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**Project Information**

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

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6. **Survey Dates:** 7/4/12 TO 8/31/12

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

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

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Other (explain)

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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.*

Olympic National Park (OLYM) has experienced increasing visitation over the past decade. Increasing use of the park may negatively affect the quality of visitor experiences through crowding and resource degradation. A General Management Plan (GMP) for Olympic National Park (OLYM) was completed in 2008 and provides overall direction for park management for the foreseeable future. The GMP allows formulation of more specific plans, including a wilderness management plan. A wilderness management plan is especially important at Olympic as approximately 95 percent of the park is designated wilderness under the provisions of the 1964 Wilderness Act. This wilderness planning effort should be informed by a program of research, including information from and about wilderness users.

In this project, a study of wilderness visitors at OLYM will be conducted to help support development of a wilderness management plan. The study will be guided by NPS' Visitor Experience and Resource Protection (VERP) framework, a management-by-objectives approach that requires formulation of indicators and standards of quality for the wilderness experience, monitoring of indicator variables, and management actions designed to maintain standards of quality. The study will be designed to inform the wilderness planning process, and the VERP framework will be used to guide this process. The analysis of the data gathered will be used to support decisions related to the protection of wilderness character and resources. The public purpose of the project is to provide greater understanding of visitor use and experience to help inform long-term management of designated wilderness within OLYM. This information is necessary to fulfill the mandate of the Wilderness Act of 1964

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which states:

*that wilderness areas “shall be administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for gathering and dissemination of information regarding their use and enjoyment as wilderness.”*

It is critical to understand visitors’ attitudes and behavior to inform park and wilderness planning and management within the context of contemporary management frameworks such as Visitor Experience and Resource Protection (VERP) (Manning, 2001). These frameworks help define quality by setting management objectives to fulfill park mandates, legislation, and policy. The VERP process involves identifying indicators and standards of quality; monitoring indicator variables; and taking management actions to ensure that quality standards for each indicator are maintained. Indicators of quality are defined as measurable, manageable variables that act as proxies for the quality of park resources and experiences. Standards define the minimum acceptable condition of these indicator variables.

The visual simulation and scaling methods and questions used in this study are well-established in the field. Numerous studies at many different NPS units have used similar methods and questions (Manning, 2007). Examples include visitor surveys in Acadia NP, including studies on the park loop road (Hallo & Manning, 2011), on the network of historic carriage roads (Jacobi, et al., 1999; Wang and Manning, 1999), at Schoodic Peninsula (Manning, et al., 2005), and at the park’s Isle au Haut (Manning, 2007).

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9.	<b>Survey Methodology: (Use as much space as needed; if necessary include additional explanation on a separate page.)</b>	<b>Respondent Universe:</b> (a) The respondent universe will be visitors to the trailhead sampling sites, age 18 and over, between June 1 and August 31, 2012. The sample will be stratified into 3 study groups: <ul style="list-style-type: none"><li>• wilderness day users,</li><li>• overnight wilderness users in low-use sections of the park, and</li><li>• overnight users in high-use sections of the park</li></ul>
		<hr/> <b>(b) Sampling Plan/Procedures:</b> The sampling period includes the park's peak use period. Sampling at each site will be conducted on 10 randomly selected days throughout the period of the study. The sampling days will be spread out over the days of the week and take place between 8 a.m. and 5 p.m. Sampling will be evenly divided between the wilderness trailhead locations. Ten days will be sampled at each trailhead location, with both weekday periods and weekend periods represented proportional to use. This will ensure that a sufficient number of interviews will be completed to make inferences to the visitor populations at these all locations with an acceptable degree of precision. The 8 a.m. – 5 p.m. period was chosen because it is the time of day when the majority of visitation occurs.

During each sampling period, a trained surveyor will be stationed at the various wilderness trailheads. When the sampling period begins, the surveyor will approach each group exiting the trailhead and ask them to participate in the survey. If members of the visitor groups agree to participate, the eligible person in the group whose birthday is closest to the sampling day will be asked to complete the questionnaire for their personal group. After they complete the questionnaire, they will return it to the survey attendant. When the surveyor has completed his/her contact with the group, the surveyor will ask the next group exiting the trailhead to participate in the survey. This process will continue throughout the sampling period. These visitors will complete the on-site questionnaire in the presence of the survey attendant, 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.

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**(c) Instrument Administration:**

Visitors to the wilderness portion of the park will be read the following script:

"Excuse me, sir/ma'am. We're conducting a study for Olympic National Park to better understand visitor use in this area. Participation is voluntary and all responses are anonymous. Would you be willing to take 10 minutes to help?"

If YES: "Thank you. Who in your personal group (who is at least 18 years of age) has the next birthday? Would you be willing to fill out this survey? Have you completed a survey at a different location in the park?"

If YES: "Thank you, but we can only accept one response per personal group. Thank you for your time."

If NO: "Thank you."

If NO: "I understand. I hope you enjoyed your visit".

During the survey administration the respondents will be asked to rate a series of photographs to indicate their acceptable level of crowding based on the number of people shown in the photographs (see attached photo). The survey administrator will show the respondents a series of photographs. The photographs will be shown to the respondent one at a time. The order that photos will be presented to different respondents will alternate between incrementally increasing and decreasing the number of people. A total of eleven photographs (one set of 5 and one of 6) will be used for survey crowding questions.

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**(d) Expected Response Rate/Confidence Levels:**

The estimated sample size for each of the three visitor groups is expected to be 312 visitors. The overall survey sample size is expected to be approximately 936 visitors. Based on previous experience in conducting similar surveys, it is expected that about 80% of visitors (about 750 individuals or 250 visitors for each of the three types of visitor groups) will be willing to participate. In a

similar study at the Isle au Haut section of Acadia National Park in 2002, a response rate of 87% was attained. More recent studies on the Mount Desert Island portion of Acadia National Park yielded response rates of 83.6% at Acadia Mountain, 78.5% at Hunter’s Beach, 83.5% at Seawall, 86.3% at Valley Cove, and 77% at Little Hunter’s Beach. Study findings are estimated to be accurate within 6 percentage points, based on a sample size of approximately 250 using a 95% confidence level. This will be sufficient for the park’s planning purposes. The number of people in each visitor party and date and time of refusals will be recorded and reported on a refusal log.

Number of Initial Contacts	Expected Response Rate	Expected Number of Responses	Margin of Error +/- %
936	80%	750	6%

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

Non-response bias will be examined by comparing selected characteristics of the sample population with characteristics observed and recorded in every group contacted (e.g., group size, gender and group type). Additionally, all visitors approached will be asked to answer three key questions from the survey:

1. *Did you spend the night in the wilderness?*
2. *How crowded did you feel on this visit?*
3. *How many times have you been to the wilderness of Olympic National Park?*

These results and observational data will be recorded and compared to results from respondents completing and returning the questionnaire to see if non-response bias is present. The results of the check for non-response bias will be reported and implications for data interpretation will be discussed in any reports prepared for the NPS managers.

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

The questions included in these surveys have been designed and reviewed by the PI, research staff and graduate students at the University of Vermont, and NPS park and regional staff. The questions are similar to those used at several other national park areas in previous studies. Finally, most questions appear in the NPS/OMB “Pool of Known Questions” (OMB Control Number 1024-0224; Current Expiration Date 8/31/2014) and have been reviewed and approved by the NPS Information Collections Review Coordinator. Research methods and findings from these and related studies in many units of the National Park System have been compiled into two text books that are used by students, researchers, and managers to plan, design, administer, and report social science studies in the field of parks and outdoor recreation (Manning 2007; Manning 2011).

10 **Burden Estimates:** We plan to approach at least 936 individuals during the sampling period ( $n=936$ ). With an anticipated response rate of 80%, we expect to receive 750 total responses for this collection.

We expect that the initial contact time will be at least one minute per person ( $936 \times 1 \text{ minute} = 16 \text{ hours}$ ). We expect that 186 (20%) visitors will refuse to participate during the initial on-site contact, for those individuals we will record their reason for refusal and ask them to answer the four questions that will be used for the non-response check. This is estimated to take no more than 2 minutes ( $186 \times 2 \text{ minutes} = 6 \text{ hours}$ ) to complete each session.

For those who agree to participate ( $n= 750$ ) we expect that 750 will complete and return the survey, with that, an additional 15 minutes will be required to complete the follow through ( $750 \text{ response} \times 15 \text{ minutes} = 188 \text{ hours}$ ). The burden for this collection is estimated to be 210 hours.

Estimated Number of Contacts		Estimation of Time		Estimation of Respondent Burden	
Total Number of Initial Contacts	936	Estimated Time (mins.) to Complete Initial Contact	1	Estimated Burden Hours	16
Estimated number of on-site refusals	186	On-site Refusal/nonresponse	2	Estimated Burden Hours	6
Total Number of Responses	750	Time to complete and return surveys	15	Estimated Burden Hours	188
				<b>Total Burden</b>	<b>210</b>

11. **Reporting Plan:** The results of this information collection activity will be presented in an internal agency report and will be available upon request. A copy of the technical study report will be archived with the Social Science Division of the National Park Service for inclusion in the Social Science Studies Collection as required by the Programmatic Approval Process. The key estimates that will be derived from the data collected will be descriptive in nature, primarily measures of central tendency (mean and median), dispersion (standard deviation), and frequency distributions. Some tests for differences in means and proportions may be done.

### References

- Manning, R. (2011). *Studies in Outdoor Recreation* (Third Edition). Corvallis: Oregon State University Press.
- Manning, R. (2007). *Parks and Carrying Capacity: Commons Without Tragedy*. Washington, D.C.: Island Press.
- Manning, R. (2001). Visitor Experience and Resource Protection: A Framework for Managing the Carrying Capacity of National Parks. *Journal of Park and Recreation Administration*, 19(1):93-108.
- Manning, R., Lawson, S. and Morrissey, J. (2005). What's Behind the Numbers? Qualitative Insights Into Normative Research in Outdoor Recreation. *Leisure Sciences*. 27: 205-224.
- Wang, B. and Manning, R. (1999). Computer Simulation Modeling for Recreation Management: A Study on Carriage Road Use in Acadia National Park, Maine, USA. *Environmental Management*, 23(2):193-203.