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Charting a Path: A Critical History and Analysis of Social Science in America's National Parks

James H. Gramann, Dept. of Recreation, Park and Tourism Sciences, 600 John Kimbrough Blvd., Texas A&M University, College Station, TX 77843-2261; jgramann@tamu.edu

Today, social science is a common activity in national parks. In its usual form, the visitor survey, it documents the characteristics, behaviors, and perceptions of park visitors. But few people know the origins of social science in the parks. Who conducted the first survey? How has park social science evolved? Where should it be heading? This paper begins to address these questions.

In 1893, Lieutenant Hiram Chittenden, an army engineer working on the road system in Yellowstone National Park, mailed a questionnaire to a sample of guests who had stayed at the park's hotel at Mammoth Hot Springs. This is the first recorded social science in an American national park. Chittenden's survey was motivated by his opposition to a proposal by businessmen in Washington state to build an electric railway to transport visitors between Yellowstone's major attractions. Electricity for the train was to be generated from dams constructed on streams and waterfalls in the park. At the time, travel in Yellowstone was mostly by stagecoach, and dusty roads were a constant problem. During the summer of 1893, the concessioner at Mammoth—working with the Washington state group—had collected signatures from hotel guests on a petition supporting the railroad. Because Chittenden believed that the petition did not represent the "actual opinion upon the subject," he drew one name from the hotel's guest register for each day of the season, attempting to represent geographic diversity, and mailed a questionnaire to each person in his sample. Of 120 questionnaires sent out, 100 were returned. As reported by Chittenden, the survey included three questions: "(1) What was the principal drawback to the enjoyment of your tour of the park? (2) From the experience of your own tour would you advise your friends to visit the park? (3) Assuming that there were a complete system of thoroughly macadamized or graveled roads in the park, so constructed as largely to eliminate the mud and dust nuisance, and in which there should be no hills so steep that teams could not ascend them at a trot; and assuming also that there were a well-equipped electric railway covering substantially the same route, by which

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method would you prefer to make a tour of the park: by coach or by car?"[1] On the issue of travel, Chittenden reported that respondents overwhelmingly favored stagecoaches, 147 to 29. (The 176 responses exceeded the sample size because other members of the respondents' travel groups volunteered answers, which Chittenden included in his tally.)

Bills authorizing the railway were introduced in Congress in 1894 and 1895, but died in committee.[2] The House report included adverse comments from the secretary of the interior and from Captain George Anderson, Yellowstone's military superintendent and Chittenden's commanding officer. Anderson called the railway "unneeded, undesirable, vicious."[3] Given the command structure in Yellowstone during its military years, it's almost certain that Anderson knew of Chittenden's results, and these informed his response to Congress, along with his staunch opposition to other railroad proposals for the park.

As with Chittenden's survey, most social science information collected by the fledgling National Park Service (NPS) (after its creation in 1916) described park visitors. Initially, the major source of this information at Yellowstone and other parks was a detailed form filled out for each group passing through park check stations. For example, on July 26, 1920, Mr. R. Floodas of Pocatello, Idaho arrived at Yellowstone's west entrance in an Oakland (a make of car). Two passengers and one Airedale accompanied him. He carried a firearm and paid an entrance fee of $7.50.[4]

Statistics such as these had applied value. They documented the growing popularity of national parks, and they illustrated the diversity of national park visitation, underscoring the patriotic value of parks in encouraging all citizens to "see America first." As well, they justified public investment in roads, hotels, and auto-accessible campgrounds.

At times, NPS summaries of check station data displayed a childlike wonderment at the transformation in vacation patterns caused by the private auto. In 1922, as his park approached the 100,000-annual-visit milestone, Yellowstone Superintendent Horace Albright enthused that the park's visitors presented a "more comprehensive 'automobile show' than has ever been staged under auditorium or show-room roof," with 123 vehicle models and "innumerable adaptations of modern touring cars into houses on wheels…."[5] (Behind the scenes, the NPS fretted over the safety of automobiles in parks, as well as conflicts with horse-powered travel.) But as visitation increased, detailed record-keeping at park entrances became impractical. It was replaced by today's traffic-counting systems that record visitor numbers (but not characteristics) and by sporadic surveys, usually covering periods of two weeks or less.

Lemuel (Lon) Garrison transferred to Yosemite National Park in California in 1935 from nearby Sequoia. At Yosemite, he found a park crowded with people and vehicles. Private cars were first admitted to the park in 1914, and by 1929 annual visitation approached half a million, most of it concentrated in Yosemite Valley. Park planners dubbed the five auto campgrounds in the valley the "Yosemite slums." In the 1930s, with camper counts reaching 20,000 on Fourth of July weekends, the campgrounds reportedly had a settlement density twice that of Pittsburgh, Pennsylvania. To park staff, the clear result was a negative visitor experience.[6]

Garrison held a psychology degree from Stanford University, and in 1937 and 1938 he surveyed more than 2,000 campers in Yosemite Valley. Garrison hoped to discover information about their motives and perceptions that could be used to encourage greater use of campgrounds outside of the valley. As he planned his research, Garrison consulted with his former professors at Stanford.

This was an early example, perhaps the first, of university involvement in national park social science.

In contrast to park planners, Garrison's report noted that many visitors felt that the Yosemite Valley encampments provided an enjoyable experience. Half of the campers said they preferred campgrounds that were "near the center of things" with many things to do. Although the other half said they preferred a quiet and isolated campground, they still chose to camp in Yosemite Valley. Garrison concluded that "those who prefer a quiet campground don't know what they mean." But, he added, "It might be possible to increase the quality of use by a well thought out and aggressive educational campaign." To Garrison's disappointment, his study was disregarded by the park. He later wrote that his report quickly disappeared "like a hard-boiled egg dropped into a bowl of soft mashed potatoes."[7]

Economic research also played a key role in early park social science. When Yellowstone National Park was established in 1872, supporters argued it would pay for itself through income from concession leases, at least after roads and other infrastructure were completed. In effect, the economic value of the park would be measured by its operational surplus. Some national parks did report surpluses, including Yosemite in 1907 and Yellowstone in 1915 and 1916.[8] Whether military costs were included in the parks' balance sheets is unknown. But from the 1920s onward, federal appropriations outstripped park earnings and deficits grew dramatically. By this accounting yardstick, the national parks had no value. Perhaps as a result, the discussion of the parks' economic importance shifted from their revenue generation to the income and employment realized in communities whose financial lifeblood flowed from having a popular destination on their doorsteps. As early as the 1940s, a study at Yellowstone National Park calculated the contribution of park employment and visitor spending to the economy of the surrounding region.[9]

The methods employed in the national parks' first social science have been greatly refined since Chittenden's pioneering survey. However, some aspects endure. Visitor surveys remain a key social science tool, and early topics, such as transportation, crowding, and economic contributions, continue to be relevant. Tabulations of visitor numbers and characteristics are still strategically important. Universities and other partners continue to contribute to park social science through cooperative ecosystem studies units. As Garrison found, visitors' and managers' perceptions of experience quality can differ. And finally, as Garrison also discovered, social science may inform management, but it doesn't necessarily determine it.

However, other things have changed in the 125 years since Chittenden's original inquiry. These changes are producing new social science needs in the national parks. One need is for social science informed by historical and contextual depth. A second is for more social science that examines issues transcending park boundaries.

A feature of much contemporary park social science is its cross-sectional design. Visitor surveys represent a snapshot at one brief point in time. Typically, this cross-sectional approach seeks explanations for what visitors think and do in present conditions. Common "proximate" explanatory variables include age, race, income, and attitudes. But this is like trying to understand a tree by its foliage, while ignoring the roots and the soil from which it grows.

"Distal" causes are more distant in time and broader in social context. They represent the cumulative impact of historical forces and social conditions on the present. Understanding distal

causes can improve understanding of a current problem, just as understanding a tree is improved by knowledge of its soil and roots. Historical depth and social context can also suggest additional actions to address a problem.

Consider the relatively low visitation by African Americans to national parks. Commonly cited proximate causes are inequities in income and knowledge about parks. But this disregards the roots of the problem by ignoring who participated in the conversation about national parks when the idea first appeared in the nineteenth century, and—more to the point—who was excluded from that conversation. A reasonable hypothesis is that the historical legacy of African American exclusion is reflected in visitation patterns today.

Fee-free days and information campaigns respond to proximate causes. They are important in many ways but don't represent a comprehensive approach to the problem. Distal causes also must be addressed. One approach to overcoming the weight of historical exclusion is to work with African American groups to support their own grass-roots efforts to reverse exclusion by creating a culture of inclusion. Cultural peers are more likely to understand the full effects of exclusion and how to overcome it. These peers include the many passionate participants in organizations such as the Outdoor Afro movement.

Regarding trans-boundary issues, more questions than answers exist; thus, the need for additional social science is clear. The problem is how to protect national parks when their borders are porous, and every day the conditions outside parks become less like the desired conditions inside. A related problem is the increase in partnership parks and attempts to build protected-area collaboration on a landscape scale across many geographic and institutional boundaries.

Human population growth fragments natural systems, but it also fragments social systems. As human populations increase, they become more complex, more diverse, and segregated into specialized functions. One effect is multiple jurisdictions and interests with differing and often incompatible goals for a landscape. This leads to a loss of common ground as a basis for collaboration.

An important barrier to collaboration is differences in stakeholders' core values. A second is distrust. Core value differences include: conflicting symbolic values shaping community identity, for example, the Old West vs. the New West; differences in economic values shaping land-use decisions, such as more development vs. limited development; and disagreements over ecosystem values driving park management, such as in priorities attached to wilderness character or wildlife habitat.[10]

Distrust is multidimensional. One form of distrust is a general predisposition to not trust specific entities, such as the federal government, independent of context. Another is distrust of specific processes, such as environmental assessments or social surveying, independent of participants. A third is distrust based on personal incompatibilities between potential participants in a collaborative process.[11] Many other collaboration barriers exist, but research on how to overcome value differences and distrust is particularly important if national parks are to successfully partner across boundaries in fragmented social systems.

In sum, when the future of park social science is examined against an ever-encroaching and more diverse world, we see new needs added to the science already in place. We need social science informed by history. We need more qualitative case studies of collaboration and what can be learned

from success and failure. We need long-term monitoring of social change in and around parks, including changes in who park visitors are, and in levels of trust and distrust. And, because the NPS can't do this alone, we need more healthy partnerships to extend the capacity of park social science.

Endnotes

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3. Louis C. Cramton, *Early History of Yellowstone National Park and Its Relation to National Park Policies* (Washington, DC: Government Printing Office, 1932), 49–50, 67–68, www.nps.gov/parkhistory/online_books/yell/policies/yell_history_policies.pdf.
4. Entrance permit, July 26, 1920, Yellowstone Heritage and Research Center, box N-1, "Travel and Visitation."
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10. Julia M. Wondelleck and Steven L. Yaffee, *The Challenge of Collaboration* (Washington, DC: Island Press, 2000), 47–68.
11. Marc J. Stern and Kimberly J. Coleman, "The Multidimensionality of Trust: Applications in Collaborative Natural Resource Management," *Society and Natural Resources* 28, no. 2 (2015): 117–132.