

## **Indian Ocean circulation changes over the Middle Pleistocene Transition.**

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The Mid-Pleistocene Transition (MPT; ~1.4 – 0.4 Ma) represents a climatic shift towards climate cycles at a quasi-100-kyr frequency. High-resolution data exists covering the MPT from globally distributed archives, but there is only sparse evidence on changes in heat exchange between the Pacific and Indian Oceans. Deciphering the influence of this heat exchange via the Indonesian Throughflow (ITF) is an important step in understanding the causes of the MPT. The Leeuwin Current off Western Australia is directly influenced by the ITF and can therefore be used to reconstruct ITF variability during the MPT

We present the first continuous reconstruction of changes in the Leeuwin Current during the MPT using data from IODP Expedition 356 Site U1460. The site is located at 29°S in the path of the current. We reconstruct paleoenvironmental variability by combining XRF, organic geochemistry, ICP and XRD data with shipboard data, to reconstruct Leeuwin Current and ITF variability. High sedimentation rates (~30 cm/ka) at Site U1460 provide the opportunity for high-resolution reconstruction of the MPT.

Initial analyses show that productivity off Western Australia intensified after the MPT, indicated by increased primary productivity related to increased nutrient levels, from 900-600 ka. There is also increased amount of SST variability after 900ka suggesting a more dynamic Leeuwin current and that glacial periods had a weaker Leeuwin current. Our results suggest, that these changes after the MPT might be related to global changes and suggest connections between changes in Indian Ocean circulation and the south Atlantic Ocean.