MEASO18
Marine Ecosystem Assessment of the Southern Ocean

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Tim Moltmann is the Director of Australia's Integrated Marine Observing System (IMOS), based at the University of Tasmania in Hobart. In this role he is responsible for planning and implementation of a large national collaborative research infrastructure program, which is deploying a wide range of observing equipment in the oceans around Australia and making all of the data openly available to the marine and climate science community and other stakeholders.

Tim is a highly experienced Australian research leader. He has been Director of IMOS for nine years, and before that worked at the Commonwealth Scientific and Industrial Research Organisation (CSIRO) for over a decade, rising to be Deputy Chief of the Marine & Atmospheric Research Division based in Hobart. He has a particular interest in research infrastructure, and has played a lead role in major national projects relating to large research vessels, observing systems, and national marine information infrastructure.

Tim's national roles include being Chair of Australia's National Marine Science Committee, Co-Chair of Australia's Forum for Operational Oceanography, and a member of national committees on Marine Biodiversity research, Climate Change research, Environmental Information, and integrated monitoring and reporting for the Great Barrier Reef. He has worked in primary industries and fisheries at State Government level, and has extensive background experience in private industry in Australia and the UK.

His international roles include being Chair of the Global Ocean Observing System Regional Alliance Forum, and an ex officio member of the Global Ocean Observing System Steering Committee. He has contributed as an invited expert to planning and review of marine research infrastructure programs in Canada, the USA, Brazil and Singapore.

The future of research capabilities – a global perspective

It is difficult to deliver science-based advice on marine ecosystems in support of stakeholders and policy-makers. The ocean, and particularly the Southern Ocean, is a challenging environment in which to both undertake science and act upon advice. Ocean observing systems have a particularly important role to play in providing scientifically robust information on marine ecosystems that are remote and uninhabited (though not unaffected) by humans. The vision of a global ocean observing system emerged from studies of ocean circulation and ocean-atmosphere exchange during the 1980s. With a focus on physics for climate, great progress was made in developing observing and data capabilities during the 1990s, and implementation of a global ocean observing system progressed apace. By the mid-2000s however, implementation had stalled. It became obvious that 'physics for climate' was insufficient justification for the nations of the world to invest in a global ocean observing system at the scale required. Over the last decade, a broader set of requirements has been developed which responds to societal needs for ocean health and real-time services in addition to understanding of climate. In Australia, creation and development of our national Integrated Marine Observing System (IMOS) has coincided with this evolution from 'physics for climate' to 'ecosystems for society'. From inception, IMOS

has been designed as an integrated system, observing across scales and across disciplines. Important lessons have been learned along the way. An unrelenting focus on data discovery, access, use and reuse is required. Observing systems, data networks, and modelling systems must come together in an adaptive framework. Molecular and genetic technologies need to come out of the laboratory and into the ocean, to provide information on the time and space scales at which marine ecosystems function. And societal impact has to be something that the scientific community plans for, not just expects to emerge from great science.

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