

# ECOLOGICAL RESTORATION IN THE DANUBE DELTA BIOSPHERE RESERVE/ROMANIA

## THE EVOLUTION PROCESS IN HOLBINA-DUNAVAT AREA DURING RESTORATION WORKS

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Mainly during the last decades of the 20<sup>th</sup> century, the Danube Delta has suffered from human interventions that led to dramatic changes in some areas. These interventions consisted in the dyking of large areas for the purpose of agricultural use, intensive fish-farming and forestry, which resulted in dramatic alterations or disturbances of the water balance. This again had effects on the alteration of natural processes, the ecological balance as well as the characteristic functions of wetlands and led to a deterioration or worse, the loss of area-specific habitats. When the transformation measures were stopped in early 1990, the dyked area covered 97.408 ha (22 %) of the total 482.592 ha.

Given the fresh impetus observed in Nature Conservation and Environmental Protection in Eastern Europe after 1990, the Danube Delta could afford new possibilities and perspectives. Studies for rehabilitation/restoration measures were started in the Danube Delta immediately following its declaration as Biosphere Reserve in 1990. Restoration and the elaboration of concepts for the conservation of biodiversity and sustainable development are the priority tasks of the Danube Delta Biosphere Reserve Authority. In the implementation of this task the Danube Delta National Institute for Research and Development, together with partners from WWF Auen Institute, Germany the Institute for Inland Water Management and Waste Water Treatment-RIZA, The Netherlands was acting as a technical and scientific body, designing the restoration projects and developing monitoring activities of restored area, taking the responsibility to suggest additional measures if case.

The general objective of ecological reconstruction/restoration is to restore the natural, site-specific hydrological, biogeochemical and ecological functions, to ensure the redevelopment of the ecosystem and its functions and thus to promote the development of site-specific habitats and their biodiversity. Moreover, the redevelopment of the natural resources should enable the local populations to proceed to their sustainable, traditional use.

Holbina-Dunavat area(S=5630 ha) has been studied from 1994 in order to establish a strategy for ecological restoration by a reintegration of the fish farm basins with the surrounding wetlands by opening the ring dikes around the basins, questions about the size, number and position of the breaches being still subject to debates, adding to the project an experimental component.

The paper is going to offer an analysis of the evolution process in Holbina-Dunavat area during restoration works, building up the setting of criteria to be used for success control monitoring of the ecological restoration project.