

Neotectonically-controlled lakes in the Lower Solimões region - Central Amazon - Brazil

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Several neotectonic features have been recognised during the geological and geomorphological mapping of Lower Solimões region of Central Amazon. The adjustments to present climate conditions and a neotectonic framework installed since Miocene in Solimões basin have influenced the development of present-day landform patterns and drainage systems. As fluvial geomorphic features, lakes also display a fascinating complex of different types depending on their location in the basin. This study focus on a regional perspective (scale 1:250,000) of the morphology and morphometry of largest lakes on the left catchments of Lower Solimões river and their relationship with neotectonic structures.

In the region between Japurá and Negro rivers, the landform developed on Pleistocene sediments presents a reworked surface texture with drainage networks characterised by angular patterns, linear segments, drainage capture, anomalous drainage as well as straight, large lakes. Commonly linked with the main channels, Amana, Piorini, Badajós, Anama, Acará and Manacapuru lakes are over 18 km of width and tend to follow the same trend as drainage network. Lake margins are commonly controlled by normal faults NW-SE connected with younger E-W shear faults which break the linear shape of the lakes, either at their ends or in the middle parts. Apparently such structures are related to an intraplate E-W dextral shear system superimposed on the morphology of studied lakes.

This study was produced during the first stage of SIVAM Project, which aims to reinterpret and update the natural resources of Brazilian Amazon using remote sensing products and GIS techniques.