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Vegetation development on a brackish sludge mound: a case study at the port of Antwerp

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The Antwerp Port Authority considers the application of dredged material from the maintenance of locks and docks for the construction of landscape dikes. These dikes could become an important part of the ecological infrastructure in the port area. In 2000, an experimental dike was constructed with consolidated dredged material near Magershoek, a small community north of the locks of Zandvliet and Berendrecht. Ecotoxicological and environmental risks as well as possibilities for nature development and forestry are investigated. The present poster only deals with spontaneous vegetation development and the effects of different management schemes. Four management schemes are investigated: (1) spontaneous development, (2) spontaneous development with mowing, (3) sowing of grass with mowing, (4) sowing of a mixture of grass and herbs with mowing.

First year vegetation strongly reflects the brackish nature of the substrate. It is dominated by few salt-tolerant species such as *Matricaria maritima*, *Aster tripolium* and *Atriplex prostrata*. Other constant species include several Chenopodiaceae, *Sonchus oleraceus*, *S. asper*, and *Lactuca serriola*. *Matricaria maritima* remains strongly dominant in second year vegetation, whereas *Aster tripolium* and *Atriplex prostrata* decline. *Urtica dioica* and *Cirsium arvense* become better established.

The site was only mown twice until now, but changes are already obvious. Both in sown and spontaneous parts, mowing leads to rapid expansion of several grass species. But few of the sown herbs are established (e.g. *Centaurea jacea*, *Daucus carota*, *Cichorium intybus*).

In order to predict long term vegetation changes, the site at Magershoek is compared to older disposal sites with similar soil structure and contamination degree along the rivers Schelde and Leie.