



National Environmental
Research Program

MARINE BIODIVERSITY *hub*

National maps of marine biodiversity and connectivity

Australia has an ongoing need to understand spatial patterns of biodiversity across its vast marine domains. The knowledge is needed for managing marine reserves (particularly where field surveys have not been possible), and for heritage and environmental assessments.

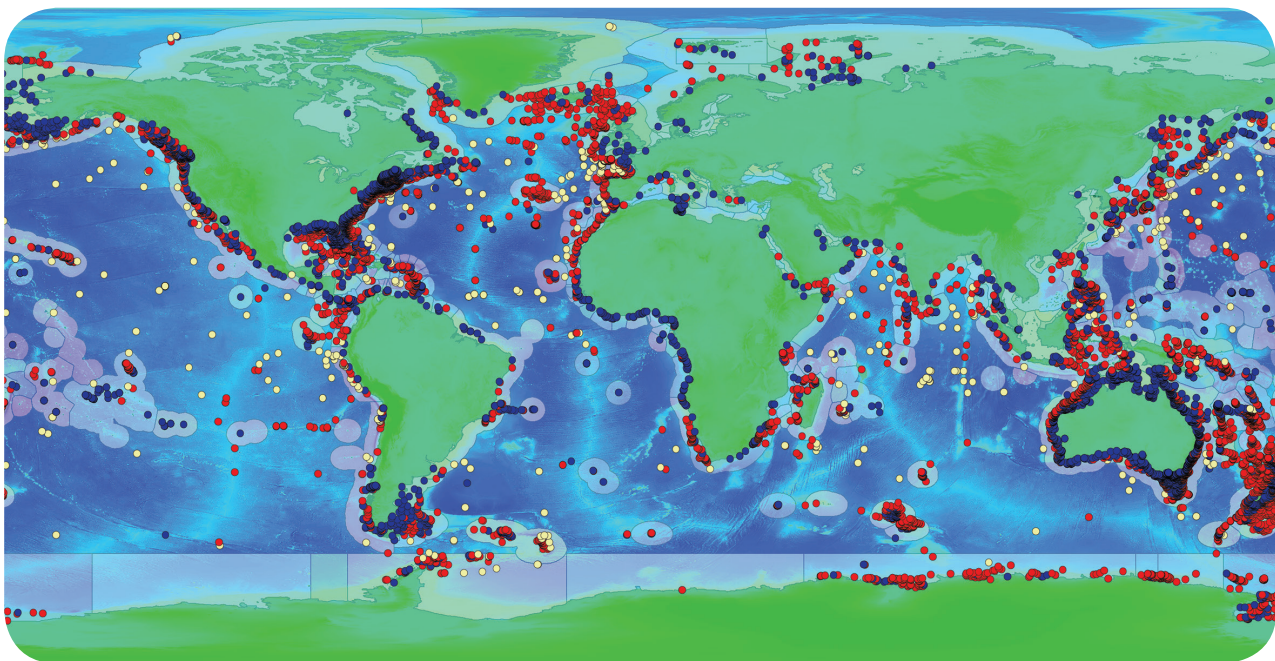
Direct field surveys are expensive. In the interim, a NERP Marine Biodiversity Hub project is collating data stored in museum collections (some overseas) and interpolating various biometrics

across the seascape to create large scale maps of the marine domain. This research has become possible thanks to the digitisation of museum collections and the development of data analysis and mapping software.

The metrics being mapped include species assemblages, species richness, species turnover, local endemism, and phylogenetic endemism. This last metric involves mapping where ancient lineages ('living fossils') are located. Animal groups being mapped include brittle-stars, squat lobsters, and sharks and rays. Although some of these groups

are not of economic importance, they are well known and can be used as surrogates for other seafloor fauna.

The work has international significance. Few nations have assembled similar datasets at such scales. It will further our understanding of the formation and distribution of life in the oceans, and provide guidance for marine management. International science agencies have provided co-funding to extend the work globally. This will particularly benefit less-developed nations with large marine domains.



Locations of brittle star samples destined to contribute to the global mapping project. Blue dots: continental shelves; red dots: bathyal; yellow dots: abyssal.



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Australian Government
Department of Sustainability, Environment,
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The NERP Marine Biodiversity Hub is supported through funding from the Australian Government's National Environmental Research Program, administered by the Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC). Our goal is to support marine stakeholders in evidence-based decision making for marine biodiversity management. Stakeholders include DSEWPaC, the Australian Fisheries Management Authority (AFMA), the Australian Petroleum Production and Exploration Association (APPEA) and the Integrated Marine Observing System (IMOS). (February 2013)