

AQUATIC BIRDS AND FISH HABITAT DEGRADATION IN KÖRÖS RIVER VALLEY ECOTONES OF THE GREAT HUNGARIAN PLAIN

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The River Körös draining 27,537 km² is the second largest watershed of the River Tisza which once harboured fish and aquatic bird habitat as it was meandering through the Hungarian Lowland. During the three to four months of floods, the main river channel became a large floodplain which then subdivided with the drop in water level and frequently translocated. These changes were maintaining a diversity of aquatic ecosystems which in turn maintained a high species diversity. The riverine landscape was rich in wetlands which existed aside of the main water channel in river branches, permanent and temporal standing open waters. There were marshes, meadows and soft-wood gallery forests full of wildlife. Every kilometre of the River Tisza had an average of 20.7 km² of such a floodplain.

In the second half of the 19th century, due to the need of agricultural land, the largest river regulation in Europe decreased this specific floodplain area to less than 1 km². The river valley completely changed, being converted into a canal surrounded by wheat and corn fields. The river has lost most of its diverse habitats and much of its rich wildlife. The industrialization of the Hungarian agriculture started during the sixties of the century further deteriorated most of the spawning, breeding, nursing and feeding habitats for both the aquatic bird and fish species.

Computing and analyzing national statistics we have quantified the structure of the industrial agriculture buildup in Hungary from 1950 to 1993. Industrialized cereal production, animal husbandry together with the nitrogen-rain producing coal-gas-oil consumption have developed a deadly impact on these fragile habitats highly reducing their diversity and disparity. The present environmental state of thirteen lowland river deadarm ecosystems was surveyed for geomorphology, sedimentation, nutrient supersaturation, heavy metal contamination,

bacterial, redox and metabolic gas condition in their sediments. Deadarm littoral ecotone of 75,500 m has been monitored and quantified for aquatic bird and fish habitats along eupotamon, parapotamon, semipaleopotamon and paleopotamon deadarms.