

Sediment Status in Europe: Frameworks, Standards and Approaches, Synthesis of Expanded Review

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Introduction and approach: It has been two decades since the European Water Framework Directive, which mandated catchment-wide approaches to managing waterways, and over a decade since the European Sediment Research Network (SedNet) published a series of books addressing the role of sediments in achieving this goal. In 2008, the European Commission published a directive on environmental quality standards in the field of water quality, but declined to specify or require sediment quality guidelines except under special circumstances, although it still required that Member States monitor sediment and biota for priority substances that accumulate in them. Subsequently, a significant body of work has addressed contaminant trends, drivers of toxicity and contaminants of emerging concern in European waters.

Results and discussion: Many national and European approaches have evolved, or are under review. Documents on national approaches to freshwater and marine sediment assessment are being continuously reviewed for a range of European countries and regions. An additional focus has been on evaluating both national approaches to emerging contaminants not currently identified as priority pollutants, and how future attention on these might change sediment assessment frameworks in the near term. Europe remains quite diverse in its approach to sediment standards and assessment. Approaches range from a complete absence of standards and guidelines to highly detailed frameworks; applications can be broad or narrow.

The assumptions behind frameworks and policies are critical to their application; not all countries clearly distinguish between screening and action levels. Where specified, lists of potential contaminants to be monitored range from a handful to dozens, and differ for freshwater and marine systems. This paper will compare approaches to sediment chemical assessment in a much broader range of European countries and regions. Trends and changes, and the relationship between chemical and other assessments, will be discussed.

References: [1] Apitz and Merchandani (2017) EuroSed: Review of National Approaches to the Screening of Potentially Contaminated Sediments. Prepared by SEA Environmental Decisions, Ltd. and AECOM. October 2017, Little Hadham, UK..