The future of ecology is collaborative, inclusive and deconstructs biases

To the Editor — Scientists make lists. We do this to organize, summarize, discover patterns, predict future trends and understand how the world works. Some lists expand our thinking and improve our research, other lists are restrictive. Here, we argue that the '100 articles' list compiled by Courchamp & Bradshaw[1] is more restrictive than constructive. The list continues a long-standing tradition of highlighting almost exclusively work from male scientists and perpetuates a false perception that women, people of colour and people from the Global South are new to the field of ecology. In addition, the list is restrictive in classifying what ecology is, and is not. There are entire dimensions of ecology that are not represented, and the emphasis of traditional community ecology comes at the cost of population ecology, landscape ecology, ecosystem ecology, palaeoecology, behavioural ecology, physiological ecology and more[2]. We write this as a form of positive intervention because in order to advance the field of ecology, we need to advance and welcome the intellectual contributions of the full breadth of past, current and aspiring ecological scientists.

Innovation, creativity and problem-solving are enhanced when tackled by diverse teams[3,4]. Numerous ecology studies have demonstrated that species and genetic diversity support ecosystem functioning, the effect of which is often more than the sum of the individual parts[5–7]. Social interactions are similar — socially diverse teams arrive at consensus more quickly and perform tasks more effectively[8]. Despite general acknowledgement of the benefits of diversity, the field of ecology continues to struggle with great imbalances. Women and people of colour remain chronically underrepresented in ecology faculty positions, and within academia they are less likely to receive awards and funding, be cited, give plenaries, or serve on editorial boards[9–11]. If we continue to ignore those contributions and perspectives, ecology will remain imbalanced and continue to miss the mark on being relevant to society and for social justice[12].

Courchamp & Bradshaw explicitly state that the list is "to foster the understanding, knowledge and inspiration of early-career scientists". However, it fails on that account by providing such a narrow perspective of ecology and instead reaffirms the implicit bias imbedded in our community. The problem with their 100 articles is that longstanding biases and historical inequalities (both conscious and unconscious) are reflected and perpetuated in the methods. When the methods are biased by design, the results do not adequately represent the contribution of female and other underrepresented scientists, and therefore conflict with the future of an inclusive and interdisciplinary ecology[2,10,13]. Here, we echo Tallis & Lubchenco[14] and 238 co-authors that there is a need for "more-inclusive representation of scientists and practitioners in the charting of our field's future". Now is the time to address ecology's cultural and historical biases. If we do not, we will continue to restrict our perspectives and growth. Thus, the future of ecology must identify and deconstruct the implicit biases embedded in all aspects of science. The future of ecology must be inclusive.

If 'must read' lists are important, how can they be made inclusive? How can they be made to better us as professionals and as a scientific community? At the core, such lists should encourage the current and next generation of scientists to embrace a holistic set of perspectives, philosophies and contributions. We invite Courchamp & Bradshaw and other ecologists to join us in cultivating a paradigm shift in science as a whole, one that explores the ways that inclusion complements research, supports an increasingly diverse group of young ecologists, and enhances our ability to solve the world's most pervasive and challenging ecological issues. ❐

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Competing interests

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