

OC27 - Ecological restoration of Mediterranean temporary ponds in Portugal

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Mediterranean Temporary Ponds are habitats of major conservation concern in Europe. Moreover, according to the IUCN Red List of Habitats, they are currently assessed as Vulnerable because of a strong decline in habitat quality occurred over the last decades.

In this work, we present the interventions performed to restore and the monitoring scheme of nine degraded ponds in Southern Portugal, made within the LIFE-Project ‘Conservation of Temporary Ponds in the Southwest Coast of Portugal’ (LIFE12NAT/PT/997). In addition, we present the first after-restoration results for a case-study pond (LIFE620).

The natural topography of the nine ponds was re-established mainly by deepening the sediment bed. We expected to recover the natural hydroperiod, restore vegetation typical zonation and enhance local biodiversity. To assess the impact of this restoration we surveyed and monitored changes of several biophysical components (flora, fauna, water and sediment) before and after the interventions.

On pond LIFE620, interventions were made in the summer of 2015. Exotic invasive trees (*Acacia* spp.), which completely surrounded the pond, were removed. Then, the pond was slightly deepened to restore its natural topography. The pond started to fill with water in October 2015 and during the first hydroperiod after restoration it showed already a more suitable vegetation zonation and a marked increase of pond characteristic plant species. Plant richness increased in all vegetation belts (central, intermediate and external). The same happened with the frequency of ponds’ characteristic species, except for the central belt, where it has decreased. In contrast, we observed a significant decrease in the frequency of *Dittrichia viscosa*, a typical species of the pond secondary succession, and a significant reduction of the area occupied by invasive exotic species. Regarding large branchiopods biodiversity, a new species of anostracan colonized the pond during the second hydroperiod after restoration. Amphibian species richness also increased markedly after the pond restoration, from two to eight species. Furthermore, the number of reproducing species at this pond also increased after the restoration, from one to three amphibian species. Bat activity increased after the restoration but only slightly while the species richness remained low even after the pond restoration.