

## Diploastrea heliopora: New Coral Archive of Tropical Paleoclimate

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Understanding climate variability in the tropical ocean over the last several hundred years is a high priority in climate change research. We propose here that the coral *Diploastrea heliopora* is an excellent recorder of interannual climate variability because this species grows slowly (3-5 mm per year) and has long lifespan up to 700 years. Moreover, *Diploastrea* has a wide distribution throughout the tropical regions in the Indo-Pacific Ocean and can survive even bad water quality. We used coral samples collected from two different regions: Alor Island in Indonesia on the Southern periphery of the Western Pacific Warm Pool and Amedee, New Caledonia, near the southern latitudinal limit for this species. We compared the isotopic results for *Diploastrea* with those for the coral *Porites*, which has been widely used for palaeoclimatic reconstruction, from Alor and Amedee (Quinn et al., 1996), respectively. The oxygen isotopic profiles of *Diploastrea* in both Alor and Amedee are primary influenced by variation of sea surface temperature with seasonal and decadal resolutions in each location. On the other hand, the mean values of oxygen isotope for both of *Diploastrea* specimens are 0.3-0.4 higher than those for *Porites*. The oxygen isotopic profiles for the *Diploastrea* from both sites recorded well the variation of precipitation/evaporation in this region in response to El Nino Southern Oscillation (ENSO). The results suggest that *Diploastrea* yields a dependable palaeo-ENSO signal and that it has good potential as a useful long-lived archive for reconstructing palaeoclimate in tropical Indo-Pacific region.