



Curtin University

MARINE ECOLOGY
AND FISHERIES GROUP

LIVING LANDS, COASTS AND SEAS

Advancing marine research and discovery at Curtin

Marine ecology and fisheries

The Marine Ecology and Fisheries group has a broad research portfolio ranging from the effects of climate change to stock assessment. Collectively, this research functions to inform best-practice management of Western Australia's marine ecosystems.

One of our key research themes is the ecology and distribution of marine fishes. This involves determining the age, growth and distribution of exploited species, acoustically tracking fish movement and home-range size and using cutting-edge molecular approaches to determine genetic variation and population size.

For twenty years our staff have been developing novel, fishery independent, sampling techniques using stereo-video systems. These techniques have been adopted by agencies around the world as their tool of choice for monitoring marine environments. In WA, baited remote underwater stereo-video systems (stereo-BRUVs) and diver operated systems are used to investigate distributions, habitats, seasonal patterns and the responses of ecosystems to anthropogenic influences including fishing, tourism and climate.

Our capabilities extend to the use of environmental DNA (eDNA), where DNA in water is used to determine the presence/absence of marine species (and pests) using next generation DNA sequencing (NGS) technologies. Food-webs are central to the functioning of marine ecosystems and we routinely use DNA to determine diet through non-invasive faecal sampling of species including sea lions and whale sharks.

The group is at the forefront of research into coral biology in WA including an understanding of how populations have changed temporally and spatially. The functional interaction of corals with its symbiont(s) is also a focus of our research.

At the Curtin Aquatic Research Laboratory (CARL) we have the aquarium facilities to control water temperature, salinity, oxygen, sediment, light and food. This allows us to investigate how fish, corals and other organisms respond to a range of environmental cues at different life stages.

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