

**SUMMARY DESCRIPTION OF THE PROJECT (Max. 3 pages; to be completed in English)****Project title:**

Booming business: wetland restoration in the marshes of Natura 2000 Alde Feanen

**Project objectives:**

**This proposal concerns the over 2.140 ha large wetland of the Alde Feanen, in the northern part of the Netherlands. The Alde Feanen is a ,N2000 area and a national park. The area is one of the most extensive fenland areas in the Netherlands (and Western Europe). 'Booming business' refers to the booming sound of the Bittern (*Botaurus stellaris*), the species of bird which represents a number of vulnerable and threatened Natura 2000 habitat types and wetland species in the area. It also refers to the excellent opportunities for sustainable conservation actions to restore the wetland's key processes, thus protecting and regenerating the large biodiversity of the Alde Feanen. This biodiversity is currently threatened by:**

- **Strong decline in water reed beds, caused by the disappearance of water level dynamics**
- **Strong decline in submerged water plants, caused by the phosphate legacy from the past**
- **Decline of floating fens, caused by ongoing ageing and scrub encroachment**
- **Decline of fen meadows, caused by ongoing acidification.**

**'Booming business' aims at sustainable conservation actions to:**

- 1. restore a large area of water reed beds,**
- 2. restore a large area of submerged water plants,**
- 3. restore and regenerate floating fens**
- 4. preserve an important area of fen meadows**

**Many Natura 2000 species depend on these habitat types. With a mix of actions a significant part of the remaining phosphate will be removed from the water system, and in parts of the area water level dynamics will be restored. By making a significant intervention now we can enable the system to leave the past and its negative legacy behind. At the same time the actions proposed will increase the visitors' experience of the area, and therefore its recreational value. Local and regional authorities, the regional water board, the national park authority, the provincial nature conservancy organization and the local community will therefore all cooperate in the project.**

**Actions and means involved:**

**1. Water reed beds:** A return to the earlier water dynamics is impossible due to the many conflicting interests. However, there is a unique opportunity to restore water reed beds on a considerable scale. That opportunity lies in 5 former grassland polders, which were abandoned in the last century and subsequently became flooded. These polders will temporarily be reclaimed (using wind or solar energy) and after the establishment of the reed beds flooded over again. This action can simply be repeated as soon as the reed beds are starting to disappear. The second action concerns the establishment of water reed beds along the shores of the large southern lake, combined with shore protection.

**2. Water plants:** The Alde Feanen have a lot of relatively small isolated peat ponds. Growing conditions for submerged water plants in these ponds can be greatly improved by a combination of dredging the phosphate rich sediment, removing the benthivorous and zooplanktivorous fish stocks, flushing the ponds with less phosphate rich water in summer, and local reintroduction of disappeared water plant species. These measures are supported by removing phosphate-rich sediment from shallow areas

outside the peat ponds.

3. **Floating fens:** Acidified floating poor-fens (**i.e.** transition mires) and reed lands with encroachment of scrubs and/or tall herbaceous species will be rejuvenated by topsoil removal, and by improvement of the local hydrology. This way the old acidified soil layer and scrubs are removed, and the fens will once more be fed by minerotrophic ground and surface water. Applying different depths of soil removal ensures maximum spatial variability.

4. **Fen meadows:** In the western part of the Alde Feanen, a large area of *Molinia* fen meadows is flooded annually. To facilitate this, an existing but currently poorly functioning small helophyte filter will be restored and extended, and will be used to reduce nutrient loading of the water used for flooding.

#### Expected results (outputs and quantified achievements):

The project will give a strong 'boost' to the Alde Feanen's water system, and all Natura 2000 habitat types will profit, including the priority habitat type Bog woodland (H91D0) and the priority species Root Vole (H1340). In an important part of the area the bottlenecks as a consequence of the 'phosphate legacy' and the 'water dynamics legacy' will be solved. The measures will result in:

1. **Water reed beds:** Restoring a sustainable water reed surface of 55 ha; this will improve water quality and breeding, foraging and living habitats of many of the Natura 2000 species.

2. **Water plants:** Strong, long-term expansion of submerged water vegetations (especially H3150 with Water Soldier and pondweeds). Measures will be taken in 80 ha of isolated peat ponds, including the removal of 72,000 m<sup>3</sup> phosphate rich sediment, fish stock management for 70 ha, nutrient removal by summer flushing on 38 ha and small scale reintroduction of aquatic plants, supported by the removal of 125,000 m<sup>3</sup> of phosphate rich sediment from the non-isolated parts of the area.

3. **Floating fens:** Topsoil removal from 25 ha of transition mires and reed lands that have become overgrown, combined with hydrological improvements to ensure supply of minerotrophic water leads to new formation of habitat type 7140 Transition mires and quaking bogs (especially floating poor-fens, H7140\_b). We expect this measure to be effective for at least 25 years.

4. **Fen meadows:** Restoration and extension of an existing helophyte filter will allow supply of good quality water for flooding. This will facilitate long-term survival of 30 ha flooded fen meadows (H6410).

5. The perceived spatial quality of the area, and with it the socio-economic value will be greater as a result of the improvements to the nature and the 'cleaner' navigability (navigating without turning up dredgings all the time).

The relevant authorities will include all necessary further conservation actions in their management plans for the area after the project.

Can the project be considered to be a climate change adaptation project?

Yes  No

One of the effects of climate change is that waterlevels are expected to rise, so that the capacity of water storage needs to be increased. As a result of the project about 114,5 hectares of extra water storage capacity will eventually be added to the Frisian watersystem, the '**boezem**'. This consists of action C1 and C3. Former polders and peat ponds which were not part of the Frisian '**boezem**', will be connected to this system. Thereby the Frisian water system will be more resistant to the expected amounts of rainfall and the rising waterlevels. Connecting the polders and the peat ponds to the '**boezem**' will start as soon as the measures have resulted in the development of water reed beds and submerged water vegetation.