

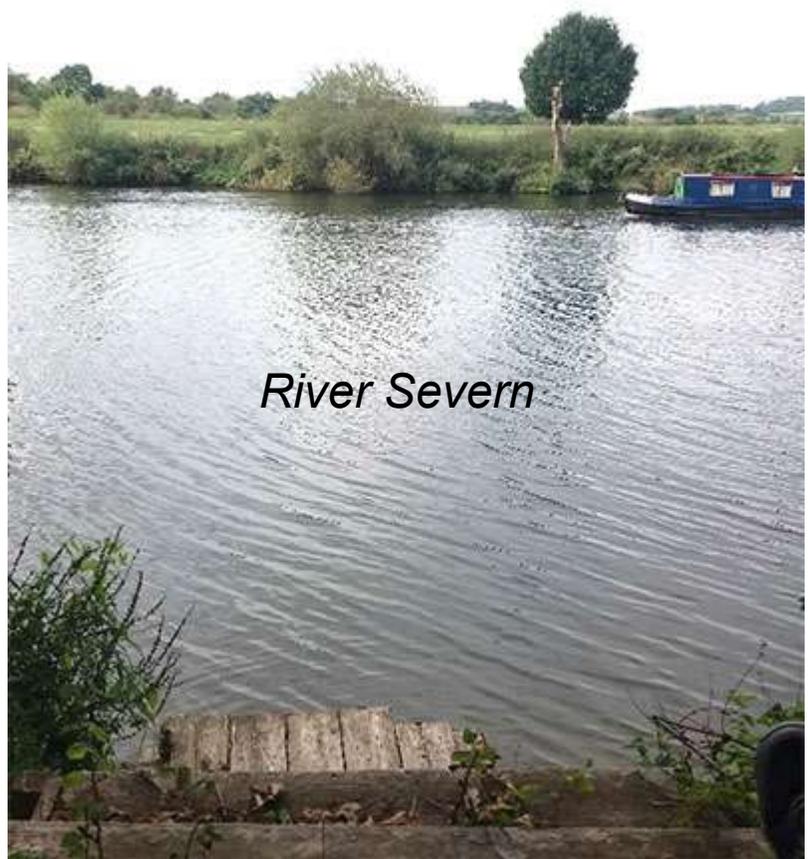


## **"Severn River Project" : Investigating the impacts of microplastic pollution on ecosystems**

**From September 12 to 30, 2022, André-Marie Dendievel and Brice Mourier, research scientists at the ENTPE conducted a survey in West Midlands and Wales (UK) as a part of the *Severn River Project*, a research project on microplastic pollution along the Severn River, a major river draining the west of the United Kingdom.**

At the Laboratory of Ecology of Natural and Anthropised Hydro-systems (LEHNA) and within the team "Impacts of water structures and pollutants on hydrosystems (IAPHY), research aims to:

1. improve the understanding of historical and emerging pollution in rivers
2. assess the disturbances and risks for eco- and hydro-systems (habitats and biodiversity)
3. develop new methods to better manage and interpret the changes affecting managed rivers during the Anthropocene (post-1945)



### **/// The impact of plastics**

The *Severn River Project* addresses the issue of microplastic pollution along a major river draining the west of the UK. The project aims to estimate the concentrations and types of plastics in water and sediment, and to assess their impact on ecosystems using a combination of sedimentology, pollutant analysis and environmental DNA.

### **/// The *Severn River* watershed: an open-air research laboratory**

After working on several rivers in France (*Rhône, Ain, Loire*), the *Severn River* was chosen because its catchment area is very specific:

- the upstream area is predominantly rural (middle mountain ranges) with a heavy mining heritage
- the downstream river section receives inputs from one of the main industrial centres since the start of Europe since the Industrial Revolution (Birmingham's metallurgical and coal basin).



*River Severn in the Hafren forest*



*River Severn at coal port bridge*

Today, the region hosts **18% of the UK plastics industry**. This situation provides an open-air laboratory for **studying trends in microplastic contamination along the land-to-sea continuum**. The Severn River is also known - and feared - for its heavy flooding, which is a major management issue at the regional level.

### **/// Aims of the project**

1. To develop international scientific collaborations and cross approaches on the impact of microplastic pollution on ecosystems
2. Perform a sampling and analysis campaign on recent sediments and on sediment cores in order to have a spatial and temporal understanding of the whole contamination of this Severn River

A project in partnership with the University of Birmingham, School of Geography (Prof. S. Krause) and the University of Lincoln (Prof. M. Macklin & C. Thomas).

## **CONTACTS**

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