

Geomorphological evolution of the Paraguay River plain at Corumbá reach, Pantanal, Brazil

Macedo, H. (UFMS/CPAN) ; Stevaux, J. (UFMS/CPTL) ; Silva, A. (UFMS/CPAN)

RESUMO

The Upper Paraguay River Basin comprises areas with distinctive biological and physical characteristics, with the Pantanal being the most complex. The fluvial plains of the Paraguay River within the Pantanal have peculiar hydrosedimentary dynamics and are of great importance because they are the main collectors of this huge depositional tract. This study investigated the Quaternary evolution in the Paraguay-Corumbá Fluvial Plain, using remote sensing, sedimentary, and geochronological analysis. Three geomorphological compartments were identified: 1) the floodbasin of the Paraguay River presents drainage formed by suspended-channels. In the southern portion of the floodbasin, these channels converge into meandering channels with scroll bars, similar to those present in the southern Pantanal region; 2) depositional fluvial landforms are composed of an abandoned meander belt on the floodbasin; and 3) the active meander belt of the Paraguay River. The origin and evolution of the floodbasin were influenced by both climatic factors (drier climate) and the localization of the area in relation to the watershed. The paleomeander belt shows depositional landforms indicating different hydro-sedimentological conditions, but with similar water discharge to the nowadays. An evolutionary sequence of the geomorphology of the area was proposed: 1) formation of suspended-channels in the Paraguay River floodbasin during the 50–20 ka BP; 2) formation of the former meandering belt of the Paraguay River, at the end of the Pleistocene and early Holocene, truncating the suspended-channel forms in the floodbasin; and 3) with progressive climatic changes and increasing river discharge in the upper Holocene, an avulsion occurred in the Paraguay River near Castelo Bay and built the current single-channel meander belt. The identified and mapped landforms, which produced overlapping fluvial styles, have recorded paleoenvironmental and paleohydrological changes since the Late Pleistocene.

PALAVRAS CHAVES

Fluvial geomorphology; Hydro-sedimentology; Paleoenvironmental change