

“Workshop “Program of Measure under the Water Framework Directive”

20 – 22 June 2016
ECRAN 62432

Assessment methodologies and criteria used for water quality status classification



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Structure of the presentation

- WFD Assessing current status
- Assessment and classification system for surface water bodies according to WFD
- Deriving numerical criteria for biological indicators in the EU

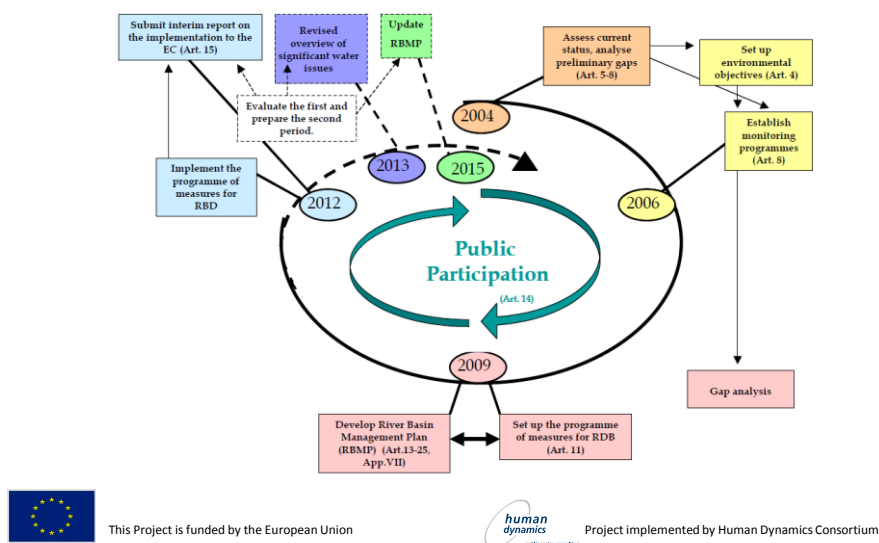


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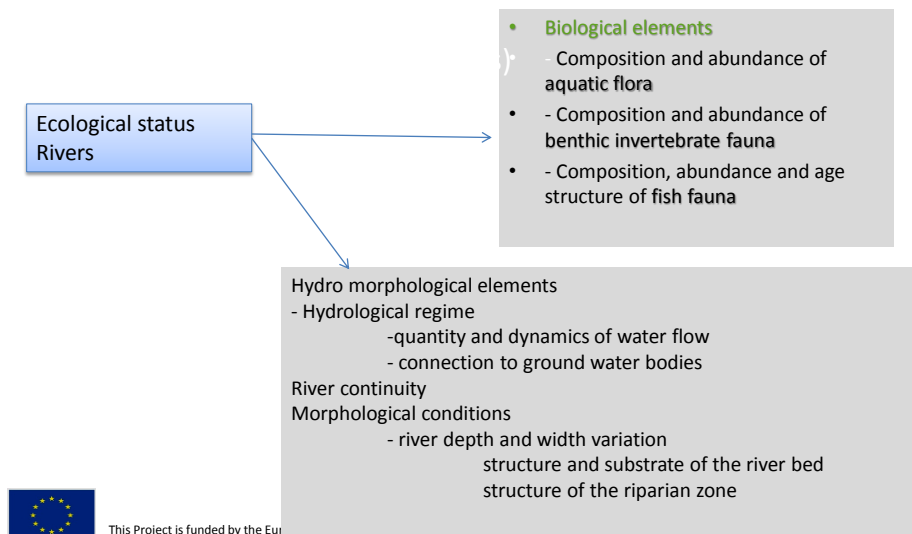


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Assessing current status



Assessment and classification system for surface water bodies according to WFD (1)



Assessment and classification system for surface water bodies according to WFD (2)

Ecological status
Rivers



Chemical and physicochemical elements supporting the biological elements

General

- Thermal conditions
- Oxygenation conditions
- Salinity
- Acidification status
- Nutrient conditions

Specific Pollutants

- Pollution by all priority substances identified as being discharged into the body of water
- Pollution by other substances identified as being discharged in significant quantities into the body of water



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Assessment and classification system for surface water bodies according to WFD (3)

Ecological status
Lakes



Biological elements

- Composition, abundance and biomass of phytoplankton
- Composition and abundance of other aquatic flora

Hydromorphological elements supporting the biological elements

Hydrological regime

- quantity and dynamics of water flow
- residence time
- connection to the ground water body

Morphological conditions

- lake depth variation
- quantity, structure and substrate of the lake bed
- structure of the lake shore

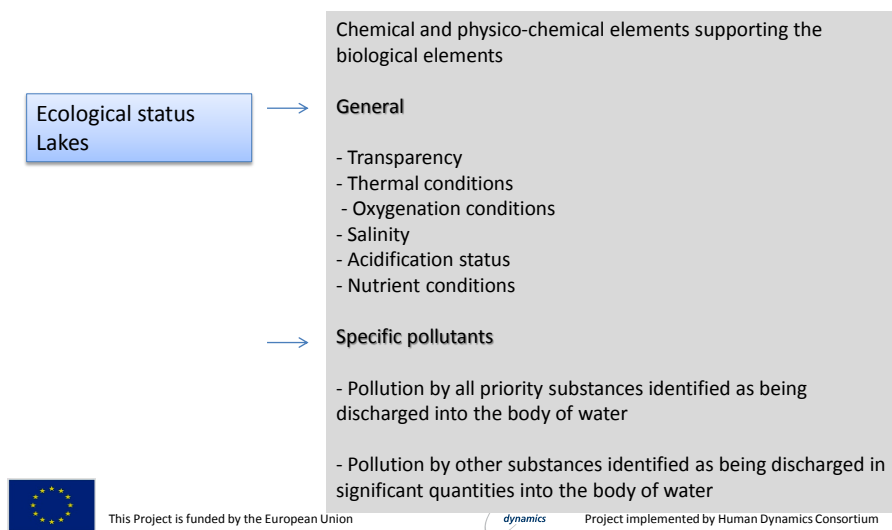


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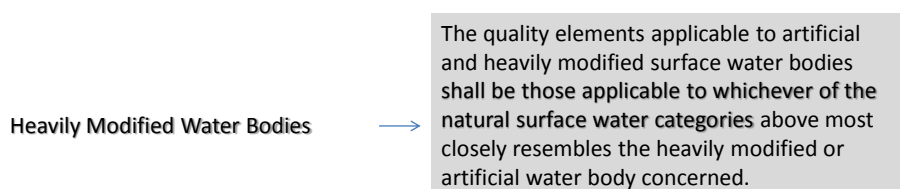


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Assessment and classification system for surface water bodies according to WFD (4)



Assessment and classification system for surface water bodies according to WFD (5)



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Deriving numerical criteria for biological indicators in the EU (1)

Problem of comparability of biological monitoring results.

To ensure comparability, the results of biological monitoring are expressed as ecological quality ratios (EQR) for the purposes of classification of ecological status.

EQR - relationship between the values of the biological parameters observed for a **given body of surface water** and the values for these parameters **in the reference conditions applicable to that body**.

Numerical value 0-1

High ecological status represented by values close to 1
Bad ecological status by values close to 0.



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Deriving numerical criteria for biological indicators in the EU (2)

Member State shall divide the ecological quality ratio for their monitoring system for each surface water category into five classes ranging from high to bad ecological status by assigning a numerical value to each of the boundaries between the classes.

The value for the boundary between the classes of high and good status, and the value for the boundary between good and moderate status shall be established through an **intercalibration exercise**.

Geographical Intercalibration Groups have been established and a number of guidelines for the intercalibration are published (EC, 2003, EC, 2010)



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Examples of development of new WFD-compliant assessment systems

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Eutrophication related assessment methodologies and criteria are subject to intercalibration for marine waters.

The eutrophication related biological metrics that are subject to intercalibration in at least some marine water GIGs are: chlorophyll a, phytoplankton, macroalgae, angiosperms and benthic invertebrates.

There is also related work on eutrophication related supporting physico-chemical determinands including nutrient concentrations, transparency and dissolved oxygen concentrations.



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Thank you!



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