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Categories, impacts, and the politics of naming in conservation: Reply to Schwartz and Simberloff

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We thank M. Schwartz and D. Simberloff for their thoughtful response (Schwartz and Simberloff 2025) to our article (Lundgren et al., 2024b) in which we used *assisted migrant* to describe introduced populations of threatened mammals. We did this to highlight inconsistencies in how

conservationists value organisms entangled with human histories and to connect the work to broader discussions around conservation translocations.

Schwartz and Simberloff argue that using the term *assisted migrant* in these cases confuses conversations about conservation translocations. We are sympathetic to this critique and applaud the considerable work by the authors in developing the science and ethics around conservation translocations. In our article, we do not advocate for the widespread adoption of *assisted migrant* to refer to introduced organisms. Regardless, we are grateful for the opportunity to foreground 3 questions: By what criteria are organisms' conservation value categorized? Do the negative impacts described by Schwartz and Simberloff not also frequently apply to assisted migrants (sensu Schwartz and Simberloff) or native species? And, how are the fields of conservation and ecology to respond to a changing world if their language remains static?

CREATION OF CATEGORIES

Conservation relies on categories, including so-called invasive species, native, introduced, non-native, pest, threatened, endemic, and so on. These categories shape decisions to protect, eradicate, or utilize organisms. Moreover, these categories are nonexclusive and are based on a mixture of empirical and normative criteria. The role of humans in the dispersal history of a species is axiomatic to many of these categories, reflecting long-standing Western notions that humans are separate from nature (White, 1967).

Schwartz and Simberloff argue that species intentionally introduced for conservation reasons should be distinguished from other introduced species and labeled as *assisted migrants*. We note some difficulties with this, including the unknown intentions of the people who historically or prehistorically introduced species (Long, 2003; Sacks et al., 2022) and that some species may have been introduced for what might be considered conservation prior to the emergence of conservation science itself (List et al., 2007; Wilkinson, 2004). However, we agree that the intentionality of introductions by conservationists could be a worthy criteria to consider in how species and populations are categorized.

We simply ask, of all the dimensions of history and biology and threats to consider, which should be prioritized? Terms like *assisted migrant* create different potential framings, ways of understanding impacts, and considerations than terms like *introduced* or—especially—*invasive*. For example, introduced rusa deer (*Rusa timorensis*) in Australia are vulnerable in their native range and

can be fairly labeled as threatened, invasive, introduced, or assisted migrant. Each of these categories summons different questions, opportunities, and complexities. Our intent in our article was to playfully highlight the subjectivity and mutability of these terms and thus suggest the breadth of possible conservation thinking if conservation professionals were more flexible with how they label life.

NEGATIVE IMPACTS

Schwartz and Simberloff claim that the “impacts [of introduced organisms] are, in fact, broadly negative,” citing that 85% of impacts are negative. These tabulations seem irrefutable, yet they lack the proper control to make any claim about the importance of nativeness per se. All living organisms negatively affect other species. Native predators and herbivores reduce the abundance of their food resources, native plants take up space that could be occupied by other plants, and so on. Indeed, native organisms can become dominant, alter their environments, and cause local extinctions: old-field succession is a case in point (Davis, 2009).

With native organisms, these impacts are considered natural and are studied under the lens of ecology. However, when an organism is thought to be introduced, these same impacts are described as aberrant and harmful. If one were to apply the standards of invasion biology to all organisms, would one not find that all organisms are harmful? After all, it appears that in most cases, it is impossible to determine whether a species is native or introduced based on its impacts alone without a *pri-ori* historic knowledge (Sagoff, 2005), with many meta-analyses showing no difference between the effects of native, introduced, and invasive organisms (Boltovskoy et al., 2021; Canavan et al., 2019; Howard et al., 2017; Lundgren et al., 2024a; Wooster et al., 2024).

Schwartz and Simberloff write that “the description of the action should not be driven through a value filter for the reader’s benefit.” If this is so, how has the richly anthropomorphic metaphor of “invasion” become axiomatic to an entire discipline? According to leading invasion biologists, there are no “clear and objective boundaries” that define invasive species (Soto et al., 2024), yet invasion biology has reframed many ideas, such as succession, dispersal, and mutualism, in the language of pestilence and conquest (Davis et al., 2001). The use of these metaphors has been justified for their role in garnering public support for killing introduced species (Simberloff, 2006). Is this not “a value filter for the reader’s benefit”?

We believe that the language of invasion biology stifles curiosity (Tschinkel & Wilson, 2014) and

limits critical thinking about the effects of introduced organisms (Larson, 2005; Pereyra et al., 2024). This can have real consequences for the types of questions conservationists ask, the ways data are interpreted, and the ways conservationists respond to ecological change.

LANGUAGE EVOLUTION

We agree with Schwartz and Simberloff that a multitude of overlapping terms can sow confusion. However, we disagree that conservation scientists “ought to strive to conform as closely as possible to agreed-upon terminology, whatever the social connotations...Avoiding value-laden terminology or choosing terminology to convey a value weakens the science and weakens scientists’ capacity to function as knowledge brokers.”

We believe that scientific terminology must be contestable. These changes are core to scientific inquiry (Hodges, 2008; Kuhn, 1962) and are evident in the bifurcation of invasion biology from ecology. In particular, we believe that conservation and ecology should strive for language that does not *a priori* propagate bias, and we question the tendency to center human involvement as the primary criterion through which organisms are understood (Clark, 1996). After all, human–nature ontological dualism may be the core driver of humanity’s often deleterious relationship with the more-than-human world (Donfrancesco & Luque-Lora, 2022; Sagoff, 2020).

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