



IGU 2015 Book of Abstracts

IGU 2015 – 3895

Indicators of rivers geomorphological functionality, application of the EU Water Framework Directive in Sicily (Italy)

V. AGNESI, S.E. ANGILERI, M. CAMA, C. CONOSCENTI, E. ROTIGLIANO (Italy)

Many river systems in Europe suffer from human pressure. For this reason the European Water Framework Directive (WFD; 2000/60/EC) was created for river basin and floods management. In 2010 the Italian Environmental Minister issued the WFD and a protocol for the stream hydromorphological evaluation, analysis, and monitoring was established (IDRAIM). The Morphology Quality Index (MQI) is part of this procedure and defines the deviation of present geomorphic reach situation from reference conditions. It is composed by Indicators of Geomorphological Functionality (IGF), Indicators of Artificiality (IA) and Indicators of Channel Adjustments (ICA). The present work aims at illustrating the calculation of IGF in 34 river catchments located in the Eastern part of Sicily (Italy). The procedure was characterized by three main steps: i) subdivision of the river network into relatively homogeneous reaches depending on landscape units, valley setting, channel slope; ii) evaluation of confinement classes (the percentage of banks not directly in contact with the alluvial plain but with hillslopes or ancient terraces) and confinement index (the ratio between the alluvial plain width and the channel width); iv) identification of river morphological typologies (sinuosity, braiding and anastomosing indices). In order to calculate the IGF, GIS analysis, photo interpretation, historical data collection and geomorphological fieldwork were integrated. Results showed that the IDRAIM procedure for the calculation of the IGF can be successfully applied for the Sicilian Rivers. However, being the Sicilian rivers mainly characterized by a torrential regime, some adjustments of the IGF procedure could be suggested.