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https://doi.org/10.1038/s41559-025-02759-8

Six actions for ecologists in times of planetary crisis

Climate breakdown and unprecedented biodiversity loss put humanity at grave risk, and threaten human lives, livelihoods and well-being globally. Ecologists have been instrumental in revealing and detailing some of the mechanisms that drive biodiversity decline, and regularly call for immediate action[1]. In response to this, a sense of emergency has entered public discourse, and is heightened with each new report and global summit; some ecological societies have been calling on their members to write to their political representatives, and many ecologists have been vocal about both scientific and societal issues on social media. Yet, despite these pockets of activity, it has been argued that the way that the discipline of ecology operates could reflect more clearly the urgency of the situation[2,3].

Several factors might contribute to the current mismatch. First, as with any other scientists, ecologists have been encouraged to place themselves in a neutral, reporting, objective role[4]. Those who deviate from this tack have encountered increasing threats to their academic freedom and activities, especially with the rise of political populism and nationalism around the world[5]. Second, the emergence of conservation biology in the 1980s provided a clear home for mission-driven ecologists who aspire to go beyond applied science[6]. Third, the scientific community is embedded in societies and economic systems that are primarily hardwired to economic growth, in which (1) facts alone do little to address systemic issues that underlie biodiversity loss and climate change, and (2) high-level decisions about research funding are increasingly shaped by their perceived contribution to economic growth[2,7].

Although this disconnect between the systems studied and the urgency of the environmental crisis can be rationalized, a key question remains: if the ecological community is not fully expressing the urgency and developing responses, why should anyone else? This question demands a collective reflection on what individuals, employers, funders, publishers and learned societies could do better to accelerate the transition towards a future that safeguards the climate, biodiversity and ecological processes upon which humanity depends. Here, we call on the ecological community to consider six actions that we believe could drive meaningful change.

Explicitly recognize and address the biodiversity crisis

Ecologists and their institutions need to embrace a culture that places efforts to stop and reverse biodiversity loss at its core. This commitment should be clearly articulated in mission statements, and should compel ecologists to develop their own theory of

change in terms of how their research helps to address biodiversity loss and supports nature recovery. For us, this has meant prioritizing certain research avenues over others on the basis of their conservation importance, and acquiring new knowledge and skills beyond the ones we were originally trained in. It has also led us to articulate innovative curricula and increase our focus on educating and training new generations of ecologists with the necessary skills to face these challenges.

Explore positive futures

Ecological research should be extended to explore what sustainable futures for nature would look like[7]. This requires engaging with other disciplines and society at large to identify plausible positive ecological futures and effective strategies that promote biosphere-based sustainability at multiple scales, while contributing to initiatives such as Biosphere Futures. Funders and learned societies should actively support the development of scenarios for positive change, and help to steer both research and public discourse while providing spaces for dialogue to understand the needs and constraints of different stakeholders.

Defend academic freedom

As a group, we have witnessed our work or the work of our colleagues being miscommunicated, amended or suppressed. We therefore believe more robust mechanisms are needed to enable direct, unfiltered communication between scientists and policy makers to ensure that scientific messages are not diluted or misrepresented[8]. Additionally, institutions and publishers should urgently collaborate to (1) create avenues for scientists who cannot openly express their views to contribute meaningfully to public and policy discussions[9] and (2) identify and safeguard critical ecological data at risk of being erased in political turmoil.

Go political

Science has always been political, yet we are constantly being told that it suffers when scientists become politically engaged. There has never been a more important time for this neutrality myth to be put to rest. As well as assessing the environmental impacts of their research, we believe that ecologists must critically assess how their research activities and conclusions reinforce or disrupt existing power structures[10]. The field would benefit from greater engagement with the social sciences (notably political ecology), which examine the economic, social and political dynamics involved in systemic changes.

Inspire society

The effect of ecology as a discipline might be undermined if the actions of its representatives do not embody the changes that they seek to promote. Role-modelling is a well-documented driver of behavioural shifts, and a practical means of testing approaches to reducing the environmental footprint of institutions, research and professional practices. For some of us, action on this has meant collaborating with

schools and other community spaces to enhance scientific and ecological literacy, as well as connections with nature. For others, it has meant demanding and facilitating institutional changes so that our organizations monitor, report and annually reduce their carbon and biodiversity footprints.

Address the colonial legacy of ecology

The Western dominance of ecology has had detrimental effects on local science communities and epistemologies that directly affect our ability to tackle the biodiversity crisis. Resolving this requires dismantling extractive research models and building an ecological science community that is (1) inclusive, with an egalitarian contribution and representation of scientists from diverse cultural and ethnic backgrounds; and (2) reparative and grounded in place-based justice, and that engages with and promotes local and Indigenous knowledge. For some of us, this has involved creating horizontal spaces for dialogue between academic and traditional knowledge systems, integrating community-defined priorities into research agendas, and redefining metrics of success to include societal relevance, reciprocity and long-term engagement.

Conclusion

The current global environmental crisis we face entails a stronger shift in how ecologists, and other researchers, position themselves in society, prioritize their research and make decisions about their ways of working. The ecological community is large — ecological societies are larger, are older and run more journals than their conservation biology counterparts — and must be, as a whole, more proactive and vocal on one of the key issues of our times. With the object of study of its discipline under unprecedented threat, the ecological community needs not be found wanting in, and ought to be at the forefront of, the response.

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Competing interests

The authors declare no competing interests.