

MARINE RESEARCH IN WA

Event organised by The Royal Society of Western Australia
Monday, 18 May 2015 from 6:00 PM to 8:00 PM (AWST)
Exhibition Space, Building 500, Curtin University, Bentley, WA

PATRICK SEARES - CEO the WA Marine Science Institution (WAMSI)
PROF LINDSAY COLLINS – Dept of Applied Geology, Curtin University

Big Programs for Complex Issues – Progress

Patrick Seares

The Western Australian Marine Science Institution (WAMSI) is delivering two of Australia's largest marine research programs, as well as looking forwards to where the next strategic scale marine research is needed. The \$30 million Kimberley Marine Research Program is providing the first regional understanding of how the Kimberley marine environment works. The \$19million Dredging Science node is providing the answers to questions being asked around Australia about the predictability and real impact of dredging activities. The mid-way point of these programs is yielding information that is of great interest to Government and industry 'science users' alike.

WAMSI also commissioned the Blueprint for Marine Science 2050 to identify what information is needed to enhance industry competitiveness and government management in the marine estate. This end-user led process has clarified, and given priorities within the well-known gap between our understanding of the ocean and our activities within it. The learnings from these and other activities shows that there will only be an increasing need to collaborative, strategic scale, research off Australia's western coast into the future.

Patrick Seares joined WAMSI as the Chief Executive Officer in 2013. He moved to WAMSI from the role of Director of Assessment at the WA Department of Water. There he oversaw the majority of the State Government's hydrological and related environmental sciences and its application through statutory planning and policy advice to government. Patrick previously held roles in water as Director of Reform, Manager of Strategic Policy, and spent an extended time in the UK with separate roles in water resources and management consultancy.

The WAMSI Reefs Geomorphology Project is one of 24 WAMSI Kimberley Projects, providing new insights into the Kimberley Coral Reefs, which have been little studied until now. In fact, some authors have doubted whether the reefs are true build ups, or veneers over rock platforms. The project has as its goals the determination of the Holocene ("entirely recent" from 11,700 years before present to now) record of reef growth, to use remote sensing to map as many of the reefs as possible, and seismically evaluating the true thickness, internal architecture, and growth history of the reefs.

The project has been a success at all these objectives, and is now nearing completion. Over 100 reefs have been mapped, 30 in some detail, by combining remote sensing with ground truth data provided by WAM and others. A Holocene record of reef growth was obtained through mine pit mapping at Cockatoo Island, revealing an 8.5 Ka record of reef growth. Further, nearly 100 line km of shallow seismic data revealed reef structure correlated to the Marine Isotope Curve, with reef platforms having 2, and sometimes 3, stages of reef buildup, correlated to high stands of MIS,1,5,7 of the marine isotope curve. The significance of the research for marine park management will be explained.

Lindsay Collins (BSc Hons; PhD, UWA) is Professor of Sedimentology and Marine Geoscience at Curtin (Department of Applied Geology, WASM). He was formerly Head of Applied Geology, and Assistant Director of CRC (LEME). His fields of research include Sedimentology, Petroleum Geology, Quaternary Geology, Continental Shelf, Marine and Coastal Geology, Coral Reef Geology, and Microbialites. A lifelong interest in Shark Bay culminated in a recent 5 year study of hypersaline facies, and an associated study of seagrass banks, both funded by the Petroleum Industry. Lindsay is currently a Project Leader for WAMSI, studying the Kimberley Coral Reefs.
