

**NEOGENE TECTONIC AND STRUCTURAL EVOLUTION OF THE TIMOR  
SEA REGION, NW AUSTRALIA:**

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## **Abstract**

Neogene deformation styles in the Timor Sea vary from flexure-dominated in the NE to transtension-dominated towards the SW. Neogene faults generally preserve overall normal displacement despite sometimes complex reactivation histories. Controls on fault style include proximity to the Timor Trough, and position relative to basement highs. Basement faults often control the location of Neogene faults, with both hard- and soft-links preserved throughout the area. Cretaceous and Upper Jurassic shales and claystones act as ductile horizons and cause detachment of basement from the Neogene in some areas. Three main pulses of deformation at the Early Miocene, Late Miocene and late Early Pliocene correspond to regional tectonic events in the region. The Late Miocene event in particular seems widespread, with synchronous deformation through the Indo-Australian plate.