

Prescribed burning and fuel availability in wetlands of the Parana River, Argentina

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ABSTRACT – The Paraná River has a pulsatile hydrological regime alternating high and low waters. Normally the low water season is at the end of winter (August-September). In the flood plain there are islands formed by differentially deposited sediment, generating different topography, including a landscape pattern with: levees (higher), mid-slopes and lowlands of the islands, usually with water. In these lowlands the floating and rooted vegetation predominates, which accumulate biomass during the summer, commonly called “*canutillares*”. Eventually they run out of water, due to downspouts of the river, and the exposed biomass stops growing due to winter temperatures, becoming high fuel loads. Among the anthropic disturbances in the Paraná Islands, the grazing of domestic cattle and burning to improve the quality of the fodder stand out. During the year 2008, factors that contributed to the propagation of igneous foci in the islands coincided, highlighting a historical downhill with winter cold that dried the vegetation, increasing the probability of fires. The objective was to carry out prescribed burns in wetlands and quantify the fuel available at the beginning of burning. In August 2018, in a “*canutillar*”, without water for 120 days (down from Paraná), from the department Diamante (Entre Ríos, Argentina), a closure was made to avoid bovine grazing. The experimental design was randomized blocks with four (4) repetitions where the treatments are controlled burns and unburned controls. Before burning the fuel was quantified, cutting two (2) 0.25 m² subsamples on each plot, it was weighed in green and dried in an oven at 60 ° C to know the moisture content (% H) and dry matter (grMS * m²) The normality of the data (Shapiro Wilks) was tested and an ANOVA (p = 0.05) was used with *Infostat*. The fuel values showed no significant differences between the burns and the controls (258 and 239 grMS * m², respectively), as well as H% (29 and 23%, respectively). High amounts of fuel favor burning in Paraná wetlands when favorable conditions exist. The observations will continue to know the productivity of the “*canutillares*” and the resilience after the disturbance.

Keywords: Prescribed fire, fuel load, wetlands, Paraná River Delta.