

Submission to the Draft Roadmap

Thank you for the opportunity to comment on the Draft 2016 National Research Infrastructure Roadmap. Overall, the National Marine Science Committee commends the Expert Working Group and the Secretariat on the document. Comparing it with the Capability Issues Paper, it is clear that feedback provided through the consultation sessions and written submissions has been listened to and factored into the drafting of the Roadmap.

Marine research infrastructure needs are largely dealt with in the Environmental Systems focus area. The priority areas identified on page 50 are strongly supported – namely, enhancing and expanding IMOS, increasing bluewater and polar vessel sea time, growing the national coastal vessel fleet, maintaining involvement in the International Ocean Discovery Program (IODP), and in ice coring and other Antarctic infrastructure.

We note the aspiration in this focus area to establish a national integrated Environmental Prediction System (page 43). Whilst supporting this aspiration, we think it would be more appropriate for a national research infrastructure roadmap to focus on a national integrated environmental prediction capability that draws on the current and potential strengths of national research infrastructure addressing major components of the Earth system - oceans, land, atmosphere and cryosphere.

It will therefore be important to ensure that interactions between the elements of the Environmental Systems focus area are carefully considered. Remotely sensed Earth observations are essential to understanding Marine Systems, and we have a strong and growing focus on ocean remote sensing. Environmental prediction capability is important for terrestrial and marine systems, and the interactions will increase as IMOS is expanded into estuaries and coastal waters. It may be useful to include a paragraph to this effect as an introduction to Table 8 (page 49).

The Case Studies within this focus area could be strengthened, and we are pleased to hear that key people within our community have been contacted to assist with this task.

The Digital Data and eResearch Platforms focus area is also very important for marine science. We strongly support the priority placed on Tier 1 HPC. With respect to the priority to create an Australian Research Data Cloud, we believe this needs to be considered as much more than just the integration of ANDS, NeCTAR and RDS. The Australian Ocean Data Network (AODN) is an advanced research data infrastructure with a national footprint and strong international linkages, and it needs to be considered as part of the Australian Research Data Cloud. We would also like to see the Marine Virtual Laboratory (MARVL) developed from a pilot project with uncertain funding into a properly supported national ocean modelling infrastructure.

Noting that the priority areas on page 50 are strongly supported, the case for investment in marine research infrastructure could be more clearly articulated throughout the document as a whole. In general, National Science and Research Priorities in Food Security, Energy Security and Transport are somewhat underemphasised in the focus area structure that has been used. Marine science will be a key contributor to driving the development of Australia's blue economy, including in fisheries and aquaculture, marine biotechnology, offshore oil and gas, ocean renewable energy, ports and shipping.

Specific suggestions are as follows:

1. The table on page 23 should show (marine) Environment Systems research infrastructure as relevant to Transport and Health national priorities, to reflect the importance of ports and shipping, fishing and aquaculture, and marine biotechnology.
2. Fisheries and Aquaculture, and Marine Biotechnology, should be referenced in the Complex Biology focus area. It does not make sense to confine these marine industries to the Environmental Systems and Biosecurity focus areas.
3. The Energy Security national priority should be given more emphasis in a number of focus areas, including Characterisation and Environmental Systems, to reflect the importance of offshore oil and gas, and ocean renewable energies.

We support the key recommendations, including those on establishment of a Research Infrastructure National Advisory Group and Development of a Roadmap Investment Plan. We appreciate that the Implementation section (2.11) will need to be further developed once the key recommendations have been considered. However we believe it will be very important to take full advantage of the planning and implementation mechanisms within the national innovation system that are already working well.

The NMSC has taken responsibility for decadal planning of Australian marine science, and we are very pleased to see our major research infrastructure priorities reflected in the Draft Roadmap. Importantly, the National Marine Science Plan has been developed with the users and stakeholders fully involved. We have appropriate mechanisms in place for implementation of national collaborative research infrastructure and are keen to see these utilised. They include IMOS, the Marine National Facility, IODP, and the Australian Antarctic Science Program. It is also important to note that funding for key aspects of our national marine research infrastructure has been uncertain and/or inadequate for several years now. There does need to be a degree of urgency with respect to implementation of the Roadmap so as to mitigate the risk of further deterioration, and enable our community to seize exciting opportunities that are currently out of reach.

Thank you for the opportunity to provide comment on the Draft Roadmap. We look forward to working with you on its implementation.