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## Habitat characteristics, hydrology and anthropogenic pollution as important factors for distribution of biota in the middle Parana River, Argentina

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### ABSTRACT:

The regulation of anthropogenic pollution inputs into large rivers is an important aspect of ecological resilience of aquatic systems and river pollution management. The current study examined the relationship between contamination loads, hydrological and morphological patterns and the distribution of macroinvertebrates and epipellic diatoms in the middle Paraná River system to form part of the development of a pollution monitoring framework. Seven sampling sites were selected over three main river areas predominantly impacted by sewage effluent and agriculture activities. The sampling areas were the Paraná, Colastiné and Las Conchas rivers. In order to prevent dilution of pollutants and macroinvertebrate drift, sampling was performed during the base flow period of 2015 to determine pollution contaminated stretches of the river system. Results indicated that metals have been accumulated in river bottom sediments as a consequence of anthropogenic land use activities. Macroinvertebrate and epipellic diatom assemblages as bioindicators of anthropogenic pollution were evident

downstream of urban sewage effluent discharges causing higher concentrations of Cr, As and Ni than the permitted threshold levels for bottom sediment.