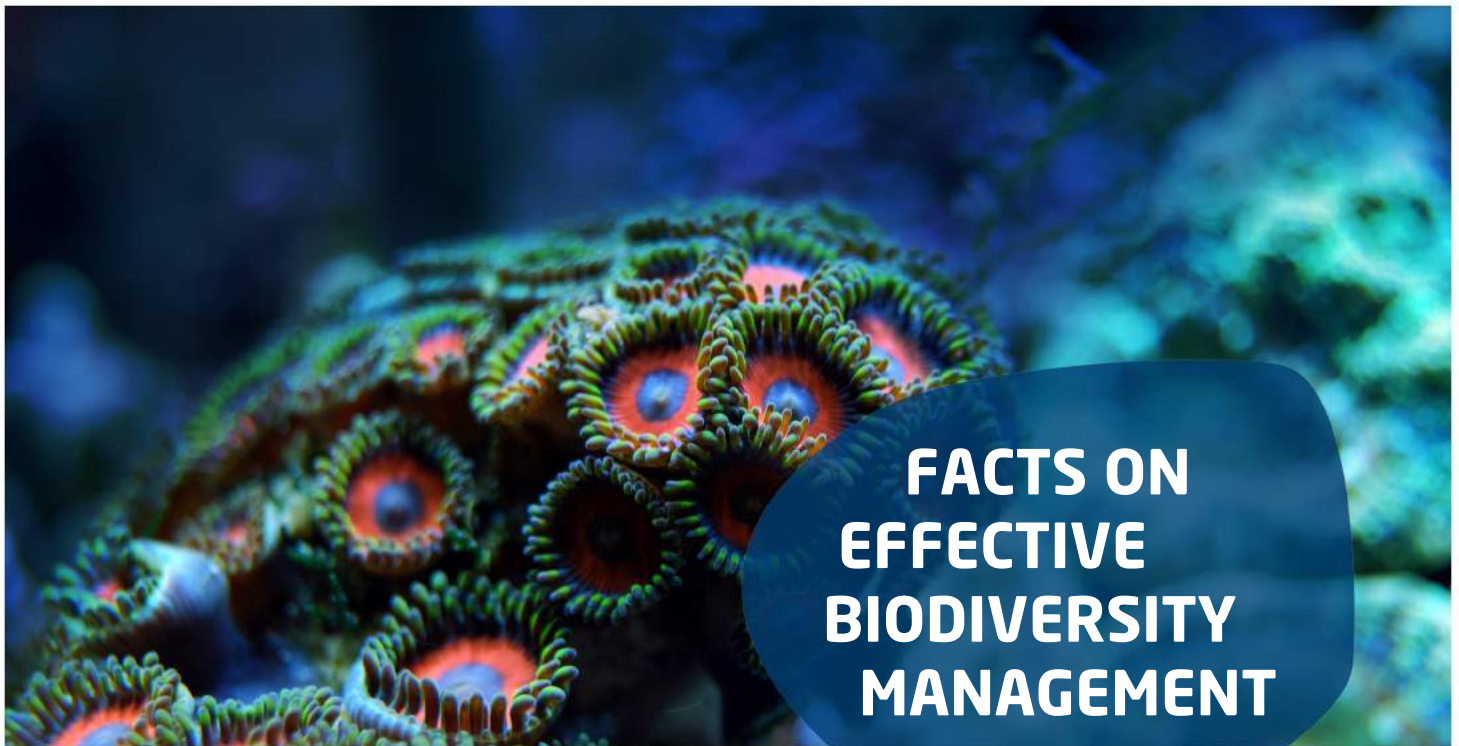


HIFMB FACT SHEET









FACTS ON EFFECTIVE BIODIVERSITY MANAGEMENT

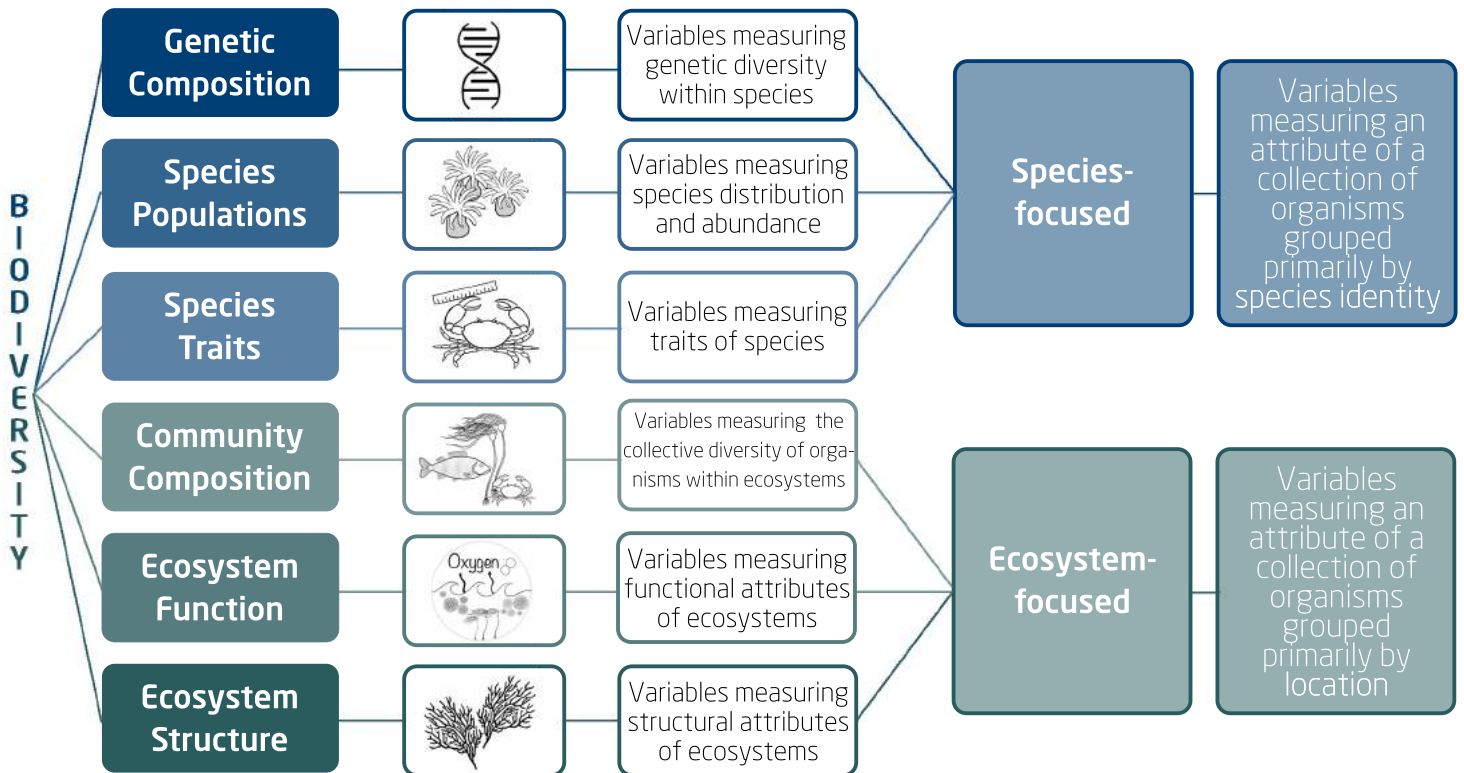
Overview

There is no number of species that we are safe to lose up to a limit, and setting a limit discourages cautious management.

Thresholds and tipping points are commonly used concepts in environmental management, however they are not suitable to be used to manage biodiversity change for conceptual, ethical, and empirical reasons:

-  Empirically, most biodiversity change appears to happen gradually, rather than sudden and disproportionate, as would be expected if a threshold had been crossed.
-  Biodiversity change is not linear and there is often a time lag between a 'cause' and the 'effect'.
-  Ethically, thresholds and tipping points deem some species dispensable, when they could be keystone species.
-  Few commonalities exist between species in their responses to environmental changes, and some species have stress memories that weaken their resilience to change.
-  Conceptually, defining a threshold for biodiversity change (a maximum value of acceptable loss) neglects the fact that ecosystems are complex and rely on a complete, entangled webs of species interactions.
-  Alongside large scale global policy targets, targets must be formulated at the local and regional scales - this is where management decisions are effectively being implemented.

Biodiversity is more than just counting species! Essential Biodiversity Variables are divided into six distinct classes, half of which focus primarily on species, and the other half primarily on ecosystems as shown below.



Recommendations for Actions

- High precision monitoring is needed so that scientists can use dependable and complete data to evaluate changes in biodiversity.
- Integrated management across scales is required to ensure that both local and global management decisions are aligned.
- Coproduction across scales including the availability of funding to compensate stakeholders for their involvement

Original Publications

Dajka JC, Antonucci di Carvalho J, Ryabov A, Scheiffarth G, Rönn L, Dekker R, Peters K, Leberecht B, Hillebrand H. (2022). Modelling drivers of biodiversity change emphasizes the need for multivariate assessments and rescaled targeting for management. *Conservation Science and Practice*.

Hillebrand H, Kuczynski L, Kunze C, Dajka JC. (2023). Thresholds and tipping points are not suitable concepts to understand or address anthropogenic biodiversity change – an intervention. *Marine Biodiversity*.

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