



## Expedited Approval for NPS- Sponsored Public Surveys

1. **Project Title | Submission Date:** Devils Postpile National Monument and Sequoia-Kings Canyon National Parks Visitor Experience Surveys November 10, 2009

2. **Abstract:** The purpose of these 3 surveys is to provide information to inform management actions designed to reduce crowding and resource impacts at 2 popular locations in Devils Postpile National Monument and at Crystal Cave in nearby Sequoia National Park. The surveys will measure visitors' evaluations of their visits and help identify crowding-related standards for one indicator of the quality of visitor experiences: people-per-viewshed (PPV). The NPS Visitor Use and Social Sciences Branch at Yosemite National Park will conduct the surveys for these 2 park units. Data will be collected through on-site visitor surveys at two locations in Devils Postpile NM and at Crystal Cave in Sequoia NP.

(not to exceed 150 words)

### 3. Principal Investigator Contact Information

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**Title:** Social Scientist

**Park:** National Park Service

**Park Office/Division:** Visitor Use and Social Sciences Resources Management and Science Division

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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.)
- 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.
- Literature Review: Both Devils Postpile (DEPO) National Monument and Sequoia-Kings Canyon (SEKI) national parks have experienced increases in visitation over the past two decades. Greater use of the park negatively affects the quality of visitor experiences through crowding and resource degradation. It is critical to understand visitors' attitudes and behavior to inform park planning and management within the context of contemporary management frameworks such as Visitor Experience and Resource Protection (VERP) (NPS, 1997; 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.
- For DEPO, the park unit's first general management plan was initiated in 2009. Staff at Yosemite NP have assisted DEPO in developing a long-term visitor impact monitoring program. Visitor input into the identification of crowding standards at the two major attractions in the monument is essential to implementing the VERP framework in the park.
- In the case of SEKI, Crystal Cave Tours, which is operated by the park's cooperating association, has become a concern to park managers. Group sizes range from 30 to 80 people per tour. These large groups make it more difficult for tour guides to control behaviors that have adverse impacts on cave resources. The size of the tour groups also makes it more challenging to communicate core interpretive messages during the tours. In large groups, the behavior of all participants cannot be monitored effectively and persons at the rear of a group may have difficulty hearing tour guides speak.
- The visual simulation methods and scaling used in these 3 surveys are well-established in the field. Several previous studies have used similar methods and questions (Manning, 2007). Examples include visitor surveys in Acadia NP,

including studies on the park's loop road (Hallo & Manning, in press), on the network of historic carriage roads in the park (Jacobi, et al., 1999; Wang and Manning, 1999), at Schoodic Peninsula (Manning, et al., 2005), and at the park's Isle au Haut unit (Manning, 2007).

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

This study will employ a cross-sectional survey design with data collected from a stratified sample of current DEPO and SEKI visitors through on-site interviewing.

(a) Respondent universe:

The respondent universe for this study includes all adult park visitors (ages 18 and older) visiting DEPO and SEKI from June-August, 2010).

A total of 1,125 visitors will be contacted to participate in the survey, with a final completed sample size of 936 expected (see section 10 below).

(b) Sampling plan/procedures:

The sampling period is designed to include both parks' peak-use periods. A survey will be administered to visitors at the 3 sampling sites in the parks units (Postpile viewing area and Rainbow Falls in DEPO and Crystal Cave in SEKI). Sampling will be conducted on 5 randomly selected days at each survey site throughout the period of the study. The sampling will be spread out over the days of the week and stratified into two sampling periods. The early sampling period will take place from 8:00 a.m. to 4:00 p.m., while the late sampling period will take place from 12:00 noon to 8:00 p.m. During each period, a trained surveyor will be stationed at one of the 3 study sites. When the sampling period begins, the surveyor 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 surveyor, 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.

(c) Instrument administration:

Visitors to the 3 study sites will be read the following script:

"Excuse me, sir/ma'am. We're conducting a study for Devils Postpile National Monument [or Sequoia 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 group (who is at least 18 years old) 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 group. Thank you for your time."

If NO: "Thank you. Please feel free to ask me any questions you have about the survey."

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

Evaluations of different numbers of people per viewshed (an indicator of visitor experience) will be elicited using 5 visual simulations (photographs) showing low to high numbers of visitors. Additionally, the questionnaire will gather information on individual characteristics, trip/visit characteristics, activities and uses of park resources, and opinions on park management.

(d) Expected response rate/confidence levels:

At each of the 3 sites, 375 visitor groups will be approached to participate in the survey, and interviews are expected to be completed by 300 (80% response rate). A series of trail intercept surveys at Acadia National Park in 2006 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 (OMB 1024-0224, NPS 06-008). Study findings are estimated to be accurate within 5.6 percentage points for each site, based on a sample size of 312 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 survey log.

(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 using a survey log that also records the final disposition of each contact. The results of the check for non-response bias will be reported and implications for data interpretation discussed.

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

Both survey methods and questionnaire instruments have undergone review by David Pettebone, Bret Meldrum, and Niki Nicholas, Yosemite National Park, Resource Management and Sciences Division; Joel Despain, Annie Esperanza, and Charisse Sydoriak from Sequoia and Kings Canyon National Parks; and Deanna Dulen, Devils Postpile National Monument. All questions are similar to those used in previous studies used at several other federal land management units.

10. **Total Number of Initial Contacts | Expected Respondents:**

1125	900

11. **Estimated Time to Complete Initial Contact | Instrument (mins.):**

2	10

12. **Total Burden Hours:**

225

13. **Reporting Plan:**

The results of these information collection activities will be presented in a summary report and will be available upon request. Although the questionnaires are similar for each survey location, the data will be analyzed separately, since the purpose is to describe indicators and standards of experience quality for each site. The key estimates 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.

One electronic version (in PDF and MS Word file formats) and 10 hard copies of the final report will be provided to the park representatives at both SEKI and DEPO.

One electronic version (in PDF file format) and 2 hard copies of the final report will be provided to the NPS Denver Service Center at the following address: National Park Service, Denver Service Center, P.O. Box 25287, Denver, CO

80225-0287.

One electronic version (in PDF file format) and 2 hard copies of the final report will be provided to the NPS Social Science Division at the following address: National Park Service, 1849 C St., NW (2300) Washington, DC 20240, for inclusion in the Social Science Studies Collection.

The Principal Investigator will also prepare and submit electronically the NPS Investigator's Annual Report.

#### References

- Hallo, J. and Manning, R. (In Press). Transportation and Recreation: A Case Study of Visitors Driving for Pleasure at Acadia National Park. *Journal of Transport Geography*.
- Jacobi, C. and Manning, R. (1999). Crowding and Conflict on the Carriage Roads of Acadia National Park: An Application of the Visitor Experience and Resource Protection Framework. *Park Science*, 19(2):22-26.
- 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.
- National Park Service. (2006). Environmental Assessment: Washington, D.C., Visitor Transportation Study for the National Mall and Surrounding Park Areas. Washington, D.C.: USDI National Park Service.
- 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.

Surveyor Use Only

ID: \_\_\_\_\_

Date: / / 2010

Time: \_\_\_\_\_ AM/PM

OMB Control #: XXXX-XXXX

Expiration Date:



## Devils Postpile NM/Crystal Cave (Sequoia NP) Visitor Experience Surveys

**Dear Devils Postpile National Monument [Sequoia National Park] Visitor:**

We are conducting this survey to learn more about our visitors so that we can improve our service to you. You are one of a select number of people randomly chosen for this survey, so your opinions are important to us. The survey takes about 10 minutes to complete, and all of the information collected will be anonymous. Please read each question carefully and save any comments for the final page. In this questionnaire, your personal group is defined as anyone that you are traveling with, such as spouse, partner, family, or friends. This does not include the larger group that you might be traveling with, such as school, church, scouts, or tour group.

1. Including this visit, approximately how many times have you visited Devils Postpile National Monument [or Sequoia National Park]? [1. VISITHIS1]

Number of visits: \_\_\_\_\_

2. On the scale below, please indicate how familiar you are with Devils Postpile National Monument [Sequoia National Park]? (Circle one number.) [Topic Area 1 - Individual Characteristics]

1	2	3	4	5	6	7	8	9	
Not at all familiar								Extremely familiar	

3. Have you visited the Postpile viewing area [Rainbow Falls] [Crystal Cave in Sequoia National Park] before? (Check one.) [1. VISITHIS2]

- Yes (CONTINUE TO QUESTION 4)  
 No (SKIP TO QUESTION 5)

4. Including this time, approximately how many times have you visited the Postpile viewing area [Rainbow Falls] [Crystal Cave] ? [1. VISITHIS2]

Number of visits: \_\_\_\_\_

5. **[Devils Postpile surveys only]** On your trip today, where did you begin your hike?  
(Check one.) **[3. TBACK6]**

- Devils Postpile Visitor Center
- Rainbow Falls Trailhead
- Overnight camping in Wilderness area
- Don't know
- Other: \_\_\_\_\_

6. **[Devils Postpile surveys only]** On your hike today, which locations did you visit?  
(Check all that apply.) **[2. Variation ITIN1]**

- Devils Postpile
- Rainbow Falls
- None of the above
- Don't know
- Other (1): \_\_\_\_\_
- Other (2): \_\_\_\_\_

6. **[Crystal Cave survey only]** On your visit today, which tour(s) did you take? (Check all that apply.) **[3. ACT22]**

- Regular Tour
- Discovery Tour
- Wild Cave Tour
- None of the above
- Don't know
- Other: \_\_\_\_\_

7. **Approximately what time did you start your hike to the Postpile viewing area**  
**[Rainbow Falls] [Crystal Cave] today? [3. TBACK3]**

\_\_\_\_\_AM/PM

**OR**

- Don't know

8. In general, how did the encounters you had with other people at the Postpile viewing area [Rainbow Falls] [Crystal Cave] today affect your overall enjoyment of your hiking experience? (Please check one response, even if you did not see other people.) [Topic Area 6 - Individual Perceptions of their Park Experiences]

- Greatly added to my enjoyment
- Somewhat added to my enjoyment
- Had no effect
- Somewhat reduced my enjoyment
- Greatly reduced my enjoyment

9. A We would like to know how many other people you think you could encounter at the Postpile viewing area [Rainbow Falls] [Crystal Cave tour] without feeling too crowded. To help judge this, please rate each of the photographs by indicating how acceptable you find it based on the number of people in the photo. (Circle one number for each photo) [5. VERP1]

	Very Unacceptable					Very Acceptable				
Photo 1	-4	-3	-2	-1	0	1	2	3	4	
Photo 2	-4	-3	-2	-1	0	1	2	3	4	
Photo 3	-4	-3	-2	-1	0	1	2	3	4	
Photo 4	-4	-3	-2	-1	0	1	2	3	4	
Photo 5	-4	-3	-2	-1	0	1	2	3	4	

**B** Which photograph shows the maximum number of people the National Park Service should allow at the Postpile viewing area [Rainbow Falls] [Crystal Cave tour] at one time? In other words, at what point should visitor use be limited? (Record photo number or check one of the boxes.) [5. Variation VERP3]

	<u>                    </u>	<b>OR</b>	<input type="checkbox"/>	<b>OR</b>
	Photo Number		Visitor use should not be limited at any point represented in the photos	
				<input type="checkbox"/>
				Visitor use should not be limited at all

**C** Which photograph shows the number of people at the Postpile viewing area [Rainbow Falls] [Crystal Cave tour] that you would prefer to see? (Record photo number or check one of the boxes.) [5.VERP2]

	<u>                    </u>	<b>OR</b>	<input type="checkbox"/> Don't Know
	Photo Number		



<b>D</b>	<b>Which photograph shows the number of people at the Postpile viewing area [Rainbow Falls] [Crystal Cave tour] that would cause you to never want to return? (Record photo number or check one of the boxes.) [Topic Area 6 - Individual Perceptions of their Park Experiences]</b>			
	<u>                    </u> Photo Number	<b><u>OR</u></b>		<input type="checkbox"/> Don't Know

<b>E</b>	<b>Which photograph looks most like the number of visitors you saw at the Postpile viewing area [Rainbow Falls] [Crystal Cave tour] today? (Record photo number or check one of the boxes.) [5. VERP4]</b>			
	<u>                    </u> Photo Number	<b><u>OR</u></b>		<input type="checkbox"/> Don't Know

10. How crowded did you feel while you were at the Postpile viewing area [Rainbow Falls] [Crystal Cave tour] today? (Circle one number.) [5. CROWD1]

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
<b>Not at all</b>		<b>Slightly</b>			<b>Moderately</b>		<b>Extremely</b>	
<b>Crowded</b>		<b>Crowded</b>			<b>Crowded</b>		<b>Crowded</b>	

<b>11.</b>	<b>[Devils Postpile surveys only] How much of a problem were each of the following items for you at Devils Postpile today? (Check one box for each item.) [6. OPMGMT1]</b>			
	<b>Not a Problem</b>	<b>Small Problem</b>	<b>Big Problem</b>	<b>Don't Know/No Opinion</b>
Difficulty locating the trailhead	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of available parking at the trailhead	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not enough information provided at the trailhead about how to prepare for a hike on the trail	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not enough signs with information about the natural and cultural history of the area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not enough directional signs along the trail	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trails are too wide	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trails are too eroded (e.g. exposed roots, rocks, channeling)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Litter along the trail	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improperly disposed human waste evident on or near the trail	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Too many people on the trail	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Off-trail trampling around the Postpile viewing area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Sound from aircraft	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sound from large groups of visitors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sound from other visitors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sound from NPS maintenance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sound from vehicles (e.g. cars, buses, motorcycles)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. A **[Crystal Cave survey only]** In general, how well could you hear your tour guide’s presentation today?

**[Topic Area 6 - Individual Perceptions of their Park Experiences]**

1	2	3	4	5	6	7	8	9
Could Not Hear Guide		Heard Guide Poorly			Heard Guide Well		Heard Guide Very Well	

B **[Crystal Cave survey only]** Did you or any of your group have personal interaction with your guide on your tour today? **[3. Variation ACT10]**

Yes

No

C **[Crystal Cave survey only]** In general, how far away were you from your tour guide today? **[Topic Area 6 - Individual Perceptions of their Park Experiences]**

Less than 10 feet

10 - 20 feet

20 - 30 feet

30 - 40 feet

40 - 50 feet

More than 50 feet

D **[Crystal Cave survey only]** Did you observe other visitors walking off of the designated trail during your tour today? **[Topic Area 6 - Individual Perceptions of their Park Experiences]**

Yes

No

E **[Crystal Cave survey only]** Did you observe other visitors disturbing any natural resources during your tour today? **[Topic Area 6 - Individual Perceptions of their Park Experiences]**

Yes

No

F **[Crystal Cave survey only]** If you answered yes to either question, please explain: **[Topic Area 6 - Individual Perceptions of their Park Experiences]**

**Response:**

12. What did you like best about your Crystal Cave tour **[trip to Devils Postpile] [trip to Rainbow Falls]** today? **[6. EVALSERV25]**

**Response:**

13. What did you like least about your Crystal Cave tour **[trip to Devils Postpile] [trip to Rainbow Falls]** today? **[6. EVALSERV24]**

**Response:**

14. How did you get to the trailhead today? **[Topic Area 2 - Trip/Visit Characteristics]**

Personal vehicle

Shuttle bus

Other: \_\_\_\_\_

15. What is your sex? (Check one.) **[1. GEND3]**

Male

Female

16. **In what year were you born? [1. AGE1]**  
 Year born: 19\_\_\_\_\_
17. **Do you live in the United States? (Check one.) [1. RES3]**  
 Yes - What is your zip code? \_\_\_\_\_  
 No - In what country do you live? \_\_\_\_\_
18. **What is the highest level of formal education you have completed (Check one.) [1. Variation ED2]**  
 Less than high school  
 High school graduate or GED  
 Some college, business or trade school  
 College, business or trade school graduate  
 Some graduate school  
 Master's, doctoral or professional degree
19. **Are you Hispanic or Latino? (Check one) [1. RACE/ETH2]**  
 Yes  
 No
19. A **[Crystal Cave survey only] Are you of Middle Eastern/Arabian ancestry/descent? (Check one) [1. Variation RACE/ETH2]**  
 Yes  
 No
20. **What is your race? (Check one or more.) [1. RACE/ETH3]**  
 American Indian or Alaska Native  
 Asian  
 Black or African American  
 Native Hawaiian or other Pacific Islander  
 White

Thank you for your help with this survey!  
 Please return the completed questionnaire to the survey administrator.

**PRIVACY ACT and PAPERWORK REDUCTION ACT STATEMENT:** 16 U.S.C. 1a-7 authorizes collection of this information. This information will be used by park managers to better serve the public. Response to this request is voluntary and anonymous. No action may be taken against you for refusing to supply the information requested. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

**BURDEN ESTIMATE STATEMENT:** Public reporting burden for this form is estimated to average 10 minutes per response. Direct comments regarding the burden estimate or any other aspect of this form to: Superintendent, Devils Postpile National Monument, Mammoth, CA 93546.

