacted. When more than one person is encountered in a group we will use the closest birthday method to select the respondent.

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

“Hello, my name is _____. I am conducting a survey for the National Park Service to better understand visitor’s attitudes towards the management of sounds here at Bryce Canyon. Your participation is voluntary, all responses will be anonymous and the survey will take about 15 minutes to complete during your hike. We are asking that you stop 4-6 times along the way and tell us about the sounds you heard during your hike. We are hoping this will not take away from your visit. Have you or any members of your group participated in this survey while at Bryce Canyon?”

If “Yes” then, “Thank you for helping us. Have a safe trip.”

If “No” then, “Would you be willing to spend accept a survey to complete during your hike?

- *If “Yes” then, “Thank you for your willingness to assist with this study. I’ll read you the survey instructions so we can begin.”*

If “No” then, “Do you mind if I ask,

- *is this your first time hiking this trail?”*
- *where are you from? (state or country)*

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

(d) Expected Response Rate/Confidence Levels:

A total of 1,200 visitor groups will be contacted during the sampling period. Based on similar on-site surveys by the National Park Service, (Newman 2010) we expect a final response rate of 56%. This response rate will yield approximately 675 completed questionnaires. Based on this, the overall sampling error will be approximately +/- 5% at the 95% confidence interval.

Location	Number of Initial Contacts	Expected Response Rate	Expected Number of people accepting the survey	Margin of Error +/- %
Site 1	400	56%	225	5%
Site 2	400	56%	225	5%
Site 3	400	56%	225	5%

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

During the initial contact, the interviewer will ask each visitor two questions taken from the survey. These questions will be used in a non-response bias analysis.

- 1) *Is this your first time hiking this trail?”*
- 2) *Where are you from? (state, province or country)*

In addition, the data from the survey will be analyzed for non-response bias by comparing participating groups’ characteristics (group size, activity type – i.e., day hiking, backpacking, trail running) to non-participating groups’ characteristics gathered on a survey refusal log maintained by the surveyors.

Responses will be recorded in a log maintained by the surveyors. Results of the non-response bias check will be described in a report and any implications for park planning and management will be discussed.

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

Survey research methods and the questionnaire instrument were reviewed by NPS officials. Questionnaire items are identical to those used in previous studies in several other national park sites. The questions are consistent with **Topic Area 4: Sound9** in the NPS Pool of Known Questions (OMB Control Number 1024-0224).

10 **Burden Estimates:** We plan to approach at least 1,200 individuals during the sampling period. With an anticipated response rate of 56%, we expect to receive 675 total responses for this collection.

We expect that the initial contact time will be at least one minute per person (1,200 x 1 minute = 20 hours) to determine if they will be willing to take the survey. We expect that 525 (44%) visitors will refuse to take the survey, for those individuals we will record their reason for refusal and ask them if they would be willing to answer the two questions that will be used for the non-response check. This is estimated to take no more than 2 minutes (525 x 2 = 18 hours) to complete each session.

For those who agree to participate (n= 675) we expect that 50% (n=337) will complete and return the survey. For those completing and returning the survey, an additional 15 minutes/respondent will be added to the overall burden for the collection (337 response x 15 minutes = 84 hours). The burden for this collection is estimated to be 122 hours.

Estimated Number of Visitor Contact	
Initial Contacts	1,200
On-site Refusal/ nonresponse	525
returned surveys	337

Estimation of Time (minutes)	
Complete Initial Contact	1
On-site Refusal/ nonresponse	2
Complete and return surveys	15

Estimation of Respondent Burden (hours)	
Initial Contact	20
On-site Refusal/ nonresponse	18
Estimated Burden	84

Total Burden 122

11. **Reporting Plan:** Analysis and results will include frequency distributions and descriptive statistics for all questionnaire variables as well as selected cross-tabulations and other comparisons.

Finally, we will submit a copy of the technical completion report, as required, to the NPS Program Manager, Policy Planning and Compliance, Night Skies Division, and the NPS Social Science Program for inclusion in the Social Science Studies Collection.