



New LIFE for Dutch Fens - Restoration programme for Natura2000 fen areas in the Netherlands

LIFE12 NAT/NL/000372

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Contact details:

Contact person: Titia ZONNEVELD

Email: T.Zonneveld@natuurmonumenten.nl

Project description:

Background

The Dutch lowland fen areas belong to the most important wetland ecosystems in Western Europe. These areas are young landscapes, formed during the Holocene geological period in the Dutch provinces of South Holland, North Holland, Utrecht, Overijssel and Friesland. The wetlands have been modified by activities such as mowing, grazing and peat extraction, which have enriched its biodiversity through the maintenance of different succession phases, from open water to acidic bogs and forests. Following the abandonment of the land, however, natural succession and eutrophication has occurred.

At the time of the project, the seven lowland fen areas that were the focus included a large area of well-developed, valuable habitat. Nevertheless, the surface area and quality of this habitat has declined in the past few decades, due mainly to hydro-ecological reasons. In order to maintain the rare habitats found in the succession from open water to wet forest, continuous management measures are needed. Threats to the valuable habitats include the dominance of older succession phases, sub-optimal hydrological conditions (e.g. water table set as a function of agricultural activities and the stronger influence of rain water than groundwater, leading to acidification), high nitrogen deposition, external and internal eutrophication (e.g. input of water from the polders, canals, rivers; mineralisation of the peat leading to a release of nutrients), fragmentation and isolation (due to urbanisation and intensive agricultural practices), changes in land use and management (e.g. traditional reed cutting, harvesting of peat and hay harvest), and increased pressure due to recreational activities.

Measures have been taken to improve the hydrology, reduce eutrophication and set back the natural vegetation succession (to younger successional stages) in the Natura 2000 sites. The measures led to enlargement and or improvement of the quality of the target habitats (listed in Annex I of the Habitats Directive). This resulted in the improvement of biotopes of valuable flora and fauna species

occurring in these habitats, and leading lead to enhancement biodiversity and of the connectivity in the lowland fen area.

Objectives

The main objective of the New LIFE for Dutch Fens project was to restore, improve and/or enlarge the area of fen habitats, with an emphasis on the early successional fen stages (including water vegetation). The project would target seven different lowland fen habitats in the Netherlands. These habitats are listed in Annex II of the Habitats Directive and included fens, wet heathlands, freshwater submerse habitats and wet meadows.

The main actions to be carried out included:

- sod-cutting in degraded/acidified transition mires and quaking bogs to restore fen habitats;
- digging ditches in transition mires and quaking bogs to improve the supply of base-rich surface or seepage water and to prevent acidification;
- removing topsoil of land formerly used for agriculture to create *Molinia* meadows;
- digging new peat holes to create water-submersed habitats and develop young succession stages;
- dredging eutrophic peat lakes to improve water quality for water habitats;
- altering ditches and optimally using the flow of surface water fed by seepage water to improve the hydrological conditions of quaking bogs and other habitats;
- creating new marshes and removing land from leasehold agreements to create habitat for marshland birds such as the bittern, purple heron and great reed warbler;
- removing shrub, young trees and felling young marsh forest to improve water habitats and young succession fen stages;
- constructing float lands (helophytes and other water plants) on three sites in the Oostelijke Vechtplassen area, preceding applied research on succession of young fen habitats;
- purchasing a ship and establishing a compost facility; and
- improving the quality of information points and recreational facilities.

Results

All the above mentioned measures per action have been carried out and all habitat restoration targets have been reached. The project New LIFE for Dutch Fens helped restore 506.43 ha of fen habitats, improving the environmental conditions for the development of young fen succession stages and other open waters with *Chara* vegetations (H3140), *Magnopotamion* or *Hydrocharition* vegetations, wet heath, *Molinia* meadows, transition mires and quaking bogs and fens with *Cladium mariscus*. It also enlarged the targeted habitats by 211.96 ha.

This also included measures on invasive alien species like cranberry. Most of the occurring invasive alien species are managed well however, the American freshwater crayfish remains a problem in different sites, having a negative impact on water quality and the growth of vegetation. Because it was not

possible to create an extra compost facility the beneficiary is now looking into receiving subsidies from the Province of Zuid Holland to improve and expand the existing compost area. In the meantime we remove the extra biomass in an other ways. Research on fen terrestrialisation through artificial floating platforms has learned us a lesson about the practical applications of lowland fen restoration in the field. A total of 45 rafts (each sized 50 m²) were installed in nine peat holes at Oostelijke Vechtplassen, yielding insight into the factors that delay terrestrialisation of early fen succession stages and allowed the project team to develop solutions for future fen restoration projects. Furthermore, the project constructed a crane ship to facilitate management during and after the project. The know-how of the building process could be used in other locations.

The project developed three public information points (Rottige Meente, Oostelijke Vechtplassen en Botshol), purchased a boat for tours (in Nieuwkoopse plassen) and created a footpath with viewpoints. Contributions to the local economy and employment relate to tourism and the improved quality of the reed land and reed yield. Moreover, the long-term, cyclical management has secured the future of reed cutters. The project also contributed to the nature directives, along with the EU Biodiversity Strategy (targets 1 and 2) and the Water Framework Directive. In all project areas monitoring took place.

Further information on the project can be found in the project's layman report and After-LIFE Conservation Plan (see "Read more" section).

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Environmental issues addressed:

Themes

Habitats - Freshwater

Keywords

freshwater ecosystem, protected area, restoration measure

Target EU Legislation

- Water
- Directive 2000/60 - Framework for Community action in the field of water policy (23.10.2000)
- Nature protection and Biodiversity
- Directive 92/43 - Conservation of natural habitats and of wild fauna and flora- Habitats Directiv ...
- COM(2011) 244 final "Our life insurance, our natural capital: an EU biodiversity strategy to 2020 ...

Target species

Acrocephalus arundinaceus Acrocephalus schoenobaenus Ardea purpurea
Botaurus stellaris Chlidonias niger Circus aeruginosus Cobitis taenia Cottus
gobio Graphoderus bilineatus Ixobrychus minutus Leucorrhinia pectoralis
Liparis loeselii Locustella luscinioides Lycaena dispar Microtus oeconomus
arenicola Misgurnus fossilis Myotis dasycneme Porzana porzana Rhodeus
sericeus amarus

Target Habitat types

- 7140 - Transition mires and quaking bogs
- 7210 - Calcareous fens with Cladium mariscus and species of the Caricion davallianae
- 6410 - "Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)"
- 3140 - Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.
- 3150 - Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation
- 4010 - Northern Atlantic wet heaths with Erica tetralix

Natura 2000 sites

SPA	NL2000012	Naardermeer
SPA	NL9801063	Nieuwkoopse Plassen
SCI	NL3000036	Nieuwkoopse Plassen en de Haeck
SCI	NL3000061	Naardermeer
SCI	NL9801044	Botshol
SCI	NL9803006	Rottige Meenthe & Brandemeer
SPA	NL3009004	De Wieden
SPA	NL9802058	Wormer- en Jisperveld
SPA	NL9802060	Oostelijke Vechtplassen
SCI	NL2003036	Oostelijke Vechtplassen
SCI	NL2003054	Wormer- en Jisperveld en Kalverpolder
SCI	NL2003064	Wieden

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Beneficiaries:

Coordinator	Vereniging Natuurmonumenten
Type of organisation	NGO-Foundation

Description	Natuurmonumenten is an NGO that manages 355 protected areas (that it either owns or leases) covering around 104 100 ha. This represents about one quarter of the total protected area in The Netherlands. The association has around 727 000 members.
Partners	Staatsbosbeheer, The Netherlands

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Administrative data:

Project reference	LIFE12 NAT/NL/000372
Duration	01-JUL-2013 to 31-DEC -2018
Total budget	13,470,041.00 €
EU contribution	4,203,999.00 €
Project location	Friesland(Nederland) Overijssel(Nederland) Utrecht(Nederland) Noord-Holland(Nederland) Zuid-Holland(Nederland)

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Read more:

Project web site	Project's website
Project web site - 2	"Laagveensymposium: 30 & 31 Mei 2018" (Online)
Publication: After-LIFE Conservation Plan	Title: After-LIFE Conservation Plan (Dutch version) Editor: Vereniging Natuurmonumenten, Staatsbosbeheer No of pages: 41
Publication: After-LIFE Conservation Plan	Title: After-LIFE Conservation Plan 2 (Dutch version) Editor: Vereniging Natuurmonumenten, Staatsbosbeheer No of pages: 31
Publication: Layman report	Title: Layman report Year: 2018 Editor: Vereniging Natuurmonumenten, Staatsbosbeheer No of pages: 35
Publication: Layman report	Title: Layman report (Dutch version) Year: 2018 Editor: Vereniging Natuurmonumenten, Staatsbosbeheer No of pages: 35
Video link	"Laagveensymposium: nieuw leven in het veen" [NL - 9'35]
Video link	"Onthaasten in het Laagveen" (2')
Video link	"Opwinding in het Laagveen" (2')

Video link

["Waterballet in het Laagveen" \(2'\)](#)

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