

WA Branch

Romancing The Triangle

Zone: A PNG Story

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The Puri Anticline of Papua New Guinea was first recognised in 1937 and later drilled during 1957-59 with limited success. New seismic data has been interpreted to suggest that the structure is located within a triangle zone which extends for 45 kilometres along the leading edge of the Papuan Fold Belt. The stratigraphy and structure of the Puri Triangle Zone is now better understood due to the recent acquisition of seismic, radar and aerial photography data combined with detailed surface geological mapping.

The leading-edge structure in the Puri Region undergoes a transformation from a relatively simple duplexed wedge to a more highly deformed structure with interpreted out-of-sequence thrusting within its core. This represents a transition from blind, triangle zone type deformation to emergent thrusting along the leading edge.

The stratigraphy involved in the triangle-zone structure both pre-dates and is synchronous with the formation and encroachment of the Papuan Fold Belt.

The Eocene to Miocene carbonate section, which forms the competent core to the structure, represents a period of relative tectonic quiescence, prior to any significant uplift of the fold belt. With the late Miocene initiation of tectonism, material was shed from the uplifted mountain belt into the developing foreland basin resulting in the deposition of marine flysch claystones. As the deformation front approached, a transition to non-marine, predominantly arenaceous deposition occurred.

The structure and stratigraphy of the Puri Region are compared to analogous triangle zone structures in Canada, Russia, Pakistan and France.