

RESTORING WETLANDS IN EUROPE

ALFAwetlands

POLICY BRIEF



The context

While Europe is increasingly facing the effects of climate change with more frequent droughts and floods, restoring wetlands is more crucial than ever. Nature is our best ally to mitigate and adapt the effects of climate change.

Various policies offer the potential for wetland restoration. Already adopted in 1971, the 'Ramsar Convention on Wetlands', sets as an intergovernmental treaty the foundation for national action and international cooperation for the conservation and wise use of wetlands and their resources.¹ The EU has committed to enhance and restore ecosystems in different policies, notably as part of the EU Green Deal adopted in 2019. The UN has dedicated our current decade to be the Decade for Ecosystem Restoration.^{2,3}

Putting Europe's biodiversity on a path to recovery by 2030, is the aim of the EU Biodiversity Strategy, and its most important key element is the recently adopted Nature Restoration Law (NRL). This law is the first of its kind, setting legally binding targets to restore degraded ecosystems in Member States of the European Union.⁴

Policies offer unprecedented potential for EU large-scale restoration of wetlands

To implement the EU Green Deal, the EU Biodiversity Strategy has been adopted with the aim of protecting and enhancing biodiversity by proposing clear commitments and actions. Restoring wetlands plays a prominent role as a nature-based solution to be further deployed and invested in.

For its implementation, the NRL⁵ is the first EU law focused on the restoration of ecosystems. The law includes targets for restoring ecosystems based on existing regulations and additional specific ecosystems (Chapter 2). Restoration targets will help to safeguard biodiversity, lock-in carbon, improve resilience to droughts and floods and purify waters by reviving millions of hectares of wetlands.

This ALFAwetlands policy briefing aims to highlight the potential for the restoration of wetlands and peatlands in the Nature Restoration Law and showcase specific initiatives across Europe.

Why do wetlands & peatlands matter?

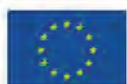
In times of a rapidly changing climate with more severe droughts and heat waves, mankind benefits from essential regulating ecosystem services provided by natural and rewetted wetlands, such as climate and water regulation. Their catchments provide high-quality drinking water and wetlands also play a role in flood-water regulation, especially in lowland or coastal settings.⁶ Beyond that, natural wetlands harbour unique biodiversity.⁷ Peatlands, a special wetland type, are among the most efficient carbon-storing ecosystems. Covering only around 3-4 % of the planet's land surface, they contain up to one-third of the world's soil carbon – twice the amount of carbon to be found in the world's forest biomass.⁸

Drained and natural peatlands (see Figure 1)⁹, in the whole of Europe cover 593,727 km² – This is larger than the land area of France.¹⁰ Over the past centuries Europe has drained half of its peatlands for intensified land use. This development results in Europe being the second largest emitter of greenhouse gases from drained peat soils (230 Mt CO₂ eq/year, equating to approximately 7% of EU-27 total greenhouse gas emissions (3,601 Mt CO₂ eq/year in 2019).¹¹

Why does the Nature Restoration Law matter to wetlands and peatlands?

The NRL recognizes wetlands as ecosystems where conservation, restoration and sustainable use needs to be ensured (recital 5). This aligns well with the goal of the ALFAwetlands project to maximise climate change mitigation & biodiversity of wetlands.

A great variety of wetland types, now to be restored as part of the NRL, can be found in the ALFAwetlands project regions. In Living Labs, platforms of interdisciplinary research, stakeholders from different backgrounds collaborate to conduct ecological and social science as well as modelling to produce scientific evidence on the impacts of managing hydrology, tree stands and soils.



NRL Article 4.1 includes the following restoration targets for 28 wetland habitat types listed in the EU Habitats Directive such as wet grasslands, bogs and fens, wet forests, coastal wetlands, etc (Annex I):

Member States shall put in place restoration measures on at least 30 % of the total area of all habitat types listed in Annex I by 2030, on at least 60 % by 2040 and 90 % by 2050 of the area of each group of habitat types listed in Annex I. Until 2030, priority should be given to areas that are located within Natura 2000 sites.

Within the NRL, the importance of peatlands, especially for biodiversity and climate protection (recital 59 NRL) is recognized. The adopted NRL includes peatlands degraded by different forms of land use (e.g. agriculture, forestry, peat extraction). This broad approach promotes greater equilibrium among EU Member States, recognizing diverse land use practices that might be central in certain peatland-rich EU countries.

NRL Article 11.4 endorses the restoration of organic soils in agricultural use constituting drained peatlands. Restoration measures shall be put in place on at least:

- **30%** of drained peatlands by **2030**, of which at least a quarter shall be rewetted;
- **40%** of drained peatlands by **2040**, of which at least a third shall be rewetted;
- **50%** of such areas by **2050**, of which at least a third shall be rewetted.

The restoration goals for agriculturally used peatlands in the EU Member States according to NRL (Art. 11.4) are visualized in figure 1. The NRL describes various measures to reach these goals (Annex VII) spanning from converting cropland to permanent grassland to rewetting for paludicultural use or the establishment of peat-forming vegetation (ecological restoration, see box) (recital 59, NRL). The sustainable wet peatland use after restoration, will minimize peat decomposition, CO₂ emissions and soil subsidence.

Globally agreed climate targets cannot be achieved without rewetting of peatlands.^{12,13} Especially rewetting of temperate and boreal agricultural peat soils like in EU will have rapid climate benefits.¹⁴ Therefore, Article 11.4 indicates that Member States should incentivise rewetting as restoration measure to make it an attractive voluntary option for landowners and land users. Additionally, Member States are encouraged to boost access to training and raise awareness on the benefits of restoring peatlands.

The National Nature Restoration Plans

Member States need to propose National Nature Restoration Plans (NRPs) determining (priority) areas to restore and engage in dialogues with local stakeholders to implement restoration. Each Member State shall submit a draft of the national restoration plan referred to in Art.14 and 15 NRL to the Commission by 1 September 2026. Despite flexibility, the main objective of the law is to “ensure the recovery of biodiverse and resilient nature across the Union territory”. This will oblige Member States to put emphasis and resources on restoring wetlands ecosystems according to NRL targets.

Scientific data and maps produced in the ALFAwetlands project could be made available to policy makers to support the preparation of NRPs.

About the ALFAwetlands Project

ALFAwetlands aims to enhance the geospatial knowledge of wetlands, assess restoration pathways through co-creation, and provide sustainability indicators to maximize climate mitigation, biodiversity and other ecosystem benefits, including social justice.

The project includes 9 Living Labs with 33 wetland sites across Europe, fostering collaboration on ecological, economic, and social issues. It seeks to improve restoration practices that can be scaled to other areas. ALFAwetlands is coordinated by the Natural Resources Institute Finland (Luke) and involves experts from 15 organizations across 10 EU countries.



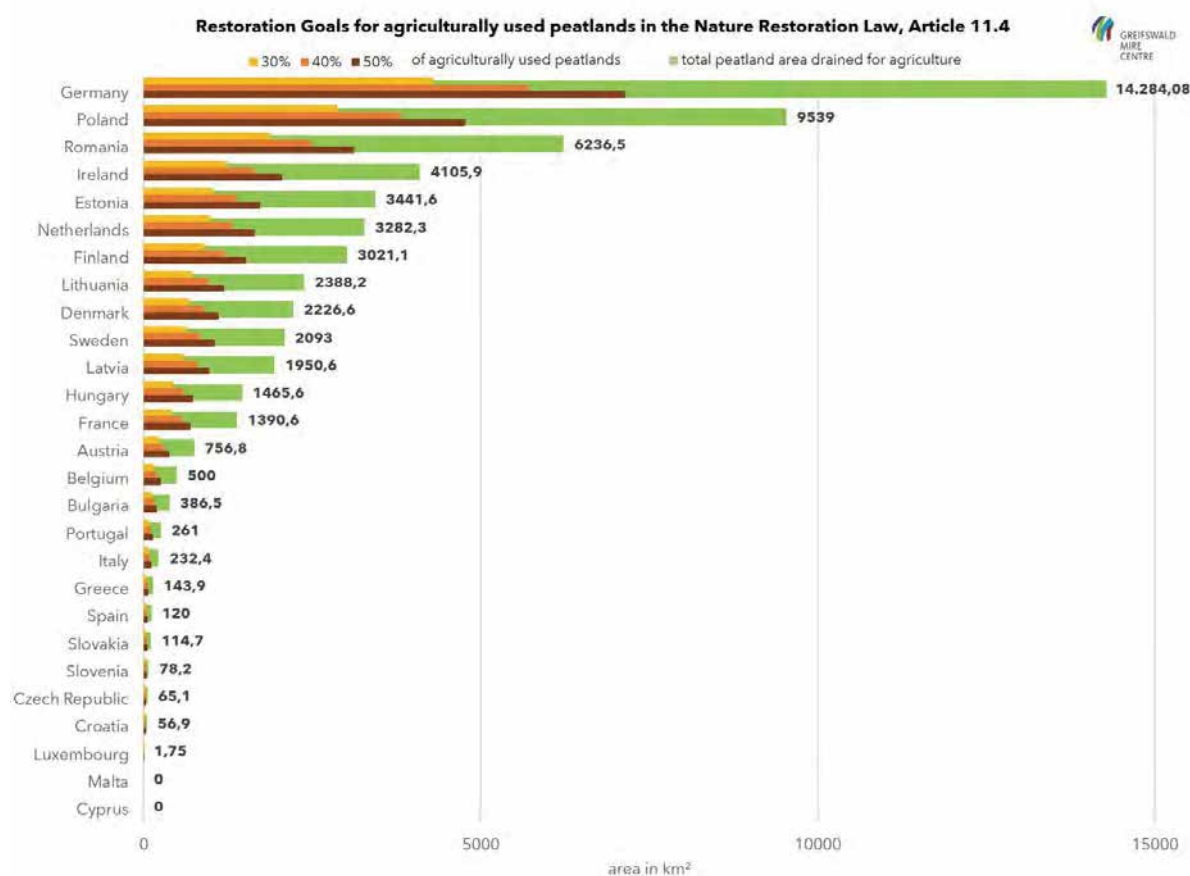


Figure 1: Drained peatlands in agricultural use of EU Member States to be restored according to Article 11.4 NRL, compared with the total area of drained peatlands in agricultural use (GPD 2024)

Know the difference

Wetlands are “areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres”.¹⁵

Peatlands are ecosystems in which under permanently water-saturated, oxygen-poor soil conditions dead plants do not completely decay and with a naturally accumulated peat layer at the surface.^{16,17}

Peat is semi-decomposed accumulated plant material consisting of at least 30% dead organic material.¹⁷

Mires are natural peatlands where peat is accumulating.¹⁶

Paludiculture is the productive land use of wet and rewetted peatlands that preserves the peat soil and thereby minimizes CO₂ emissions and subsidence.¹⁸

Ecological Restoration is the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed. It aims to move a degraded ecosystem to a trajectory of recovery that allows adaptation to local and global changes, as well as persistence and evolution of its component species.¹⁹

Rewetting is the deliberate action of raising the water table on drained soils to re-establish water saturated conditions, e.g. by blocking drainage ditches or disabling pumping facilities.²⁰



References

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Homepage: www.alfawetlands.eu

Contact: info@alfawetlands.eu

Authors for correspondence:

Marie Lorenz

Michael Succow Foundation – Partner in the Greifswald Mire Centre



Odette González Macé

Wetlands International European Association



Partners:



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