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Centenarian sea cucumbers at risk of over-fishing

Photos and video available [here](#).

Marine scientists have been amazed to discover an endangered sea cucumber can live for decades, with some animals living more than 100 years, in a first-of-its-kind genetic mark– recapture study.

Australian Institute of Marine Science (AIMS) Senior Principal Research Scientist Dr Sven Uthicke said the findings suggested black teatfish sea cucumber populations recovered much more slowly than previously thought and this had implications for commercial fishery catch limits.

Black teatfish is a highly valued delicacy in some cultures and is fished in Australia, the Pacific Islands and Southeast Asia. Sold for more than [AU\\$400 per kg](#) in Hong Kong, they are now seldom seen in Asian markets as wild stocks have been overfished. They can be found throughout the Great Barrier Reef, and their distribution extends across to Western Australia.

Sea cucumbers play an [important role in tropical marine ecosystems](#), recycling nutrients on the ocean floor and mixing sediment. Recent studies also show healthy sea cucumber populations can enhance coral health.

The researchers made the discovery by comparing DNA samples from a population collected in a no-take zone of the Great Barrier Reef Marine Park in 2000 with samples collected from the same location 24 years later.

A small biopsy was taken from each animal, and they were returned to where they were taken. Modelling was used to estimate their lifespan.

“We had a hunch that they could get older than the ten years that was commonly thought,” Dr Uthicke said.

“We collected 55 animals to sample and thought if we find three that were the same individuals as 24 years ago, that would be amazing,” he said.

“In fact, we found 60% (33) were the same as those sampled in 2000, and that really was a surprise.

“It shows adult black teatfish have extreme longevity and very low natural death rates.

“We found they live for at least 24 to 27 years on average, while some live for more than 100 years.

“Most of the recaptured animals had grown very little over the 24-year period, and many had become smaller.

“These findings suggest black teatfish populations recover much more slowly from fishing pressure than previously assumed.

“Harvesting needs to be a lot more conservative than it currently is if we are to avoid a possible extinction and preserve their important ecological functions.”

Black teatfish is on Appendix 2 of the Convention on International Trade in Endangered Species (CITES) and presently classified as *Endangered* by the [International Union for Conservation of Nature \(IUCN\) Red List of Threatened Species](#).

Dr Uthicke said current fisheries management approaches needed to be re-evaluated as they currently assumed tropical sea cucumbers could replace harvested individuals faster than the research results indicated.

“Harvesting long-lived reef animals like black teatfish is unlikely to be sustainable under current fishing pressures and environmental stress,” he said.

The research was led by AIMS and conducted in partnership with the University of Sydney and Southern Cross University.

The University of Sydney Professor of Marine Biology Dr Maria Byrne said black teatfish were in a perilous state of conservation [globally](#).

“The results of this study are a wake-up call to urgently increase their protection,” she said.

Southern Cross University Marine Science and Management Professor Steven Purcell said the study underlined the need for better planning of fishery harvest strategies and conservation of the species.

“Pacific Island fishers say this species is now rarely seen on their reefs, and Australia should take heed to avoid overfishing this resource too,” he said.

‘Extreme longevity revealed by 24-year genetic mark-recapture challenges conservation of endangered sea cucumbers’, was published in *iScience*.

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