

# Reopening of a section of the River Bièvre in an urban environment

## The operation

Category	Restoration
Type of operation	Reopening of a culverted river
Type of environment	Intermediate river zone
Issues at stake (water, biodiversity, climate)	Good status of habitats
Start of operation	2002
End of operation	2003
Length of river affected by the works	200 m

## River in the restored section

Name	The Bièvre
Distance to source	23 km
Mean width	4 m
Mean gradient	2.62 ‰
Mean flow rate	0.7 m <sup>3</sup> /s

## Aims of the project owner

- Improve the local residents' perception of the river by creating a park with a natural ambience, which promotes floristic and faunistic biodiversity.
- Diversify the habitats of the river.



Work in progress on the park in Fresnes in 2003.

## Location

Country	France
River basin	Seine-Normandie (Normandy)
Région(s)	Île-de-France
Département(s)	Val-de-Marne
Commune(s)	Fresnes



## Environment and pressures

The River Bièvre rises near Guyancourt in the Yvelines département and is 36 kilometres in length. It flows into the Seine in the 13th arrondissement (district) of Paris. Since the 11th century, its 200 km<sup>2</sup> catchment area has been very heavily modified. Numerous mills were built along its course, which led to the straightening of the river. Increasing urbanisation and the establishment of industrial and craft activities (butcher's shops, tanneries and leather dressing factories) along the Bièvre transformed it into an "open sewer". Starting in the 18th century, the river was gradually culverted. In Paris, the culverting works took place at intervals, from reach to reach, between 1877 and 1935. Culverting then continued upstream from Paris. Today, 11 km are canalised under slabs and 5 km have disappeared under rubble and urbanisation in Paris.

Regulatory context: *Not applicable*

## References in relation to European Directives

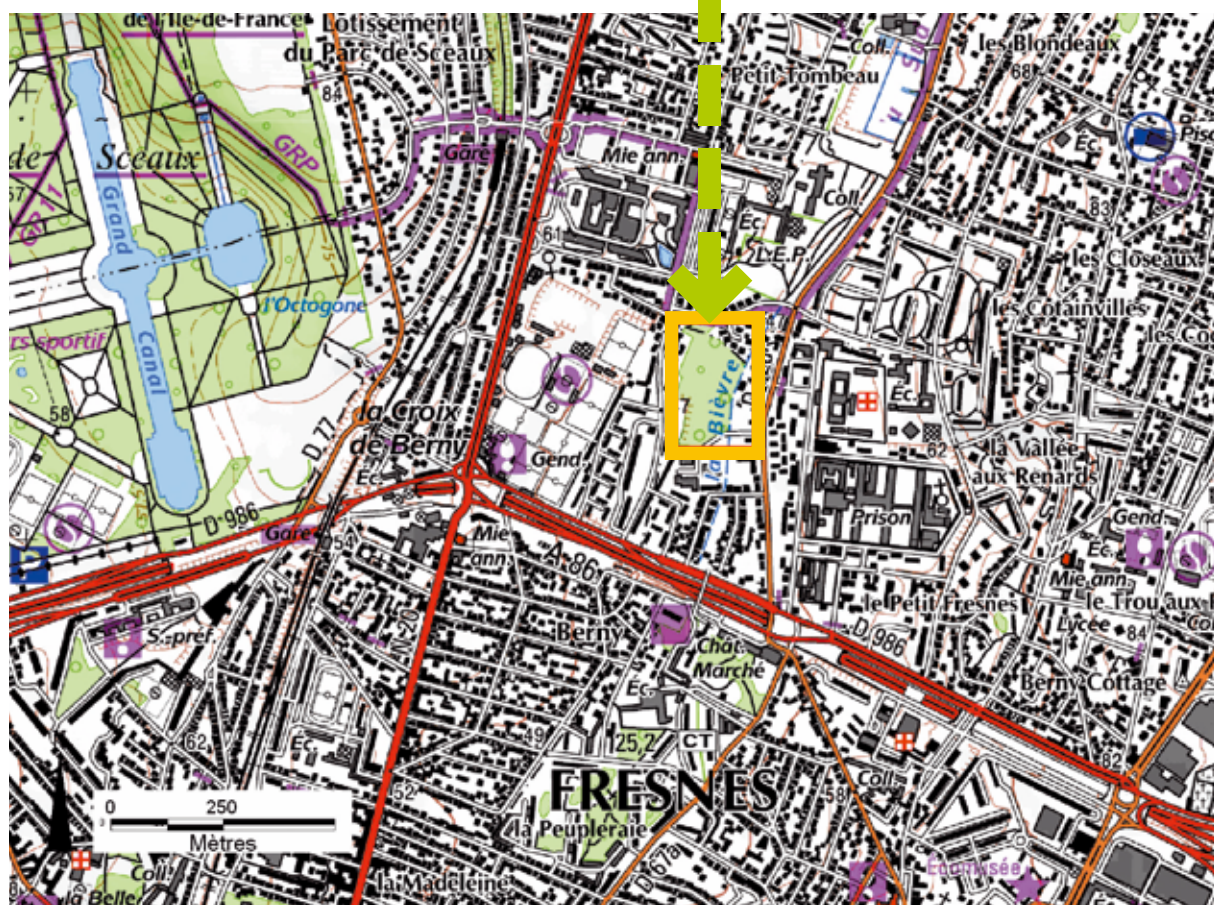
Water body ref. **FRHR156B**

Natura 2000 site ref. *Not applicable*



Communauté d'agglomération du Val de Bièvre

The Bièvre reopened in Fresnes park, downstream sector.



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Today, the Bièvre forms a rainwater system. It has become an alternative means of transportation for wastewater when the sewers are out of action. Given this situation, one can imagine the biological status of the river.

### ■ **Opportunities to act**

In response to this observation, studies were undertaken in the 2000s in order to identify the opportunities for reopening the Bièvre.

In the framework of the Bièvre renovation policy, the Communauté d'agglomération du val de Bièvre (Val de Bièvre Combined District Council) expressed a desire to carry out a pilot project in order to reopen the river. This project was carried out in the «Parc des Près» in Fresnes, a three-hectare area that remained undeveloped.

### ■ **Works and developments**

The former river bed, i.e. the current rainwater system, was retained for use in the event of the sewers being out of action. A meandering stretch of water was created in order to favour the development of aquatic life. Aquatic and semi-aquatic species were planted in several areas.

At the same time, the Conseil général (Regional Council) carried out works on the sewer system. Over twenty direct wastewater connections to the Bièvre were eliminated.

### ■ **Regulatory approach**

Unknown.

### ■ **Post-restoration management**

The Parc des Près is managed according to the principles of differentiated management (non-systematic mowing of meadows and aquatic plants, allowing deadwood to remain on the ground, leaving ivy to grow, etc.). The park is maintained by a private company specialising in the differentiated management of parks and green areas.

### ■ **Monitoring**

Pre-works monitoring was not carried out. Invertebrate analyses and inventories of flora and fauna are carried out on a regular basis by an ecological engineering consultancy.

### ■ **Outcome of the project and outlook**

The benefits of this operation are very convincing, with the monitoring activities showing enriched biodiversity. Aquatic vegetation is developing well and the aquatic biocenoses have become established. Ducks and other species of birds, fish, amphibians and several aquatic insect species are commonly observed.

The reopening of the river has allowed for the re-diversification of the river habitats. Despite these benefits, the effects of this operation on the aquatic corridor remain limited given the length of river affected by the works and the other pressures that remain on either side of the restored section. As a consequence of these pressures, the water quality remains mediocre but this operation was especially important for the local residents who can now rediscover this riverside area.

In the other sectors, the elimination of the wastewater connections on the river already constitutes the first stage of the reopening of the river. Furthermore,



Hervé Cardinal - SIAVB

*The Bièvre between Massy and Verrières prior to reopening in 1999 (above) and afterwards in 2006 (opposite).*



Alain Cardiau

## Costs

In euros excl. VAT

Cost of studies	Unknown
Cost of acquisitions	Not applicable
Cost of operations and developments	€520,000 <i>i.e. per linear metre:</i> €2,600
Cost of promotion	non concerné
<b>Total cost of the actions</b>	<b>€520,000</b>

### Financial partners and funding:

Water Agency: 40%, Département-level council, Regional Council.

### Technical partner of the project:

Conseil général, ONEMA (French National Agency for Water and Aquatic Environments – departmental unit), DIREN (Regional Environment Directorate), Ile-de-France Region Parks Agency, Bièvre Valley Intermunicipal Sewerage Association.

when the river is completely disconnected from the wastewater system, the water from the river will now longer flow into a wastewater treatment plant but will instead flow directly into the River Seine, which will lead to significant savings.

Another section of the Bièvre has also been reopened between Massy and Verrières. The project owner for this operation is the Syndicat intercommunal d'assainissement de la vallée de la Bièvre (Bièvre Valley Intermunicipal Sewerage Association).

A new project concerning the reopening of approximately 610 metres of the Bièvre is scheduled to take

place in the Parc départemental du Côteau in Arcueil and Gentilly. The Conseil général (Département-level Council) is the project owner on this occasion.

In order to implement a consistent management scheme for the Bièvre basin, a SAGE (Water Management and Development Scheme) is currently being created. It will aim to combat flooding and manage runoff, on the one hand, and restore the natural and historic heritage, on the other. Other reopening projects are likely to emerge, especially on the Avenue Flouquet in Hay-les-Roses.

## Promotion of the project

An interpretive trail runs alongside the reopened river. An environmental coordinator runs educational visits, especially for schools and leisure centres from different towns and villages in the communauté d'agglomération (Combined District Council). A brochure about this operation has been produced and can be downloaded from the Combined District Council's website [voir <http://www.agglo-valdebievre.fr/>]. This project won the Grand Prix de l'Environnement environmental award in 2003 and the Trophée des Eco-maires (Environmentally friendly mayor's award). The project was presented during the World Water Forum in Kyoto, 2003.



Comme Forst - Onema

The culverted Bièvre between Arcueil and Gentilly. Project to reopen a 610-metre section.

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