

PILOT SITE DESIGN

DEURNSCHE PEEL

PROVINCE OF NORTH BRABANT, THE NETHERLANDS



The pilot in the Deurnsche Peel is divided in two subsites which are both inside the Natura 2000 protected nature reserves.

The 1st sub-site is situated in rewetted bog remnant made of grassland with some *Juncus effusus* and with a plot of 0.7 ha planted with cattail (*Typha latifolia*), which was already naturally present and whose crop is promising with higher quality applications.

The 2nd sub-site is situated between the edge of the bog reserve and agricultural fields, next to a larger water course. It is made of grassland with high cover of *Juncus effusus* with planted willow (*Salix*).

Both sub-sites are managed by State Forestry who is interested to gain experience and to show farmers in the surroundings how wet use of agricultural areas can be an alternative to drained land use. Water level management is done by Water board Aa & Maas and State Forestry, not by farmers. At location 2 (*Salix*) the water level in the small canal is managed to ensure sufficient drainage of agricultural grasslands upstream.

Size of pilot site: 30 000 M²

Peatland type:

- Sub-site 1: Rewetted bog remnant - Peat on sand - Bog peat
- Sub-site 2: Peat on deep sandy soil - Bog peat

Land use: Nature reserve, harvesting

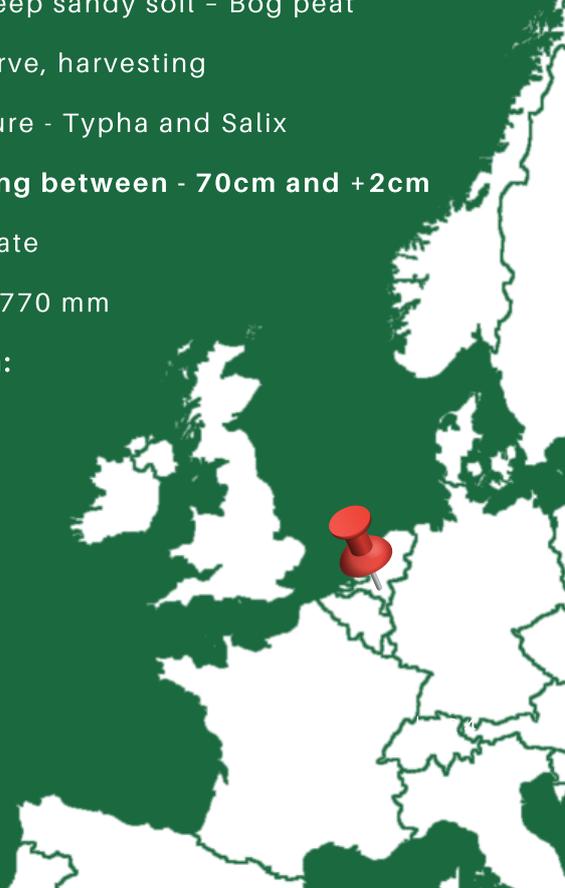
Crop type: Paludiculture - *Typha* and *Salix*

Water level: fluctuating between - 70cm and +2cm

Climate type: Temperate

Total annual rainfall: 770 mm

Target CO₂ reduction:



CHALLENGES

Climate challenge

Drought is severe problem during establishment of crops. The water table in the cattail plot could not be raised to the surface or above (which would be optimal for cattail) and both plots suffered from the exceptionally dry summer of 2018. This had a high impact on the survival and growth of the plants, especially the cattail, that were still in the phase of establishment.

Historical activities

Water management towards water tables that are sufficiently high is challenge in drained landscape. Indeed, both pilot sub-sites have been in agricultural use as drained grassland on peat. A layer of sand was added on top of the peat and fertilizer has been added to some extent. After the land was handed over to State Forestry the water table was raised by blocking drainage ditches. Nevertheless, mowing with removal of grass with no fertilization has been carried out for 10 years or longer.

Animals

Geese pulled quite a number of the planted Salix. These were re-planted.

GOALS

The specific objectives are rewetting of bog remant, support biodiversity preservation in the Natura 2000 site, learning from paludiculture experiment. If possible, the water level will be raised. This may hopefully result in higher minimum summer water level, but probably not to (much) higher maximum water level.

In terms of management the State Forestry and Waterboard Aa & Maas intends to mow so as to prevent crops from being overgrown by grasses and weeds; additional planting of Typha. Harvesting if sufficient biomass will grow once a year.

In future years, the main goal is to see if local farmer are interested in using Salix harvesting to use it to feed their animals, or use as energy crop. As for Typha in the first sub-site, it will be mown in autumn, or harvested in the end of winter when the biomass is dry and can be used for example construction material.

POTENTIAL BUSINESS MODELS

- Cattail: use it as biomass for building or insulation material, food for cattle and as substrate media.
- Willow: use it as fodder at lower price than cattail.

PILOT SITE TIMELINE

To be completed