

Bornem Cluster Project



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

The Scheldt is a tidal river. Twice a month, the ebb and flow dynamic causes a spring tide, which comes with higher water levels. 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. Causing severe damage in the Belgian provinces of Antwerp and East Flanders, the storm convinced the government 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. The Bornem Cluster is part of the updated Sigma Plan.

New protection and thriving nature in Bornem

To better protect Bornem and the surrounding area from flooding, the Sigma Plan proposes a series of interventions including the creation of a flood control area (Oudbroek-Schelland Polder) and 2 depoldering areas (Groot Schoor and Stort van het Buitenland). We are also reinforcing the levees between these areas (a.o. by elevating them). This gives rise to the development of extraordinary estuarine nature, with more biodiversity and plenty of greenery. Thanks to these interventions, these areas are also an important ally in the struggle against climate change.

Location
Province of Antwerp, Bornem

Surface area
223 hectares

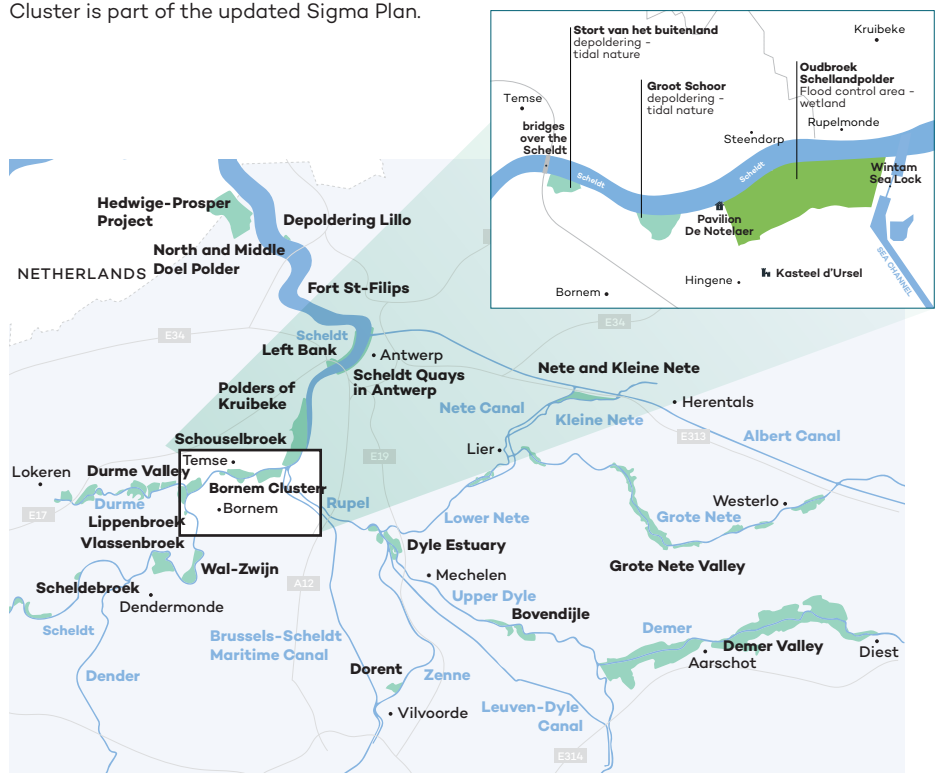
River
Scheldt

Measures

- Flood control area
- Depoldering
- Wetland

Why?

- Flood protection
- Development of tidal nature and wetland (European conservation objectives)



What measures are being taken?

Enhancing water safety in the region.

GROOT SCHOOR: DEPOLDERING THAT CREATES MORE ROOM FOR THE SCHELDT.

Depoldering Groot Schoor gives more room to the Scheldt, decreasing its flow rate and resulting in lower high-water levels upstream. This, in combination with the moved Scheldt levee, will better protect Bornem and the surrounding area from flooding. Tidal nature can develop in the depoldered area. Such areas have a beneficial impact on water quality.



Groot Schoor

OUDBROEK-SCHELLAND POLDER: FLOOD CONTROL AREA ALSO USED AS A WETLAND.

On the right bank of the Scheldt, east of Pavilion De Notelaer, we are establishing a flood control area in the Oudbroek-Schelland Polder during storm tide when water levels are extremely high. For this we are building a new, safe ring levee to protect the residential area from flooding. We are also providing outlet sluices to let the Scheldt water, which can flow into the area at storm tide through the lowered Scheldt Levee, flow back to the Scheldt. We aim to preserve and further develop the existing carrs within the polder.



Oudbroek-Schelland Polder

STORT VAN HET BUITENLAND: DEPOLDERING TO GIVE EXTRA ROOM TO WATER AND TO CREATE MORE TIDAL NATURE.

Stort van het Buitenland is being depoldered. First a new Scheldt levee will be constructed inland, providing a pleasant recreational area for cycling and walking. Following remediation of the landfill, the area will be exposed to the tides by making an opening in the existing Scheldt levee, creating freshwater mudflats and marshes, which are rare in Europe.



Stort van het Buitenland

Flood control area

A flood control area is an area of flat land alongside a river that buffers water under extreme weather conditions. At dangerously high water levels, the water flows over the overflow levee and onto the plain. When the storm is over, the water flows back into the Scheldt via the sluices. A ring levee always protects the hinterland to prevent any residential areas from being flooded as well.

Depoldering

Depoldering means giving back land to the river. First we construct a new levee inland. Subsequently we remove the old levee either partially or entirely and also make deeper breaches, creating additional room between the old and the new levee where the river can (over)flow. This lowers the water level in the river and reduces the force of the water, thereby decreasing the risk of flooding. As the tides are given free rein again, this also gives rise to valuable tidal nature.

Wetlands

Wetlands within the Sigma Plan are marshy areas that are unaffected by the tide. During winter, ground water levels are high there and they drop in summer. The landscape varies from open water and reed beds across alluvial forests to wet grasslands.



Bluethroat

© H. Willock



Purple heron

© R. Absillis



Alluvial forest

© Agency for Nature and Forest



Yellow flag iris

© Vilda



Green-eyed hawk

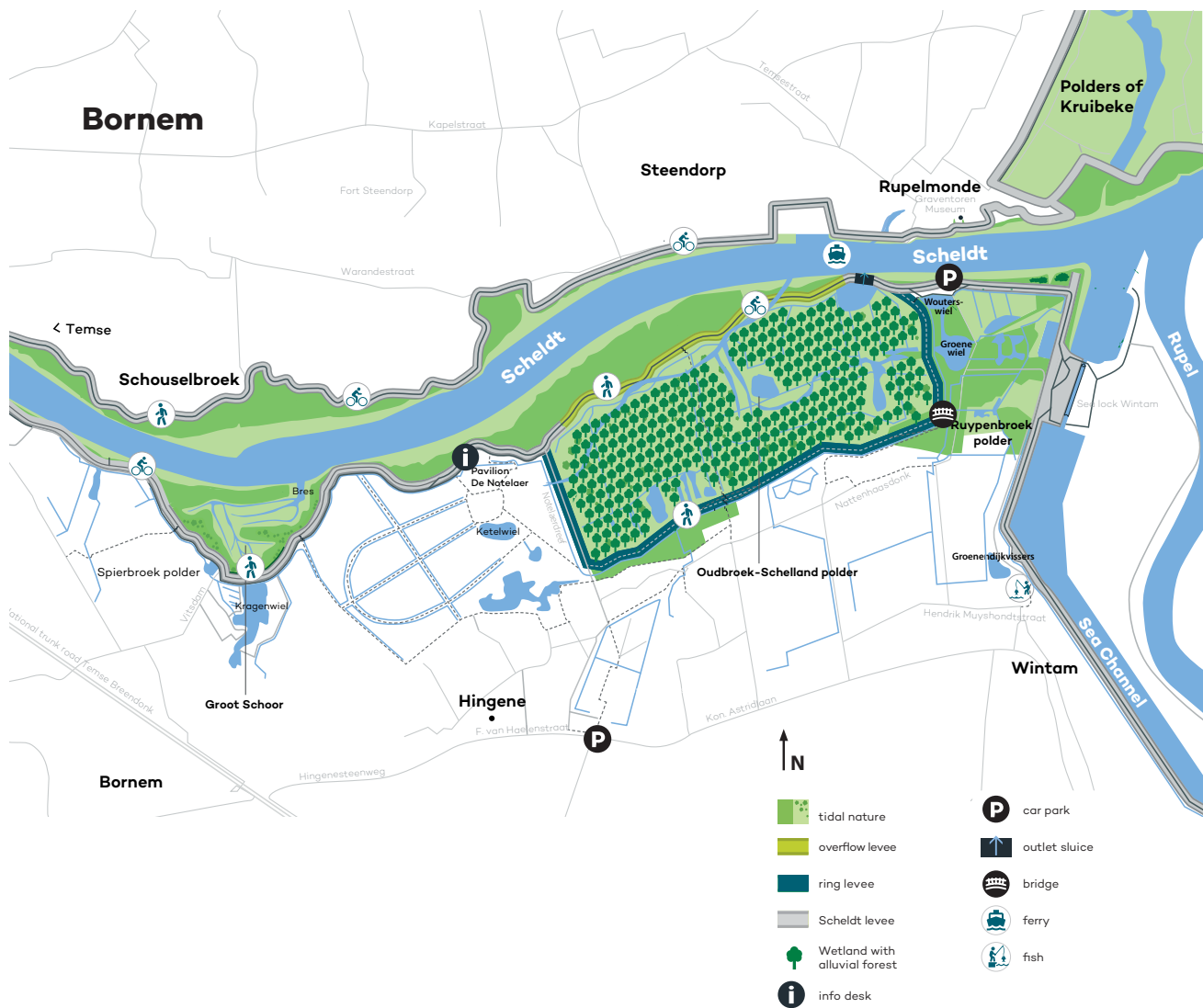
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At the same time, we are restoring precious tidal nature.

In Bornem we are not only striving to enhance water safety but also to establish a rich and varied landscape. In the Oudbroek-Schelland Polder the existing wetland is further developed, whereas in Groot Schoor and Stort van het Buitenland a landscape of tidal mudflats and marshes, gullies and creeks emerges. The Oudbroek-Schelland Polder is a safe haven for such birds as woodpeckers and woodcocks. When conditions get wetter, we also hope to welcome the purple heron. You can also see countless dragonflies here, including the rare green-eyed hawk and the

scarce chaser, and you can also spot roe deer. Once the area in Groot Schoor has been depoldered, special birds, fish and invertebrates will find ideal living conditions here. Depoldering has a beneficial effect on water quality and the river's food chain as a whole.

For instance, the many worms and snails that live here are the perfect meal for a variety of fish and wading birds, such as the spotted redshank and the common greenshank. The same applies to Stort van het Buitenland.



LIFE Sparc

Thanks to the Sigma Plan, the Scheldt valley is better equipped to deal with the consequences of climate change, such as rising sea levels and periods of heavy rainfall. In Europe

the Sigma Plan serves as a perfect example. That is why a number of Sigma Plan areas including Groot Schoor receive additional EU funding through the LIFE Sparc project (life-sparc.eu).

Project name	Surface area	Municipality	Duration	Measure
Oudbroek-Schelland Polder	144 hectares (flood control area) + 46 hectares of wetland	Hingene	2015-2030	Flood control area, wetland
Groot Schoor	25 hectares	Bornem/Hingene	2020-2026	Depoldering
Stort van het Buitenland	8 hectares	Bornem	2030-2035	Depoldering