



Hortobagy Steppes - Restoration of pannonic steppes, marshes of Hortobágy National Park

LIFE02 NAT/H/008634



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Project description:

Background

The Hortobágy National Park in eastern Hungary is a unique steppe area and a hot spot for bird-watchers from all over Europe. It is the largest coherent occurrence of the priority pannonic salt steppe and marsh habitat (habitat 1530) type in Europe. Continuous natural grassland covers 54,000 ha, interspersed by a range of wetland habitats like ephemeral waters, temporary/seasonal alkaline marshes, permanent marshes, oxbow lakes and man-made fishponds. The pannonic salt steppes and marshes are of central importance for the park's ornithological value. These are vast open expanses that were formed over tens of thousands of years through the unique combination of a continental climate, flat topography and spring flooding from the nearby Tisza River. Grazing with traditional breeds of cattle and sheep also contributed to the maintenance of an open vegetation structure. During the communist period, however, a vast network of dykes and channels was laid out over several thousands of hectares in attempt to create irrigation systems and rice fields. Although the experiment eventually failed, the abandoned infrastructures altered the characteristic surface micro-topography of the area by blocking natural surface water movements. This resulted in the degradation of the alkaline steppes and marsh mosaic and reductions in the populations of steppe birds.

Objectives

The project aimed to restore to a favourable conservation state and ensure the long-term conservation of the priority habitat complex 'Pannonic salt steppes and marshes' over 6,650 hectares of the Hortobágy National Park. The project planned to eliminate the artificial factors altering the natural micro-topography of the flood plain area as the only possibility to ensure the long-term conservation of this priority habitat type. This would involve the removal of 360 km of artificial dykes and irrigation channels - all channels would be filled up and all dykes levelled down. The restoration of the former flood plains would be complemented by the re-introduction of the traditional intensive grazing system to re-create the unique mosaic of alkaline wet and dry grassland patches. Intensive grazing of cattle would keep the grass short and give the competitively-weak plant associations like the Puccinellio-Salicornetea (habitat 1310) the space to spread on suitable solonetz soil areas. The work aimed to restore the natural cycles of low-level flooding in spring followed by almost total drying out of the area in the summer. Ultimately, these actions were expected to have a positive impact on breeding birds such as great bustard, bittern and aquatic warbler.

Results

The project succeeded in restoring pannonic salt steppe and salt marshes to a favourable conservation state over nearly 10,000 ha in the Hortobágy National Park. It also created favourable conservation status of oligotrophic to mesotrophic standing waters with vegetation of Isoeto- Nanojuncetea (3130). Hortobágy was declared a Natura 2000 site, designated as an SPA and proposed as an SCI during the project. Bulldozing eliminated 560 km of disused dyke and canal systems. Seeding activities over 60 ha and mechanical weed control over 72 ha then supported the re-colonisation of the main native grass species - *Festuca pseudovina*. The project elaborated and successfully used a new technology for seeding natural grassland. Water management installations were constructed, closing inlets and outlets or restoring links between artificially separated marshes. This achieved the successful restoration of water levels in temporary marshlands over more than 350. The new installations have also allowed for controlled flooding of marshlands to imitate processes that were natural before the dredging of the river. Some marshes, which had previously dried out by late spring, now keep water throughout summer, providing foraging ground for flora and fauna. The project provides enhanced habitat conditions for 37 species of birds listed in Annex I of the Birds Directive. Population growth was already seen during the project in important species such as bittern (*Botaurus stellaris*), common crane (*Grus grus*), aquatic warbler (*Acrocephalus paludicola*) and great bustard (*Otis tarda*). Furthermore, otter (*Lutra lutra*) occupied all stagnant waters, ferruginous duck (*Aythya nyroca*) bred and the European pond turtle (*Emys orbicularis*) re-colonised suitable habitats. The project also reconstructed small areas of special soil surface microforms, which are a special habitat type of salt steppes. In 2003, 514 individuals of dotterels (*Charadrius morinellus*) were observed on these patches, the highest number ever recorded. The experiences and monitoring data of the project can be used to guide effective management of this priority habitat in other Natura 2000 sites. Indeed, following the dissemination of project results and guided field visits for site managers from across the EU, the spreading of the knowledge has already occurred, including to

other LIFE-Nature projects.

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Environmental issues addressed:

Themes

Habitats - Freshwater

Species - Birds

Habitats - Grasslands

Keywords

drainage system, environmental impact of agriculture, grassland ecosystem, grazing, landscape conservation policy, monitoring, renaturation, wildlife sanctuary, site rehabilitation, land restoration, restoration measure, water resources management

Target EU Legislation

- Nature protection and Biodiversity
- Directive 92/43 - Conservation of natural habitats and of wild fauna and flora- Habitats Directiv ...
- Decision 93/626 - Conclusion of the Convention on Biological Diversity (25.10.1993)
- COM(98)42 -"Communication on a European Community Biodiversity Strategy" (05.02.1998)
- COM(2001)162 -"Biodiversity Action Plan for the conservation of natural resources (vol. I & II)" ...

Target Habitat types

- 1530 - Pannonic salt steppes and salt marshes
- 3130 - Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea

Natura 2000 sites

SPA

HUHN10002

Hortobágy

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Beneficiaries:

Coordinator	Hortobágy National Park Directorate
Type of organisation	Park-Reserve authority
Description	The Hortobágy National Park (HNP) Directorate manages conservation areas in the Hajdú-Bihar-, Jász-Nagykun-Szolnok-, Szabolcs-Szatmár-Bereg counties as well as the Tisza lake in Heves County of Hungary.
Partners	None

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Administrative data:

Project reference	LIFE02 NAT/H/008634
Duration	15-MAY-2002 to 15-NOV -2005
Total budget	780,744.00 €
EU contribution	546,521.00 €
Project location	Associated Hungary (H)(Hungary Magyarország)

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Read more:

Leaflet	Title: Restoration of pannonic steppes and marshes Author: Hortobágy National Park Year: 2005 No of pages: 2
Project web site	Project website
Publication: Layman report	Title: Layman report (EN) Year: 2005 No of pages: 20

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