



Testing of the I.F.F. Method for Ecomorphological Assessment of Rivers in Slovenia

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More and more different scientific tools are applied to characterize ecological values of aquatic habitats. In last years quite many different methods have been developed to assess ecomorphological status or quality of fluvial environment, and then applied under different conditions. We applied the IFF method (**I**ndice di **F**unzionalità **F**luviale) that was developed in Italy on the basis of the RCE-I method (Riparian Channel Environmental Inventory – Petersen, 1992) in two different fluvial environments: in a relatively natural river (Dragonja River, S Slovenia, sub-Mediterranean climate), and in a urban river environment (three rivers in the City of Ljubljana, central Slovenia, sub-alpine & continental climate). The main aim of the study was to check the applicability of the IFF method when assessing ecomorphological status of rivers in Slovenia.

In October 2004, a 17 km long reach of the Dragonja River was investigated, and the level of functionality of both riverbanks was determined separately on an I (high) to V (very low) scale (9 classes all together). The differences between both banks were not significant. The level of functionality changes from the level III (average functionality) in the lower river reach near the outlet to the Adriatic Sea to the level I (high functionality) in the upper river reach. In October 2004, 13 km long reaches of the Gradaščica, Mali Graben, and Glinščica in the City of Ljubljana were investigated, and the level of functionality of both riverbanks was determined separately. The differences between both banks were not significant. The level of functionality changes from the level III (average functionality) in the upper river reach of Glinščica and the lower reach of Mali Graben to the level V (very low functionality) in the aligned and artificially protected Gradaščica channel.

The application of the IFF method was straightforward but with some problems. Some questions to be answered are ill defined from the hydrological (engineering) point of view. The assessment is continuous, and can not take into account local transversal structures having point effects and structures in reaches with low IFF values. Any other local specific conditions may be incorporated into the final assessment. The field virtual “assessment velocity” was between 1 km/h in natural fluvial environment and 3 km/h in urban anthropogenically disturbed fluvial environment. Because the method describes variables it is essential to educate potential people involved in doing field inventory.