

From species to ecosystems: exploring community-based indicators as the missing link in marine assessments

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It is well recognized that management of activities affecting biodiversity and our natural ecosystems requires an ecosystem perspective. Understanding how individual organisms respond to dynamic environments provides information at the species level, and this is a key foundation for understanding how ecosystems function and change. However, between the two (species and ecosystems), lies the essential entity of communities. Community-level information is often overlooked, for example in the well-meaning efforts to progress from single/limited multi-species assessments to ecosystem-level assessments. This contribution takes a fresh look at the multitude of ecosystem models and ecological indicators that abound in the marine realm and which have been proposed to support ecosystem-based management. Using a South African marine ecosystem as a case study, we explore what additional information on biodiversity can be gleaned from community-level indicators as opposed to single stock assessments. We examine how such indicators may illuminate and alleviate some of the intricacies and stumbling blocks of broad-scale, ecosystem-level assessments that are currently being strongly advocated for as we strive for multi-sectoral ocean management.

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