



Social Science Program

Expedited Approval for NPS-Sponsored Public Surveys

1. **Project Title** Visitor Experience and Recreation Demand at Lake Roosevelt National Recreation Area

Submission Date: 5/16/2011

2. **Abstract:** This study will use two on-site questionnaires to address visitors' needs, attitudes, and experience quality in relation to the distribution and amount of use in the Kettle Falls area of Lake Roosevelt National Recreation Area. One questionnaire will investigate visitor perception of the restorative characteristics of lake recreation sites and identify visitor place attachments to the lake setting; the other questionnaire will address crowding, facility capacity, and visitor attitudes toward potential management actions. Simultaneous observations of recreation behavior. Both surveys will be used to provide information about the frequency and distribution of recreation use at Lake Roosevelt. Survey data will be collected during summer 2011 from approximately 800 adult visitors (400 for each instrument) on a random sample of 40 days. This study is being conducted at the request of Lake Roosevelt National Recreation Area. All survey questions qualify for National Park Service Programmatic review process.

(not to exceed 150 words)

3. **Principal Investigator Contact Information**

First Name: Troy **Last Name:** Hall

Title: Professor

Affiliation: University of Idaho, Conservation Social Sciences

Street Address: PO Box 441139

City: Moscow **State:** ID **Zip code:** 83844

Phone: 208-885-9455 **Fax:** 208-855-6226

Email: troyh@uidaho.edu

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

First Name: Marsha **Last Name:** Buchanan

Title: Commercial Services Program Specialist

Park: Lake Roosevelt National Recreation Area

Park Office/Division: Headquarters

Street Address: 1008 Crest Drive

City: Coulee Dam State: WA Zip code: 99116

Phone: (509) 633-9441 Ext 140 Fax:

Email: Marsha_Buchanan@nps.gov

Project Information

5. Park(s) For Which Research is to be Conducted: Lake Roosevelt National Recreation Area

6. Survey Dates: 05/01/2011 (mm/dd/yyyy) To 09/30/2011 (mm/dd/yyyy)

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

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

Other (explain)

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, operations, management, education, and interpretive activities. At Lake Roosevelt National Recreation Area (LARO) social science research is needed to understand visitor experience as well as determine public need for recreation access. The managers at LARO are especially interested in knowing more about the public's need for recreational use and access as part of decision making regarding special use permits. LARO planners also expressed a need to know more about how natural landscapes assist in the recovery from mental fatigue and how people respond after visiting places with restorative qualities. We propose to use two separate, but related surveys, based on previous research on carrying capacity, crowding, place attachment (PA), and attention restoration theory (ART).

Survey 1 - Attention Restoration & Place attachment at Lake Roosevelt National Recreation Area: will be used to determine how aspects of the social, physical, and managerial setting jointly affect visitor experience. *Survey 2 - Crowding, Conflict, and Recreation Management at Lake Roosevelt National Recreation Area:* will focus on questions related to visitor use, crowding, and conflict. Both surveys will contain a common set of questions to determine basic demographics of the sample and visitation preferences. We used observational data collected during summer 2010 to identify the proposed sampling areas to distribute surveys.

Common questions

Both instruments will include basic socio-demographic and trip-related descriptive questions, such as age, group size, activity participation, and past experience. Two questions are designed to ask about crowding. These questions will be used in correlational or regression analysis as both dependent variables (e.g., crowding as a function of use levels) and independent variables (e.g., crowding as an influence on attention restoration).

Survey 1: Attention Restoration and Place Attachment

The questions in this survey will be used to establish visitor perception of, naturalness, safety, comfort, and the level of development at varying recreation sites. Using a revised version of a previously developed Perceived Restorativeness Scale, this study will use social science theory to explain psychological recovery (mental well-being) link psychological restoration to natural, physical, and social characteristics of the setting. A goal is to determine the extent to which Place Attachment explains physical and emotional restoration. Questions from Williams and Vaske (2003) relating to Place Attachment will be used to explain the visitors' connections to a natural setting.

This study will use evaluative measures for actual psychological restoration to determine: balance, stress, mood, feelings, and well being. These measures have been carefully designed so visitors will be able to self-report their restoration levels both prior to and during their current visit to LARO. Probing as many possible correlations between perceived restoration and recreating in a natural environment will help to build a better understanding of the effects of restorative settings. This information will help managers identify critical areas in the park that could be available to promote high quality recreation experiences.

Survey 2: Crowding, perceptions, and attitudes toward management

The first set of questions, specific to this survey, focuses on potential social problems visitors may have noticed during their visit to LARO (i.e., conflict, lack of privacy, and crowding). In this survey we will include photographs of three shoreline sites with varying levels of use. Questions associated with the photographs will be to determine the level of acceptability crowding and use at

three locations (Bradbury Beach, Colville Flats, and Kettle Fall Marina) in the Park. A separate question will be used to determine if visitation ever changed because of crowding.

Another set of questions will be used to address visitors' evaluations of existing facilities, services, and management, particularly those related to shoreline recreation. Specifically, question 13 will be used to assess how the quality of facilities and services has changed in the past two years (responses to this question will come from the respondents who have visited LARO for at least 2 years— if they are not in this category they will be directed to skip to the next set of questions). A final set of questions will ask the respondent to provide their opinions about potential new facilities and policies. These questions will be used to provide additional information needed to support management policies and planning efforts.

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

(a) Respondent universe:

All adult visitors (18 years and older) at eight designated developed and dispersed recreation sites in the Kettle Falls region of LARO from mid-May through late-September, 2011.

(b) Sampling plan/procedures:

Surveys will be distributed at eight recreation sites selected to maximize differences in use and setting characteristics, including campgrounds, boat ramps, day use areas, and dispersed lake shore/beach sites.

We will randomly select 40 days for survey administration. The eight sites will be divided into two groups so only four sites will be visited per sample day (i.e., 20 days of sampling per site). This will allow the researcher to spend 30 minutes in transit and 60 minutes surveying at each site each day. The start time at each site will be randomized to ensure coverage between 10:00 a.m. and 5:00 p.m. each sampling day.

We plan to obtain at least 6 completed surveys during an established 60-minute time period. Sampling periods will be stratified by day of the week and location. Each location will be sampled an equal number of times during the sampling period. On each sampling day, trained surveyors will be stationed at a designated location for 60 minute intervals. The surveyors will recruit study participants by contacting a random sample of visitors as they walk past the study 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. Visitors will be asked to complete the questionnaire on-site in the presence of the surveyors, who will be available to answer any questions that arise and collect the surveys upon completion. We will alternate the distribution of Survey 1 or Survey 2 to all potential respondents. Each respondent will be asked to

complete only one version of either survey.

When refusals occur, the next eligible person will be contacted. Any reasons for refusal will be recorded on the log-sheet. The researcher will also record observable information such as gender, activity, and group size (see Survey Log).

At the end of each 60-minute time period, the researcher will travel to the next study site and repeat the process.

(c) Instrument administration:

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

“Hello, my name is Andrew Bentley. I am a graduate student from the University of Idaho and I am conducting a survey for the National Park Service here at Lake Roosevelt. This survey will help the Park Service adopt management practices that provide enjoyable experiences for visitors, while protecting and preserving the natural resources for future generations to enjoy. You have been randomly selected and your responses will be completely 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, “Your opinions do count. I am happy to answer any questions about the survey instructions and to discuss the survey further after you have completed the questionnaire. Have a great day.”

The researchers will adhere to both Federal and University of Idaho standards for informed consent by stating the purpose of the research, assuring people that participation is voluntary and anonymous, and offering to answer any questions about the research. People who agree to participate will be given a clipboard, pencil, and survey, and asked to return the survey to the researcher once they have finished. People who decline to participate will be thanked and the researcher will proceed to the next group until the time block ends for each site.

(d) Expected response rate/confidence levels:

The short nature of the surveys and the use of on-site questionnaires lead us to expect a relatively high response rate, estimated at 75%. This level of response has been reached with similar surveys conducted by the University of Idaho.

203 usable questionnaires are needed for a 95% confidence interval

and a 3% margin of error. However, we plan to conduct factor analysis on various scales, which requires a minimum of 10-15 subjects per scale item. The largest scale includes 25 items, and this will require at least 375 responses. Allowing for incomplete and/or unusable surveys, our sample size will require 800 completed survey (400 of each version). This sample size should also permit comparisons of managerially relevant subgroups, such as campers vs. day users or boaters vs. shoreline users. There will be no attempt to generalize the findings outside the scope of this collection.

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

The data recorded on the survey log for each survey instrument will be used to compare participating groups' characteristics (e.g., gender, personal group size, presence of children, activity, and weather conditions) to non-respondents. 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.

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

The questions in these surveys are annotated to show the connections to the NPS currently approved Pool of Known Questions (PKQ). Variations to PKQ are noted, especially when there is an obvious deviation.

The primary measures in Survey 1 are well established and have been tested for validity and reliability. The questions in Survey 2 have also been used extensively in previous work and are identical or very similar to questions in the PKQ. As required, we completed a formal peer-review of the proposed sampling plan and measures by soliciting outside feedback from faculty within the University of Idaho, Conservation Social Sciences department.

With a response rate of 75%, we plan to approach 1,280 individual. We expect that the initial contact time will be at least two minutes per person (1,280 x 2 minutes = 43 hours). For those who agree to participate (800), an additional 15 minutes will be required to complete the questionnaire (800 response x 15 minutes = 200 hours). The burden for this collection is estimated to be 243 hours.

10. Total Number of Initial Contacts	1280	11. Estimated Time to Complete Initial Contact	2 mins.	12. Total Burden Hours:	243
Expected Respondents	800	Instrument (mins.):	15 mins		

13.

Reporting Plan:

A report will be issued to LARO and the NPS Social Science Program containing (1) overall descriptive results of the questionnaires; (2) analysis of visitors' attitudes and perceptions, and (3) analysis of how visitors' perceptions of restorative qualities and place attachment vary by level of recreation site development and crowding. Analyses of the survey will include descriptive statistics and regression analyses to determine the strongest predictors for experience quality. Additionally, findings on carrying capacity, crowding, place attachment (PA), and attention restoration theory (ART) will be used and reported as part of a PhD dissertation at the University of Idaho.

References Cited

- Hartig, T., Korpela, K., Evans, G., & Gärling, T. (1997). A measurement of restorative quality in environments. *Scandinavian Housing & Planning Research, 14*, 175-194.
- Kaplan, S. (1995). The restorative benefits of nature: Toward an integrative framework. *Journal of Environmental Psychology, 15*(3), 169-182.
- Karmanov, D., & Hamel, R. (2008). Assessing the restorative potential of contemporary urban environment(s): Beyond the nature versus urban dichotomy. *Landscape and Urban Planning, 86*(2), 115-125.
- Korpela, K. M., Ylén, M., Tyrväinen, L., & Silvennoinen, H. (2008). Determinants of restorative experiences in everyday favorite places. *Health & Place, 14*(4), 636-652.
- Laumann, K., Gärling, T., & Stormark, K. M. (2001). Rating scale measures of restorative components of environments. *Journal of Environmental Psychology, 21*(1), 31-44.
- Pals, R., Steg, L., Siero, F. W., & van der Zee, K. I. (2009). Development of the PRCQ: A measure of perceived restorative characteristics of zoo attractions. *Journal of Environmental Psychology, 29*(4), 441-449.
- White, D. D., Hall, T. E., & Farrell, T. A. (2001). Influence of ecological impacts and other campsite characteristics on wilderness visitors' campsite choices. *Journal of Park and Recreation Administration, 19*(2), 83-97.
- Williams, D., & Vaske, J. (2003). The measurement of place attachment: Validity and generalizability of a psychometric approach. *Forest Science, 49*, 830-840.