Three lessons conservation science can learn from the COVID-19 pandemic

Introduction

Early-career conservation researchers (ECRs) are burdened with an outdated academic system and institutional cultures, alongside urgent conservation issues. The global response to COVID-19 has prompted our reflection on what a meaningful response to a crisis entails: a rapid, concerted, and international mobilization of resources to change policies and behaviors, despite uncertainty. In contrast, political and social responses to the equally grave biodiversity and climate crises remain slow (e.g., Ripple et al. 2019). Despite repeated calls to increase relevance and public engagement in conservation science (Keeler et al. 2017), institutional reform is lacking.

Many of the measures taken in response to COVID-19 offer new, valuable insights for combating environmental issues. Moreover, the pandemic emphasizes longstanding issues that weaken the impact of science on conservation. An opportunity exists to learn from the pandemic and catalyze the much-needed reform in conservation to address rapid environmental degradation. We describe 3 key lessons for conservation scientists and decision makers that are particularly salient for ECRs, who will be responsible for revolutionizing conservation science to combat worsening environmental crises.

Optimize Research-Related Activities

COVID-19 has forced reprioritization of many research activities. For example, the pandemic revealed how much work-related travel is often unwarranted, given the enormous carbon footprint and rapidly improving platforms supporting online meetings and conferences. Many researchers report a smooth transition online and that virtual meetings are sufficient to exchange ideas and develop networks, although many report also missing in-person interactions. Many ECRs were prepared to collaborate virtually because they already used online tools to build scholarly communities (Nicholas et al. 2019). Postpandemic, incorporating lessons learned into virtual options presents a viable, near-emissions-free alternative to reduce professional travel (see https://osf.io/pt697/).

Under quarantine, scientists are reevaluating their research priorities. Although lockdown prevented new data collection (Corlett et al. 2020), many turned to backlogs of existing data, public data in online repositories, and evidence syntheses. While we recognize the value of new data collection and continued monitoring, COVID-19 forced careful consideration of when and if new data are necessary to address key conservation questions—a beneficial practice postpandemic. Only a small proportion of the published literature is useful for policy or practice. Many urge the realignment of conservation science to deliver real-world benefits for biodiversity, yet there is no evidence of such progress (Keeler et al. 2017). Given current momentum for cultural change in the scientific community and many resources to optimize how science is done (details at https://osf.io/pt697/), the pandemic provides a tangible opportunity to reprioritize meaningful conservation research (Corbera et al. 2020).

Convey the Gravity of the Situation

Scientists have played a large role in the public discourse on COVID-19. Communicating scientific findings and projections have become vital, and misrepresentation of evidence has had devastating outcomes (Londoño 2020), offering guidance for conservation scientists. For example, epidemiologists have employed user-friendly data visualization to communicate outcomes of different public health policies (examples in https://osf.io/pt697/) and governments have effectively communicated uncertainty around model predictions—a complex concept that is challenging to convey to the public (e.g., Dyck 2020).

COVID-19 also highlights the important role of social media campaigns in getting information to broad audiences (e.g., mask wearing). Several COVID-19 communication strategies could be applied to conservation messages on social media platforms, like using slogans, hashtags (e.g., #flattenthecurve), and human-centered...
stories (Yammine 2020). COVID-19 emphasizes the risks of rapidly spreading misinformation online (i.e., infodemic [Cinelli et al. 2020]), which is also problematic for environmental issues (e.g., climate-change misinformation [Treen et al. 2020]). Fighting misinformation is actionable, and current efforts to tackle its spread (e.g., flagging content from bots and disinformation-news sites [see https://osf.io/pt697/ and Yammine 2020]) can guide conservation scientists (Caulfield 2020).

**Improve Metrics of Merit**

COVID-19 highlights inequalities in the science community, where many with care duties, low incomes, and other issues have been unable to maintain productivity. Tackling environmental issues requires equal opportunities for everyone to be successful. Central to the uptake of the lessons we outlined is redefining research excellence in conservation. A scientist’s publications remain central to career advancement, despite evidence that this evaluation system is flawed (Fischer et al. 2012). The current “publish-or-perish” culture conflicts with the fundamental goal of conservation. In particular, ECRs are often apprehensive to stray from the focus on publication output. The COVID-19 pandemic presents a much-needed opportunity to reflect on what constitutes research excellence and confront our obsession with publishing at the expense of supporting conservation action, public engagement, and equity. The COVID-19 crisis provides an opportunity to implement long-discussed alternative metrics for evaluating professional merit (alternatives at https://osf.io/pt697/).

**Moving Forward Together**

During the pandemic, billions of people across diverse cultures and political affiliations made profound sacrifices to protect each other from harm. Although the pandemic looms large, even greater challenges lay ahead—climate change, biodiversity loss, and ecosystem collapse. We hope these 3 lessons from the pandemic provide seeds for change so that conservation science can emerge from this crisis better prepared for the next.

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