

## Miocene-Recent evolution of the Woodlark rift basin, SW Pacific (Leg 180 results)

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Leg 180 (June-August '98) provided insights into propagation of a spreading centre into continental crust. A N-S transect of 4 holes was drilled across the rift hanging wall, from a proximal setting close to the major low-angle extensional Moreseby detachment fault, across both the and outer rift zones. Additional sites were drilled on the rift and along the footwall. Regional Palaeogene ophiolite emplacement was followed by Miocene subduction-related arc volcanism. Regional uplift and emergence took place in the U. Miocene. Rifting of the (back-arc) Woodlark Basin began in the L. Pliocene, with transgression, localised air-fall ash input and volcanoclastic turbidite deposition. Strong extension along the Morseby detachment fault in Late Pliocene-early Pleistocene generated fault-derived talus. In a proposed two-stage model, diffuse rifting (Pliocene) was followed by focused rifting (Late Pliocene-early Pleistocene) along a master detachment fault, whose activity was triggered by continentward propagation of a spreading tip. This model may be applicable to other settings, including the Permo-Triassic break-up of Gondwana.