



AMSA 2017 Communiqué ('Connections through Shallow Seas')

Darwin recently played host to the annual meeting of the Australian Marine Sciences Association (AMSA), the peak body representing some 700 marine scientists across the nation. While the ~270 talks spanned a range of disciplines and subject matter, the value and need for more integrated social and economic management of our marine resources was a common theme.

In a series of seminal talks at the conference and from the public forum, a clarion call has come for the value and status of our marine and coastal domain to be factored into planning for northern development. Australia's EEZ to the north exceeds the area of land mass being considered for development; it is home to many globally unique elements and remains virtually unmodified, but also uncharted in numerous aspects. There is an urgent need to establish environmental baselines and to understand the factors underlying its marine productivity. Commonwealth, State and Territory Governments are encouraged to adopt ecosystem-based management to ensure the value and condition of this marine estate is preserved. Fundamental to this goal is collaboration between marine scientists and the key stakeholders in the NT marine environment to identify the key knowledge gaps to be addressed to improve the scientific basis for policy, regulation, strategic and operational decision making by government, industry and communities.

A number of talks, including those in a special session, highlighted the important role of marine parks, including the Commonwealth Marine Reserves network, as key mechanisms for the conservation and management of marine biodiversity. It is often argued that no-take marine reserves are not necessary in a place like Australia where robust fisheries management is common. However, work presented at AMSA 2017 challenges this assumption, highlighting drops in large-fish biomass in fished areas around the country and increased numbers of commercial fish in parks with high enforcement. Work was also presented to show the strong differences in fish assemblages around the country, justification for a comprehensive marine reserve network with no-take areas represented in all the major bio-regions. Of particular note was the unique biodiversity of the Coral Sea, which is quite different from the Great Barrier Reef, and thus, needs separate consideration in marine zoning plans. In aggregate, this research supports the need to ensure there is no further reduction in the size or distribution of no-take areas within the Commonwealth Marine Reserve network.

The meeting also highlighted the fundamental role played by infrastructure in the support of marine science. A special session celebrated ten years of the Integrated Marine Observing System (IMOS) and highlighted the many scientific achievements that have resulted from rich data made available through this program. Over 5,700 animals have been tagged and tracked by the acoustic monitoring network allowing for an unprecedented understanding of the patterns of connectivity of our coastal habitats. A decade of plankton observations has highlighted dramatic responses to warming and acidifying oceans by these communities that form the basis of blue water food webs. And the combined might of a network of instrumented moorings, coastal high frequency radar and autonomous gliders has allowed us to better understand and predict important oceanographic processes like upwelling that drive fisheries and marine heatwaves which lead to changes in regional biodiversity. These findings highlight an incredible return on investment and should serve as motivation for further investment in marine science as the Commonwealth Government considers the National Research Infrastructure Roadmap.

The Indigenous Engagement Workshop followed several related talks at the conference and provided compelling examples from around the Australian coast of two-way learning encompassing traditional ecological knowledge and western marine science. They deliver the genesis and framework for such relationships to become embedded in monitoring and research in coastal and marine systems universally.

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