

DIATOM MONITORING PROGRAMS IN SURFACE WATERS IN FLANDERS (BELGIUM) FOR THE WATER FRAMEWORK DIRECTIVE

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To meet the requirements of the European Water Framework Directive (WFD), a good ecological status should be reached in all natural surface water bodies by 2015, and a good ecological potential in all artificial or heavily modified surface water bodies. For this purpose, member states establish monitoring programs for evaluating the ecological status or potential of their water bodies, based on those biological quality elements that are specified by the WFD for each surface water category. According to the WFD, the assessment method used by the member states to evaluate the ecological status or potential should be expressed as an ecological quality ratio (EQR) that can take values between zero and one, with high ecological status represented by values close to one and bad ecological status by values close to zero. The EQR range is divided into five quality classes.

The member states establish three monitoring programs. Surveillance monitoring is carried out at least once every six years for a sufficient number of surface water bodies to provide an assessment of the overall surface water status. Operational monitoring is undertaken at least once every three years to establish the status of those water bodies identified as being at risk of failing to meet their environmental objectives. Investigative monitoring is carried out in case the reason for any exceedance is unknown.

Monitoring of diatoms (one of the relevant biological quality elements for the surface water categories 'rivers' and 'lakes') consists of routine sampling and sample preparation, followed by identification and counting of the valves and EQR calculation.

This poster provides an overview of the current progress in implementing the diatom monitoring program for the WFD in Flanders (Belgium) by the Flemish Environment Agency (VMM).

In the Flemish region, the first samplings for the WFD were carried out in 2007. Approximately 1400 samples were taken in the period 2007-2010.

After sample preparation, 500 valves are identified at species level and counted. Subsequently, the taxonomic lists can be integrated into an electronic database to enable EQR calculation. Until now approximately 1500 species were found.

A new diatom-based assessment method for Flanders, called PISIAD (Proportions of Impact-Sensitive and Impact-Associated Diatoms; Hendrickx & Denys, 2005), has been developed by the Flemish Institute for Nature and Forest Research.

To ensure that quality classes based on assessment methods of different member states are comparable, international comparison is necessary. At the European level, intercalibration exercises were organised to ensure that the two highest quality class boundaries are comparable. Results of these intercalibration exercises were already endorsed by the European Commission, including PISIAD class boundaries for most types of Flemish rivers. Furthermore, bilateral comparisons with France, the Netherlands and with the Belgian regions Wallonia and Brussels Capital take place regularly in order to compare results obtained by samplings carried out at the same location.