

It is time to overcome unconscious bias in ecology

To the Editor — Training and mentoring young scholars is one of the most important responsibilities of senior scientists. Amongst the many tasks that mentorship involves, helping mentees to develop a strong foundation in their field is vital. In this regard, sharing a list of papers deemed to be essential reading could be a useful starting point, particularly given the challenge of tackling a new, vast and rapidly expanding literature. In their paper titled ‘100 articles every ecologist must read’, Franck Courchamp and Corey Bradshaw produce such a list. Sadly, they got it wrong.

Rather than developing a representative and inspiring list of papers for young ecologists, Courchamp & Bradshaw have presented a highly gender and racially biased list in which 97 of 100 selected articles are first-authored by white men. Only two articles are led by women (Camille Parmesan and Mary Power); these are ranked last. One paper is led by a non-white man (Motoo Kimura). Compounding the list’s lack of diversity is its domination by a small number of scientists: 22 of the articles are first-authored by three white men (Robert MacArthur, Bob May and David Tilman), and a further 35 articles are led by only 15 additional white men. We do not dispute that these men have made exceptional contributions. What we do contend is that this list has failed to capture ecology’s diversity of exceptional scientists. We are deeply disturbed that its authors would promote this list to graduate students as the ‘must read’ papers in ecology. It is not a list we would ever recommend. By almost exclusively presenting works by white men, we fear Courchamp & Bradshaw are sending a strong message to a new generation of ecologists: women and people of colour need not apply.

Courchamp & Bradshaw’s list is also hampered by its lack of representation of the field of ecology itself. Ecology encompasses an array of approaches and scales, from

the molecular to the macroecological, and addresses both pure and applied questions. Yet, the authors elicited information from the editorial boards of ‘pure ecology’ journals only, overlooking the field’s top-ranked journals (*Global Change Biology*, *Molecular Ecology*, the *Journal of Applied Ecology* and *Conservation Biology*, for example) that do not fit within this narrow definition. They also elicited information from members of the Faculty of 1,000 (F1000) Ecology section. The composition of the selected editorial boards and F1000 members are themselves severely gender and racially biased. Although developing any list of this type will, to some extent, be a subjective endeavour, there are sound ways to minimize bias when eliciting the judgements of experts².

Academia is rife with bias, including overt harassment³ and bullying⁴, as well as more subtle, but pervasive unconscious (or ‘implicit’) bias^{5–7}. Unconscious biases are shaped by culture, family and friends, and personal experiences, and they influence how we view and evaluate others. Yet, because they lurk below the surface, we rarely recognize that they inform the choices we make⁵. From reference letters⁸, interview panels⁹ and awards committees to student evaluations¹⁰ and the peer review process¹¹, unconscious bias plays a role in deciding who to hire, promote, reward, publish and fund. As scientists, we can choose either to perpetuate unconscious bias — for example, by giving only privileged individuals a seat at the table, or in this case, the right to choose influential papers — or we can actively work to overcome it.

Ecology is a dynamic and growing discipline, with enormous relevance to the environmental challenges facing the world. Solving these challenges requires that we attract and retain the best and brightest young scientists. Doing so necessitates that we enhance the inclusivity of our field. Female role models were limited when we

were growing up, but were hugely important for us. Today there is an ever-increasing number of brilliant female scientists training the next generation of ecologists. Failure to showcase the contributions of these scientists does a huge disservice to students. To our minds, Courchamp & Bradshaw’s paper will not be remembered as an inspirational list of must-read papers in ecology, but rather as an ode to a legacy of white male dominance in our field and the epidemic of unconscious bias that continues to this day. □

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Competing interests

The authors declare no competing financial interests.