Restoration of Wetlands in the Western Lowland Area of the Dümmer Lake, Germany

Year of issue

2023

Summary

This project combined several natural water retention measures: restoration of meadows and pastures, reduced tillage, reduced stocking density, and wetland restoration . Located in north-west Germany (Weser basin, DE4000), it was funded under the LIFE Program and aligned with the WFD, Habitats, and Birds Directives. Since 2017, over 30 ha of wetlands have been restored, and a reed polder (>80 ha) is being developed to reduce phosphorus loads. Additional river restoration measures have been implemented in the Hunte and Elze catchments. The project involved a wide range of stakeholders, including conservation bodies, water managers, farmers, and local NGOs. It successfully increased meadow bird populations and fostered constructive stakeholder cooperation. Recent efforts also include fish removal and a shift from technical to nature-based solutions, with key goals targeted for 2027.

Photo Gallery



Location

52.5106507, 8.3411022

Project

NWRM

National ID

Germany_03

Sector

Agriculture

Installation Date

2007-12

Implementation status

Completed

Contact

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Overview

Location of the project

The Dümmer lowland in the northwest German plain consists of extensive marshes and wet grassland that are flooded in winter.

Country

Germany

NUTS2 Code

Hannover

Sponge measures implemented in the case study

Minimum tillage

Reduced stocking density

Wetland restoration and management

Meadows and pastures

Involved partners

Authority type	Authority name	Authority role	Comments	Authority responsibility
Regional / sub-national water authority	Lower Saxony Water Management, Coastal Defense and Nature Conservation Agency (NLWKN)	Implementation	Local state authority for nature conservation / bird conservancy	Responsible
Regional / sub-national water authority	Lower Saxony Ministry of Environment	Other	Coordination, Management	Responsible

Documents

cs-de_03-duemmerlake_final_version.pdf (1.01 Mo)

Site Information

Climate Zone

Cool temperate moist

Temperature (°C)

9.00 °C

Slope range

nearly level (0-1%)

Water quality status

Although it can be assumed that the measure had reduced nutrients in the groundwater of the area, no quantitative assessments were carried out prior to the implementation.

Design and Implementation

Project area

2500

Project area specifications

Usability, integrative planning, acceptability

Area subject to Land use change or Management/Practice change (ha)

2500.00 ha

Factor constraints

The wetlands of the Dümmer lowland area are of international significance for nature conservation. The diverse natural and nearnatural habitats hold a large number of bird species (reed, wading, water and meadow birds), which breed, rest or winter here.
Various developments have greatly endangered these bird's paradise in the past. The diking of the Dümmer lake in 1953 has led to the drainage of the wetlands and the intensification of agricultural activity.
Together with the cutting of peat in the adjacent bogs, this has caused the water to be heavily polluted with nutrients.

Favourable preconditions

Before the project, over 2000 ha were already acquired for the Bird Sanctuary of Lake Dümmer. A well established, institutionalized Round Table served as a communication platform between Nature Conservationists and Farmers, so that acceptance was guaranteed throughout the process.

Financing

Total cost

3100000.00 €

Costs investment

2000000.00 €

Costs investment information

land acquisition

Costs land acquisition

2000000.00

Costs land acquisition unit

€ (total value)

Costs operation maintenance

1100000.00 €

Costs operational

800000.00 €

Costs operational information

Supporting dams and removal of drainages

Costs maintenance

300000.00 €

Financing authorities

Authority name	Type of funding	Financing share
European Union	EU-funds: LIFE+	100 %

Compensations

Non

Policy and Governance

Policy description

Wide, open grasslands and meadow birds are a part of the historic cultural landscape of meadows and pastures in Northern Germany. Intensified agriculture in Lower Saxony, as well as in many other places, puts a threat on this landscape and local meadow bird populations. The draining of meadows, early mowing, and densification of the ground through heavy machinery render these areas practically unlivable for meadow birds. Meadow birds breed and raise their chicks on the ground in grassland areas. After hatching, the chicks need about four weeks before they are able to fly. Until then, they collect insects and worms from the vegetation and the ground under attendance of their parents. When they reach maturity, meadow birds use their long beaks to pick for food in the wet soil. Suitable habitats for meadow birds have decreased strongly in size, and the grassland remaining today, does not provide ideal conditions. Consequently, the number of meadow birds declined sharply in recent decades.

Policy targets

Improved Biodiversity

Target remarks

Regulation of hydrological cycle and water flow
Habitat restoration

Policy pressure

Directive	Relevant pressure
WFD identified pressure	Nutrient pollution

Directive	Relevant pressure
Floods Directive identified pressure	Protected Areas
Floods Directive identified pressure	Landscape

Part of a wider plan

Oui

Wider plan

Wider plan focus	Name
Environment & Biodiversity	Natura 2000

Public consultation

Non

Has contractual arrangements

Oui

Impacts and Monitoring

Monitoring System

Monitoring requirements

Regularly (weekly to monthly)

Monitoring parameters

Biodiversity/ meadow bird breeding success

Maintenance

Maintenance requirements

After the project could be finished, management of the rewetting areas will continuously be guaranteed by the nature conservation base Dümmer.

Impact Assessment Methodology

Performance impact assessment method

Catchment outlet

Performance impact estimation information

meadow bird breeding success monitoring

Cost assessment method

There were no methods used to assess costs and the cost-effectiveness of the measure. The benefit was measured by monitoring the breeding success of meadow birds, though.

Socio-economic Impacts

Benefits and co-benefits

Two nature trails were created along the western bank of the lake, which tie up to the few years old nature trail "Dümmer” in Ochsenmoor. The special natural features of the Dümmer lowlands are displayed to cyclists and hikers.
While the short trail around Olgahafen was specially designed for hikers, the trail stations along the further course of the bank are mainly set up for cyclists. Four of these stations have an interactive design.
The youth- and holiday center of Vechta district is situated next to the start of the nature trails. About 10,000 people, mainly pupils with their school classes, visit this center every year. Especially for this clientele as well as for other interested visitors the "nature trail quiz rally” was developed.
Furthermore the restoration of the habitat led to increased tourist numbers.

Ancillary benefits

Biomass production, tourism, recreation, Water security

Biophysical impacts: Hydrology

Information on retained water

N.A.

Information on increased water storage

N.A.

Information on runoff reduction

N.A.

Biophysical impacts: Biodiversity

Improved biodiversity

Oui

Information on improved biodiversity

improvements of the meadow bird communities

Biophysical impacts: Water & Soil Quality

Water quality overall improvements

N/A info

Soil quality overall improvements

N/A info

Biophysical impacts: Others

Ecosystem impact climate regulation

No specific impact

Lessons Learned

Key lessons

Lessons learned in this project reach from practical and technical experience to the integration of stakeholders to achieve a high acceptance and participation of local farmers.

The experience from this project also led to the initiation of the LIFE+ Project Meadow Birds, including water retention measures in 12 project areas.

Barriers

Barrier type	Barrier role	Comments
Expected maintenance needs	Main barrier	viability of extensive grassland mainenance is low

Drivers

Driver type	Driver role	Comments
Organisation committed to it	Main driver	Bird protection / natura200 site

Success factors

Success factor type	Success factor role	Comments
Financing possibilities	Main factor	for land acquisition

Success factor type	Success factor role	Comments
Attitude of relevant stakeholders	Secondary factor	acceptance of relevant stakeholders

Sources

Sources

Erfolgreiche Feuchtgrünlandentwicklung durch Naturschutzmaßnahmen. Langfristige Veränderung von Flora, Vegetation und Avifauna am Beispiel des Ochsenmoores in der Dümmerniederung.

LIFE-Natur Projekt "Wiedervernässung der westlichen Dümmerniederung"