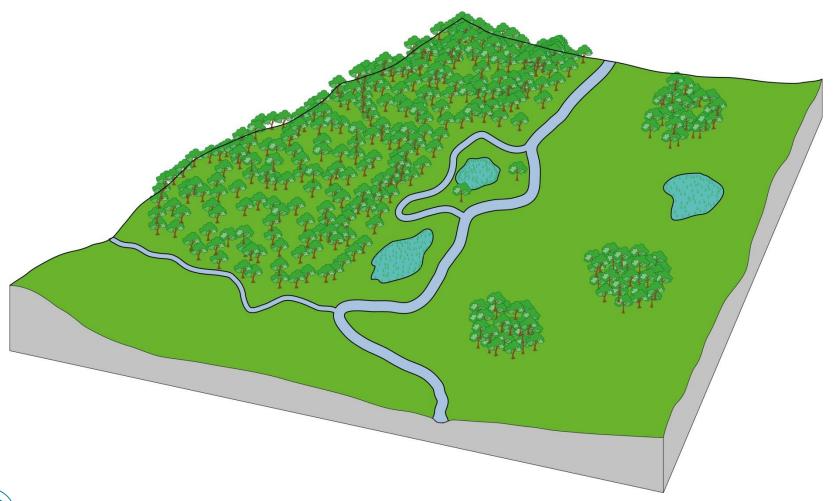


The Senne in the Brussels Region: context, challenges and opportunities

It all starts with a river...





It all starts with a river...



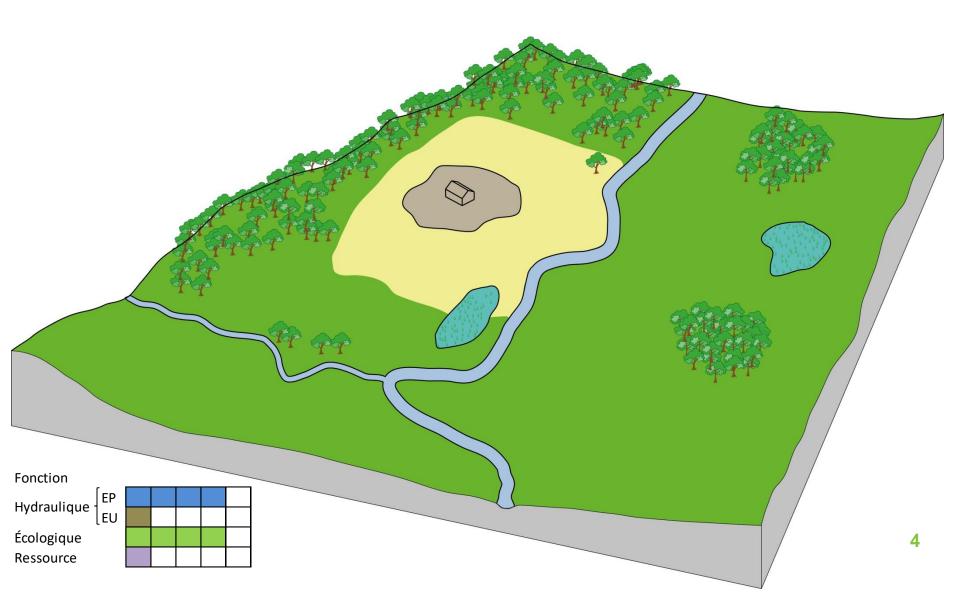
And if it was the Senne, a (very) long time ago



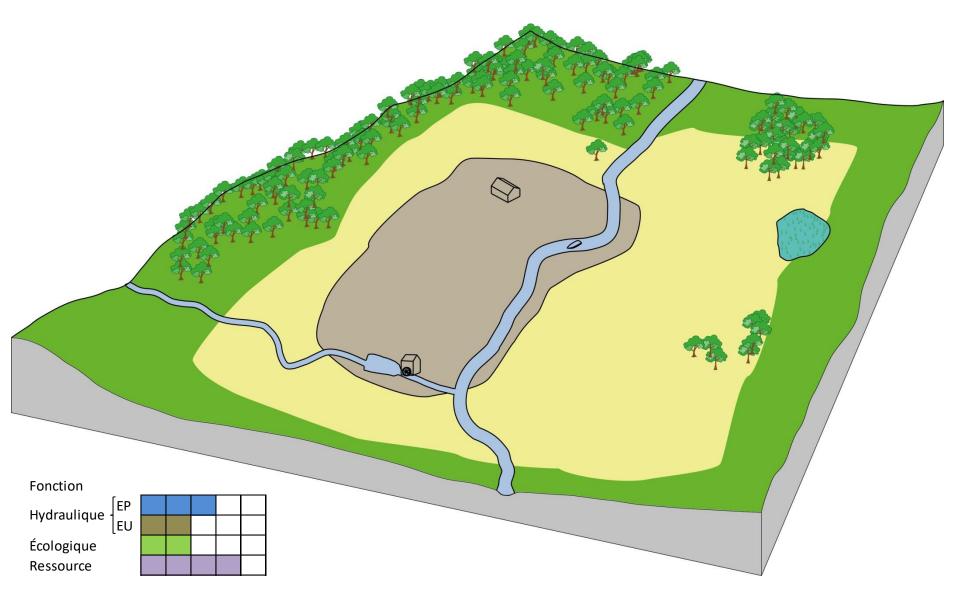
Hydraulique Écologique



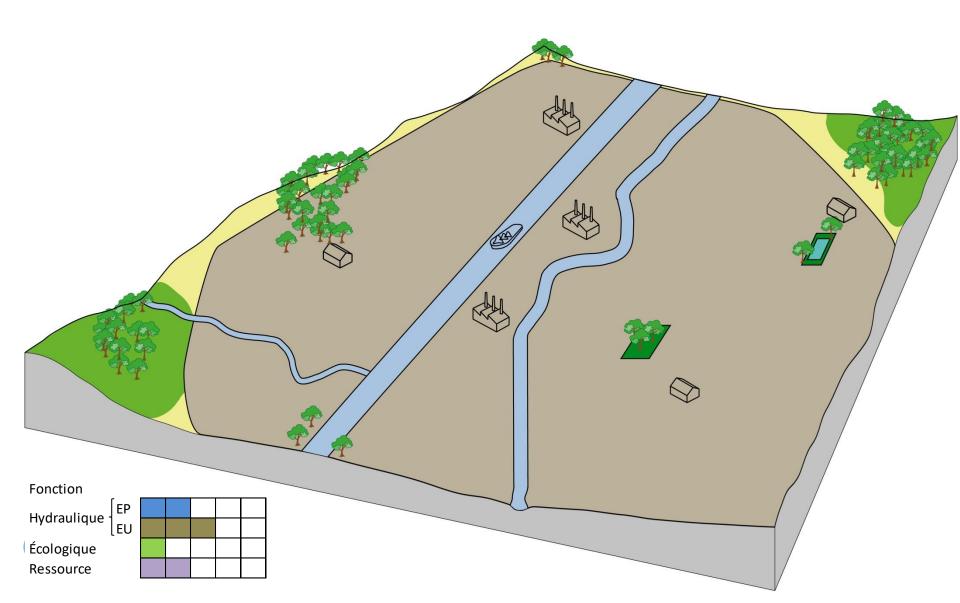
Men settle and shape their landscape



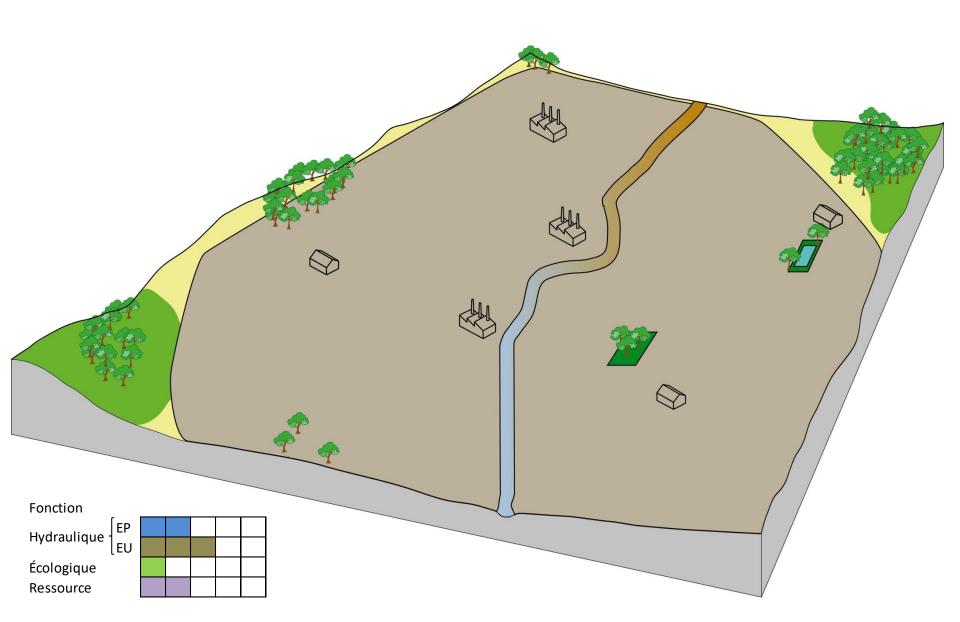
The city is growing and using the "water" resource



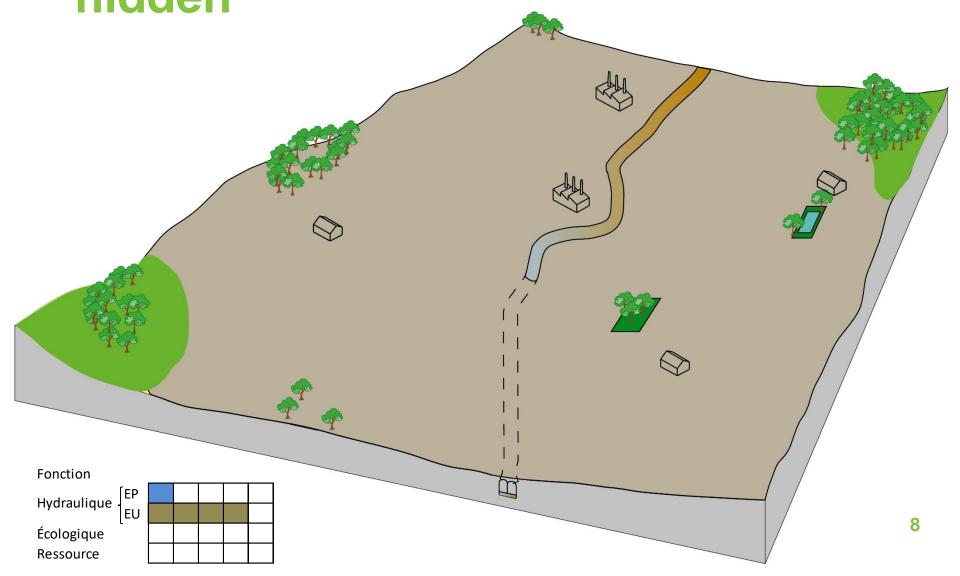
As things change, so do the needs...



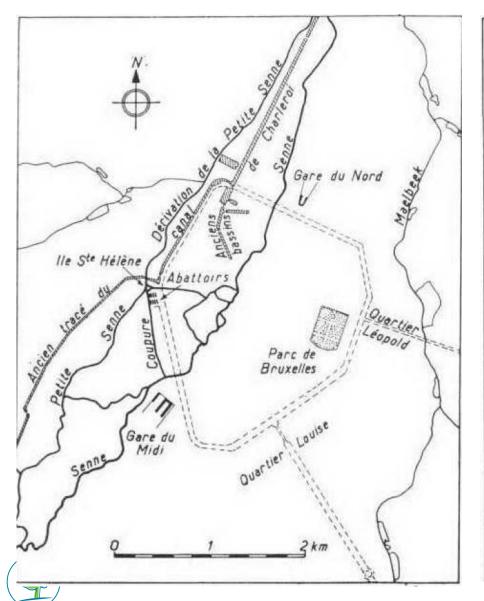
...and water quality is declining

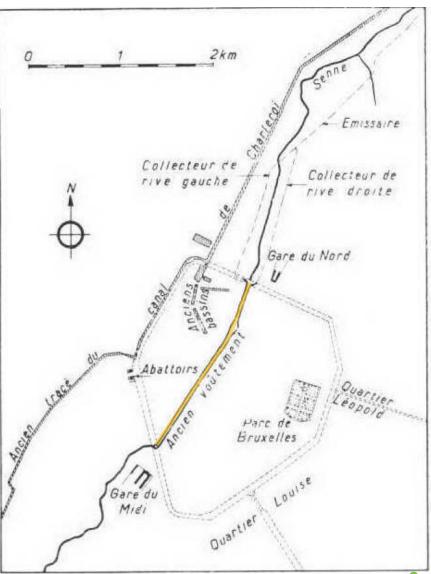


After having been a resource, water becomes a nuisance that is hidden

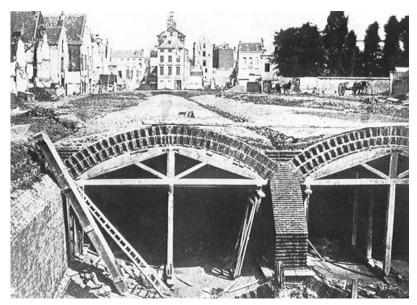


Senne before and after the "sanitation work" of 1867-1871





The "sanitation works" of 1867



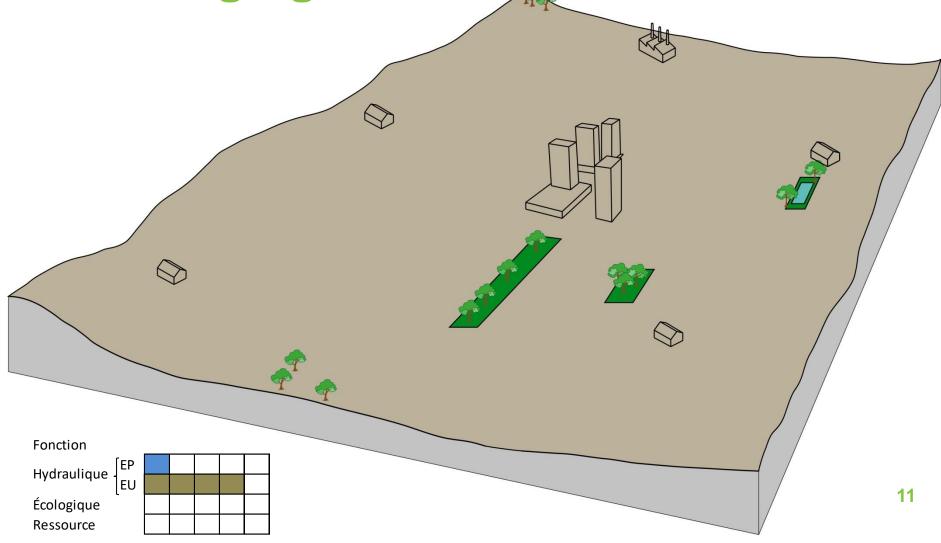
La rue des Pierres



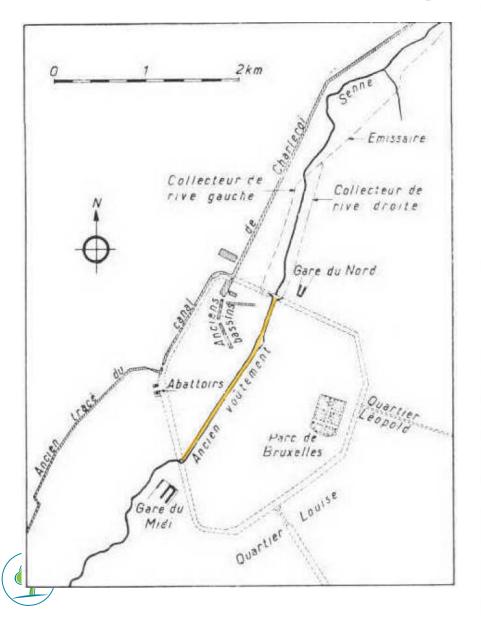
Au niveau de la Bourse

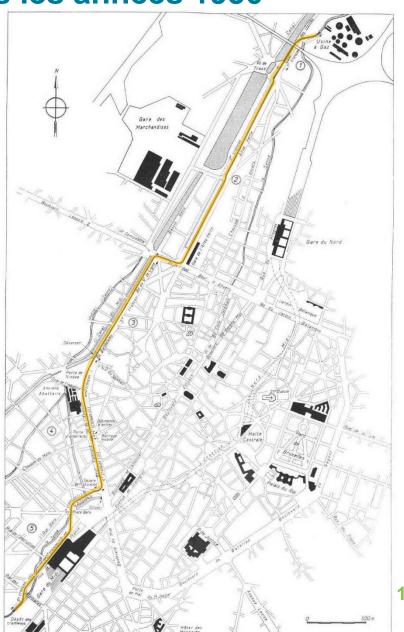


Urbanization is still intensifying and the city is being (re)built by damaging its river

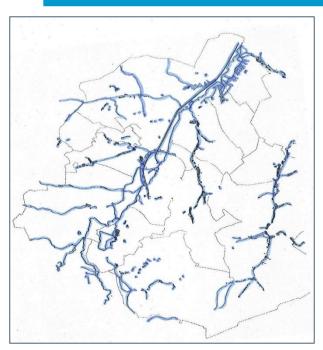


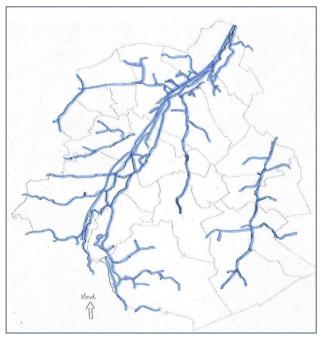
Senne avant et après les années 1950

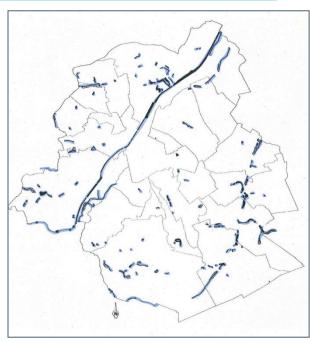




Disappearance of the hydrographic network







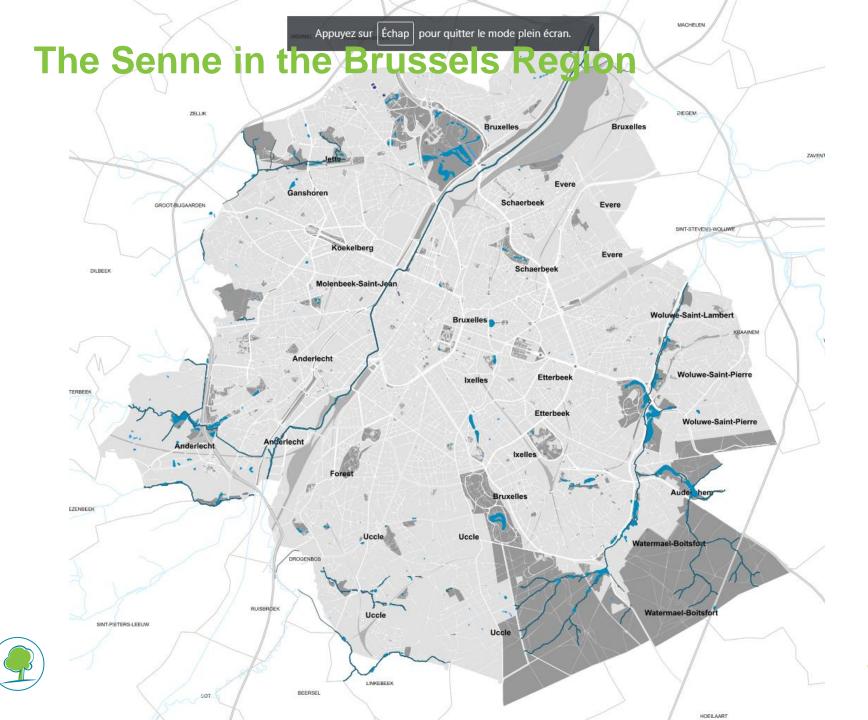
1770 (Ferraris)

1858 : Vandermaelen

1993: IGN



Draining of ponds, transformation of the rivers into open sewers, then vaulting



The Senne in the Brussels Region

2/3 vaulted





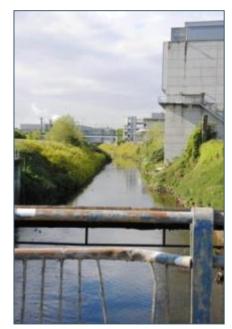




The Senne in the Brussels Region



1/3 open air









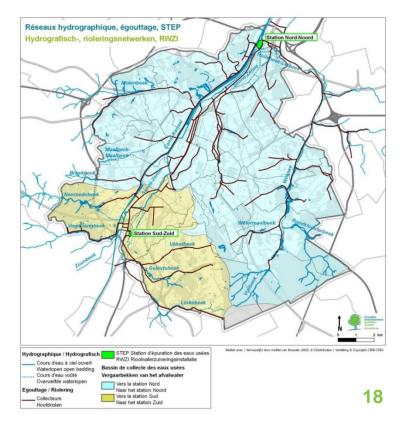
Then it's "quiet" on the ground, but things are changing "elsewhere".

- At the societal level → Rise of environmental issues
- At the regional level
 - Creation of the IBGE (=Bruxelles Environnement) in 1989
 - Green/Blue Mesh concept in 1999



Then it's "quiet" on the ground, but things are changing "elsewhere".

- At the European level
 - Council Directive 91/271/EEC concerning urban waste-water treatment
 - Council Directive 92/43/CEE on the conservation of natural habitats and of wild fauna and flora

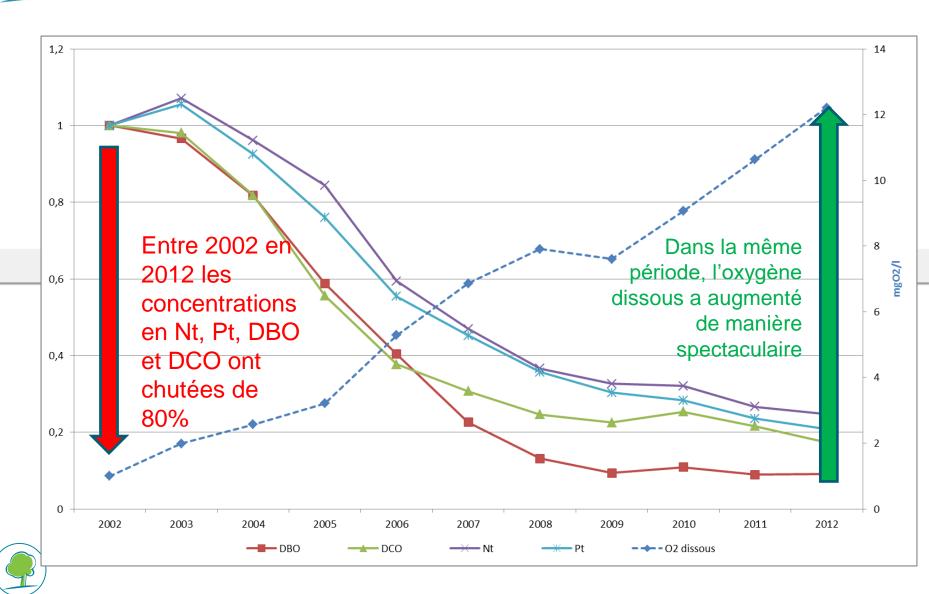




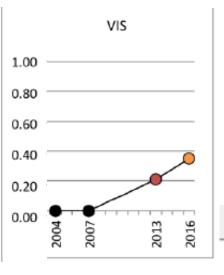
Then it's "quiet" on the ground, but things are changing "elsewhere".

- At the European level
 - ▶ Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy
 - > GOAL: to achieve good status of surface water
- At the regional level
 - → 2006 : Declaration of the Senne as a river subject to the WFD to the EU
 - → 2007 : management of the Senne by BE









In 2016, for the first time in the Senne: 15 species, > 200 individuals 2013 – 1 fish

2004, 2007, 2010 – 0 fish







Karper









BUT...

There is still a long way to go to reach the European objectives ...

| | Zenne | |
|--|----------------------------------|--|
| | (Toestand 2012/2013) | |
| Algemene toestand | Slecht | |
| Ecologische toestand | Slecht | |
| Biologische kwaliteit | Slecht (vissen) | |
| Fysisch-chemische | Niet-naleving | |
| kwaliteit | (CZV, geleidb, ZD + BZV, Nt, Pt) | |
| Chemische kwaliteit – | Slecht | |
| Specifieke verontreinigende stoffen | (Zink, pcb's, minerale oliën) | |
| Chemische toestand | Slecht | |
| Met alomtegenwoordige stoffen | Slecht | |
| | (Kwik (biota)) | |





WHAT ARE THE MAJOR ISSUES TO BE RESOLVED?

1. The hydromorphological quality





2. The storm overflows





3. Wastewater treatment plants





JANVIER 2017



THE ROLES OF BRUSSELS ENVIRONMENT AROUND THE SENNE RIVER

1. Quality monitoring

2. Daily maintenance of the river

3. Develop the river to improve its hydromorphology



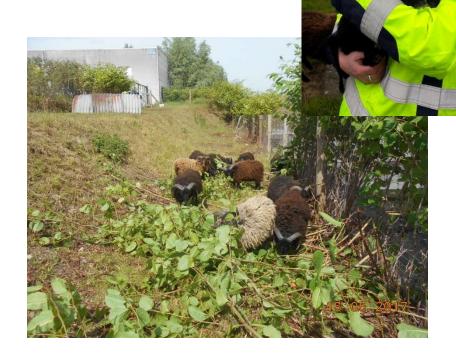
Daily maintenance of the river

Dredging in the years 2013-2016

Fight against invasive species

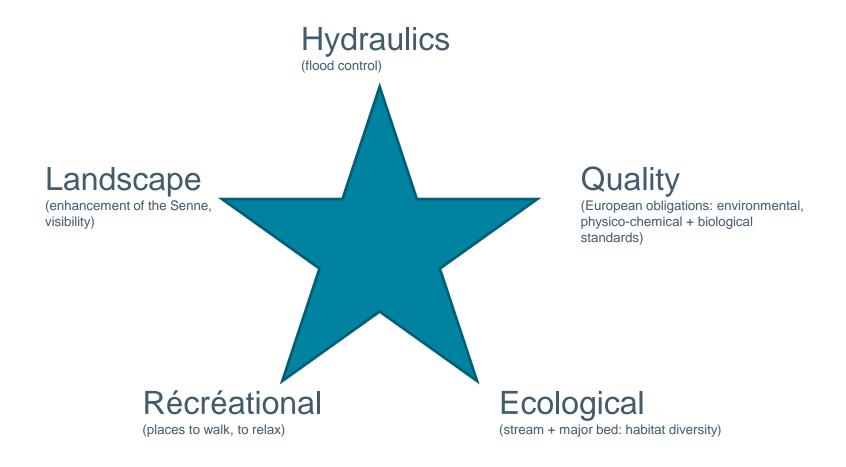
Differentiated management







The future of the Senne: the principles

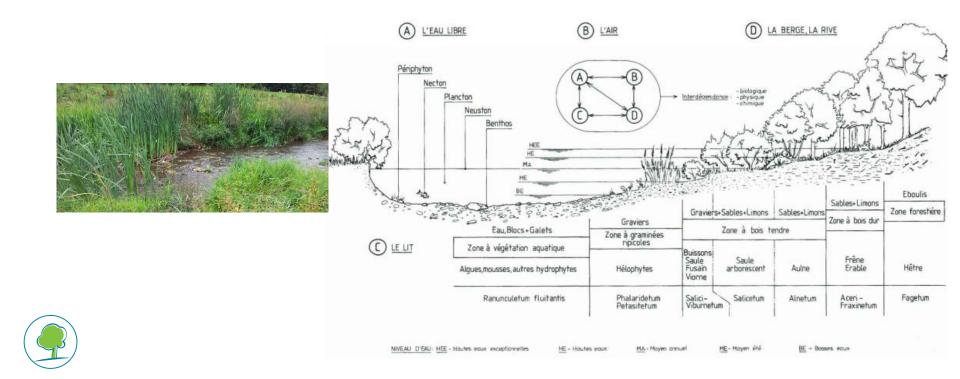




Issues in the restoration of the Senne River

Renaturation increases ecological capacity

- Improvement of the physico-chemical and biological quality
- Support for biodiversity in urban areas
- Improvement of the living environment
- Reduce the impact of the Region on the downstream

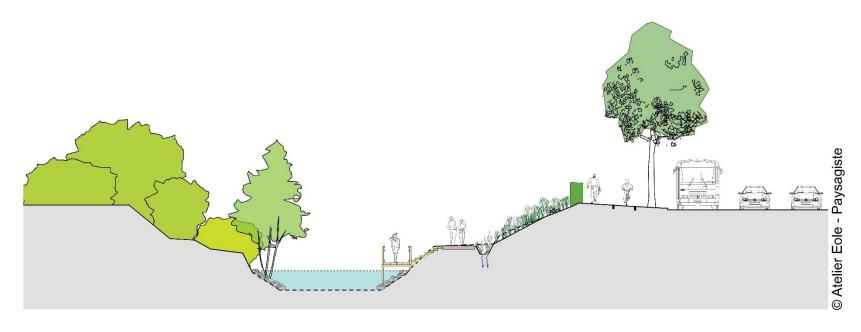


Issues in the restoration of the Senne River

Reconciling the issues around the Senne?

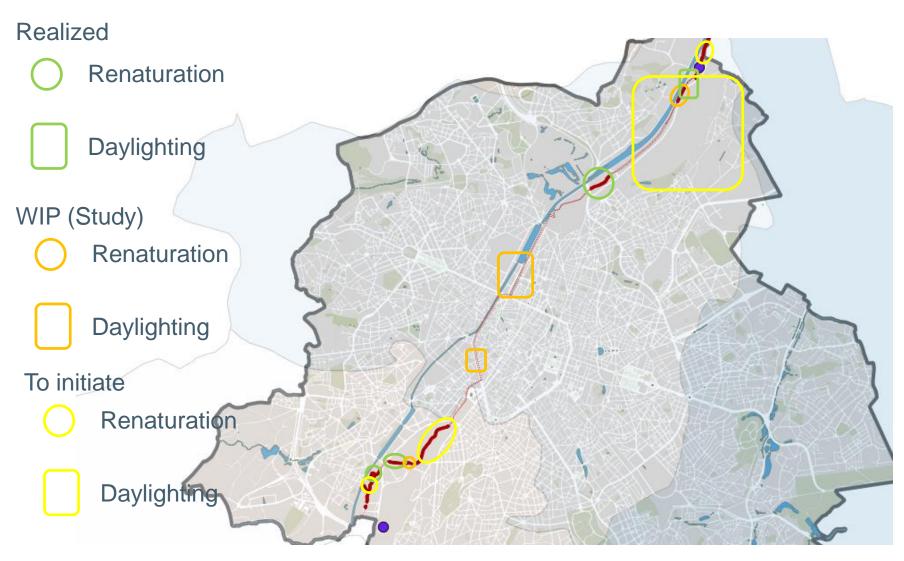
Respons: 2 banks for 2 worlds

- => One "biodiversity-only"
- => Other accessible to man



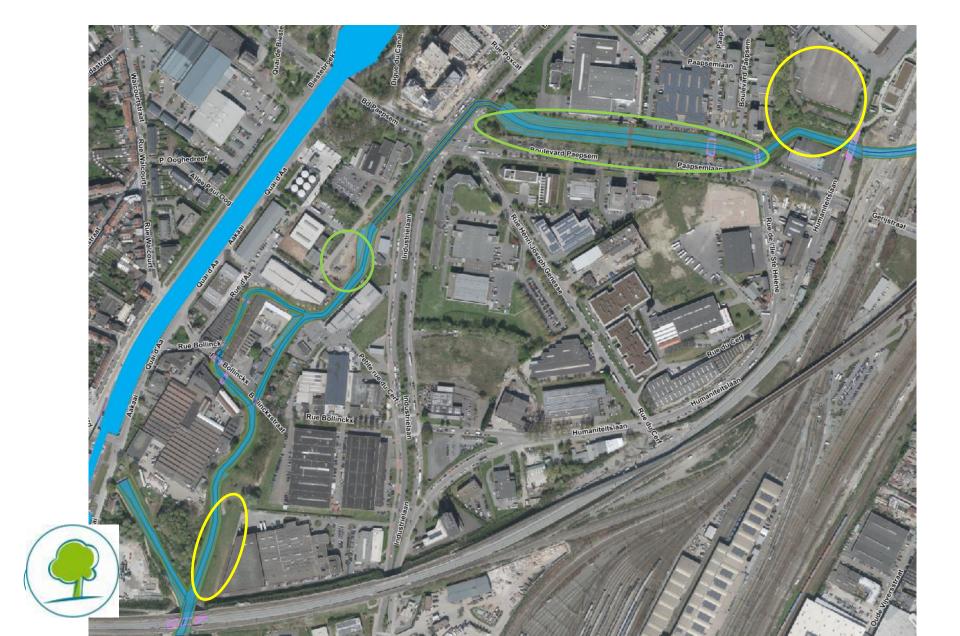


Projects





South area (Anderlecht)



Temporary Immersion Zone - Wetland



Renaturation and walk along the Paepsem Boulevard



A long-standing desire

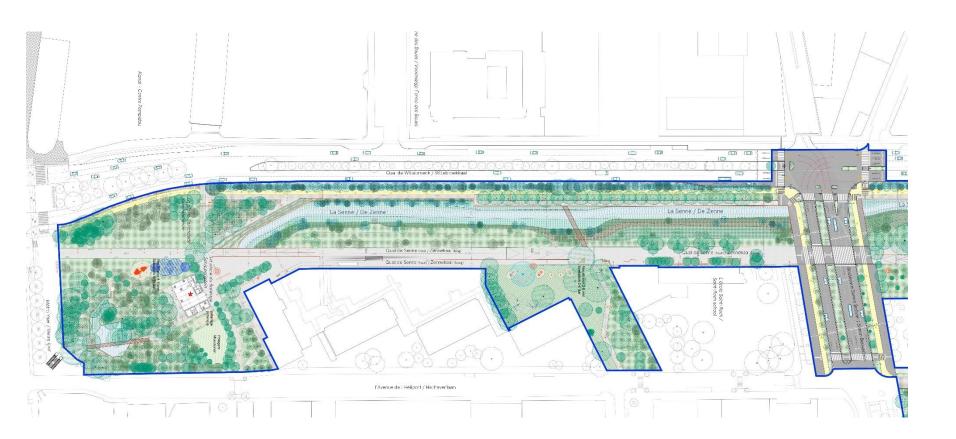
2005 – Study by the Fous de la Senne (Senne's crazys)

Technical pre-feasibility by IMDC

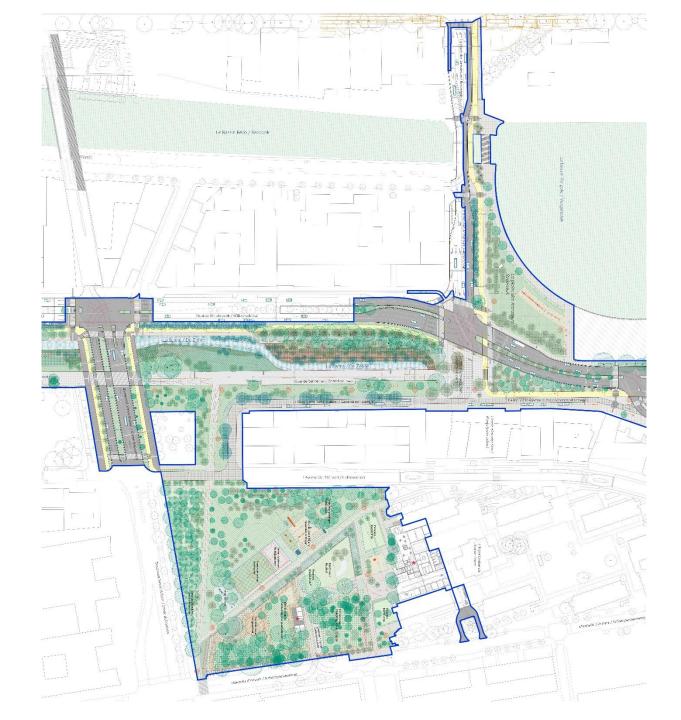
Conclusions:

- Several alternatives are possible depending on the choice of landscape, as well as the desired functions and uses
- > Major constraint: poor quality of the Senne. (nb: the South WWTP has just been started up)
- > Secondary constraints: depth, mosquitoes
- 2015 Project relaunched by the City of Bxl in collaboration with BE
- 2016 Study of the level constraints within BE (sketches, stagings)
- 2017 Integration of a study of orientation / scenario / landscape impacts / ... in a Life IP project
- 2017 Project included in CRU n°1
- 2018 Feasibility study for the landscape integration of the Senne River in Maximilian Park
- 2020 Competition
- 2021 Start of project studies
- 2022 Planning Permits

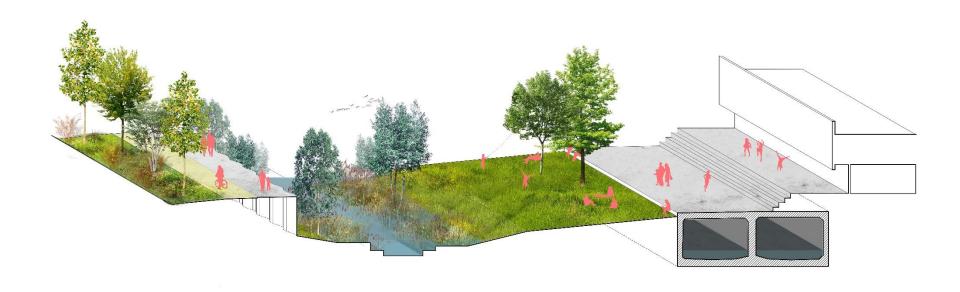














PARTICIPATION

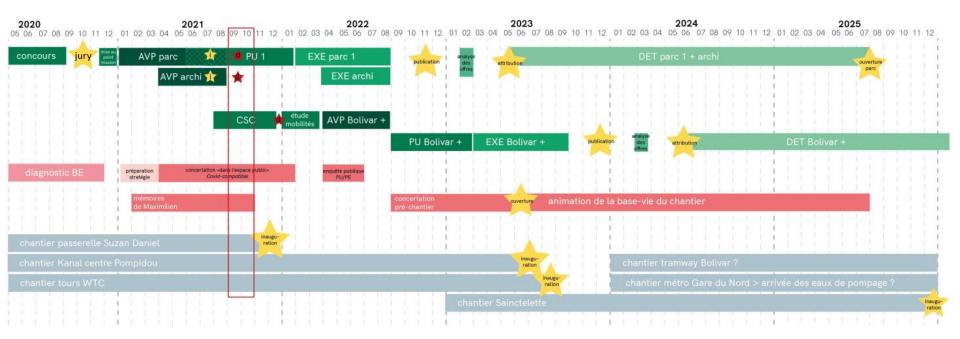
















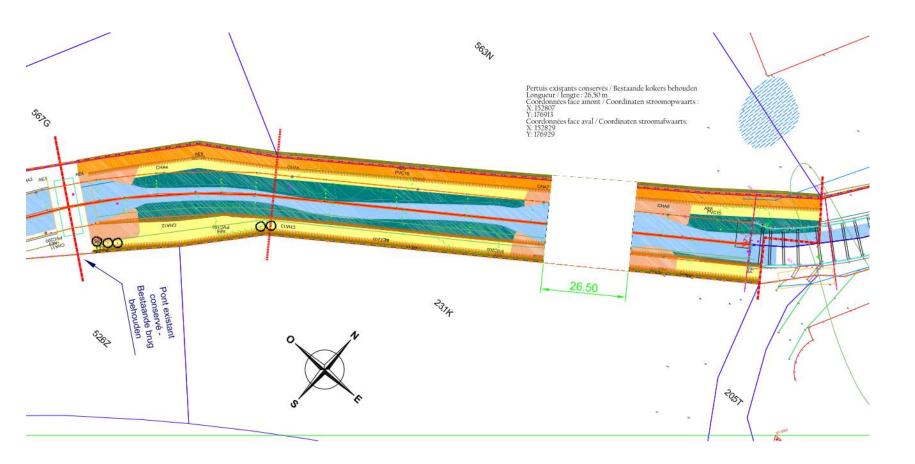


Dayligthing of the Senne river in the north of Brussels



- 1996 = vaulting for environmental reasons (350 m)
- Mid 2000's = Causes completed, situation restored



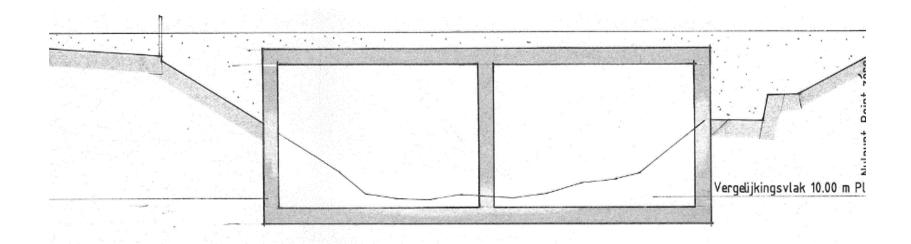


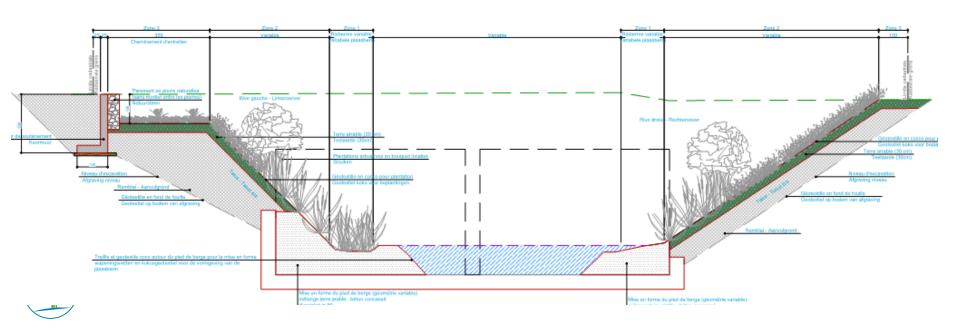
• Study: 2017/2019

• Work: 2020/2021

• Cost: € 2.160.000







Some numbers

Volume of demolished concrete = $2,415 \text{ m}^3$.

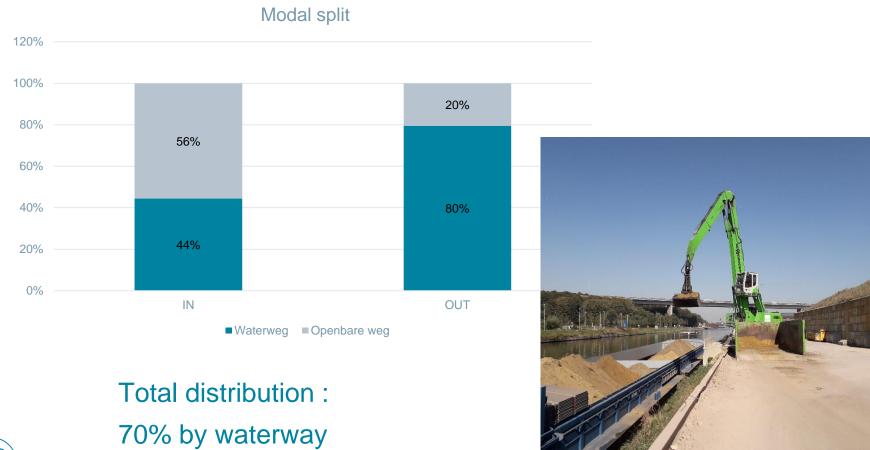
Volume of crushed and reused concrete = approx. 2,000 m³



Some numbers

Total Tonnage IN/OUT = 18.893,10 T

30% by roadway





Other opportunities



