

## **The Klias Peninsula and Padas River, NW Borneo: An Example of Drainage Capture in an Active Tropical Foreland Basin**

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The Klias Peninsula is a prominent rectangular geomorphic feature (~1500 km<sup>2</sup>) that juts abruptly from the NE-trending shoreline of Sabah between Brunei Bay (SW) and the small Papar River delta (NE). This region developed as a Neogene foreland basin and its modern coastline study can serve as an analogue for clastic depositional systems in ancient foreland basins. The peninsula's peat deposits, the largest in Sabah, represent a modern example for the deposition of organic-rich tropical coastal plain source rocks. However, preservation of these peat deposits, from erosion during Holocene transgression arises from the special circumstance; a natural sea wall of Miocene sandstones. SE of the Klias Peninsula, Borneo's 4th largest river, the Padas River, flows into Brunei Bay as do the Limbang and Trusan rivers. Although these 3 rivers have a combined discharge greater than that of the Baram River, they have been unable to prograde into and fill Brunei Bay. Miocene cobble conglomerates deposited in a tidally-influenced channel define a major sequence boundary exposed on the Klias Peninsula that can be correlated to paleo-shelf edge gorges imaged offshore on seismic data. Recent beach deposits on the Klias Peninsula now at 20m elevation indicate youthful uplift. Likewise, Pliocene gravels at Berakas Beach in Brunei suggest the ancestral Limbang River also followed a different course. These observations suggest that the Padas, Limbang and Trusan rivers have only recently been captured by rapid subsidence of Brunei Bay and previously cut across the NW Borneo shelf to supply turbidite sands to deepwater depositional systems. Concomitant uplift and subsidence within this area, as well as a prominent negative Bouguer gravity anomaly under Brunei Bay, point to a tectonic driving force for drainage reorganization. Thus, the Padas River and Klias Peninsula offer a stellar modern example of drainage capture and facies variability in an active tropical foreland basin.