Holter-Hammrich Area - Flood Protection and Nature Conservation, Germany

Year of issue

2025

Summary

The Holter-Hammrich project combined several natural water retention measures: floodplain restoration, meadow and pasture rehabilitation, and reduced tillage. Located in north-west Germany within the Weser river basin (DE4000), it supports Lower Saxony's otter and wetlands protection programs and contributes to WFD goals. Since its implementation, the 240 ha flood retention polder—activated in 2011—has enhanced flood protection and become a key habitat for over 60 bird species and other wildlife, including the returning European otter. It now also serves educational and recreational purposes, with a 7 km nature trail and observation points. The project stands out for its integration of ecological, hydraulic, and public engagement goals, achieved through multi-stakeholder cooperation involving environmental agencies, water managers, local authorities, and farmers.

Photo Gallery



Location

53.1982, 7.6115

Project

NWRM

National ID

Germany-01

Sector

Hydromorphology

Installation Date

2011-05

Implementation status

Completed

Contact

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Overview

Location of the project

The Leda-Jümme area is a flat, broad valley of the lower Ems river.

Country

Germany

NUTS2 Code

Weser-Ems

Sponge measures implemented in the case study

Wetland restoration and management

Cover crops

Meadows and pastures

Floodplain restoration and management

Minimum tillage

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	Promoter, developer, supervisor	Responsible

Documents

cs-de-01-holter-final_version.pdf (942.3 KB)

Site Information

Climate Zone

Cool temperate moist

Temperature (°C)

9.00 °C

Slope range

0%-1%

Vegetation class

Grassland

Design and Implementation

Project scale

Micro

Project scale specifications

Subarea "Leysser Hammrich" (143 ha), Habitat for grassland birds
- landuse with different requirements (extensification)
- use of controlled water level increase in winter and spring
Subarea "Altes Tief" (80 ha) diverse mosaic of shallow water zones, shrubs, reeds and wet grassland - Mostly free vegetation development (succession)
- use of ca 40 ha year-round wet areas of shallow water

Project area

223

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

223.00 ha

Size

223.00

Size unit

ha

Design capacity

3800000

Principles

Integration of demands, integrative planning, functionality

Factor constraints

For the present area an independent concept has been developed that fitted the local requirements of nature conservation and flood protection.

Favourable preconditions

natural site conditions, in particular the height variations of the area

Financing

Total cost

12600000.00 €

Costs land acquisition

4000000.00

Costs operational information

€ 80,000 Technical constructions
€5,500,000 Specially prepared trail for nature information and experience
€3,000,000 New Roads for farmers

Information on Economic costs - income loss

Actual income loss: Lease Agreements are given out for free, due to heavy regulations for farming

Financing authorities

Authority name	Type of funding	Comments
State of Lower Saxony	Sub-national funds	Land acquisition

Authority name	Type of funding	Comments
European Union	EU-funds: Cohesion and regional development funds	The cost for a specially prepared trail with nature information were covered by European funds.
various	National funds	Other measure were financed from different sources due to the various goals. NWRM unrelated constructions of dykes and technical facilities were paid from water management sources, whereas reconstructions of roads were paid by rural development funds.

Policy and Governance

Policy description

Due to the natural site conditions, in particular the height variations of the area, the Holter Hammrich serves common goals of flood protection and nature conservation.
The closure of the last dike breaches, and the further expansion of pumping stations for drainage of the area led to new problems: After heavy rainfalls flood loads led to higher water levels, dykes were threatened to breach leading to floods at unpredictable places. More storage space was needed and finally built for excessive headwater.
Extensification or abandonment of agricultural use and high water levels in spring support an increase of characteristic breeding birds for example.
Amphibians benefit from standing water bodies.

Policy targets

Improved Biodiversity

Target remarks

Flood control and flood risk mitigation
Nutrient Pollution
Biodiversity and gene pool protection in meadow areas
Habitat restoration

Policy pressure

Directive	Relevant pressure
WFD identified pressure	Nutrient pollution
Floods Directive identified pressure	Natural exceedance

Requirement directive

Requirement directive	Specification
Other EU	Habitat Directive: Otter protection, habitat restoration

Policy challenges requirements

The Lower Saxony otter protection programme and the Lower Saxony wetlands protection programme were aimed to be addressed.

Part of a wider plan

Yes

Wider plan

Name
Lower Saxony otter protection programme
Lower Saxony wetlands protection programme

Public consultation

No

Has contractual arrangements

No

Impacts and Monitoring

Monitoring System

Monitoring requirements

Regularly

Maintenance

Maintenance requirements

Maintenance schemes have not been set up. The state of Lower Saxony is contractual responsible for any maintenance required.

Impact Assessment Methodology

Performance impact assessment method

Unknown

Performance impact estimation information

N.A.

Socio-economic Impacts

Ancillary benefits

Biomass production, recreation, and information.

Biophysical impacts: Hydrology

Information on retained water

3.8 million m3

Information on increased water storage

N.A.

Information on runoff reduction

N.A.

Biophysical impacts: Biodiversity

Improved biodiversity

Yes

Information on improved biodiversity

Extensification or abandonment of agricultural use and high water levels in spring support an increase of characteristic breeding birds for example. Amphibians benefit from standing water bodies.

Biophysical impacts: Water & Soil Quality

Water quality overall improvements

N/A info

Information on water quality overall

N.A.

Soil quality overall improvements

N/A info

Information on soil quality overall improvements

N.A.

Biophysical impacts: Others

Ecosystem impact climate regulation

No information available

Information on ecosystem impact climate regulation

N.A.

Lessons Learned

Key lessons

A continuous and open discussion between all involved groups led to a high acceptance of the overall process. It was a key lesson of this measure that cooperation between different sectors (flood protection, nature conservation etc.) as well as different stakeholder groups (government agencies, NGO†™s) are able to cooperate in effective networks, when a consistency of goals is given.

Barriers

Barrier type	Comments
Other	There were no major implementation barriers, although the benefit for nature conservation aspects were doubted by nature conservation NGO†™s. It was argued that the use of the structure as a flood protection and water storage facility would counteract the habitat restoration means in extreme cases of floods. By a continuous and open discussion these uncertainties were resolved.

Drivers

Driver type	Driver role	Comments
Organisation committed to it	Main driver	The NLWKN is the Nature Protection Agency of Lower Saxony
Availability of subsidies	Secondary driver	—

Success factors

Success factor type	Success factor role	Comments
Communication activities	Main factor	A continuous and open discussion between all involved groups led to a high acceptance of the overall process.
Attitude of relevant stakeholders	Main factor	Willing stakeholders and a positive public perception were the major enabling factors.
Financing possibilities	Main factor	The availability of financial resources and cooperation between all stakeholders led to a smooth implementation of all measures.

Flexibility / Adaptability

For the present area an independent concept has been developed that fitted the specific requirements of nature conservation and flood protection as well as the specific landscape. In similar settings, the technical dimension of the measure is adaptable.

Transferability

The most important precondition for a similar applications is a consistency and cooperation between different stakeholders, so that various financial instruments can be activated to achieve a common goal.

Sources

Sources

Modelprojekt Holter-Hammrich