

## Short term vegetation development on restored brackish tidal marshes

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The Schelde estuary is subject to many anthropogenic impacts (harbour expansion, dredging activities, embankments, etc.) inducing hydrodynamic pressures and destroying or deteriorating intertidal areas. Some small sites were restored as part of an ecological rehabilitation plan. A monitoring schedule, including physical processes, colonisation by benthic invertebrates, vegetation development and utilisation by water birds and fish was set up for all restored sites. The results will improve our apprehension for tidal wetland restoration in future plans.

Colonisation and development of vegetation on two restoration sites, Ketenisseschor and Paardeschor, situated in the mesohaline part of the Schelde estuary are monitored since 2003 and 2005 respectively. On both sites vegetation development is monitored by vegetation mapping in combination with relevés in permanent quadrates. Each year the elevation of the permanent plots is measured. On a selection of the permanent plots water levels are measured with data loggers at a frequency of 5 minutes during several spring and neap tide cycles .

Based on the monitoring results a vegetation succession is observed. *Vaucheria sp.*, a filiform macro-algae is able to colonize the bare mudflats and due to its sediment accreting properties sedimentation is enhanced. The *Vaucheria* stands are colonised by *Aster tripolium* and subsequently by *Scirpus maritimus*, both species successively dominating. If *Phragmites australis* invades, the climax vegetation on brackish tidal marshes is reached.

On each site, all the succession stages from pioneer to climax are observed irrespective of the initial tidal elevation. At locations with a relatively high initial tidal elevation however vegetation turnover is higher, evolving to a more stable stage conform to the abiotic conditions.

Colonisation seems to be influenced by drainage level or moisture content. On well drained sites e.g. in the vicinity of creeks colonisation starts lower in the tidal frame than in undrained or less drained sites.