

Restoring the River Doquette to its original bed

The operation

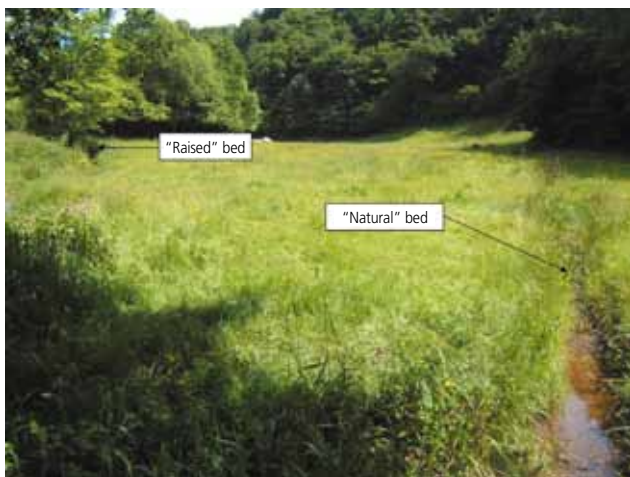
Category	Restoration
Type of operation	Restoring a river to its original bed
Type of environment	Headwaters
Issues at stake (water, biodiversity, climate)	Good status of habitats
Start of operation	October 2008
End of operation	October 2008
Length of river affected by the works	240 m

River in the restored section

Name	The Doquette
Distance to source (upstream point)	3.8 km
Mean width	2.2 m
Mean gradient	1.1 ‰
Mean flow rate	0.05 m ³ /s

Aims of the project owner

- Restore the habitats of the river.
- Restore hydraulic flows at all times of the year in order to ensure river continuity.



The Doquette in June 2008, prior to restoration with its raised bed (on the left) and its natural bed now used as a drainage ditch (on the right).

Location

Country	France
River basin	Seine-Normandie (Normandy)
Région(s)	Basse-Normandie
Département(s)	Manche
Commune(s)	Hambye, Percy



Environment and pressures

The Doquette is a small salmonid river. This tributary of the River Sienne is 6.4 kilometres in length and has a mainly agricultural catchment area (meadows and woods). The river is home to brown trout and bullhead; it is also likely to be colonised by Atlantic salmon.

In the 1970s, a part of the Doquette was moved into a straight channel at the edge of a field. The original bed was retained and transformed into a drainage ditch. The river, now in a "raised" position, deteriorated. The flow patterns became uniform and the habitats of the low-water channel became homogenised. Since being moved, the Doquette flowed over the bedrock and could dry out during the low-flow period.

Regulatory context: *Not applicable*

References in relation to European Directives

Water body ref. **FRHR336B-I7049000**
 Natura 2000 site ref. *Not applicable*



CATER

The works phase during the restoration of the Doquette in October 2008.

■ Opportunities to act

In application of the multi-annual restoration and maintenance programme for the catchment area of the River Sienne, there were plans to erect fencing along the raised river. The landowner, who had two channels on his plot, requested modifications in order to avoid the erection of fencing along both the raised river and the drained river. This double intervention would indeed have posed certain problems relating to the use of this land. The Syndicat intercommunal d'aménagement et d'entretien de la Sienne (SIAES – Intermunicipal Development and Maintenance Association for the Sienne), in collaboration with the departmental fishing federation, thus proposed to restore the Doquette to its former bed, which would then be the only section to be fenced. The departmental fishing federation acted as the project manager for these works, which were not mentioned in the Declaration of General Interest for the multi-annual programme.

■ Works and developments

The original river bed was wider (mean width of 4.5 metres). Where possible, the works were only carried out from one of the banks. 136 tonnes of aggregates were brought in from a quarry and deposited in the river. 77 tonnes of stones and pebbles (from 0 to 250 mm), were used to form the armour layer, with the remaining 59 tonnes being used to reconstitute the alluvial mattress (40 tonnes of 20 mm to 40 mm gravel and 19 tonnes of 10 to 14 mm gravel). A connection was made with the river, while the existing connection with the straightened bed was blocked. The old, spring-fed channel was not filled in. Both banks of the restored river were fenced and a ford crossing and drinking trough were installed.

■ Regulatory approach

Regulatory procedures were not required. The police de l'eau (River Police) department of the Direction départementale de l'agriculture et de la forêt (DDAF- Departmental Agriculture and Forestry Directorate) was informed of the execution of the works.

■ Post-restoration management

The farmer is required to maintain the fencing. Within five years, if necessary, the SIAES will intervene in order to manage the vegetation.

■ Monitoring

Three longitudinal and horizontal profiles of the bed of the drained river were recorded with a view to monitoring their evolution. There are also plans to monitor the fish and invertebrate populations. The SIAES and the Cellule d'animation technique pour l'eau et les rivières (CATER- Technical Coordination Unit for Water and Rivers) for Basse-Normandie will carry out these monitoring operations. At present, only one photographic monitoring operation has been performed.



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SIAES

The works phase during the restoration of the Doquette in October 2008: introduction of coarse materials in order to reconstitute the alluvial mattress of the river bed.



SIAES

The Doquette in October 2008, after the restoration works.



SIAES

The Doquette in May 2009, seven months after the restoration.

Costs

In euros excl. VAT

Cost of studies	Unknown
Cost of acquisitions	Not applicable
Cost of operations and developments	€9,000 <i>i.e. per linear metre:</i> €37.50
Cost of promotion	Not applicable
Total cost of the actions	€9,000

Financial partners and funding:

Water Agency: 60%, Regional Council: 20%, Departmental Fishing Federation: 20%

Technical partner of the project:

SIAES (Intermunicipal Development and Maintenance Association for the Sienne), CATER (Technical Coordination Unit for Water and Rivers) for Basse-Normandie

Outcome of the project and outlook

The quality of the river habitats has improved and the flows, in particular, have diversified. Morphogenic flooding during the following winter remobilised the gravel. Banks were created, whilst others were displaced downstream. However, there is little material input from upstream because the river flows over a slaty substrate. The armour layer has stabilised well.

Working from the alternate bank allowed for the conservation of one steep-sided bank (the former drainage ditch) and the creation of another gently sloping bank. The banks were revegetated quickly and naturally.

For the moment, the benefits obtained are wholly satisfactory, given the investments in terms of time and money. These results will be confirmed by a biological assessment of the operation. The farmer is also satisfied with the results of the operation.

A similar operation was planned for the catchment area of the upstream Sélune at the end of 2009. The departmental fishing federation has also undertaken to carry out a project on the River Thar. In addition, a global project, approved by the Syndicat mixte des côtiers du Granvillais (Public-Private Association for the Granville Coastal Basins), is underway. Starting at the end of 2009 and scheduled to last three years, this project aims to decompartmentalise the river by improving 257 road structures such as culverts and bridges, which should restore river continuity.

Promotion of the project

- Creation of a public relations brochure, which can be downloaded from the CATER Basse Normandie website: <http://cater.free.fr/>
- A field visit was made with the river technicians of the département, inter-municipal organisations, the agence de l'eau (Water Agency) and the CATER.



The Doquette after restoration in the summer of 2009. The flows have diversified.

Project owner

Fédération de la Manche
pour la pêche et la protection
du milieu aquatique



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