

Visitor Surveys Aid Mount Rainier In Handling Management Problems

By Peter Thompson, Darryll R. Johnson, and Thomas C. Swearingen

A five-part social science research project, two years in the making, is bridging the gap between science and management at Mount Rainier NP. The quality and managerial relevance of the five reports (see box) reflect nearly continuous interaction during that two-year period between the park and the personnel of the University of Washington's NPS Cooperative Park Studies Unit.

A number of persistent resource management problems (which were the genesis of the research project) had troubled park managers for decades. Of particular concern were the proliferation of unmaintained (social) trails in heavily used subalpine meadows and the maintenance of a clean, healthful environment for the large number of climbers on heavily used routes in the park where management of human waste by traditional means is increasingly difficult. Over the years, a number of different management strategies have been attempted to alleviate these problems – but with limited success.

A series of meetings, held in the summer of 1984, examined research possibilities addressing these problems. Attending these meetings were members of the Mount Rainier resources management staff, the Pacific Northwest Regional Chief Scientist, and the Research Sociologist from the University of Washington, CPSU.

Three general research objectives were:

1. Measurement of the attitudes of alpine zone users toward human waste management problems and policies;
2. Assessment of user and potential user acceptance of an experimental minimum impact camping platform at Indian Henry's Meadow (a popular backcountry subalpine meadow used by dayhikers and backpackers);
3. Evaluation of the effectiveness of passive communications to encourage day users to follow minimum impact procedures in the Paradise Meadows.

The delineation of these objectives led to a Cooperative Agreement between NPS and the University of Washington CPSU. Darryll Johnson of the CPSU was Project Leader, and Peter Thompson from Mount Rainier Resource Management staff was the park liaison. Tommy Swearingen and William Salvi, CPSU research associates, were assigned important responsibilities.

During the winter of 1984-85, specific work objectives were developed. The schedule called for completion of the research design by March 30, 1985, data collection during the summer of 1985, coding and data processing in the fall, and final report by April, 1986. The first product of the project was a bibliography released in January, 1985 – *Recreational Impacts on Soils and Vegetation: Park and Alpine Studies* by Tommy Swearingen.

At a meeting in January, 1985, there began a process which became the project's hallmark and set this research apart. It was the considerable amount of interaction between investigators, park management, and operational personnel of the park. Detailed, site specific discussions continued into the spring, with park personnel directly involved in providing feedback on all questionnaire items and sign texts for the

Paradise trailside sign text quasi-experiment. Field personnel provided the researchers with valuable insight into the management problems.

Simultaneously, a general visitor survey was added to the project to update park demographic and economic data on the park visitors. The survey consisted of three questionnaires gathering information on a wide variety of topics including visitor characteristics, recreation activities, use of facilities and services, use of park information sources, organized group membership, psychological motivation for park visitation, and travel cost data.

The visitor contact procedures were designed to have minimal intrusion upon visitors' experiences. Refusals to participate were almost nonexistent. Response rates to the mailed questionnaires associated with all project components were high (73 to 84 percent). The data bases represent a valuable information tool that can be used to provide insight into a number of areas of managerial relevance now and in the future.

Because of the amount of interaction between the scientists and the park staff during project planning and applicable findings, park staff showed considerable interest in the final reports. The information is relevant to the development of strategies for continuing education of backcountry users, for formulation of policy considerations related to waste management in the alpine zone, and for facility planning and other managerial strategies connected with the general visitor population. Selected statistical highlights from these projects are listed below.

General Visitor Survey. These data provided a descriptive profile of the visitor and the typical park visit. For example, it was found that of those over the age of 18, one-half had completed college degrees and 20 percent were 60 years of age and older. Twenty-three percent of the surveyed visitors stayed overnight in the park. The general visitor survey also contained a travel cost survey providing estimates of the economic impact of park visitation in the state of Washington. In the course of traveling to and from Mount Rainier, it was estimated that visitors spent approximately 38 million dollars in the state of Washington and 13 million in a four county area around the park.

Paradise Meadow Visitor Survey. Twelve percent of all Paradise Meadows visitors felt that human impact was not a problem in the area; 25 percent did not know if there was human impact or had no opinion about it. Twenty-eight percent of the surveyed Paradise Meadows visitors said they had not been exposed to information relating to human impact in the park. There was a strong relationship between exposure to low impact information and the perception that there was a human impact problem in the Paradise Meadow area. Seventy-five percent of the respondents who were exposed to such information perceived some degree of problem compared to 36 percent of the respondents who were not exposed to such information.

Park visitors not exposed to low impact information may be different in other ways that contribute to their perception that impact either is not a problem or does not exist. These data strongly suggest park communi-

cation efforts do have an impact upon the perceptions of park visitors, and that efforts should be expanded to reach those people not being contacted.

Day-Hiker Off-Trail Hiking in Response to Alternate Sign Texts. Although the data are preliminary and additional research is planned during the summer of 1987, some interesting results emerged. The presence of trailside signs generally affected off-trail hiking, and visitor response varied significantly by sign type. At one site, off-trail hiking rates were 15.5 percent when no signs were present compared to 9.6 percent with the standard park sign ("Meadow Repairs, No Hiking"). Interestingly, both of these rates were substantially higher than those resultant from a non-verbal sign depicting a boot sole in a circle with a crosshatch (2.8 percent), and a sign stating a negative sanction (Off-Trail Hikers May be Fined) (1.7 percent).

Camp Muir Climbers' Survey. Nine percent of the surveyed climbers perceived a substantial human waste management problem on the Camp Muir route. Forty-seven percent of the climbers felt there was a slight to moderate human waste problem; 44 percent felt there was no problem or had no opinion. Some degree of a human waste problem was perceived by 66 percent of campers in private parties compared to 40 percent in commercially guided parties.

Seventy-two percent of all climbers felt there was a need for better public waste management information; 74 percent supported requiring all climbers to use the carryout bag waste system. Thirty-five percent of the private climbers who are supposed to receive the waste carryout bags reported they had not received them. Ninety percent of the climbers favored continued use of the Muir solar assisted toilet.

The researchers feel that these findings, and the manner in which they were derived, assure a continuing high level of interest in research in the behavioral sciences at Mount Rainier NP.

Thompson is now Chief Ranger at Crater Lake NP; Johnson is Project Leader for Social Science in the Pacific Northwest Region; Swearingen is a Research Assistant at the U of WA NPS/CPSU.

The Study's Five Reports

Swearingen, Thomas C. and Johnson, Darryll R. *Mount Rainier National Park Paradise Meadow Visitor Survey.*

Johnson, Darryll R. and Swearingen, Thomas C. *A Preliminary Analysis of Day Hiker Off-Trail Hiking in Response to Alternate Sign Texts at Selected Sites in the Paradise Meadows Area, Mount Rainier National Park.*

Swearingen, Thomas C. and Johnson, Darryll R. *Mount Rainier National Park Camp Muir Climber Survey.*

Salvi, William and Johnson, Darryll R. *The Indian Henry's Meadow Visitor Survey.*

Salvi, William and Johnson, Darryll R. *The 1985 Mount Rainier General Visitor Survey: Statistical Abstract.*

All five studies are published by the Cooperative Park Studies Unit, College of Forest Resources, University of Washington, Seattle, Washington, 1986.