

The Need for a Comprehensive Socioeconomic Research Program for the National Park Service

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Introduction

This article describes various types of information that have been collected, and are currently being collected, that are relevant to a comprehensive socioeconomic monitoring program for the National Park Service (NPS), as well as current projects that address gaps in socioeconomic data. This summary illustrates the need for a comprehensive and systematic program to collect socioeconomic data for the US national park system.

In 2016, NPS recorded over 330 million recreation visits to its lands and waters, the highest recorded level of use in its history. This unprecedented visitation demonstrates the public's interest in national parks and coincided with NPS's centennial-year effort to increase public awareness of parks and public lands, particularly among youth and historically under-represented groups. Despite its apparent success in increasing overall use of park lands, it's difficult to measure the broader benefits and implications of these efforts because NPS does not currently collect comprehensive socioeconomic data, such as those on demographics, visitation characteristics, or spending. Thus, the agency is not able to document how the recent increase in visitor use actually addresses the broader concern to reach new and more diverse audiences. Similarly, inconsistent socioeconomic data limits our understanding of the economic benefits of park visitation and tourism to local communities and the nation (see Richardson et al., this volume).

The mission of NPS as stated in the Organic Act of 1916 is “to conserve the scenery and the natural and historic objects and the wild life [in the national parks] and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.” Preserving large natural areas as parks for public enjoyment was a novel idea in the early 20th century, and logically the emphasis was on protecting

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park environments in their natural state. However, the need for public support to advocate for a system of parks was not lost on Stephen Mather, the first NPS director. One of Mather's early initiatives expanded the road system within national parks to provide public access to the natural wonders within them and to build a constituency for a national system of parks (Sellers 1997). The success of this strategy persists to this day.

Visitation to national parks in 2016 represented a 19% increase from visitation five years earlier and a 156% increase from that of 50 years ago (National Park Service 2017). Despite the current surging interest in parks, the best available data suggest that the demographic makeup of park visitors has not changed appreciably in the last 50 years and does not represent the diversity of the American public (Weber and Sultana 2013; Krymkowski, Manning, and Valliere 2014). Specifically, NPS visitors tend to be disproportionately white and to have higher levels of education than the American public as a whole (Solop and Hagan 2002; Taylor, Grandjean, and Anatchkova 2011; Weber and Sulatana 2013a, 2013b).

The best available data for estimating the sociodemographic makeup of NPS visitation comes from two sources: (1) collections of studies from individual park units that were designed specifically to inform unit-level research and management questions; and (2) the Comprehensive Survey of the American Public (CSAP), conducted in 2000 and 2008. The first source, individual park studies, does not produce an accurate picture of NPS visitation nationally. Aggregating datasets from individual parks fails to describe NPS visitation as a whole because no study design was developed to ensure a representative sample of parks. Rather, there is over-representation of large, nature-based protected areas. In contrast, the CSAP studies did capture a representative sample of NPS visitors and non-visitors, but only provided broad generalizations about visitors and lacked detail about those going to particular parks or types of parks (e.g., Revolutionary War parks, Civil Rights parks, national monuments, etc.).

These points are not being made to dispute the data or the anecdotal evidence that national park visitation consists of a whiter and more educated population than the American public as a whole. Rather, it's because of these shortcomings in existing data that NPS requires a systematic and comprehensive program to monitor the socioeconomic makeup and effects of NPS visitation. In order to broaden support across the American public, NPS needs to elucidate and communicate the myriad of benefits it provides to all Americans. At the core of this need is to systematically understand NPS visitors, why they visit, and how visitation is changing in order to gauge if the goal of relevancy is being realized.

NPS socioeconomic research

Research that examines socioeconomic aspects of park recreation began in earnest in the mid-1960s with the publication of reports by the Outdoor Recreation Resources Review Commission (ORRRC) (Siehl 2008). A main purpose of the ORRRC was to estimate "population, leisure, transportation, and other factors" related to outdoor recreation. Since that time visitor surveys about outdoor recreation that include participant demographics and characteristics have become increasingly more prevalent and sophisticated and are conducted in parks by a wide range of disciplines across the social sciences.

A great deal of knowledge about outdoor recreation has been gained through studies in the last 50 years. However, the majority of social science studies for NPS are at the park-unit scale. A few national studies related to recreation and parks exist, including the National Survey on Recreation and the Environment (USDA–FS 2002); nationwide studies commissioned by the National Recreation and Park Association about the benefits of, and public support for, local parks (Godbey, Graefe, and James 1992; Mowen et al. 2016); a recent total economic valuation of NPS lands (Haeefele, Loomis, and Bilmes 2016); and the National Survey of Fishing, Hunting, and Wildlife-Associated Recreation (USFWS 2017). However, none of these were designed to capture data describing the population of NPS visitors and non-visitors.

Public use statistics data. Recreation visitation data have been collected at some national parks since before the creation of NPS in 1916 (see Gramann, this volume). For example, annual use data is available for Yellowstone starting in 1904 and for Yosemite and Grand Canyon starting in 1906. Visitor statistics became more detailed in 1979 when monthly use data began to be reported. These counts included estimates of recreation visitors, non-recreation visitors, concession lodging visitors, tent campers, RV (recreational vehicle) campers, concession camping, backcountry campers, and miscellaneous campers.

Today the System for Visitor Use Statistics (VUS) continues to compile visitation data for 385 NPS units on a monthly and annual basis. These numbers are a key input for economic analyses of visitor spending, economic contributions to communities and the nation, and job creation (Cullinane-Thomas and Koontz 2016). VUS data also are fundamental to park management and for a basic understanding of how people use parks; however, they provide little to no insight about who visits, what activities they participate in, or where they go. Questions of this nature require further inquiry through visitor use and survey research.

CSAP. The CSAP studies are the most comprehensive efforts to understand visitors and non-visitors to the national park system. Surveys of the American public were completed in 2000 and in 2008 and generally found broad support for NPS. This method of study continues to prove useful as a means to collect information regarding national park units from past and contemporary non-visitors.

Demographic findings from the 2008 CSAP showed that NPS visitors (defined as respondents who visited an NPS unit within the last two years) are more homogeneous than the US population as a whole. Table 1 shows the educational achievement of visitors, non-visitors, and all respondents, along with estimates of the US population in 2008 (US Census Bureau 2016). Over 53% of NPS visitors earned at least a university degree, compared with 34% of non-visitors. It's also noteworthy that over 43% of all survey respondents had attained a university degree, which is more than the US population as a whole (just over 29%). This may reflect particular interest of this demographic in national parks and/or public land management.

The 2008 CSAP report also showed that the vast majority (78%) of NPS visitors were white/non-Hispanic, compared with 66% of the US population as a whole (Table 2). In contrast, Hispanics (9%) and African Americans (7%) were underrepresented in NPS visitation. It's worth noting that the 2000 CSAP found that 4% of NPS visitation was composed of Af-

Table 1. Educational attainment from 2008 CSAP compared with 2008 US population.

Educational Attainment	NPS Visitor	NPS Non-Visitor	Study Proportion	US Population (2008)
Less than high school	2%	9%	6%	13%
High school graduate or GED	13%	25%	20%	31%
Some college	32%	31%	32%	26%
University degree	31%	23%	27%	19%
Graduate degree	22%	11%	16%	10%

Table 2. Race/ethnicity from 2008 CSAP compared with 2008 US population.

Race/Ethnicity	NPS Visitors	NPS Non-Visitors	Study Proportion	US Population
White, Non-Hispanic	78%	63%	70%	66%
Hispanic, any race	9%	17%	13%	15%
African American	7%	16%	12%	13%
Asian	3%	3%	3%	4%
American Indian/Alaskan Native	1%	1%	2%	1%

frican Americans, suggesting a slight increase in African American visitation between the two surveys. However, the increase was small enough to be caused by chance, and further study is needed to determine if the change was substantive (Taylor, Grandjean, and Anatchkova 2011).

Visitor Studies Project (VSP) and Money Generation Model (MGM). The closest any effort has come to systematically collecting socioeconomic data about NPS visitors was the University of Idaho’s Visitor Services Project (VSP), which operated from 1982–2014. The VSP provided park managers relevant information about visitors to support operational and managerial decisions (Machlis et al., 1984). In particular, the VSP sought to answer questions about: (1) the kinds of services, activities, and opportunities used by the public; (2) who visitors are, where they go, and what they do; and (3) the relationship between interpretive services and visitors. However, VSP surveys were designed to generalize to the park-unit level and were not intended to describe the national park system as a whole.

The Money Generation Model (MGM) was designed to estimate visitor spending at NPS units. Annual MGM studies began in 2003 to inform park units about these visitor spending effects. Two hundred seventy-five VSP and 65 MGM surveys were completed over the 30-year course of the VSP. Although the program surveyed a wide range of park units, a review of VSP reports shows that surveys over-represented studies units designated “National Park” (hereafter capitalized when used this way) compared with other NPS units. Eighty-six of 275 VSP surveys (31%) were conducted in National Parks; however, National Parks make up only 14% of all units in the national park system and accounted for only 25% of all visitors to the system in 2016. Park units were prioritized for VSP surveys based on planning forecasts for general management plans and other environmental compliance efforts. Parks also had the option to request a survey, and as a result VSP surveys tended to be done in larger parks that could afford the cost of the research.

The scope of questions and subjects in VSP projects expanded and evolved over time and included inquiries about visitor spending, activities, and demographics, and perspectives related to issues such as climate change. Three questions appeared consistently across all VSP studies: (1) group size, (2) group type, and (3) state of residence. Other questions appeared in the majority of studies, including age, country of residence, and park information sources used. However, many of these questions were asked in different formats over the years and confound temporal or aggregated analysis.

Questions about race, ethnicity, and languages spoken were not asked on VSP surveys until the late 1990s and were not included on all surveys. Our review of VSP studies from 2009–2013 reveals that 53 of 74 studies (72%) included questions about race/ethnicity. An aggregation of these shows that 5% of respondents were of Hispanic descent, 92% were white and non-Hispanic, 1% were American Indian/Alaska Native, 4% were Asian, 0.1% were Native Hawaiian/Pacific Islander, and 1% were African American. Although these data are not statistically representative of all NPS visitors, the findings corroborate the results from both CSAP studies: regarding race/ethnicity, NPS visitors represent a more homogenous population than that which characterizes the US as a whole.

Questions about visitor expenditures began to appear in VSP surveys in 1988. Once again, there was no consistent inclusion of these among VSP studies. The first of the MGM studies that looked specifically at visitor spending related to NPS units was published in 2003. After that, questions about spending became more common, and our review of VSP studies from 2009–2013 found that about 55% of surveys included questions about trip expenditures. (Some parks declined to include spending questions due to lack of space or because they felt that such information was not relevant to a park’s mission.) Visitor spending estimates are now conducted through the Visitor Spending Effects (VSE) program. The VSE provides both park-specific and national spending estimates (Cullinane-Thomas and Koontz 2017). This program is run cooperatively between NPS and the US Geological Survey (USGS).

Other socioeconomic research. Finally, numerous park-specific studies covering a wide range of topics have been completed by various researchers. These are too numerous and diverse to quantify, and there is no protocol for archiving these types of reports. Typically,

these studies are initiated at the park level and procured through cooperative agreements or by contract services. The NPS Inventory and Monitoring Program maintains a repository of documents in a platform titled “Data Store,” and among them are social science and socioeconomic reports. Although Data Store does not maintain a comprehensive collection of these studies, it provides some insights about where studies have been administered. A search of all park units using relevant keywords yields 2,311 relevant documents and journal papers (excluding planning documents). Of these, 1,294 are specific to individual national park units, with (for example) 152 documents specific to Acadia, 115 to Yosemite, and 97 Denali. Again, this suggests that NPS socioeconomic research tends to occur disproportionately in large, nature-based, iconic park units.

Social science needs assessment

To address the gap in systemwide socioeconomic data for NPS, a national social science needs assessment was conducted from 2008–2009 (Gramann et al. 2010). This effort was informed by more than 400 people from parks, regions, programs, and the Washington Office who participated in focus groups, surveys, and workshops. Objectives identified by the workgroup for an NPS socioeconomic monitoring (SEM) program included more comprehensive data about visitor use levels and characteristics, visitor experiences, services in parks and gateway communities, and demographics.

Current efforts

Based on the recommendations from the SEM needs assessment workgroup, the NPS Social Science Program (SSP) conducted a pilot SEM study and a third iteration of the CSAP, which is now titled the Comprehensive National Household Survey (CNHS). These two forms of public inquiry provide NPS with information about park visitors and the non-visiting public. Both of these research efforts are being conducted by a vendor through a contract.

A workshop was convened in November 2014 bringing together NPS staff, USGS collaborators, and research consultants to discuss strategies and sampling approaches to implement a SEM study for NPS. Fifteen parks were purposively selected to represent various types of units, levels of use, different types of settings (e.g., urban, rural, seashore, parkway), and difficulty of survey administration (i.e., parks with highly controlled entrances vs. porous and dispersed access). Results will help answer fundamental questions about a comprehensive SEM program, such as the necessity to collect data at all units or if estimates from a collection of indicator parks are sufficient. In addition to the pilot study, a national sampling approach has been recommended that will allow for bureau-wide aggregation of results on NPS visitors. This approach balances the needs for various scales of data across park, regional, and national contexts.

The SSP is also administering the CNHS, which as noted above is a third iteration of the CSAP. The CNHS was developed for the centennial of NPS in 2016. Key questions from the previous surveys have been retained, but additional questions cover topics such as youth engagement, relevancy, and NPS programs. The additional objectives of the CNHS beyond traditional socioeconomic inquiry are to understand the breadth and reach of NPS influence

and to determine how NPS messaging is being communicated and received beyond in-park visitors. The new format of the national survey will allow NPS to determine trends for key variables, such as the demographic makeup of visitors and non-visitors, and will establish baseline data to determine trends related to relevancy and youth engagement. Ideally, a nationwide survey such as the CNHS would be administered every five years to allow for a systematic monitoring of key trends.

Discussion

As NPS enters its second century, it's clear that the protection of federal land encompasses more than just natural resources management. Knowledge about socioeconomic factors is integral to understanding and addressing the agency's broader concerns to reach new and more diverse audiences and to understand and communicate the range of benefits provided by NPS lands and programs to local communities and the nation as a whole.

The US population is becoming more diverse racially, ethnically, and in age structure. By 2044, the US Census Bureau estimates that half of the population will be composed of minority groups (Colby 2015). The National Park Service needs to reach these new audiences to maintain relevancy with future US populations (Sultana and Weber 2013a) and to provide the benefits that NPS offers to people who have not realized these opportunities.

A current goal of NPS is to represent the nation's identity and the history of the country as a whole. A systematic, long-term SEM program will provide data to understand how various groups use, or do not use, NPS lands and services. For example, Weber and Sultana (2013a) have found that minority populations visit in higher proportions to smaller NPS units. This study developed an accessibility model of population centers to national park units, and results showed that African American accessibility was highly correlated to the year of establishment of NPS units, indicating that the national park system has expanded closer to African American communities. Comprehensive, systematic, and representative socioeconomic data would allow for greater insights into this type of social dynamic and provide guidance about how to serve various groups better.

The US population in 2016 was 323 million and the US Census Bureau estimates that the population will grow to 400 million people by 2051 (Colby and Ortman 2015). Such increases will likely lead to increased demands for parks and protected areas. The recent national report by Mowen et al. (2016) found that the American public views public parks as critical infrastructure and not as luxuries. These perspectives were found to be consistent across all demographics throughout the US. Information from consistent socioeconomic inquiries such as these can provide NPS managers with insights to determine how to best allocate scarce resources to address increased demands for parks and services.

The economic benefits of recreation and protected lands to local communities and the nation are also being recognized. The US outdoor industry is emerging as one of the country's most significant economic drivers, with an estimated \$667 billion spent each year (Allen, Kary, and Southwick 2013). In fact, NPS units are economic drivers in many local communities. Direct spending effects of NPS visitation to local gateway communities are estimated at \$18.4 billion and contributions to the national economy include \$19.9 billion

in value added, 318,000 jobs, \$12 billion in labor income, and \$34.9 billion in economic output (Cullinane-Thomas and Koontz 2017).

Parks and protected areas also provide other economic benefits. For example, in one study property values near wilderness areas were estimated to have experienced a 13% increase (Phillips 1999), and it has been found that in areas where national park units have been established, local property values have increased (Crompton 2001). More recently, companies such as Google and Nature Valley are harnessing information-sharing about parks and outdoor recreation. Information and pictures uploaded by users of outdoor places and activities are being used by these companies as online content. This virtual material has created a new type of marketable resource originating from park lands (Stinson 2017).

Conclusion

After 100 years of land management, NPS increasingly needs to know more about visitors and the broader societal benefits of its lands and programs. Moreover, as NPS evolves to become more representative of the history and demographic makeup of the US, the service needs systemwide socioeconomic data to assess progress towards its goal of relevancy and inclusion. However, the National Park Service still lacks fundamental socioeconomic information about the national park system as a whole. The majority of socioeconomic research is based on data from large, nature-based national parks, and it's likely that there is important data to be had about various user groups and benefits attained from visitation at other types of park units. The results from the SEM pilot study and the CNHS will provide important socioeconomic data for park leadership and the American public. These data will be most useful if they become part of a long-term SEM program and not just stand-alone inquiries. Long-term, comprehensive understanding of who visits all types of parks within the nation's park system, together with the associated benefits of this visitation, would support a broader dialogue about how NPS can best serve the American public.

The views and conclusions in this report are those of the authors and do not necessarily reflect policies of the National Park Service. Mention of trade names or commercial products does not constitute endorsement or recommendation for use by the National Park Service.

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