

Basic research related to the rehabilitation of the Igrice wetland near Nyíregyháza

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The 70-hektar Igrice wetland is located to the northeast of Nyíregyháza, bordered by Nyíregyháza, Sóstóhegy and Ilona-tanya. This protected area is one of the last remaining pieces of the wetlands typical for the Nyírség region. These wetland habitats developed in the ancient riverbeds of the Nyírség. A number of wetland habitats developed in the ancient riverbeds with a diverse flora and fauna. As a result of the canalization of the Tisza and the loss of the regular water supply these areas have gradually banked- and dried up. The few remaining wetlands are degraded by the intensive agricultural practices.

Considering these facts, it is worth to pay particular attention to the Igrice wetland, which has been locally protected since 1992. The wetland is fed by two canals: the Lukalaposi-szivárgó and the Igrice-ér. These canals are parts of the main precipitation drainage network of Nyíregyháza, therefore their water is heavily polluted, especially by communal waste. The protected wetland is one of the lowest areas in Nyíregyháza (its highest point is 103,0 m, while its lowest point is 100,9 m), therefore the canals' drop very little resulting in the poor drainage system of the wetland. This poor drainage system causes the sediments and pollution carried by the canal water to deposit in the protected area. As a result of the pollution, the area occupied by marsh plants has increased at the expense of the open water. Before the wetland became officially protected there were two big open water areas (about 5 hektars each) on both sides of the Igrice-ér. In the past ten years, the west side area of the canal was completely overgrown by marsh plants, such as reed and bulrush. In order to improve the water quality of the canals the most effective and cheapest solution would be to create mud and sediment traps on the upper stretches of the Igrice canal. By these dams, the pollution and sediments could be filtered and, at the same time, the oxygen supply of the canal water could significantly improve.

The Igrice wetland has been studied more or less regularly by the laboratory of the Upper-Tisza Regional Environmental Protection Agency focusing on water chemical and hydrobiological parameters. According to the saprobiological studies, the waters of the area are heavily polluted by organic matter. The trophical level research indicates a seasonally changing supply of plant-derived nutrients. The zooplankton and phitoplankton levels studied during the same research show great diversity, with some unique species. A complete phito- and zooplankton study is currently under way, which is examining the steadiness of the quality and quantity parameters in the wetland and the surrounding areas providing water for the wetland.

Despite the above mentioned problems, the wetland has an especially diverse flora and fauna. The more than 190 plant species of the wetland create 11 natural populations. Some of the most important of these populations are the gorse willow-grove with a heron nesting area, the alder-bog, and the lowland swamp-meadow, where thousands of *Orchis laxiflora* ssp. *palustris* bloom every spring. The *Epipactis talloosi*, an orchid species new to the area was described in 2001, which blooms in small numbers (15-20) in the alder-bog. The most valuable habitat of the wetland is the heron nesting area of the gorse willow-grove. 20-30 pairs of night herons, 10-15 pairs of little egrets, regularly nest in the protected area as well. Furthermore, white egrets, 1 pair of purple herons, little bitterns, 1-2 pairs of bittern and 1-2 pairs of marsh harrier nest in the reed and bulrush. The area is also very important as a resting place on the bird migration route, with spoonbills, cormorants, and ospreys frequenting the area.