

DOES SOCIAL MEDIA HARM OR HINDER CONSERVATION EFFORTS?

INTRODUCTION

At present, the world is suffering huge biodiversity loss as habitats are degraded and species face extinction. Much of this loss is attributed to anthropogenic activity as our expanding human population requires increasing space and resources¹. If we are to successfully coexist with nature, it is important we understand human-nature interactions and further influence them in such a way that this rapid biodiversity loss is addressed. Social media offers a contemporary platform for researchers to extract and share knowledge on conservation issues, improving their own understanding of the topic and raising public awareness. However, social media also has the potential to harm conservation efforts if misused and this must be taken into consideration when assessing its impact on conservation science.



APPLICATIONS

Over 3 billion people use some form of social media. Social media enhances the potential for communication, allowing anyone with internet access to share information with others across the globe. This increased connectivity benefits conservation science in two ways, firstly by enabling scientists to **gather** huge quantities of data, opening new research avenues that will provide valuable insights for future conservation strategy and secondly, allowing them to effectively **transmit** information to fellow researchers and citizens.

INFORMATION GATHERING

Posts are comprised of a combination of possible elements (see figure 1): User information 1 (profile, followers etc.), content 2 (photo, text, sound, video), geotag 3 (location –automatic or manually defined by user) and timestamp (timing of post). Analysis of these elements allows:

1) WILDLIFE MONITORING

- Tracking spread of invasive species²
- Monitoring sightings of rare species and phenological events
- Assessing species population size and distribution

2) TRACKING OF ILLEGAL ACTIVITY

- Understand structure/extent of illegal wildlife trade
- Monitor illegal trespassing in protected areas
- Assess impacts of hunting on species populations

3) UNDERSTANDING HUMAN-WILDLIFE INTERACTIONS

- Investigate popularity of protected sights and reasons behind this
- Understand public sentiment towards conservation issues
- Examine **who** is visiting, **why** they are visiting and **what** they are doing (in protected areas)



X DRAWBACKS

- Whilst social media is a rich source of data the variability of posts make analysis challenging, studies based purely on data gathered from social media are relatively scarce.
- Data is likely to be highly biased since different population groups use social media to a differing extent/in a different ways e.g. younger national park visitors are more likely to post about their experience than older visitors and women are more likely to post than men. A lack of statistics on usage make it difficult to estimate representativeness.
- There are a number of ethical issues such as privacy (only a fraction of social media data is open), free speech and revealing user identities (e.g, relating to illegal activity).



The Telegraph @Telegraph · 59m
 #CecilTheLion: from king of the pride to the hunter's bow
 telegraph.co.uk/news/worldnews... by @JoeShute



Figure 2

← ↻ 59 ★ 25 ⋮

[View photo](#)



Figure 3

INFORMATION TRANSMISSION

Raising public awareness of conservation issues and how to tackle them would result in a more effective resolution process. The global reach of social media (284 million monthly Twitter users alone) makes it an important tool for public education and outreach:

- Social media can bridge the gap between scientists and the public. Tweeting from a scientific conference means more people are informed of contemporary research than are physically present at the conference.
- People read and trust traditional publishers and media companies more than alternative sources; via social media accounts, articles from these organizations can have a much greater reach (through sharing, reposting etc.). (see figure 2)
- The greater ease of communication afforded by social media ensures scientists and citizens alike can collaborate on conservation projects.
- Public support plays a significant role in motivating governmental policy. Social media campaigns can result in conservation issues having a more prominent position in the public psyche urging decision-makers to respond with appropriate policies.

X DRAWBACKS

- The lack of regulation means misinformation can spread rapidly through social media.
- Some scientists warn of 'clicktivism' whereby discussion is encouraged online but this does not translate into action.
- Sometimes social media can cause a breakdown in positive collaboration e.g. Botswanian government and NGO officials questioned why Dutch citizens raised funds via social media for a local wildlife corridor they knew nothing about.
- Live tweeting of wildlife sightings can lead to an influx of tourists to a single location leading to overcrowding and the animal in question experiencing high levels of stress.
- Online crazes cause increased popularity for exotic pets e.g, despite having CITES protection, Slow Loris numbers have significantly declined in the wild after online videos of the animals went viral and prompted illegal capture and trade (see figure 3). Furthermore, social media allows easier communication between illegal traders and consumers.

- Consumerism encouraged by online 'influencers' creates unsustainable resource requirements and land-use changes leading to further conservation challenges.
- The virtual reality of the online world encourages militant behaviour that threatens long-term conservation efforts e.g. many users advocate extreme and unethical violence against poachers in online comments.

Collaboration between policy-makers, scientists and social media platforms will allow these platforms to be harnessed as a valuable tool for preserving our natural world. Below are a list of recommendations for these groups, that, if followed, will enhance the benefits that can be gleaned from social media utilization for conservation practices:

- Raise awareness of the value of social media data in conservation science, encourage users to post nature observations and make them available for research purposes.
- Advocate for social media platforms to utilise prompts to build observation databases e.g, “Looks like you are sharing a nature observation. Would you like to share this post for research use?”¹. This increased data should allow usage statistics to be more accurately calculated thus mitigating the problem of posting bias.
- Encourage a universal posting format for nature observations, making analysis more straightforward.
- Employ techniques that ensure accurate information is shared widely to maximise positive impact of social media on information sharing in relation to conservation:
 - Use appropriate hashtags/usernames for twitter-friendly summaries of scientific research.
 - Encourage conference speakers to provide a social media ready statement on slides.
 - Invite active twitter users to talks to effectively expand the reach of the presentation.
 - Include high quality pictures in articles and campaign manifestos and keep articles brief and to the point. This increases readership and thus public reception.

REFERENCES

1. Toivonen, T. *et al.* Social media data for conservation science: A methodological overview. *Biol. Conserv.* **233**, 298–315 (2019).
2. Minin, E. Di, Tenkanen, H. & Toivonen, T. Prospects and challenges for social media data in conservation science. *Front. Environ. Sci.* **3**, 63 (2015).