



### Expedited Approval for NPS-Sponsored Public Surveys

1. <b>Project Title</b>	Understanding Transportation-related Effects on Visitor Experience	February 24, 2011
<b>Submission Date:</b>	Quality in Mount Rainier and Denali National Parks	

**Abstract:** The purpose of this project is to conduct onsite surveys of visitors in Mount Rainier and Denali National Parks to collect information on transportation-related effects on visitor experiences, as well as visitors' perceptions of and attitudes regarding transportation-related impacts to visitor experience quality and park resources. The surveys (listed below) will be conducted during the summer of 2011, and will be used to inform park planning and management decisions, including the development of transportation and soundscape-related indicators and standards of visitors experience quality.

(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.)** *Legal Justification: The National Park Service Act of 1916, 38 Stat 535, 16 USC 1, et seq., requires that the National Park Service (NPS) preserve the national parks for the use and enjoyment of present and future generations. At the field level, this means resource preservation, public education, facility maintenance and operation, and physical developments that are necessary for public use, health, and safety.*

Further, 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).

Management Justification: Transportation systems, operations, and programs are necessary to facilitate public access and visitor enjoyment of national parks. However, there can be a number of transportation-related impacts to national park resources and visitor experience quality (Daigle, 2008). For example, Mount Rainier National Park accommodates more than 1 million visitors annually and experiences intensive visitation during summer months. Associated with intensive park visitation are a number of transportation-related impacts, including traffic congestion at park entrances and on park roads, parking shortages and associated visitor frustration, and resource impacts from unendorsed parking. Denali National Park does not experience

the same levels of visitation as Mount Rainier National Park, yet transportation-related impacts are evident there as well. For example, visitor's primary means of access to the park's interior is via tour buses, which have visual, soundscape, and air quality impacts on park resources and visitor experience quality (Ambrose & Burson, 2004; Krog & Engdahl, 2005; Ouis, 2001). While transportation planning, management, and operations are inextricably linked to visitor use and visitor experience quality, few studies have examined these relationships (Lawson et al., 2009). The package of surveys included in this study are designed to examine the impacts of transportation on visitor experience quality and visitors' perceptions of and attitudes about managing transportation-related impacts in national parks, and include:

**Instrument A** - Transportation Effects on Soundscape Experience - DENA

**Instrument B** - Transportation Effects on Soundscape Experience - MORA

**Instrument C** - Transportation Effects on Auto Touring Experience, Park Roads - MORA

**Instrument D** - Transportation Effects on Auto Touring Experience, Scenic Overlooks - MORA

**Instrument E** - Transportation Effects on Park Shuttle Experience - MORA

**Instrument F** - Transportation Effects on Decisions to Use Park Shuttle Service - MORA

The results of this study will be used to inform park transportation and visitor use planning and management decisions, including the development of transportation and soundscape-related indicators and standards of visitors experience quality (Lawson et al., 2007; Newman et al., 2006). More generally, the findings from this study will help park managers take actions to improve transportation systems and operations in a manner that is consistent with the parks' fundamental visitor experience and resource protection objectives.

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

**(a) Respondent Universe:**

**Instrument A:** The respondent universe for the visitor survey will be all recreational visitors (18 years of age and older) to the Talkeetna Ranger Station, the Backcountry Information Center and the Savage River Trail area of Denali National Park and Preserve during the study period.

**Instrument B:** The respondent universe for the visitor survey will be all recreational visitors (18 years of age and older) to the Clover Lake and Van Trump Park areas of Mount Rainier National Park during the study period.

**Instrument C:** The respondent universe for the visitor survey will be all recreational visitors (18 years of age and older) auto touring in the Nisqually/Stevens Canyon Road Corridor of Mount Rainier National Park during the study period.

**Instrument D:** The respondent universe for the visitor survey will be all recreational visitors (18 years of age and older) stopped at scenic overlooks while auto touring in the Nisqually/Stevens Canyon Road Corridor of Mount Rainier National Park during the study period.

**Instrument E:** The respondent universe for the visitor survey will be all recreational visitors (18 years of age and older) using the park's shuttle system in Mount Rainier National Park during the study period.

**Instrument F:** The respondent universe for the visitor survey will be all recreational visitors (18 years of age and older) in the Nisqually/Stevens Canyon Road Corridor of Mount Rainier National Park during the study period.

**Sampling plan/procedures:**

**Instrument A:** The visitor survey sampling period will occur on a total of 10 randomly selected days during the peak summer visitation season at Denali National Park and Preserve. Sampling days will be stratified by day of the week and location. Furthermore, each location will be sampled an equal number of times. On each sampling day, trained surveyors will be stationed at each selected point from 8am to 5pm. 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 for approximately three minutes to the sounds around them, including both human and natural sounds. After three minutes, they will be instructed to open their eyes 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.

**Instrument B:** Sampling will occur on 10 randomly selected days during the peak summer visitation season at Mount Rainier. Sampling will be stratified by day of the week and location, with two sampling locations – Comet Falls and Clover Lake. Both sampling locations will be in backcountry locations (Transition Trail Zone and Semi-Primitive Trail Zone of park’s GMP) of the park, approximately 1-2 miles from the corresponding trailheads. On each sampling day, trained surveyors will be stationed at selected intercept points from 10 AM to 6 PM. 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 using the next-birthday method of respondent selection. The study will be conducted employing the “attended listening” method originally developed and tested at Grand Teton National Park in 2006 (OMB 1024-0224, NPS 06-043) and refined at Haleakala National Park in 2007 (OMB 1024-0224, NPS 07-014), and at Sequoia and Kings Canyon national parks in 2008 (OMB 1024-0224, NPS 08-029). Participants will be instructed to close their eyes and listen to the sounds around them, including transportation-related sounds. After they have heard all the sounds that they think they can hear, they will be instructed to open their eyes and complete the questionnaire. Instructions will be printed on the front page of the survey instrument; however, the surveyors also will explain these instructions when distributing the questionnaire. After a visitor completes the questionnaire, the surveyor will then intercept the next group to pass the sampling point and randomly select another individual to participate in the visitor survey.

**Instrument C:** The sampling period is designed to include the park's peak use period. A survey will be administered to visitors at two of the primary auto touring destinations in the Nisqually/Stevens Canyon Road Corridor - Paradise and Ricksecker Point. At each site, sampling will be conducted on five randomly selected

days throughout the period of the study. The sampling days will be spread out over the days of the week and the sampling period will be from 10 AM to 6 PM. During each sampling period, trained surveyors will be stationed at the study sites. When the sampling period begins, the surveyors will approach the first visitor group exiting the site and ask them to participate in the survey. If members of the visitor group agree to participate, the eligible person in the group whose birthday is closest to the sampling day will be asked to complete the questionnaire. When the surveyor has completed his/her contact with the group, the surveyor will ask the next visitor group exiting the site to participate in the survey. This process will continue throughout the sampling period. Visitors will complete the on-site questionnaire in the presence of the surveyors, who will answer any questions that arise and collect the surveys upon completion. A screening question will be asked to assure that participants will not be surveyed more than once and to ensure they are auto touring in personal vehicles, rather than riding the park's shuttle buses.

**Instrument D:** The sampling period is designed to include the park's peak use period. A survey will be administered to visitors at two of the primary scenic overlooks visited by auto touring visitors in the Nisqually/Stevens Canyon Road Corridor – Narada Falls and Inspiration Point. At each site, sampling will be conducted on five randomly selected days throughout the period of the study. The sampling days will be spread out over the days of the week and the sampling period will be from 10 AM to 6 PM. During each sampling period, trained surveyors will be stationed at the study sites. When the sampling period begins, the surveyors will approach the first visitor group exiting the site and ask them to participate in the survey. If members of the visitor group agree to participate, the eligible person in the group whose birthday is closest to the sampling day will be asked to complete the questionnaire. When the surveyor has completed his/her contact with the group, the surveyor will ask the next visitor group exiting the site to participate in the survey. This process will continue throughout the sampling period. Visitors will complete the on-site questionnaire in the presence of the surveyors, who will answer any questions that arise and collect the surveys upon completion. A screening question will be asked to assure that participants will not be surveyed more than once and to record visitor's mode of travel to the study site (i.e., personal vehicle or park shuttle bus).

**Instrument E:** The sampling period is designed to include the park's peak use period. A survey will be administered to visitors at two of the primary shuttle bus stops in the Nisqually/Stevens Canyon Road Corridor – Cougar Rock and Longmire. At each site, sampling will be conducted on five randomly selected days throughout the period of the study. The sampling days will be spread out over the days of the week and the sampling period will be from 10 AM to 6 PM. During each sampling period, trained surveyors will be stationed at the study sites. When the sampling period begins, the surveyors will approach the first visitor group exiting the shuttle bus and ask them to participate in the survey. If members of the visitor group agree to participate, the eligible person in the group whose birthday is closest to the sampling day will be asked to complete the questionnaire. When the surveyor has completed his/her contact with the group, the surveyor will ask the next visitor group exiting the bus to participate in the survey. This process will continue throughout the sampling period. Visitors will complete the on-site questionnaire in the presence of the surveyors, who will answer any questions that arise and collect the surveys upon completion. A screening question will be asked to assure that participants will not be surveyed more than once.

**Instrument F:** The sampling period is designed to include the park's peak use period. A survey will be administered to visitors at Paradise, which is the most popular visitor destination in the park. Sampling will be conducted on ten randomly selected days throughout the period of the study. The sampling days will be spread out over the days of the week and the sampling period will be from 10 AM to 6 PM. During each sampling period, trained surveyors will be stationed at Paradise. When the sampling period begins, the surveyors will approach the first visitor group exiting the site and ask them to participate in the survey. If members of the visitor group agree to participate, the eligible person in the group whose birthday is closest to the sampling day will be asked to complete the questionnaire. When the surveyor has completed his/her contact with the group, the surveyor will ask the next visitor group exiting the site to participate in the survey. This process will continue throughout the sampling period. Visitors will complete the on-site questionnaire in the presence of the surveyors, who will answer any questions that arise and collect the surveys upon completion. A screening question will be asked to assure that participants will not be surveyed more than once and to record visitors mode of travel to Paradise (i.e., personal vehicle or park shuttle bus).

**(b) Instrument Administration:**

**Instruments A-F:**

Visitors selected for participation in any of the surveys included in this study will be read the following script:

*“Hello, my name is \_\_\_\_\_. I am conducting a survey for the National Park Service to better understand your attitudes toward transportation and visitor use in Mount Rainier/Denali National Park. Participation is voluntary and all the responses are anonymous. Would you be willing to spend a few minutes to answer some important questions regarding your visit here? This will only take about 15 minutes.”*

*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 visitor experiences, perceptions, and attitudes towards transportation and visitor use in Mount Rainier/Denali National Park. Who in your group (who is at least 18 years old) has the next birthday?”*

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 contacted (including those who choose not to participate) will be recorded in a survey log for the purposes of testing for non-response bias.

**(c) Expected response rate/confidence levels:**

**Instruments A-F:**

For each survey instrument, a total of 375 visitor groups will be contacted during the sampling period. Based on previous and nearly identical studies in Grand Teton, Yosemite, and Sequoia and Kings Canyon National parks, it is expected that 300 (80%) will agree to participate in the survey. The number of refusals will be recorded and reported in a survey log, and will be used in calculating the response rate. Based on the day-use survey sample size, there will be 95% confidence that the day-use survey findings will be accurate to within 5.6 percentage points, and will have a power level greater than .80 for any number of statistical tests (two-tailed independent samples t-test, multivariate regression), at the .05 alpha-level. Thus, the proposed sample size will be adequate for bi-variate comparisons and will allow for comparisons between study sites and more sophisticated multivariate analysis if deemed necessary.

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

**Instruments A-F:**

The data recorded on the survey log for each survey instrument will be used to compare participating groups' characteristics (group size and activity type – i.e., day hiking, backpacking, etc) to non-participating groups' characteristics. The reasons for refusals (when volunteered) also will be noted on the survey log. Results of the non-response analyses will be reported, and the implications for interpreting the results will be discussed in the final report.

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

The questions included in these surveys were initially designed and reviewed by the principal investigator, research staff, scientists from other universities with expertise in survey research methods, and NPS staff. Nearly identical survey instruments were tested in 2006 and 2007 in Grand Teton, Haleakala, Yosemite, and Sequoia and Kings Canyon National Parks.

10. <b>Total Number of Initial Contacts   Expected Respondents:</b>	A: 375	A: 300	11. <b>Estimated Time to Complete Initial Contact   Instrument (mins.):</b>	A: 1	A: 15	12. <b>Total Burden Hours:</b>	A: 81
	B: 375	B: 300		B: 1	B: 15		B: 81
	C: 375	C: 300		C: 1	C: 15		C: 81
	D: 375	D: 300		D: 1	D: 15		D: 81
	E: 375	E: 300		E: 1	E: 15		E: 81
	F: 375	F: 300		F: 1	F: 15		F: 81
	<b>Total</b>	<b>2250</b>		<b>1800</b>			

13. **Reporting Plan:** A technical study report will summarize results and management recommendations. Journal manuscripts and academic papers will also be prepared. Data will be analyzed using Statistical Package for Social Sciences (SPSS) version 18.0 to compare and quantify acceptability of sounds heard in the audio recordings. These results will also be compared using demographic variables to look for statistical

differences between groups. Copies of all reports and papers will be archived with the National Park Service Social Science Division for inclusion in the Social Science Studies Collection. All surveys will be included in one final report to the NPS.

## References

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- Ambrose, S., & Burson, S. (2004 ). Soundscape studies in National Parks. *The George Wright Forum*, 21(1), 29-38.
- Krog, N. H., & Engdahl, B. (2005). Annoyance with aircraft noise in local recreational areas and the recreationists' noise situation at home. *Journal of the Acoustical Society of America*, 117(1), 221-231.
- Lawson, S., Kiser, B., Hockett, K., Reigner, N., Howard, J., Ingram, & A., Dymond, S., (2007. Social science research to inform soundscapes in Haleakala National Park. Final study report. Virginia Polytechnic and State University.
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- Ouis, D. (2001). Annoyance from road traffic noise: A review. *Journal of Environmental Psychology*, 21(1), 101-120.