

4TH ECRR INTERNATIONAL CONFERENCE ON RIVER RESTORATION

WORKSHOP N. 4

Title:

"Assessment of river ecological status: shadows and lights of the WFD"

Organized by:

Italian Centre for River Restoration (CIRF)

Time:

4 hours

Number of participants:

Maximum 50

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Rationale

The Water Framework Directive 2000/60/EC sets out strategic and clear objectives to prevent further deterioration of aquatic ecosystems and to achieve the "good ecological status" by 2015. In its framework some fundamental novelties with respect to previous legislation are introduced. First of all, while confirming the importance of physico-chemical elements for water quality, it primarily pursues the goal of improving the overall ecological status of water bodies, thus finally recognizing the value of freshwater ecosystems independently of its present or future usefulness to humans. Furthermore, amongst its most innovative aspects, referring in particular to the ecological classification of water bodies, the following can be highlighted: the establishment of type-specific *reference conditions* (specific for each typological category), the higher importance given to biological quality elements and the strong innovation represented by the hydromorphological quality elements (thus stating the achieved awareness of the impacts deriving from the alteration of flow regime and river morphology).

However, few insidious "bugs" have been introduced into the WFD. First of all, hydromorphological elements are considered only for the "high" class of the ecological status classification system (WFD, All. V, sec. 1.2). The assignment of water bodies to the "good status (or potential)" class is made only on the basis of the biological and physico-chemical monitoring results (while the classes "sufficient", "poor" and "bad" status only rely on biological quality elements). The marginal importance attributed to hydromorphology could actually leave rivers defenceless in front of hard engineering interventions, which are precisely the root causes of the most radical alterations of water bodies.

Another crucial point is the WFD's low propensity to integrated assessment in the classification of the ecological status: integration in the classification system is lacking both among the three quality elements - biological, physico-chemical and hydromorphological - and among specific sub-elements of each quality element. A "worst-wins" (OO-AO: One-Out All Out) approach was chosen in the assessment, entailing the risk of imposing recovery costs not proportionate to the achievable ecological improvement and significantly increasing the risk of misclassification.

Such a classification system may also undermine the integration between the WFD and the Floods Directive (2007/60/EC): the limited consideration of hydromorphological elements actually works as a disincentive for Member States: an innovative program of measures based on a "more space to the river" approach might in fact (particularly in the short term) not gain any recognition of the achieved ecological results, despite their evidence. Conversely, a programme of flood defence measures, based on traditional engineering techniques, might not suffer from any disincentive, as the ecological deterioration may not be registered by the classification system.

Furthermore, the alterations faced by the majority of rivers through hydraulic infrastructures and works could lead to designate them as "Heavily Modified Water Bodies", thus allowing to engage in the less strict objective of "good ecological potential" and to ignore the improvement of their hydromorphological conditions. The importance of duly taking into account environmental services (in particular flood risk reduction) among the benefits deriving from programmes of measures has to be highlighted: costs needed to achieve "good status" could be no longer considered "disproportionate" and the water body might not be designated as HMWB, thus achieving a greater environmental improvement.

Workshop aim

- Identification of weaknesses and misleading requirements in the WFD classification system.
- Analysis of potential risks and negative consequences of the proposed classification system to assess the river ecological status.
- Discussion about possible solutions to overcome highlighted limitations

Workshop Outline

The following main issues will be discussed, preceded by a very short presentation of the issue, including practical examples. Participants are kindly invited to send as soon as possible to the WS leader documents, slides, comments considered useful to support the discussion.

- The limited role of hydromorphological quality elements in the classification procedure is probably based on the **assumption that biological communities would record all morphological**

alterations and especially that biological indicators presently used are sensitive enough to detect these impacts.

To what extent this can be assumed to be true?

Within what timescale?

Is this coherent with WFD monitoring and implementation schedule?

How severe is the risk of a misleading assessment?

- What are pros and cons of the **OO-AO (One-Out All Out) principle** (WFD, Annex V, 1.4.2.i) in the assessment of the ecological status? Is a compensatory approach a valid alternative? Is it practicable within the WFD implementation process? To what extent has this issue been discussed so far?
- Are ecosystem services, especially as regards to flood risk reduction, being sufficiently considered when defining HMWBs? To what extent further integration of hydromorphological quality elements can contribute to implementing a “more room to the river” approach and to a more satisfactory **integration between the WFD and the Flood Risk Directive**? What can be suggested in practice?
- Defining **reference conditions for hydromorphological quality elements** is a particularly hard task. Which are the major challenges to be faced? How is the issue being faced in different Member States?
- The idea of using the same indicator for all Member States (or for all ecoregions and/or all types of river within the same Member State) is very hardly practicable; on the other hand, the same problem arises if **different scales of analysis (regional, local) or different levels of data availability** (which could preclude the possibility of using the more “desirable” indicators) are taken into account. Considering these problems, which is the most suitable scale for hydromorphological quality assessment in order to support basin scale planning and management? What kind of flexible system can be adopted in order to integrate a coarse classification (at basin scale) with more specific indicators (at the local scale, e.g. to define specific measures or restoration interventions).

Outputs

Summary of the results of the workshop. Draft of policy document to be addressed to the EC as regards of possible revisions required within the WFD implementation process.

Useful documentation:

- The Water Framework Directive: a soap bubble? An integrative proposal: FLEA (FLuvial Ecosystem Assessment) (Nardini *et al.* 2008).
- ‘Natural’ rivers, ‘hydromorphological quality’ and river restoration: a challenging new agenda for applied fluvial geomorphology (Newson and Large 2006).