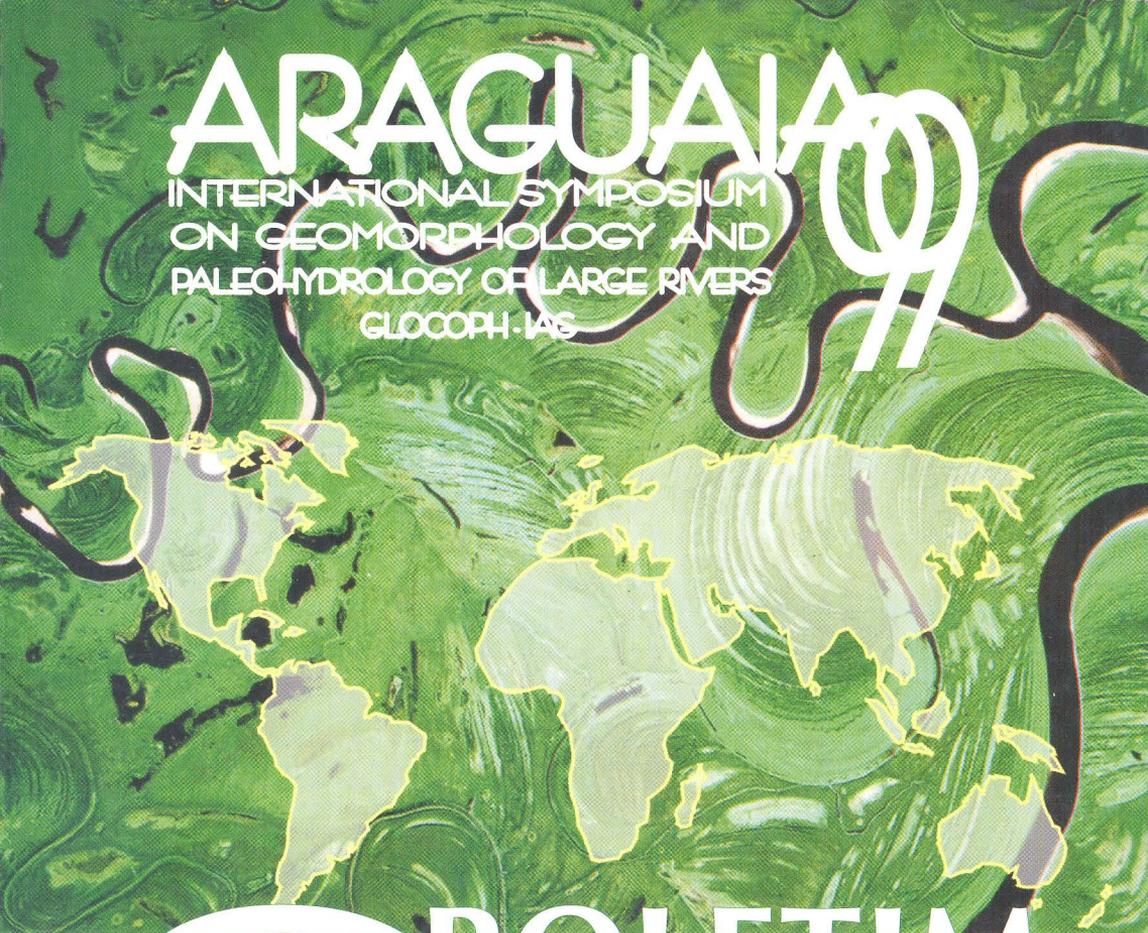


ARAGUAIA

INTERNATIONAL SYMPOSIUM
ON GEOMORPHOLOGY AND
PALEOHYDROLOGY OF LARGE RIVERS
GLOCOPH-1AS



GBOLETIM GOIANO de Geografia

special issue
vol. 19(1): 1999

FEDERAL UNIVERSITY OF GOIÁS
INSTITUTE OF SOCIAL & ENVIRONMENTAL STUDIES - IESA

Geografia
Essentials - IESA - UF

Editora
UFG

THE HIGH PARANÁ RIVER FLOOD PLAIN

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The flood plain of the high Paraná river extends from Três Lagoas (SP) to Guaíra (PR) for about 450 Km, and exhibits different characteristics along its length, due to the occurrence of three structural compartments. The upper compartment is named after Lagoa São Paulo, the medium is named after Rio Baía and the lower is named after Ilha Grande (Souza Filho & Stevaux 1997).

The Lagoa São Paulo Compartment extends for about 100 Km and the flood plain is restricted to channels installed over the low terrace sediments. These channels are at least 200m wide; sub-actives and arranged in a complex branching and inter linking pattern. The sediments may exhibit up to 3m of thickness, represents flood basin deposits and its surface has 24 cm/km of gradient. The channel is narrow and deep, and it has submerged compound bars. Its gradient is 9 cm/km.

The Rio Baía Compartment extends for at least 250 Km and always occurs on the right bank of the Paraná river. The flood plain is narrow upstream and enlarges up to 9 Km downstream. It occurs mainly in the right side of the river forming archipelagos. Its surface has 7.0 cm/km of gradient. It is characterized by areas with concentrations of natural levee and channel associated; areas with crevasse splay fans; an anastomosing channel complex, and areas of flood basin. All these areas are associated to lagoons, bogs and marshes. The channel is multiple, large and shallow, asymmetric with the talweg situated on the left side, and are very large bars (cross-channel bars and lateral bars, according Santos, 1991, and Souza Filho, 1993). The gradient is close to 6 cm/km.

The Ilha Grande Compartment extends for about 100 Km and occurs on the left side of the river. The flood plain forms two main islands (Ilha

Grande e Ilha dos Bandeirantes), and a narrow flood plain strip on the left bank. Its surface is marked by extensive flood basins delimited by continuous natural levees, its gradient's surface is 10 cm/km. There are two channels. The main channel occurs on the right side. This channel is large and deep, and the sand bars are more frequent and form great bars complexes. Its gradient is 20 cm/km.

Table 1 Gradient's values in each compartment

	Lagoa São Paulo Compartment	Rio Baía Compartment	Ilha Grande Compartment
Floodplain gradient	23.5 cm/km	7.2 cm/km	9.8 cm/km
Channel gradient	8.8 cm/km	5.9 cm/km	20.1 cm/km

The flood plain's deposits were formed mainly by an anastomosing channel pattern, and represent ancient deposits of the Paraná river (Souza Filho, 1994). This surface was modified by tectonic movements after their deposition. The active channel is not adjusted to the present day conditions and their hydrologic and faciologic characteristics enable us to compare them with the South Saskatchewan braided river (Souza Filho (1993). This gradient shows local and regional variations, and its basal level was controlled by the Sete Quedas falls (nowadays under the Itaipú reservoir).

The tectonics movements could explain those variations discussed above, but do not explain the differences between the flood plain and the channel's gradients. The flood plain and channel's gradient differences could demonstrate the great influence of the development of the Sete Quedas Falls. The falls are the basal level to the high Paraná river and their regressive evolution tends to increase the channel gradient.

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