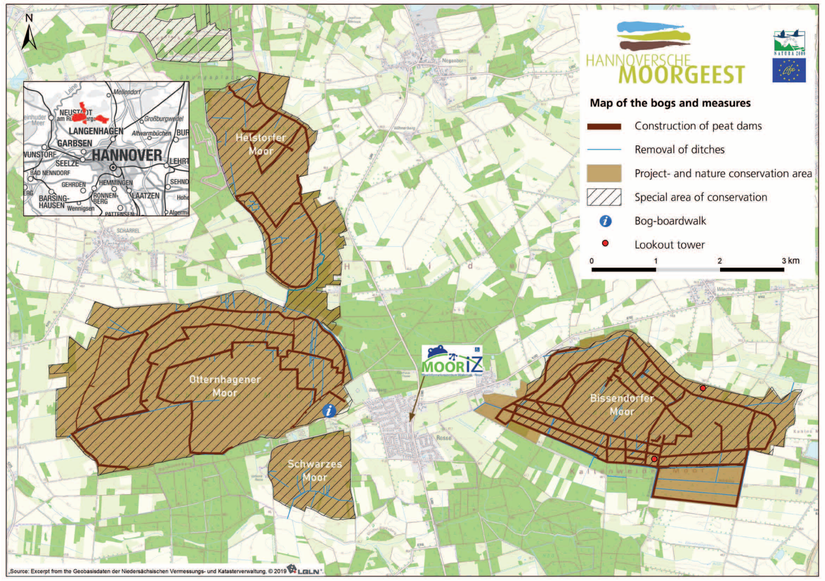
LIFE+ natur project
Hannoversche Moorgeest

The »Hannoversche Moorgeest« consists of four bogs located just northwest of Hannover: Bissendorfer Moor, Helstorfer Moor, Otternhagener Moor, and Schwarzes Moor. They are highly valuable, because they are among the few remaining raised bogs in Lower Saxony.

Since industrial peat extraction never occurred, the nearly 7,000-year-old peat bodies remain largely intact. Peat was only extracted and used as fuel in small-scale manual peat cuttings (as seen in the photo above). However, the bogs were extensively drained with ditches in the past to allow access and use of the peat.

Despite these destructive interventions, the bogs still impress with their scenic beauty and exceptional biodiversity. More than 1,400 species of animals and plants are native to these bogs, occupying over 120 different biotope types. Due to their significant ecological importance and the severe threats they face, the four bogs are now protected and part of the European Natura 2000 network. The potential to restore living raised bogs is substantial. With the assistance of the LIFE+ project, co-financed by the EU, the urgently needed measures to regenerate the water balance and ecosystems are now being implemented. The selection committee of the UN Decade for Ecosystem Restoration has recognized this project as one of the top 10 projects in 2023.

UN-Dekade zur Wiederherstellung von Ökosystemen
Deutschland setzt sich ein!
TOP-10-PROJEKT 2023
#RenaturiereDeutschland



Project Overview

Title: Hannoversche Moorgeest (LIFE 11 NAT/DE/344)

Duration: September 2012 – August 2027

Objective: Restoration of natural peat water levels

Budget: 17,5 million euros (European Union 47 %, Lower Saxony 47 %, Region Hannover 6 %)

Project Area: 2,243 hectares

Conservation status: Nature Reserve and Special Area of Conservation

What is *Natura 2000?*

Natura 2000 is the world's largest cross-border coordinated network of protected areas. It encompasses over 27,000 protected areas, covering almost 20 % of the EU's land area. There are two protection categories: bird protection areas designated under the Birds Directive and Special Areas of Conservation designated under the Habitats Directive. Together, they make a significant contribution to the protection of endangered, threatened, or rare species, their habitats, and biological diversity.

In Germany, approximately 81,000 km² of land in 5,200 Natura 2000 sites, representing around 15,5 % of the country's land area, are under protection (as of early 2019).

What is LIFE+?

LIFE+ is an EU funding program that provides co-financing of up to 75 % for projects aimed at improving habitats and species that are within the Natura 2000 protected area system.

QR-Code to the project homepage
More information can be found here:
www.life-moorgeest.niedersachsen.de

Responsibilities
Land Niedersachsen:
Ministerium für Umwelt, Energie und Klimaschutz
www.umwelt.niedersachsen.de

Project management
Niedersächsischer Landesbetrieb für Wasserwirtschaft, Küsten- und Naturschutz (NLWKN)
www.nlwkn.niedersachsen.de
Susanne Brosch, Göttinger Chaussee 76A, 30453 Hannover
Tel.: 0511 3034-3115
susanne.brosch@nlwkn.niedersachsen.de

Partner Institution
Region Hannover
www.region-hannover.de

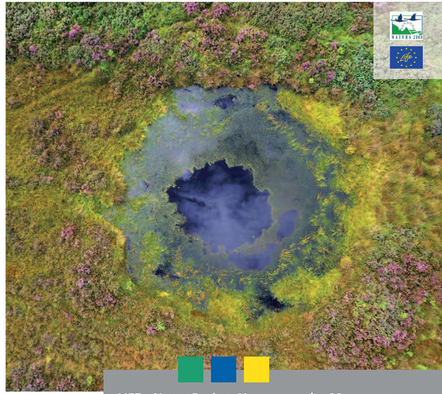
Partner for land consolidation
Amt für regionale Landesentwicklung Leine-Weser
www.arl-lw.niedersachsen.de

On-site information
Moorinformationszentrum Wedemark - Resse (MoorIZ)
Altes Dorf 1b, 30900 Wedemark-Resse
www.mooriz.de

Imprint
Editor and subscription:
NLWKN, Göttinger Chaussee 76A, 30453 Hannover
naturschutzinformation@nlwkn.niedersachsen.de
http://webshop.nlwkn.niedersachsen.de

Concept and text: Bioplan Höxter PartG, www.bioplan-hoexter.de
Design: www.sasse24.de | Illustrations: Jennifer Adam
Photos: Jens Fahning | Markus Gebel | Frank Grawe | Gerd-Michael Heinze | Marcel Hollenbach | Christian Stahl | Philip Steinhoff | Aaron Schad | Alexander Schlichter. Titel: Marcel Hollenbach.

Niedersächsischer Landesbetrieb für Wasserwirtschaft, Küsten- und Naturschutz



LIFE+ Natur Project Hannoversche Moorgeest
Implementation of measures

HANNOVERSCHE MOORGEEST
A LIFE+ Project of Lower Saxony

Niedersachsen

Habitats & species


peat moss


subarctic darner


yellow-spotted whiteface


cranberry blue


moor frog

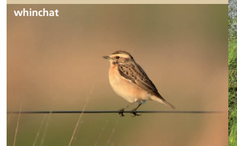
The moor frog (*Rana arvalis*) displaying its blue courtship coloration. During the mating season, males turn blue for a few days, likely as a form of intersexual communication.


common crane

The bogs are home to highly specialized, often endangered species that need to be protected. The most important organisms in bogs are the peat mosses (*Sphagnum* spec.). In the »Hannoversche Moorgeest«, more than 20 species of peat moss can be found. Their ability to store water in large quantities is the major prerequisite for the development of raised bogs.

Rare species of dragonflies, such as the subarctic darner (*Aeshna subarctica*) and the yellow-spotted whiteface (*Leucorrhinia pectoralis*) depend on intact peatlands. For instance, the former lays its eggs into the peat moss. The once widespread cranberry blue (*Plebejus optilete*) is now threatened with extinction in Lower Saxony. Its survival depends on the preservation of the few remaining peatlands.

The birdlife of the Moorgeest includes species such as the common snipe, eurasian curlew, whinchat, european stonechat, northern lapwing, and green sandpiper – all of which have disappeared from today's cultural landscape. Several pairs of the disturbance-sensitive common crane are also breeding in the Moorgeest.


whinchat

Project goals: rewetting

Rainwater stored in the peat mosses ensures a water-saturated peat body in intact bogs throughout the year. However, in the »Hannoversche Moorgeest« the water balance is severely disrupted by deep drainage ditches. With the drainage of the bogs, the peat moss dries out. As a consequence, the habitat of many plant- and animal species typical for raised bogs, is destroyed. To counteract this development, the project aims to:

- Help the raised bogs to grow again. This requires a permanent improvement in the water balance, achieved by raising water levels by up to 30 cm, allowing typical bog water levels to be restored in the central parts of the bogs and retained throughout the year.
- Improve the living conditions of typical bog species by reviving peat moss growth and promoting large-scale, self-driven peatland and peatland forest development. In addition, non-native and invasive plant species (e.g., swamp blueberry) must be repressed.
- Develop species-rich grassland in the fringe zones of the project area. This habitat serves as a buffer between the typical cultural landscape (intensively managed farm- and grassland) and the desired natural landscape with its wet and nutrient-poor sites.


High water level in the bog

On the way to the goal

Bog restoration is climate and flood protection

Drainage leads to the decomposition of the peat body, which is formed from dead moss and plant remnants. As a result, significant amounts of climate-damaging gases (CO_2, methane) are released into the atmosphere. Rewetting the peat body prevents this process. The bogs can once again fulfill their important role as a carbon sink and counteract the accumulation of CO_2 in the atmosphere. Furthermore, raised bogs are efficient rainwater storages and prevent peak flooding. Therefore, they contribute to flood protection.

Preservation of nature experiences and cultural heritage

The „Hannoversche Moorgeest« offers recreation seekers an impressive natural experience with its diversity and uniqueness, providing insights into long-forgotten cultural-historical land use forms (peat cutting).

Preliminary investigations and management plan

Every project requires to set a goal and plan reasonable measures. To formulate these, data was collected and preliminary investigations were conducted. These include data on flora and fauna, climate, geology, peat thickness, water levels, landform configuration, outflow, or drainage structure.


bog-boardwalk Resse

First steps towards implementation

From planning to approval

Before implementing the measures, extensive consultations were held with local stakeholders. Four planning approval procedures with public participation were conducted, where citizens could contribute suggestions, criticism, and improvement proposals. Finally, the plans were approved by the responsible authority. The availability of land is key to implementing the measures and ensuring the project's sustainable success.

Land consolidation

However, at the outset, 63 % of the area was owned by approximately 900 owners, spread across about 2,200 land parcels. A land consolidation process has been ongoing since 2012. Three options were offered to the owners to avoid disadvantages: sale, exchange, or a permit agreement. Around 200 hectares of exchange land outside the project area were provided. Currently, 94 % of the land is in public hands.

Overview of the measures

In the current and final project phase (2021-2027), extensive construction measures for rewetting and revitalizing of the bogs are being carried out.
To retain rainwater in the bogs, dams are built, and drainage ditches are closed or dismantled. This involves clearing trees in the alignment route in preparation for construction machinery and future dams.

Overview of Total Measures

Construction of peat dams	62,4 km
Decommissioning of drainage ditches:	37,5 km
Tree removal:	132,8 ha

Measures in detail

Drainage ditches

Numerous drainage ditches are rendered inoperative through selective ditch closures or complete filling. This prevents rainwater drainage from the bogs. Additionally, weirs are installed in the ditches at the periphery of the bogs. They allow for regulated drainage or gradual elevation of the water level in the area.

Dam Construction

Peat is extracted locally for dam construction, preventing the introduction of foreign material into the bogs. The peat requirement varies depending on the dam's height. On average, the working strip for excavation and dam construction is about 34 meters wide. Basin-like excavation pits are created at a distance of 3-4 meters from the dam to allow peat mosses to recolonize quickly, and they serve as valuable dragonfly habitats in the interim.

Further construction measures

During the implementation of measures, considerations are made for adjacent land use to ensure the maintenance of drainage. Therefore, existing drainage ditches outside the bogs must be retained or modified. Additionally, certain sections of roads around the project area will need improvement and maintenance.

Monitoring

What is it?

Monitoring is used for assessing success and preservation of evidence. The condition is recorded during and after the implementation of measures and compared to previous conditions. This way it can be determined, if the goals have been achieved or if adjustments are needed.

Water levels

Water levels are regularly monitored at approximately 120 measuring points. These points are located in the core areas and fringe zones of the bogs, as well as in adjacent cultivated areas. The extensive monitoring network allows for identifying the response of the bog's water body to rewetting measures or periods of drought and reacting as needed.

Flora and fauna

In 2021, before the start of the measures, control areas were established, and species groups and vegetation communities that are characteristic for peatlands were surveyed in an initial assessment. This included dragonflies, amphibians, birds and habitat types. The success assessment will take place after the completion of the construction measures (winter 2026/2027).


sundew

Drone surveys

An aerial perspective provides the best overview. Therefore, standardized drone surveys of the areas have been conducted twice a year since 2018. These surveys produce image series and time series. With their help, developments in the areas, such as changes in tree cover, can be documented. Additional surveys are conducted as needed.