

[A review of assessment methods for river hydromorphology \(Belletti et al 2014\)](#) **[1]**

Numerous hydromorphological assessment methods have been developed in different countries during recent decades, with notable differences in their aims, scales, and approaches. Although these methods are increasingly applied to support river management, the strengths and limitations have been insufficiently investigated. This review of 121 methods analyses hydromorphological assessment methods dating from 1983 to 2013, identifying their main strengths, limitations, gaps, the potential to integrate different approaches, and the need for further improvements.

For this purpose methods have been grouped into four categories: (1) physical habitat assessment; (2) riparian habitat assessment; (3) morphological assessment; (4) assessment of hydrological regime alteration. Seventeen categories of information covering general characteristics, recorded features and river processes encompassing over 90 features were recorded for each method reviewed, allowing a comparative analysis of the four assessment categories. The main gap in most methods is insufficient consideration of physical processes. Thus, an integrated hydromorphological analysis is recommended, where the morphological and hydrological components are the key parts to classify hydromorphological conditions. Additional physical and riparian habitat methods strengthen the link with ecological conditions.

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