

## **Social media communication preferences of national park visitors**

### **Introduction**

Many public land management agencies have dual mandates of protecting cultural and natural resources while simultaneously providing public access to those resources. The mission of the U.S. National Park Service (NPS) is to not only protect nationally-significant landscapes, but to protect them for the “enjoyment, education, and inspiration of this and future generations” (National Park Service, 2017a). Effective communication with park visitors about why landscapes protected by the agency are significant (whether it be for their aesthetic, cultural, historic, or scientific value) is critical to ensuring those visitors have high-quality outdoor recreation experiences (Moyle & Croy, 2009). To this end, the NPS engages in communication through a variety of ways, ranging from on-site interpretive tours to national television commercials and social media campaigns. Communicating with visitors outside of “traditional” communication channels such as print media, park-specific web pages, and interpretive programs is increasingly being recognized by the agency as a way to attract new and diverse audiences (Henker & Brown, 2011). For example, NPS director Jonathan Jarvis released a memorandum in 2011 stating, “the NPS encourages parks, programs, and offices to consider using social media tools to augment their communications efforts” (Jarvis, 2011, pg. 2).

Consequently, individual units of the National Park Service have been integrating different social media platforms into their communication efforts over the past several years (Garrison & Li, 2014). However, research is often unavailable to guide social media communication in parks (National Park Service, N.D.). This research begins to meet this need by:

- 1) developing a better understanding of how visitors to a prominent U.S. national park use social media platforms;
- 2) determining what types of information park visitors would prefer to receive via park-managed social media accounts; and
- 3) determining which types of information sources park visitors trust the most.

Each of these objectives was developed by the research team with input from the Crater Lake Science and Learning Center. Through an expanded understanding of social media use and preferences amongst park visitors, communication specialists and park managers will be better equipped to deliver the right types of park-specific information through the most appropriate social media channels, increasing the efficiency and usefulness of their social media communication efforts.

### *The Rise of Social Media*

Social media is an increasingly popular communication tool, with 2.46 billion users worldwide in 2017 (eMarketer, 2017). In 2018, 73% of adults in the U.S. used *YouTube*, 68% used *Facebook*, 35% used *Instagram*, and 24% used *Twitter* (Smith & Anderson, 2018). These platforms have all steadily increased use in the U.S. since 2013 (Smith & Anderson, 2018).

Social media platforms are changing the way people communicate and obtain information. Each platform has a different purpose and use. For example, *Instagram* is used to share photos with friends, *Twitter* allows users to create short, 240-character, micro-blog posts describing their daily lives, and *YouTube* is used for sharing video content. Consequently, many people use multiple social media platforms, with the average American using three different platforms (Smith & Anderson, 2018).

Social media is gradually becoming prevalent at all levels of government (Mergel & Bretschneider, 2013). Some federal agencies have been successful in communicating effectively through social media. For example, during the Obama administration, the White House used many different platforms to communicate with the public. Their efforts included *Facebook*, *Twitter*, *Instagram*, *Flickr*, *Vimeo*, *Medium*, *Tumblr*, *YouTube*, *Snapchat*, *iTunes*, and *MySpace* (Schulman, 2016). Different types of content were posted on each platform to optimize the communication strengths of the distinctive channels and reach diverse audiences. The White House's use of social media has been characterized as an efficient way to directly communicate with a diverse public *and* increase the transparency of activities within the Obama administration (Bertot, Jaeger, & Grimes, 2012). More government agencies could operationalize social media to expand public participation, increase transparency, and more effectively communicate with the public they serve (Chun, Shulman, Sandoval, & Hovy, 2010).

Data collected through social media have been used in park and protected area management to track visitation (e.g., Sessions, Wood, Rabotyagov, & Fisher, 2016; Tenkanen et al., 2017; Wood, Guerry, Silver, & Lacayo, 2013), determine visitor characteristics and travel behavior (e.g., Mendieta, Suárez, Vaca, Ochoa, & Vergara, 2016; Sonter, Watson, Wood, & Ricketts, 2016), and understand visitor preferences (e.g., Hausmann et al., 2017). However, there has been less research on how parks and protected areas could use social media to communicate with visitors more effectively. Many U.S. national parks have a social media presence, although platform use and types of content posted varies substantially (Garrison & Li, 2014). Of U.S. national parks, only one (Glacier National Park in Montana) has a published and publically-available social media management plan (National Park Service, N.D.). A recent study found that many people who liked the Yellowstone National Park *Facebook* page had visited the park

before, and that they preferred communication scenarios where the park was actively posting content and responding to users who engaged with the *Facebook* page (Miller & Freimund, 2017). There is a need to better understand how visitors would prefer to receive information through social media, both in terms of platform type and content delivered.

Understanding social media platform uses, content preferences by platform, and trust in different sources can help managers better understand how to effectively communicate park information to visitors. If visitors use different platforms to access distinct types of content, it is important to selectively disseminate information where people expect and want to find it. It is an inefficient use of time to curate content for social media platforms visitors do not use, or place the content on a platform where people do not seek it. Knowing platform and content preferences can therefore make the time managers spend communicating with the public more efficient, while also increasing the size of the audience reached. Park managers also want to make sure the information they are spreading is believed, so identifying the most trusted sources to communicate through, or citing the most trusted sources, can help increase credibility.

## **Methodology**

### *Study Site*

Our investigation focuses on a prominent national park protected for its aesthetic, cultural, and scientific value – Crater Lake National Park in Oregon. Crater Lake National Park is located in the Cascade Mountains in the northwestern U.S. (Figure 1). Due to the lack of inlets and tributaries, the lake has been described as one of the purest in the world (Harmon, 2002). Between 2009 and 2017, Crater Lake National Park has consistently attracted more than 400,000 visitors each year, with visitation peaking from June through September (National Park Service,

2017b). Visitors to the park can enjoy hiking, driving around the caldera on the Rim Drive, swimming in the lake, and taking boat tours to Wizard Island.

[Figure 1 near here]

### *Survey Instrument*

This study focuses on five common social media platforms used in the U.S. – *Facebook*, *Twitter*, *Instagram*, *YouTube*, and *Flickr*. These platforms are listed and described in Table 1. Visitors were also given the option to indicate other platforms they used during the on-site survey described below. For the purposes of the study, visitor use of individual platforms refers to the individual logging on to the website and engaging with its content. This could be in the form of uploading content, viewing content provided by others, or interacting with others over the content through “likes,” “shares,” or discussion.

[Table 1 near here]

Questions included in the survey established how often visitors generally use each of the social media platforms and what their main reasons were for using each platform. Individuals were asked about which social media platforms they would prefer for certain kinds of park content (history, directions, park conditions, natural features, and local amenities and activities). Specifically, visitors were asked “what types of information from the Crater Lake National Park [insert specific social media platform] page would allow you to have more enjoyable recreation experiences?” Additionally, visitors were asked about what communication channels/sources they used to plan their trip, and whether or not they would trust various channels/sources for park related information. For each channel or source, visitors were asked whether or not they would get information from that channel or source. If they indicated they would get information from

that channel or source, they were asked whether they would either be cautious to trust the source, or whether they would always trust the source; this question was adapted from Smith (2013). Finally, visitors were also asked to provide their basic demographic characteristics, including gender, age, education level, and race/ethnicity.

### *Data Collection*

Data were collected via an on-site paper survey administered between July 15-24 and August 1-15, 2014, for a total of 23 data collection days. These dates were selected to gain access to the highest possible number of visitors, as June through September is the peak visitation season. On-site surveys were selected because they can accurately capture visitors' perceptions and behaviors *during* their visit. Post-visit data collection methods such as mail-back surveys have been known to produce biased assessments of on-site experiences (Armstrong & Overton, 1977). Visitors to the park were surveyed at two central sites in the park – The Steel Village Visitor Center at the base of the caldera and the Rim Village Visitor Center at the rim. Surveys were conducted on paper, with an incentive of a raffled iPad for participation. To ensure unbiased representativeness of the results, every other visitor was intercepted and asked to complete the survey. If pedestrian traffic was particularly heavy, every third visitor was asked to complete the survey. If a group of visitors were selected, the individual with the most recent birthday was asked to take the survey; this helped ensure group leaders were not oversampled. This sampling methodology was based on standard practice for sampling visitors in parks and protected areas (Vaske, 2008). The total number of visitors that were intercepted but declined to take the survey were tallied after each sampling effort to calculate a response rate. The university's Institutional Review Board approved the survey instrument and data collection

methods.

## Results

### *Visitor Profile*

Of 911 visitors intercepted during the sampling periods, 580 accepted and completed the survey, for a response rate of 64%. The sample of visitors was slightly more male, had a fairly even age distribution, and was more highly educated and white than the general U.S. population (Table 2).

[Table 2 near here]

### *Social Media Use*

The majority of visitors (76%) were active on social media within the last month (Table 3). Additionally, over half of visitors (54%) were active on more than one social media platform. Of those who used social media, *Facebook* was the most popular, followed by *YouTube*, *Instagram*, and *Twitter*; fewer people used *Flickr*. Write-in responses for other platforms used included *LinkedIn* ( $n = 15$ ), *Tumblr* ( $n = 6$ ), *Pinterest* ( $n = 5$ ), *Snapchat* ( $n = 3$ ), *Vine* ( $n = 2$ ), *Reddit* ( $n = 2$ ), and *500px* ( $n = 1$ ).

[Table 3 near here]

Of those who used social media, people had different reasons for using different platforms (Figure 2). *Facebook* and *Instagram* were predominately used to keep in contact with family and friends, while *Twitter* and *Flickr*'s most popular use was to find and share information; *YouTube* was primarily used for entertainment purposes.

[Figure 2 near here]

### *Content Preferences by Platform*

People who used *Facebook*, *Twitter*, and *Instagram* were most likely to want to receive current weather/trail conditions on those platforms (Figure 3). *YouTube* and *Flickr* users were most likely to want to receive information on wildlife in the park and the park's natural and cultural history. Overall, *Twitter* users were most likely to not want to receive any information about Crater Lake through that platform, while *Facebook* users were the most likely to want to receive at least one type of content about the park through that platform.

[Figure 3 near here]

### *Trust in Different Information Sources*

Over half of visitors used their family or close friends for information on planning their trip to Crater Lake National Park (Table 4). The next most popular sources were the Crater Lake website and online non-news sources. Very few people used magazines or other organizations, such as non-profits or schools, to gather information in preparation for their trip.

[Table 4 near here]

The most highly trusted source for information on Crater Lake National Park was NPS publications, followed by family/close friends (Figure 4). The least trusted source was online non-news websites. The majority of people said they would be cautious about trusting information from organizations such as non-profits or schools, magazines, colleagues/acquaintances, and online non-news sources.

[Figure 4 near here]



## Discussion

Although many U.S. national parks have a social media presence, the use of platforms and types of content shared with the public varies. This research provides outdoor recreation managers and those responsible for communicating with the public a basis for why visitors use social media, what content they want to receive, and the specific platforms they want for varying content. Three-fourths of visitors to Crater Lake National Park were active on social media, and over half used multiple platforms. These results are comparable to social media use statistics for the U.S. general public in 2014 (Duggan, Ellison, Lampe, Lenhart, & Madden, 2015). Visitors do report very different uses for social media platforms. Consequently, visitors want different types of content about national parks posted on different platforms.

Visitors to Crater Lake National Park stated using *Facebook* and *Instagram* predominately for social purposes, while the greatest uses for *Twitter* and *Flickr* were to find and share information; *YouTube* was most useful for entertainment. Although many visitors use social media for social purposes, Miller and Freimund (2017) found that people who liked the Yellowstone National Park *Facebook* page were more likely to want educational content, entertainment, and affective posts (i.e., inspiration, reducing stress); people were less likely to like the page for social motivations. This indicates that people who follow parks on social media may have different and more specific motivations for following the park than for using the platform in general.

Additionally, visitors have varying trust in different information sources, with the NPS itself being highly trusted. This is in contrast to other studies which found the federal government is not highly trusted (e.g., Chanley, Rudolph, & Rahn, 2000; Smith, Leahy, Anderson, & Davenport, 2013; Wilkins & Miller, 2018). However, the U.S. public tends to view

the NPS more favorably than other federal government agencies (Doherty, Kiley, Tyson, & Jameson, 2015), and people who actually visit a national park may be even more likely to trust the NPS than the general public.

### *Management Implications*

The more social media platforms a park or protected area uses, the more people they can reach. However, managers have limited time and resources they can dedicate to developing and maintaining a presence on social media. Consequently, it would be most effective to concentrate efforts on the platforms used by the greatest proportion of visitors, and then add more platforms as time allows. Our research shows that information disseminated through the Crater Lake National Park *Facebook* page would have the largest reach, followed by a *YouTube* channel, an *Instagram* account, and a *Twitter* account. Additionally, only 9% of visitors who use *Facebook* reported they would not want to receive park-related information on that platform. Since few visitors use *Flickr*, and 19% of those do not want to receive park information there, parks should focus on developing content for other platforms before devoting time to *Flickr*. *Instagram* and *Flickr* are both photo-sharing services. More visitors use *Instagram*, and *Instagram* users are more likely to want to receive park content than *Flickr* users, again suggesting *Flickr* may not be the best platform to target for disseminating information to visitors. As of May 2018, Crater Lake National Park is only active on *Facebook* and *Twitter*. Since *YouTube* is used by many visitors, and it has a distinct use for entertainment purposes, it may be worthwhile to establish a *YouTube* presence to share different types of content than what is posted on *Facebook* and *Twitter*.

Park visitors would prefer managers to disseminate different types of content on different social media platforms. Visitors on *Facebook* and *Twitter* were most likely to want to receive current weather/trail conditions via these platforms. Visitors on *Instagram* similarly wanted weather/trail conditions through a park-managed *Instagram* account, but also had a high preference for content on wildlife that could be seen in the park. Content on *YouTube* should focus on the park's natural and cultural history and wildlife that can be seen in the park. Finally, visitors have the highest preference for receiving information on the park's natural and cultural history on *Flickr*. Overall, only around a quarter to a third of visitors wanted to receive information on getting to/from the park or local amenities/activities around the park on one of the social media platforms studied. These types of content may be better suited for non-social media outlets, such as the Crater Lake National Park website, which many visitors indicated they used to plan their trips.

In addition to knowing preferences for information channels and content, understanding trust in sources can also be beneficial for effective communication. People use trust in a source as a means to quickly evaluate whether or not they believe information (Eagly & Chaiken, 1993; Lee, Scheufele, & Lewenstein, 2005). If visitors believe the source is trustworthy, they are more likely to accept the information. Since visitors have high trust in NPS as well as their family/close friends, any information shared on social media either directly through the park or through an individuals' close ties is likely to be perceived as credible. Relative to the NPS and visitors' family/close friends, visitors had lower trust in organizations, such as non-profits or schools. If an organization partnering with a park is interested in disseminating park information, it may be beneficial to link to official park sources to increase perceived credibility.

### *Limitations and Future Research*

This study does have limitations. This sample was only from visitors to Crater Lake National Park; it is unlikely that all national park visitors have the same preferences. However, as Crater Lake National Park visitors are mostly non-local and travel from all over the U.S. as well as internationally (Littlejohn, 2001), it is likely that samples pulled from many other U.S. national parks would have similar demographics and social media use patterns. Additionally, this sample was taken exclusively during the summer. Future research could investigate if park visitors during other seasons have differing characteristics and preferences. Another limitation of this study is that social media preferences are rapidly changing (Perrin, 2015). We would expect the percentages of park visitors who use each platform would be different today and in the future. However, we believe that the content preferences and perceived uses of the platforms studied here will be largely stable over time given the platforms themselves have remained fairly consistent.

Although there is currently a lack of research on park visitors' preferences for social media communication, future research could investigate how social media preferences and perceived uses change over time. Additionally, future research could focus more on what specific messaging types visitors like and respond to. While this study examined the types of content visitors prefer on different social media platforms, it did not address how to specifically present the content.

Finally, there is a need to determine content and platform preferences between social media followers who are currently at the destination, who have never visited, and those who have visited previously but are not currently at the destination. People may have differing information needs depending on their relationship to the destination and their motivation to

follow the accounts on social media. While this study only focused on the communication preferences of park visitors, it would be interesting to explore how desired content and platforms may differ when communicating with the general public rather than only people who had visited the destination. This study did not ask visitors the timeline for when they use park-related social media information. It may also be beneficial for future studies to investigate if and how social media is used for deciding to visit a destination, planning a trip, while in the park, and once they return home.

## **Conclusion**

Outdoor recreation managers often struggle with finding effective ways to communicate with visitors. Many managers are now exploring the use of social media, but there has been little empirical research to guide their efforts. This is the first research to explore park visitors' uses of different social media platforms and the information they would prefer to receive from each of those platforms. Our findings suggest that outdoor recreation and park managers should disseminate different types of information through different social media platforms. Additionally, communicating through the most trusted sources can help ensure the content is believed. While the scope of our study is limited to one national park in the U.S., the findings are relevant to all park and protected managers in the U.S. who currently use, or are considering using, social media as a way to communicate with visitors.

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