

Kimberley Corals Tallest in the World

Written by Kandy Curran, Thursday 18 August 2016



Coring in the Kimberley

Image: *Kandy Curran*

With an enthusiastic audience of over 70, geomorphologist Dr Mick O’Leary from Curtin University gave his presentation, intriguingly named: Corals, canaries and cockroaches: A natural history of coral reefs on June 29, as part of the Science on the Broome Coast series.

The ‘stand out’ finding from Dr O’Leary’s research ‘to understand how Kimberley reefs, developed and evolved over a 10,000-year period to reach their current form today’, is the discovery that Kimberley corals are the tallest in the world. To take the science wow factor even further, the Kimberley reefs studied are adaptive and resilient, able to endure extreme environment conditions - high turbidity and sediment input, elevated temperatures, up to 10 metre macrotidal ranges, frequent cyclones and subaerial exposure during low tides!

To help map 294 km of tidal reefs and gain an understanding of the reef geology and growth over this time period, O’Leary engaged the Mayala, Dambi and Mangari Traditional Owners and Bardi Jawi Rangers. Scientific methods used, included satellite and aerial remote sensing, multibeam and sidescan sonar surveys, and coral reef coring and geochronology.

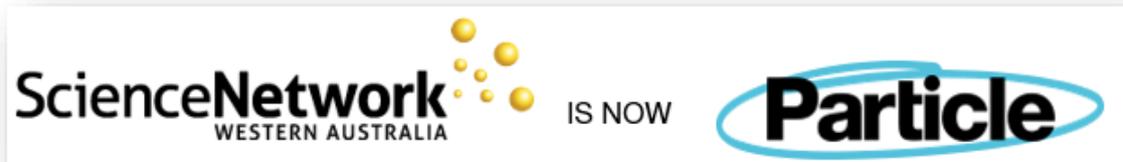
Compared to other reef systems, Kimberley reefs are complex, atypical and poorly understood – perfect for budding scientists to explore. The presentation provided a fascinating insight into how Kimberley reefs developed and evolved since the post-glacial flooding of the continental shelf 8,000 years ago. The reef structure has switched over time from branching to massive to present day coralline algal assemblages. High reefs showed continual vertical aggradation – accounting for the unique tallness of these reef systems, whereas low reefs ‘turned-off’ 6,000 years ago.

A widespread coral bleaching event was reported this year in the Kimberley; however Dr O’Leary hypothesized “that the adaptations of Kimberley reef systems, to very challenging environment conditions, should provide vital resilience to endure any future global warming event.”

As to the intriguing title, “the expression ‘canary in the coalmine’ is analogous with the fragility of coral reefs, since both are sensitive to environmental change, evident in recent global reef

decline, and canaries that were used to warn of noxious gases in underground coalmines. However, geologically, coral reefs can be robust, having endured over time, as have cockroaches,” Dr O’Leary said. Which leaves a dilemma for scientists to explore further - are coral reefs like canaries or cockroaches?

This innovative Science on the Broome Coast series is hosted by the Roebuck Bay Working Group and Yawuru Land and Sea Unit, and sponsored by Inspiring Australia, The University of Notre Dame, Western Australian Marine Science Institution, Rangelands NRM through the Federal Government Landcare Program and the Department of Parks and Wildlife.



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