

Preliminary report of International Ocean Discovery Program Expedition 356 -What can we learn from the (sub) tropical carbonates off northwest Australia? -

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International Ocean Discovery Program (IODP) Expedition 356 cored the upper 400 to 1000 m of Cenozoic strata off northwestern Australia from 1st August to 30th September 2015. The main goals were: 1) to reveal a detailed history of variation in the Indonesian Throughflow (ITF), determine timing of onset of the Leeuwin Current, and explore their relationships to regional and global climates; 2) to obtain a 5 Myr orbital-scale record of tropical to subtropical paleoceanographic and paleoclimatic changes in the Australian monsoon area; and 3) to describe the spatio-temporal patterns of subsidence along the Northwest Shelf of Australia. Expedition 356 recovered cores from seven sites (U1458, U1459, U1460, U1461, U1462, U1463, and U1464) along a latitudinal transect from 28° 40' S to 18° 31' S. Biostratigraphic ages were determined to be early Eocene to Pleistocene at Site U1459, Pliocene to Pleistocene at Site U1460, and Miocene to Pleistocene at Sites U1461, U1462, U1463, and U1464. The lithology at all sites is composed mainly of unlithified to lithified carbonates (mudstone to packstone), intercalated with dolomitized layers at two sites. Thick evaporite (anhydrite and gypsum) in the Miocene strata at Site U1464 implies a sabkha environment (drier conditions). The very good preservation of calcareous microfossils in the latest Miocene to Pleistocene at Site U1463 will allow us to investigate orbital-scale secular changes in paleoceanographic and palaeoclimatic environments during the last 5 Myr.

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