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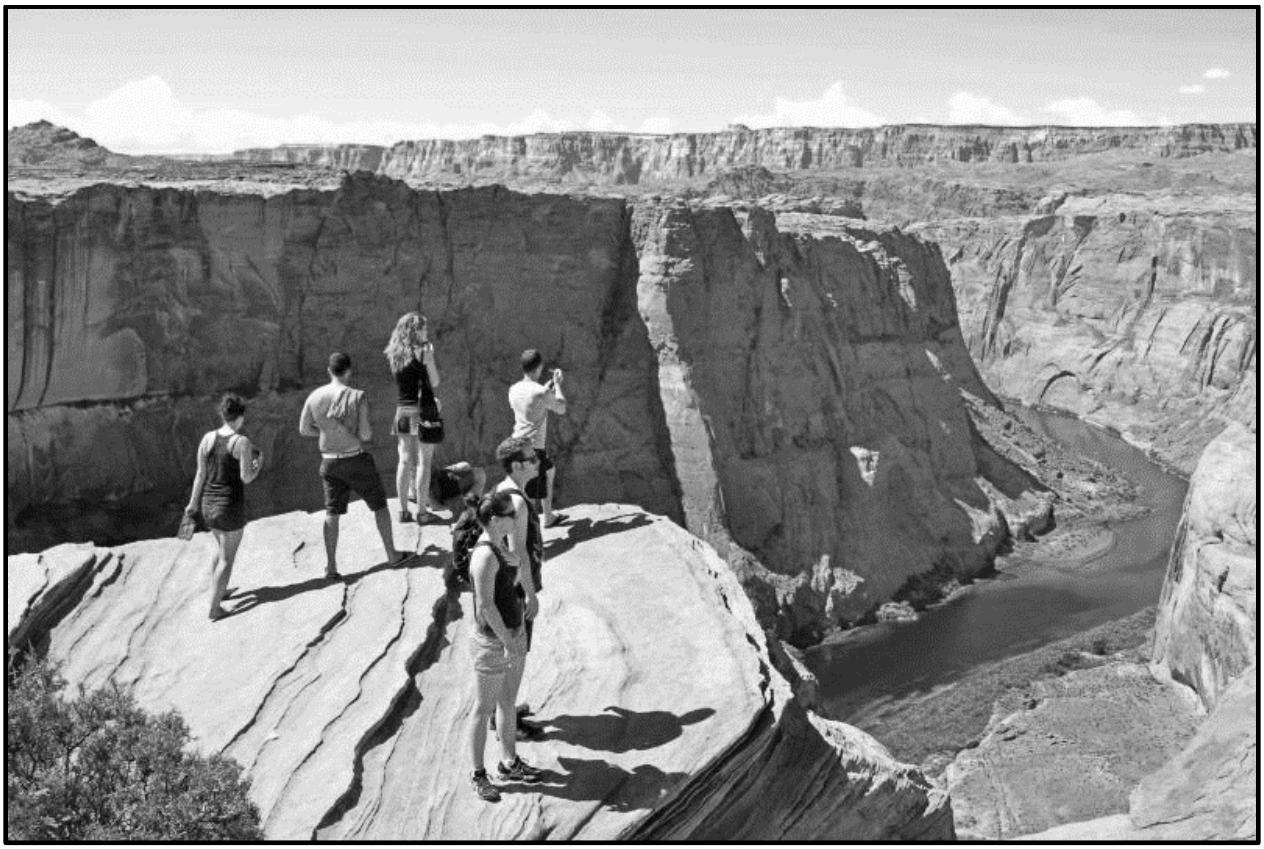
Natural Resource Stewardship and Science

Implementation Plan for a Socioeconomic Monitoring Program in the National Park System

Natural Resource Report NPS/NRSS/EQD/NRR—2019/1891



ON THE COVER
Photograph of Glen Canyon National Recreation Area – Horseshoe Bend Overlook
Photograph courtesy of the National Park Service

Implementation Plan for a Socioeconomic Monitoring Program in the National Park System

Natural Resource Report NPS/NRSS/EQD/NRR—2019/1891

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March 2019

U.S. Department of the Interior
National Park Service
Natural Resource Stewardship and Science
Fort Collins, Colorado

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List of Terms

ACAD:	Acadia National Park
BISC:	Biscayne National Park
BLRI:	Blue Ridge Parkway
CACO:	Cape Cod National Seashore
COLO:	Colonial National Historical Park
GLAC:	Glacier National Park
GLBA:	Glacier Bay National Park and Preserve
GLCA:	Glen Canyon National Recreation Area
GOGA:	Golden Gate National Recreation Area
GRCA:	Grand Canyon National Park
KLGO:	Klondike Gold Rush National Historical Park
NIOB:	Niobrara National Scenic River
NPS:	National Park Service
OMB:	Office of Management and Budget
ROM:	Rough Order of Magnitude
RSG:	Resource Systems Group
SAAN:	San Antonio Missions National Historical Park
SAFR:	San Francisco Maritime National Historical Park
SEM:	Socioeconomic Monitoring
SSP:	Social Science Program
VALR:	World War II Valor in the Pacific National Monument
VSP:	Visitor Services Project
VUS:	Visitor Use Study
VUStats:	Visitor Use Statistics
YELL:	Yellowstone National Park

Introduction and Summary

From 2014 to 2017, the National Park Service (NPS) Social Science Program (SSP) worked with RSG via a contract to develop and conduct pilot implementation of an in-park Socioeconomic Monitoring (SEM) program for the National Park System. This report describes the results of the pilot SEM program and presents an implementation plan for a long-term SEM program. The NPS SEM implementation plan includes specifications and rough order of magnitude (ROM) cost estimates for a Base Model and information about potential methodological enhancements to the Base Model.

Organization of Report

This report is organized into five sections.

Section 1: **Need for a Socioeconomic Monitoring Program of Research.** This section describes the need for SEM in the NPS and current monitoring activities.

Section 2: **Development and Implementation of the Pilot.** This section presents the methodological development of the pilot SEM. The section includes information about the framework to identify parks for participation in the pilot, questionnaire design, development of a Field Monitoring Guide, survey sampling methods, onsite implementation, data management, analysis, and reporting of park-specific results.

Section 3: **Lessons Learned from the Pilot Implementation.** This section summarizes observations of what went well and what could be improved during implementation of the pilot. The lessons learned that are reported in this section provide some of the basis and rationale for the Base Model for long-term SEM described in the next section of this report.

Section 4: **SEM Program Base Model and Potential Enhancements.** This section presents the development of a Base Model for a long-term SEM program, informed by the experiences and lessons learned during the SEM pilot implementation. A matrix presents the Base Model specifications and is supported by a narrative describing details of the SEM program dimensions considered.

Section 5: **Rough Order of Magnitude Cost Estimate for the Base Model.** This section includes a ROM annual cost for the Base Model, based on several key assumptions, including the assumptions of sampling at 24 park units per year and a target of 400 completes per park unit.

Section 1: Need for a Socioeconomic Monitoring Program of Research

A strong mandate and need for SEM exists within NPS, as expressed in the Organic Act (54 U.S.C. 100101, *et seq.*), Management Policies 2006 (NPS, 2006), and the Natural Resource Stewardship and Science Framework (Natural Resource Advisory Group, 2016). The NPS has previously initiated efforts to identify viable socioeconomic variables for monitoring and prioritize them based on agency need for integrating science into planning and decision-making processes (Gramann et al., 2010).

A comprehensive SEM program would develop baseline information describing important human populations in parks, regions around parks, and nationally, and allow for long-term monitoring of trends in socioeconomic characteristics of these populations. Additionally, a program would facilitate the integration of SEM into NPS planning, management, and decision-making, and sharing of NPS information with partnership organizations for attaining common goals and objectives (Gramann, 2008).

A comprehensive approach to NPS SEM would include surveys of park visitors, a national household survey of the American public, and other related elements. Presently, the NPS conducts several monitoring activities that form the foundation for a SEM program. These include the following:

- Monthly and annual monitoring of the amount of park visitation at national, regional, and park scales (Visitor Use Statistics - VUStats).
- Annual monitoring of the economic effects of visitor expenditures at national, regional, and park scales (Visitor Spending Effects).
- Periodic Comprehensive Survey of the American public measuring attitudes and behaviors toward the National Park System, including data on non-visitors; conducted at the national scale with some analysis at the regional scale.
- Visitor Survey Card surveys measuring progress toward performance goals and conducted in approximately 320 parks annually, with reporting at the national, regional, and park scales.

However, a cost-effective, system-wide program of collecting, organizing, and making available high-quality social science trend data based on in-park visitor surveys is not yet in place. From 2014 to 2017, the NPS SSP developed and conducted pilot implementation of an in-park SEM program for the National Park System. This report describes the results of the in-park pilot SEM program and presents an implementation plan for a long-term SEM program.[1] The NPS SEM implementation plan includes ROM cost estimates for a Base Model and potential enhancements.

[1] While a comprehensive SEM program would study the full spectrum of relevant human populations, this report focuses only on the in-park visitor component. All subsequent references to SEM in this report are specific to that component.

Implementation of an in-park SEM program is critical for the NPS, at a time when NPS managers are confronted with increasingly complex and challenging issues that require a broad-based understanding of the status and trends of human populations in parks, regions around parks, and the nation. An in-park SEM program will develop and communicate information that enables managers to identify trends in the numbers, characteristics, and behaviors of park visitors. This knowledge is essential for decision-making, working with stakeholders in gateway regions, and in communicating effectively to protect visitor experiences and park resources.

Thus, the NPS SSP worked with RSG via a contract to develop and conduct a pilot implementation of an in-park SEM program for the National Park System. This report describes the development, implementation, and results of the pilot SEM program and presents an implementation plan for a long-term SEM program.

Section 2: Development and Implementation of the Pilot

The development of the pilot began with a three-day workshop in November 2014, which led to further development and refinement of the methods implemented. The purpose of the workshop was to develop a framework for selecting park units for sampling in the pilot, identify salient topic areas and questions to be included in the pilot questionnaire, and begin discussion of onsite implementation structure and protocols. After the workshop, these items were further refined. NPS SSP and RSG developed a Field Monitoring Guide to document the procedures used to implement the pilot and to provide guidance for long-term implementation of SEM. Data management, analysis, and reporting plans were also refined further during methods development. The following sections and associated subsections describe these elements of the methods development phase of the pilot.

Methods

Framework to Identify Parks for Participation in the Pilot

An initial focus of the methods development phase of the SEM pilot was developing a systematic process to select park units for inclusion in the pilot field implementation. The initial goal of this effort was in selecting park units that, together, would be representative of the full range of park units in the National Park System.

To inform the selection of participating park units, all NPS units with visitation statistics from the NPS Visitor Use Statistics (VUStats) were categorized into a matrix using a classification system based on two strata:

1. Park type: Natural, Recreation, and Historical/Cultural.
2. Population class: Urban, Other, and Alaska.

Population classes were identified using population class categories used by VUStats. NPS units classified as having an Urban population class were non-Alaska units that had a VUStats population class of Urban, Suburban, or Mixed, with the majority of the of the surrounding population class considered Urban or Suburban. NPS units classified as Other were non-Alaska units with a VUStats population class of Rural, Outlying, Remote, or Mixed, with most of the surrounding population class considered as Rural or Outlying. NPS units with a value of No Boundary Data from VUStats were also classified as Other. All NPS units in Alaska were classified as Alaska.

NPS region was initially included as a stratum in the development of the matrix; however, it was later removed as a stratum in the final version of the matrix to avoid having too many cells in the sampling matrix with small cell counts.

As a result, 391 NPS units were classified and organized into a matrix of the two final strata (Table 1). This classification matrix provides a potential basis for selection of park units for long-term SEM to systematically gather data representative of the National Park System as a whole. This classification scheme was further refined through the course of the SEM pilot, resulting in the recommended sampling design presented later in this report.

Table 1. NPS unit classification matrix

	Surrounding Population Class			
Park Type	**Urban**	**Other**	**Alaska**	**Total**
Historical/Cultural	107	124	2	**233**
Natural	7	83	14	**104**
Recreation	17	37	0	**54**
Total	**131**	**244**	**16**	**391**

The funds available to implement the pilot in park units permitted a selection of up to 14 park units for inclusion in the pilot. It was recognized that selecting 14 park units from the above matrix would likely not result in a selection of parks representative of the National Park System as a whole. Recognizing this, it was agreed that park units should be selected based on their ability to conduct a "stress test" of sampling and survey administration methods during the field implementation, in the spirit of a pilot and potential application of the methods in a long-term program of SEM.

Thus, the 14 park units were selected to present a broad array of scenarios that a future formal SEM program may experience. Possible scenarios included multilingual visitors to a unit, geographic dispersion of multiple sites managed by one NPS unit, unconventional or complex mixes of recreational use, and units that presented complex sampling logistics, like linear parks/parkways, units with multiple managed entrances and exits, and units with multiple unmanaged points of entry and exits (e.g., access by air, land, or water). NPS units were also considered for the pilot implementation based on their potential to address gaps in visitor spending profile data for national recreation areas, national seashores and lakeshores, military park units, and NPS units located in Hawai'i. The final list of parks selected for inclusion in the pilot implementation, and the stress test rationale for their inclusion, are presented in Table 2.

Table 2. NPS units selected for participation in pilot

Park Unit*	Park Type	Population Class	Rationale
ACAD	Natural	Other	Multiple unmonitored points of entry/exit
GLBA	Natural	Alaska	Park and preserve, and cruise ship visitors
CACO	Recreation	Other	Visitor spending effects data needs
BLRI	Recreation	Other	Linear parkway
COLO	Historical/Cultural	Urban	Visitor spending effects data needs
SAAN	Historical/Cultural	Urban	Multilingual visitors
GLCA	Recreation	Other	Visitor spending effects data needs

* Park units are listed in the order in which onsite data collection occurred during the SEM pilot.

Table 2 (continued). NPS units selected for participation in pilot

Park Unit*	Park Type	Population Class	Rationale
GOGA	Recreation	Urban	Geographically dispersed sites managed by one unit
BISC	Natural	Urban	Multiple unmonitored points of entry/exit
GRCA	Natural	Other	Visitor spending effects data needs
NIOB	Recreation	Other	Unconventional use
GLAC	Nature	Other	Visitor spending effects data needs
VALR	Historical/Cultural	Urban	Visitor spending effects data needs
KLGO	Historical/Cultural	Alaska	Cruise ship visitors

* Park units are listed in the order in which onsite data collection occurred during the SEM pilot.

Questionnaire Design

The SEM questionnaire was a standardized survey instrument designed to gather system-wide information at NPS units about visitor and trip characteristics, visitor spending in gateway communities, visitor perceptions of park experiences, visitor attitudes toward park management, and visitor satisfaction with park services and facilities (Appendix 1). The questionnaire was developed through a collaborative process between the NPS SSP and RSG, during which priority socioeconomic questions for NPS were generated through the pilot development workshop. All the questions included in the final SEM questionnaire were selected from the NPS Programmatic Information Collection Review Pool of Known Questions. The majority of the questions included in the SEM survey instrument ask visitors to choose answers from a list of response options, providing an open-ended option, where appropriate, to ensure that question prompts allowed for inclusive answers. A few questions were completely open-ended to collect unprompted responses from visitors in their own words. The questionnaire was reviewed and approved by the Office of Management and Budget (OMB), and correspondingly conforms to OMB standards and guidelines for questionnaire design. Staff at each unit were asked to review the SEM questionnaire to provide guidance on park-specific tailoring of question prompts to ensure consistency of the survey instrument with park policies, programs, services, and activities.

The questionnaire was most commonly administered to visitors in English. Where a substantive proportion of visitors were expected to speak or read languages other than English, additional languages were available for survey administration at park units. Two park units included in the pilot expressed this expectation: Spanish and Cantonese questionnaires were made available for survey administration at GOGA, and Japanese questionnaires were made available for survey administration at VALR.

Field Monitoring Guide

The Field Monitoring Guide developed by NPS SSP and RSG presents the procedures used to implement the pilot phase of the SEM survey and provides guidance for long-term implementation. The Field Monitoring Guide is organized in the following sequence to reflect the order of research

tasks required to conduct the SEM survey: project initiation, preparation for survey administration, and survey administration.

The appendices of the Field Monitoring Guide contain instruments, forms, and related documents used to conduct the pilot phase of the SEM survey. The materials contained in appendices include: standardized protocols, instruments, and log forms; and reference material and supporting documentation of study procedures. Ultimately, the procedures and instruments documented in the Field Monitoring Guide may need to be revised for long-term implementation of the SEM survey to reflect the lessons learned during the pilot phase.

Survey Method

The SEM visitor survey was administered at the 14 selected NPS units as a personally delivered self-administered mail-back survey, following the principles outlined in Don A. Dillman's book *Internet, Phone, Mail, and Mixed-Mode Surveys: The Tailored Design Method* (2014). The survey method included three phases: 1) onsite distribution of a booklet-sized questionnaire, 2) a color-picture reminder postcard mailing, and 3) one replacement mailing of a booklet-sized questionnaire for those participants that had not yet returned a completed questionnaire. The study population included visitor groups with at least one group member 18 years of age or older in the NPS unit during the park's study period. The target margin of error for summary statistics of no greater than +/- 5% (Fowler, 1993) was used to establish the target sample size at 400 completed questionnaires for each park.

Onsite Implementation

Sampling Effort

Specific survey administration dates were selected to target peak use at each park. Conducting survey administration during peak use at each park unit maximized sampling efficiency and captured a broad range of use and users and was consistent with sampling periods selected for previous Visitor Services Project (VSP) studies. Peak-use months for each unit were identified using the five-year average of monthly visitation data available from the NPS VUStats. Several NPS units shared the same peak-use month. As a result, and due to staffing and other logistical constraints, months that had visitation within +/- 5-10% of the park's identified peak-use month's visitation were then selected for survey administration. Within the selected peak-use month, the survey administration dates were selected to include both weekdays and weekend days.

The SEM visitor survey was administered at each park, except for ACAD, for a 10-day sampling period. In ACAD, survey administration took place on 13 sampling days to ensure that a large number of sampling locations (22) were sufficiently sampled with a limited number of survey administrators available (6). Additionally, the survey administration dates were staggered throughout a larger 25-day period to accommodate concurrent data collection by the same staff for another project in the park. The survey administration dates for each park are presented in Table 3.

Prior to the start of the sampling period, RSG staff and survey administrators were onsite at each NPS unit to conduct training of survey administration protocols and scope all sampling locations at each unit for successful survey administration. Training and scoping occurred over one to two days,

depending on the complexity of the unit, the number and dispersion of sampling locations at the unit, and the previous experience of survey administrators in the pilot.

Table 3. Dates of survey administration, by park unit

Park Unit	Dates of Survey Administration
ACAD	August 7, 2015–August 31, 2015*
GLBA	August 7, 2015–August 17, 2015
CACO	August 21, 2015–August 31, 2015
BLRI	October 8, 2015–October 17, 2015
COLO	June 3, 2016–June 12, 2016
SAAN	June 3, 2016–June 12, 2016
GLCA	June 17, 2016–June 26, 2016
GOGA	June 17, 2016–June 26, 2016
BISC	July 1, 2016–July 10, 2016
GRCA	July 15, 2016–July 24, 2016
NIOB	July 15, 2016–July 24, 2016
GLAC	July 29, 2016–August 7, 2016
VALR	July 29, 2016–August 7, 2016
KLGO	August 21, 2016–August 21, 2016

*Survey administration occurred on August 7–10, 12,13, 17, 22, 23, 26, 28-29, and 31, 2015.

Sampling locations at each unit were selected through an iterative, data-driven process. A list of potential sampling locations was compiled using three primary information sources. First, previously conducted visitor use studies or survey research were consulted for locations that had been sampled previously. Second, the sampling locations for collection of NPS VUStats visitation data were consulted for potential additional sampling locations. Third, the unit's website and other popular trip planning resources were consulted to ensure that popular visitor locations were not inadvertently excluded from the list of potential sampling locations. Lists of potential sampling locations were reduced through consideration of feasibility for survey administration and coverage of the range of user types at each unit. Refined lists of sampling locations were finalized through consultation with the NPS SSP and NPS unit staff. The SEM visitor survey was administered at as few as one sampling location and up to 22 sampling locations (Table 4).

Table 4. Number of sampling locations, by park unit

Park Unit	Number of Sampling Locations
ACAD	22
GLBA	4
CACO	12
BLRI	12
COLO	6
SAAN	6
GLCA	7
GOGA	12
BISC	6
GRCA	4
NIOB	4
GLAC	4
VALR	1
KLGO	8

Nonresponse Bias

A nonresponse bias analysis was completed for each park unit included in the pilot. Specifically, answers to five, preselected nonresponse bias questions and one observable characteristic of the contacted visitor were used in the pilot to compare respondents with nonrespondents. After being contacted to participate in the survey, an interview, lasting approximately two minutes, was conducted with all contacted visitor groups regardless of whether they agreed to participate. The interview included the following questions used for evaluation of nonresponse bias:

1. How many adults, 18 years and older, are in your group?
2. How many children (under 18 years) are in your group?
3. What type of group are you with? Friends, family, friends and family, or some other type of group?
4. How long is this trip to [park unit] in total, from beginning to end?
5. Does any member of your group have a physical condition that might make it difficult to participate in or access park activities or services? (Asked during the 2015 data collection only.)
6. What is your state of residence (if you live in the U.S.) or country of residence (if do not live in the U.S.)? (Asked during the 2016 data collection only.)

In addition to five, preselected nonresponse bias questions, the gender of the person in the group who was first contacted by the survey administrator was observed and recorded.

An effort was made to obtain answers to the nonresponse bias questions from all visitor groups contacted, including those that declined to participate. Responses were obtained from most of the participating visitor groups and from many, but not all, of those that declined to participate in the study. When the survey administrator was unable to obtain responses to the nonresponse bias questions, it was because the approached contact refused all further contact from the administrator after the initial refusal, usually with no reason provided. These instances were defined as "hard refusals."

Sampling Procedures

For all sampling locations at all NPS units, a specific survey administration point was identified based on analysis of aerial site photos and onsite scoping. Survey administration points were denoted with a yellow star in a site schematic provided to the survey administrator assigned at the site (Figure 1). For the majority of sampling locations, a red line was use in the site schematic to denote the boundary or point at which visitor groups were considered to have entered the survey area and were intercepted for the survey. Using the boundary beyond which visitor groups were eligible for contact in the survey administration procedures resulted in a systematic approach for contacting visitor groups to participate in the study. A red arrow was used in the site schematic to denote the direction of travel in which visitor groups were intercepted. When needed, this survey administration approach was adapted to maximize sampling efficiency at sampling locations in the pilot study.

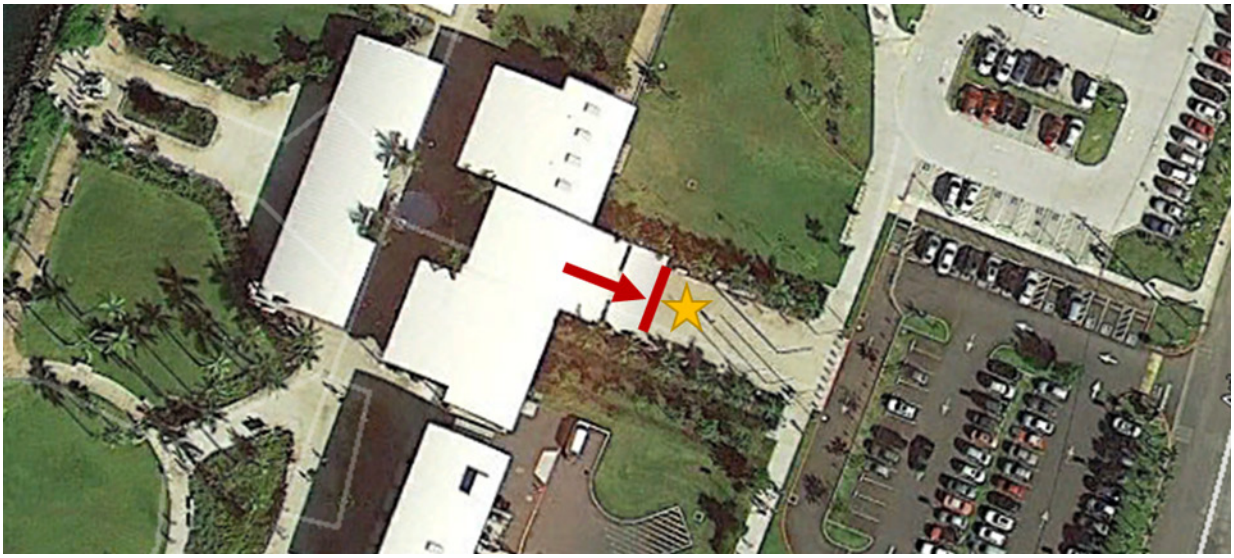

Figure 1. Example of site schematic used for survey administration: Entrance sampling location at VALR

Mail-back survey packets were administered to visitor groups in park units using onsite intercept methods. Visitor groups were intercepted (or contacted) using location-dependent sampling methods. At high-volume sampling locations, a timed-interval approach was used, whereby the survey administrator attempted to sample one visitor group every N minutes, where N is the time interval.

At moderate- to low-volume sampling locations, a "first-after-last" approach was used, whereby the survey administrator attempted to sample the first group to appear at the start of the sampling period and after each completed contact. At low-volume sampling locations, a census-based approach was used to attempt to contact every visitor group during the sampling period. At campgrounds and similarly configured sampling locations (e.g., boat marinas), an interval approach was used to sample every Nth campsite on a circuit (e.g., campground loop) with a randomly selected starting point on the circuit (e.g., randomly select campsite X as the first site to contact, and then contact campsite X+N and so forth, until the circuit was complete). The timed-interval, first-after-last, and census-based approaches were used to contact visitor groups traveling on foot (e.g., at trailheads, Visitor Centers), by motor vehicle (e.g., at entrance gates, boat ramps), or by boat (e.g., alighting from cruise ships, tour boats). Each contacted visitor group was greeted, introduced to the purpose of the study, and asked to participate. If a visitor group agreed to participate, they were asked which member of the group (at least 18 years old) had the next birthday; the individual with the next birthday was asked to complete the questionnaire for the group. This was done to randomize selection of the individual within the group to complete the questionnaire.

Individuals who agreed to complete the questionnaire were asked to provide their name and mailing address. This information was used to send follow-up mailings according to Dillman's (2014) mail-back survey methods. Participating visitors were then administered a mail-back survey packet, which included a booklet-sized questionnaire placed inside of a pre-addressed envelope affixed with a U.S. first-class postage stamp. Visitors were asked to complete the questionnaire after completing their trip to the park unit and to return the questionnaire by mail using the self-addressed postage-paid envelope provided. International visitors were asked to mail their completed questionnaires before leaving the country due to the U.S. first-class postage affixed to the return envelope. Table 5 summarizes the survey effort, by park unit.

Table 5. Number of questionnaires distributed onsite, by park unit

Park Unit	Number of Questionnaires Distributed
ACAD	1,065
GLBA	920
CACO	1,041
BLRI	902
COLO	764
SAAN	670
GLCA	660
GOGA	1,717
BISC	755

Table 5 (continued). Number of questionnaires distributed onsite, by park unit

Park Unit	Number of Questionnaires Distributed
GRCA	974
NIOB	217
GLAC	977
VALR	880
KLGO	876
Total	12,418

Two weeks after field survey administration concluded in each park, all survey participants were sent a color-picture postcard (Appendix 2) thanking them for participating in the study or reminding them to complete and return the questionnaire. Approximately two weeks after mailing the postcards, a replacement mail-back survey packet was sent to everyone who agreed to participate in the study but had not yet returned his or her questionnaire (Appendix 3). Two distinct replacement mail-back survey packets were sent in the mailing, depending on whether the provided address was a U.S. address or an international address. U.S. addresses were sent a packet that included a preaddressed return envelope affixed with a U.S. first-class postage stamp. International addresses were sent a packet that included a preaddressed return envelope printed with international business reply mail postage.

The final number of questionnaires that were completed and returned by visitor groups from each park, and the range of final response rates[2] observed, are presented in Table 6.

Table 6. Number of completed questionnaires, by park unit

	Number of Questionnaires Completed			
Park Unit	U.S. Respondents	International Respondents	Total*	Final Response Rate
ACAD	633	65	734	60%
GLBA	396	130	574	38%
CACO	499	34	580	38%
BLRI	538	17	599	51%

*Total completed does not equal the sum of U.S. and international respondents due to item nonresponse in the questionnaire.

[2] Response rate is the proportion of completed survey questionnaires to total onsite contacts. Calculation of response rate follows American Association for Public Opinion Research (2015) definitions.

Table 6 (continued). Number of completed questionnaires, by park unit

	Number of Questionnaires Completed			
Park Unit	U.S. Respondents	International Respondents	Total*	Final Response Rate
COLO	365	15	410	48%
SAAN	258	16	294	38%
GLCA	233	37	296	38%
GOGA	553	126	736	25%
BISC	221	5	248	22%
GRCA	358	140	533	40%
NIOB	102	1	110	43%
GLAC	492	67	600	56%
VALR	258	63	353	27%
KLGO	299	83	414	38%
Average	372	57	463	40%

*Total completed does not equal the sum of U.S. and international respondents due to item nonresponse in the questionnaire.

Visitor Counts and Weighting of Survey Response Data

Visitor groups contacted during nonpeak periods or at lower use sampling locations had a higher probability of selection for participation in the pilot than visitor groups contacted during peak periods or at higher use sampling locations. To account for these differences in selection probability, the survey data were to be weighted using counts of visitor volumes collected by survey administrators at sampling locations in each park unit.

When required for data weighting, visitor count data were collected for four 30-minute time periods during each sampling day at each site. During each 30-minute visitor count period, the number of visitors who entered the sampling location was counted. These count data were used to weight the survey response data to account for variation in visitor volumes (and corresponding probability of selection for the study) across sampling locations and hours of the day. At some sampling locations where visitor use was too low (i.e., visitor groups were not reliably present for survey administration or counting), an attempt was made to contact all arriving visitor groups. As a result, the number of contacts on the survey contact log forms was assumed to constitute a count of all visitor groups entering the sampling location.

Data Management and Analysis

Data Entry and Cleaning

Data from returned questionnaires were entered into a database using TeleForm, an optical recognition data coding software application. Each questionnaire was scanned and loaded into

TeleForm, which automatically coded responses and highlighted potential coding errors (i.e., values the software algorithm identifies as having been recorded in the process with uncertainty). Potential coding errors were reviewed and corrected by research staff. Corrected data were subjected to additional cleaning and proofing using Microsoft Excel and SPSS statistical software. Data cleaning and proofing included identification and correction of invalid values and complete manual verification of data entry for a randomly selected subset of the completed questionnaires for quality assurance.

Data Analysis

SPSS statistical software was used for data analysis. For all questions where predefined response options were provided, frequencies were reported. For all questions with open-ended response options, verbatim visitor comments were reported in stand-alone visitor comments appendices. For the majority of questions with open-ended response options, thematic codes were applied to the responses to categorize the data. Descriptive statistics for those variables for which measures of central tendency could be computed were presented in an appendix in each report.

Reporting of Park-Specific Results

Survey results were reported independently for each park unit participating in the pilot. Frequencies were presented in chart and tabular formats consistent with previous VSP reports to facilitate a direct comparison of results between years when previous VSP studies were available for the pilot parks. Categorized open-ended response data were reported in tabular format to provide the frequency of occurrence for each theme. In cases where the number of open-ended responses was low, the data were reported in summary bullets rather than in tabular format of categorical results.

Section 3: Lessons Learned from the Pilot Implementation

Transferability of Onsite Sampling Procedures from Park to Park

The survey administration and visitor counting procedures developed for the pilot were observed to be transferable from park to park in the face of the "stress test" scenarios presented in each park unit. Few adaptations to the procedures were necessary. Necessary adaptations were primarily at sampling locations where visitor use was too low to reliably intercept and count visitor groups. Adaptations were also necessary when a single entrance into the survey administration area would create systematic exclusion of user groups in the pilot due to the physical characteristics of the sampling location or the types of visitor use taking place at them. Examples of adaptations included sampling different staircase exit points from the Ocean Beach sampling location in GOGA at different times of day to ensure coverage of all exit points in the study area. In SAAN, a roving circuit through the Acequia Park sampling location was used to contact visitor groups that had entered the sampling location for use of the park green or recreation path. In NIOB, it was decided to change the sampling approach at low-use sampling locations to a "near census" method to see that as many visitor groups were contacted as possible to reach the target number of distributed questionnaires for the park. The minimal need to make adjustment such as these and the observed effectiveness of the developed procedures in all park units indicates that the methods used in the pilot are transferable to other park units that would be included in a long-term program of SEM.

Impacts of Data Weighting for Probability of Selection on Survey Results

As described above, visitor counts at sampling locations were conducted to determine the probability of selection of visitor groups being contacted to participate in the SEM survey at the majority of sampling locations in each park. Results of an assessment of the impacts of data weighting on results in the SEM survey suggested the differences between weighted and unweighted results for the parks included in this assessment are generally inconsequential. Exceptions included questions with small sample sizes; these instances are excluded from the results presented below.

After the 2015 and 2016 pilot field implementation, the procedure for calculating the probability of selection of each contacted visitor group was proving to be time-consuming and costly to the pilot budget. To address these concerns, an assessment of the impacts of weighting visitor groups for probability of selection on survey results was conducted. Weighted and unweighted survey data results were examined for seven of the 14 parks included in the pilot in 2015 and 2016. Specifically, within each park, results for each question in the survey were examined to identify differences between weighted and unweighted frequencies of 5% or greater. For cases with a 5% or greater difference, results were further examined to assess whether the differences affected the findings or interpretation of the results for the question.

Of 636 tables of weighted and unweighted results with sufficient sample sizes that were compared, 564 (89%) of them had differences between weighted and unweighted results of less than 5%, and the differences had no effect on the findings or interpretation of the results. An example of these observations is presented in Table 7.

Table 7. Unweighted and weighted frequencies, Group Size (ACAD)*

Response	Unweighted Frequency	Unweighted Valid Percent	Weighted Frequency	Weighted Valid Percent
5 or more	119	16%	98	13%
4	139	19%	143	20%
3	97	13%	90	12%
2	325	44%	342	47%
1	53	7%	60	8%
Total (n)	**733**	**733**	**n/a**	**n/a**

* For both the weighted and unweighted results, groups of 2 are the most common group size, followed by groups of 4.

Relatively few of the tables reviewed in the assessment (72 of 636, or 11% of tables) had differences between weighted and unweighted results of 5% or greater. For the majority (88%) of those that did, the findings or interpretation of the frequency results were unaffected by the differences (Table 8). In other words, only nine of the 636 (1%) tables had frequencies with different findings or interpretations between weighted and unweighted results (Table 9). However, in all nine of these cases, measures of central tendency for weighted and unweighted responses with and without outliers do not differ substantively (Table 10). As a result, it was decided to discontinue the weighting procedure for the remaining parks in the pilot and to exclude this procedure from the Base Model for a long-term SEM program.

Table 8. Unweighted and weighted frequencies, Information Sources (ACAD)*

Label	Unweighted Frequency	Unweighted Valid Percent	Weighted Frequency	Weighted Valid Percent
Park website	358	49%	375	55%
Friends/relatives/ word of mouth	338	46%	353	52%
Previous visits	364	50%	309	45%
Maps/brochures	296	40%	284	42%
Travel guides/ tour books	194	27%	199	29%
Other website	110	15%	129	19%
Local businesses	52	7%	78	12%
Government centers	67	9%	52	8%

* For both the weighted and unweighted results, the most frequently used information sources are the park website, friends/relatives/word of mouth, previous visits, and maps/brochures.

Table 8 (continued). Unweighted and weighted frequencies, Information Sources (ACAD)*

Label	Unweighted Frequency	Unweighted Valid Percent	Weighted Frequency	Weighted Valid Percent
Newspaper/magazine articles	53	7%	37	5%
Social media	29	4%	33	5%
Park via phone, mail, or email	27	4%	33	5%
Other NPS units	18	2%	20	3%
TV/radio/DVD	3	<1%	11	2%
School class/program	9	1%	6	<1%
Other information source	45	6%	42	6%

* For both the weighted and unweighted results, the most frequently used information sources are the park website, friends/relatives/word of mouth, previous visits, and maps/brochures.

Table 9. Unweighted and weighted frequencies, Number of Nights in Lodging Outside the Park (GLCA)

Label	Unweighted Frequency	Unweighted Valid %	Weighted Frequency	Weighted Valid %
5 or more	19	18%	27	24%
4	8	8%	9	8%
3	13	13%	12	11%
2	24	23%	20	18%
1	40	38%	42	39%
Total (n)	**104**	**109**	**n/a**	**n/a**

Table 10. Unweighted and weighted means and medians, Number of Nights in Lodging Outside the Park (GLCA)

Category	Mean w/ outliers	Median w/ outliers	Mean w/o outliers	Median w/o outliers
Weighted	1.52	0	1.27	0
Unweighted	1.35	0	1.1	0

Response to Survey from International Visitor Groups

All visitor groups who had yet to complete and return questionnaires by the time of the replacement mailing were sent a replacement questionnaire to complete, regardless of their state or country of residence. Costs associated with postage for sending international participants replacement questionnaires and receiving completed questionnaires for data entry in the U.S. were higher than

costs incurred for domestic participants. Table 11 presents the final completion rates for international visitor groups who agreed to participate onsite. The average number of questionnaires completed and returned by international respondents at the time of the replacement mailing was 41% of questionnaires distributed onsite, and the average number of questionnaires completed and returned by international participants was 57% of questionnaires distributed. This indicates that the additional cost to send international participants replacement questionnaires with international business reply mail postage resulted in a 16% increase in the number of questionnaires completed and returned by international participants. This finding also suggests that international respondents should continue to receive a replacement questionnaire in a future program of SEM.

Table 11. Response to survey from international visitor groups

Park Unit	Number Distributed Onsite	Number of Replacements Mailed	Percent Completed and Returned at Time of Mailing	Final Number Completed and Returned	Final Percent Completed and Returned
ACAD	69	25	64%	65	94%
GLBA	266	146	45%	130	49%
CACO	82	56	32%	34	41%
BLRI	25	17	32%	17	68%
COLO	25	18	28%	15	60%
SAAN	27	15	44%	16	59%
GLCA	111	78	30%	37	33%
GOGA	414	322	22%	126	30%
BISC	7	5	29%	5	71%
GRCA	272	156	43%	140	51%
NIOB	1	0	100%	1	100%
GLAC	132	90	32%	67	51%
VALR	163	107	34%	63	39%
KLGO	189	123	35%	83	44%
Average	**n/a**	**n/a**	**41%**	**n/a**	**57%**

Number of Replacement Mailings

As mentioned previously, a replacement mail-back survey packet was sent to everyone who agreed to participate in the study but had not yet returned their questionnaire. The decision to send a single replacement was based on funds available to implement the pilot, with acknowledgment that previous VSP studies commonly included two replacement mailings in their mail-back methodology. In a meta-analysis of VSP response rates over time (Rookey, Littlejohn, & Dillman, 2012), using two

replacement mailings resulted in a final average response rate near 70% for studies completed in 2007 (the most recent year referenced in the meta-analysis). Further, Rookey, et al. suggest that the observed average final response rates would have decreased more over time, if not for using two replacement mailings, when compared to a period in VSP implementation where a single or no replacement mailing was sent. In the SEM pilot, the highest final response rate observed after two seasons of data collection was 60% at a single park, with an average of 41% across the 14 park units. These results suggest that two replacement mailings would be beneficial to increasing final response rates of the SEM survey at individual park units and the final response rate for all parks sampled each year.

Response to Survey from Non-English-Speaking Visitor Groups

As mentioned above, the SEM questionnaire was primarily administered to visitor groups in English; however, additional languages were available for survey administration at park units where a substantive proportion of visitors were expected to speak or read languages other than English. Correspondingly, Spanish and Cantonese questionnaires were available for survey administration at GOGA, and Japanese questionnaires were available for survey administration at VALR. Bilingual survey administrators for Spanish-English (three administrators) and one Cantonese-English survey administrator were hired for the pilot implementation at GOGA, in addition to one English-only survey administrator. Non-English language questionnaires were available for distribution at all sampling locations in the park. At VALR, the single survey administrator only spoke English. The survey administrator at VALR made the Japanese questionnaire option visible to visitor groups when it was expressed that they did not speak English well or indicated they were from Japan.

At both parks, few visitor groups were administered non-English questionnaires (Table 12), and no Cantonese surveys were administered at GOGA, during the sampling periods. Of 26 Spanish surveys administered at GOGA, approximately one-fifth were completed and returned, while two of the four Japanese surveys administered at VALR were completed and returned.

Table 12. English and Non-English questionnaires distributed and returned in pilot and similar, concurrent visitor studies

	Number of English Questionnaires		Number of Non-English Questionnaires	
Park Unit	**Distributed**	**Returned**	**Distributed**	**Returned**
GOGA	1,696	731	26	5
VALR	876	353	4	2
SAFR	803	393	10	3
YELL	1,969	1,232	61	25

In similar studies conducted outside of the pilot implementation for SEM, comparable results for participation by non-English-speaking visitor groups were observed. In a 2017 visitor use study (VUS) at San Francisco Maritime National Historical Park (SAFR), 10 Spanish language

questionnaires were distributed and three were returned. Surveys were administered at three locations in the park, with a bilingual English-Spanish-speaking administrator staffed at one sampling location and an English-speaking administrator staffed at the other locations. Spanish questionnaires were available for distribution at all sampling locations. Similarly, in a 2016 VUS at Yellowstone National Park (YELL), 61 Mandarin-language questionnaires were distributed, and 25 questionnaires were returned. Surveys were administered at five entrance stations in the park; one entrance was staffed with two survey administrators, an English-speaking administrator and an English-Mandarin-speaking administrator, while all other entrances had a single, English-speaking administrator. Mandarin-language questionnaires were available for distribution at all sampling locations. English-speaking administrators were observed to be as effective at distributing Mandarin-language questionnaires as the English-Mandarin-speaking administrator; this suggests that multilingual survey administrators are not necessary to increase non-English language survey distribution.

While results from GOGA, SAFR, and YELL suggest the presence of bilingual survey administrators increased costs for implementation at these parks for a nominal gain of non-English-speaking respondents in the sample, it is evident that having additional languages available for distribution was warranted in these three parks. It is possible that additional resources could be beneficial to increase SEM survey distribution to non-English-speaking visitor groups to NPS units. Additional resources could include supporting materials for survey administration, like translated interview scripts and nonresponse bias question prompts, that would be presented to visitor groups to aid nonverbal communication about the study to non-English-speaking contacts.

Section 4: SEM Program Base Model and Potential Enhancements

The experiences and lessons learned during the pilot implementation informed the development of a Base Model for a long-term SEM program by NPS SSP and RSG. The Base Model includes specifications that meet minimum requirements for a scientifically rigorous and robust SEM program. In addition to these minimum requirements, potential enhancements to the Base Model were identified if additional funding beyond the Base Model was made available for the program. The Base Model with potential enhancements is presented in matrix format below and the specifications are subsequently described.

Definition of the Base Model

Table 13 presents the specifications that define the Base Model and potential enhancements. As mentioned above, the Base Model includes specifications that meet minimum requirements for a scientifically rigorous and robust SEM program. The Base Model is defined or specified with respect to nine SEM program dimensions.

Table 13. Dimensions of a Base Model with potential enhancements

Dimension	Base Model	Potential Enhancements
Park Unit Selection	Sampling-based selection without replacement within stratum	Not applicable
Survey Instrument	Mail-back questionnaire booklet stuffed in preaddressed, postage-paid envelope	Not applicable
	English and Spanish languages	Additional languages, like Japanese, Mandarin, and Korean
Park Units per Year	Based on targets for margin of error and number of years for national rollup	Not applicable
Seasonality	Peak season only	Not applicable
Sampling Effort	• 2 scoping days • 10 sampling days • 5 sampling sites	Additional scoping days, sampling days, or sampling sites
Target Sample Size	400 completed questionnaires (90% of park units) 800 completed questionnaires (10% of park units)	Increased target number of completed questionnaires

[a] Field staff size would be doubled in 10% of park units as part of the Base Model to meet increased sample size needs.

[b] Visitor spending profiles analyses that would be completed by NPS SSP are not included in RSG's cost estimate for the Base Model.

Table 13 (continued). Dimensions of a Base Model with potential enhancements

Dimension	Base Model	Potential Enhancements
Replacement Mailing	One replacement mailing	Two replacement mailings Web-based response option
Field Team Staffinga	• 1 Social Science Specialist (5 days) • 1 Interview Specialist 2 (13 days) • 2 Interview Specialist 1 (12 days)	Additional field team staffing
	English-speaking only	Not applicable
Analysis	Descriptive summaries of survey responses per SEM pilot park reports	Not applicable
	National-level descriptive summaries of survey responses accumulated and combined from each park unit in each year of implementation Data weighted for national summary, based on NPS unit visitation data	Data weighted to account for within-park probability of selection based on group size or other factors (e.g., weekend versus weekday contact, number of sampling sites visited)
	Nonresponse bias analysis per SEM pilot park reports • Park-level comparison of respondent and nonrespondent characteristics • Park-level comparison of survey responses for key questions	Not applicable
	VSE analysis for visitor spending profiles[b]	Not applicable

[a] Field staff size would be doubled in 10% of park units as part of the Base Model to meet increased sample size needs.

[b] Visitor spending profiles analyses that would be completed by NPS SSP are not included in RSG's cost estimate for the Base Model.

Park Unit Selection, Sampling Interval, and Number of Park Units Sampled per Year

The Base Model selection of park units for participation in the SEM program would occur yearly and be sampling-based. Twenty-four park units that are representative of the National Park System would be sampled each year. This number is a function of considerations regarding margins of error for a national representation within a reasonable number of years and regional representation with somewhat more relaxed targets for margins of error or number of years.[3] All NPS units would be

[3] At 24 units per year, the margins of error on annual national estimates will be narrow enough for many practical uses. For some policy purposes, more precise estimation may be needed, in which case data from two or more consecutive years can be pooled. At the stratum level, three units per year will yield margins of error too wide for

sampled without replacement within stratum until all NPS units classified within the same stratum as the selected park have participated. In other words, once an NPS unit is selected to participate, it would not participate again until all NPS units classified within the same stratum as the selected park have participated. If a park is not selected for participation that year, it remains eligible for selection for participation in subsequent years, until it is selected. The sampling design, including sampling strata, number of park units in each stratum, and years for full inclusion of each stratum are summarized in Table 14.

Table 14. SEM Base Model Sampling Design

Stratum		Number of Parks		
First Level	**Size**	**Population**	**Sampled Each Year**	**Years to Full Inclusion**
Natural Resources (NR)	Small	72	3	24
	Large	29	3	10
Historic/Cultural, Urban (HU)	Small	82	3	28
	Large	24	3	8
Historic/Cultural, Other (HO)	Small	83	3	28
	Large	34	3	12
Recreational (RA)	Small	35	3	12
	Large	17	3	6

Survey Method and Replacement Mailing

In the Base Model, the SEM program would use the mail-back survey administration procedures implemented in the pilot. All participating visitor groups would be asked to provide their mailing address to receive a postcard reminding them to complete their questionnaires approximately two weeks after the conclusion of survey administration at the park unit. A single replacement mailing would be mailed to all visitor groups approximately four weeks after the conclusion of survey administration.

A potential enhancement could include two replacement mailings to increase final response rates to the SEM survey. Additionally, a web-based version of the survey could be available to participants as an alternative to completing a hardcopy mail-back questionnaire; if NPS considers incorporating a web-based survey option for respondents, it might be advisable to do so, initially, on a trial basis to evaluate its effect on response rates.

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most purposes, and pooling across years may be essential. In either case, the concept of combining multiple years of SEM data to improve the utility of the SEM data is an underpinning of the sampling and analysis design.

Survey Instrument

The Base Model of a SEM program would use a standardized questionnaire that would be administered in each NPS unit. As in the pilot, minimal, park-specific tailoring of question prompts to ensure consistency of the survey instrument with park policies, programs, services, and activities would be permitted. Versions of the questionnaires would be available in both English and Spanish, in alignment with NPS communication, marketing, and relevance goals related to Spanish-speaking populations. Correspondingly, supporting materials for survey administration, like interview scripts and nonresponse bias question prompts, would be available in both languages. NPS should consider how to shorten the survey instrument or use matrix sampling to increase final response rates.

A small number of additional languages for the survey instrument, like Japanese, Mandarin, and Korean, could be available as a potential enhancement.

Seasonality, Sampling Effort, and Target Sample Size

In the Base Model, sampling occurs during a single, peak season at each NPS unit.[4] The sampling effort would include two days for onsite scoping of sampling locations and training survey administrators on survey administration procedures. Survey administration would occur over 10 sampling days, and a maximum of five sampling locations would be included for survey administration. Each sampling location would be sampled a minimum of three days, with a mix of weekdays and weekend days. Ninety percent (90%) of park units would have a target of approximately 800 questionnaires distributed onsite, and 400 completed questionnaires; 10% of park units would have a target of approximately 1,600 questionnaires distributed onsite, and 800 completed questionnaires.

Data Collection Team Staffing

In the Base Model, three survey administrators would complete data collection in each park unit to ensure coverage of sampling locations during the sampling period. All survey administrators would be English-speaking only, provided via external sources (e.g., contracted staff), rather than involving park staff, and directed to operate according to a Field Monitoring Guide and onsite training and oversight, for quality assurance. Sampling staff would be doubled in the 10% of park units with a target of 800 completed questionnaires.

Bi- or multi-lingual survey administrators could be available as a potential enhancement to the Base Model.

Analysis of Results

Park-wide, descriptive summaries of survey responses would be reported for each NPS unit that participates in a given year, in addition to a cumulative, annual national summary report with descriptive summaries of survey responses aggregated from each park unit in each year of implementation of SEM. Survey responses would not be weighted for park-level reports, but would

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[4] The peak use period was selected as the target for SEM sampling to characterize visitor uses and users during the period when most visits occur and because current financial resources do not allow for sampling across multiple seasons of the year.

be weighted for the annual national summary, based on visitation statistics for each NPS unit. For park-wide reports, a nonresponse bias analysis would be completed that compares characteristics of respondents and nonrespondents and examines effects of characteristics on survey responses for key questions in the SEM survey instrument. Additionally, select questions from the survey instrument would be used to develop visitor spending profiles at each park unit and measure visitor spending effects at the park, regional, and national levels.[5]

[5] Visitor spending profiles analyses would be completed by NPS SSP and are not included in RSG's cost estimate for the Base Model.

Section 5: Rough Order of Magnitude Cost Estimate for the Base Model

The ROM external vendor annual cost for the Base Model is approximately $2,670,000 per year in 2017 dollars. The ROM annual cost for NPS internal project management is approximately $187,000. The ROM annual cost estimate assumes sampling at 24 park units per year; it includes a target of 400 completes per park unit in 90% of parks sampled and 800 completes per park unit in 10% of parks sampled. More specifically, the ROM annual cost estimate is based on the following annual workflow:

1. Sampling site selection and schedule for data collection
    a. Scoping calls with park staff
    b. Identifying sampling sites
    c. Establishing sampling schedule
2. Park coordination
    a. Application for park research permit
    b. Coordination with park point of contact prior to arrival
    c. Limited park-specific customization of questionnaire and instruments
3. Staffing
    a. Field team staff recruitment
    b. Field team travel arrangements
    c. Field team coordination and training prior to arrival
4. Logistics
    a. Preparation of staffing schedule and logistics plan
    b. Coordination with printing vendor
    c. Assembly and shipping of materials, supplies, and equipment
5. Onsite
    a. Onsite scoping and training (2 days)
    b. Onsite data collection (10 days)
    c. Daily sample tracking, debriefing, and study materials management
    d. Return shipping of materials, supplies, equipment, and data
6. Mail-back survey management
    a. Postcard reminder mailing (1)
    b. Replacement questionnaire mailing (1)
7. Data management
    a. Database and codebook development

    b. Data entry
    c. Data quality assurance/quality control and cleaning
8. Analysis and reporting
    a. Park-specific data analysis and reporting
    b. National-level data weighting, analysis, and reporting
    c. Annual web conference seminar presenting national-level results

The ROM annual cost estimate does not include one-time costs that would be associated with launching an NPS SEM survey, which include, but are not necessarily limited to, the following:

1. Survey instrument, log form, and methods revisions based on the SEM pilot.
2. OMB clearance for revised instruments, forms, and methods (as needed).
3. Sampling tool for selection of park units for data collection, by program year.

Some of the most likely potential enhancements include the following:

1. Additional number/percentage of park units with increased field staff size and target number of completes.
2. Web-based survey option available.
3. Additional number of sampling sites for a proportion of NPS units.
4. Additional number of languages available for the questionnaire and supporting survey administration materials.

Conclusion

NPS has demonstrated a long-term need for a program of systematic SEM in the National Park System. NPS SSP and RSG developed and conducted a pilot implementation of such a program in 14 NPS units and specified the essential components of a Base Model for long-term implementation of a SEM program based on findings and results from the pilot. The Base Model would include robust sampling procedures to select NPS units for primary data collection in each program year and to select visitor groups onsite in park units for participation in the survey. After one year of implementation, results from the Base Model program would be sufficient for park-specific summaries and national-level analyses to represent the National Park System. Thereafter, the data from two or more consecutive years of implementation could be aggregated to reduce the margin of error in national summaries and in subsample analyses (e.g., comparisons across park types or visitor demographics). Subsequent years of the program would generate data that allow for observation of National Park System-wide trends.

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Appendix 1. Standardized Version of the Questionnaire

Social Science Program
National Park Service
U.S. Department of the Interior

[Specify Park Name]

Visitor Study

2016

Paperwork Reduction and Privacy Act Statements: The Paperwork Reduction Act requires us to tell you why we are collecting this information, how we will use it, and whether or not you have to respond. This information will be used by the National Park Service as authorized by 16 USC 5931 §201. We will use this information to evaluate visitor services and facilities managed by the National Park Service. Your responses are voluntary and anonymous. Your name and address have been requested for follow-up purposes only. At the completion of this collection all names and personal information will be destroyed and in no way be connected with the results of this survey. A Federal agency may not conduct or sponsor and you are not required to respond to, a collection of information unless it displays a currently valid OMB Control Number.

Burden Estimate: We estimate that it will take an average of 20 minutes to complete this questionnaire. You may send comments concerning the burden estimates or any aspect of this information collection to the Social Science Program Chief, National Park Service, 1201 Oakridge Drive, Fort Collins, CO, 80525-5596; nps_nrss_social_science@nps.gov (email).

OMB Approval 1024-0224
Current Expiration Date: 5-30-2019

United States Department of the Interior

NATIONAL PARK SERVICE
1849 C Street, N.W.
Washington, DC 20240

[Season, Year]

Dear National Park Visitor:

Thank you for participating in this study. Our goal is to learn about the expectations, opinions, and interests of visitors to the National Park System. This information will assist us in our efforts to better manage this park and to serve you.

This questionnaire is only being given to a select number of visitors, so your participation is very important. It should take about 20 minutes to complete after your visit.

When your visit is over, the adult in your group who will have the next birthday should complete this questionnaire. Seal it in the postage-paid envelope provided and drop it in any U.S. Postal Service mailbox.

If you have any questions, please contact the Social Science Program Chief, National Park Service, 1201 Oakridge Drive, Fort Collins, CO, 80525-5596; nps_nrss_social_science@nps.gov (email).

We appreciate your help.

Sincerely,

Jonathan B. Jarvis
Director

RETURN PROCEDURE

At the end of your visit:

1. Please have the adult in your group (at least 18 years old) who has the next birthday complete this questionnaire. That will help give us a statistically reliable sample.

2. For questions that use circles (O), please mark your answer by filling in the circle with ***black or blue ink***. Please do not use pencil.

Like this: ● Not like this: ✔ ✗ ∅ ⊙

3. Seal it in the postage-paid envelope provided.

4. Drop it in a U.S. Postal Service mailbox.

DIRECTIONS

Please have the adult in your group (at least 18 years old) having the next birthday complete this questionnaire.

In this questionnaire, your **personal group** is defined as you and anyone with whom you visited [NPS site] on this trip, such as a spouse, family, friends, etc. This does not include the larger group that you might have traveled with, such as a school, church, scout, or tour group.

A **visit** is defined as the day in which you were contacted to complete this questionnaire. A **trip** is defined as the total extent of time away from your personal residence that could include multiple visits to [NPS site].

A. Trip Description

1. Including yourself, how many people were in your personal group during your visit to [NPS site] on the day you were contacted for this survey?

   _____ Number of adults (18 years or older)

   _____ Number of children (under 18 years)

2. What type of group were you with, during your visit to [NPS site] on the day you were contacted for this survey? Please mark (●) **one**.

   O Alone
   O Friends
   O Family
   O Family and friends
   O Other (Please specify) _____

3. Please indicate all of the forms of transportation you personally used to travel from your home to [NPS site], on this trip. Please mark (●) **all that apply**.
   - O Car, truck, or SUV (Number of people in vehicle, including you) _____
   - O Recreational vehicle or motorhome
   - O Airplane
   - O Tour bus or tour van
   - O City bus or subway
   - O Train or long-distance passenger bus
   - O Water-based transportation (Please mark (●) **all that apply**.)
     - O Cruise ship
     - O Ferry
     - O Tour boat
     - O Other water-based mode (Please specify) _____
   - O Bicycle
   - O Walk/hike
   - O Other (Please specify) _____

4. Approximately how many hours and miles from home did you travel one way to get to [NPS site] on this trip?

   _____ Number of hours

   AND

   _____ Number of miles

5. On this trip to [NPS site], which one of the following entrance fees applied to you personally? Please mark (●) **one**.
   - O Did not pay a fee or use a pass to enter the park
   - O 7-day entrance pass
   - O Annual Pass for [NPS site]
   - O America the Beautiful – National Parks and Federal Recreational Lands
   - O Senior Pass, Access Pass, or Military Pass
   - O Fee included in tour package
   - O Don't know/Not sure
   - O Other (Please specify) _____

6. On how many days during this trip did you enter or re-enter [NPS site]? If you were on a day trip or if you camped or lodged inside the park and did not leave the park boundaries for the entire length of your stay, then answer 1 day.

_____ Number of days entering or re-entering [NPS site]

OR

O Don't know/Not sure

7. On this trip, how much total time did you spend within [NPS site]?

_____ Number of hours, if a day trip

_____ Number of days, if greater than 1 day

B. Trip Planning and Motivations

8. Prior to this trip, how did you obtain information about [NPS site]? Please mark (●) **all that apply**.

O Did not obtain information prior to this visit
O Previous visits
O Friends/relatives/word of mouth
O Inquiry to park via phone, mail, or email
O [NPS site] website [(nps.gov/XXXX)]
O Other website (Please specify) _____
O Local businesses (hotels, motels, restaurants, etc.)
O Maps/brochures
O Newspaper/magazine articles
O Other units of the National Park System (NPS)
O School class/program
O Social media (such as Facebook, Twitter, etc.)
O State welcome center/visitors bureau/chamber of commerce
O Television/radio programs/DVDs
O Travel guides/tour books (such as AAA, etc.)
O Other (Please specify) _____

9. Did you have the information about [NPS site] you needed on this trip? Please mark (●) **one**.

O Yes

O No (Please specify information you needed but didn't have on this trip.)

_____

_____

_____

10. How important to you was each of the following reasons for visiting [NPS site] on this trip? Please mark (●) **one for each row**.

	Extremely Important	Very Important	Moderately Important	Slightly Important	Not at All Important
To visit a National Park Service site	O	O	O	O	O
To spend time with friends/family	O	O	O	O	O
To view wildlife or natural scenery	O	O	O	O	O
To get physical exercise	O	O	O	O	O
To relax	O	O	O	O	O
To learn more about American history and culture	O	O	O	O	O
To learn more about nature	O	O	O	O	O
To attend a special event (Please specify) _____	O	O	O	O	O
To hear the sounds of nature/quiet	O	O	O	O	O
To experience solitude	O	O	O	O	O
To be outdoors	O	O	O	O	O
To view dark night sky/stars	O	O	O	O	O
Other (Please specify) _____	O	O	O	O	O

11. Of the reasons listed in Question 10, which was the <u>most important reason</u> for you to visit [NPS site] on this trip?

_____

C. Park Activities, Programs, and Services

12. On this trip, in which of the following activities did you personally participate within [NPS site]? Please mark (●) **all that apply**.

- O Viewing wildlife, natural features, scenery, wildflowers, etc.
- O Creative arts (photography/drawing/painting/writing)
- O Visiting a cultural or historic site
- O Nature study
- O Driving for pleasure
- O Walking/short hike (less than 1 hour)
- O Day hiking (1 hour or more)
- O Bicycling
- O Running/jogging
- O Fishing
- O Non-motorized water travel (rafting, kayaking, canoeing, tubing, etc.)
  Please specify: _____
- O Motorized water travel (boating, jet skiing, etc.)
  Please specify: _____
- O Camping in developed sites
- O Overnight backpacking
- O Overnighting in resort, cabin, or other accommodations in [NPS site]
- O Family gathering/reunion
- O Picnicking
- O Water play (swimming, snorkeling, scuba diving, etc.)
  Please specify: _____
- O Hunting/trapping
- O Foraging/collecting edibles (e.g., mushrooms, truffles)
- O Rock climbing/bouldering
- O Mountaineering
- O Other (Please specify) _____
- O Other (Please specify) _____
- O Other (Please specify) _____

13. Of the activities listed in Question 12, which was your primary activity during your visit to [NPS site] on the day you were contacted for this survey?

_____

OR O I did not have a primary activity on this trip to [NPS site].

14. On this trip, in which of the following programs and services did you personally participate within [NPS site]? Please mark (●) **all that apply**.

O Attending a ranger-led activity, such as a tour or talk
O Talking informally with a ranger
O Viewing outdoor exhibits
O Viewing indoor exhibits
O Attending a cultural demonstration or performance
O Reading the park brochure or newspaper
O Going to the Visitor Center
O Watching movies or videos about the park
O Participating with a child in your group in the Junior Ranger program
O Obtaining National Park passport stamp
O Listening to an audio tour or podcast
O Using a smart phone app specific to [NPS site]
O Other (Please specify) _____

15. On this visit to [NPS site], did you learn anything from park staff, programs, and/or exhibits about American history, nature, and/or culture? Please mark (●) **one**.

O Yes (Please specify subjects you learned about.)

_____

_____

_____

O No

16. If you were to visit [NPS site] in the future, are there specific subjects you would like to learn about? Please mark (●) **one**.

O Yes (Please specify subjects you would like to learn about.)

_____

_____

_____

O No

17. How important to you was it during your visit to [NPS site] to use personal electronic devices to do each of the following, and how would you rate the quality of the service in [NPS site] required to do each? For each item, please mark (●) **one for importance and one for quality of service needed**.

	IMPORTANCE					QUALITY OF SERVICE REQUIRED					
	Extremely Important	Very Important	Moderately Important	Slightly Important	Not at all Important	Very Good	Good	Average	Poor	No Service At All	Not Applicable
Make/receive cell phone call	O	O	O	O	O	O	O	O	O	O	O
Send/receive text message	O	O	O	O	O	O	O	O	O	O	O
Search the internet	O	O	O	O	O	O	O	O	O	O	O
Share pics/videos/audio via social media (Facebook, Twitter, etc.)	O	O	O	O	O	O	O	O	O	O	O
Download an NPS podcast	O	O	O	O	O	O	O	O	O	O	O
Other (Please specify) _____	O	O	O	O	O	O	O	O	O	O	O

18. a) Did anyone in your personal group have a physical condition that made it difficult to access or participate in park activities or services, during your visit to [NPS site]? Please mark (●) **one**.

O Yes

O No ➔ **Go to Question 19**

b) If YES, what activities, services, or facilities did the person(s) have difficulty participating in or accessing? Please be specific.

_____

_____

_____

c) Because of the physical condition, which specified difficulties did the person(s) have? Please mark (●) **all that apply**.

O Hearing (difficulty hearing ranger programs, bus drivers, audio-visual exhibits or programs, or information desk staff even with hearing aid)

O Visual (difficulty in seeing exhibits, directional signs, visual aids that are part of programs even with prescribed glasses or due to blindness)

O Mobility (difficulty in accessing facilities, services, or programs even with walking aid and/or wheelchairs)

O Other (Please specify) _____

19. What did you like most about your visit to [NPS site]?

_____

_____

_____

20. What did you like least about your visit to [NPS site]?

_____

_____

_____

21. Did your visit to [NPS site], on this trip, meet your expectations? Please mark (●) **one**.

- ○ Yes
- ○ Not entirely (Please explain)

_____

_____

_____

- ○ Not at all (Please explain)

_____

_____

_____

D. Park Management

22. To what extent do you agree or disagree with each of the following statements? Please mark (●) **one for each row**.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Don't Know / Not Sure
[NPS site] is a safe place to visit	O	O	O	O	O	O
[NPS site] is too crowded	O	O	O	O	O	O
Natural resources in [NPS site] are in pristine condition	O	O	O	O	O	O
The entrance fee for [NPS site] is too high	O	O	O	O	O	O
Vandalism and crime are not a problem in [NPS site]	O	O	O	O	O	O
[NPS site] is not accessible to persons with physical disabilities	O	O	O	O	O	O
Historical and cultural features in [NPS site] are well maintained/preserved	O	O	O	O	O	O
Development of adjacent areas detracts from visitors' experiences at [NPS site]	O	O	O	O	O	O

23. How would you rate the quality of the facilities, services, and recreational opportunities in [NPS site]? Please mark (●) **one for each row**.

Park Facilities	Very Good	Good	Average	Poor	Very Poor	Not Used or Not Available
Visitor center	O	O	O	O	O	O
Exhibits (indoor and outdoor)	O	O	O	O	O	O
Restrooms	O	O	O	O	O	O
Walkways, trails, and roads	O	O	O	O	O	O
Campgrounds and/or picnic areas	O	O	O	O	O	O
Visitor Services						
Assistance from park employees	O	O	O	O	O	O
Park map or brochure	O	O	O	O	O	O
Ranger programs	O	O	O	O	O	O
Value for entrance fee paid	O	O	O	O	O	O
Commercial services in the park (food, lodging, gifts, rental, etc.)	O	O	O	O	O	O

Please specify services used: _____

Recreational Opportunities						
Learning about nature, history, or culture	O	O	O	O	O	O
Outdoor recreation (sightseeing, camping, bicycling, boating, hiking, etc.)	O	O	O	O	O	O

24. Overall, how would you rate the quality of the facilities, services, and recreational opportunities in [NPS site]? Please mark (●) **one**.

- O Very good
- O Good
- O Average
- O Poor
- O Very poor

25. This park was established because of its significance to the nation. In your opinion, what is the national significance of this park?

_____

_____

_____

E. Expenditures

Please refer to the map when answering the questions in this section.

Place holder for map

26. Do you live within the nearby area (within the shaded area shown on the map)? Please mark (●) **one**.

O Yes

O No

27. a) On this trip to [NPS site] and the nearby area, did you stay overnight away from your permanent residence either inside [NPS site] or within the nearby area (within the shaded area of the map on p.12)? Please mark (●) **one.**

O Yes

O No ➔ **Go to Question 28**

b) If **YES**, please list the number of nights you stayed in [NPS site] and/or in the nearby area (within the shaded area of the map on p.12) on this trip.

Accommodation	Number of Nights
Backcountry camping in [NPS site]	_____
Camping in [NPS site]	_____
Camping outside [NPS site]	_____
Lodging in [NPS site]	_____
Lodging outside [NPS site]	_____
Cruise ship	_____
Other accommodations (e.g., friends/relatives)	_____

28. Was this trip to [NPS site]? Please mark (●) **one**.

O Your primary or sole purpose of your trip away from home?

O One of several equally important destinations on your trip away from home?

➔ Was one or more of the other equally important destinations located within the nearby area (within the shaded area of the map on p.12)? Please mark (●) **one**.

O Yes

O No

O Just an incidental or spur of the moment stop on your trip away from home?

➔ Was your primary destination located within the nearby area (within the shaded area of the map on p.12)? Please mark (●) **one**.

O Yes

O No

29. Did you visit any other National Park Service sites on your trip away from home? Please mark (●) **one**.

O Yes (Please specify)

_____

_____

_____

O No

30. a) Did you or anyone in your personal group purchase any package tours that included at least some meals, some lodging, and/or some transportation while on this trip?

O Yes

O No ➔ **Go to Question 31**

b) What was the total length of your package tour(s)? #_____days

c) What was the total cost per person for the package tour(s)?

$_____per person

d) How many people in your personal group were on the package tour(s)?

#_____people

e) Which of the following were included in the package tour(s) as part of your visit to [NPS site] and the nearby area (within the shaded area of the map on p.12)? Please mark (●) **all that apply**.

	Items included in your package tour(s) as part of your visit to [NPS site] and nearby area
Local air transportation	O
Local ground transportation	O
Local water transportation	O
Local lodging	O
Meals	O
Guide services	O
Fees (e.g., fishing licenses)	O
Gear (e.g., camping equipment, bikes, kayaks)	O
Admission to events or attractions	O
Other (Please specify) _____	O

31. Please estimate how much you and your personal group with whom you shared expenses (e.g., other family members, traveling companions) spent both inside [NPS site] and within the nearby area (within the shaded area of the map on p.12) during your time in the nearby area. If you reported expenditures for package tours, please only include individual expenses that were NOT part of your package tour(s).

If you no longer have your receipts, estimate as closely as you can how much you and your group spent. Please enter 0 (zero) if you did not spend any money in a particular category.

Note: Residents living within the highlighted area of the map should only include expenditures that were directly related to this trip to [NPS site].

Expenses	Amount spent in [NPS site] and nearby area
Park entrance fee	$_____
Gas and oil (e.g., auto, RV, boat, etc.)	$_____
Rental cars	$_____
Taxis, shuttles, and public transportation	$_____
Restaurants and bars	$_____
Groceries and convenience foods	$_____
Hotels, motels, resorts	$_____
Specialty lodging (e.g., B&Bs, hostels, cabins, vacation rentals)	$_____
Camping fees (tent, RV)	$_____
Recreation and entertainment expenses (e.g., movies, bowling, miniature golf, etc.)	$_____
Souvenirs, clothing, supplies, other retail	$_____
Equipment rental	$_____
Guides and tour fees	$_____
Other (Please list) _____	$_____

OR

O Don't know/Not sure

32. For you and any members of your personal group with whom you shared expenses, please record any additional money spent outside of the map area during your trip away from home (for example, travel or food expenditures).

$ _____

OR

O Don't know/Not sure

33. a) Including yourself, how many people in your personal group were covered by the expenses for this trip away from home?

_____ Number of adults (18 years or over)

_____ Number of children (under 18 years)

b) Including yourself, how many people in your group split these trip expenses?

_____ Number of people

F. Background

34. For your personal group during your visit to [NPS site] on the day you were contacted for this survey, please provide the following information. (**If you don't know the answer, enter "DK."**)

	Current Age	U.S. ZIP code or name of country other than U.S.	Number of visits to [NPS site] in last 12 months, including this trip	Number of visits to other NPS sites in the last 12 months
Yourself	_____	_____	_____	_____
Member #2	_____	_____	_____	_____
Member #3	_____	_____	_____	_____
Member #4	_____	_____	_____	_____
Member #5	_____	_____	_____	_____
Member #6	_____	_____	_____	_____
Member #7	_____	_____	_____	_____

35. For your personal group during your visit to [NPS site] on the day you were contacted for this survey, please provide the following information. Please mark (●) **one for each group member, including yourself, for gender and Hispanic or Latino. (If you don't know the answer, mark (●) "Don't know.")**

		Additional members of your personal group					
	Yourself	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**
Male	O	O	O	O	O	O	O
Female	O	O	O	O	O	O	O
Hispanic or Latino	O	O	O	O	O	O	O
Not Hispanic or Latino	O	O	O	O	O	O	O
Don't know	–	O	O	O	O	O	O

36. For your personal group during your visit to [NPS site] on the day you were contacted for this survey, please provide the following information. Please mark (●) **one or more for each group member, including yourself. (If you don't know the answer, mark (●) "Don't know.")**

	Yourself	#2	#3	#4	#5	#6	#7
American Indian or Alaska Native	O	O	O	O	O	O	O
Asian	O	O	O	O	O	O	O
Black or African American	O	O	O	O	O	O	O
Native Hawaiian or other Pacific Islander	O	O	O	O	O	O	O
White	O	O	O	O	O	O	O
Don't know	–	O	O	O	O	O	O

37. For your personal group during your visit to [NPS site] on the day you were contacted for this survey, what is the highest level of formal education completed by each member of your group? Please mark (●) **one for each group member, including yourself. (If you don't know the answer, mark (●) "Don't know.")**

	Yourself	#2	#3	#4	#5	#6	#7
Less than high school	O	O	O	O	O	O	O
Some high school	O	O	O	O	O	O	O
High school graduate or GED	O	O	O	O	O	O	O
Some college, business, or trade school	O	O	O	O	O	O	O
College, business, or trade school graduate	O	O	O	O	O	O	O
Some graduate school	O	O	O	O	O	O	O
Master's, doctoral, or professional degree	O	O	O	O	O	O	O
Don't know	–	O	O	O	O	O	O

38. Which category best represents your annual household income? Please mark (●) **one**.

- O Less than $24,999
- O $25,000-$34,999
- O $35,000-$49,999
- O $50,000-$74,999
- O $75,000-$99,999
- O $100,000-$149,999
- O $150,000-$199,999
- O $200,000 or more
- O Do not wish to answer

39. Including yourself, how many people are in your household?

_____ Number of people

40. When visiting an area such as [NPS site], what language do you personally prefer to use? Please mark (●) **one for speaking and one for reading**.

	Speaking	**Reading**
English	O	O
Spanish	O	O
Other (Please specify) _____	O	O

41. Is there anything else you would like to tell us about [NPS site's] facilities, services, or recreational opportunities?

_____

_____

_____

Thank you for your help!

Please place the questionnaire in the envelope provided and drop it in any U.S. Postal Service mailbox.

SURVEY ID NUMBER:

Appendix 2. The Thank You/Reminder Postcard

Postcard Mailed to Respondents with United States Addresses

Dear National Park Visitor,

About two weeks ago we contacted you to participate in a visitor use survey for the National Park Service. On your recent trip to one of the many National Park Service units, you spoke with one of our survey administrators and received a questionnaire booklet and postage-paid envelope. If you have already sent in your completed survey, we **thank you**!

However, if you have not yet had the opportunity to complete the survey, please do so. A select number of people were contacted for this study, so your opinions are very important! Please complete and return the questionnaire booklet at your earliest convenience. If you have lost the questionnaire booklet, another one will be mailed to you in approximately two weeks.

Jonathan B. Jarvis
Director, National Park Service

Postcard Mailed to Respondents with International Addresses

Dear National Park Visitor,

About two weeks ago we contacted you to participate in a visitor use survey for the National Park Service. On your recent trip to one of the many National Park Service units, you spoke with one of our survey administrators and received a questionnaire booklet and postage-paid envelope. If you have already sent in your completed survey, we **thank you**!

However, if you have not yet had the opportunity to complete the survey, please do so. A select number of people were contacted for this study, so your opinions are very important! Please complete and return the questionnaire booklet at your earliest convenience. If you have lost the questionnaire booklet or need additional postage to mail it to the US, another booklet will be mailed to you in approximately two weeks and will include a return envelope with international postage.

Thank you,

The National Park Service

Appendix 3. The Replacement Mailing Cover Letter

UNITED STATES DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE
1849 C. Street, N.W.
Washington, DC 20240

Dear [Name],

About a month ago, on your recent trip to one of the many National Park Service units, we asked you to participate in a visitor survey for the National Park Service. The National Park Service would like to thank you for agreeing to participate in this visitor study. We selected only a small number of visitors to participate in this study; therefore, the return of each questionnaire is very important. The information you provide will help us better manage the National Park Service, and better serve you, our visitor.

If you have already returned your questionnaire, we would like to thank you. However, if you have not, we are asking you to please return it by mail today. Since we have not received yours as of the date we mailed this letter, we have included a replacement questionnaire for your convenience, along with a postage paid envelope.

If you have any questions regarding your questionnaire, please contact the Social Science Program Chief, National Park Service, 1201 Oakridge Drive, Fort Collins, CO, 80525-5596; nps_nrss_social_science@nps.gov (email).

Thank you for your help with this important study. Your opinions matter, and we appreciate you sharing them with us. They will help us improve the management of the National Park Service.

Sincerely,

Jonathan B. Jarvis
Director
National Park Service

The Department of the Interior protects and manages the nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its special responsibilities to American Indians, Alaska Natives, and affiliated Island Communities.

NPS 909/150833, March 2019

National Park Service
U.S. Department of the Interior

Natural Resource Stewardship and Science
1201 Oakridge Drive, Suite 150
Fort Collins, CO 80525