

SUBMISSION TO THE DRAFT 2016 NATIONAL RESEARCH INFRASTRUCTURE ROADMAP

The Australian Marine Sciences Association (AMSA) is pleased to provide a submission on the 2016 National Research Infrastructure Roadmap Draft. AMSA is a professional society of over 800 members nationwide, committed to promoting marine sciences. Our members are from universities and government agencies and have expertise spanning all disciplines related to marine science. AMSA is pleased to see that the submissions to the Capabilities Paper by AMSA and other organisations representing marine science seem to have been generally incorporated into the Draft Roadmap Paper. Below we provide comments on specific parts of the Plan.

National Research Infrastructure Principles (1.3)

AMSA supports the nine principles outlined in the Draft Paper. In particular, we would reinforce the importance of considering the whole-of-life costs for any infrastructure investment and would suggest the wording in the document makes clear this should include all material and labour costs (personnel) required for ongoing maintenance of equipment and quality controlled data streams.

A Framework for National Research Infrastructure Governance (1.3)

It is critical that the governance structure for long-term research infrastructure planning provides some level of buffering against the inevitable politically driven short-term shifts in funding priorities. As such, AMSA strongly supports the notions put forward in the Draft Paper which highlight the need for independent and transparent scientific advice for planning. We would suggest the language relating to the life-cycle approach clearly indicates the need for long-term commitment of funding.

Skills and Career Development (1.4)

AMSA views the ongoing training (and retraining) of both specific technical and general scientific skills as fundamental to maintaining (and enhancing) Australia's international reputation for excellence in the area of marine science. As such, ASMA strongly supports the inclusion of planning for skills and career development in the Draft Plan. Enhancing professional career opportunities through the national research infrastructure roadmap will provide motivation for achieving qualification and obtaining experience. As the Draft Plan highlights, there will be a need to adequately trained personnel not only to run any new facilities or equipment but also to analyse data outputs and include it in scientific study.

International Engagement (1.5)

For many of our members, the maintenance of international collaborations is fundamental to running and successfully funding research programmes. AMSA is pleased to see the important role of national infrastructure in facilitating these interactions clearly articulated in the Draft Plan. National facilities such as the RV Investigator and monitoring programs provided via IMOS have allowed Australian Marine Scientists to strengthen engagement within global communities. Some international programs relevant to marine science which are not on the list provided in this section include the International Indian Ocean Expedition (2015-2020) and the Ocean Tracking Network (OTN).

National Research Infrastructure Focus Areas (2)

The infrastructure needs and requirements in the area of the marine sciences have been generally well captured within the Environmental Systems focus area. In terms of overlap with the National Science and Research Priorities (Table 2), we would note that a lot of marine research is also directly relevant to the 'Transport' priority. Weather and ocean current predictions are used extensively by the fishing and shipping industries as well as for long-term transport infrastructure planning in the face of climate change (sea level rise, storm surge). The Biosecurity focus area is also relevant for the 'Transport' priority, as the main vector for marine pests are ballast water and hull fouling, and research for prevention and eradication are articulated in the coming National Strategic Plan for Marine Pest Biosecurity.

Digital and eResearch Platforms (2.1)

Australia also has considerable existing capacity in the areas of climate modelling, ocean monitoring, benthic marine habitat mapping and animal tracking. These data streams are made available via online data portals. AMSA strongly supports the continued enhancement of capabilities in area of data access support and tools to facilitate national and international collaborations involving the data products derived from our national infrastructure.

Environmental Systems (2.6)

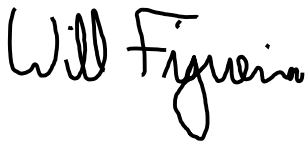
The focus for environmental systems highlights observation and modelling needs, yet the proposed future needs are not elaborating how the uncertainty assessments, which would require experimentation, can be achieved. Infrastructure that enables experimentation is essential to increase understanding (e.g. AIMS Sea Simulator) and experimental findings can support forecasting and improved modelling.

AMSA welcomes the approaches to enhance the marine research fleet and ensure 300 day operation of the RV Investigator. An increased fleet for coastal and shelf waters is desperately needed.

The important role of maintaining a backbone of marine research stations around the country has not been well articulated in this section. Marine research stations are responsible for generating a large amount of knowledge about the marine environment. The stations are typically run by individual Universities or research organisations. They are typically quite expensive to operate and the organisations must either run them at a loss or pass on high usage fees to researchers. AMSA would support consideration in this document of strategies which would allow for greater access to these research stations as well as strong integration of their mission and outputs. In particular AMSA is in support of a National Integrated Marine Experimental Facility as outlined in the National Marine Science Plan, which can be realised through linking existing marine research stations into an infrastructure facility. Such a network could host a marine microbial observatory, and realise many more coastal observations. Comparative observations and experimentation carried out at research stations around the country can generate the data on key natural and anthropogenic drivers needed for integrative modelling more applicable to large geographic areas. An integrated network of stations would have additional benefits for international collaboration by linking into the World Association of Marine Stations.

Under the topic of biosecurity, AMSA strongly supports the need for more biosecurity researchers in general but especially taxonomists. The detection of invasive species cannot be accomplished by autonomous sensors only. Human experts provide critical basis for research not only in the area of biosecurity but biology and ecology generally, essential as much of Australia's marine biodiversity comprises species still new to science.

Kind regards,



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