

IMPACTS OF RICE CULTURE ON THE MANAGEMENT OF A WETLAND IN ARGENTINA: PRELIMINARY RESULTS

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This project is within the framework of the European Commission project “The Sustainable Management of Wetland Resources in Mercosur”. There are two overall objectives in the project: to create the tools and methodology for a management of wetland resources that are socially, economically and environmentally acceptable; and to institute a long term study of the impacts of large scale regional socio-economical development on wetland resource quality. The studied site is a large wetland area (13000 km²) in northeastern Argentina, the “Esteros del Ibera”.

Rice culture has been identified as the main consumer of water from the “Esteros”, being necessary to define the maximum flows that can be used without compromising hydrological balance. Simultaneously, discharges of a part of the used waters containing pesticides back into the “Esteros”, while contributing to the maintenance of the water level, can affect the ecosystem equilibrium, due to a potential contamination of the trophic chain. The purpose of this paper is to present the characterisation of pesticide use in the rice fields, and the evaluation of specific pesticide distribution over the different environmental compartments, through the use of multimedia/fugacity mathematical modelling. This results will be validated against experimental measures and the use of a biosensor.