WaterLANDS

Higher ambition for Peatlands in the EU Nature Restoration Law Proposal

Policy Briefing

September 2022

Index

Tobias Dahms, GMC

Higher ambition for Peatlands in the EU Nature Restoration Law Proposal

The long-awaited proposal for a Regulation on Nature Restoration that explicitly targets the restoration of Europe's ecosystems was presented by the European Commission on 22 June 2022. The EU co-legislators, the European Parliament and Council, will develop and further discuss their positions, followed by negotiation in trilogue meetings.

This is a year of important international moments for nature and climate, with the UNFCCC COP27, Convention on Biological Diversity (CBD) COP15, and Ramsar COP14 all taking place in 2022. The EU and its Member States can play a leading role in the international arena by showing the right example at home. The Regulation on Nature Restoration, also called Nature Restoration Law (NRL), can be a game-changer, triggering transformation on a large scale, constituting important steps to mitigating climate change and helping EU citizens to adapt to a warmer and more unstable climate, contributing to improved functioning of ecosystems, slowing down and stopping the catastrophic decline in biodiversity, and stimulating sustainable and resilient economies.

We, conservationists and scientists caring for wetlands and peatlands across the EU call on all stakeholders involved to take action to restore peatlands. We welcome the proposal and, in particular, **appreciate the target to restore drained peatlands under agricultural use** beyond peatlands listed in Annex I of the Habitats Directive 92/43/EEC (Art. 9 NRL proposal, see the end of this paper). Peatlands, which have been drained and are currently used for agriculture, can become just as vital for water storage and climate change mitigation and adaptation as peatland habitats that are protected under the Habitats Directive. We welcome the recognition of the importance of peatlands for biodiversity and climate protection (recital 54, NRL proposal) and the mention of alternative modes of use such as paludiculture[1] (recital 55, NRL proposal). **We call on decision-makers to improve the proposed targets** to achieve a transformation pathway that leads to net zero CO_2 emissions from peatlands by 2050.

Tobias Dahms, GMC

1 Paludiculture is the agricultural or silvicultural use of wet and rewetted peatlands (Wichtmann, W., Schröder, C. & Joosten, H. (eds.) (2016) Paludiculture - Productive Use of Wet Peatlands. Schweizerbart Science Publishers, Stuttgart.)

The state of peatlands in Europe

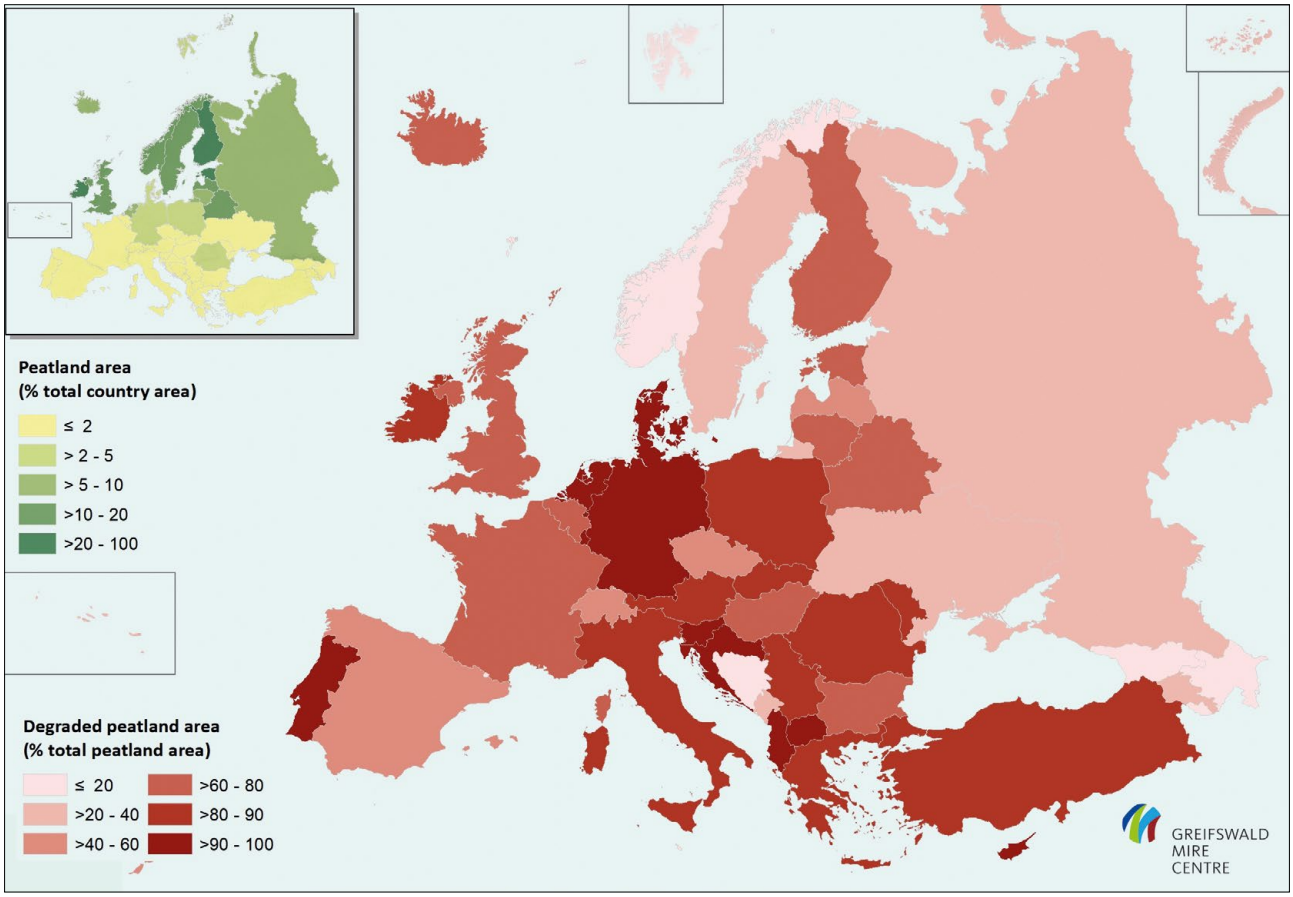

Figure 1: *Map of current peatland area in Europe (upper left corner) and percentage of degraded peatlands from that total area (main map) (compilation based on Tanneberger et al. 2021 and Joosten et al. 2017)*

Peatlands[2] occur in almost all EU Member States (see figure 1), with a concentration in North-western, Nordic and Eastern European countries, covering an area of approximately **350,000 km², of which more than 50% are degraded by drainage[3] and used for agriculture, forestry and peat extraction**.

There are significant differences in the extent and use of peatlands within Europe (see figure 2). While the peatland area is rather small in the Mediterranean region, the size of the area covered by peatlands increases significantly towards the north. In the peatland-rich, central European countries Poland, Germany and the Netherlands, the majority of peatland area is used for agriculture. In Northern Europe, namely in Finland and in the Baltic countries like Estonia and Latvia, the use is predominantly forestry.

The **EU is the second largest global emitter of greenhouse gases (GHG) from drained peatlands** (230 Mt CO_2eq/year = 15% of total global peatland emissions, while making up 12% of the global peatland area), which equates to approximately 7% of EU-27 total greenhouse gas emissions (3,601 Mt CO_2eq/year in 2019)[4]. To reduce these emissions significantly and protect the remaining peat carbon stocks, restoring drained peatlands must entail rewetting (raising water levels to near the surface, e.g. by drain blocking or stopping pumping in polders). Afforestation of drained peatlands is generally an inappropriate climate change mitigation measure as gains from increased biomass carbon sequestration are likely to be cancelled out by ongoing and increased peat carbon losses and changing albedos[5].

2 Peatlands are areas with a naturally accumulated peat layer at the surface (peat = soft, porous or compressed, sedentary deposit of which a substantial portion is partly decomposed plant material with high water content in the natural state), organic soil contains at least 20 % organic carbon (35 % organic matter) as defined by the Intergovernmental Panel for Climate Change (IPCC 2006, 2013)

3 Joosten, H., Tanneberger, F. & Moen, A. (eds.) (2017): Mires and peatlands of Europe: Status, distribution and conservation. Schweizerbart Science Publishers, Stuttgart.

4 Global Peatland Database 2022, European Environment Agency (2021): EEA greenhouse gases - data viewer.

5 Lohila, A., Minkkinen, K., Laine, J., Savolainen, I., Tuovinen, J.-P., Korhonen, L., Laurila,T., Tietäväinen, H. & Laaksonen, A. (2010): Forestation of boreal peatlands: Impacts of changing albedo and greenhouse gas fluxes on radiative forcing. Journal of Geophysical research 115: G04011.; Ojanen, P. & Minkkinen, K. (2020): Rewetting offers rapid climate benefits for tropical and agricultural peatlands but not for forestry-drained peatlands. Global Biogeochemical Cycles 34, e2019GB006503.;

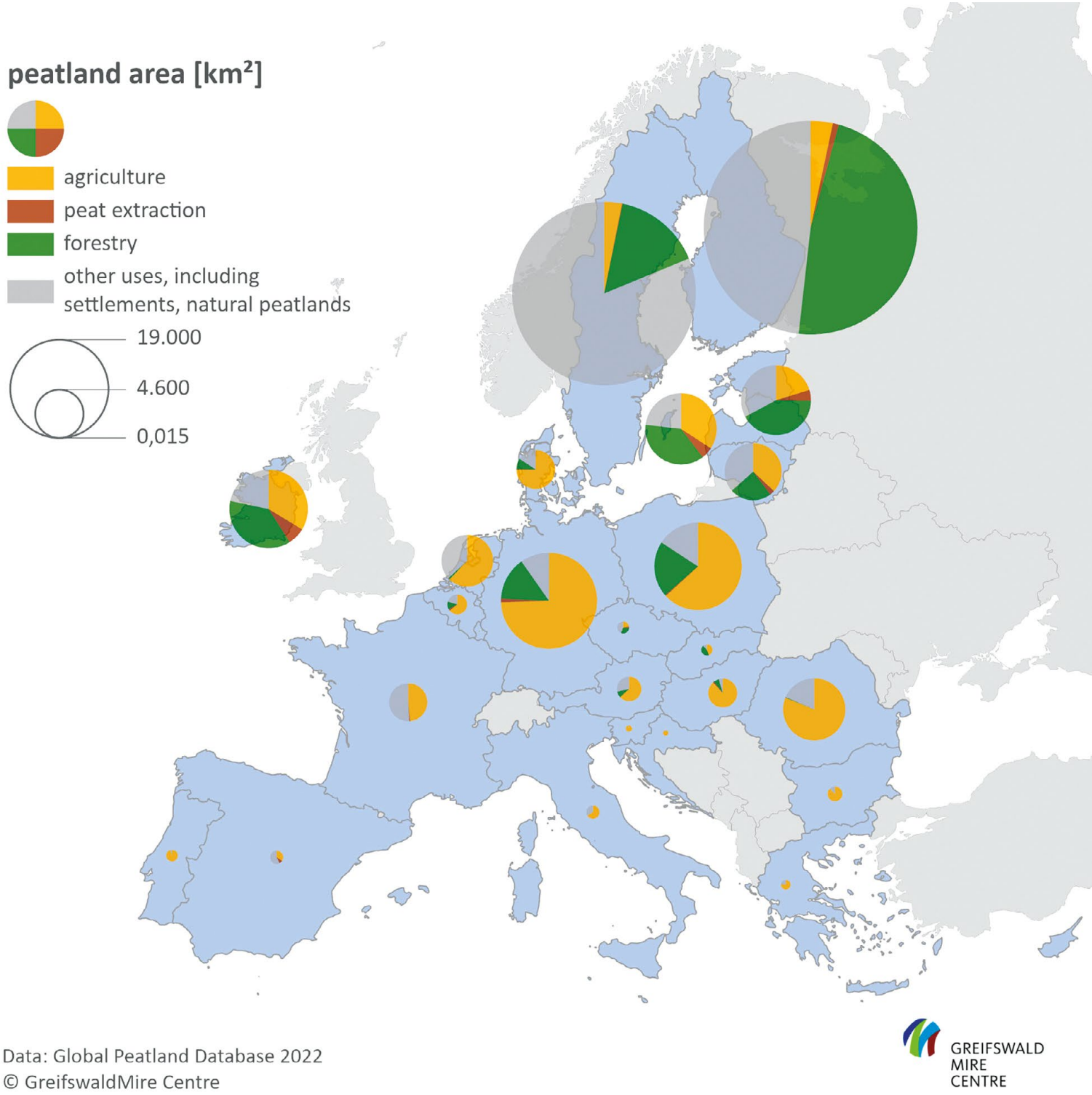

Figure 2: *Map of peatland use in Europe, showing proportions of different land use categories per country (own compilation)*

The effect of the peatland targets for the Member States

In terms of absolute area, **Germany** and **Poland** have the largest areas of agriculturally used organic soils, followed by Ireland, the Netherlands and Finland. With respect to the total area of peatlands to be rewetted, **Germany**, **Poland** and **Romania** will have to restore[6] 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, followed by Latvia, which will have to commit to restoration on circa 15% of its total peatland area (see figure 3). While the types of agriculture differ strongly, the **Netherlands and Finland** will be most affected from an agricultural point of view, as organic soils constitute more than 10% of their agricultural land, followed by **Germany, Ireland, Latvia,** and **Estonia**[7].

The targets of the NRL proposal focus strongly on agriculturally used peatlands, while many peatland-rich EU Member States use peatland areas predominantly for land use types other than agriculture (namely forestry or peat extraction). These other land use types are hardly covered by the proposal, which leaves the peatland-rich Nordic and Baltic countries with fewer obligations to restore peatlands compared to the other Member States, despite their large share of drained peatland areas. As it stands, Article 9.4 thus creates an **imbalance in the NRL's ambitions in light of the need for peatland restoration,** thus its scope should be extended to other types of land use.

The proposed Article 9.4 differentiates between restoration and rewetting. The overarching objective of the law is "to contribute to the continuous, long-term and sustained recovery of biodiverse and resilient nature […] and to contribute to achieving Union climate mitigation and climate adaptation objectives and meet its international commitments" (see general objectives of the proposed regulation). Climate objectives – clearly – cannot be reached without full rewetting.

Raising the water level only partially can lower GHG emissions and support biodiversity, nevertheless peat degradation and GHG emissions will continue. In order to stop peat decomposition, soil subsidence and CO_2 emissions from peatlands, **peatland restoration always requires full rewetting** by raising the water level to near the surface. Only in this way peatland degradation can be stopped and the remaining peat carbon stock will be saved.

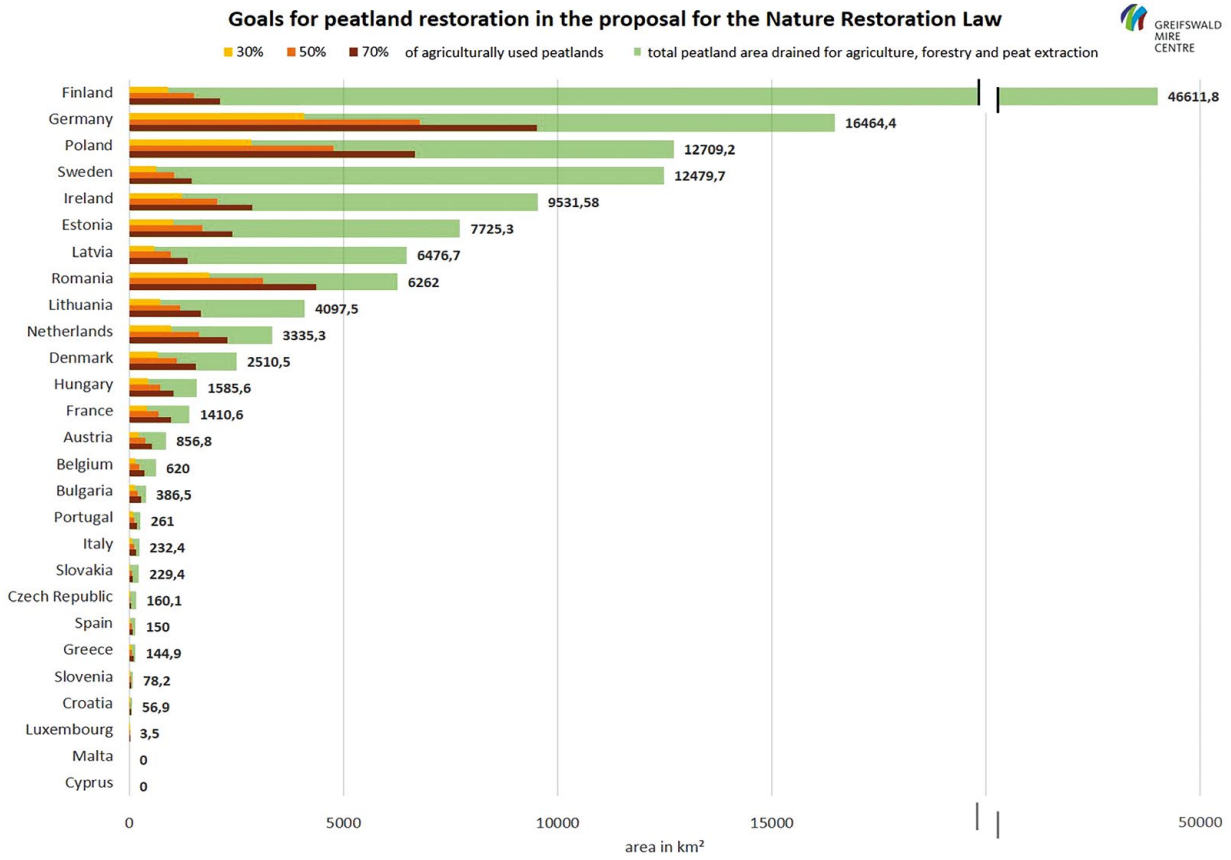

Figure 3: *Agriculturally used peatlands, to be **restored** according to Article 9 NRL proposal, compared with total peatland area drained for land use (own compilation, based on Global Peatland Database 2022)*

6 In this policy brief, the terms restoration and rewetting are used in line with the NRL proposal, note that we recommend defining restoration as being conditioned by rewetting (see recommendation A).

7 COMMISSION STAFF WORKING DOCUMENT IMPACT ASSESSMENT REPORT ANNEX VI-b Accompanying the proposal for a Regulation of the European Parliament and of the Council on nature restoration {COM(2022) 304 final} - {SEC(2022) 256 final} - {SWD(2022) 168 final}

Rewetting and GHG mitigation scenarios

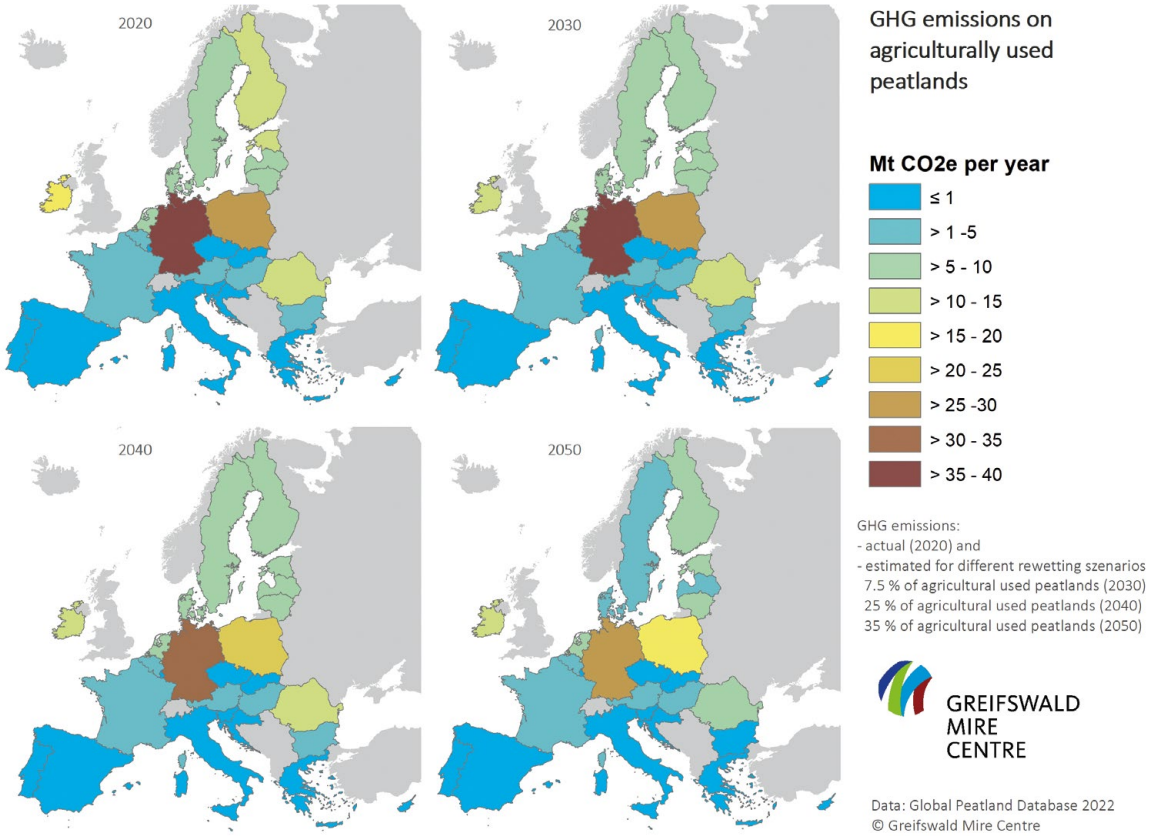

Figure 4: *Expected GHG emissions on peatlands used for agriculture, according to the proposed targets for* ***rewetting*** *in the NRL proposal (own compilation).*

The GHG emission reduction that will be achieved by fulfilling the proposed targets for peatland rewetting is limited (Fig. 4), as rewetting represents only half of the total target (7.5 % till 2030, 25% till 2040, 35% till 2050). In 2050, Germany would still release high GHG emissions from drained peatlands (25-30 CO_2-eq per ha and year, 30-35 Mt in total per year), the highest quantity in the EU-27, followed by Poland and Ireland. **This way, the globally agreed target of net-zero CO_2 emissions by 2050 will be missed.**

Rewetting 35% of the total area of agriculturally used peatlands in EU-27 in a typical mix of croplands and grasslands* **will reduce their total emissions by 25% (ca. 45 Mt CO_2-eq.).** If only grasslands are rewetted, the emission reduction will be no more than 6 Mt CO_2-eq. per ha and year (ca. 39 Mt CO_2-eq. per year in total). Rewetting croplands instead of grasslands results in emission reductions that are about 10 t CO_2-eq. higher per ha and year[8]). If rewetting is focussed on croplands first, emission reduction would overall be higher by ca. 57 Mt CO_2-eq. per year. The climate benefit of the NRL proposal should be maximised by **prioritising rewetting of croplands over grasslands** among the agriculturally used peatlands as 33% of the current total emissions will be reduced (instead of only 23% when rewetting only grassland) (see figure 5).

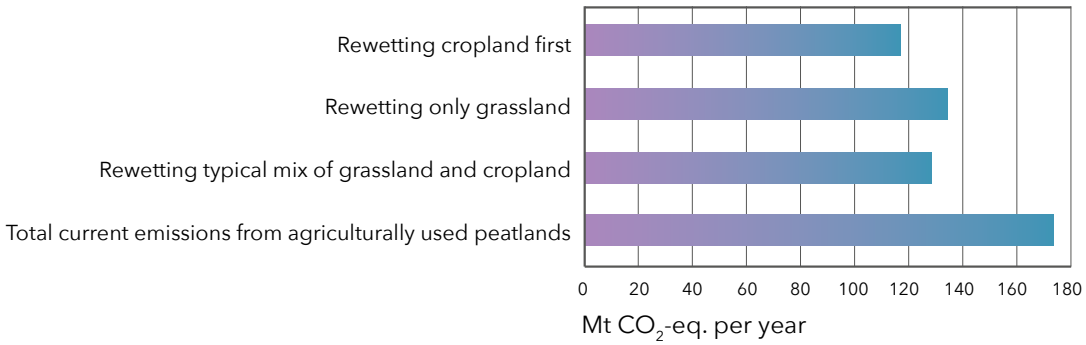

Figure 5: *Scenarios for remaining emissions when* ***rewetting*** *35% of agriculturally used peatland area; * the area used as grassland is about twice as large as the area of cropland (own compilation, based on Global Peatland Database 2022, Greifswald Mire Centre)*

8 Wilson, D. Blain, D., Couwenberg, J., Evans, C.D., Murdiyarso, D., Page, S.E., Renou-Wilson, F., Rieley, J.O., Sirin, Strack, A. M. & Tuittila, E.-S. (2016): Greenhouse gas emission factors associated with rewetting of organic soils. Mires and Peat 17, Article 04, 1–28..

Benefits of peatland rewetting

Besides GHG emission reduction, **rewetting will prevent soil subsidence, eventual flooding,** and saltwater intrusion in coastal areas. It will **lower the risk of peat fires, soil erosion, and desertification**.

It will also **reduce current nutrient runoff** into surface waters. Rewetted peatlands have a positive effect on **water availability**, as they slow down water flow and retain more water in the landscape. Peatlands also support biodiversity far beyond their borders by **regulating the hydrology and meso-climate on a landscape scale**, especially in times of a rapidly changing climate with severe droughts and heat waves. They also have a cooling effect on the **local or regional climate**. They thus provide **essential regulating ecosystem services** for people living in the surroundings and for their economic activities including agriculture[9].

Although the number of species found in a peatland may be comparatively low in certain cases, peatlands have a **high proportion of specialised plant, amphibian and bird species that are rare and threatened** on the European or even global level. Because of habitat isolation and heterogeneity, peatlands play a special role in maintaining biodiversity at the genetic level. If restored and functioning, they may provide refuges for endangered species with an originally much wider distribution (e.g. Aquatic Warbler) and cool shelters for species displaced by climate change. At the same time, we need more restored grassland areas on mineral soils in a living landscape to provide habitat for species, which presently make use of surrogate habitats on drained and degraded peatland sites, e.g. meadow birds.

Wet peatlands can be sustained in a productive state (paludiculture), which will continue **value creation for livelihoods from agriculture**, offer new opportunities for economic development and at the same time reduce pressure on other wetlands (which might be at risk to be drained for agricultural use).

Michael Succow, GMC

9 Bonn, A., Allott, T., Evans, M., Joosten, H., & Stoneman, R. (Eds.). (2016): Peatland restoration and ecosystem services: science, policy and practice. Cambridge University Press.

Recommendations

EU Member States, above all peatland-rich ones, need to take clear responsibility and commitment to restore (i.e. fully rewet) and safeguard peatlands. EU Member States, landowners, and land-users in the EU should be encouraged and incentivised to maintain and re-establish high water levels in peatlands to maximise carbon storage, minimise GHG emissions, and support biodiversity, **we call on EU decision-makers to ensure that**:

A. **Rewetting is a prerequisite** of peatland restoration

Article 9.4 proposes separate targets for restoration and rewetting of peatlands, but this distinction is inaccurate. Restoring degraded peatland requires improving hydrological conditions, first and foremost by rewetting. According to the current targets only 7.5% (by 2030), 25% (by 2040), and 35% (by 2050) of drained peatlands used for agriculture would be effectively restored by rewetting. In practice, it will even be less, because rewetting of peatlands drained for forestry and peat extraction counts towards the agricultural target. Because rewetting of the latter lands is easier to realise (fewer opportunity costs) and contributes less to reducing emissions, it will function as a loophole to avoid the rewetting of high-emitting agricultural peatlands. The current target numbers are therefore far below what can and must be achieved for the overarching climate commitments (see Recommendation B). We recommend deleting the separate rewetting target, and making rewetting a condition for any restoration target.

B. The proposed targets are insufficient and should **be increased significantly**

Although reaching the proposed targets (including full rewetting as described above) already means considerable transformational challenges for the use of peatland areas, they do not comply with the Paris Agreement, as only around 25% of the current GHG emissions from agriculturally used peatlands will be reduced by 2050. A complete cessation of peatland drainage and reversal of the effects of existing drainage are unavoidable to reach the core implication of the Paris Agreement - zero net CO_2 emissions by 2050[10]. The EU has even sharpened this goal by aiming to be climate-neutral with net-zero emissions (i.e. including all GHGs) by 2050. A higher ambition for drained peatland targets is therefore needed for consistency across policies and to prevent drained peatland from remaining a huge source of carbon losses in the AFOLU (agriculture, forestry and land use) sector.

C. The **scope of the target is expanded to all non-residential land use on drained peatland**

The focus on drained peatland under agricultural use prioritises the GHG emission hotspots but largely neglects other land use types such as drained peatlands used for forestry, which urgently need to be rewetted as well. Several peatland-rich Member States (especially Nordic countries) have only a small share of agriculturally used peatlands. The proposed targets imply disproportionally low rewetting ambitions for those countries.

All countries should be equally ambitious in peatland rewetting, regardless of the type of use. Therefore, the scope of the Article 9.4 should be expanded to all types of peatland use. The current two subparagraphs referring to counting other land uses under the agricultural target must be deleted, also to prevent these from being used as a loophole for reducing agricultural land emissions. This will also contribute to the simplicity and clarity of the regulation (see example below). The targets need to be formulated for *"organic soils constituting drained peatlands under any land use, except for residential areas"*.

D. A **mandatory monitoring** for peatland restoration is set in Article 17

Art. 17 requires the Member States to monitor almost all ecosystem types except peatland restoration on drained organic soil and this omission should be rectified. A good understanding of ecosystem functioning, particularly eco-hydrological processes, as well as knowledge-based designs, are crucial for effective restoration action. Equally important is maintaining and improving the capacity for long-term monitoring of restoration impact, to allow a reliable evaluation of climate and biodiversity policy and action. Member States should be held accountable for their use of peatlands, so mandatory monitoring of peatland restoration is essential for the proper implementation and enforcement of the law. EU-funded research projects such as WaterLANDS, ALFAWetlands, WETHorizons, Rewet, ReVersal and PRINCESS are building the science base to which the Member States can contribute further.

10 Tanneberger, F., Abel, S., Couwenberg, J., Dahms, T., Gaudig, G., Günther, A., Kreyling, J., Peters, J., Pongratz, J., Joosten, H. (2021) Towards net zero CO_2 in 2050: An emission reduction pathway for organic soils in Germany. *Mires and Peat*, 27, 05, 17pp.

Recommendations to improve the European Commission's current proposals on peatlands

Proposal by EC

Art. 9.4

For organic soils in agricultural use constituting drained peatlands, Member States shall put in place restoration measures. Those measures shall 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.

Member States may put in place restoration measures, including rewetting, **in areas of peat extraction sites** and count those areas as contributing to achieving the respective targets referred to in the first subparagraph, points (a), (b) and (c).

In addition, Member States may put in place restoration measures to rewet organic soils that constitute **drained peatlands under land uses other than agricultural use and peat extraction** and count those rewetted areas 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).

Recommendation

Art. X (new)

For organic soils under any land use constituting drained peatlands, Member States shall put in place rewetting (and possibly additional restoration) measures and monitor their success. Those measures shall be in place on at least:

a. 30 % of such areas by 2030

b. 50 % of such areas by 2040

c. 70 %, where possible up to 100 %, of such areas by 2050.

This policy brief was jointly produced in September 2022 by

GREIFSWALD MIRE CENTRE

Wetlands INTERNATIONAL

Contact details:

Greifswald Mire Centre
c/o Michael Succow Foundation
Ellernholzstr. 1/3
D-17489 Greifswald, Germany
URL: www.greifswaldmoor.de
E-Mail: info@greifswaldmoor.de
Twitter: @greifswaldmoor

Wetlands International European Association
Rue de l'Industrie 10
B-1000 Brussels
Belgium
URL: www.wetlands.org/europe
E-Mail: europe@wetlands.org
Twitter: @WetlandsEurope

The policy brief has been reviewed and supported by the following scientific institutions:

The policy brief is supported by the following organisations:

The H2020 WaterLANDS consortium with 32 organisations from research, industry, government and non-profit sectors in 14 European countries endorses this letter.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101036484 (WaterLANDS). The elaboration of this policy brief has been funded by the European Union and opinions expressed are however those of the author only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them.

Shutterstock / Gijs Rijsdijk

WaterLANDS

The WaterLANDs project, funded by the EU Horizon 2020 Green Deal, is working to restore wetlands sites across Europe which have been damaged by human activity and laying the foundations for upscaling protection across more areas.

WaterLANDS