



Environmental flow assessment for river Trebizat, BiH

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The alteration of the water flow downstream of dams is one of the most stressful factors influencing the aquatic and riverine ecosystem. The environmental flow assessment is a tool for finding the balance between water use by humans and nature and ensuring a long-term and good quality water supply both for human purposes and for ecosystems. In 2007/08 WWF has implemented a project in the Neretva basin (Bosnia and Herzegovina) with a focus on environmental flow evaluation for the river Trebizat, located in the western region of Herzegovina. The water regime of the Trebizat river is affected by the abstraction of its water for hydropower plants, irrigation and fish farming not to mention pollution problems. The Trebizat river flows through an area of remarkable ecological value hosting also protected areas (the travertine-formation around Kravice waterfall).

The main aim of this paper is to present the results of the application of a methodology for environmental flow assessment, namely the GEP methodology (guaranteed ecological flow). It belongs to the category of hydrological environmental flow assessment methods and the test was done to assess the environmental flow in the river Trebizat. Using existing hydrological data as well as samples specifically collected on the field, the environmental flow was assessed applying the GEP methodology. Additionally, instream ecological values and critical parameters for environmental flow assessment were evaluated. The area was assessed in terms of its geography, climate conditions, historic heritage of the river, demography, geology of the river and its tributaries, river hydrology and morphology, ecological characteristics, river pollution, river use and river management. At five selected sampling sites along the Trebizat river, additional data on macrophytes, phytobenthos and physico-chemical parameters were collected and analysed. Although there have been many negative impacts in recent years on the Trebizat river, the analyses of aquatic organisms showed a high diversity.

The research highlighted very important criteria for environmental flow evaluation are disregarded by the GEP methodology, namely river ecology and river morphology. As a consequence additional criteria were considered with the aim of preserving the river and riparian ecosystem of the river Trebizat.