Crowdsourcing conversations about America's national parks

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This book is about the US national parks, with special emphasis on visiting and managing the parks. There are more than 400 diverse national parks in the US that help tell so many of the important stories of the nation's natural and cultural history. All of these parks are managed by the National Park Service (NPS), an agency of the federal government. Many of these parks are well known and heavily visited—parks such as Yellowstone, Yosemite, and Grand Canyon—while others are not widely known and sparsely visited. But all of these parks must be managed carefully to protect their natural and cultural integrity and to help visitors enjoy and appreciate them. It is also important that visitors are informed about these parks and associated management issues, so they can get the most out of their visits and help protect the parks in the process.

The book takes an innovative approach to all this by using a sample of crowdsourcing postings— comments and photographs by park visitors posted on more than a dozen crowdsourcing platforms (e.g. Yelp, Reddit, Facebook, LinkedIn) to start a series of "conversations" about the national parks. For example, visitors often post comments or photos about what they liked (and sometimes didn't like) about the parks they've visited and how they're managed. We then respond to these postings to complete the conversations in a substantive and informed manner. We've given each conversation a short descriptive title as listed in the Contents and organized the conversations in three broad categories: (i) the types and diversity of the national parks; (ii) how to successfully plan and conduct visits to the parks; and (iii) issues associated with national park management. We encourage you to read some or all of these conversations to develop a greater sense and appreciation of the national parks, how to get the most out of your park visits, and how to be an informed and responsible national park visitor.

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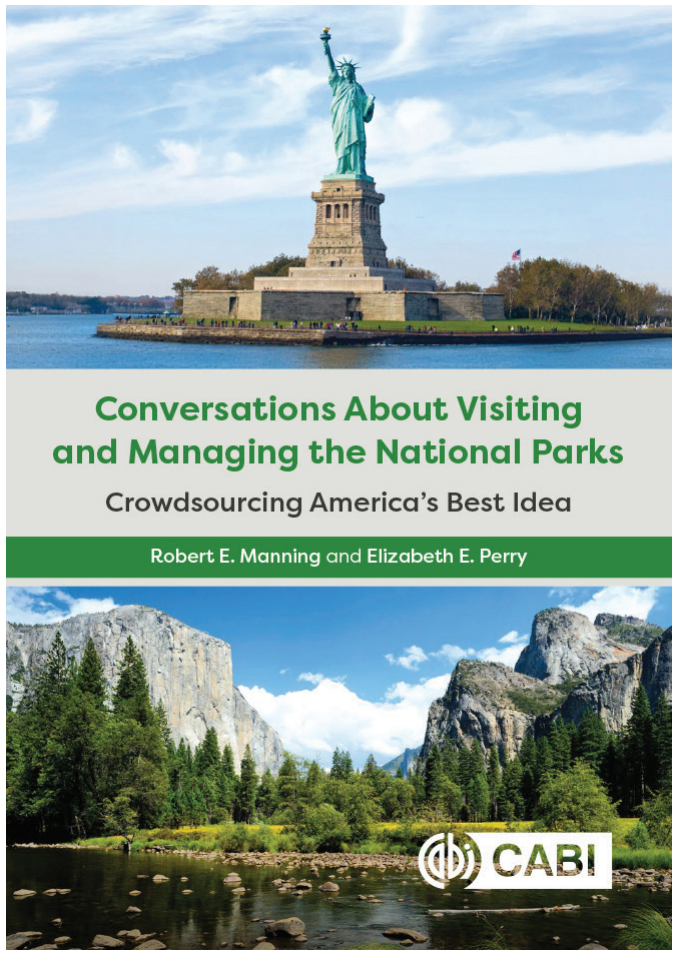

CROWDSOURCING

Crowdsourcing is generally defined as information voluntarily derived from a large group of dispersed individuals. Initial forms of crowdsourcing can be traced back hundreds of years, but contemporary forms involve the Internet and digital platforms, and have proliferated exponentially over the past two decades. The term "crowdsourcing" was coined in 2006 by Jeff Howe in *Wired* and is derived from a combination of the words "crowd" and "outsourcing," meaning that collection of desired data/information is outsourced (transferred to others) to the crowd (members of the public). There are many crowdsourcing platforms, some of them especially well known and widely used, including Yelp, Google Reviews, Angie's, Tripadvisor, X (formerly Twitter), Facebook, TikTok, LinkedIn, Flickr, Google Reviews, and Wikimedia Commons. Some contemporary crowdsourcing platforms are

business oriented, focusing on reviews of restaurants, hotels, and other enterprises. But many are designed for discussion of social and political issues and have public policy implications, sometimes helping to inform governmental decision-making. In this latter application, crowdsourcing can contribute to democracy by inviting and facilitating public involvement and helping to put power into the hands of citizens (or "netizens" in this case). Crowdsourcing is sometimes thought of as a form of citizen science, constituting a type of creative consciousness, and representing an expression of monitorial citizenship.

Park planning, management, and research have begun to use information derived from various forms of crowdsourcing due to its relatively low cost compared to direct observations of park visitors and field-based surveys. Many of these uses of crowdsourcing information/data have recently been reported in the scientific and professional literature. For example, an increasingly common approach has been to use geo-referenced photographs taken by park visitors and posted to crowdsourcing platforms such as Flickr and Wikimedia Commons. These geo-referenced photos provide useful information on the number of visits to parks and their spatial and temporal distribution. An extension of these studies has used such data to estimate the preferences of visitors for various types of landscapes and other park features and the public health and social benefits derived from park visits. However, use of text-based crowdsourcing postings is less common.

We use crowdsourcing in this book to access information from and about national park visits and visitors; examples of such information include what visitors liked most and least about their park visits, questions they ask about national park-related issues, and their thoughts about national parks and how they should be managed. We use mostly text-based postings, but also use photos as appropriate. We then respond to these comments by offering: (i) information about the national parks; (ii) how the quality of visits can be enhanced through better information; (iii) how and when to best plan a national park visit; (iv) how and why the national parks are managed as they are; and (v) how a better understanding of all this can contribute to the enjoyment of park visits and ultimately lead to a greater appreciation of the national parks and public support for their protection.

CONVERSATIONS

As noted above, this book primarily comprises a series of "conversations" about the national parks, including visiting and managing them. These conversations are started by visitors to the parks through their crowdsourcing postings and are completed by our informed and considered responses. These conversations are "authentic" in that they use crowdsourcing postings to draw directly on the experiences of visitors to these parks—aspects of their visits they particularly enjoyed or found displeasing, things they didn't expect or understand, questions they had about the parks, and issues they wished they'd understood beforehand. Our responses to these postings are also as "authentic" and authoritative as possible; they're based on our careers as university professors who teach the history, philosophy, and management of national parks and related areas, and conduct long-term programs of research for the NPS and associated agencies. We also have extensive personal and professional experience in the parks, visiting them often, having prior careers in the NPS, and even living in some parks for a year at a time while on sabbatical leave and working with NPS staff.

While we draw on our academic and research backgrounds, we're careful to ensure that our responses are as readable as possible. We take a conversational tone, avoid technical language (or explain the meaning of technical terms when needed), and keep our responses short and as plainspoken as possible; "snappy" is our goal. These conversations remind us of the "teachable moments" we enjoy so much in our classes, when students make comments or ask questions and we have the opportunity to respond in respectful and informed ways. We think this represents an interactive form of education at its best—for both students (and in this case, the public as well) and us.

With the help of several of our student researchers (acknowledged at the beginning of the book), we've combed through thousands of postings about the national parks on nearly 20 crowdsourcing platforms. Many of these postings didn't surprise us, but some certainly did (as do some of the comments and questions we get in class!). Formulating responses to some postings was pretty straightforward, but others required research and deliberation on our part. We've been appropriately respectful in responding to all these postings, just as we strive to do with our students, and we always maintain the anonymity of those who make these posts.

The diversity of topics raised in the postings we examined was even more pronounced than we expected. To bring order to this, we've categorized the conversations into three groups as referenced in the Contents: (i) Part 1: The National Parks (sample issues include urban national parks, wilderness in the national parks, national parks as models of sustainability); (ii) Part 2: Visiting the National Parks (sample issues include visitor safety in the national parks, public transit in the national parks, national park museums); and (iii) Part 3: Managing the National Parks (sample issues include entrance fees and passes in the

national parks, wildfires in the national parks, and how to become a friend of the national parks). In the Contents, we've given each of the conversations a number and a short descriptive title (sort of like "Frequently Asked Questions" on many Internet sites) to lead readers to those that are of most interest. We have done a lot of cross-referencing in the conversations; for example, in the conversation in Part 1 on the growing number of visits to the national parks (Conversation 3), we've noted the number of the conversation in Part 2 on how to avoid crowding in the parks (Conversation 55).

CONVERSATION #76: CLIMATE CHANGE

Post

Alcatraz Island is facing climate change pressures, including sea level rise, that compound the difficulties of preserving the prison and other structures. A new effort, detailed in a *New York Times* article (Knight 2024), aims to capture the entire island in 3-D, allowing for remote exploration and a catalog of current conditions as climate change continues to impact the national park. Not all are in agreement about the need for this, as *Russ J.* shared in a reader comment on the story:

Fans of penitentiary facilities are of course entitled to treat this site as important and worth preserving. But trying to present Alcatraz as a meaningful indicator of climate change smacks of opportunism and dishonesty. If people refuse to see the evidence of climate change that is readily apparent everywhere, I doubt looking at a rusty old prison is going to change their minds.

Response

Russ J., we agree that there are numerous examples evidencing climate change in the national parks and beyond; and that for some, Alcatraz Island may not be the prime example. However, we also know that climate change is affecting all national parks (again, and beyond) and that we need more invested climate stewards. Consider that the climate change story at Alcatraz may inspire some who are interested in the history of the island to dig a little deeper into climate impacts, make connections between their curiosities and climate, and, hopefully, engage in actions toward a responsive future. This could be "fans of penitentiary facilities," but also those interested in the Indians of All Tribes occupation, the flora and fauna of the island, and its representation throughout time and cultures in the San Francisco Bay. Let's explore the subject of climate change and the national parks a bit more.

Human-caused climate change has been called an "existential threat" to humanity; it endangers the integrity of the natural cultural world, our ways of life, and perhaps our very existence. The contemporary climate crisis is primarily driven by excessive greenhouse gas emissions that collect in the atmosphere, trapping the sun's heat, warming the planet, and leading to a cascading series of impacts. The principal source of greenhouse gasses is burning of fossil fuels including coal, oil, and natural gas, along with massive global deforestation which reduces the degree to which forests capture and trap/sequester greenhouse gasses.

The National Park System is on the front lines of this crisis. Many national parks are located in extreme and vulnerable environments such as high elevations, Arctic regions, the arid southwestern US, large wetlands, and extensive forests and coastlines; these are locations where the effects of climate change tend to appear early and with more severity. Examples of these effects include glacial melt, reduction of snow cover, drought, declining river flows, increasing wildfires, severe storms, extensive tree mortality, shifting biomes, sea level rise, ocean warming and acidification, coral bleaching, loss of biodiversity, invasive species, and loss of archaeological and historical sites and associated artifacts.

In response to these threats, the NPS has developed its Climate Change Response Strategy (updated in 2023). This plan includes an integrated strategy to apply across the National Park System. First, the strategy begins with understanding the science behind climate change as a way to make informed decisions about national park management. For example, what are global trends and projections about climate change, how are park resources affected, and how might management actions be effective? Second, this is followed by adapting to climate change. For example, as stream water temperatures have risen in response to climate change, native trout in Glacier National Park are being relocated to cooler sections of these streams. Other examples include prescribed fire in selected forests (see Conversation 77), propagation and planting of warm-water resistant corals, and expanding coastal wetlands to absorb storm water surges and sea level rise. There are a host of adaptation strategies for cultural resources as well, including stabilizing shorelines to protect historic structures, moving historic buildings to higher ground, and documenting historic and archaeological sites before they are ultimately inundated by sea level rise. Third, the NPS is working to mitigate the foundational causes of climate change. For example, the agency is adopting a variety of climate-friendly practices in the parks, including reducing greenhouse gas

emissions in park operations, building and retrofitting visitor centers and other facilities to meet carbon reduction objectives (see Conversation 50 on visitor centers), shifting from fossil fuels to renewable energy sources, and developing public transit options in parks to reduce reliance on automobiles. Fourth, the NPS is making climate change an important component of its public education and interpretive programs. As noted in Conversation 13, the national parks are increasingly known as "America's classroom," and many of the parks' educational and interpretive programs are addressing the increasingly important issue of climate change, including how the lessons learned in the parks might be applied in the communities in which park visitors live. The NPS publication, "Climate Change in National Parks" is a useful guide (see National Park Service (2023a) in the References at the end of the conversation). Recent research has also explored the effects of climate change on recreational use of national parks and related areas. The changing climate has altered recreation conditions in varying seasons, primarily manifested in winter and summer recreation and tourism activities. For example, warming temperatures in the winter season have reduced the length of snow-sports seasons and depth of snowpack, and increased the volatility of natural snow conditions, and this is undercutting the quality of winter recreation experiences. Under future climate change projections, the length of the snow season is expected to substantially decline. Research also suggests that climate change is likely to negatively affect summer outdoor recreation conditions in regionally specific ways, such as increasing average daily summer temperature, increasing the number of days over 90°F, increasing the number of rainy days per week, and increasing the number of biting insects across the Northeast. In addition, the changing climate (e.g. warming temperatures and more and stronger hurricanes) is expected to result in limited accessibility to recreation resources that are damaged and/or temporarily closed for restoration.

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