

Assessing “modern background sediment delivery to rivers” across England and Wales and its use for catchment management

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Abstract Catchment sediment management across England and Wales continues to require alternative criteria to the existing guideline standard (an annual mean suspended sediment concentration of 25 mg L⁻¹) provided by the European Union Freshwater Fish Directive. In response, a recent collaborative science project has investigated the scope for developing alternative catchment-specific sediment targets using an integrated modelling toolkit coupling sediment pressures from agriculture and impacts on aquatic biota, including fish and macroinvertebrates. Part of this work involved using palaeolimnological reconstruction to quantify “modern background sediment delivery to rivers” (MBSDR) across England and Wales, prior to recent agricultural intensification. It is proposed that the estimates of MBSDR can be used to assess the maximum ceiling of mitigation because no management strategy should aim to control background sediment loss arising from natural physiographic and hydrological drivers, and to correct the gap between past, present or future projected sediment pressures on watercourses and “good ecological status” for sediment.

Keywords sediment delivery; palaeolimnology; modelling; management; policy