



## Expedited Approval for NPS-Sponsored Public Surveys

1. **Project Title | Submission Date:**

2. **Abstract:**   
(not to exceed 150 words)

### 3. Principal Investigator Contact Information

**First Name:**  **Last Name:**

**Title:**

**Affiliation:**

**Street Address:**

**City:**  **State:**  **Zip code:**

**Phone:**  **Fax:**

**Email:**

### 4. Park or Program Liaison Contact Information

**First Name:**  **Last Name:**

**Title:**

**Park:**

**Park Office/Division:**

**Street Address:**

**City:**  **State:**  **Zip code:**

**Phone:**  **Fax:**

**Email:**

## 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:

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 unacceptable impacts. Using appropriate management planning, superintendents will identify what levels and types of unnatural sound constitute acceptable impacts on park natural soundscapes.

The frequencies, magnitudes, and durations of acceptable levels of unnatural sound will vary throughout a park, being generally greater in developed areas. In and adjacent to parks, the Service will monitor human activities that generate noise that adversely affects park soundscapes, including noise caused by mechanical or electronic devices. The Service will take action to prevent or minimize all noise that through frequency, magnitude, or duration adversely affects the natural soundscape or other park resources or values, or that exceeds levels that have been identified through monitoring as being acceptable to or appropriate for visitor uses at the sites being monitored. (National Park Service, 2006, p.56).

Because noise intrusions can interfere with ecological systems and visitor enjoyment in parks, the NPS has been measuring natural ambient and unnatural sound levels at national parks for over twenty years. However, few studies have been able to connect acoustical measurements to actual visitor response data. To address this, the proposed study will measure visitor response to audio clips containing varying levels of natural ambient and human-caused sounds endemic to the park. The survey instrument, sampling protocols, and analysis methods are similar to soundscape-related studies conducted at a number of other national park units (Lawson et al., 2007a, 2007b; Newman et al., 2006; Newman et al., 2005; Pilcher et al., 2008). The information collected in this study will enhance current park planning and management efforts by providing visitor use and user characteristics, assessing the impacts of human and mechanical noise on visitors' experiences in Great Smoky Mountains National Park, and identifying potential indicators and standards of quality for soundscape conditions in the park.

9. **Survey Methodology: (Use as much space as needed; if necessary include** (a) Respondent universe:  
The respondent universe will be all visitors, 18 years of age and older, to the Cosby area of Great Smoky Mountains National Park between May 1 and August

additional explanation on a separate page.)

31, 2009. The survey sampling period coincides with one of the peak periods of visitor use in the study area.

(b) Sampling plan/procedures:

During each sampling day two trained surveyors will be stationed at the Gabes Mountain Trail trailhead between 10:00 a.m. and 6:00 p.m. When the sampling period begins, the first surveyor will approach the first visitor group to exit the site and ask a randomly selected member of the group (person over the age of 18 whose birthday is closest to the current date) to participate in the survey. When the first surveyor has completed his/her contact with the visitor group, he/she will ask a randomly selected member of the next exiting visitor group to participate in the survey. This process will continue throughout the sampling day. Visitors will complete the on-site questionnaire in the presence of the second surveyor, who will answer any questions that arise. In question 11, respondents will be asked to render judgments about recordings that they listen to using a portable audio player and noise-cancelling headphones. This technique has been used successfully in previous NPS studies at Muir Woods National Monument, as well as Haleakala and Hawaii Volcanoes National Parks. In particular, respondents will listen to and evaluate a set of five recordings that vary from containing only natural sounds endemic to the park to those containing substantial human-caused sounds, such as vehicles and human voices. The recordings will be developed from acoustical data recorded in the park prior to the study and mixed by a bioacoustical engineer from the NPS Natural Sounds Program Center. Respondents will be asked to evaluate the extent to which they consider the sounds in each recording to be appropriate for the study area, and how closely each recording resembles the sounds they heard during their visit to the study area that day. A series of short breaks for the surveyors will be designed into the sampling schedule.

(c) Instrument administration:

Exiting visitors will be read the following script:

“Excuse me, sir/ma'am. We're conducting a study for Great Smoky Mountains National Park to better understand visitors' experiences and attitudes about managing natural and human-caused sounds in the park. Participation is voluntary, and all responses will be kept anonymous.

“Has any member of your group participated in this survey before?”

If YES: “Thank you for your time. I hope you enjoy your visit.”

If NO: “Would you be willing to spend a few minutes to answer some important questions regarding your visit here?”

If YES: “Thank you.”

If NO: “I understand. I hope you enjoy your visit.”

Visitors who agree to participate will be sent to the on-site survey station where they will be administered the survey instrument. Respondents will be instructed to complete the questionnaire on-site and to address any questions to the surveyor. The surveyor will collect completed questionnaires.

(d) Expected response rate/confidence levels:

Based on response rates from similar sound surveys of national park visitors conducted by the principal investigator (Haleakala National Park 64% and Hawaii Volcanoes National Park 62%), coupled with a response rate of 90% for a 2006 survey of visitors conducted by the principal investigator in the Cosby area of Great Smoky Mountains National Park, a 70% response rate is expected. A total of 285 visitors will be contacted for the survey, and it is expected that approximately 200 visitors will respond to the questionnaire. Based on this sample size, there will be 95% confidence that study findings will be accurate to

within 6.75 percentage points.

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

The number of refusals will be recorded, reported, and screened for non-response bias (see Attachment 2: Survey Log). Data from the visitor survey portion of the study will be analyzed for non-response bias by comparing group characteristics (group size, group type, time of visit) to non-respondent group characteristics gathered on the survey log. Results of the non-response analysis will be reported, and any implications for management will be discussed in the final report.

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

The questions included in the questionnaire have been designed and reviewed by the principal investigator, research staff and graduate students, scientists from other universities with expertise in survey research, and staff from the National Park Service Natural Sounds Program. The substance and format of the questions contained in the survey instrument are similar to questions administered at a number of other national park areas (Lawson et al., 2007a, 2007b; Newman et al., 2006; Newman et al., 2005; Pilcher et al., 2008), and findings from such questions have been published in peer-reviewed academic journals.

10.	<b>Total Number of Initial Contacts   Expected Respondents:</b>	285	200	1 1.	<b>Estimated Time to Complete Initial Contact   Instrument (mins.):</b>	1	15	12	<b>Total Burden Hours:</b>	55
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13.	<b>Reporting Plan:</b>	A technical study report will summarize results and management recommendations. A copy of the report will be archived with the National Park Service Social Science Program for inclusion in the Social Science Studies Collection. Results will be summarized and reported as means, standard deviations, and frequency distributions, in accordance with variables' scales of measurement.								
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Lawson, S., Kiser, B., Hockett, K., Reigner, N., Howard, J., Ingram, A., & Dymond, S. (2007a). *Social science research to inform soundscape management in Haleakala National Park: Study completion report*. Blacksburg: Virginia Polytechnic Institute and State University, College of Natural Resources.

Lawson, S., Hockett, K., Kiser, B., Reigner, N., Ingram, A., Howard, J., & Dymond, S. (2007b). *Social science research to inform soundscape management in Hawaii Volcanoes National Park: Study completion report*. Blacksburg: Virginia Polytechnic Institute and State University, College of Natural Resources.

Newman, P., Pilcher, E., & Manning, R. (2005). *Muir Woods National Monument- Draft Phase I Soundscape Report*. Colorado State University, Fort Collins, CO.

Newman, P., Pilcher, E., & Stack, D. (2006). *Yosemite National Park Phase I Soundscape Report*. Colorado State University, Fort Collins, CO.

Pilcher, E., Newman, P., & Manning, R. (2008). Understanding and managing experiential aspects of soundscapes at Muir Woods National Monument. *Environmental Management*.