



PROJECTE LIFE+ NATURA

LIFE 08 NAT/E/000072

Recuperació d'hàbitats riparis del riu Ter

Seguiment de la fauna aquàtica i de l'estat ecològic de les llacunes existents i les de nova creació a l'Illa d'Avall de Jafre i a les deveses de Salt

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Girona, desembre de 2013

Promouen



AJUNTAMENT DE BESANÓ



AJUNTAMENT DE SANT GREGORI



AJUNTAMENT DE SALT



AJUNTAMENT DE GIRONA



AJUNTAMENT DE JAFRE

Patrocinen



Diputació de Girona



Generalitat
de Catalunya



Abstract. Scientific monitoring report of aquatic wildlife and ecological status of flood zones 2013 (English)

One of the actions foreseen in the Riparia-Ter project is the recovery of wetlands associated with the riparian environment, which were formerly very numerous, by the creation of new ponds. For this purpose, newly created ponds were built during 2012 at L'Illa d'Avall de Jafre (zone TER 4) and at Les Deveses i Hortes de Salt i Girona (zone TER 2). Throughout the project the faunal composition and the ecological status of some of the existing ponds and of the new ponds immediately after its creation were analysed.

In the construction of new ponds a heterogeneous set of small water bodies has been built by digging up until the water table was reached, looking for future good coverage of the riparian forest. This is expected to lead to greater heterogeneity in the composition of aquatic fauna and to contribute to the increase of its biodiversity. The dense vegetation cover is characteristic of these riparian systems, limiting light penetration and preventing the excessive growth of phytoplankton. Besides, if the goal is to create new water bodies with surface water flooding, a good water quality and a good ecological status can only be achieved with a complete control of water circulation, avoiding excessive accumulation of nutrients due to confinement.

Among the existing ponds two types of water bodies were identified according to water circulation: ponds fed mostly by groundwater and ponds with a regulated supply of surface water. The first ones have higher salinity values and lower pH and nutrient concentrations, especially in inorganic forms of nitrogen. Regarding newly created ponds, the physical and chemical characteristics and the species composition of the constructed ponds in Salt is very similar to the ponds with a regulated supply of surface water. This similarity is not so clear between the constructed ponds in Jafre and the ponds fed mostly by groundwater. The lack of structure around the ponds that still do not have adequate vegetation and tree cover may be the cause of these differences.

The aquatic fauna of existing and of newly created ponds is quite rich, with 213 taxa identified overall in the ponds studied. It stands out the presence of *Daphnia pulex*, first citation confirmed for this species in the Iberian Peninsula. The two mentioned types of ponds can also be differentiated by their aquatic fauna, but with some particularities in newly created ponds. The different water bodies have a high percentage of taxa singularity, so that small variations in water body characteristics easily give rise to some heterogeneity in species composition.

QAELS index of water quality based on the composition of aquatic invertebrates gives good or very good values in all samples from all ponds except for constructed pond Salt 2, sampled only a few days after its filling. Thus, water quality was appropriate at all the ponds. The ECELS index that measures the habitat condition gives poor quality values in Aiguamoix del Veïnat pond and in Gorga de les Acàcies pond, good in Bassa de les Cigonyes pond and high in Pla dels Socs pond. The regulated water flow, the presence of non-native invasive plants and the lack of submerged vegetation are the main causes that reduce the habitat condition. The ECELS values are deficient in constructed ponds attributable to the fact that they still have not reached the appropriate structure. For example, the depth of the water table in l'Illa d'Avall de Jafre

forced to dig ponds with a very steep slope. This will eventually be irrelevant if vegetation roots on pond perimeter, but can cause the pond filling if the vegetation has difficulties to take root. Moreover, the lack of tree cover allows more solar radiation and increased algal production, which in turn affects the ecological status of these ecosystems. The Pla dels Socspond would be the water body closest to a reference ecosystem and has been the model in the design of newly created ponds.

It is important to keep in mind that the ecological functioning of existing and constructed ponds is largely influenced by the artificiality of the Ter river flow, which affects the water circulation in the ponds, the depth of the water table, the frequency and intensity of flooding events and the erosive capacity of the river.