

Preliminary assessment of Eflows on Lucanian Rivers through IHA implementation

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According to the WFD, the ecological flow (Eflow) is assumed to be the hydrological regime consistent with the achievement of the environmental objectives of “good quality status” in natural surface water bodies. As well known, the hydrological regime of natural flow plays a primary and crucial role influencing the physical conditions of habitats, which in turn determines the biotic composition and sustainability of aquatic ecosystems. Furthermore, the simple assumption to supply a minimum instream during dry periods is not enough anymore in order to protect the river environment. The recent hydro-ecological knowledge provides that all flow components must be included as operational targets for water quantitative management from base flows (including low flows) to high and flood regimes in terms of magnitude, frequency, duration, timing and rate of change. Several conceptual and numerical codes have been developed and applied on different case studies in order to define common tools to be implemented for the Eflow assessment. In such a frame, the work deals with the application of the Indicators of Hydrologic Alteration methodology (IHA by TNC) to main Lucanian rivers to assess the ecological flow to be assumed in each monitoring cross section. The analyses have been carried on monthly discharge data derived through a simple rainfall-runoff applied at the basin scale and based on the precipitation measurements obtained by the regional rainfall gauge stations.