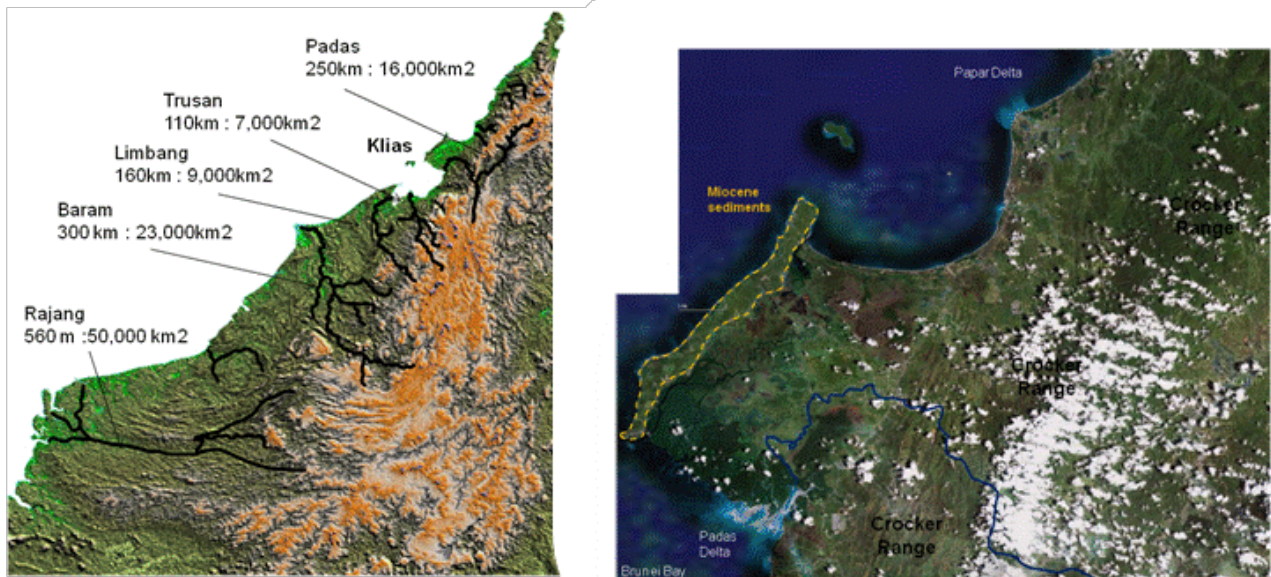


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The Klias Peninsula and Padas River, Northwest Borneo: A possible example of hinterland drainage capture in a tropical orogenic highland.

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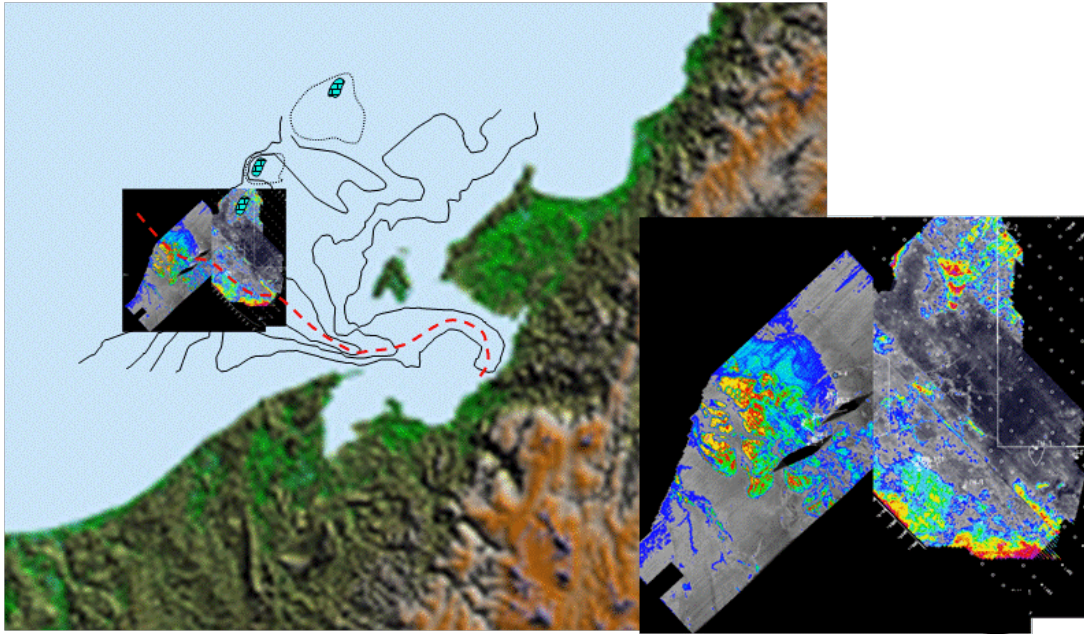
On the basis of length and catchment area the Padas River is the third largest river draining into the South China Sea from the highlands of Borneo. At the mouth of the Padas River, the Klias Peninsula forms a prominent geomorphic feature that juts from the northeast trending shoreline. This peninsula covers roughly 1000 km² and represents a tide-dominated muddy delta that has been stabilized by a wetlands peat swamp. The Padas Delta has filled a large bay / lagoon behind (southeast) a rocky headland of Miocene clastic rocks that were probably once an island. The Padas River has recently avulsed and is now flowing into Brunei Bay as are the Limbang and Trusan Rivers.



The Padas River owes its status as the 3rd ranked river because it has cut through the Crocker Range to capture drainages on the eastern flank of that range as well as the drainages from the Trus Madi Range on the eastern side of the Tenon, Keningau and Tambunan valleys. This is in stark contrast to the stubby drainages further to the northeast, such as the Papar, Kinabalu, and Belud Rivers, whose clastic load is re-worked by tide and waves to form a relatively strike continuous shoreline. The Padas appears to be a mud-rich system, a circumstance that can be attributed to the difficulty of transporting a voluminous coarse bed load through the Padas

canyon, as well as the fact that the western flank of the Crocker Range where the Padas River flows is dominated by outcrops of the shale-rich Temburong Formation.

The paleo-Padas River has been cited as the probable delivery system for the upper Miocene turbidite reservoirs of the Gumusut and Kikeh deepwater fields. A Holocene incised valley system extending into Brunei Bay is expressed in the present-day bathymetry and is imaged on 3D seismic. However, the Trusan and/or Limbang Rivers, are also viable candidates for such a delivery system and have a sand-prone hinterland of the Meligan and older units in the Belait Formation.



Regardless of which, if either, of these interpretations is correct, the Klias-Padas system demonstrates the profound along strike variability of the modern coastline of northwest Borneo. Its wetlands peat deposits represent good source rock facies juxtaposed with shoreface reservoirs. The Klias-Padas system also appears to be anomalous in having such a large length and catchment area relative to the size of its modern delta and to its muddy discharge and. It is possible this is a young system and one step in the evolution of tropical shorelines along orogenic belts. Further work that could address this issue should include a coring and carbon dating in the Klias Peninsula and study of the gravel terraces in the hinterland.