D3.1 Impacts on hydromorphological degradation and disturbed sediment dynamics on ecological status

This deliverable specifically looks at impacts of hydromorphological (HYMO) degradation on ecological status in streams and rivers using existing data, both in the context of Water Framework Directive (WFD) and Habitats Directive(HD). It contains a wide range of analyses of all biological elements (BQEs: algae, macrophytes, macroinvertebrates, and fish) in relation to important issues such as hydrological regime, channelization, and fine sediments loads. This work shows the first evidence that metrics indicating HYMO impacts could be developed from monitoring data on fish and macrophytes. Furthermore, the potential to derive metrics sensitive to fine sediment is demonstrated. Combined metrics using more than one BQE showed potential in detecting the impact of pressures on stream ecosystems. However, it was also evident from the analyses that many existing macroinvertebrate metrics lack specificity and can provide false positive responses to HYMO pressure. This suggests that the disentanglement of multi-stressor responses is critical for the accurate assessment of ecological status. Additionally, frequently overlooked topics such as sediment quality and groundwater issues ought to supplement or be included in HYMO assessments, due to their potential for explaining variance in biological datasets. Aquatic habitats protected under the HD will be increasingly vulnerable to hydrological pressures with the changing climate, suggesting that dynamic HYMO pressures should be incorporated in the protection of specific habitats.

Further Links

Link to D3.1 on the REFORM website: http://www.reformrivers.eu/deliverables/d31-impacts-hydromorphological-degradation-and-disturbed-sediment-dynamics-ecological

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- Home
- Imprint

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