

WHY IS PEATLAND REWETTING CRITICAL FOR MEETING EU ENVIRONMENTAL OBJECTIVES?

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Peatlands occur in almost all EU Member States – though in larger extents in North-western, Nordic and Eastern countries – covering an estimated area of 350,000 km² [1,2]. At least half of those areas have already been degraded by drainage and agricultural or forestry use [2]. This degraded area is responsible for approximately 7% of the total EU-27 total annual greenhouse gas emissions and 25% of the annual agricultural emissions [3, 13]). Due to the sharp decrease of peatland area in the last decades, most of their specialised habitats and species (such as specialised plants, amphibians and bird species) are threatened or declining [4]. Further negative consequences of the continued drainage on peatland areas are mobilisation and discharge of nutrients to ground- and surface water, soil subsidence (1-2 cm yearly), higher flooding risks and - ultimately - loss of productive land [3].

Peatlands are known as the world's most effective carbon stores and – if restored – heavily contribute to tackling both the climate and biodiversity crises [3]. They also reduce risks of flooding, act as water purifiers and reserves as well as a buffer against pollution [5,7].

Rewetting drained peatlands can lead to drastic GHG emission reductions. **Thus, restoring peatland under cropland and grassland use is recognised as a key GHG mitigation measure by the IPCC [8].** The huge mitigation benefits of rewetting mostly arise from avoided emissions from degraded peat.

To reach climate neutrality by 2050, virtually all drained peatlands should be restored. If no rewetting takes place, emissions from peatland would take up 12-42% of the global emission budget needed to keep warming below 1.5-2°C [9].



Mire Georgenfeld, Germany © Sandra Naumann

Around 33,000 km² of peatlands are protected under the EU Habitats Directive (Annex I). Still, most degraded peatland areas have not been targeted with any formal measures by the EU. Current Member State reporting on peatlands show that only 10% of all peatlands are in good condition [4].

The proposal for an EU Nature Restoration Law targets peatland restoration and requires Member States to put in place and implement restoration measures as effective means to combat climate change and biodiversity loss.

WHAT CAN THE NATURE RESTORATION LAW ACHIEVE?

The **proposed Nature Restoration Law (NRL)** targets the restoration mainly via two articles:

Article 4 of the NRL requires Member States to put in place restoration measures for all habitats protected under Annex I of the Habitats Directive.

Article 9(4) specifies restoration measures on organic soils in agricultural use constituting drained peatlands, to be in place on at least:

- (a) 30 % of such areas by 2030, of which at least a quarter shall be rewetted;
- (b) 50 % of such areas by 2040, of which at least half shall be rewetted;
- (c) 70 % of such areas by 2050, of which at least half shall be rewetted.

This may also include restoration measures, including rewetting, in areas of peat extraction sites, and restoration measures to rewet organic soils constituting drained peatlands under land uses other than agricultural use and peat extraction. These may be counted as contributing, up to a maximum of 20%, to the achievement of the targets referred to in the first subparagraph, points (a), (b) and (c).

provided in the proposed wording.

As Figure 1 indicates, **Germany and Poland have the largest total areas of agriculturally used organic soils.**

In the context of the proposed Article 9(4), Germany, Poland and Romania will have to restore about half of their total peatland area by 2050, while Finland and Sweden will only have to take action on 2% of their total peatland area [2]. On the other hand, the restoration of degraded Annex I peatlands in Finland and Sweden could cover large areas.

The implementation and management of restoration measures will be **undertaken largely by private landowners and land managers**, in return for incentive payments which include compensation for opportunity costs relating directly to land management (e.g. income forgone through reduced grazing) [10]. This requires strong and new cooperations that also consider the slow recovery of peatlands to good condition and to the state of carbon sequestration. The impact assessment accompanying the NRL proposal estimates that the **monetised benefits from peatland restoration outweigh the estimated costs** of full ecosystem recovery (i.e. to good status) [10]. This is based on studies estimating benefits of peatland restoration through carbon sequestration and ecosystem services to range from €146 to €3,140 per hectare per year.

The NRL aims to not only restore peatlands covered by Annex I of the Habitats Directive, but also other drained peatlands, especially the ones under agricultural use.

Estimates show that further restoration of peatland and wetland Annex I habitats under Article 4 alone could **achieve additional net GHG mitigation benefits between 7.8 and 22.8 million tCO₂eq/year to 2030 and between 26.7 and 62.9 MtCO₂eq/year to 2050** [10]. If all EU peatlands were fully restored, the estimated mitigation potential is about 185 MtCO₂eq/year [11].

Article 9(4) will thus drive a significant land use change to reinstate peatlands which have been drained and are currently used for agriculture as a means for water storage and climate change mitigation, e.g. via alternative modes of use such as paludiculture [12]. While the article has a strong focus on agriculturally used peatlands, other peatlands usages (e.g. forestry) might be more relevant for some Member States – specifically the Nordic and Baltic countries, and some flexibility is

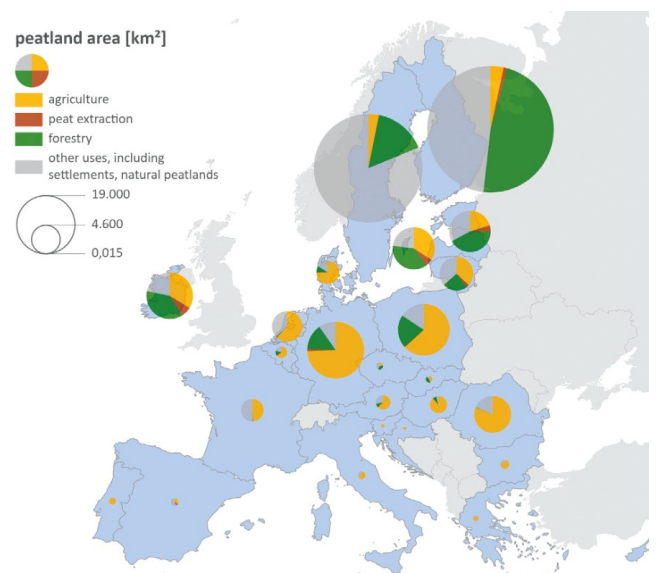


Figure 1. Overview of peatland area in Europe Germany, © Greifswald Mire Centre, 2022

Why is peatland rewetting critical for meeting EU environmental objectives?

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