Get People Outside or Protect the Wilderness:
The Impact of Social Media on Public Lands

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Introduction

Since the launch of social media, its presence has been felt in almost every industry. This includes public lands across the globe and especially within the United States. Social media applications are an outlet for expression and exploration. They offer worldwide influence and create content at a previously unseen rate, allowing users to access the world through what is often an edited photograph or video. In my research, I will be exploring the implications of viewing our public lands in this manner. The goal is to discern just how distorted this view of public lands has become and how it impacts users' opinions of these landscapes, the wildlife they sustain, and the recreational activities they support. More specifically, I will be addressing how the social media lens has contributed to a number of issues within these domains, but also how it has created useful data and encouraged more people to become interested in the environment and the conservation of it.

By surveying users of public land and reviewing specific case studies that pertain to land usage, I will be analyzing their opinions of these subjects, thereby determining whether or not social media has ultimately caused public lands to benefit or suffer from its influence. This will give regard directly to those who have witnessed the impact first hand. I will be taking a wholistic approach to ensure that a well-informed conclusion is come to, but will be addressing primarily these opinions with respect to conservation of public lands. Land conservation is in dire need of new advocates, and I aim to see whether or not social media will be able to offer a net positive influence for this practice.

To better understand how social media has influenced public opinion of public lands, I will be diving into the world of social media applications and assessing their impact on these government-owned lands.

Owners, Citizens, and Social Media Users of Public Lands

As humans we are in a unique situation where we are directly responsible for the world in which we live. Unlike other living things on Earth, we seem to have a moral obligation to maintain the beautiful and the wild aspects of nature. While our cities expand and our footprint grows, we have become increasingly aware of just how limited the spaces we can access this raw wilderness have become. Our eyes are fixed on screens that captivate us with enticing glimpses into untouched landscapes, where the scars inflicted by humanity remain unseen. Yet, this glimpse carries more weight than we care to admit, and we often ignore the effects that this media may have on this seemingly far-off destination. I aim to uncover just how aware we are of the implications our social media usage has on public lands.

Primarily, I will be taking this pragmatic viewing of social media's influence, and using my research to uncover the ways in which social media has succeeded and failed to help achieve what we deem to be our ideal public lands. By focusing on this ethic, I aim to understand the many ways in which people's perceptions of public lands have been changed, and how they continue to change due to the influence of social media. If social media can influence its users to become mindful of their actions and the ways

they directly impact our public lands, then it seems it can end up creating a more thoughtful culture of users in the domain of public lands. Establishing a specific set of criteria that outlines ways in which social media has repeatedly been used as a means of reassessing the current state of our public lands, I will thereby be able to determine the resulting effects, both direct and indirect, as either positive or negative. This is pertinent to my research as it envelopes the idea that we aren't in perfect harmony with our public lands, and nothing but the consistent striving for the betterment of them through careful thought and reflection will produce the desired results.

Furthermore, I will be asking what people think of their rights of access to knowledge, participation in public decisions, informed consent, and reasonable levels of risk exposure." (Andrews, 2006) By asking users to examine their integrity and responsibility when it comes to their usage of social media through Andrews' framework of technological citizenship, I will be determining how people feel they are responsible for public lands and the conservation of them by simply being users of social media. "If the ultimate meaning of citizenship is the 'sense that public things matter,' then new public 'spaces' like the web [including social media] become a focus of technological citizenship." (ibid) This statement pertains to public lands just as much as it does social media, and it demonstrates how we all have a moral obligation to behave both virtually and physically in these public spaces. Social media has the ability to be a force for good, so long as it can be used properly by responsible citizens.

As Will Primos once said, "You teach someone to love something, they will want to protect it". I will explore the ways in which this holds true for public lands given regard to being taught by social media. Specifically, I want to know if this passion for the environment can be instilled in a person by showing them the natural world through social media's lens and teaching them to appreciate it enough so that they become cognizant of every picture, thought, or video posted online, thereby becoming a responsible citizen of this technology. This sense of duty to our public lands realigns itself with the ethic of pragmatism because it inspires the iterative process of asking "how can we make this better?" It's what drives conservation around the world and leads me to believe that this alone is the most important contribution social media has to offer to public lands.

Case Context

This research involves the use of social media, smart phones, and digital cameras. Primarily, I will be examining the use of Instagram, but will also touch upon various other forms of social media. Social media comes with a wide range of functionality and capability but at the core of most platforms is the ability to post pictures and geotag the exact location the picture was taken. Within the 21st century, the prevalence of smart phones with integrated digital cameras and direct access to the internet has enabled millions of users to offer a glimpse into the world of public lands to those who might have previously been uninterested in them. The influx of new users

engaging with these diverse and complex ecosystems with little understanding of the effect they have on them becomes of importance when locations become geotagged. These geotags create specific destinations for others to venture towards but can also be used as pieces of data that enable conservation research. While this provides the opportunity for more people to begin to appreciate these landscapes for what they are, as well as the flora and fauna that inhabit them, it also creates complicated scenarios in which humans interact with a world that balances on a razor's edge. Such interactions often have unintended consequences that largely go unnoticed by the majority of public land users until it is too late. These consequences range from human lives being lost to the erosion of soil that is far more important than we realize.

A prime example of how this has impacted public land can be seen at Horseshoe Bend in Page, Arizona. This remote location prior to 2010 had a few thousand visitors annually, but within the year that Instagram launched, the visitation grew to over 100,000 and has since continued to grow at an alarming rate. For a town of 7,000 people, the lack of infrastructure in place was clear as trash piled up and traffic became congested. The sad reality of the situation is that social media has created the demand to achieve the perfect online presence, and all too often that means putting people, animals, and environments at risk. "People don't come here for solitude. They are looking for the iconic photo." (Zia, 2018, p1). While we often believe it is best for everyone to participate in outdoor recreation, we often neglect to understand what the implications of introducing new participants are, especially when we are removed from

the actual introduction of said participants. With approximately 3.48 billion active social media users (Newberry, 2019) online today, the introduction of new participants quickly creates a snowball effect where relatively unknown landmarks can quickly become tourist traps that are overcrowded and in need of serious infrastructure for the well-being of the environment and the safety of tourists. With issues ranging from clogged toilets to starving wildlife, the technical and social dimensions have dismantled the ability of public lands services to keep up with these problems.

While getting more individuals outside is a great thing, the fact that the actions of these new participants have such a negative impact on the landscape would leave one to believe that social media is a doing more harm than good. Luckily, these incredible photos can offer a variety of benefits to public lands that range from motivation for outdoor recreation to "big data" for conservation research. In the realm of outdoor recreation, it's led to a number of a new participants as seen in Figure 1. This participation is crucial for funding conservation efforts.
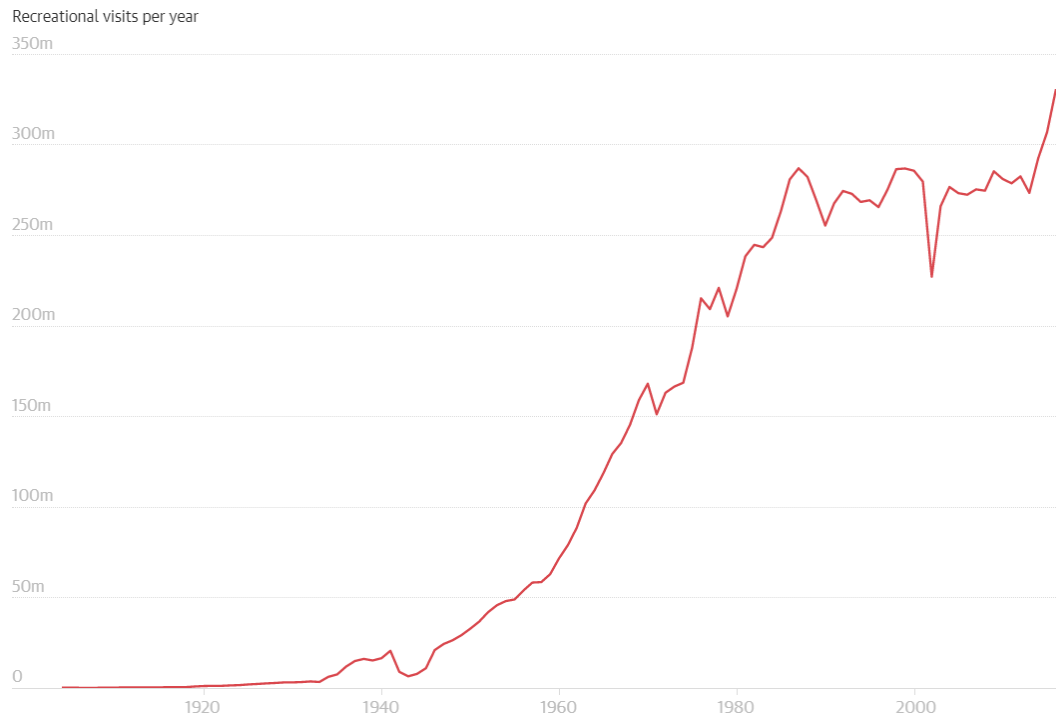
Recreational visits per year

Figure 1. Increase of National Park attendance over time (Wood, Guerry, Silver, Lacayo 2013).

Additionally, we have big data driving conservation efforts. Big data is considered the enormous amount of information sourced, in this case, through social media. By cross-examining big data such as the geotagging of specific locations on social media to other sources of data such as surveys and interviews, researches are able to produce findings that can lead to important conservation efforts. The scientific implications of social media's "big data" include the ability to better understand species' distributions, resulting biodiversity, erosion, pollution, recreational usage, and public opinion. A great example of this can be seen in Figure 2 where we see the geotagged locations on flickr from 2005-2012. By enabling researches to access location data from geotagged pictures on social media platforms like this, they are enabled to

carry out research on a whole new scale. With this development of technology comes

new ways to uncover important data pertaining to public lands and the usage of them.

By better understanding how we interact with the environment, we are able to better

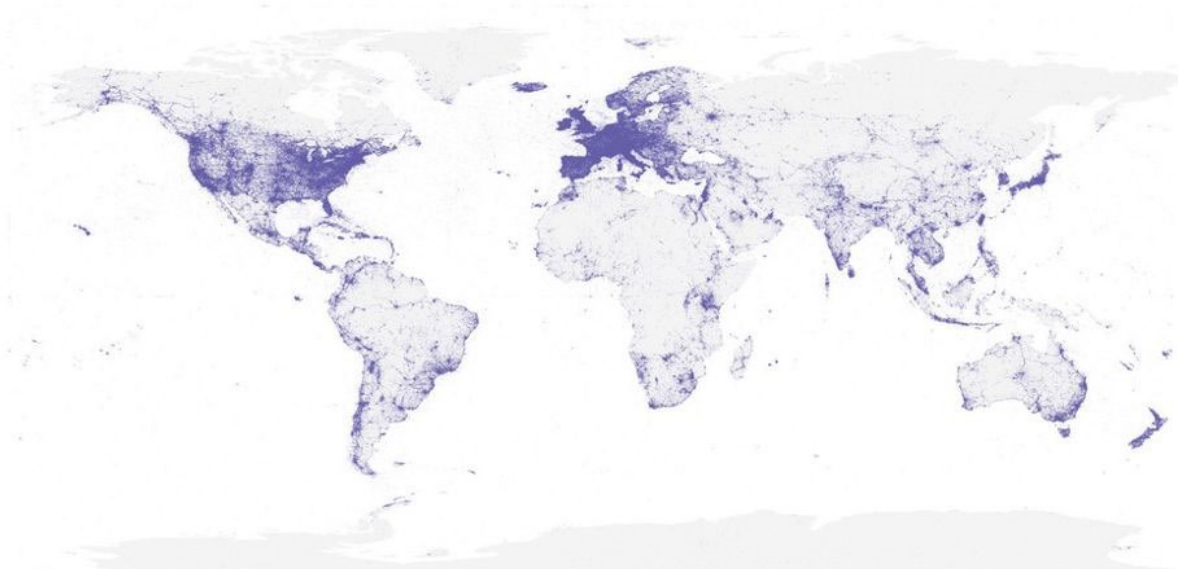understand the necessary measures needed to keep it around for generations to come.

Figure 2. Locations of the 197 million geotags on flickr (2005-2012) (Wood, Guerry, Silver, Lacayo 2013).

Research question and methods

The main research question is: What sort of influence does social media have in

regards to public lands conservation? By framing the problem using technological

citizenship and the ethic of pragmatism, I will uncover the ways in which social media

has led people to become emblazoned with the call to action for conservation. The

questions I will be answering are as follows: "how have people experienced the usage

of social media within public lands?", "in what ways can social media positively

and/or negatively affect their experiences in public lands?", and "how does responsibility with respect to conservation of public lands play a role in the usage of social media?".

Additionally, this research will answer whether or not social media users feel they are fulfilling their duties towards achieving technological literacy, engaging with the problems of the day, and protecting the civic good. (Andrews, 2006) These are pertinent to my overarching question because they specifically address the ways in which social media has impacted public lands by its ability to influence people. Through the utilization of surveys and case studies to gather evidence and address these questions, this paper aims to discern whether or not social media will ultimately impact public lands for better or for worse.

The main method of research utilized was a survey consisting of twenty-seven questions to better understand users of social media and public lands. Asking users to state their participation in outdoor activities, social media usage, and thoughts pertaining to public lands, conservation, and social media with respect to public lands, the survey was able to compile data detailing the beliefs and attitudes of the sampled population directly pertaining to social media and public lands. Since the survey was distributed across multiple social media platforms such as Instagram, Facebook, and Reddit, the one hundred twenty-eight responses received should be viewed individually as reflective of these respective respondents and not necessarily the entire population. Collectively, reasonable conclusions can be formed using the opinions of

these respondents as a sample of the population of social media users. Participants ranged from ages twelve to seventy-eight, with approximately 76% of responses being from males, and 50% of respondents being in college. Most of the data collected within the survey was categorical and offered insight into whether or not users of social media felt their use of the technology was helpful or harmful. Primary analysis was done by sorting responses as either contributing to the notion of social media being a positive or negative influence on public lands. To further explore the data, these findings were compared to the outcomes of the case studies.

As outlined in the case context, additional research was done by examining case studies where the interaction between social media and public lands has become readily apparent in certain location. By exploring the impact in specific locations across public lands as a direct result of social media's influence, these case studies offer a look into the varying ways technology has drastically altered the way these spaces are experienced. These research methods together create a comprehensive look into the world of public lands through the lens of social media.

Results

This research shed light on the prevailing attitude of social media users towards the subject, and that is that most people see little to no harm in posting about public lands. As seen in Figure 3, the general consensus concerning social media in public lands is that it adds to the experience but users are willing to give it up if it would

benefit conservation efforts. Respondents commented on the importance of social media's ability to inform people when action needs to be taken. The unmatched potential to educate newcomers to the outdoors on the practices of responsible public land users trumps the potential downsides to using the technology. Lots of answers provided were started with "it depends", highlighting the subjectivity in the questions.

Average Age	Dominant Gender	Most Used Social Media	Importance of Conservation	Most Common Activity
29	Male	Facebook	4.69	Hiking

Most Positive Social Media	Most Negative Social Media	Feeling of Responsibility?	Helps or Hurts Conservation?
Instagram	Instagram	Yes	Helps

Need to post?	Adds to or Diminishes Experience?	OK to Geotag?	Stop posting?
No	Adds to	Yes	Yes

Figure 3. Survey Results. (Hamlin, 2020).

When asked whether respondents felt the need to post about their adventures within public lands, most said they did not, yet coincidentally, felt that posting about these experiences did more good than harm. Altogether, this has created somewhat of a disparaging picture on the surface, but, upon a deeper dive into the data with further investigation, a more hopeful depiction of the situation is revealed.

Among the survey's findings, the reported level of importance regarding the conservation of public lands is significantly higher than expected. While this might be attributed to the bias of those who chose to take a survey about public lands, it is still of

note considering the majority of respondents 75% indicated the level on a scale of one –

five to be a five. Additionally, falling in line with this finding, 88% of respondents felt

responsible for the conservation of public lands. Thus, the following questions became

more valuable. Surprisingly, the views surrounding social media were not in line with

preconceived notions. Survey respondents overwhelmingly demonstrated that they

believe social media primarily helps conservation efforts. Because over 76% of these

responses leaned in this direction, the reasons demonstrated a common theme felt was

that social media helped raise awareness of conservation issues within public lands. For

those that took the time to explain this a little more, they expounded on the nuances of

the issue and pointed out that the potential for social media to do good ends up

trumping the downsides in the long run. On the contrary, issues like infighting and

gatekeeping as well as overuse and abuse among others seem to be rather prevalent

among responses.

Discussion

After comparing this data to case studies such as the influence of social media at

Horseshoe Bend, the presented survey seems to paint a vastly different picture than one

would imagine. While the participants in the survey overwhelmingly declared that they

felt responsible for protecting the environment in places like Horseshoe Bend, quite the

opposite is depicted. This leads me to conclude that although participants may care

about these wild spaces, they lack the knowledge necessary to protect them. This

becomes increasingly concerning when addressing the opinion of geotagging. Since almost 72% of the surveyed population sample's knee-jerk reaction when asked whether geotagging a social media post was okay was to answer yes, I was initially led to believe that reasonable levels of risk exposure as related to [what aspect of?] technological citizenship were not being met as this put not only public lands in danger, but also people visiting them. Additionally, when asked about using the geotag data for scientific purposes, the response rate rose to almost 93% of participants indicating that it would be okay.

Luckily, after examining respondent's why's for their beliefs on geotagging, I was encouraged to discover that a good deal of the population sample had insightful things to say about the issue. In particular, one respondent commentated that "[geotagging] supports the reduction of our world to a few specific point ", but finished by saying "I don't think this is a reason not to though, I think this is a reason to change the dialogue about how we view public lands and appreciate them", which I wholeheartedly agree with. The most noteworthy finding was the realization that a fair number of responses mentioned that the location being geotagged is more important than the geotagging itself, since the technology itself really isn't the issue. The abuse of places being geotagged caused by overcrowding and misuse happens more readily as a result of the technology and is why the responsibility of users to understand risks as outlined in technological citizenship is so important.

This issue is exacerbated in locations that are especially sensitive to human pressure and those that don't have the infrastructure in place to support the level of traffic that social media can bring. These aspects of social media directly relate to the rights of access to knowledge and informed consent within the technological citizenship framework because they exemplify the ways in which geotagging promotes access to knowledge but often neglects to question the consent of the users of public lands. By widening the scope and viewing these users without excluding the plants and animals, this issue becomes even more apparent. Since the flora and fauna lack the ability to speak up or be informed about these issues, the consent falls on those who are intrinsically motivated to look out for their needs and protect them. Through the ethic of pragmatism, these users who delegate themselves to serve the wildlife end up advocating for it and strive to better the public lands they inhabit. As Aldo Leopold believed, the pragmatic approach to this is adaptive land management where users continuously monitor the status of public lands and wildlife and adjust the management system as necessary. By having humans advocate for the flora and fauna that call these public lands home, the geotagging becomes of concern if the advocates aren't heard or listened to. The usage of social media has direct and dire effects on public lands if and only if the users of the technology aren't informed and heard. By choosing to utilize public lands while remaining a user of social media, each and every participant assumes the responsibility placed upon their shoulders to view these spaces for what they are and to constantly promote the betterment of them.

Consequently, this research was not without limitations. From finding survey respondents to avoiding bias, the accumulation of data to accurately assess the situation was an extremely difficult process. The lack of quantitative data inhibited the ability to run statistical analysis on the survey responses, resulting in a less comprehensive view into the opinions of users of public lands. On another note,

While overall, I was okay with the data I was able to acquire, I would've liked to have asked more quantitative questions within the survey. This would allow more analysis to be run using various statistical tests. Questions such as "at what level would you attribute social media to the conservation of public lands?" with a scale from 1-10 for respondents to choose between would offer more insight into the public opinion of this technology. Having a more comprehensive evaluation with better statistical data would allow me to extrapolate this research into other applicable fields.

I feel that research allowed me to explore a realm I love in a new manner, and it brought a new-found appreciation for social media. As my research shed light on the use of this technology within public lands, I began to realize the many ways that passionate individuals and organizations were using social media to communicate their love and respect for these wild spaces. When at first, I thought of social media users as selfish individuals, by the end I was able to scroll through Instagram and recognize how so many of those I follow make significant strides to promote the betterment of public lands through their influence. Lastly, this research has informed my data collection process. Rather than just having to analyze given data, the necessity to

determine my own collection methods has made me consider the difficulty lies not just in the analysis but also in the acquisition. Learning to ask the right questions is what turns good research into great research.

Conclusion

Social media has the potential to be a force for good within public lands, even while ignorant users continue to demonstrate the pitfalls of the technology. After seeing the well thought out reasons for their opinions, the participants in the survey have restored my hope in the ability of people to put the needs of the land above the need for Instagram fame. I believe that as long as we continue educating users of social media about how their actions impact public lands and encouraging them to maintain and improve them, public lands will be able to prosper and continue instilling a passion for the outside world. To reinforce one respondent's perspective, "I don't want public lands to be loved to death but a broad appreciation for what is there can be useful for public outcry when they are threatened." This idea echoes my aforementioned belief that we aren't in perfect harmony with our public lands, and nothing but the consistent striving for the betterment of them through careful thought and reflection will produce the desired results. As we continue to let social media gain prevalence within our lives, it's important that we continue to examine our integrity and responsibility regarding these implications. In the wise words of the godfather of ecological conservation, Aldo Leopold, "To those devoid of imagination, a blank place on the map is a useless waste;

to others, the most valuable part." Luckily, a picturesque location on social media doesn't have to remain just that, it can be the spark that ignites a beautiful realization that we are fortunate to share such a masterpiece of creation with people who may experience and appreciate it for generations to come. This sort of realization is what will continue to advocate for public lands long after the hype of being an influencer has worn off and is what encourages me to trust in the goodness of people, even those hiding behind the distortion of social media.

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