

# INTRODUCTION

Bergenmeersen is one of the subsectors of the Kalkense Meersen Cluster, which in turn forms part of the updated Sigma Plan. This plan is an update of the original 1977 Sigma Plan, and is an ambitious project to improve water safety and nature around the tidal rivers of Flanders.

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## Where is Bergenmeersen?

The Kalkense Meersen Cluster consists of the subsectors Kalkense Meersen, Wijmeers (part 1 and 2), Bergenmeersen, Paardeweide and Paardebroek. These areas extend along both banks of the Scheldt on the territory of the municipalities of Wetteren, Laarne, Berlare and Wichelen.

Bergenmeersen lies on the right bank of the Scheldt, on the territory of the municipality of Wichelen. The area sits in a meander of the Scheldt adjacent to the centre of Wichelen.

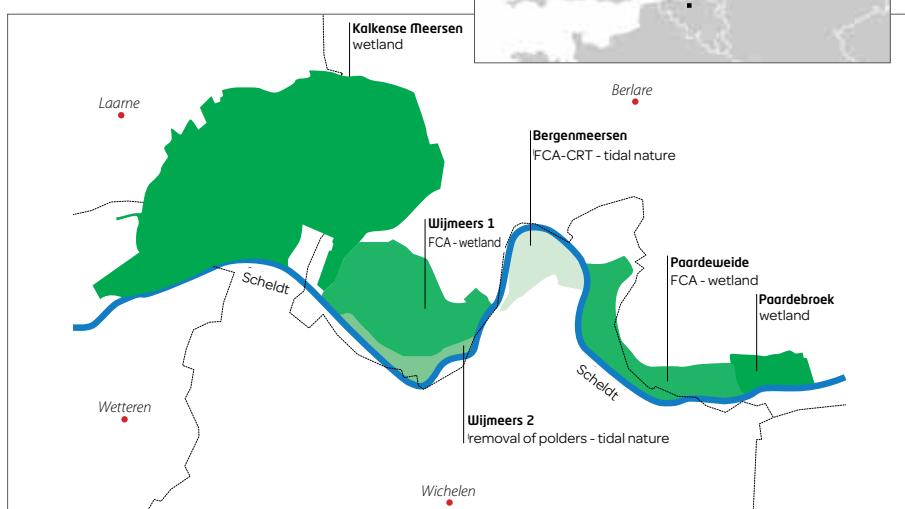


Figure 0.1. Location of Kalkense Meersen Cluster and the various subsectors

## Use tailored to water safety and nature

Bergenmeersen was already a functionally flood control area (FCA) that could accommodate water in the event of a storm surge. As part of the updated Sigma Plan, Bergenmeersen was reorganised as a flood control area with controlled reduced tide (FCA-CRT).



Figure 0.2. Bergenmeersen at low tide



Figure 0.3. Bergenmeersen at high tide



Figure 0.4. Bergenmeersen at spring tide



Figure 0.5. Bergenmeersen at storm tide

## How does an FCA-CRT work?

An FCA-CRT is a variant of an FCA. It combines the safety role of a flood area with the restoration of rare tidal nature. Water flows into and out of an FCA-CRT twice a day to the rhythm of the tides.

The area is flooded at each high tide. A limited amount of water flows in through the inlet sluice. In this way, the tide is “reduced”. When the tide ebbs, the water flows back into the river through the outlet sluice. The natural action of a tidal river is thus mimicked. The area effectively becomes part of the Scheldt ecosystem and a system of tidal marshes can develop.

The CRT principle was developed by Professor Patrick Meire (University of Antwerp). Before applying it on a large scale, an experimental CRT was constructed: the Lippenbroek trial project. The development and effect of tidal nature were tested here over recent years.

## References

- *Flood control areas as an opportunity to restore estuarine habitat.* T. Cox et al. (2006), Ecological engineering: the Journal of Ecotechnology - 28:1, p. 55-63
- *Natuurontwikkeling in het Lippenbroek.* Herstel van estuarine natuur via een gecontroleerd gereduceerd getij. (Nature development in the Lippenbroek. Restoration of estuarine nature through a controlled reduced tide). T. Maris et al. (2008), Natuur.Focus 7(1): 21-27 / [www.rlrl.be/rivierkenner/images/lippenbroek\\_2008.pdf](http://www.rlrl.be/rivierkenner/images/lippenbroek_2008.pdf)