

Geoindicators of Holocene climatic changes in Pantanal region, Central South America

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Pantanal region is located in tropical central South America. The region has two main types of landscapes: the lowlands of the Pantanal Basin and the highlands nearly around it. The most conspicuous feature of Pantanal Basin is the giant Taquari alluvial fan, and other smaller ones. The highlands at the northeast and southeast are sculptured on Phanerozoic sedimentary and some volcanic rocks; at the west, northwest and southwest they are sculptured mainly on folded metamorphic Proterozoic and Archean rocks. Plane top surfaces are common for all ranges and pediments occur at the intermediate altitudes of the main valleys, as previously described. A humid to semihumid tropical climate is typical for the present day but some authors have suggested semi-arid to arid climates for early Holocene. This work relates the research of some geoindicators of climatic changes: erosional and depositional geomorphic features, pans, sediment characteristics and paleosoils. For example: paleochannel patterns over early lobes indicate larger sediment load than the present day, ramps and alluvial terraces suggest sheet flood erosion and valley fill changing to linear forms of valley incision. Clean white sands thin cover either in alluvial fan or in pediments and ramps and suggest participation of eolian processes. Tufas with gastropode fossils in playa deposits are covered by peat soils, reworked in the present. Carbon dating indicates semiarid and cold climates around 8.000y. Arguments for the same age for the material are presented. (Support from Pantanal-Chaco Project, EUF and CNPq)