

From Hellebrug to Herenbossen >
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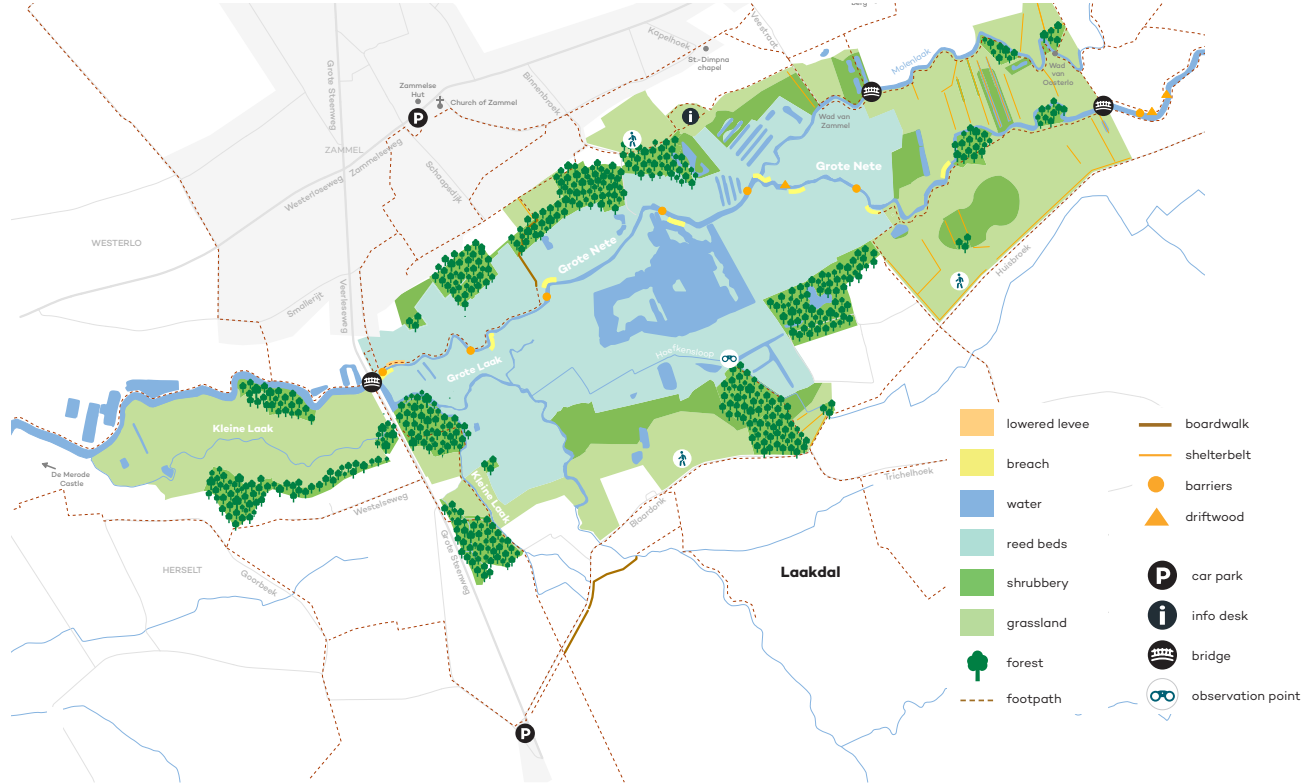
In the most downstream part of the Grote Nete Valley Sigma Plan project, we are restoring the valley meadows. In 2024-2025, we will be reorganising the area between Lodijkbrug (Heist-op-den-Berg) and Herenbossen (Heist-op-den-Berg/Hulshout) and the area of Steenkensbeek below Herenbossen. This work includes the installation of two river barriers and the construction of compartmentalisation levees.



Ter Borcht-de Merode <
Water safety, agriculture and recreation

In Ter Borcht-de Merode in Hulshout and Westerlo, flood protection and conservation in the nature reserves are key. These are three water buffer control zones. First, we will build a cross levee in the valley to keep the water where it is. We will add inlet and outlet breaches to the Grote Nete levee to prevent the area from getting too dry. We will also add levee chamfers and move certain levee sections to create small marsh zones so that the valley can function more 'naturally' and fish have more room to move. The reconnection of two old meanders is also in the pipeline.

Zammelsbroek



< Zammelsbroek
A landscape full of variety

Near Geel, Herselt and Laakdal lies the swampy nature reserve that is Zammelsbroek, some 200 hectares in size. Here, we are injecting some valuable nature as well as protecting the surrounding area from flooding. A useful and beautiful natural environment is emerging in the form of wetlands: open water with reed beds and wet grasslands. This is useful because wetlands are like sponges. In wet periods, they retain excess rainwater and in dry periods, they very gradually release it. This is magnificent, as it attracts numerous plants and animals to this new habitat. The restoration of the winter riverbed and reconnection of the Grote Nete to its tributaries increases the river's natural dynamics. Riverbed barriers and low drainage ensure higher water levels in the river and higher groundwater levels in the valley.



Grote Nete Valley

The Sigma Plan
protects Flanders
from flooding
while enhancing
estuarine nature.

Location

Hulshout, Westerlo, Herselt, Nijlen, Herenthout, Heist-op-den-Berg, Hulshout, Geel and Laakdal

Surface area: 850 hectares (excluding the Ter Borcht-de Merode water buffer zone)

River: Grote Nete

Interventions

- Restoration of winter riverbed
- Barriers raise groundwater levels
- An open connection between the tributaries and the Grote Nete river
- Water buffer control zones

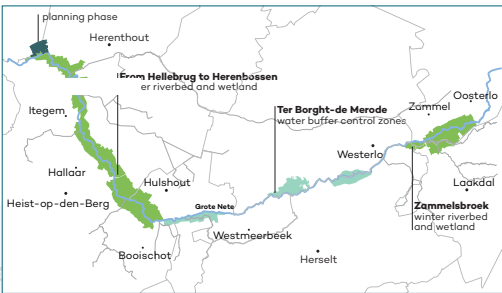
Why?

- More room to accommodate flooding
- Higher groundwater level to stop the valley from getting too dry
- Restoration of open connection with tributaries prevents flooding
- More wetlands

The Grote Nete is part of the Scheldt basin and is consequently affected by the tides. Spring tide pushes the water up to a higher level twice a month. If this coincides with a northwesterly storm at sea, the water swells even more and it becomes a storm tide. The Gale of January 1976 is a well-known example of a storm tide. It caused severe damage in the Belgian provinces of Antwerp and East Flanders, so the government decided that better protection was needed. This resulted in a large-scale water safety project called the Sigma Plan. The Sigma Plan was updated in 2005. The objective remains protection against flooding. But at the same time the Flemish government will restore and further develop the tidal nature along the river (to meet the European conservation objectives).

Grote Nete Valley

The Sigma Plan project consists of three sub-areas: From Hellebrug to Herenbossen, Ter Borcht-de Merode and Zammelsbroek. In the area from Hellebrug to Herenbossen and in Zammelsbroek, the emphasis is on nature restoration, while in Ter Borcht-de Merode the focus is on nature conservation and water management. Various measures are put in place to give the river more room to accommodate flooding. This also stops the valley from getting too dry. The aim? Less flooding, more valuable wetlands and plenty of walking and cycling opportunities.



Grote Laak: remediating by working together with nature



For LIFE project NARMENA, seven partners led by the Flemish Public Waste Agency (OVAM) and the Flemish Environment Agency (VMM) sought solutions to historical metal pollution in the soil of the Grote Laak river. We are contributing to nature-based remediation methods that fixate or immobilise the pollution by keeping the area wet. The Grote Laak originates in Leopoldsburg. This tributary is 29.7 km long and flows into the Grote Nete via Zammelsbroek in Laakdal.

The NARMENA LIFE project runs in parallel with the Sigma Plan project. Both are aligned to achieve a maximum win-win result. More details? Visit ovam.vlaanderen.be/grote-laak.

Project name	Surface area/ volume	Municipality	Duration	Intervention
From Hellebrug to Herenbossen	650 hectares	Nijlen, Herenthout, Heist-op-den-Berg and Hulshout	2016-2026	• Restoration of winter riverbed • Wetland
Ter Borcht-de Merode	540 million litres	Hulshout, Westerlo and Herselt	2006-2026	• Water buffer control zones
Zammelsbroek	200 hectares	Geel, Laakdal and Herselt	2006-2026	• Restoration of winter riverbed • Wetland

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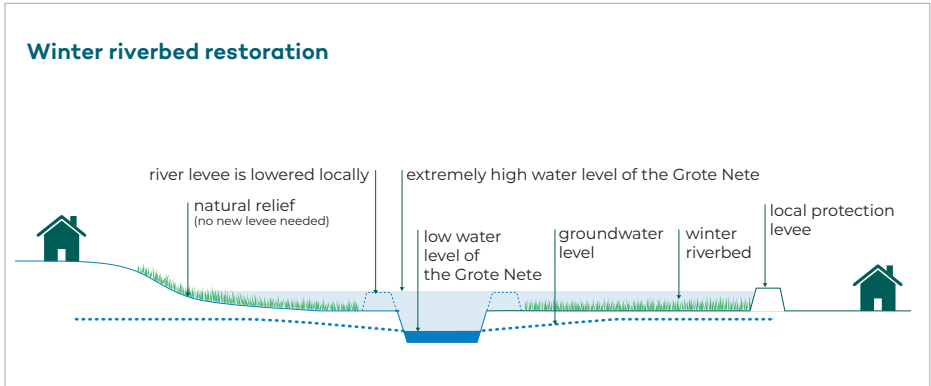
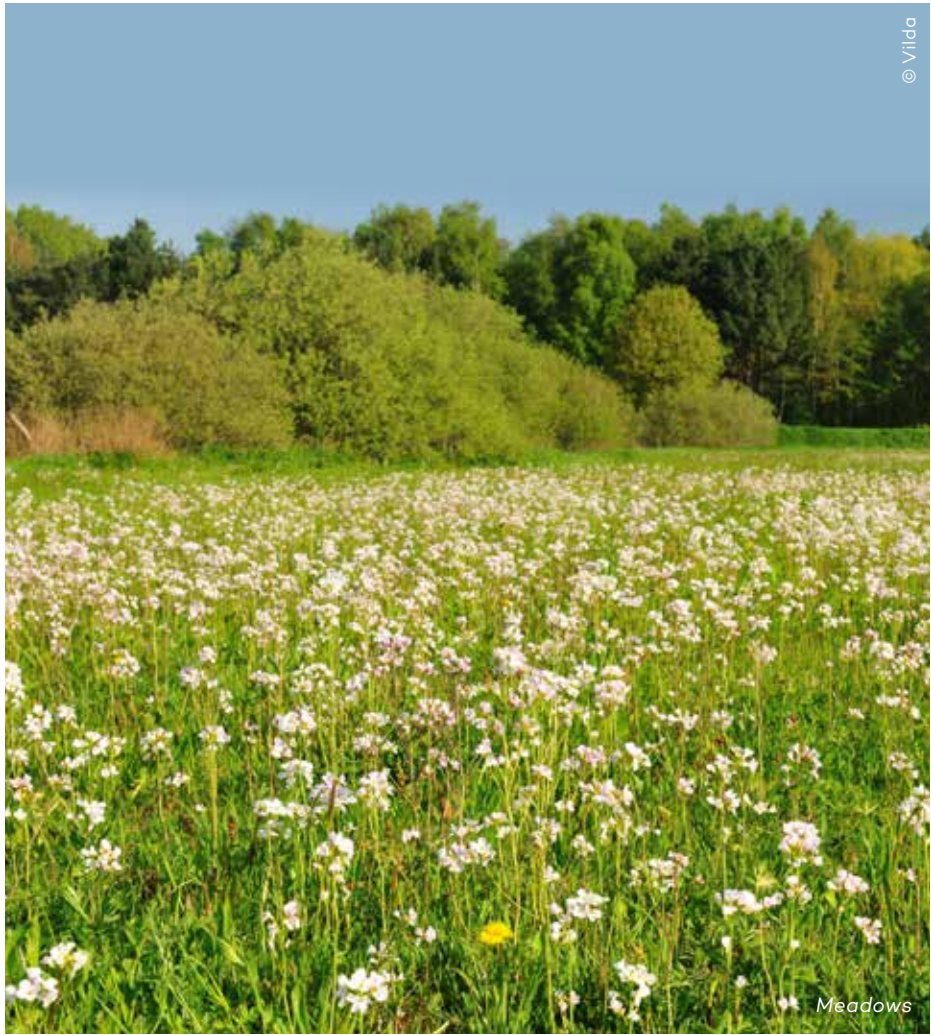
What measures are being taken?

The Grote Nete Valley Sigma Plan project is creating 30 kilometres of natural and water buffer zones along the Grote Nete. Our various measures will give the river more room to accommodate flooding, restore river nature and stop the valley from getting too dry. This means extra safety goes hand in hand with a unique natural environment and new leisure opportunities.

Winter riverbed restoration

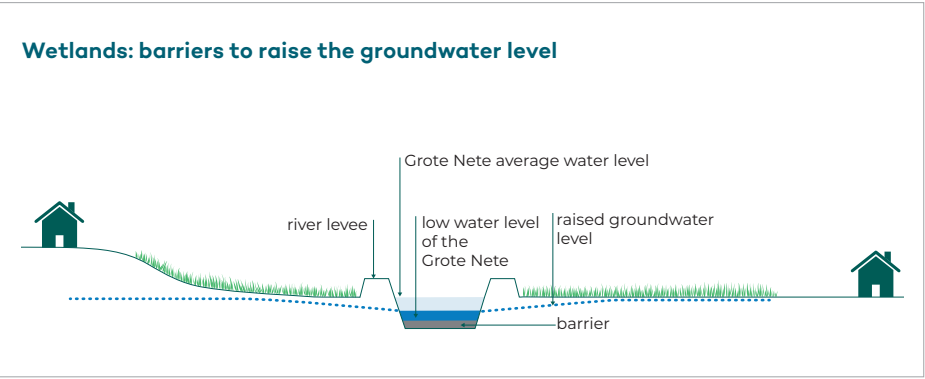
We are restoring the natural winter riverbed. This is the part of the river that usually floods in winter and therefore gives the river more space to flood. Lowering certain levees allows the river to flood there safely. The natural relief or local levees protect the residents of the hinterland. Slightly raising an existing road or path is often sufficient. The water will remain in the winter riverbed until it flows back to the river naturally, soaks into the ground or evaporates. A diverse patchwork of marsh, wide reed beds, wet marshes and flood grasslands gradually develop in the open landscape.

Where? From Hellebrug to Herenbossen, Zammelsbroek



Raising groundwater levels

We are installing barriers in certain places on the bottom of the Grote Nete to raise the groundwater level. This allows wet river nature to flourish even in dry periods. Don't these barriers increase the risk of flooding, though? No, they don't. They only affect the river when the water is low. When the water is high, the river is above the barriers anyway.



Water buffer control zones

At high water levels, water flows over a locally lowered overflow levee and onto the buffer zone. Cross levees keep it there. Local levees and the valley's natural relief protect the local residents from flooding. An outlet structure allows the water to drain from the buffer zones again.

Where? Ter Borgh-de Merode

Restoration of open connection with tributaries

In the past, the entire Grote Nete Valley was completely surrounded by a levee. This prevented any open connections between the river itself and its tributaries. This results in local flooding and stops the valley from functioning naturally. By removing certain levees, we restore the connections between the Grote Nete and its tributaries. This brings the streams back into direct contact with the Grote Nete and therefore reduces flooding.

When the water levels of those tributaries are high, their excess water can flow into the Grote Nete, which then carries it away. This also allows the streams' ecosystems to recover. Fish and other organisms can move freely between the various water-courses again.

Where? From Hellebrug to Herenbossen, Zammelsbroek



An eye for (European protected) nature

The Sigma Plan project will create 850 hectares of new natural wetlands with marshes, open water, wide reed beds, alluvial forests, marsh marigold grasslands and flowery meadows. Rare bird species such as the great bittern, corncrake, kingfisher and spotted crane will feel at home here. Fish such as the rare chabot bullhead and brook lamprey will enjoy the open connections between the Grote Nete and its tributaries. Moreover, wetlands have an important water safety function:

they retain the water like a sponge after heavy rainfall in the area. In dry periods, they then release the water more slowly so that the surrounding vegetation doesn't dry out as quickly. This makes this type of river nature a very useful ally in the fight against climate change. What's more, these wetlands also store CO₂. These restoration measures are in line with the Flemish Government's Blue Deal programme against drought and flooding.