

## Letter

IPBES Promotes  
Integration of  
Multiple Threats to  
Biodiversity

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In a recent opinion article, Bonebrake *et al.* [1] promote the implementation of conservation strategies that integrate multiple threats to biodiversity acting at different timescales, including horizon threats such as climate change. They call into question the usefulness of studies featuring climate change as less urgent than other threats. They argue that showcasing the immediate impact of some threats to downplay the importance of climate change contributes to compartmentalising our understanding of environmental pressures.

Bonebrake *et al.* [1] refer to Titeux *et al.* [2] as one such study and they state that Titeux *et al.* [2] highlighted the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) as biased towards climate change research. Titeux *et al.* [2] reviewed scientific studies exploring biodiversity responses to future environmental threats. They showed that these studies mostly focus on climate change impacts but seldom address other important threats such as land use change and emphasised the need for further integration of threats across scales. Their conclusions are therefore well-aligned with Bonebrake *et al.*'s [1] suggestion to favour conservation strategies that address multiple threats. Titeux *et al.* [2] referred to IPBES as a timely opportunity to catalyse such an integration across threats. Hence, we feel that Bonebrake *et al.* [1] misinterpreted Titeux *et al.* [2] when they suggested

that this study could contribute to fracturing the current research panorama and conservation solutions.

Many assessment reports from international initiatives such as IPBES build on the review of scientific evidence available from the scholarly literature. If the literature is reviewed without full awareness of the uneven scientific knowledge across threats [3], there is a potential risk of providing biased assessments of their impacts. It is therefore of utmost importance to warn that research may disproportionately focus on some threats while neglecting others [4]. Synthesising available evidence is needed to reveal critical knowledge gaps in the context of the current biodiversity crisis [3,4]. Highlighting these gaps has nothing to do with advocating for some causes by downplaying the importance of others, but it contributes to helping us avoid placing too much emphasis on well-studied threats when implementing global conservation strategies.

IPBES is aware of the need to promote the integration of multiple threats to biodiversity. The importance of such integration was emphasised in the IPBES methodological assessment report on scenarios and models of biodiversity and ecosystem services [5]. An IPBES expert group on scenarios and models is carrying out an integration of existing data and models to explore the future combined impacts of climate and land use change [6]. This initiative is ongoing, but some of the first results were included in the IPBES global assessment report on biodiversity and ecosystem services [7] (<https://www.ipbes.net/global-assessment-biodiversity-ecosystem-services>). This report, which came out too recently to be included in Bonebrake *et al.* [1], stresses the importance of acting immediately and simulta-

neously on multiple threats to biodiversity.

IPBES reports also underscore our limited ability at present to adequately evaluate the full range of impacts across different threats. Aspects of land use change that are key to biodiversity – for example, changes in land management or intensity of use – are still poorly represented in scenarios and models for biodiversity [2,8]. Data sets representing these aspects more thoroughly are increasingly becoming available [9] and offer perspectives that will allow us to improve our ability to evaluate future biodiversity responses to multiple dimensions of land use change [10]. Data scarcity is also a major obstacle when assessing the impacts of other threats [3], such as direct exploitation of natural resources or invasive alien species. However, two IPBES thematic assessments will soon synthesise current knowledge on these threats. The Belmont Forum and BiodivERsA network also recently launched a joint call to fund projects addressing research gaps highlighted in the IPBES methodological assessment on scenarios and models. Some successful projects will develop multiscale scenarios of future biological invasions [11] or evaluate the combined impacts of exploitation and climate change. IPBES has therefore been playing an influential role in motivating research on multiple threats to biodiversity, but further integration is needed. We encourage the task force on scenarios and models that will take place under the next IPBES work programme to stimulate the establishment of an overarching framework for a full integration of threats across scales. Another upcoming thematic assessment will focus on understanding the underlying causes of biodiversity loss and identifying leverage points at multiple societal levels and spatial scales to effect



transformative change for conservation and wise use of biodiversity. Its scoping process is underway, but we believe that this assessment could provide an adequate forum for Bonebrake et al.'s [1] suggested solutions.

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## Letter

# Conservation Success through IPBES-Guided Transformative Change

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In response to our Perspective on integrating proximal and horizon threats to biodiversity [1], Titeux et al. [2] objected to one of our sentences: 'Titeux et al. [3] specifically highlight the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) as biased towards climate change research.' To be more precise, Titeux et al. [3] stated in the abstract that 'biodiversity scenarios mostly focus on the future impacts of climate change' and that 'the current state of integration between ecological and land system sciences is leading to biased estimation of actual risks and therefore constrains the implementation of forward-looking policy responses to biodiversity decline.' They

then concluded the paper with a call: 'IPBES offers a timely opportunity for taking up this challenge, but this independent body can only do so if adequate research efforts are undertaken.' We appreciate that Titeux et al. [2] felt it necessary to correct our, admittedly, simplified summation of their work. However, we do not believe that this amounted to misrepresentation (although readers can judge for themselves).

As highlighted by Titeux et al. [2], there is significant alignment in objectives between each of our perspectives and the IPBES Global Assessment [4]. Acknowledgment and active incorporation of multiple threats and scales into policy planning will be the only successful way forward. Upcoming additional IPBES reports [2] that further model/analyze interactions of biodiversity threats will undoubtedly advance conservation efforts broadly. Similarly, the recently released New Global Deal for Biodiversity (NGD) provides a blueprint for conserving biodiversity that explicitly integrates multiple threats [5]. The NGD proposes win-win strategies for protecting areas of habitat based on their classifications that include high diversity, connectivity and areas with high carbon-storage values, serving the multiple conservation goals of protecting biodiversity, maintaining ecosystem services and mitigating climate change [5].

But perhaps the strongest message from the IPBES Global Assessment [4] is the need for transformative change. Immediate and massive changes to global economic and political systems are needed in order to slow the deterioration of nature and biodiversity. Traditional conservation efforts have shown considerable successes, for example, in reversing declines of species or restoring ecosystems. Such

