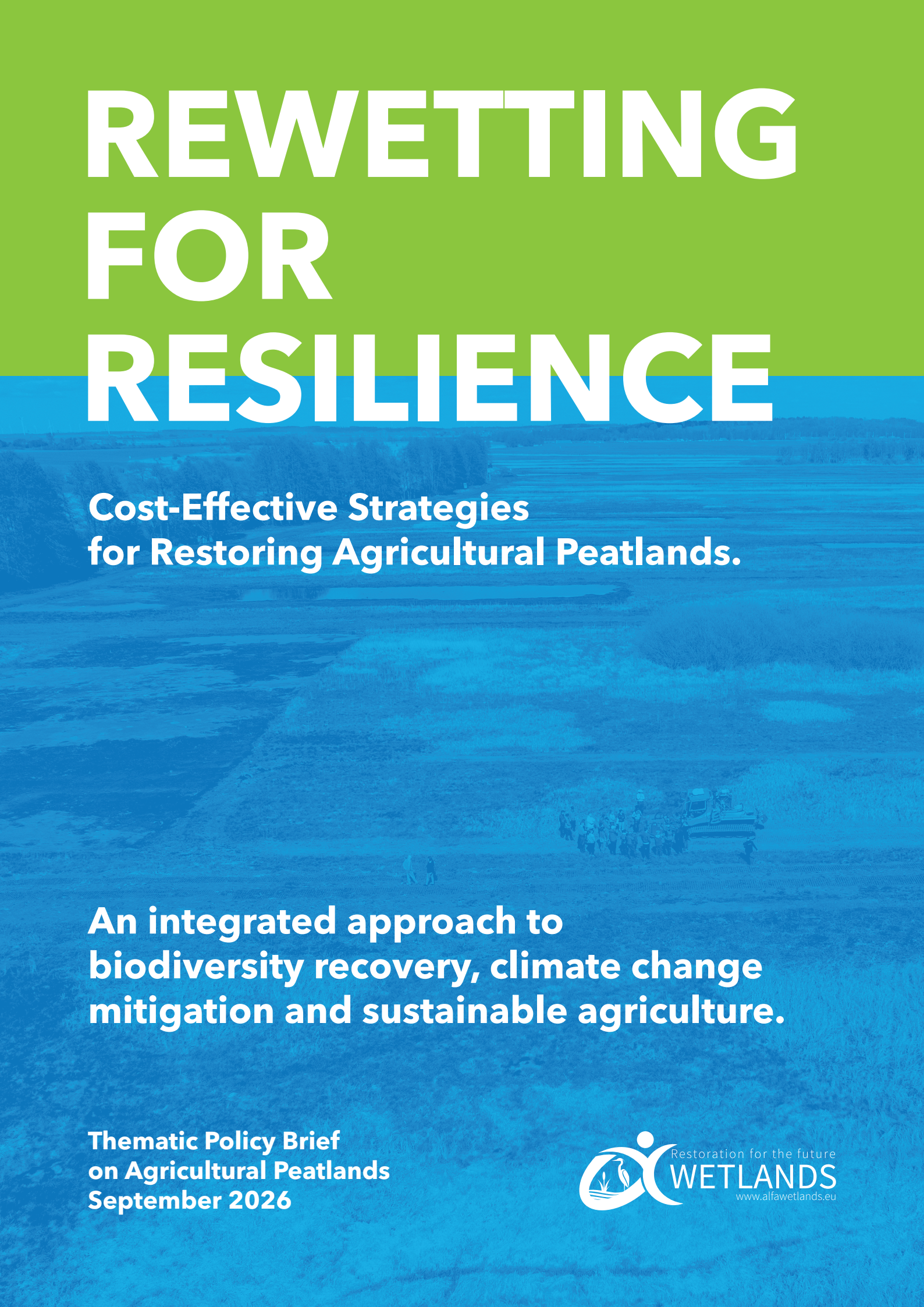
REWETTING FOR RESILIENCE

Cost-Effective Strategies for Restoring Agricultural Peatlands.



An integrated approach to biodiversity recovery, climate change mitigation and sustainable agriculture.

Thematic Policy Brief
on Agricultural Peatlands
September 2026

Restoration for the future
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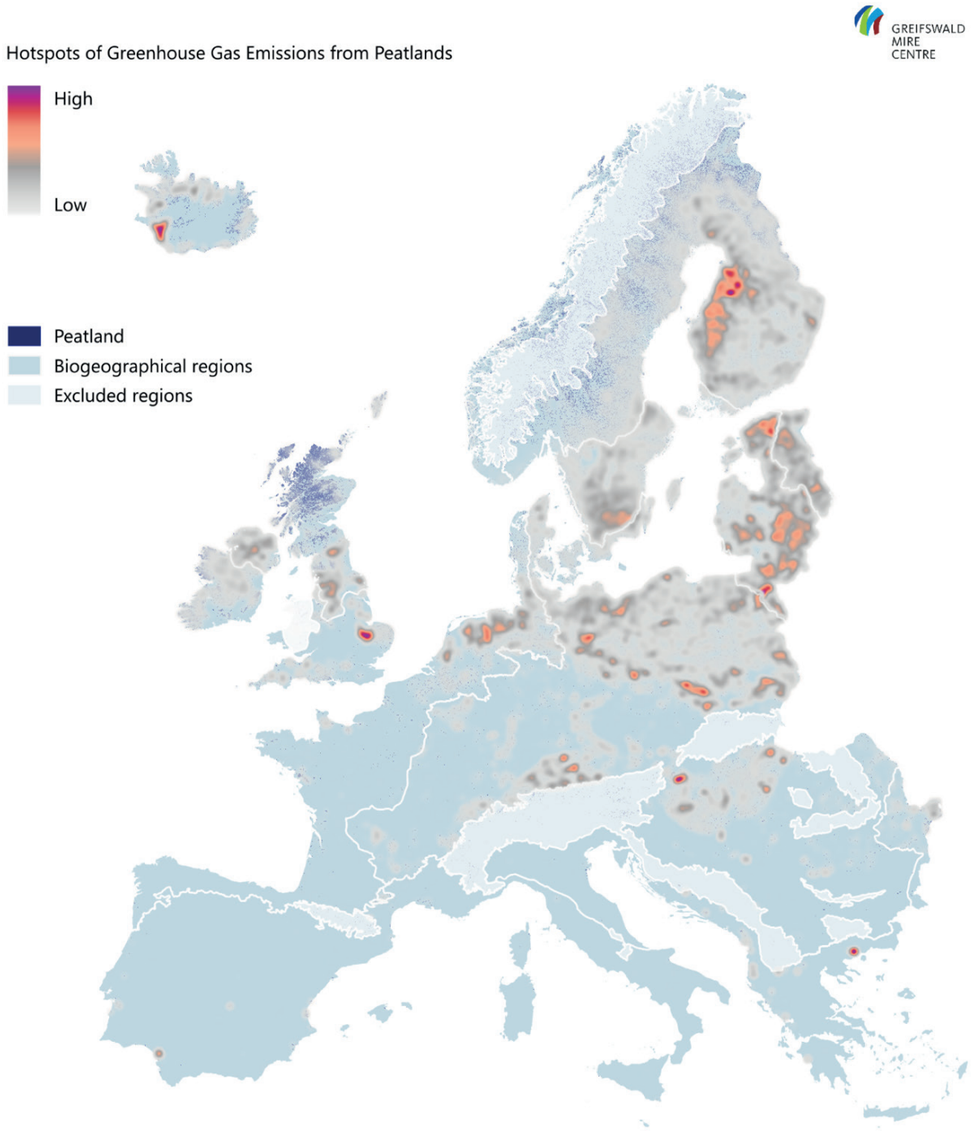
Figure 1: Peatland greenhouse gas emission hotspots within European biogeographic regions. Note: This is a composite map. Hotspots are calculated separately for each biogeographical region. Each region has its own lowest and highest emission values, thus the colour coding from low to high is relative and only valid within each biogeographical region. For further information, see ALFAwetlands deliverable 1.3 (https://alfawetlands.eu/deliverables/). The Alpine region was discarded because of lacking emission factors.



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Key Messages

1. **Restoring agriculturally used peatlands offers exceptional climate benefits:** Rewetting a relatively small area of agriculturally used peatlands can deliver substantial emission reductions and make a significant contribution towards EU climate neutrality objectives.
2. **Biodiversity recovery through policy coherence:** Rewetting peatlands in intensively drained landscapes delivers simultaneous climate benefits and boosts wetland species if planned carefully in site-specific context, supporting coherent achievements of EU environmental targets.
3. **Paludiculture can transform restoration economics:** Paludiculture – the productive use of wet peatlands – significantly lowers economic barriers to restoration and creates viable business opportunities. With strong paludiculture product demand, restoration could be practiced even without additional climate-policy incentives.

Introduction – Why is this important

Drained peatlands[1] accounted for approximately 80% of cropland and grassland greenhouse gas (GHG) emissions in 2023, though they cover only 2% agricultural land in the EU (EEA 2025, UNFCCC 2025). Considering that carbon sinks from forestry are in decline across the EU (UNFCCC 2024, 2025), rewetting of drained agricultural peatlands with high net GHG emission reduction potential should be prioritized to advance the targets for land use, land-use change and forestry (LULUCF) with manageable land-use changes (Jia et al. 2026).[2]
Even though EU policy has increasingly targeted peatland conservation and restoration in the past years through the development of carbon credits certification standards (Carbon Removals and Carbon Farming Regulation (CRCF)), the recognition of certain paludicultures as eligible for direct payments (2023-2027 Common Agricultural Policy (CAP)), and the establishment of legally binding restoration and rewetting targets for drained peatlands (Nature Restoration Regulation (NRR), Art. 11.4), significant efforts are still needed to unlock the full potential of peatlands.

Policy Context

With the adoption of the NRR, the EU has committed to rewetting approximately 17%[3] of agriculturally used peatlands by 2050 (EU-NRR 2024). Achieving this target would not only reduce GHG emissions from cultivated peatlands by 10 % but would also be a milestone

[1] Referred to as "organic soils" within LULUCF sector in greenhouse gas inventories
[2] Disclaimer: This policy brief largely comprises findings from a publication by Jia et al. (2026), which was primarily produced as part of the research carried out under the ALFAwetlands project.
[3] NRR 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 50% of such areas by 2050, of which at least a third shall be rewetted.

towards more sustainable food production (PRINCESS 2025). While implementing the NRR is a crucial first step towards climate neutrality, significantly higher climate benefits can be achieved through large-scale peatland rewetting (ebd.). This, in turn, requires additional enabling EU policy, financing and market conditions to substantially reduce GHG emissions from agriculture.

Restoration of croplands on peat soil, entailing full rewetting in compliance with the NRR, delivers the largest possible share of emissions reductions (see fig. 2). Incentives as GHG prices or biomass demand increase attractiveness of full rewetting within a mixed restoration portfolio (Jia et al. 2026), making peatland rewetting one of the most effective and efficient measures for achieving the NRR goals and giving Member States strong incentives to go beyond minimum requirements (SERE 2026).

The high opportunity costs associated with rewetting measures mean that its successful implementation depends on substantial financial economic support for landowners potentially facing income disruption during transition periods. In this context, the CRCF Regulation provides a voluntary certification framework that could trigger land-use changes by establishing new revenue streams through market incentives in future, thereby complementing public funding streams such as the CAP and LIFE programme (Robinson & Ganesh 2026).

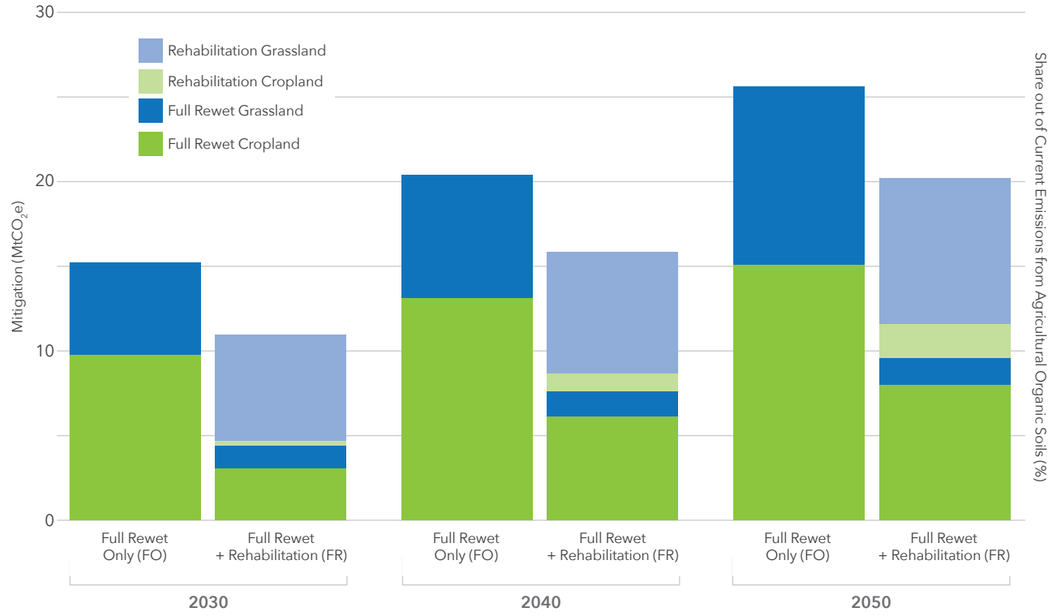
Recommendations

1. **Initiate the recovery of wetland biodiversity, promote native peatland species and strengthen ecological connectivity with adjacent peatland habitats through paludiculture.** Based on current studies and with careful, site-specific planning, paludiculture promotes wetland biodiversity and under certain conditions mire-specific fauna and habitats can recover by providing favorable habitat conditions while maintaining productive land use (HNEE et al. 2024, Martens et al. 2023). In addition, the impact of rising groundwater levels at landscape level should be considered. Since drained peatlands often border on remnants of natural peatland ecosystems within nature reserves, paludiculture can optimize and re-establish the water storage capacities at landscape-scale (Temmink et al. 2026; EHF 2026).

2. **Prioritize peatland sites with high and robust net GHG mitigation potential and use carbon crediting to unlock incentives for rewetting.** Deeply drained peatlands under agricultural use emit substantially more greenhouse gases than forested peatlands, with croplands producing higher emission than grasslands (van Giersbergen et al. 2025). Thus, the National Restoration Plans – the main instrument for NRR implementation in Member States – should prioritize restoration measures according to land use and drainage depth, thereby identifying deep-drained croplands as areas with the highest emission reduction potential (see fig. 2). This approach is mirrored by carbon crediting mechanisms under the CRCF certification framework, which reward quantified greenhouse gas emission reductions resulting from rising water tables. Since substantial carbon credits via the CRCF can only be generated through raised water levels of drained peatlands with high climate mitigation potential, targeting croplands can help landowners reduce opportunity costs of rewetting while delivering significant GHG emissions reductions. Such incentives could also help fulfill the requirements outlined in NRR Article 11.4.

3. **Integrate paludiculture into peatland restoration policies to accelerate rewetting, reduce emissions, and contribute to a circular low-carbon economy.** The economical revenue of paludiculture products lowers thresholds for investments into large-scale rewetting, increases the share of fully rewetted peatlands, and can stimulate restoration even without carbon pricing incentives under high biomass demand (Jia et al. 2026). Beyond that, the economic potential of paludiculture biomass could play a central role in restoration projects. In fact, including innovative products derived from paludiculture in the Advanced Materials Act[4] could help facilitate the transition to a circular and a low-carbon economy, whilst minimizing negative environmental impacts (PaluWise 2026).

Figure 2: GHG mitigation from restoring drained organic soils (croplands and grasslands) under various restoration measures upon achieving NRR targets for specific years (Jia et al. 2026)



Summary

Achieving the maximum climate, biodiversity, and socio-economic benefits of agricultural peatland restoration requires ambitious targets, policy coherence across the NRR, CRCF, CAP, and broader EU climate and industrial strategies. Aligning restoration targets with financial incentives, carbon crediting mechanisms, and support for paludiculture can accelerate site-specific peatland restoration while supporting a just and economically viable transition for landowners.

[4] The Advanced Material Act is a key legislative initiative currently under preparation by the European Commission and scheduled for 2026. It is a key deliverable of the Competitiveness Compass, with the aim of establishing a strategic framework for advanced materials that is crucial for industrial leadership, strategic autonomy and competitiveness in the EU. (DG RTD 2026)

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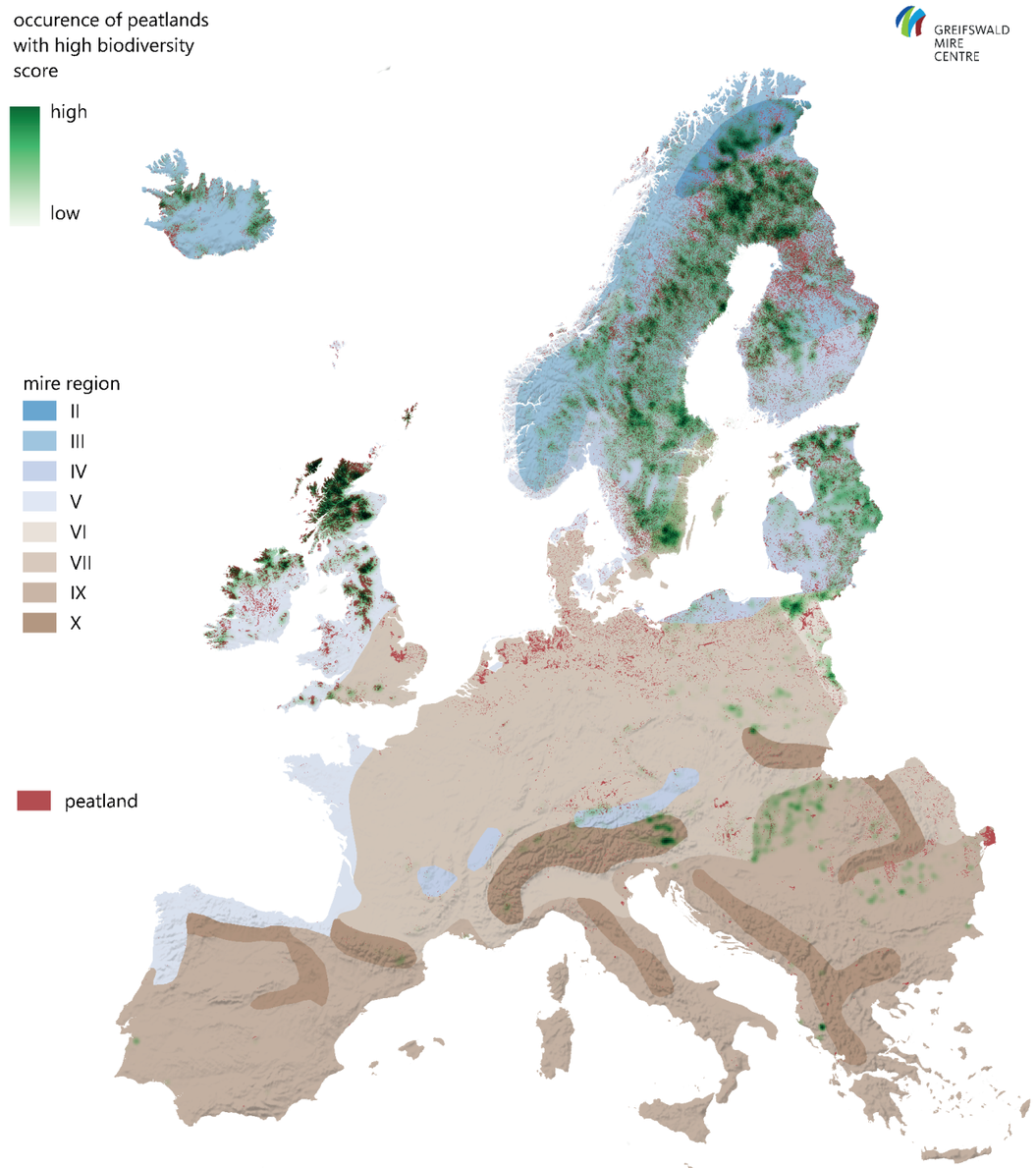
Figure 3: Regions outside protected areas that are considered peatland biodiversity hotspots (= dark green), according to the respective separate mappings of biodiversity in Mire regions (cf. Tanneberger et al., 2021) based on proxy data and shown here as a composite map (which explains some abrupt changes at the boundaries of the mire regions). Mire regions: (II) palsa mire region, (III) northern fen region, (IV) typical raised bog region, (V) Atlantic bog region, (VI) continental fen and bog region, (VII) nemoral-sub-meridional fen region, (VIII) Colchis mire region, (IX) southern European marsh region, (X) central and southern European mountain compound region.



The displayed maps (Fig. 1 and Fig. 3) were jointly produced by the ALFAwetlands and WET HORIZONS projects.

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Cite as
ALFAwetlands (2026): Rewetting for Resilience: Cost-Effective Strategies for Restoring Agricultural Peatlands. An integrated approach to biodiversity recovery, climate change mitigation and sustainable agriculture. Policy Brief. September 2026.

Cover Picture
Restoration measures in agricultural fen peatland in Germany with shallow topsoil removal and ditchblocking. Site is rewetted and established for paludiculture. © BioFilm/Michael Succow Foundation.

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