

## Restoration of the ecological continuity between the Moulin Neuf pond and the Saint Gentien stream

by Stéphane Rabier / 2018-06-18 17:26:58 / France / 6227 / FR



**Year of commitment** : 2018

**Address 1 - street** : MOULIN NEUF, France

**Diameter** : 200

**Water cycle** : River bed and river bank restoration , Other

**Biodiversity & Ecosystems** : / Green and blue corridor, Ecosystem restauration, Eco-tourism, Ecosystems preservation /



**170 638 €**

**Builder**

Chognot

**Manager / Dealer**

Questembert Community

### GENERAL INFORMATION

Property of the community of communes of the country of Questembert, the man-made lake of the Moulin Neuf was the subject of a renovation operation and ecological reconquest following a general degradation of the quality of its waters. On the one hand, work has been undertaken in the man-made lake (lowering of

the water line and improvement of the self-purification function). On the other hand, continuity was no longer ensured since the creation of the man-made lake because of the winnowing of the Moulin Neuf. The control and emptying works were impassable for the fish species in view of the height of fall of the order of 4 meters, and did not allow the transit of sediments.

The company CHOIGNOT has therefore carried out various works involving civil engineering, earthworks, plant engineering and the vault to restore the ecological continuity and health of the water body.

## Progress Status

Delivered

## Data Reliability

Self-declared

## Funding Type

Public

## Website Enterprise / Infrastructure

<http://www.chognot.fr>

## Sustainable Development

### Attractiveness :

These developments of the Saint-Gatien River constitute a new tourist attraction for the pond of Moulin Neuf. Especially for the improved fishing activity, but also for the bathing activities that become possible again.

### Well Being :

The blue algae (cyanobacteria) present before the work caused irritation for the people who bathed in the water. The experimentation of a natural purification system allowed the elimination of nitrogen and phosphorus which polluted the water.

### Preservation / Environmental Improvement :

The device for crossing the water intake of the new bed created under the bridge comprises a lateral ramp and macro-pads with a roughness in the bottom of the bed. Thus, the ecological continuity is restored since the fish will be able to cross the device before arriving at the water level to then go up the affluents.

## Governance

Community of communes of the country of Questembert

**Holder Type :** Regional Authority

Chognot

**Builder Type :** Construction Industry

Questembert Community

Project Manager: CE3E - Consulting & Water Studies Espace Environnement

## Sustainable Solutions

Restoration of ecological continuity

### Description :

The renovation of this tourist equipment of importance for the territory, was built around two operations of ecological reconquest.

- One concerns the water quality of the Moulin-Neuf where the presence of cyanobacteria thwarted swimming. This blue alga feeds on nitrogen and phosphate molecules and has an irritating effect on the skin. Based on a natural purification experiment, the action consisted of lowering the level of the water body to create wetlands and allow the vegetation to settle on the exposed areas. Thus, the water from the sources that feed the pond will be partially cleared of nitrogen and phosphorus, the very ones that pollute the waters of the pond. Nearly six hectares of the site remain in wet meadows whose role is to cut down the nitrogen and phosphorus levels.

800 m<sup>3</sup> of sediments were reused in the softening of the banquettes and served as a breeding ground for the site-adapted helophytes. In addition, new valves (2 surface valves and a bottom valve) were installed with automated control to maintain the new water line lowered from the water body and to promote flow in the bypass river.



- The other operation consists in creating a river bypass of the Mill, integrating a fishway (target species: eels and salmonids), by digging in an arm of discharge by which the lake was released in case of flood. The company CHOIGNOT has thus realized the following works from upstream to downstream:

Zone 1: A feeder channel for the intake of the new 17.5 ml St Gantien bed, with a wet bed width of 1.5 m at the same elevation of 41 m NGF and 4.65 m m with full

board, undergoing the natural variations of water level or artificial related to the management of two valves and the bottom valve in the event of significant variation of flows.

Zone 2: A calibrated concrete intake with bottom roughness and macroplots of 1.45 m wide by 7.15 ml and 8.4 m full deck (passage under bridge).

Zone 3: A 30-ml stream segment after removal of granitic outcrops with a 1.2 to 2 m nested bed width at a flow rate of 0.2 m<sup>3</sup> / s and a full width at 2 to 6.65 m. In this segment, a 6 m weir was created in blocks and concrete with an overflow rating of 41.20 m NGF.

Zone 4: A 92-ml segment in the chaos of existing granitic blocks and 0.2 to 2 T block inflow, with a nested bed width of 1 m to 2.90 m wide and a full-bodied bed. 2.1 to 6.25 m. In this zone, 2 crossings were removed and replaced by fords.

- Biodiversity :
- Infrastructure
- Water management
- Management of natural areas

Company (es) Website :

## Contest

### Reasons for participating in the competition(s)

The renovation of this tourist equipment of importance for the territory, was built around two operations of ecological reconquest: One concerns the water quality of Moulin-Neuf where the presence of cyanobacteria thwarted swimming. This blue alga feeds on nitrogen and phosphate molecules and has an irritating effect on the skin. Based on a natural purification experiment, the action consisted of lowering the level of the water body to create wetlands and allow the vegetation to settle on the exposed areas. Thus, the water from the sources that feed the pond will be partially cleared of nitrogen and phosphorus, the very ones that pollute the waters of the pond. Nearly six hectares of the site remain in wet meadows whose role is to cut down the nitrogen and phosphorus levels. 800 m<sup>3</sup> of sediments were reused in the softening of the banquettes and served as a breeding ground for the site-adapted helophytes. In addition, new valves (2 surface valves and a bottom valve) were installed with automated control to maintain the new water line lowered from the water body and to promote flow in the bypass river.

The other operation consists in creating a river bypass of the Mill, integrating a fishway (target species: eels and salmonids), by digging in an arm of discharge by which the lake was released in case of flood. The company CHOIGNOT has thus realized the following works from upstream to downstream:

- Zone 1: A supply channel for the intake of the new 17.5 ml St Gtien bed, with a wet bed width of 1.5 m at the same elevation of 41 m NGF and 4, 65 m at full board, subject to natural water level or artificial variations related to the management of two valves and the bottom valve in case of significant variation in flows.
- Zone 2: A calibrated concrete intake with bottom roughness and macroplots of 1.45 m wide by 7.15 ml and 8.4 m full deck (passage under bridge)
- Zone 3: A 30-ml watercourse segment after removal of granitic outcrops with a 1.2 to 2 m nested bed width at a flow rate of 0.2 m<sup>3</sup> / s and a full width from 2 to 6.65 m. In this segment, a 6 m weir was created in blocks and concrete with an overflow rating of 41.20 m NGF.
- Zone 4: A 92-ml segment in the chaos of existing granite blocks and 0.2 to 2 T block inflow, with a nested bed width of 1 m to 2.90 m in width and a full-bodied bed from 2.1 to 6.25 m. In this zone, 2 crossings were removed and replaced by fords.

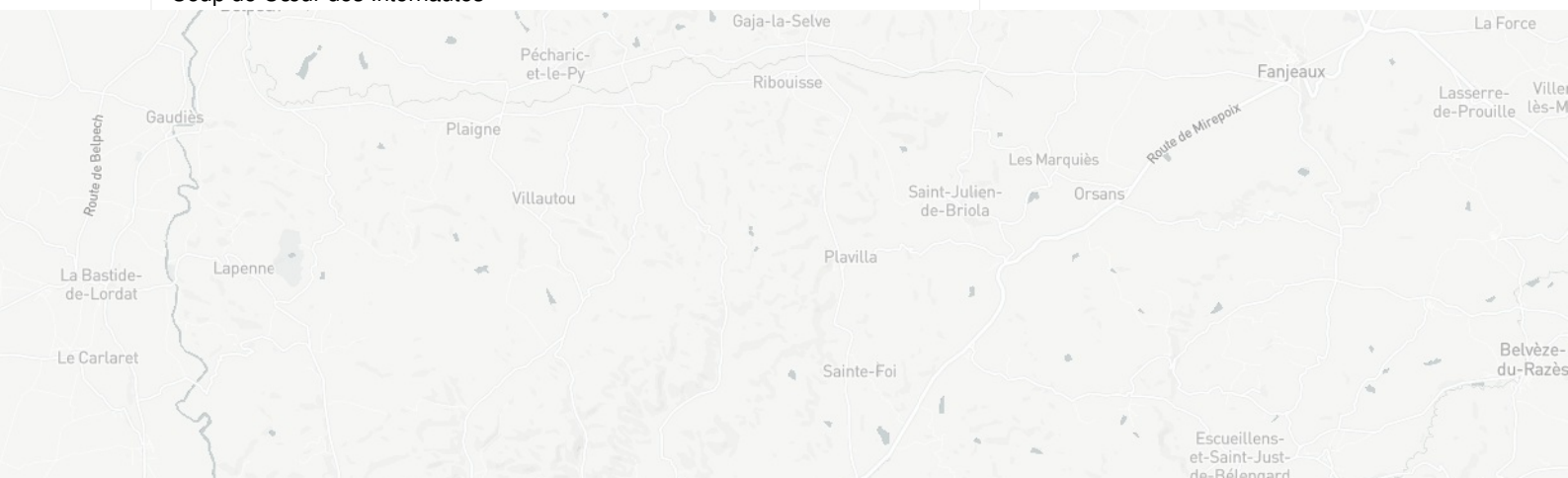
The economic benefits for the territory:

These developments of the Saint-Gatien River constitute a new tourist attraction for the pond of Moulin Neuf. Especially for the improved fishing activity, but also for the bathing activities that become possible again.

### Building candidate in the category



Coup de Cœur des Internautes







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