

NATIONAL CENTER FOR ECOLOGICAL ANALYSIS AND SYNTHESIS

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Dear Editors,

In recognition of the cumulative impacts of human activity on our oceans, scientific and public attention are increasingly focusing on understanding and preserving marine species and ecosystems. However, the challenges in predicting and communicating distributions for marine species – presence as well as absence – create uncertainty in our understanding of global biodiversity, potentially leading us to expend time, effort, and resources on inefficient and inadequate marine conservation efforts.

We are submitting the enclosed paper, entitled “Aligning marine species range data to better serve science and conservation,” in which we explore substantial dissimilarities in species range predictions between two extensively-used databases of global marine species ranges. We then explore the implications of these differences in context of marine biodiversity protection. Briefly, we found:

* Discrepancies in species range prediction can generally be attributed to differences in methodology and intent of each dataset. Many of these discrepancies are due to methods that introduce substantial errors in species range predictions.
* These discrepancies can result in dramatically different estimates of species protection under our current global network of marine protected areas (MPAs), including a five-fold increase in our estimate of species left entirely unprotected by existing MPA boundaries.
* By understanding the drivers of errors within each dataset we can address or reduce the impact of such errors, increasing the utility of these datasets for use in research and conservation efforts.

Effective marine conservation depends crucially on understanding the distributions of the species that we hope to preserve. Given the general interest in ocean ecosystems, and national and international marine conservation efforts in particular, we anticipate the paper will appeal broadly to scientists and policy-makers as well as the ecology-minded public.

The research and results presented here are novel from any past work my colleagues or I have done. This work has not yet been published, has been approved for publication by all authors, and is only offered for consideration to *PLOS ONE*. If additional information is needed, please feel free to contact me.

Sincerely, on behalf of all coauthors,

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