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EDITED AND REVIEWED BY
Oladele Ogunseitan,
University of California, United States

*CORRESPONDENCE
Herman J. P. Eijsackers,
herman.eijsackers@wur.nl

SPECIALTY SECTION
This article was submitted to
Toxicology, Pollution and the
Environment,
a section of the journal
Frontiers in Environmental Science

RECEIVED 14 September 2022
ACCEPTED 16 September 2022
PUBLISHED 03 October 2022

CITATION
Eijsackers HJP, Maboeta MS,
van Straalen NM and Wepener V (2022),
Editorial: Nature conservation,
biodiversity protection and ecological
risk assessment: Three worlds apart in
need of connection.
Front. Environ. Sci. 10:1044494.
doi: 10.3389/fenvs.2022.1044494

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Editorial: Nature conservation, biodiversity protection and ecological risk assessment: Three worlds apart in need of connection

Herman J. P. Eijsackers^{1,2*}, Mark S. Maboeta²,
Nico M. van Straalen³ and Victor Wepener²

¹Wageningen University and Research, Wageningen, Netherlands, ²Unit for Environmental Sciences and Management, North-West University, Potchefstroom, South Africa, ³Vrije Universiteit Amsterdam, Amsterdam, Netherlands

KEYWORDS

nature, conservation, biodiversity, risk assessment, ecology

Editorial on the Research Topic

[Nature conservation, biodiversity protection and ecological risk assessment: three worlds apart in need of connection](#)

The protection of our natural environment with its human-induced declining biodiversity calls for a multidisciplinary effort aimed at halting the decline and restoring nature from what is left. This effort is hampered by fragmentation of the scientific disciplines supporting nature conservation. In a somewhat stereotypic division, we see the field divided into three worlds:

- The classical nature conservation approach with an emphasis on landscapes and vegetation.
- The approach of biodiversity protection, aimed at conserving species with high appeal, such as butterflies and birds.
- Ecological risk assessment, with its emphasis on contamination as a factor prohibiting successful nature restoration programs

We initiated the Research Topic Connecting Biodiversity Protection, Nature Conservation Assessment, and Ecological Risk Assessment from the observations that there seems to be a disconnect between Biodiversity Protection, Nature conservation Assessment and Ecological Risk Assessment and that they are worlds apart. All three “worlds” have their own governance and culture, basic principles and assumptions, vocabulary and terminology, with GBI, IUCN, and SETAC as prominent representatives and signboards.

What we hoped for were papers comparing these worlds apart and providing bridges connecting them.

The result so far is modest, with two papers touching on the basics of the connections and a number of papers illustrating how difficult it is to combine these worlds.

Maltby et al. provide a functional biodiversity approach (ecosystem services) to derive environmental quality standards. But ecosystem services are not linked to classical species diversity yet, in particular in connection to the red list principles of the IUCN. In a tiered approach these refinements could perhaps be achieved, but more research is needed then.

Aidoo et al. touch upon the risk of invasions by the coconut beetle *Oryctes monoceros* due to climate change. The study outcomes indicate that although risk of extinction is evident, the role of climate change in the extinction of the species is not that clear.

The other papers provide interesting perspectives on impacts of different stressors (i.e., genetic, emerging and legacy contaminants) on specific species.

Manning et al. describe the risks of hybridization between native and introduced brook trout using a habitat model and thereby providing an outlook at a landscape perspective.

Dahms et al. analyse the impact of microplastic on the fish species *Clarias garipinus*. It would be interesting to compare the results with this predator fish with fish species with other food patterns, and preferably a red or orange conservation status.

Van As et al. provide the first record of organochlorine pesticides in the blood of African leopards, an iconic and threatened species. It illustrates the remarkably limited research on environmental chemical threats and management implications to wild life and specifically apex predators, which

was already observed in relation to heavy metal contamination (Eijsackers et al., 2019).

Hopefully these papers will provide inspiration for further research on the topic, providing bridges, or when that is too far, bridgeheads. Given the number of views for these papers so far, the interest is apparent.

Author contributions

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

Conflict of interest

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Reference

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