

# Climate Change Communication Campaign Planning: Using Audience Research to Inform Design

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## Project description

IN 2011, MORE THAN 280 MILLION PEOPLE VISITED US NATIONAL PARKS and over 42 million visited national wildlife refuges. Public lands represent some of the most widely visited and revered landscapes in the country. Climate change impacts can be seen in many national parks and national wildlife refuges throughout the country (Bentz et al. 2003; Millar et al. 2004, Moritz et al. 2008; Salazar-Halfmoon 2010) and the phenomenon has been recognized as the greatest challenge ever faced by public land management agencies (Delach and Matson 2010). With nearly a century of experience in environmental communication practice and natural resource interpretation, US National Park Service (USNPS) and US Fish and Wildlife Service (USFWS) managers recognize the potential for America's public lands to serve as natural learning laboratories and represent a unique opportunity to provide millions of visitors with meaningful, place-based climate change education.

The Place-based Climate Change Education Partnership (CCEP) was a strategic campaign planning project funded by the National Science Foundation and conducted in partnership with USNPS, USFWS, and the National Parks Conservation Association. The goal of the campaign planning effort was to develop climate change communication tools and resources for interpretive staff at national parks and national wildlife refuges across the country. Our team worked directly with more than 400 USNPS and USFWS employees and partners at 16 national parks and wildlife refuges in five regions across the country (northern Colorado, the Puget Sound in Washington state, the Kenai Peninsula in Alaska, Washington, DC, and southern Florida). Campaign planning activities included: (1) a comprehensive literature review of climate change communication research, (2) interviews and surveys with agency managers and front-line staff (35 interviews, 847 surveys), (2) interviews and surveys with members of the target audience—park and refuge visitors (359 interviews and 1,481 surveys), (3) five regional workshops, and (4) 15 site visits and focus groups with agency staff. These research activities were also opportunities to assist with institutional capacity and

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infrastructure-building to provide resources for climate change communication and engagement within both agencies.

### **Theoretical perspectives driving the communication campaign**

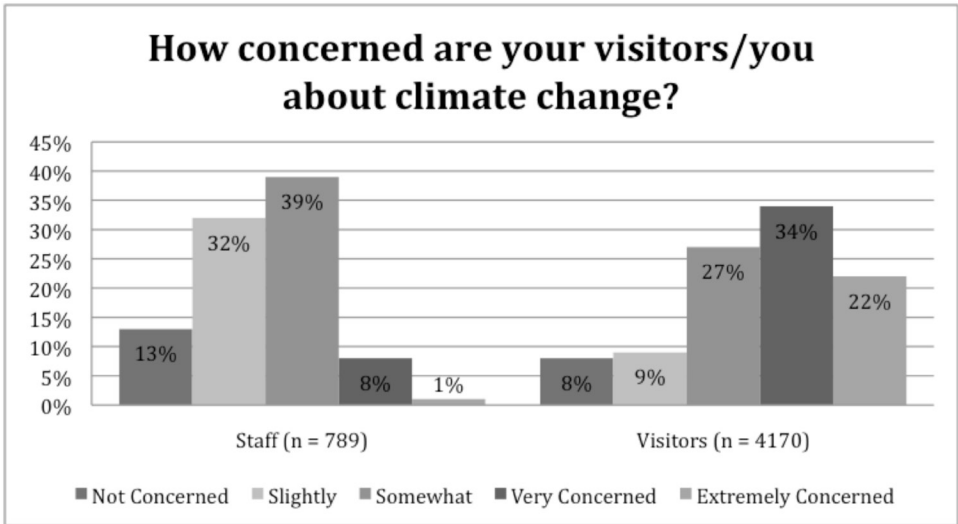
The theoretical framework for this endeavor is based on a combination of social science and education-based theories: (1) place attachment, (2) place-based education, (3) free-choice learning, and (4) norm activation theory (the full theoretical model is detailed in Schweizer, Davis, and Thompson 2013). These four theoretical threads explain that people form bonds to places (Altman and Low 1992), and parks and refuges are no exception. These bonds function by enabling people to develop an intimacy with the land, stimulating an effective learning environment in which to perceive changes to the landscape (Thomashow 2002). In addition to being situated in a particular place, authentic learning also follows the desires and motivations of each individual learner and typically involves discussion with others (Falk and Dierking 2002; Falk 2005; Heimlich and Falk 2009). The place-based communication context facilitates the maintenance and deepening of personal norms for performing pro-social and pro-environmental behaviors necessary to mitigate the impacts of climate change locally. National park and wildlife refuge visitors' understanding of climate change is activated through four variables of engagement: (1) problem awareness, (2) ascription of responsibility, (3) perceived outcome efficacy, and (4) one's ability to help.

### **Practical lessons gained from the campaign research**

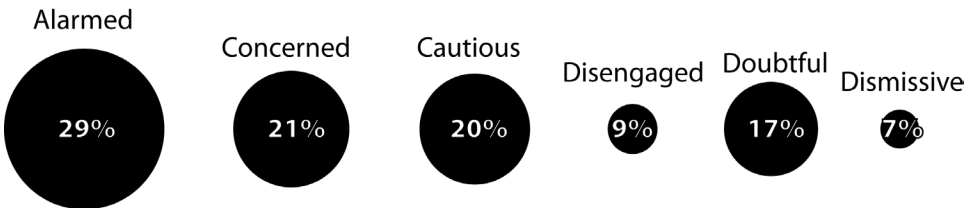
Survey and interview results revealed a population of visitors who care deeply about America's public lands and natural landscapes and this audience differs significantly from the broader American public in regards to (1) their knowledge and opinions on climate change, (2) willingness to take mitigating actions, (3) perceptions of climate change impacts, and (4) desire for climate change education, communication and engagement.

Results from the surveys show a disparity in staff perceptions of visitors' thoughts regarding climate change. For example, only a small fraction (<9%) of park and refuge staff believed that their visitors were very or extremely concerned about climate change whereas subsequent surveys with visitors indicated that a majority of the audience (56%) was very or extremely concerned (see Figure 1). This disconnect illustrates that a lack of knowledge about an organization's target audience often serves as a perceived barrier to discussing controversial issues, like climate change on federal lands. Through focus groups and staff interviews, our team identified the pervasiveness of this misconception, which hindered effective communication planning and prevented staff from engaging visitors in conversations about climate change and local impacts. One NPS interpreter explained: "For me, interpreting climate change impacts is like interpreting the Civil War. I hope I never have to do it because I'm certain that half the group will be neo-Confederate nay-sayers...."

To segment our target audience (park and refuge visitors), we conducted a k-means cluster analysis. We used the same survey questions and similar audience segments as the Yale Project on Climate Change's (YPCC's) "Six Americas" studies: "alarmed," "concerned," "cautious," "disengaged," "doubtful," and "dismissive" (Maibach, Roser-Renouf, and Leiserowitz 2009). Results indicated that a substantially higher proportion of park and refuge



**Figure 1.** Comparison of staff (n = 789) perceptions of visitor concern regarding climate change and visitors’ (n = 4,170) reported climate change concerns.



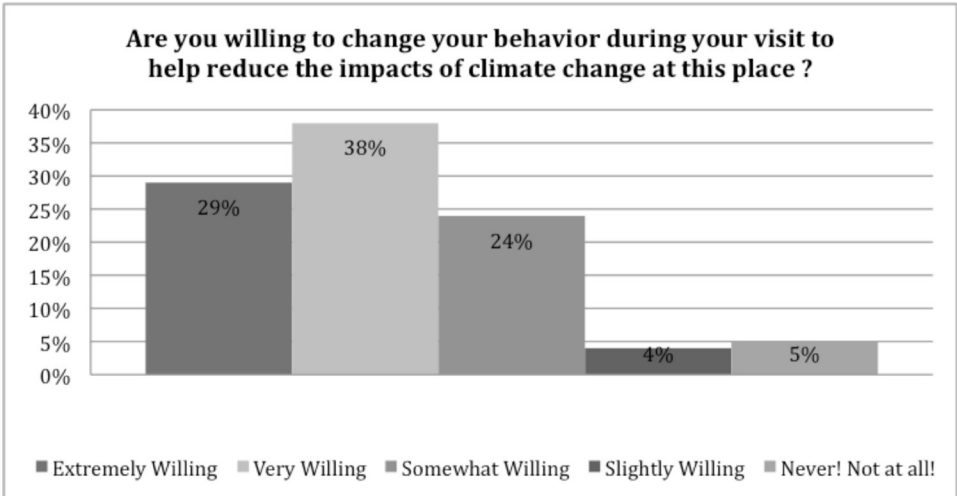
**January–December 2011 • n = 4,136**

**Figure 2.** National parks and national wildlife refuges “Six Americas” audience segmentation (adapted with permission from Schweizer et al. 2013).

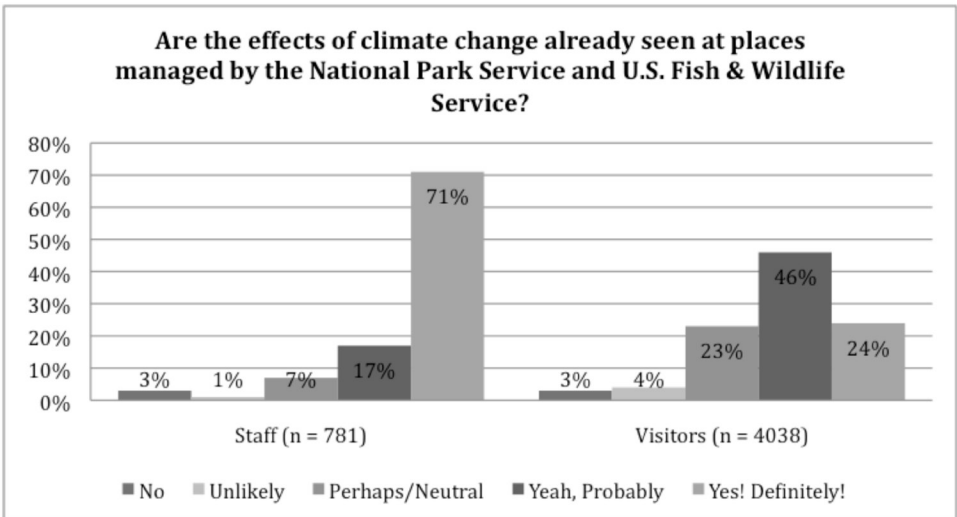
visitors (29%) fall into the “alarmed” category (see Figure 2) relative to the American public (Leiserowitz et al. 2011). According to the most recent YPCC Six Americas study, 39% of the American public is either “alarmed” or “concerned” about climate change (Leiserowitz et al. 2011); therefore, the fact that 50% of park and refuge visitors were grouped in the “alarmed” and “concerned” categories suggests that this audience may be more knowledgeable, concerned, and engaged with climate change than the average American.

Visitors’ willingness to change behavior was measured with a single-item indicator. Respondents were asked to respond to the question “How willing are you to change your behaviors in this park/refuge to help reduce the impacts of climate change?” Response options consisted of “extremely willing,” “very willing,” “somewhat willing,” “slightly willing,” and “not willing” (see Figure 3).

In addition to concern about climate change and willingness to take mitigating action, the audience research assessed visitors’ awareness of climate change and its site-specific im-



**Figure 3.** Visitor (n = 4174) willingness to take mitigating actions while visiting the park or refuge.



**Figure 4.** Comparison of agency staff and visitor perceptions of climate change impacts.

pacts, as well as their self-reported knowledge about this issue. Visitors were asked several questions including “Do you think climate change is happening?” and “What do you think is the cause of climate change (human, natural, both)?” In addition, two questions on the survey measured visitors’ ability to notice climate change impacts while visiting parks and/or refuges (see Figure 4).

Finally, several questions were used to measure visitors’ desire to learn and how they would like to learn about climate change impacts. Visitors rated their level of agreement with the following statements: “I would like to learn more about climate change impacts in our

national parks/refuges” and “I would like to learn more about climate change impacts in this park/refuge.” Additionally, in both the interviews and surveys visitors were asked to provide an example of how they would like to discuss climate change or to select all of the communication media in which they would like to learn about climate change. When provided a list of 12 learning methods, survey respondents identified websites as the most preferred method (46%) followed by trailside exhibits (42%) and indoor exhibits (38%). Visitor interviews revealed more scattered interests, with trailside exhibits ranking highest (26%) followed by ranger/interpretive programs (18%) and brochures (16%); a visitor at Kenai Fjords National Park suggested the use of trailside exhibits to

[P]oint out the different birds that used to be here or the mile posts where the glacier has been the past 100 years. I don't think you really need to preach at people but show them what's going on. I like subtle.

In addition to identifying preferred methods of learning, 78% of surveyed visitors believe informing visitors of actions they can take is particularly salient and important to communicate in parks and refuges. Articulating interest in action-oriented outreach, a visitor at Biscayne National Park explained:

I guess the whole thing about climate change is that it feels so overwhelming ... what am I supposed to do about it? It's easier to do nothing. So saying things that you can do [into outreach] that people feel are do-able [is a good idea].

As recommended by this visitor, it is critical that place-based climate change communication and engagement activities focus on bioregional principles and practices, and identify specific actions that visitors can do—today—to slow the impact of climate change.

### **Walk-away insights for climate change communication planning**

Lessons from this multi-methodological audience analysis and communication campaign planning research, led us to suggest three principles for our agency partners to consider as they develop regional climate change communication campaigns: (1) use place as a medium, (2) connect that place to emotional and social meanings through (3) empowering messages about specific actions visitors can do to reduce the impacts of climate change.

Based on our research, teams of agency-leads from each region designed a suite of place-based strategic communication actions/activities to deepen their audiences' understanding of climate change processes and impacts. For example, four of the specific engagement activities developed during the course of the project included: (1) regional, climate change youth leadership summits with community service and citizen science components, (2) cross-jurisdictional interpretive “climate change” trails, which included consistent message and signage design throughout the region, (3) mobile media applications and downloads for information about site-based climate change impacts, and (4) *changing landscapes*-themed communication and interactive repeat photography website.

We advocate the development of messages with a systems-based explanation in order to highlight the local changes and impacts observed at each park or refuge and how those impacts are connected to individual decision-making and behavioral choices—no matter how

far away the visitor lives. Coupling meaningful social interaction with experiential, place-based learning opportunities is a way to foster community and facilitate a deeper understanding of climate change impacts.

### **Case study: Climate change communication in Alaska**

An example of a climate change communication campaign based on research from the Place-based CCEP is the development and implementation of “Making Sense of History: Understanding Landscape Change in Alaska.” Colorado State University (CSU) and the Southwest Alaska Network (SWAN) partnered to create this interactive, repeat-photography website based on survey and interview data from the Place-based CCEP and parks’ research on climate change communication. Through this website, people visiting the parks are able to learn about specific changes happening in the area and what landscapes looked like historically, and personally visit and observe these places in the present. An additional advantage of building a website is enabling people who are interested in the parks, but unable to physically journey to them, to see and explore how the land is changing. To develop an effective climate change communication tool through this website, we incorporated several key findings from our research that correlate with other findings from the field of communication:

1. Visitors generally want to learn about climate science, but prefer to engage with the information by choice and discover without having facts forced upon them (Cone et al. 2011; Kubeck 2011), which confirms the main premises of Falk’s free-choice learning theory (Falk 2005):

... so combining visual and actual experience, then we come up with our own judgments (visitor at Kenai Fjords National Park, personal communication, June 21 2011).

2. Photographs comparing historic landscapes with what visitors now see are powerful tools that leave a lasting emotional impression and encourage visitors to learn more about what they’re seeing (Byers 2007):

If there was a sign in front of something you could visibly see and you had a before and after picture that shows the changes you can’t deny but can physically see (visitor at Kenai Fjords National Park, personal communication, June 23, 2011).

3. Visitors are interested in learning through hands-on activities, particularly if what they are doing is contributing to data collection that will help park scientists but that does not necessarily require days or months of training (Ottinger 2009; Newman et al. 2011), which also confirms the underlying principles of place-based learning theories:

Anything that would help our community learn more about what’s going on and also help my understanding of what’s out there if I’m trained that gives me more information. Plus I’m a teacher, I don’t teach science but it helps me, it empowers me with more information and I can talk to my students about it so that’s kind of a trickle down to the community too (visitor at Kenai Fjords National Park, personal communication, June 21, 2011).

4. Incorporating technology is essential to engage a diverse audience, even in Alaska where cell phone service and internet accessibility are variable (Newman et al. 2010):

I'd like to learn through a website, I'm always on the internet, even traveling...  
(visitor at Harpers Ferry National Historic Park, personal communication, May 27, 2011).

The design incorporates all of these elements into a clean, engaging, and interactive repeat-photography website for visitors of all ages to explore. Images of the parks are the centerpiece of the site and are prominently displayed on each page. Site visitors are encouraged to upload their own photos of the parks that match the location of historic photos to add to the on-line database. They can compare any two photos on the site as well as comment on changes they are observing in their photos and those of other users.

Connecting web users to the science—climate and otherwise—being conducted in the parks was an integral part of the site design. Links to current research projects of park scientists studying coastal change, glaciers, plant communities, and more are readily available, as are photos, short biographies, and videos of scientists in action. As it was important to the development team to include many aspects of science in the parks, not every research project is dedicated to climate science; however, each page shows how climate science is related to most studies being conducted in the parks. Site visitors are provided with resources that encourage them to learn more about climate change and climate science and with links to information on how to get involved with other citizen science programs near their homes.

“Making Sense of History” launched in July 2013. Website visitors are invited to take a brief on-line survey to share their opinions to help improve the site design, as well as to better understand if and how it is encouraging visitors to think and learn more about climate change. Based on nationwide interest in repeat photography and citizen science as tools to learn about climate change, we are currently exploring ways to engage with other national parks and protected areas in similar initiatives. Our long-term vision is to enable managers and interpreters of public lands across America to be able to add their location to the website, upload historic photos, and easily create their own repeat-photography citizen science page.

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