

Organic compounds and Trace Metal Elements in the Eure River Watershed: Past and actual records of anthropogenic impacts

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The Eure River (Normandie, France) is the main tributary of the Seine River downstream. The Martot Dam blocked the Eure River waters less than 1 km upstream the Eure-Seine Rivers confluence, but in October 2017, the French Authorities removed the Martot Dam. The study aims to evaluate the dam removal impacts on re-suspension of contaminated sediments stored in the Martot Pond (located ~300 m upstream the ex-location of the Martot Dam) or the Eure River's channel and hydro-sedimentary transfers in Eure River.

Concerning past transfers, sedimentary archives have been cored, before dam removal, at the Martot Pond and the Les Damps Pond (located 10km upstream). Organic (PAHs, PCBs and Organochlorine Pesticides) and metallic compounds showed a wide contamination with highest concentrations evidenced during the 1950-1960's and the 1990-2000's. For actual transfers, Suspended Particulate Matter (SPM) are monthly collected using Time-Integrated Mass-flux Sediments Samplers (TIMS Samplers). SPM sampling in the Eure River began before dam removal to determine the evolution of contaminants fluxes after dam removal and contaminated sediments re-suspension from the Martot Pond and the Eure River's channel after destabilization of the river bed.