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Vattenundersökningar – Vägledning för bedömning av modifieringsgraden av hydromorfologiska egenskaper i kustnära marina vattenområden

Water quality – Guidance on determining the degree of modification of the hydromorphological features of transitional and coastal waters



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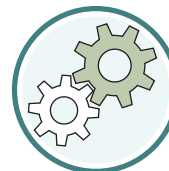
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EUROPEAN STANDARD

EN 17123

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2018

ICS 07.060; 13.060.10

English Version

Water quality - Guidance on determining the degree of modification of the hydromorphological features of transitional and coastal waters

Qualité de l'eau - Guide pour la détermination du degré de modification des caractéristiques hydromorphologiques des eaux de transition et des eaux côtières

Wasserbeschaffenheit - Anleitung zur Bestimmung der Ausprägung hydromorphologischer Merkmale der Übergangs- und Küstengewässer

This European Standard was approved by CEN on 5 October 2018.

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European foreword

This document (EN 17123:2018) 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of an identical text or by endorsement, at the latest by June 2019, and conflicting national standards shall be withdrawn at the latest by June 2019.

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

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SS-EN 17123:2018(E)**Introduction**

This document will enable broad assessments and comparisons to be made of the hydromorphological modifications of Transitional (estuaries, lagoons, etc) and Coastal waters (TraC waters) throughout Europe (e.g. for reporting by the European Environment Agency). These systems have been increasingly influenced by human activities over many centuries and hence the modifications relate to historical and recent developments that are superimposed over the natural and large-scale changes and variability experienced by these systems.

This document attempts to acknowledge the particular spatial and temporal heterogeneity of coastal and transitional systems. TraC systems are dominated by multi-directional processes (waves acting in different directions, as well as bi-directional tidal flows operating at differing tidal levels, which can be further complicated by variable wind orientation). As a result, the natural variability within coastal and transitional water bodies can often be significant in spatial and temporal scales, which need to be reflected during comparisons against natural baselines or reference conditions.

European Directives such as the Water Framework Directive (WFD)[ref 1] and the Marine Strategy Framework Directive (MSFD) [ref 2] require Member States to determine that hydromorphological and physico-chemical conditions should be suitable for supporting biological assemblages; the WFD and MSFD in turn require Member States to indicate, respectively, that good ecological status and good environmental status have been attained. The MSFD descriptors, criteria and indicators include hydromorphological features.

EN 16503 (*Water quality — Guidance standard on assessing the hydromorphological features of transitional and coastal waters*) describes a protocol for field survey and feature recording, whereas this standard gives guidance on assessing the modification of TraC hydromorphological features. It focuses especially on human pressures that affect TraC waters and thus will be valuable for implementing the WFD by indicating the extent to which these pressures will cause a departure from hydromorphological reference conditions.

Although the procedure described in this document enables the hydromorphological modification of TraC waters to be determined and described, 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 and MSFD, this standard has applications also for nature conservation, environmental impact assessment, river basin management, flood and erosion risk assessment (e.g. the EC Floods Directive) [ref 3] and setting targets for restoration. In addition, for the Habitats Directive [ref 4] there is a need to maintain certain “features” in favourable condition, which has also given rise to a focus on hydromorphological assessments.

(Note that in this standard, “assessment” is used as a broad term referring to the general description of features and the pressures affecting them. It is not used to imply the judgement of particular levels of “quality” or “value”, whether related to status under the WFD, MSFD or more generally.)

WARNING — Safety issues are paramount when surveying transitional and coastal waters. This European Standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate health and safety practices and to ensure compliance with any EU and national regulatory conditions or guidelines.

IMPORTANT — Persons using this document should be familiar with usual laboratory and fieldwork practice. It is absolutely essential that tests conducted according to this document be carried out by suitably trained staff.

1 Scope

This document provides guidance on characterizing the modifications of the hydromorphological features of TraC waters described in EN 16503, enabling consistent comparisons of hydromorphological modification between TraC waters within a country and between different countries in Europe. Its primary aim is to assess "departure from naturalness" as a result of human pressures on TraC hydromorphology, and it suggests suitable sources of information that may contribute to describing the modification of hydromorphological features. The procedures set out in this standard will encourage the objective assessment and reporting of the variability in transitional and coastal waters, and contribute to the work needed to implement the WFD and the MSFD; however, it does not replace methods that have been developed for local assessment and reporting.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

attribute

specific recorded element of a hydromorphological feature

EXAMPLE "Silt" and "boulders" are natural substrate attributes, "sheet piling" and "gabions" are attributes of engineered banks.

[SOURCE: EN 16039:2011, definition 3.2]

3.2

bathymetry

shape of the sea-bed as measured by the distribution of depth

3.3

beach nourishment

artificial process of replenishing the beach using marine sediment (e.g. sand) to increase the recreational value or to protect the beach against erosion

3.4

bedform pattern

morphology of the sea bed

Note 1 to entry: Refers to the morphology of soft bottoms. The bedform patterns may be simple or complex depending on the size and shape of the system and the nature of the local sediment transport processes. Deposition produces features such as sand and gravel bars, while erosion results in scour features.

[SOURCE: EN 16503:2014, definition 2.4]

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3.5

biogenic reef

mass consisting of the hard parts of organisms, or of a biogenically constructed frame enclosing detrital particles, in a body of water

Note 1 to entry: Most biogenic reefs are made of corals or associated organisms.

[SOURCE: EN 16503:2014, definition 2.5]

3.6

biogenic structure

structure formed by organisms that when grouped together create physical habitats (e.g. reefs) or stabilize sediments (e.g. seagrass beds, mussel beds)

3.7

breakwater

artificial structure used in coast protection to reduce wave energy

3.8

coastal cell

length of coastline confined by natural or artificial barriers across which little or no sediment is transported

3.9

coastal water

surface water on the landward side of a line, every point of which is at a distance of one nautical mile on the seaward side from the nearest point of the baseline from which the breadth of territorial waters is measured, extending where appropriate up to the outer limit of transitional waters

Note 1 to entry: This definition from Article 2 of the EC Water Framework Directive (2000/60/EC) is one example of a definition of "coastal water" used for legal purposes.

3.10

connectivity

linkage within and between water bodies and between water and land through exchange of water, sediment and organisms

[SOURCE: EN 16503:2014, definition 2.9, modified]

3.11

delta

landform that forms from deposition of sediment carried by a river as the flow leaves its mouth and enters the sea

3.12

ecological status

expression of the quality of the structure and functioning of aquatic ecosystems, by comparing the prevailing conditions with reference conditions

Note 1 to entry: As classified in accordance with Annex V of the EC Water Framework Directive (2000/60/EC).

[SOURCE: EN 16039:2011, definition 3.15]

3.13**effective fetch**

direct fetch, or distance in kilometres along which the wind blows from each direction, corrected by fetches in directions of less than 45°

3.14**fetch****fetch length**

distance of open water over which the wind can blow and generate wind-driven waves

[SOURCE: EN 16039:2011, definition 3.19, modified — “fetch length” was added as synonym]

3.15**fjord**

long, narrow and glacially eroded inlet with steep sides, created in a valley often with a shallow entrance at the mouth

[SOURCE: EN 16503:2014, definition 2.12]

3.16**groynes**

coast protection structure built broadly perpendicular to the shoreline designed to reduce beach erosion and trap sediment

3.17**highest astronomical tide****HAT**

highest tide that can be expected to occur under average meteorological conditions and at the spring and autumn equinox

[SOURCE: EN 16503:2014, definition 2.14]

3.18**hydromorphology**

physical, hydrological and hydrodynamic characteristics of transitional and coastal waters including the underlying processes from which they result

[SOURCE: EN 16039:2011, definition 3.22, modified]

3.19**intertidal area****foreshore**

zone between high and low tide lines

[SOURCE: EN 16503:2014, definition 2.16]

3.20**lagoon**

expanse of shallow coastal salt water, of varying salinity and water volume, wholly or partially separated from the sea by sand banks or shingle, or, less frequently, by rocks

[SOURCE: EN 16503:2014, definition 2.17]