Effects of extraordinary floods on the dynamics of tall grasslands of the river Paraná valley

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with 4 figures and 3 tables

Abstract. The river Paraná has a yearly pulse, by which the water reaches its highest level in autumn and its lowest in spring. Each few years there are great floods, and there are records of extraordinary floods in 1905 and 1983. The Panicum prionitis tall grassland is a community of low floristic diversity widespread all over the river valley, and most authors supposed that it is an advanced state in the plant succession towards a wet forest. The 1983 extraordinary flood destroyed completely this community. In this paper the phytosociological analysis of the communities which appeared in its place is given. These are floristically rich and composed fundamentally by the rare species of the Panicum prionitis tall grassland. It is supposed that they will evolve towards that last community, and thus the floristic diversity will decrease. New evidence of Panicum prionitis mature grassland being a steady state community which does not evolve further is added.

Resumen. Las aguas del Río Paraná tienen un pulso anual que alcanza su máximo en otoño y su mínimo en primavera. En ciclos breves, de pocos años, hay grandes inundaciones, y hay registros de crecientes extraordinarias en 1905 y 1983. El pajonal de Panicum prionitis es una comunidad de baja diversidad florística ampliamente distribuida en todo el valle del río, y muchos autores suponen que es una etapa avanzada en la sucesión vegetal hacia un bosque húmedo. La creciente extraordinaria de 1983 destruyó completamente esta comunidad. En este trabajo presentamos el análisis fitosociológico de las comunidades que aparecieron en su lugar. Estas son florísticamente ricas y compuestas fundamentalmente por las especies raras del pajonal de Panicum prionitis. Suponemos que evolucionarán hacia esta última comunidad y entonces la diversidad florística decrecerá. Aportamos nuevas evidencias de que el pajonal maduro de Panicum prionitis es una comunidad estable que no evoluciona posteriormente.

Introduction

The river Paraná, which is among the ten greatest rivers of the world, runs from north to south within a valley limited at both sides by quite noticeable tectonic scarps. From the city of Corrientes, where it receives the river Paraguay waters and turns to the south, down to the outskirts of Buenos Aires, where it joins the river Uruguay to form the River Plate, it has a deltaic character. However, the valley is a compound flood plain (IRIONDO 1972, IRIONDO & DRAGO 1972) and only its southernmost portion, i.e. from Diamante to the River Plate, can be considered a true delta (BONFILS 1962).