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**Professor Robert McCauley**



Centre for Marine Science and Technology  
School of Earth and Planetary Sciences  
Curtin University

The 2023 Jubilee Award winner is Professor Robert McCauley, from the Centre for Marine Science and Technology, School of Earth and Planetary Sciences, Curtin University, Australia's leading expert in marine bioacoustics.

Professor Robert McCauley began his science career in 1987 working in the field of underwater marine acoustics, taking up a role at Curtin University in 1996 where he remains. His PhD work entailed understanding sources of noise, mostly fish, from a listening station established in the Great Barrier Reef lagoon, west of Cowley Beach North Queensland by Dr. Doug Cato a Defence scientist. Doug was a supervisor and long-term mentor. From the first recordings, tape decks with alarm clock timers, it was abundantly clear that sound plays a major role in the lives of marine fauna and is the primary sensory modality for most marine species. Invertebrates snap and stridulate, fish grunt, honk, trumpet or blare out the same sound incessantly day and night, whales whistle, groan, click to track prey, sing melodies, or for some species, blast prey with concussive impulse signals. The diverse use of sound by marine animals, the biological adaptations marine fauna has for creating and receiving sound, the complex physics of ocean acoustics, engineering challenges of collecting sounds useful for analysis plus a required expertise in signal processing, has led to a challenging, fascinating, diverse and rewarding career.

Rob has been studying underwater sound for over 30 years and his research has fundamentally altered our knowledge of underwater sound around the Australian coast, advanced the understanding of song structures and acoustic behaviours of various marine fauna (including whales and fish), and the migration of whales. Rob's research provided novel insights into soundscapes in Australia's marine environments, integrating the ocean acoustic environment with the use of sound by marine animals. During his long and distinguished career, Rob has led many programs and experiments that advanced our understanding of marine bioacoustics.

Rob is without doubt Australia's leading expert in marine bioacoustics and his research is seen to have revolutionized our knowledge and understanding of marine fauna in Australia's marine environments and the wealth of knowledge which accrued during his impressive research career now also allows analyses of long-term patterns in sound recordings and shifts in the distribution and abundance of whales around Australia.

Rob's research into the impacts of sound on marine fauna is considered to be the very foremost in the world. He characterized the anthropogenic sound fields around most of Australia, and his research outputs supported the conservation and management of threatened species. Rob's research not only documented the effects of seismic surveys on whales and fishes, but also provided the first evidence of impacts on zooplankton and marine invertebrates.