BENEFITS AND ADVERSE IMPACTS OF WETLAND RESTORATION FOR SPECIES REINTRODUCTION

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Abstract body

Wetlands belong to the richest ecosystems in terms of biodiversity and biomass, and to the most valuable socio-ecosystems thanks to the ecosystem services they offer. Yet, globally freshwater ecosystems are among the most threatened: wetland surface area has decreased by 90% since the 1700s, bringing freshwater biodiversity to dramatic decline while being increasingly threatened by invasive species. Habitat restoration is considered as nature-based solution for limiting biodiversity erosion. Yet its actual efficiency is poorly assessed. In our project Emys-R (www.emysr.cnrs.fr) we assess the relevance of wetland restoration in favour of the endangered European pond turtle reintroduction and associated biodiversity in Europe. Here we compared the management of two wetlands (French-German Neu Woerr and Latvian Sitas Lake area) restored and/or newly created prior the turtle reintroductions. We show that recreating connectivity between ponds benefits the settlement and dispersion of the European pond turtle, but also non-targeted species such as alien invasive turtles and crayfish (FR-DE) and predatory fish (LV), with adverse impacts on the ecosystems. We also show that maintaining geographically isolated ponds limits the negative impacts of invasive species on native biodiversity. Our study highlights the prime importance of a global assessment of both the ecological context and the long-term conservation goals prior any, highly expensive and time-consuming, wetland restoration.

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