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TITLE: Science Priorities for Seamounts: Research Links to Conservation and Management

AUTHOR: ['Malcolm R. Clark', 'Thomas A. Schlacher', 'Ashley A. Rowden', 'Karen Stocks', 'Mireille Consalvey']

ABSTRACT:

Seamounts shape the topography of all ocean basins and can be hotspots of biological activity in the deep sea. The Census of Marine Life on Seamounts (CenSeam) was a field program that examined seamounts as part of the global Census of Marine Life (CoML) initiative from 2005 to 2010. CenSeam progressed seamount science by collating historical data, collecting new data, undertaking regional and global analyses of seamount biodiversity, mapping species and habitat distributions, challenging established paradigms of seamount ecology, developing new hypotheses, and documenting the impacts of human activities on seamounts. However, because of the large number of seamounts globally, much about the structure, function and connectivity of seamount ecosystems remains unexplored and unknown. Continual, and potentially increasing, threats to seamount resources from fishing and seabed mining are creating a pressing demand for research to inform conservation and management strategies. To meet this need, intensive science effort in the following areas will be needed: 1) Improved physical and biological data; of particular importance is information on seamount location, physical characteristics (e.g. habitat heterogeneity and complexity), more complete and intensive biodiversity inventories, and increased understanding of seamount connectivity and faunal dispersal; 2) New human impact data; these shall encompass better studies on the effects of human activities on seamount ecosystems, as well as monitoring long-term changes in seamount assemblages following impacts (e.g. recovery); 3) Global data repositories; there is a pressing need for more comprehensive fisheries catch and effort data, especially on the high seas, and compilation or maintenance of geological and biodiversity databases that underpin regional and global analyses; 4) Application of support tools in a data-poor environment; conservation and management will have to increasingly rely on predictive modelling techniques, critical evaluation of environmental surrogates as faunal ?proxies?, and ecological risk assessment.

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