

# Hessische Rhön – mountain grassland, rough grazing and their birds

Biosphärenreservat  
Rhön



**Acronym:** LIFE Rhön grassland birds  
**Grant amount:** Project area: 36,000 ha  
**Funded by:** €7.2 million  
**Coordinating Beneficiary:** 54% European Commission, 46% State of Hesse  
**Partner:** District of Fulda  
**Implementation:** Hessian Ministry of Agriculture and Environment,  
**Duration:** Viticulture, Forestry, Hunting, and Homeland  
 UNESCO Rhön Biosphere Reserve  
 Oct 2016 – Sept 2024

Northern shrike  
 (*Lanius excubitor*)  
 Photo: Christian Gelpke

The LIFE project “Rhön Grassland Birds” set out to tackle the alarming decline in biodiversity within the mountain meadows of the Rhön region, a UNESCO Biosphere Reserve in Germany. These meadows, created through centuries of traditional farming, are vital habitats for numerous rare plants and animals, especially ground-nesting birds. However, modern agricultural practices and land abandonment have severely threatened these ecosystems, making conservation efforts imperative.



With funding of 7.2 million Euros from the European Union and the State of Hesse, the project focused on restoring and preserving these species-rich meadows and pastures. Over eight years, the project team implemented various measures to improve habitats support endangered species, and encourage sustainable farming practices.

Key initiatives included the clearance of invasive scrub, the restoration of meadows, habitat improvements for birds and butterflies, and the control of problem species. The project also emphasised collaboration with local farmers, municipalities and volunteers to ensure the sustainability of these conservation efforts.

The success of the project is reflected in the rising populations of target species and the heightened awareness and

participation of the local community in nature conservation. The LIFE project demonstrated that agriculture and biodiversity can coexist, providing a sustainable model for landscape management.

This article provides an overview of the project's goals, methodologies and achievements, underscoring the importance of protecting these unique ecosystems for future generations.

## Rhön meadows in transition

### A LIFE project with big goals

In the Hessian Rhön, vibrant mountain meadows and rough pastures still flourish, creating open landscapes with stunning views. These areas, shaped by centuries of human cultivation, are crucial habitats for rare plants and animals, particularly ground-nesting birds.

The European Union recognises their importance and has protected these meadows under the Natura 2000 network, which includes sites safeguarded by the Habitats and Birds Directives. This protection is essential, as changing land use in recent decades has made these meadows some of the most threatened native habitats.

However, both intensifying and abandoning agricultural practices can harm biodiversity. This is where the LIFE project steps in. With a range of measures, the project aims to improve the Rhön's mountain meadows and rough pastures, ensuring their long-term conservation and vitality.

- 160 ha preservation and restoration of species-rich grassland
- 500 ha restoration of rough pastures
- 65 ha habitat improvement for the Marsh Fritillary
- 200 ha habitat improvement for ground-nesting birds
- 80 ha of habitat improvement with trees and shrubs for shrikes and tree pipits
- Creation of feeding ponds for Black Stork
- Control of problem species such as lupines and autumn crocus
- Promoting extensive farming methods through agricultural advice, identifying alternative income opportunities and demonstrating the effectiveness of different types of use
- Using public relations work to raise awareness among locals and visitors about the need to protect mountain meadows
- Preservation of historical cultural landscapes and improvement of the overall landscape.



## Habitats

The LIFE project focused on four key habitat types in the Hochrhön and Vorderrhön Special Areas of Conservation (SACs), recognised by the European Union for their rich biodiversity. Equally important, though not formally protected, are the rough pastures of the Rhön, which are similar to high Alpine pastures and hold significant ecological value.



## Mountain hay meadows

Extensively used meadows with limited and late mowing times and low fertilisation in the higher elevations of the Rhön.

**Area within the project:** 400 hectares

**Species occurring:** yellow oat-grass, wood cranesbill, spiked rampion, round-headed rampion, perennial cornflower, Turk's cap lily, little yellow rattle, globeflower.

## Species-rich Nardus grassland

Extensively used pastures in higher elevations of the uplands, created by less intensive grazing (rarely mowing). These nutrient-poor grasslands are only colonised by plants adapted to these conditions and have become extremely rare.

**Area within the project:** 190 hectares

**Species occurring:** mat grass, common lousewort, spotted St. John's wort, betony, devil's-bit scabious, mountain arnica.

## Lowland hay meadows

Traditionally used small hay meadows in lower areas with limited and late mowing times and low fertilisation.

**Area within the project:** 50 hectares

**Species occurring:** bistort, bugle, ragged robin, ox-eye daisy, greater burnet, water avens, lady's mantle.

## Semi-natural dry grassland

Grassland traditionally used as sheep pastures and less frequently as hay meadows in locations with shallow, alkaline subsoil. Colourfully flowering and rich in orchids, they are among the most species-rich habitats in central Europe.

**Area within the project:** 71 hectares

**Species occurring:** silver thistle, German gentian, fringed gentian, pasqueflower, bee orchid, lady orchid.

## Rough pastures

Traditionally used pastures on slopes in Hochrhön are characterised by structural diversity and poor soils. The variety of species and flowers is, therefore, very large.

**Area within the project:** 500 hectares

**Species occurring:** depending on the location, ram-pion, silver thistle, carline thistle, arnica, common cottongrass, globeflower, various orchid species.

## Target species

The mountain meadows of Rhön are vital sanctuaries for numerous endangered bird species. Ground-nesting birds like the Corncrake, Common Snipe, Whinchat, Tree Pipit and meadow pipit rely on these open spaces for breeding. The rare Black Stork depends on the standing waters in the meadows for feeding while nesting in the nearby beech forests. The LIFE project aims to enhance these habitats to protect these bird populations, including shrike species such as the Great Northern Shrike and the Red-backed Shrike.

Agricultural and climate changes have put many bird species in the Hessisches Rhön Special Protection Area at risk of extinction. The Rhön region is crucial in stabilising these populations, serving as one of the last large refuges in Hesse for species like the meadow pipit. The habitat improvements benefit birds and support small mammals, insects and reptiles living in the grasslands and hedgerows. Targeted species were:

- Corncrake (*Crex crex*)
- Meadow Pipit (*Anthus pratensis*)
- Tree Pipit (*Anthus trivialis*)
- Black Stork (*Ciconia nigra*)
- Whinchat (*Saxicola rubetra*)
- Red-backed Shrike (*Lanius collurio*)
- Northern Shrike (*Lanius excubitor*)
- Common Snipe (*Gallinago gallinago*)
- Marsh Fritillary (*Euphydryas aurinia*)

The conservation efforts also focused on the rare Marsh Fritillary butterfly. As an umbrella species, protecting its habitat benefits many other creatures in the ecosystem. In the Rhön, this butterfly is found only in the nardus grasslands instead of Roten Moor, where its caterpillars feed on plants like the devil's-bit scabious (*Succisa pratensis*).



## Measures to preserve biodiversity

The LIFE project's measures began with a detailed planning phase, using existing data and new studies on target bird species, the Marsh Fritillary and grassland habitats. Experts created action plans implemented between 2019 and 2024, supported by planning offices and authorities.

## Scrub clearance—goodbye to wild growth

One of the LIFE project's key measures was clearing scrub from pastures and calcareous grasslands. Due to insufficient use, many areas became heavily overgrown, reducing the grazeable land. Using brush cutters, chainsaws and forwarders, over 400 hectares of grassland were laboriously cleared of trees and shrubs and prepared for use. The main areas included Buchschirm, Seifertser, Melpertser Hute, and Simmelsberg. Ensuring long-term use of the rough pastures was crucial, requiring close coordination with local grazing communities and individual farmers responsible for ongoing landscape maintenance.

## Creation and restoration of meadows

The creation and restoration of species-rich meadows were key tasks of the LIFE project. This involved setting regulated mowing times and altering usage in consultation with farmers, as well as sowing seeds from neighbouring mountain meadows or nardus grasslands. Various methods were used to obtain seeds, including the eBeetle, an electric vehicle that brushes seeds off plants, a combine harvester,



and the green hay technique, which involves transferring hay cuttings from species-rich meadows onto prepared areas. These efforts led to the creation of around 150 hectares of diverse grassland, including mountain hay meadows, nardus grasslands, calcareous grasslands and lowland meadows.

## Habitat improvements for ground-nesting birds

Habitat improvements for ground-nesting birds like the Whinchat, Meadow Pipit, Common Snipe and Corncrake have been carried out on over 200 hectares of grassland. These efforts include creating protected unmown strips, installing artificial perches, cutting back high hedges section-by-



section, optimising and creating species-rich mountain meadows and converting management to extensive use. Mowing and grazing dates were adjusted in close coordination with farmers. In busy areas, signs were placed to remind guests and residents to behave considerably during the breeding season. These measures have led to an approximately 50% increase in the population of almost all target species.

**Monitoring**

Experts annually examine the composition of plants and species occurrence in selected areas. This data collection forms the foundation of planning. Recording plant communities, bird species and the occurrence of the Fritillary butterfly is essential. The collected data is consolidated in the office and measures are coordinated with specialist authorities, landowners, land users, municipalities and service providers. Every measure is intensively monitored and supervised, with the prerequisite being suitable, longterm subsequent use or management of the grassland.

**Optimisation and creation of calcareous grassland in Nüsttal**



Photo: Kristine Schmitt  
Linsberg

The municipality of Nüsttal, with its extensive calcareous grassland, is a botanical treasure home to rare and endangered species such as pasqueflower, orchids and gentians.

The LIFE project aimed to preserve this grassland and improve it for bird species like the Red-backed Shrike. The focus areas included Linsberg, Kregelsberg, Betzenrain, and Elzbachsrain. Insufficient grazing had caused the slopes to become overgrown with scrub. After extensive clearing, specialist planners developed a new grazing concept with the municipality and regional shepherds. Since 2018, the

most valuable calcareous grasslands in Nüsttal have been successfully managed this way. Project funds were used to purchase mobile pasture fences and a water butt trailer, and the shepherds receive financial compensation for their extra work. Measures to create and improve calcareous grassland were implemented on around 15 hectares.

**Revitalisation of feeding habitats for the Black Stork**



Photo: Elmar Herger

The Black Stork is not a resident of the mountain meadows. This shy bird nests hidden in the treetops of forests and seeks food in nearby streams, ponds, pools, or freshly mown meadows, favouring fish and amphibians. Protecting nests and improving feeding habitats are crucial for the preservation of these rare storks. In cooperation with partners like HessenForst and the Hessian Ornithological Society (HGON), disused fish ponds in the project area were revitalised or improved for the Black Stork, sometimes using heavy machinery. Observations showed that the birds quickly adapted to these improved feeding sites.

**Habitat improvement for the Marsh Fritillary**



Photo: Andreas C. Lange



Photo: Annika Hennemuth

In Hesse, the Marsh Fritillary is found only in the Rote Moor region and the Werra-Meißner district. Thus, the Rhön UNESCO Biosphere Reserve has a special responsibility for its preservation. To support the Rhön population, the LIFE project implemented various measures, including the re-creation of mowing areas in overgrown parts of Rote Moor and planting over 13 000 seedlings of the butterfly's host plant, Devil's-bit Scabious (Succisa pratensis). These efforts improved the food supply, creating 'stepping stone habitats' that significantly stabilised the population in Hessian Rhön. Volunteers, including those from Bergwaldprojekt e.V., provided valuable support for these planting campaigns.

**Containment of problem species**



Photo: Kristine Schmitt

The purple-flowering large-leaved lupine is increasingly spreading across the mountain meadows of the Rhön. Its ability to enrich the soil with nitrogen displaces typical plants from the unimproved grasslands. To contain this, the LIFE project implemented measures such as uprooting and intensive mowing of lupines over 190 hectares, often with volunteer support. The Störnberg near Wüstensachsen and Wasserkuppe were key areas for these efforts. Other problem plants include dominant populations of tufted hairgrass and wood small-reed, which are being controlled by new mowing and grazing measures, as well as autumn crocus and ragwort, which are poisonous to animals.

**Management experiments to improve biodiversity**

The changing agricultural landscape has significantly impacted the Rhön mountain meadows. To preserve them long-term, sustainable use compatible with agricultural goals is essential. With funding from the LIFE project and close cooperation with farmers, a four-year



Photo: Gunnar Schmitt

Caterpillar of the scab hawkmoth

management trial was established at the Eube site, covering 8.5 hectares. This trial tested seven different regimes of mowing and grazing to determine which combination best enhances biodiversity. Since the trial only began in 2019, it could not be completed by the end of the project.

**Hedge management**

Hedges divide the countryside and enrich the landscape. They connect habitats, regulate the microclimate and protect soil from erosion. Originally created to enclose pastures, they now provide vital habitats for many animals. However, changes in agriculture and poor management have endangered these crucial hedge structures. Many former hedges have grown into rows of trees, losing their function. The LIFE project addressed this by managing around 10 km of hedges, supported by public relations work, emphasising that professional hedge maintenance is a shared responsibility in landscape management.



After

Photo: Kristine Schmitt

**The first successes are emerging**

To evaluate and document the efficiency of the nature conservation measures, annual monitoring has been carried out from the beginning of the implementation phase (since 2019). The success of public relations has also been regularly examined. Monitoring success helps to assess whether there is a realistic relationship between effort and effect.

More than 50 permanent study areas were established to evaluate the effectiveness of the measures and to see if the plant species were developing as expected for their habitat type. Many areas showed positive development within just a few years. Monitoring also considers land management practices, such as when and how often the land is mowed or grazed. This helps determine which management methods best promote biodiversity.

	2017	2021	2022	2023
Red-backed Shrike	73	118	96	103
Tree Pipit	32	36	44	34
Meadow Pipit	20	45	33	36
Common Snipe	0	3	1	2
Whinchat	0	0	0	1
Northern Shrike	1	2	2	1

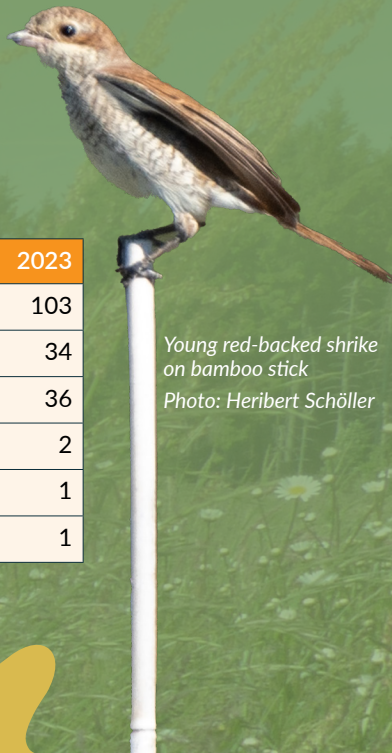
Source: Bioplan (LIFE Project 'Hessische Rhön - Mountain grassland, rough grazing and their birds' Bird monitoring as control of success of implemented conservation measures report 2023).

**Butterflies colonise new areas**

From the start, an expert closely monitored the progress of the Marsh Fritillary. Conservation measures were adapted annually based on current developments. This intensive management paid off: the existing butterfly populations recovered, and the species also colonised new areas, increasing the overall population.

In some regions, the butterfly populations thrived so well that they could be relocated to other areas within the project in a 'relocation operation'.

Source: LIFE-Monitoring Jahresbericht 2023, Benno von Blanckenhagen.



Young red-backed shrike on bamboo stick  
Photo: Heribert Schöller

**The birds are coming back**

The target bird species were also mapped annually. Their populations have developed positively in almost all areas where habitat creation and improvement measures for these bird species were carried out.







## Communication

Public relations is an important component of nature conservation work. Nature conservation succeeds only with society's support. Visitors to the Rhön play a crucial role in this. The project's press and public relations work aimed to inform, inspire and make the Rhön mountain meadows accessible. The project was regularly at events, festivals, on radio, television and in regional and national media. A major highlight for the team in 2022 was being recognised as an official project of the UN Decade on Ecosystem Restoration.

### Public relations

- [www.rhoener-bergwiesen.de](http://www.rhoener-bergwiesen.de)
- [/rhoener\\_bergwiesen](https://www.facebook.com/rhoener_bergwiesen)
- Information materials such as leaflets, booklets and information posters
- Plant identification card for identifying characteristic species in the Rhön mountain grassland
- 3 calendars
- 1 board game for children and young people, distributed to schools and educational institutions
- 2 photo competitions, 1 painting competition
- Travelling exhibition with 12 roll-ups
- 9 information boards on site
- 1 promotional film in German and English, 6 video portraits of target species, 7 explanatory videos,
- Cooperation with the YouTube channel of nature photographer and biologist Chris Kaula

- Over 90 press releases and more than 160 publications about the LIFE project.

### Training of mountain meadow ambassadors

To bring the unique treasures of the Rhön mountain meadows closer to visitors, the LIFE project, in cooperation with the Hesse Nature Conservation Academy and environmental educator Kerstin Sauermann, has trained 30 nature and landscape guides. These guides will promote environmental education in the Biosphere Reserve.

### Extra Tours: broadening horizons through hiking

As part of the LIFE project, three hiking trails, each between 8 and 12 kilometres, have been established to showcase the Rhön mountain meadows. The 'Ulmenstein' (Nüsttal), 'Ehrenberger' (Ehrenberg), and 'Wasserkuppe' (Poppenhausen and Gersfeld) Extra Tours feature information and discovery stations and have become very popular since their launch.

### 'Rhön grassland birds' exhibition trailer

In 2022, a mobile exhibition showcasing the Rhön mountain meadows was launched, featuring numerous interactive elements that provide comprehensive insights into these unique habitats. Displayed at the State Horticultural Show in Fulda from April to October 2023, the exhibition attracted over 580 000 visitors. Following the project's completion, the exhibition will be made available to the Hessen Administration of the Biosphere Reserve.

## Biodiversity needs agriculture

The long-term preservation of the Rhön mountain meadows relies on sustainable agricultural practices. Balancing the needs of local farmers with conservation goals is essential. The LIFE project provided targeted advice on Natura 2000 requirements and funding opportunities to local agricultural businesses. By 2021, eleven farms had committed to conservation efforts, benefiting from comprehensive ecological and business assessments.

Networking and training events, as well as public relations efforts, supported these partnerships. The ceremonial presentation of farm signs in 2023 officially recognised these businesses as project partners, highlighting that sustainable income can be earned alongside nature conservation.



This initiative aimed to encourage other farmers to explore alternative income opportunities compatible with conservation.

## Building knowledge—networking—passing it on

### Technical know-how transfer

From the beginning, the LIFE project prioritised technical know-how transfer through information events, lectures and guided tours. Training courses and excursions were organised for farmers on environmentally friendly mowing methods, farm succession and marketing ideas. Networking with hunters, who play a crucial role in bird conservation, was also emphasised.

Workshops on targeted predator management attracted significant interest, with over 130 participants attending in spring 2024. The project

team continuously engaged in training, conferences and seminars to bring valuable knowledge back to the region. These efforts ensured that the latest conservation techniques and strategies were effectively implemented and shared among stakeholders.

## Conclusion

The LIFE project has significantly enhanced the biodiversity of the Rhön region, improving habitats for endangered species like the Corncrake, Black Stork and Marsh Fritillary butterfly. The creation and restoration of species-rich meadows and rough pastures have greatly benefited the local ecosystem.

Local community support and public engagement have been crucial to the project's success. To learn more about the project's achievements, visit the website: [www.rhoener-bergwiesen.de](http://www.rhoener-bergwiesen.de).



## PROJECT NAME

LIFE project: Rhön Grassland Birds

## PROJECT SUMMARY

The project is particularly dedicated to conservation and development measures for the species-rich mountain grassland and the protection of endangered bird species in open areas of the Hessian low mountain ranges of the Rhön. By implementing different types of landscape maintaining measures in close cooperation with local farmers and municipalities valuable habitats in the Natura 2000 protected area network were substantially improved.

## PROJECT PARTNERS

Hessian Ministry for Agriculture and Environment, Viticulture, Forestry, Hunting and Homeland, District of Fulda, ten municipalities within the project area.

## PROJECT LEAD PROFILE

Katharina Bach (project lead since 2023), Master of Science in Biology & Ecology (University of Frankfurt am Main) with a focus on nature conservation and landscape management, collaboration on scientific publications about reef-building corals and the great sand eel. Main achievements in the LIFE project: taking over the project management in its last year with bringing all measures to a successful end, organisation of final events, final reporting and preparing the After LIFE conservation plan.

## PROJECT CONTACTS

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