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Prof. Scott Collins, PhD

Editor-in-Chief, *Frontiers in Ecology and the Environment*

Dr. Collins:

Please consider our article, "Functionalizing ecological integrity: using functional ecology to monitor animal communities", for publication in the Concepts and Questions category in *Frontiers in Ecology and the Environment*. This article fits well within the scope of *Frontiers* and the article type because it provides a novel integration and review of ideas related to animal community monitoring and functional ecology. Our paper demonstrates (1) the growing need to integrate animal communities into ecological integrity monitoring in contexts where they have historically been ignored, as well as (2) the growing feasibility of doing so because of recent advances in biodiversity monitoring technology and analytical approaches. We believe this article is of general interest to scientists, managers, and policymakers as it provides a cohesive framework for expanding monitoring efforts for ecological integrity.

In this piece, we review the literature and show that animal communities have mostly been excluded from ecological integrity monitoring (except, notably, in aquatic systems). We highlight why the exclusion of animal communities is a key gap in any program aiming to monitor ecological integrity, and we focus particularly on the impacts of excluding this axis of ecological integrity in management and conservation contexts. We then review recent advances in monitoring technology, data availability, and statistical methods that have primed the field for including animals more broadly in monitoring. Finally, we propose that describing animal communities in terms of their functional traits (e.g., body size, trophic niche, foraging habitat) can provide a generalized approach for standardizing ecological integrity metrics that include animals across environments, taxa, and monitoring methodologies. Throughout, we provide a global view of the field implementation suggestions for managers.

The work in this manuscript is original research carried out by the authors. The results have not been submitted for publication elsewhere or previously published. We declare no conflicts of interest. On behalf of my co-authors, I thank you for considering our submission to *Frontiers in Ecology and the Environment*, and we look forward to your response.

Sincerely,



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