

# The Schelde from past to future: an integrated approach for restoration

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As many estuaries, the Schelde estuary was heavily degraded due to habitat loss, pollution and disturbance. Already in the sixties initiatives were taken to protect some of the remaining estuarine habitats and ecologically valuable habitats in the former floodplain. These initiatives could however not stop further degradation. More stringent environmental legislation resulted in a better water quality, especially in the fresh and brackish part of the estuary, as from the nineties. This, and the emerging concept of nature development triggered the elaboration of a nature restoration plan, mainly oriented towards habitat restoration as a key for restoring the biodiversity of the system.

The economic importance of the estuary as the entrance to the port of Antwerp, associated dredging activities and the necessary flood protection stimulated a lot of research. This resulted in a growing insight into the complex interactions between hydrodynamics, geomorphology and ecological functioning on the one hand and some fundamental problems of the estuary on the other hand. Tidal dynamics are increasing, leading to a bigger tidal range and higher high water levels leading to flood risks. Inherently this impacts the geomorphology, which in turn impacts ecological functioning. Water quality was improving, but nutrient loads remain high as the Scheldt drains a very densely populated catchment. It became clear that an integrated restoration plan was necessary and that objectives of the restoration should not only be formulated in terms of restoration of biodiversity but also in terms of how the restoration reduces the overall negative trends in the hydro- and morphodynamics and can enhance the ecological functioning of the estuary.

The concept of ecosystem services is a very useful concept in linking all the different aspects of the system. In this presentation an overview of the restoration of the Schelde estuary and the present management will be given.