

Water quality - Guidance standard on determining the degree of modification of river hydromorphology

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NATIONAL FOREWORD

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English Version

Water quality - Guidance standard on determining the degree of modification of river hydromorphology

Qualité de l'eau - Guide pour la détermination du degré de modification de l'hydromorphologie des rivières

Wasserbeschaffenheit - Anleitung zur Beurteilung von Veränderungen der hydromorphologischen Eigenschaften von Fließgewässern

This European Standard was approved by CEN on 28 November 2009.

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Foreword

This document (EN 15843:2010) has been prepared by Technical Committee CEN/TC 230 "Water analysis", the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 2010, and conflicting national standards shall be withdrawn at the latest by July 2010.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

WARNING — Safety issues are paramount when surveying rivers. Surveyors should conform to EU and national Health and Safety legislation, and any additional guidelines appropriate for working in or near rivers.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

This European Standard will enable broad comparisons to be made of river hydromorphological modifications throughout Europe (e.g. for reporting by the European Environment Agency). The assessment of river "quality" in Europe has evolved over the past 20 years. From its original focus on organic pollution it now relies on methods for analysing a range of chemical and biological attributes. More recently, several European countries have developed systems for evaluating the hydromorphological features of rivers. The EC Water Framework Directive (WFD) has reinforced the need for this broader view of river "quality" through its requirement for determining "ecological status" based on macrophytes, phytobenthos, invertebrates and fish. The Directive also requires that hydromorphological and physico-chemical conditions should be suitable for supporting biological communities, although hydromorphology is only classified at high status. EN 14614, *Water Quality — Guidance standard for assessing the hydromorphological features of rivers* describes a protocol for field survey and feature recording, whereas this standard gives guidance on assessing the modification of river hydromorphological features. It focuses especially on human pressures that affect rivers; thus, it may be helpful for implementing the WFD by indicating the extent to which these pressures might have caused a departure from hydromorphological reference conditions. Although the procedure described in this standard enables the hydromorphological characterization of rivers, it does not attempt either to describe methods for defining high status for hydromorphology under the WFD or to link broadscale hydromorphological classification to assessments of ecological status. In addition to its relevance to the WFD, this standard has applications also for nature conservation, environmental impact assessment, river basin management, flood risk assessment (e.g. the EC Floods Directive) and setting targets for river restoration work.

1 Scope

This European Standard provides guidance on characterizing the modifications of river hydromorphological features described in EN 14614. Both standards focus more on morphology than on hydrology and continuity, and on lateral and longitudinal continuity rather than on vertical continuity which is difficult to measure. This standard will enable consistent comparisons of hydromorphology between rivers within a country and between different countries in Europe, providing a method for broad-based characterization across a wide spectrum of hydromorphological modification of river channels, banks, riparian zones and floodplains. Its primary aim is to assess "departure from naturalness" as a result of human pressures on river hydromorphology, and it suggests suitable sources of information (see Table A.1) which may contribute to characterizing the modification of hydromorphological features.

In doing so, it does not replace methods that have been developed for local assessment and reporting. Decisions on river management for individual reaches or catchments require expert local knowledge and vary according to river type.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 14614, *Water quality — Guidance standard for assessing the hydromorphological features of rivers*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

aquatic macrophytes

larger plants of fresh water which are easily seen with the naked eye, including all aquatic vascular plants, bryophytes, stoneworts (Characeae) and macro-algal growths

NOTE This definition includes plants associated with open water or wetlands with shallow water.

[EN 14614:2004, 2.1]

3.2

attribute

specific recorded element of a hydromorphological feature (e.g. "boulders" and "silt" are substrate attributes; "sheet piling" and "gabions" are attributes of engineered banks)

[EN 14614:2004, 2.2]

3.3

bank

permanent side of a river or island, which is above the normal water level and only submerged during periods of high river flow

[EN 14614:2004, 2.4]

NOTE In the context of this European Standard, the top is marked by the first major break in slope, above which cultivation or development is possible.