



5. <b>Park(s) For Which Research is to be Conducted:</b>	Bryce Canyon National Park			
6. <b>Survey Dates:</b>	May 1, 2015	TO	October 1, 2015	
7. <b>Type of Information Collection Instrument (Check ALL that Apply)</b>				
<b>Mail-Back Questionnaire</b>	<input checked="" type="checkbox"/> <b>On-Site Questionnaire</b>	<input type="checkbox"/> <b>Face-to-Face Interview</b>	<input type="checkbox"/> <b>Telephone Survey</b>	<input type="checkbox"/> <b>Focus Groups</b>
<b>Other (explain):</b>				
8. <b>Survey Justification: (Use as much space as needed; if necessary include additional explanation on a separate page.)</b>	<p><i>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.</i></p> <p>Bryce Canyon National Park (BRCA) is responsible for providing information concerning on human-wildlife interactions, specifically the negative consequences of feeding or leaving food available for. Despite management actions, these interactions continue to be a problem that leads to human-wildlife conflicts within the park. An observational study conducted during the summer of 2013 found that 39% of interactions between visitors and wildlife were undesirable (feeding wildlife, wildlife begging, chasing wildlife, and wildlife approaching humans).</p> <p>This proposed collection will be used to investigate the perceptions, attitudes, and expectations of visitors concerning wildlife at BRCA. The purpose of the proposed questionnaire provide information about GRCA visitor's:</p> <ul style="list-style-type: none"> <li>• perceptions about human-wildlife interactions</li> <li>• knowledge about wildlife within BRCA</li> <li>• awareness of appropriate behaviors around wildlife, including small mammals</li> <li>• Interest in learning more about programs offered at the BRCA</li> </ul>			
9. <b>Survey Methodology: (Use as much space as needed; if necessary include additional explanation on a separate page.)</b>	<p><b>(a) Respondent Universe:</b> All adult visitors (18 years old and older) at Bryce Canyon National Park during the 2015 summer season.</p> <hr/> <p><b>(b) Sampling Plan/Procedures:</b> The sampling period will include the park's peak use period, summer (May-September 2015); during the time of day when the majority of visitation occurs (between 8 a.m. and 5 p.m.).</p>			

We will stratify the sample by distributing 5,000 questionnaires at 8 locations throughout BRCA: the Bryce Amphitheatre (Sunset, Sunrise, and Inspirations Points), two campgrounds, the General Store Picnic Area, and Rainbow Point.

A proportionate number of questionnaires will be distributed based upon the visitation rate at each site, as estimated by the BRCA staff.

Location	% of surveys	# of surveys
Bryce Amphitheater 3 locations	45%	2,500
Campgrounds 2 locations	30%	1,500
General Store Picnic Area	15%	750
Bryce Point	5%	250
Rainbow Point	5%	250

On each sampling day, one of the 8 locations will be randomly selected for sampling. We will stay at this location for 1 hour distributing questionnaires, and then randomly select the next location and repeat until we are finished surveying for the day. Potential respondents will be approached at each site using a systematic random sampling method. For each party approached, the person with the most recent birthday will be asked to complete the questionnaire. If a person declines to participate, is under 18 years of age or an employee, or has already answered a questionnaire, we will approach the very next party. Questionnaires are estimated to take 5 minutes to complete. This estimate is based on a pilot test conducted with mock visitors at Utah State University.

The visitors will be asked to complete their survey at the end of their visit and will be given the option to return the questionnaire by placing it in one of three designated drop boxes located at the Visitor Center, Bryce Canyon Lodge Front Desk, and the General Store by mail or to. Questionnaires will be collected from the drop boxes regularly throughout the day.

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**(c) Instrument Administration:**

The investigator will approach visitors of BRCA one of the 8 locations described above. The investigator will ask the visitors if they would be willing to participate in the survey, using a standardized introduction. Upon agreeing to participate, the investigator will provide the visitor with a questionnaire. Once the visitor receives the questionnaire, the investigator will provide a brief, explanation of when and how to fill out the questionnaire, and where to return the questionnaire. These instructions are also on the written questionnaire. The investigator will then depart from the visitors, allowing the respondents to fill out the survey at their leisure.

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

The overall sample size is expected to be 5,000 visitors. We expect that 40% of the visitors (n= 2,000) will complete and return the questionnaires. The

findings are estimated to be accurate within 7 percentage points, based on the sample size and using a 95% confidence level. This will be sufficient for NPS planning purposes. In order to reach the desired number of respondents, we are providing drop boxes at the three most visited buildings in BRCA.

Number of Initial Contacts	Expected Response Rate	Expected Number of Responses	Margin of Error +/- %
5,000	40%	2,000	+/- 2.5

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

This information will not be used to make generalization to any populations other than those responding to the survey. Secondly this information will only be used to inform managers at Bryce Canyon National Park about the experiences and expectations the visitors had about wildlife during the sampling period.

We will ask all non-respondent to verbally respond to question 6b.

*“On a scale of 1-5, 5 representing the highest level of awareness, please tell me how much do you know about the following topics.”*

	Not at all aware	Slightly aware	Moderately aware	Very aware	Extremely aware
Leave No Trace Practices	1	2	3	4	5
Bryce Canyon Wildlife	1	2	3	4	5
History of Bryce Canyon	1	2	3	4	5
Human-wildlife Interactions	1	2	3	4	5
Park Safety	1	2	3	4	5
Trail Use	1	2	3	4	5

We assume that those persons more interest and engaged with subject of survey subject, will be more likely to respond. We will compare the non-respondent with the respondents using the responses to this question.

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

Because this is a graduate research project conducted through Utah State University (USU), the methods and survey instruments were reviewed and approved by a Biological Statistician as well as the USU Institutional Review Board which reviews all human surveys. The questionnaire was designed in close coordination with the Park Service staff of Bryce Canyon National Park and uses questions that have were listed in the pool of known questions.

A series of draft questionnaire were also pretested using mock visitor scenarios with students at Utah State University. Revisions were made based on the outcomes of the pretests.

10 **Burden Estimates:** We plan to administer 5,000 questionnaires during the sampling period.

With an anticipated response rate of 40%, we expect to receive 2,000 completed responses for this collection.

The initial contact time is expected to be 1 minute per contact. The total burden is expected to be 83 hours (5000 x 1 minute). For those agreeing to continue (n=2,000), the contact time is expected to be an additional 2 minutes to provide instructions. The total burden for this is expected to be 67 hours (2,000 x 2 minutes). We expect that the average time to complete the questionnaire will be five minutes per visitor (2,000 x 5 minute = 167 hours). Total time contact plus completed survey is estimated to be 233 hours. We expect that 50% of the non-respondents (n=1,500) will agree to answer the non-respondent questions when asked. This will add one minute to the initial contact time (1,500 x 1= 25 hours).

The total burden for the collection will be 341 hours.

Estimated # of Contacts		Estimation of Time (minutes)		Estimated Burden (hours)	
Total Number of Initial Contacts	5,000	Initial Contact	1	Estimated Burden	83
Estimated number non-respondents agreeing to answer	1,500	On-site nonresponses completed	1	Estimated Burden	25
Total Number of Responses	2,000	Time to complete and return surveys	7	Estimated Burden	233
				<b>Total Burden</b>	<b>341</b>

11. **Reporting Plan:** The results be reported in a descriptive manner, primarily measures of central tendency (mean and median), and frequency distributions. A copy of the summary report will be presented to the National Park Service for review and use in future management. A copy will also 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.

Additionally, this project is part of the requirements of a graduate thesis. The completed thesis will be available on-line in an open access format. We anticipate that the results of this survey will also be published in a professional journal within 2 years of the completion of this project.