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Current trends in water and suspended sediment discharge of some European rivers

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Water and sediment load of rivers varies at different time scales: short term variations are related to catchment influences (e.g. floods variability), long term variations are related to river human activities (decennial to secular time scale) and climate variability (Pont et al., 2002). These changes impact the dynamic of river-sea transitional environments (deltas, lagoons, and estuaries), leading, in case of sediment starvation to coastal erosion and wetland degradation, increasing the vulnerability of these areas to flooding and soil erosion, etc. (e.g. Sivitski et al., 2002; 2005, Giosan et al., 2013).
Most river-sea systems in Europe were heavily impacted by human induced-changes, recording both changes in water and sediment discharge.
This study will focus on seven European rivers (Danube, Nestos, Po, Elbe, Ebro, Thames and Tay), located under different climatic influences. The change drivers in the basins are various, ranging from large number of dams (Danube, Ebro) to soil management (Thames, Tay).
The scope of this study is to analyse monthly water and suspended sediment discharge and to identify trends and changes in phenology and relate these to climatic, catchment and land use changes across Europe.