

Creating new, non-tidal brackish marshland: results of a large-scale field experiment

Frank Van de Meutter, Ralf Gyselings and Erika Van den Bergh

Research Institute for Nature and Forest (INBO), Kliniekstraat 25, 1070 Brussels, Belgium
E-mail: frank.vandemeutter@inbo.be

Land reclamation at the cost of brackish marshland is still ongoing in Belgium as harbors continue to expand. Nowadays, compensations are legally required and new habitat needs to be created. This raises some questions: 1/ can we create a new, non-tidal brackish marshland on the short-term?, 2/what type of translocation of vegetative material gives the best results for brackish marshland vegetation development? and 3/what type of management is best to assist this development?

A large-scale field experiment at four sites was established, with a full-cross design of management (cutting, grazing, no management) and transplant method (turves, seeds, hay, no transplant). Vegetation development was monitored for three consecutive years.

Translocation greatly accelerates the establishment of the focal vegetation types. Translocation of turves immediately created the focal vegetation, which remained largely unchanged during the experiment. When seeds or dried hay were translocated, the establishment of focal plant species improved, yet after three years, vegetation had not yet closed, differed largely with the original vegetation. Early successional and ruderal species dominated. Plots without any transfer of material, were colonized by ruderals and some wind-dispersed focal species; many of the focal species did not colonize. Grazing helped to suppress competitive species but did not enhance establishment of focal species.