

Rottnest marine sanctuaries inadequate for prized fish

July 30 2015, by Natasha Prokop



The targeted Breaksea cod may be more abundant within Rottnest sanctuaries.
Credit: Euan Harvey

A three-year survey of fish species off Rottnest Island has found marine sanctuaries around the popular tourist destination are inadequate for high-risk targeted species.

Marine sanctuaries or no-take zones, are areas from which fishing or

other extractive activities are excluded.

Rottnest Island's four sanctuaries—Kingston Reef, Parker Point, Green Island and Armstrong Bay—were considered in the study.

UWA researchers analysed more than 300 hours of underwater footage to measure the abundance, length and biomass of the fish featured in the footage.

UWA scientist Dr Timothy Langlois says their findings reveal Rottnest's [marine sanctuaries](#) are not large enough to protect the full assemblage of [species](#).

He says this is particularly the case for large-bodied species like pink snapper (*Chrysophrys auratus*), dhufish (*Glaucosoma hebraicum*) and blue groper (*Achoerodus gouldii*), which are vulnerable to fishing.

Most of the Rottnest sanctuaries are less than 1km², and Dr Langlois says this may not be sufficient to retain large-bodied fish which tend to have large home ranges or are migratory.

"The size of sanctuaries influences how much protection they provide from the effects of fishing," Dr Langlois says.

"For many of the highly targeted species, like dhufish and pink snapper, their abundances are quite variable within the sanctuaries.

"There's no clear pattern of recovery."



Western rock lobster are often more abundant within the Rottnest sanctuary zones than outside. Credit: Simon de Lestang

These species were also found to be rare within the shallow waters of the Rottnest Island Marine Reserve (RIMR), but are more abundant in deeper waters beyond the RIMR's 15m depth boundary.

The paper says the no-take zones need to be larger and deeper to properly protect the large-bodied targeted species.

"This would likely result in increases in the numbers and sizes of target species like dhufish and pink snapper," Dr Langlois says.

He says a marine sanctuary that adequately represents different habitats should be 10km².



Buff bream and silver drummer swim within a sanctuary at Rottnest Island.
Credit: Helen Shortland-Jones

However, Dr Langlois says the Rottnest sanctuaries in their current form still provide a valuable resource for education, scientific reference, biodiversity conservation and tourism.

"[The sanctuaries] do what they do very well; they provide protection against fishing for these small areas and you see the response of the small-bodied species," he says.

The study found bycatch species like the western king wrasse (*Coris auricularis*), whose home ranges tend to be smaller than those of large-bodied species, were larger and more abundant within Rottnest's sanctuaries.

Provided by Science Network WA

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