

THE USE OF BENTHIC INDICATORS FOR ENVIRONMENTAL STATUS ASSESSMENT

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The Water Framework Directive (WFD) and the Marine Strategy Framework Directive (MSFD) are the European umbrella regulations for water systems. It is a challenge for the scientific community to translate the principles of these directives into realistic and accurate approaches (Van Hoey *et al.*, 2010). The ecological concept behind both directives is, in principle, very simple, and consists of comparing the current state of an area with that which would be expected under minimal or sustainable human use of that area and, in case of degradation, intervening to bring it back to the desired good status. To accomplish this environmental status evaluation, following principles were essential: the ecosystem-based approach, the development of indicators, the definition of 'pristine' or sustainable conditions, the detection and quantification of pressures and the development of monitoring programs. In Van Hoey *et al.* (2010), the strengths and weaknesses of these principles were discussed from a benthic research point of view. Especially for benthic invertebrates, the accumulated knowledge is extensive, largely reflecting a long-standing preoccupation in benthic research with approaches to effective environmental assessment.

Due to the spatial extent of European marine areas and ecosystem complexity, the scope for identifying universal bio-indicators is limited. The implementation of well founded sampling strategies related to habitat types as well as spatially definable pressure gradients is an indispensable prerequisite for a reliable status assessment. The indicators deliver evidence-based information, but there are shortcomings and caution is always required concerning their use in environmental assessment. Therefore, expert involvement, beside objective approaches, in filling in these principles seems of vital importance.

References

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