



PROGRAMMATIC REVIEW AND CLEARANCE PROCESS FOR NPS-SPONSORED PUBLIC SURVEYS



The scope of the Programmatic Review and Clearance Process for NPS-Sponsored Public Surveys is limited and will only include individual surveys of park visitors, potential park visitors, and residents of communities near parks. Use of the programmatic review will be limited to non-controversial surveys of park visitors, potential park visitors, and/or residents of communities near parks that are not likely to include topics of significant interest in the review process. Additionally, this process is limited to non-controversial information collections that do not attract attention to significant, sensitive, or political issues. Examples of significant, sensitive, or political issues include: seeking opinions regarding political figures; obtaining citizen feedback related to high-visibility or high-impact issues like the reintroduction of wolves in Yellowstone National Park, the delisting of specific Endangered Species, or drilling in the Arctic National Wildlife Refuge.

SUBMISSION DATE: 3-11-2022

PROJECT TITLE: Grand Canyon National Park Visitor Use Assessment

ABSTRACT: (not to exceed 150 words)

This project will address a recognized need to improve understanding of visitor use patterns as well as current and desired visitor experiences on the South Rim area of Grand Canyon National Park (GRCA). Specifically, the overarching objectives of this project are to improve the understanding of: 1) general visitor flow patterns (temporally and spatially) through the South Rim area for pedestrians in key visitor use areas and personal vehicle drivers; 2) visitor behaviors and attitudes toward varying transportation/visitor delivery systems; 3) traffic and trail counters data to understand visitor use patterns and potential scenarios in the South Rim area (including Desert View); 4) visitor motivations and actual outcomes from their visit; and 5) current visitor use and experiences as well as desired experiences.

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PROJECT INFORMATION:

Where will the collection take place? Grand Canyon National Park

Sampling Period Start Date: 5/10/2022

Sampling Period End Date: 8/31/2022

Type of Information Collection Instrument: (Check ALL that Apply)

Mail-Back Questionnaire

On-Site Questionnaire

Telephone Survey

Face-to-Face Interview

Focus Groups

Other (List) - Web-based/On-line Survey

Will an electronic device be used to collect information? **Yes** personal computers or electronic devices

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 and development.

The South Rim area of Grand Canyon National Park (GRCA) offers access to a variety of recreational activities like hiking, running, wildlife viewing, scenic driving, and photography, among others. It is also a heavily used area in GRCA where park managers report seeing increases in visitor use. Because this area is faced with changing use patterns, increasing intensity of visitor use, and multiple recreation user groups, it is challenging to provide quality visitor experiences that depend on high-caliber resource and social conditions. The major management issues in the South Rim area are related to transportation, safety, and high visitor use. Therefore, managers at GRCA have requested information related to visitor use and experience of current users within the South Rim area.

This research is a second phase of data collection that is informed from previous qualitative interviews completed by managers in 2019. This proposed study will allow managers to understand the components of visitors use. Areas of inquiry include motivations, crowding, and experiential outcomes (e.g., family cohesiveness, connection with nature, self-esteem, etc.). This study will focus on two different groups: vehicles and recreational users in the South Rim area. The results from this collection will inform decisions related to management of the South Rim area.

GPS units will be used in this study to track the spatial behavior of visitors, including how they respond to crowding and safety concerns. The GPS data will be correlated with responses from the pre- and post-experience surveys. When paired with the survey data, the GPS data will provide managers with an understanding of how visitor motivations relate to spatial behaviors associated with crowding and safety issues.

SURVEY METHODOLOGY

(A) Respondent Universe:

All adult, recreational users and drivers (18 years and older) visiting the South Rim area of GRCA from May 10, 2022 to July 31, 2023.

(B) Sampling Plan / Procedures:

This proposed collection will use an on-site questionnaire to examine recreational (day) users and drivers in select locations of the South Rim area. During three (one to two month) sampling periods ranging from May 10, 2022 to July 31, 2023, sampling days will be evenly stratified by day of week (Monday through Sunday), time (7AM to 7PM), and location (Table 1).

Table 1. Example On-site Sampling Schedule

Location	Sampling Days Per Site					Total
	May 2022	June 2022	July 2022	June 2023	July 2023	
Recreational Users						
Desert View Drive Area	8	5	2			15
Grand Canyon Visitor Center Area	8	5	2			15
Grand Canyon Village Area			2	8	5	15
West Rim Drive Area			2	8	5	15
Drivers						
South Entrance	4	3		4	4	15
Desert View Entrance	4	3		4	4	15
Total	24	16	8	24	18	90

For this study we will distribute 60 GPS units. In a 2014 study at Grand Teton National Park (GRTE), 90-100% of GPS units were recovered from respondents each day. With that, we will plan to administer about 50-60 GPS units per day because this the maximum our team can handle in one day for sampling. The collection is more constrained by available personnel than by the number of available GPS units.

Recreational users:

Recreational users will be intercepted at four different locations: the Desert View Drive area, the Grand Canyon Visitor Center area, the Grand Canyon Village Area, and the West Rim Drive Area. These locations were selected based on the preferences of GRCA managers. The Grand Canyon Village Area and the Grand Canyon Visitor Center area will be sampled during the same period (May and June 2022). The Desert View Drive area and the West Rim Area will be sampled during the same period (May through July 2023). Trained research assistants will recruit study participants by contacting a random sample of every *n*th visitor group as they enter these areas from parking lots in the study area. We will ask the person over 18 years old having the most recent birthday in the group to complete the survey and carry a GPS unit. All visitors who agree to participate will be asked to complete a pre-experience survey and will be given a pre-programmed GPS unit. At the end of the visit, participants returning the GPS unit will be asked to complete a post-experience survey (Table 2).

Drivers:

Drivers will be intercepted at two different locations: the South Entrance Station and the Desert View Entrance Station. This will encompass all vehicles visiting the South Rim area. Every *n*th driver in the sample area will be stopped and asked to participate in the survey. The sample locations were selected using the following two criteria: 1) entry and exit points of the park, and 2) adequate parking space for vehicles to safely pull off the road. One research assistant will serve as a flagger to control traffic and two surveyors will serve as data collectors. Groups will be greeted by the surveyor after they safely pull off the road segment and introduced to the purpose of the study. A screening question (i.e., “*Is anyone in your vehicle over the age of 18?*”) will be asked as part of the introduction script. If visitors answer “NO” to the screening question, they will not be asked to participate in the study and will continue on. If visitors answer “YES”, the person in the vehicle over 18 years old having the most recent birthday will be asked a series of questions to determine eligibility and will be asked to carry the GPS unit.

Table 2. Estimated Number of Visitor Contacts during Sampling Period

Location	Estimated Number of Visitor Contacts					Total
	May 2022	June 2022	May 2023	June 2023	July 2023	
Recreational Users						
Grand Canyon Village Area	180	112	45			337
Grand Canyon Visitor Center Area	180	112	45			337
Desert View Drive Area			45	180	112	337
West Rim Drive Area			45	180	112	337
Drivers						
South Entrance	90	67		90	90	337
Desert View Entrance	90	67		90	90	337
Total	540	358	180	540	404	2,022

(C) Instrument Administration:

The pre- and post-experience surveys will be administered by trained research assistants using tablet computers to facilitate skip patterns and eliminate data entry errors. During the initial contact all participants will be read the instructions, asked to complete the pre-experience survey, and handed a GPS unit. The visitor will be instructed that the GPS unit is to be kept by the primary respondent and that it can only be used to monitor movement during their visit within the area. At the end of their visit, the surveyors will be available to retrieve the GPS units and administer the post-experience survey. (Note: the GPS units will be pre-programmed, and the respondents will not have to do anything with these units other than carry them.) This process will continue throughout the sampling period.

If visitors return after researchers have left the sampling area, instructions will be attached to the GPS unit with options for returning the device (i.e., drop boxes at all exits, visitor centers, or fee booths). We will work with the park to recover late returns every day. If a visitor accidentally leaves the park with a GPS unit, an email address and phone number will be listed to arrange return. During the 2014 GRTE Visitor Use Survey, about 2,000 GPS units were passed and five were not returned. Overnight users will not be given a GPS unit, but will still be administered a survey.

Surveyors will ask visitors who are unwilling or unable to participate in the study the non-response bias questions (see below), and will also capture additional observational information (e.g., time of contact, gender, mode of

transportation or activity, group size, number of adults and children in group, and potential language barrier). This information will be combined to determine any non-response bias. This process will continue throughout the sampling period at each of the study locations. The following is an example of the script will be used:

Pre-experience survey

"Hello, I am conducting a study for Grand Canyon National Park to better understand visitor experiences while recreating within the South Rim area of the park. Your participation is voluntary, and your responses will be anonymous. As a part of the study, we ask if you are willing to take a 7-minute pre-survey and an 8-minute post-survey and if you would be willing to carry this GPS unit with you during your trip. The unit will only be used to track the patterns of your movements within the park. The unit will have no additional value outside the park or this study. Tracking your movement will help park managers understand how visitors move through and navigate certain areas in the park during a typical visit. We ask that you return the GPS to our research colleagues at the end of your visit as you exit the area. Would you be willing to take this survey and carry a GPS with you during your visit?"

- *If NO: "Do you mind if I ask you a question? From this list (survey question #5), which of the following is the primary activity you plan on participating in during today's visit? Thank you for your time and consideration. I hope you enjoy your visit."*
- *If YES "Thank you for your willingness to assist with this study. Who in your group (who is at least 18 years old) has the next birthday?"*
 - *SCREENING QUESTION: Are you staying overnight in the South Rim area?*
 - *If NO: "Great. Here is the GPS unit (hand visitor GPS unit). In addition to carrying the GPS, there are two short surveys that will take approximately 15 minutes in total, to complete. Before you leave, there is a pre-experience survey about the activities and experiences you hope to have in the South Rim area. At the end of your visit, there will be a post-visit survey that will ask about the experiences you actually had during your visit. Are you still willing to participate?"*
 - *If YES: "Great. Would you mind completing the pre-experience survey?"*
- *If NO: "Do you mind if I ask you a question? From this list (survey question #5), which of the following is the primary activity you plan on participating in during today's visit? Thank you for your time and consideration. I hope you enjoy your visit."*

Post Trip Survey

At the end of their visit and upon exiting the sampling locations, respondents will be asked to return the GPS unit and to complete the post-experience survey, which includes a participatory map exercise collecting the locations where respondents went today, and details about their experiences in these locations. At this time, the research assistant will use the following post-experience script:

"Thank you for assisting us with this study and returning the GPS unit. Are you willing to take about 8 minutes to complete post survey we mentioned at the beginning of your trip?"

- *If YES: "Thank you. [administer post-experience survey]"*

- If NO: “Do you mind if I ask: Did you feel crowded while visiting at Grand Canyon National Park today?” On a scale between 1-5 where 5 is extremely crowded, how crowded did you feel today?

“Thank you for your time and consideration. I hope you enjoyed your visit.”

Furthermore, due to the COVID-19 pandemic, extra safety precautions will be set in place. All surveyors will wear masks. Surveying will be contactless. Surveyors will administer surveys via a tablet and enter responses for respondents at a distance between each other of at least 6 feet. If study participants are not comfortable taking the survey in this fashion, they will have the option to take the survey on their cellphone via a URL printed on a piece of poster board. Study participants will not come into contact with any survey equipment. Survey equipment will be regularly wiped down. Temperature monitoring of technicians will occur before each shift, and COVID-19 symptom screening questions will be employed to each participant before surveying begins. Surveyors will deploy a temporary/portable sign at sampling locations notifying potential respondents of recommended distancing protocols should they volunteer to participate in the study. GPS units will be thoroughly sanitized between uses.

(D) Expected Response Rate / Confidence Level:

Based on previous research, GRCA staff input, limitations of staffing, and limited equipment, we anticipate that we will approach approximately 2,022 individuals to participate in the pre-experience survey. Based on previous research in GRCA and other national parks, we estimate 85% will agree to participate (n=1,716), and the remaining 15% will refuse (n=306). We anticipate that of the 306 visitors that refuse, 95% (n=288) will agree to answer the non-response bias questions, and the remaining 5% (n=18) will completely refuse to participate.

For the post-experience survey, we estimate 85% of those who took the pre-experience survey will agree to participate (n=1,458), and the remaining 15% will refuse (n=258). We anticipate that of the 258 visitors that refuse, 95% (n=246) will agree to answer the non-response bias questions, and the remaining 5% (n=12) will completely refuse to participate.

Table 2: Anticipated Response Rates

Pre-Experience Survey	Potential Number of Respondents	Expected Number of Responses (85%)	Non-respondents (soft refusals) (15%)	Completed Non-Response Surveys	Hard Refusals
Desert View Drive Area	337	286	51	48	3
Grand Canyon Visitor Center Area	337	286	51	48	3
Grand Canyon Village Area	337	286	51	48	3
West Rim Drive Area	337	286	51	48	3
South Entrance	337	286	51	48	3
Desert View Entrance	337	286	51	48	3
Subtotal	0	0	0	288	18

	Potential Number of Respondents	Expected Number of Responses (85%)	Non-respondents (soft refusals) (15%)	Completed Non-Response Surveys	Hard Refusals
Post Experience Survey					
Desert View Drive Area	286	243	43	41	2
Grand Canyon Visitor Center Area	286	243	43	41	2
Grand Canyon Village Area	286	243	43	41	2
West Rim Drive Area	286	243	43	41	2
South Entrance	286	243	43	41	2
Desert View Entrance	286	243	43	41	2
Subtotal	0	0	0	246	12
TOTAL	3,738	3,174	564	534	30

Based on the survey sample sizes for both sample populations (e.g. drivers and recreational users), there will be 95 percent confidence that the survey findings will be accurate to within 5 percentage points. With that, the proposed sample size should be adequate, but will not be used to produce results that will be generalizable beyond the scope of this collection. The sample will suffice for bivariate comparisons and more sophisticated multivariate analysis. For dichotomous response variables, estimates will be accurate within the margins of error and confidence intervals will be somewhat larger for questions with more than two response categories.

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

Non- response bias will be calculated by recording the number of refusals, responses to the non-response questions (see below) and the following observational information (i.e., time of contact, gender, observed mode of transportation or activity, group size, number of adults and children in group, potential language barrier). Both recreational users and drivers will be asked the following non-response bias question for the pre-experience survey.

- *From this list of activities (Pre-experience survey question #4), which of the following is the primary activity you plan on participating in during today's visit?*

At the end of their visit or upon exiting the sampling location, recreational users will return the GPS unit and be asked to complete the Post-experience Survey. If they refuse to complete this survey, they will be asked the following non-response bias question.

- *Do you mind if I ask: Did you feel crowded while visiting at Grand Canyon National Park today? On a scale between 1-5 where 5 is extremely crowded, how crowded did you feel today?*

Data from this study will be analyzed for non-response bias by comparing participating groups' characteristics to non-participating groups' characteristics gathered on the corresponding surveyor's log sheets. Any implications of non-response bias for park planning and management will be reported.

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

This research uses similar methods and questions that have been used in other visitor use studies. In 2014, researchers in the Recreation, Park, and Tourism Management Department at Pennsylvania State University (PSU) conducted the Moose-Wilson Corridor Visitor Use Survey using the same methods and technology. Another similar study was conducted in the String and Leigh Lakes area of Grand Teton National Park in 2018. The questions in the survey instrument are drawn from the NPS Pool of Known Questions, though adapted for appropriate context at GRCA and the South Rim area. The questions included in the survey instrument were designed, reviewed and pretested by the following: PI, research staff and graduate students (PSU) with expertise in social science research,

and GRCA staff. Pre-testing for clarity and estimated burden time was conducted with graduate and undergraduate students at Pennsylvania State University.

BURDEN ESTIMATES:

The combined estimated annual burden for this collection including the initial contact time, and time to complete the questionnaires for both sample groups (e.g. drivers and recreational users) will be 538 hours.

The estimates for the Pre and Post experience surveys are based upon the time it will take to make the initial contact, complete the surveys (or non-response survey) and to return the GPS unit.

Pre-experience Survey:

We are expecting that 85% (n=1,716) of all visitors contacted will agree to take 10 minutes to complete the pre-experience survey and take a GPS unit (1,716 x 10minutes = 286 hours). Of all of the visitors contacted, we anticipate that 95% (n=288) of those refusing to complete the full survey will agree to answer the non-response check question (288 x 1 minute = 5 hours). The burden for the remaining visitors that completely refuse to participate will not be calculated due to lack of participation.

Post-experience Survey:

At the end of their visit the GPS units will be collected and the visitors who participated in the pre-experience survey will be asked if they would be willing to complete the post-experience survey. We expect that 85% (n=1,458) will agree to complete the post-experience survey. The time to complete survey the survey will take 8 minutes (1,458 X 10 minutes = 243 hours). Based on previous studies 95% (n=246) will refuse to take the post-experience survey however they will agree to take at least minute to answer the question that will be used to estimate post-experience non-response bias (246 X 1 minute = 2 hours).

Table 4: Burden Estimates

	Completed Responses	Completion Time *(minutes)	Burden Hours (rounded up)
On-site Survey			
Pre-Experience Survey	1,716	10	286
Post Experience Survey	1,458	10	243
Subtotal	3,174	10	0
Non-Response Check			
Pre-Experience Survey	288	1	5
Post Experience Survey	246	1	4
Subtotal	534	1	9
TOTAL	3,708		538

*includes initial contact time

REPORTING PLAN:

Analyze data and prepare reports: September 2023 – December 2023

- a. Product: draft reports with visitor frequencies and descriptive statistics regarding visitor experience.
- b. Product: compiled final draft report for Management, reviewed by colleagues and GRCA staff.
2. Write final report to GRCA Management Team: March, 2024
 - a. Product: final report to GRCA management staff
 - b. Product: presentation of survey results

NOTICES

Privacy Act Statement

General: This information is provided pursuant to Public Law 93-579 (Privacy Act of 1974), December 21, 1984, for individuals completing this form.

Authority: National Park Service Research mandate (54 USC 100702)

Purpose and Uses: This information will be used by The NPS Information Collections Coordinator to ensure appropriate documentation of information collections conducted in areas managed by or that are sponsored by the National Park Service.

Effects of Nondisclosure: Providing information is mandatory to submit Information Collection Requests to Programmatic Review Process.

Paperwork Reduction Act Statement

We are collecting this information subject to the Paperwork Reduction Act (44 U.S.C. 3501) and is authorized by the National Park Service Research mandate (54 USC 100702). This information will be used by The NPS Information Collections Coordinator to ensure appropriate documentation of information collections conducted in areas managed by or that are sponsored by the National Park Service. All parts of the form must be completed in order for your request to be considered. We may not conduct or sponsor and you are not required to respond to, this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number. OMB has reviewed and approved The National Park Service Programmatic Review Process and assigned OMB Control Number 1024-0224.

Estimated Burden Statement

Public Reporting burden for this form is estimated to average 12 minutes per collection, including the time it takes for reviewing instructions, gathering information and completing and reviewing the form. This time does not include the editorial time required to finalize the submission. Comments regarding this burden estimate or any aspect of this form should be sent to the Information Collection Clearance Coordinator, National Park Service, 1201 Oakridge Dr., Fort Collins, CO 80525.