



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: 5/24/2021

PROJECT TITLE: Yosemite National Park Wilderness Study

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ABSTRACT: (not to exceed 150 words)

Wilderness camping in Yosemite National Park has changed dramatically in recent years. The numbers of campers have increased and their travel patterns, impacts on wilderness resources, and expectations of wilderness character have changed. Existing wilderness camping management (e.g., permits) and monitoring are out of date and not adequate to accomplish the park's stewardship goals, particularly at "hot spots," for wilderness camping (i.e., places with a lot of wilderness camping or that are particularly vulnerable to camping-related impacts). This collection was requested by YOSE park managers to enhance their understanding of wilderness visitor use, specifically overnight camping, wilderness travel patterns and visitor characteristics.

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PROJECT INFORMATION:

Where will the collection take place?

Sampling Period Start Date: 5/15/21

Sampling Period End Date: 10/31/21

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) |

Will an electronic device be used to collect information? ☐ No ☐ Yes ☐ mobile phone app

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.

Visitor use in Yosemite National Park (YOSE) wilderness areas has changed dramatically over the past decade. Since 2010, demand for wilderness camping permits and the number of permits issued have doubled, with higher numbers every year (Martijn Ouborg, Wilderness Branch, YOSE; 2021; internal statistics). Added to the extension of shoulder seasons, and competition for permits in summer, are the impacts of thru-hiking and contiguous wilderness access from YOSE neighbors which has brought new popularity and "bucket list" experiences to YOSE. These increases in demand have been accompanied by a concentration of wilderness camping around hotspots, which intensifies the impacts of use to both natural resources and visitor experiences.

YOSE uses a trailhead quota system designed to manage visitor pressures by limiting the number of campers within each of the park's wilderness zones. This system is currently driven by a 2010 travel pattern model that was adapted from standards established in the 70s. (Van Kirk et al., 2011). Ten years later, visitor use patterns and volumes are very different, consequently the established trailhead quota system requires recalibrating to bring wilderness camping use within park mandated capacities.

YOSE park managers and planners requested this information collection because they are in the process of updating their outdated Wilderness Stewardship Plan. The planning process requires up-to-date information about wilderness and overnight visitor characteristics, behaviors, attitudes, and experiences. The updated plan is expected prescribe wilderness monitoring and management actions to account for increased visitors use, behaviors and expected experiences. The absence of current wilderness user-specific information, managing and monitoring visitor use will be limited, forced to rely on decade old data, or cause friction with visitors and community stakeholders.

Collecting information directly from current wilderness visitors will directly benefit the new Wilderness Stewardship Plan. While many visitor use studies have been conducted in Yosemite, none of them have specifically addressed the impacts of increased wilderness visitor use and travel patterns. Specifically, these studies do not investigate relationships between wilderness trailhead entries and nightly wilderness zone occupancy. necessary to update the Yosemite's travel pattern models visitor use in designated park wilderness zones. This collection will address issues related to visitor use management and monitoring requirements of the new Wilderness Stewardship Plan.

SURVEY METHODOLOGY

(A) Respondent Universe:

All adult (18 years and older) campers in Yosemite Wilderness during a visitor use season (May thru September 2021) in the following categories:

- Yosemite pre-reserved Wilderness permit holders
- Yosemite walk-up Wilderness permit holders
- Pacific Crest Trail (PCT) long-distance permit holders
- Other federal land management units of wilderness permit holders

(B) Sampling Plan / Procedures:

The proposed collection will stratify its sample across the following wilderness camper seasons:

- **Spring** – (May and June) characterized by northbound long-distance use of the PCT corridor and seasonal use of lower elevations areas.
- **Summer** – (July and August) characterized by near capacity levels of wilderness camping parkwide.
- **Autumn** – (September and October) characterized by annually increasing use levels.

A systematic stratified random sample across respondent groups will be used to collect information. Every N^{th} visitor, with N representing the recruitment interval for the sample, will be asked to participate in the study. The N^{th} interval will be determined for each sample based on the number of permits issued, observed permit utilization rates, expected participation rates, and sampling plans. For some questionnaire administration periods (e.g., lower use time), N will equal 1.

Table 1 provides an example sampling schedule and the anticipated number of visitor contacts during each sampling period. App and travel diary sampling will be continuously administered seven days a week. Wilderness character sampling will be stratified across five of seven days each week, always including both weekend days.

Table 1: Example On-site Sampling Schedule

Respondent Group (permit type)	Spring 2021		Summer 2021		Autumn 2021		Total	
	Days	Contacts	Days	Contacts	Days	Contacts	Days	Contacts
YOSE Pre-reserved	7	2,345	42	7,015	7	2,345	56	11,705
Pacific Crest Trail Long-distance	7	651	---	0	---	0	7	651
YOSE Walk-up	7	350	42	1,050	7	350	56	1,750
Other Federal Units	---	---	42	630	7	210	49	840
Wilderness character survey (only)	5	320	30	990	5	320	40	1,630
Total		0		0		0		0

The following subsections provide an overview of our anticipated sampling plans by questionnaire version.

App-based Survey

Yosemite emails pre-reserved permit holders (YOSE Pre-res) two weeks prior to their trips. Yosemite will include a survey recruitment notice in the pre-trip email(s) to every Nth permit request scheduled to begin trips during each sampling season. The Pacific Crest Trail Association (PCTA), which operates the PCT long-distance permit system, will email recruitment notices *PCT Long-distance* permit holders during the spring sampling period.

Travel Diary

Travel diaries will be administered to *YOSE Walk-up* Wilderness permit holders during the park's wilderness education interaction, which all permit holders must attend. Similarly, staff at Wilderness Centers in neighboring units (e.g., Inyo National Forest) will solicit *Other Units* permit holders planning to enter YOSE during the sampling periods.

Wilderness Character Survey

This onsite questionnaire will be administered as a stratified purposive sample at designated Yosemite Wilderness camping areas. Sampling of wilderness campers will be stratified across the days of each sampling season to target adequate numbers of responses at each use level. Respondents to the app-based questionnaire will be screened during recruitment to determine eligibility.

(C) Instrument Administration:

Data will be collected via three questionnaire versions that are customized and targeted based on wilderness permit type.

App-based Survey

A smartphone app will collect both travel pattern and wilderness character data. This will be administered to YOSE Pre-registered and PCT long distance permit holders. This method was piloted in the autumn of 2020. Results of that pilot were used to inform, improve, and shorten the questionnaires.

Travel Diary

A paper -based questionnaire will use a map to collect travel pattern information. This will be administered to YOSE Walk-up and Other Units permit holders. Language in the *Travel-Diary* will be customized by permit type.

Wilderness Character Survey

An onsite questionnaire will be administered by interview to Yosemite Wilderness campers (i.e., all permit holder types).

presents the basic administration methods for each questionnaire. Yosemite, regional wilderness, and PCTA staff have agreed to participate in survey administration and will be provided training and reference materials.

Table 2: Proposed Questionnaire Administration Methods

	Administration Staff	Administration Media
<i>App-based Survey</i>	Wilderness & PCTA Staff	Smartphone app
<i>Travel Diary</i>	Wilderness Staff	Paper map-based instrument
<i>Wilderness Character Survey</i>	Trained field technicians	Tablet computer + paper form

The following sub-sections provide details on how each questionnaire will be administered.

App-based Administration

The following example text will be used in the email solicitation sent to selected YOSE Pre-registered and PCT Long distance permit holders, permit holders approximately 14 days prior to the start of their trips.

For the first time in Yosemite's 150-year history we are using a smartphone app to collect information about your wilderness camping experience. A using the app you will be asked you questions about your trip, group, and experience. It will also log the location where you camp each night.

If you are willing to participate AND plan to carry and use an Android or Apple smartphone during your wilderness trip (e.g., to take photographs, assist in navigation, etc.), please click on the following link if you wish to participate: [HYPERLINK TO DOWNLOAD APP-BASED QUESTIONNAIRE]

An initial email invitation will be sent to a random sample of permit holders. The email invitation will describe the purpose of the study, a link and description of how to download and register to use the app, and instruction on how to complete the survey during their trip. Based on results of the pilot study, after initial email, the need for additional prompts was identified. Second and third reminder emails will be sent to selected permit holders who completed the onboarding process for the app-based questionnaire.

Travel Diary Administration

Travel diaries will be administered by Wilderness Center staff using the following example recruitment script, delivered either in-person or as part of remote wilderness education or permit administration:

You have been selected to participate in this important study, thank you for your help. Your responses are vital to the sustained stewardship of Yosemite Wilderness.

We are asking a random sample of visitors if they would be willing to carry this map-based questionnaire during their wilderness trip. This questionnaire is designed to provide park managers information on hiking routes and camping locations. The questionnaire will include one or more maps that correspond to the parts of Yosemite Wilderness you are planning to travel. Please trace your camp-to-camp route on these maps. In addition to the maps there are questions about your trip and experiences. Please complete these questions by the end of your wilderness camping experience in Yosemite.

Are you willing to participate?

- **If No:** "No problem, thank you for your time. May we ask you five very quick questions?" [non-response questions]
- **If Yes:** "Great, thank you for your time." Permit holders who agree to participate will be provided with the instructions and materials to complete the travel diary

Wilderness Character Survey

Following the sampling plan described above, each contacted visitor group will be asked to complete the *Wilderness Character* survey by trained field technicians using the following example script.

*You have been selected to participate in this important scientific study, thank you for your help.
We will ask you questions about your group and trip, as well as your experience camping here in Yosemite tonight. Your responses are vital to the sustained stewardship of Yosemite Wilderness.*

Are you willing to participating in an on-site survey?

- **If Yes:** “Excellent, do you have any questions before we start?” the technician will verbally administer the survey and record the responses in the survey app.
- **If No:** “Are you willing to participate here with me?”
 - o If No: “No problem, thank you for your time. May we ask you five very quick questions?” [non-response questions]
 - o If Yes: “Great, thank you for your time.” [begin questionnaire administration].

(D) Expected Response Rate / Confidence Level:

Based on the results of the autumn 2021 pilot study, previous research, Yosemite management input, limitations of staffing and timing, and target completion numbers, we anticipate that we will approach approximately 16,602 individuals to participate in all questionnaires (Table 3). Of that, we expect that 50% ($n=8,289$) will accept the invitation to complete the survey. However, we expect that of the all visitor accepting invitation only 60% ($n=4,972$) will complete and return the survey. During the initial contact we will ask all visitors accepting the invitation ($n=8,289$) and those refusing participate to answer the non-response bias questions. We anticipate that 10% ($n=1,658$) will initially refuse to accept the invitation but will agree to answer the non-response survey questions. The number of visitors we expect to complete the non-response bias questions is 9,946 (all visitors accepting 8,289 and soft refusals 1,658). The remaining visitors refusing to take any part of the collection will not be included in the burden estimate.

Based on the survey sample sizes for all permit type by questionnaire populations (i.e., for each combination of permit type and questionnaire instrument), with the exception of the PCT by App population, there will be 95 percent confidence that the survey findings will be accurate to within 5% (10% for PCT LD). The proposed sample size should be adequate for the study’s purposes and not be used to produce results beyond the study’s purposes. The sample will suffice for bivariate comparisons and more sophisticated multivariate analysis.

Table 3. Anticipated Onsite Survey Response Rates

Respondent Group (permit type)	Initial Contacts	Initial Acceptance (50%)	Anticipated Completed Surveys (60%)	Completed Non-Response Surveys
YOSE Pre-reserved	11,705	5,853	3,511	7,023
Pacific Crest Trail Long-distance	651	326	195	391
YOSE Walk-up	1,750	875	525	1,050
Other Federal Units	840	420	252	504
Wilderness character survey (only)	1,630	815	489	978
TOTAL	16,576	0	0	0

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

Non-response bias will be evaluated based on permit data and responses to non-response bias questions. Any implications of non-response bias for park planning and management will be presented and discussed in reporting documentation.

Permit-based Non-response Analysis

This analysis checks for systematic exclusion of or selection for certain types of permit holders. For each questionnaire response, we will compare our sample to the whole population of permit holders and each instrument sample based on: Permit type, Trip start date, Trip end date, Trip start location, Trip end location, Trip duration, Group size. This comparison will tell us if our samples resemble the whole permit population and each instrument's response population based on trip and group criteria.

Non-response Bias Questions

This analysis checks for differences in response patterns between our sample and the population of Yosemite Wilderness campers. All visitors that declines to participate, the survey administrators will five questions non-response in the wilderness character questionnaire: Permit type, Commercial service use, Planned trip duration, Itinerary type, Group leader. In addition to these five questions, field technicians will observe apparent group size.

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

This information collection uses similar methods and questions to those that have been used in similar studies in similar high-use wilderness areas in the American West. In 2010, Yosemite collected similar wilderness camper travel pattern information.¹ This study replicates that study's methods to the extent possible and improves upon them based on recommendations made by the principal investigator of that study. Development of the wilderness character portions of the questionnaire drew substantially from information collections conducted in similar high-use wilderness areas of the American West.²

The questions in the survey instrument are drawn from the NPS Pool of Known Questions, though adapted for appropriate context. They were selected, reviewed, and pretested by the following: PI, staff, and graduate students (Penn State University, Virginia Tech, Oregon State University, University of California at Merced) with expertise in social science research, and Yosemite staff. Pre-testing for clarity and estimated burden time was conducted with graduate and undergraduate students at Pennsylvania State University, Virginia Tech, and University of California at Merced. Additionally, the app-based questionnaire was extensively pilot tested in the autumn of 2021 approved through the US Dept. of Interior and Office of Management and Budget pilot testing track. Results of this pilot have been used to develop participation rates and burden estimates.

BURDEN ESTIMATES

The total burden estimate for this collection including initial contact time, non-response question time, and time to complete all questionnaires for all sampling periods will be **1,740** hours. The table below presents burden estimates for

¹ Van Kirk, R., Martin, S., Ross, Kai, Douglas, M. (2011). Simulation modeling and analysis of overnight visitor use of the Yosemite Wilderness. Arcata: California. Humboldt State University.

² Cole, D. N., & Hall, T. E. (2009). Perceived effects of setting attributes on visitor experiences in wilderness: Variation with situational context and visitor characteristics. *Environmental Management*, 44(1), 24.

each portion (i.e., permit type, questionnaire version, initial contact, questionnaire section) of survey administration, including sub-totals for each permit-type and questionnaire.

These burden estimates are based on the following factors:

- Average wilderness trip durations provided by YOSE.
- The results of the 2020 app-based questionnaire pilot.
- Pretesting by untrained volunteers (e.g., university students).

Table 4. Burden Estimates

	Respondent Group (permit type)	Anticipated Completed Responses	Completion time* (minutes)	Respondent Burden (hours)
App Survey	YOSE Pre-reserved			
	Completed Survey	3,511	17	994
	Non-response Survey	7,023	2	234
	Pacific Crest Trail Long-distance			
	Completed Survey	195	17	55
	Non-response Survey	391	2	13
Travel Diary	YOSE Walk-up			
	Completed Survey	525	12	105
	Non-response Survey	1,050	2	35
	Other Federal Units			
	Completed Survey	252	12	50
	Non-response Survey	504	2	17
	Wilderness character survey (only)			
	Completed Survey**	489	25	204
	Non-response Survey	978	2	33
	TOTAL	14,918		1,740

*Initial contact time of one-minute included

** Wilderness Character Survey 25 minutes per response. [Part 1 - 5 minutes) and Part 2 - 20 minutes (5 minutes x 4 days (average number of trip days)]

REPORTING PLAN:

The following outline reviews our anticipated reporting phases and timelines. Reports will be delivered to Yosemite National Park in draft format for review and comment. Park comments will be incorporated prior to report finalization. Final reporting documents, including datasets with permit information removed, sampling and analytical results, non-response bias results, and a discussion of results and their limitations and implications will be electronically delivered to the park.

1. Analyze data and prepare reports: September 2021 – October 2022
 - a. Product: draft technical report sections with sampling results, descriptive statistics, relational analyses, limitations, and management implications.
 - b. Product: compiled final draft report, for review by collaborators and Yosemite staff.
2. Finalize report to Yosemite National Park: December 2022
 - a. Product: final report with review comments incorporated delivered electronically to Yosemite National Park.
 - b. Product: cleaned and organized data, with permit information removed, delivered electronically to the park
 - c. Product: presentation of project results to park leadership and staff.

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 60 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 Officer, National Park Service, 1201 Oakridge Dr., Fort Collins, CO 80525.
