

ENVIRONMENTAL CHANGES IN THE MEGAFAN OF THE AQUIDAUANA RIVER DURING THE QUATERNARY, IN SOUTHEASTERN PANTANAL

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ABSTRACT: The Aquidauana Fluvial Megafan (AFM) is an important geomorphological feature located on the southeastern edge of the Pantanal in Mato Grosso do Sul state. With an area of approximately 3,783,480 km² it has on its surface depositional geoforms that indicate environmental changes, mainly of paleo-hydrological imprint that has been occurring in the area since the late Pleistocene to the present. Among the geoforms that demonstrate the evidences of such changes are: depositional lobes (ancient, pre-current and current), a belt of abandoned meanders, abandoned incised plain of the Aquidauana River, paleochannels, point bars, marginal terraces, crevasse splays and processes of avulsion that occur especially in the current distributary lobe. The incised plain cuts the three depositional lobes, making the upper part of the AFM (ancient and pre-current lobes) a degradation area while in the lower portion an aggradation area (current lobe). Relevant avulsion process occurred in the medial fraction of the area, resulting in the abrupt change of flow direction of the Aquidauana River that previously flowed into the Negro River. Nowadays it is an affluent of the Miranda River and this was the main paleohydrological change of the area. This event has been considered as a consequence of neotectonics, since the area is strongly influenced by discontinuities and earthquakes, which act in the recent geomorphological dynamics. The understanding of sedimentary processes occurring in fluvial megafans, such as the AFM, is of great relevance in understanding the genesis and evolution of the Pantanal plain. The distinct morphological evolution of the depositional lobes and the incised plain provide different species of vegetation in the area that are adapted to the local environmental aspects. In the incised plain can be distinguished species such as the Novateiro (*Triplaris Americana*), Acuri (*Scheelea phalerata*) and the Cipó d'água (*Arrabidaea*); in the ancient and current lobes, the Lixeira (*Curatella americana*) and the Paratudo (*Tabebuia aurea*); and in the current lobe, the Genipapo (*Genipa americana*), Barreiro (*Proposis rubriflora*) and Acuri (*Sheelea phalerata*). The interdisciplinary studies of Geology, Geomorphology and Botany together with the use of geotechnologies are able to provide understanding the dynamics of the AFM and Pantanal as a whole.

KEYWORDS: AQUIDAUANA MEGAFAN, QUATERNARY ENVIRONMENTAL CHANGE, GEOTECHNOLOGY.