

Restoring a floodplain for climate adaptation

Results of changes implemented to the 'Gompels Broek' site by the province of Antwerp



UNDERSTANDING THE CATCHMENT

The site 'Gompels Broek' is situated in the valley of the Scheppelijke Nete, upstream of the city Mol. The river Scheppelijke Nete regularly flooded in Mol. The water then flowed into the nearby brook Burgemeesterloop, a small watercourse near a residential area. As a result, the small watercourse would regularly overflow and threaten the houses, because it could not cope with that extra water. Continued climate change would exacerbate flooding in the area, as prolonged periods of drought would regularly be followed by periods of extreme precipitation.

By implementing Ecosystem-based Adaptation measures, we want to make the area (and our province) more resistant to the consequences of climate change. Ecosystem-based Adaptation (EbA), a Nature-based approach to climate change adaptation, harnesses ecosystem services to increase resilience and reduce the vulnerability of human communities and natural systems to the effects of climate change. These EbA measures can be integrated into adapted agriculture, forestry and environmental management.

IDENTIFYING & ENGAGING STAKEHOLDERS

As manager of the river Scheppelijke Nete, the province of Antwerp looked for solutions to the flooding. The inhabitants of the province of Antwerp can be perceived as the interested 'buyers' of the ecosystem services. By paying taxes, they (co-)finance the demonstration site (and many water management activities in the province). The targeted ecosystem services that these buyers receive in return are increased water retention resulting in a lower risk for flooding (and a better supply of freshwater) downstream, increased biodiversity, and more healthy nature in which recreation can take place.

PRIORITISING LOCATIONS FOR CLIMATE ADAPTATION MEASURES

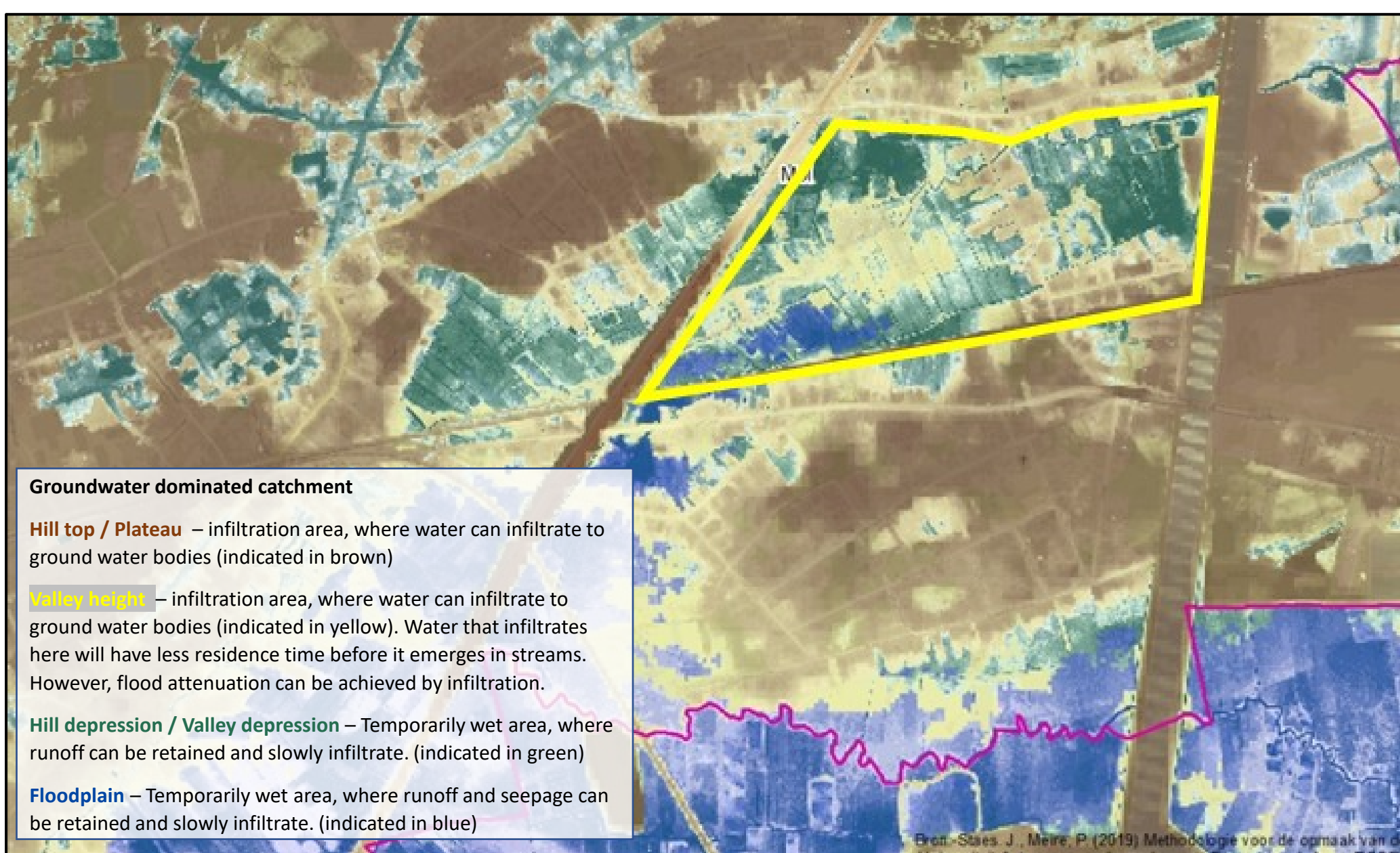
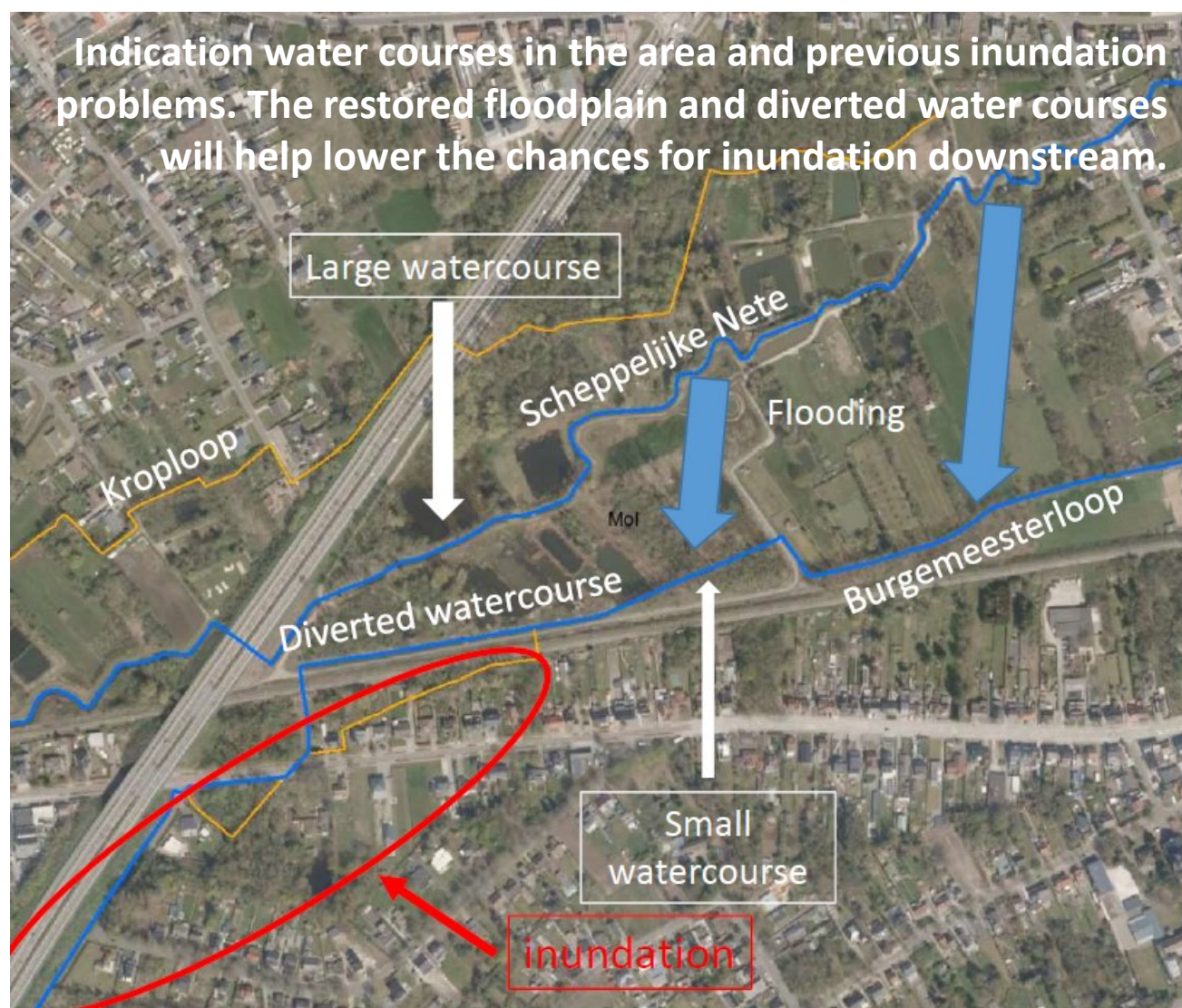
In a first phase, the brook Burgemeesterloop was moved so that it no longer flows through the gardens and the risk of flooding in residential areas was eliminated. Then it was time for part two of the solution. A natural flooding area was created in the valley of the river Scheppelijke Nete upstream Mol city, thus creating extra buffer capacity for raw water. To this end, we removed exotics and pines, removed all constructions, naturalized the artificial fish ponds (removing the artificial embankment), and excavated the elevated areas and banks (due to placing the sediment on one riverbank). Water can now flow to the flood plain on both sides of the river. A specific management allows nature to restore spontaneously. The sediment catch, although artificially built, is a solution to prevent polluted sediment to enter the restored floodplain. It uses the natural deposit of the sediment due to the fall in flow rate.

MONITORING & EVALUATION

Despite the intense rainfall this spring and summer there was no flooding in the downstream residential areas of the commune Mol! However, the natural flooding area as completely filled in spring which also resulted in flooding of recreational and agricultural areas upstream. At this moment the river Scheppelijke Nete indirectly receives water from the Channel of Beverlo. This extra water is sometimes the last straw that breaks the camel's back. In a final phase, the province of Antwerp will therefore analyse the impact of the artificial feeding of water from the canal into the natural rivers Scheppelijke Nete and Molse Nete and how this may reduce upstream flooding.

This demonstration site mainly aims at restoring the ecosystem services of flood risk reduction. However, the increased ecological value and biodiversity is also beneficial to the recreational value of the area. A maintenance path around the area also makes it accessible to walkers and cyclists and serves as a walking path between the commune Gompel and the centre of the commune Mol. The province completed over 40.000 m³ of buffering and 1,8 km of new bicycle and walking paths.

FOR MORE INFORMATION: • www.pro-water.eu/output-library
• <https://www.pro-water.eu/scheppelijke-nete-be>



The yellow outline indicate the location of the floodplain on the water system map. The map confirms the suitability to restore the previously degraded floodplain (with the potential for permanently and temporarily wet zones indicated in blue and green).

A cross-border cooperation

From November 2017 to March 2023, 10 partners from Flanders, the Netherlands and the United Kingdom work together on PROWATER. The project has a budget of more than 5.5 million euros. In each country, water production companies, governments and research institutes as well as land managers are involved in order to achieve a supported vision for Ecosystem-based Adaptation (EbA).

The project PROWATER receives 3.315.974 € through the Interreg 2 Seas fund, co-funded by the European Regional Development Fund (ERDF), to work on climate change adaptation and to increase resilience against droughts and extreme precipitation based on ecosystem services.

