Revitalisation of riverbanks and connection of hydraulic annexes alongside the Scarpe river in France

Year of issue

2025

Summary

The Scarpe in Arras (long canalised) was renatured (2009–2012) to balance navigation, recreation and ecology. Actions included removal of sheet piling, gentle bank reprofiling, mixed bio-engineering (hemp bundles, vegetated geonets, gabion mattresses where needed), riparian restoration (invasives removal, seeding, pollarded white willows), controlled access, and creation of a lagoon.

The project treated 1,760 m of banks and built two reedbeds (≈1,000 m² and 1,450 m²). In the same programme, a 1.4 ha pike spawning area at Fampoux was re-opened and reconnected to the Scarpe. Governance shifted in 2012 via a VNF→Arras Urban Community (CUA) convention; FDAAPPMA 62 manages the spawning sites. Baseline surveys were done in 2010 with a five-year follow-up planned.

Total cost €1,321,310 (studies €132,277; works €1,189,032), co-funded by Artois-Picardie Water Agency 51%, ERDF 48%, CUA 1%.

The reach remains actively managed. In 2022 the environmental authority (MRAe) reviewed a 10-year dredging plan (~180,000 m³) to secure a 1.65 m navigation draft, notably around the Saint-Laurent-Blangy water-sports base, and requested stronger WFD compliance, better fish/European eel assessment, and a catchment-scale response to upstream sediment inputs. Together, the restoration and ongoing management aim to diversify habitats while keeping the canal’s socio-economic uses.

Photo Gallery



Location

50.293, 2.7818

Project

NWRM

National ID

France_03

Sector

Hydromorphology

Installation Date

2012

Implementation status

Completed

Contact

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Overview

Location of the project

The Upper Scarpe Canal, which flows for 23 km, connects Arras to Corbehem via navigation through nine locks.

Country

France

NUTS2 Code

Nord - Pas-de-Calais

Sponge measures implemented in the case study

Stream bed re-naturalisation

Natural bank stabilisation

Reconnection of oxbow lakes and similar features

Objectives

Improve biological & chemical quality; recreate reproduction habitats. Targets: maintain burdock, pike & eel populations; establish ≥1 amphibian species; double the number of bird and insect species vs 2010 baseline.

Involved partners

Authority type	Authority name	Authority role	Comments	Authority responsibility

Local water authority	Communauté Urbaine d'Arras (CUA)	Initiation of the measure	Project owner	Responsible
Regional / sub-national water authority	Agence de l'eau Artois-Picardie	Financing	Financing 51 % of the project	Supporting
Other	Fédération départementale des associations agréées pour la pêche et la protection des milieux aquatiques du Pas-de-Calais	Determination of design details of the measure	The management of the two recreated spawning areas is carried out by the Departmental Federation of Pas-de-Calais for fishing and aquatic environment protection (FDPPMA 62).	Supporting

Site Information

Climate Zone

Cool temperate moist

Precipitation

618.00 mm

Temperature (°C)

10.80 °C

Elevation range

75 m

Vegetation class

Reedbeds (Phragmites) from two constructed roselières (≈1,000 m² & 1,450 m²), helophyte fringes, and riparian white willow (Salix alba) pollarded; hydrophilous bank flora.

WFD Ecological status

Poor

WFD Chemical status

Failing to achieve good

Water quality status

Heavily modified canal reach: past sheet-piling, limited habitats; sediment infill from upstream; runoff of agricultural inputs in marshes; invasive plants; leisure & geese pressure; WFD compliance issues flagged for dredging.

Design and Implementation

Project scale

Micro

Project scale specifications

Works on ~1.76 km of banks within a specific urban reach, plus a single oxbow-type lagoon and one 1.4 ha pike spawning area—localised hydromorphology and habitat measures.

Size

1760.00

Size unit

m

Principles

Multi-functionality: reconcile navigation/recreation with ecological restoration. Strategies: remove sheet-piling; gentle re-grading; bio-engineering (gabion mattresses + vegetated geonets; helophyte bundles); riparian restoration; controlled access; create alluvial annex/lagoon. Capacities (not storm-event-based): 1,760 m banks treated; reedbeds ~2,450 m² total; pike spawning area ~1.4 ha; dredging plan targets 1.65 m draft (separate O&M).

Factor constraints

Low-slope canalised river with historic sheet-piling; access constraints required working from water; strong leisure use and geese grazing; need to maintain navigation; presence of valuable but fragmented wetland habitats; prior dragage needed to mobilise equipment.

Constraints

River banks protected by grey infrastructure

Favourable preconditions

Population favourable to the change

Financing

Total cost

1321310.00 €

Total cost information

Preliminary studies : € 132,277

Works and developments : € 1,189,032

Financing authorities

Authority name	Type of funding	Financing share
Artois-Picardie Water Agency	Sub-national funds	51%
European Union	EU-funds: Cohesion and regional development funds	48%
Arras Urban Community	Local funds	1 %

Compensations

No

Policy and Governance

Policy description

Protection of riverbanks. Current dredging PGPOD (10 yrs, ~180,000 m³) reviewed by the environmental authority, which requested stronger WFD alignment and fish/eel assessments and urged basin-scale sediment management.

Land ownership

Public river domain (State/VNF). Day-to-day management of the canalised reach was delegated to the Arras Urban Community (CUA) from 1 Jan 2012. Spawning sites managed with the Pas-de-Calais anglers’ federation.

Policy targets

Improved Biodiversity

Peak-flow reduction

Pollutants Removal

Oher Societal Benefits

Target remarks

Improve biological and chemical water quality in the Scarpe river

Recreate breeding habitats for species

Requirement directive

Requirement directive
WFD-achievement of good ecological status
WFD-restoring a HMWB

Part of a wider plan

No

Public consultation

No

Has contractual arrangements

No

Impacts and Monitoring

Monitoring System

Monitoring parameters

Checking of vegetation's health

Impact Assessment Methodology

Performance impact assessment method

Unknown

Biophysical impacts: Hydrology

Information on retained water

Improved lateral connectivity via annex lagoon; diversification of marginal habitats; replacement of hard banks with low-slope vegetated margins; expected gains in habitat complexity. No quantified water-retention volume reported.

Biophysical impacts: Biodiversity

Improved biodiversity

Yes

Information on improved biodiversity

New fish species and vegetation development observed.

Biophysical impacts: Water & Soil Quality

Water quality overall improvements

N/A info

Information on water quality overall

The riparian area associated to the river has been improved and therefore the pollution is better managed

Soil quality overall improvements

N/A info

Information on soil quality overall improvements

Biodiversity enhanced

Biophysical impacts: Others

Ecosystem impact climate regulation

No specific impact

Information on ecosystem impact climate regulation

Not mentioned

Lessons Learned

Key lessons

The revitalisation of the Scarpe River led to an improvement and a diversification of its related aquatic and terrestrial habitats. Therefore, this project participated in enhancing the ecological status of the river, expected to be good by 2021. The perception of the population was very positive thanks to the amenity space provided. However, the fact that the work took place from the river made its realisation difficult and a population of gooses is now disturbing the growth of the planted vegetation.
The various developments carried out allow for the reconciliation of both the ecological value of the site and the use of the waterway, namely commercial navigation, recreational boating, and associated leisure activities. As a result, the site's landscape value is enhanced, with a positive impact on tourism or recreational boating, as well as on leisure activities (such as walks...).

Barriers

Barrier type
Expected maintenance needs

Drivers

Driver type
Organisation committed to it

Success factors

Success factor type
Attitude of relevant stakeholders

Transferability

Applicable to canalised urban rivers. Key cautions: geotechnical stability of regraded banks; invasive-species control; balancing navigation with habitat goals; address catchment sediment sources or dredging benefits won’t persist; document WFD non-deterioration.

Sources

Sources

Aménagement des berges en génie végétal et mise en place de zones annexes sur la Scarpe canalisée à Arras

Canalized Scarpe restoration

Partons sur la Scarpe à Arras