

Sediment toxicity profiling: monitoring instruments for water quality

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Introduction:

The range of instruments available for monitoring water and sediment quality in Dutch waters has changed in recent years. From the 1960s, water samples were tested to establish whether levels of a certain pollutant (copper, cadmium, PCBs etc.) were above a set standard. If so, measures had to be taken. Thanks to these measures, levels of most pollutants have since declined dramatically. Nowadays, however, new problem substances – such as perfluorinated compounds and brominated flame retardants – regularly emerge. New methods of analysis have now been developed for these substances.

The Directorate-General for Public Works and Water Management's (RWS) new vision of water quality policy prompted a need for new monitoring instruments. RWS has abandoned its substance-based approach in favour of assessment of water and sediment quality on the basis of ecological risk, with an emphasis on the effects of substances on organisms. The function of the area sampled is also a major factor. After all, a beach has to meet different quality standards than a harbour.

Methods This method of assessment is in line with the ecological objectives of the WFD, Natura 2000 and EMS. RWS's new vision has given rise to a need for new instruments to establish water quality by means of sediment toxicity profiling, which can act as an indicator for an entire area. This is a rapid and efficient method that is low in cost and gives a good impression of the water quality of an area and its possible threats to ecological status. It can be used to decide whether further research is needed, or whether the area already meets the standards required.

Results: This project is exploring whether suitable bio-effect methods are available to act as an indicator, using sea ports as a testing ground.

References: