



Title: A Case Study of River Rehabilitation for Fish in Northern Italy: The Panaro River Project

Author: Claudio Comoglio, Enrico Pini Prato, Mauro Ferri, Massimiliano Gianaroli

Source: American J. of Environmental Sciences 3(3): 85-92 , 2007

Abstract: The restoration of longitudinal connectivity of a watercourse altered by man-made obstacles is a key issue for the protection and safeguard of freshwater ecosystems and the construction of fish passes constitutes a relevant ad hoc measure. However, in many countries, like Italy, there is still not an adequate technical-scientific background and experience in this field and therefore several migratory species have become extinct or are suffering from severe impacts. The main elements of the river rehabilitation for fish project promoted by the Modena Province concerning the middle course of the Panaro River (North Italy), a watercourse characterised by high naturalistic and environmental values but fragmented by several weirs built to prevent riverbed erosion, are presented in this paper. The case study is analysed through the main steps that were carried out to define a preliminary plan for the restoration of the river continuity for the migration of four target species (South European nase (*Chondrostoma genei*), Italian barbel (*Barbus plebejus*), chub (*Leuciscus cephalus cabeda*) and soufie (*Leuciscus souffia muticellus*)) through the design of an innovative type of steep-slope fish ramp with large-scale roughness elements. The case study is part of an overall project and is the applicative section of an "educational" document drawn up in the form of guidelines on the correct methodological approach for fish passes design, that will be addressed to professionals, technicians and local Authorities working in the field of water resource management.