



Water Management
Agency
Grand Duchy of Luxembourg

RESTORING THE PÉTRUSSE RIVER in Luxembourg City



©Water Management Agency, 24/05/2023

In Luxembourg, we are committed to restoring our rivers, which have been severely altered through human activity, to a more natural state.

These restoration projects have many advantages, such as reducing the risk of flooding, creating habitats for many species such as fishes and birds, and providing recreational spaces for citizens.

Restoration projects also contribute to bringing our rivers to a good ecological status, as required by the Water Framework Directive (WFD).

WATER FRAMEWORK DIRECTIVE (WFD)

The WFD harmonises European water management legislation and establishes obligations to protect and restore water quality and the aquatic environments throughout the European Union. The ecological status of a water body is determined on the basis of biological, hydromorphological and physico-chemical criteria.



The project presented here concerns a 1.7 km section of the Pétrusse river, stretching from the rue d'Anvers to the confluence with the Alzette at the rue St Ulric.

Initial situation and problems

Initially, the Pétrusse flowed through a straight concrete bed, which prevented the development of any aquatic life:

- 🌿 no habitat for aquatic fauna ;
- 🌿 many impassable waterfalls for fish ;
- 🌿 high flow speed due to the flat concrete bed.

Moreover, the current was extremely variable, with a very low flow and a significant rise in water levels during high water periods, causing flooding.

Objectives

- 🌿 Ecological enhancement of the watercourse: creation of habitats favorable to the development of aquatic and semi-aquatic fauna and flora.
- 🌿 Reestablishment of the **ecological continuity**.
- 🌿 Flood reduction.
- 🌿 Integration of the restoration project into a landscaping concept.
- 🌿 Consideration of related planned work (adaptation of networks, reconstruction of existing bridges, enhancement of the valley's cultural heritage).

ECOLOGICAL CONTINUITY

Ecological continuity enables the free movement of organisms and sediments within a watercourse. In particular, it allows fish to have access to the various habitats they need to complete their life cycle (reproduction, growth, feeding, shelter). Waterfalls and dams are examples of obstacles to ecological continuity.





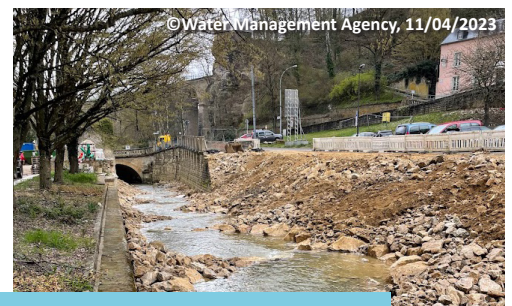
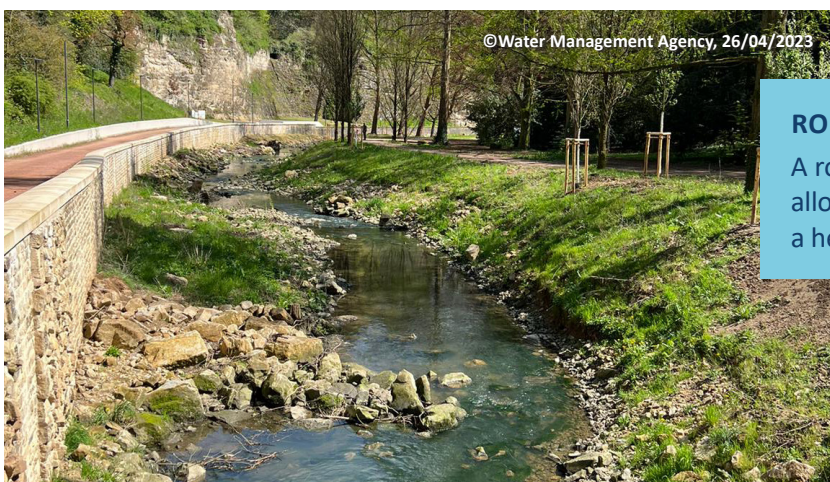
Work carried out

- ⌘ Removal of the concrete bed and creation of a natural watercourse.
- ⌘ Creation of habitats through the incorporation of **structural elements**.
- ⌘ Addition of natural substrate (natural stones).
- ⌘ Creation of a **rough ramp** to ensure the passage of fish between the Alzette and Pétrusse rivers.
- ⌘ Soil decontamination.



STRUCTURAL ELEMENT

A structural element is a natural feature (boulder, tree trunk or stump, etc.) that diversifies the habitats and the flow of the watercourse, thereby promoting its dynamics.



ROUGH RAMP

A rough ramp is a rock structure that allows aquatic animals to overcome a height difference in a watercourse.

Project by



Project partners

Ministry of the Environment,
Climate and Biodiversity

Water Management Agency

Nature and Forest Agency

Environment Agency

National Institute
for Architectural Heritage

TR-Engineering

AM Giorgetti-Kuhn

Grundbaulabor Trier

Büro für Gewässerökologie &
Gewässerentwicklung

Enviroservices International

UNESCO

Project costs

€ 21 million

Financing



LE GOUVERNEMENT
DU GRAND-DUCHÉ DE LUXEMBOURG
Ministère de l'Environnement, du Climat
et de la Biodiversité

Fonds pour la gestion de l'eau



Banque européenne
d'investissement

Duration of works

September 2020 - in progress

