

Peatland-related Policies in Six Central and Eastern European Countries



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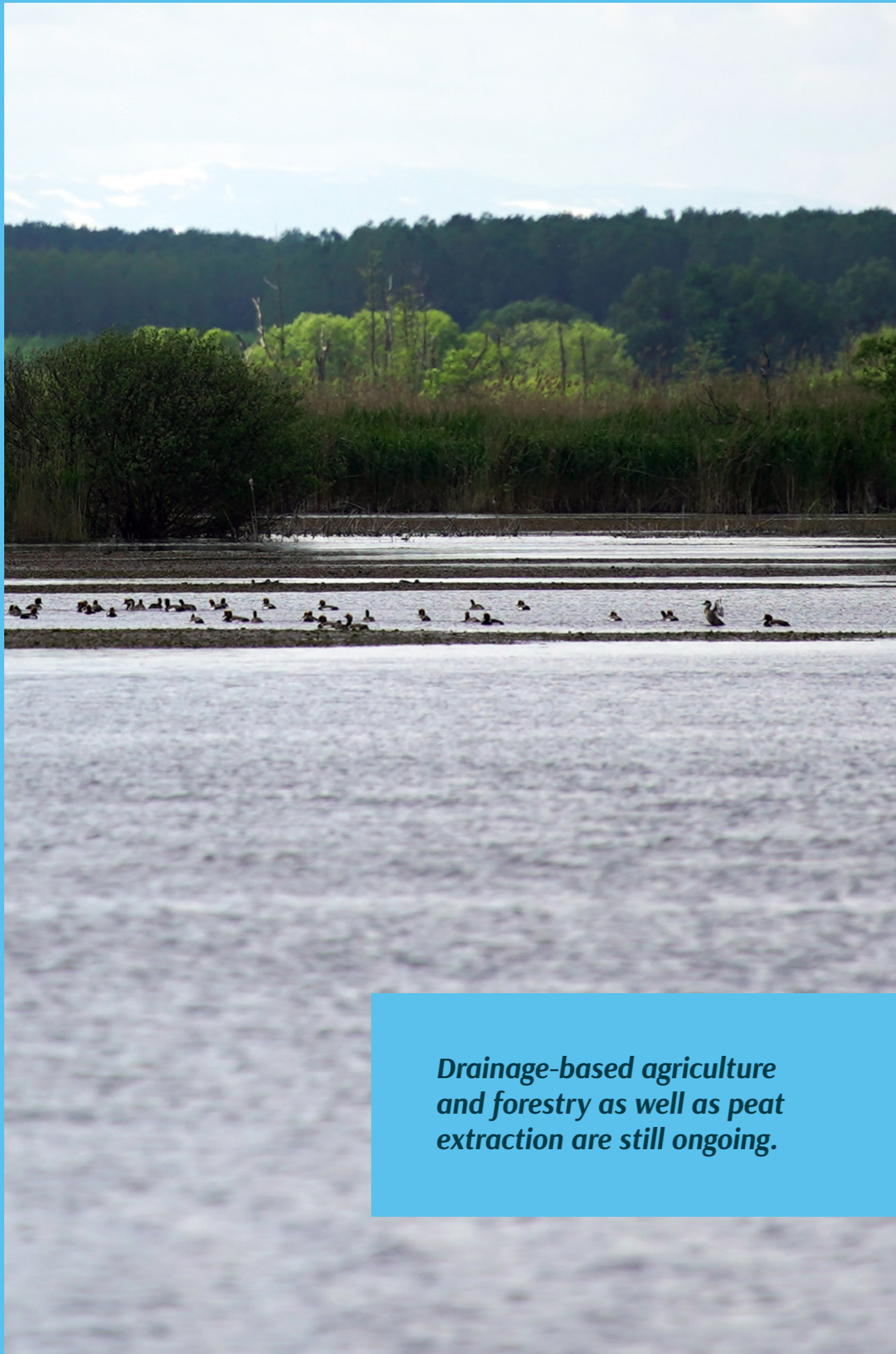
Peatlands are among Earth's most valuable ecosystems, holding up to a third of the world's soil carbon, despite covering only 3-4% of its land surface.

Introduction

Building the European Peatlands Initiative: a strong alliance for peatland climate protection in Europe – a project formed under the European Climate Initiative (EUKI), aims to strengthen pan-European collaboration for the protection, restoration, and sustainable use of peatlands. The project helps to support the adoption of peatland strategies and policies based on up-to-date data and enhances multi-stakeholder collaboration on the topic of peatlands. Moreover, it aims to share peatland restoration practices and foster multi-national collaboration between countries to successfully mitigate climate change on a European level.

Peatlands are among Earth's most valuable ecosystems, holding up to a third of the world's soil carbon, despite covering only 3-4% of its land surface.¹ Today, around 88% of peatlands found globally are unharmed and left in a natural state. Yet unfortunately, they continue to be affected by human activity. Many peatlands are not even prioritised in international and national legislation Worldwide, the European Union (EU) is the second-highest emitter of greenhouse gases (GHG) from drained organic soils.¹ Around 50% of all peatlands in the EU have been degraded and a further 10% have been permanently lost.¹ Most of Europe's peatlands have been drained to provide land for drainage-based agriculture and forestry, leaving a small percentage of peatlands in their natural state. Peat has been extracted for energy, horticulture, and soil enrichment purposes. Peatland management policies are essential for halting mass biodiversity loss, furthering climate change mitigation, and supporting the wellbeing of communities who rely on peatland ecosystems for their livelihoods.

1. Global Peatlands Assessment: The State of the World's Peatlands, 2022.



Drainage-based agriculture and forestry as well as peat extraction are still ongoing.

National Peatland-related Policies and Best Practices

While international conventions and EU-wide policies are important initial steps towards achieving common climate targets, national peatland policies must support individual countries' climate mitigation efforts.

This report aims to explore exemplary policies and best practices for peatland management from six European countries: Estonia, Germany, Hungary, Latvia, Lithuania, and Poland.

In preparing their own national peatland strategy, Central and Eastern European countries may learn from the pioneering efforts of European countries such as

Country	Main peatland-related policy	Best practice
Estonia	Action Plan for Protected Mires for 2016-2023 (currently being updated)	Restoration practice of the State Forest Management Centre, LIFE projects
Germany	National Peatland Conservation Strategy (2022)	Restoration of bogs and fens, stakeholder dialogues, paludiculture
Hungary	National Biodiversity Strategy to 2030	All peatlands are protected by law 'ex lege', restoration projects under the Environment and Energy Efficiency Operational Programme
Latvia	Environmental Policy Guidelines 2021-2027, Latvian Guidelines for the sustainable use of peat 2020-2030	Stabilisation of the peatland hydrological regime, restoration by Nature Conservation Agency and private companies
Lithuania	National Energy and Climate Action Plan 2021-2030	Contribution of private sector to the mitigation of climate change by rewetting peatlands, using carbon credits: MoorFutures-Standard
Poland	Strategy for the Protection of Wetlands (2022-2031)	Establishment of the European Peatland Policy Working Group in the frame of the LIFE Multi Peat project

Table 1. Main peatland-related policies and best practices in the assessed countries

Belarus, Austria, England, Finland, Germany, Ireland, Northern Ireland, Scotland, and Wales.²

Among Central and Eastern European countries, it is not common to have dedicated peatland strategies, focusing exclusively on peatlands. However, including peatlands in related strategies is more widespread. From six selected countries, two have dedicated peatland strategies (Estonia and Germany); the others (Hungary, Latvia, Lithuania, Poland) have peatlands included in related policies (*Table 1.*).

Most of the above-mentioned countries have ambitious targets for rewetting peatlands and reducing GHG emissions by 2030. Despite the ambitious goals, in all of these countries, drainage-based agriculture and forestry as well as peat extraction are still ongoing.

Estonia

Peatland area (ha)	915,000 ha ¹
Degraded peatland (%)	55% ²
Main peatland-related policy	<i>Action Plan for Protected Mires for 2016-2023</i> (currently being updated)
Main sources of peatland funding	EU Cohesion Fund, EU LIFE projects, national funds
GHG emissions from degraded peatlands (annual)	10.14 million tonnes CO ₂ equivalent ²
Best practice for peatland protection and management	Restoration practice of the State Forest Management Centre, LIFE projects.

Estonia has a long history of using peatlands for agriculture, forestry and peat production, with the most intense peatland drainage occurring during the Soviet era. Agricultural drainage for fields, pastures and meadows started in the 17th century, mostly in fens, and has involved up to 300,000 hectares. Forestry drainage in peatlands started in the early 19th century, and by the end of the 20th century about 180,000 hectares of land on Histosols and 238,000 hectares on paludified mineral soils had been drained.¹ Peat has been industrially extracted in Estonia since the late 18th century, and production reached higher levels in the early 20th century. Whilst the main use of peat used to be energy production, it is currently almost entirely produced for modern horticulture, on average 0.4-0.9 million tons³ annually. Currently, about 21,000 hectares of peatlands are licensed for extraction, and an additional ~10,000 hectares remained abandoned after the collapse of the Soviet regime. The latter are being restored by the state, depleted extraction areas by the peat producing companies.

Drained bogs are one of the most important generators of greenhouse gases in Estonia.

In Estonia, drained bogs are one of the most significant generators of greenhouse gases. Currently, drained peatland forests comprise 15.7% of Estonian forests,⁴

3. National peatland strategies in Europe: current status, key themes, and challenges. Ralf Nordbeck, Karl Hogl, Regional Environmental Change, 2024. <https://doi.org/10.1007/s10113-023-02166-4>

where the CO₂ emissions through the mineralization of the peat layer can exceed its accumulation in trees. Moreover, the major concern regarding peatland forests has been the draining effect of the managed drained forests on the neighbouring peatland forests and natural peatlands.

With the first nature conservation law in 1935 and first bog protection area from 1938, the protection of peatlands in Estonia has a relatively long tradition. In Estonia, slightly more than half of naturally-preserved peatlands are currently under protection.⁵ In 1957, protected areas were established in several important peatlands. Moreover, in 1981, 30 large peatland protection areas were established with a total area of 122,189 ha. Since regaining its independence in 1991, Estonia has joined several international conventions; 17 Estonian wetlands are Ramsar convention sites.

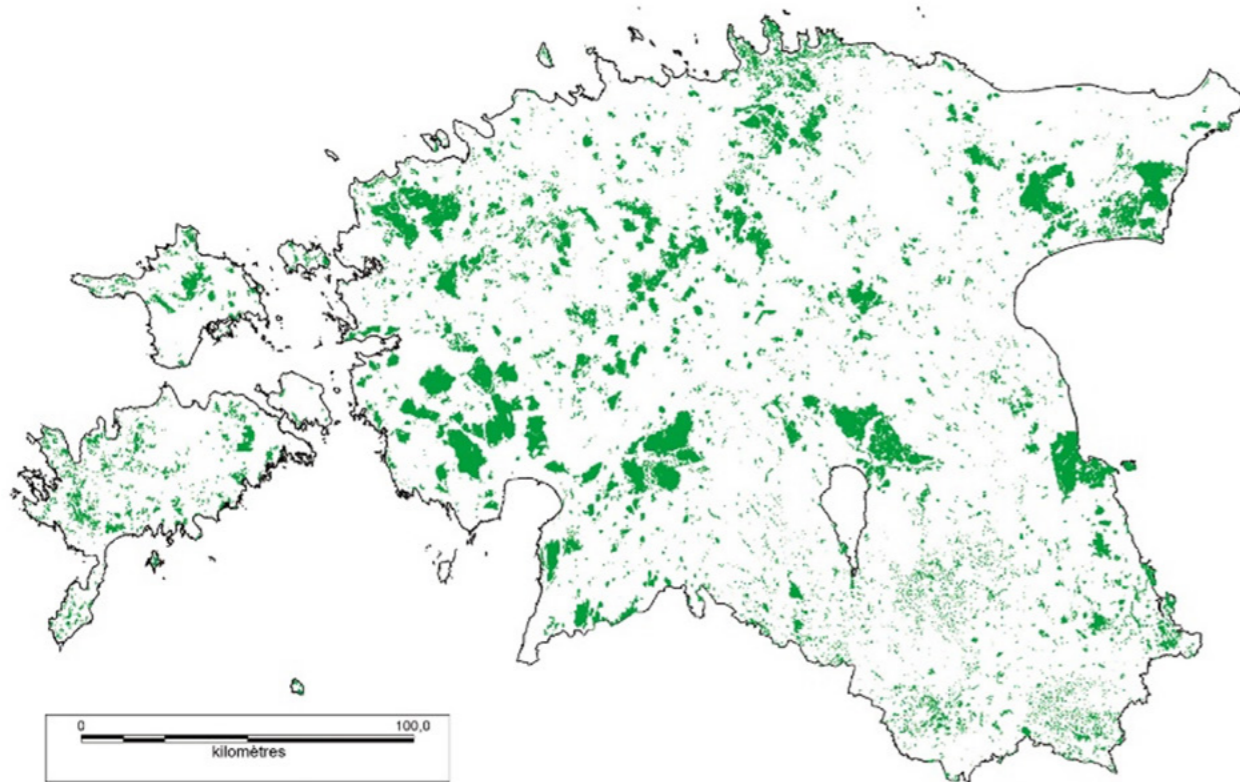


Figure 1. Estonia is a peatland-rich country with 20.2% of its total area covered with peatlands.⁶

The *Action Plan for Protected Mires for 2016-2023* addressed a goal to restore 10,000 hectares of peatlands before 2020 as well as keeping 190,000 hectares of peatlands under national protection.⁵ The new action plan is currently being completed.

Moreover, in 2023, the Estonian Environmental Board compiled an *Action plan for wet forest habitat types* (*9080, *91D0, *91E0, 91F0 and swamp forests located in protected areas).⁷ The action plan sets the goal that by 2030, all wet forest habitats will be mapped, their deterioration will be halted, and various forest habitats will be restored on an area of 13,000 hectares. A goal has been set that by 2050 a total of 126,000 hectares of wet forest habitats are to be preserved in favourable condition, the vulnerability of species living in them, such as the black stork, white-backed

woodpecker, and other woodpeckers be decreased, and the area of peat-accumulating forests be increased⁵ above.

In 2009-2011, a large-scale inventory of peatlands was conducted in Estonia, where the condition and area of all mires exceeding 1 hectare was recorded, and peatlands were divided into four value classes.¹ In parallel, more attention has been put on awareness-raising activities, such as introducing nature (including peatlands) to both locals and tourists.

The major organization acting for the restoration of degraded peatland habitats in Estonia is the State Forest Management Centre. The Centre focuses on areas of international importance, such as degraded parts of peatlands that are part of the Ramsar Convention and Natura 2000 areas, and peatlands that can be restored most easily and at reasonable costs. The Centre also assesses the restoration's success, and its positive effect on the habitat and the protected species.

While the *Nature Conservation Development Plan* until 2020 envisaged the improvement of the condition of at least 10,000 hectares of damaged peatland habitats and the restoration of at least 1,000 hectares of abandoned peat extraction areas back into wetlands, by now these goals have actually been exceeded. The State Forest Management Centre has restored nearly 17,000 hectares of peatland habitats, including more than 1,000 hectares in abandoned peat extraction areas, and the volume of work will not decrease in the coming years.³

To restore the water regime of the peatlands, the State Forest Management Centre has mainly used funds from the European Union's Cohesion Fund. In 2014-2020, the State Forest Management Centre has used approximately 4.8 million euros from the European Union's structural fund for nature conservation to restore 9,346 hectares of peatlands. In addition, the Centre is carrying out works to restore the natural communities of abandoned peat production areas from the Soviet era on 2,000 hectares, at a cost of approx. 3.1 million euros.³ The State Forest Management Centre's own contribution is added to these amounts.

Additionally, large-scale restoration projects have been implemented under the leadership of the Fund for Estonian Nature and Tallinn University, i.e. 3,343 hectares during LIFE Peat Restore project, 5,800 hectares during LIFE Mires Estonia project and 3,500 hectares during Waterlands project. The major concern about these projects is that the monitoring of vegetation, greenhouse gases, the water table and water quality does not continue after the project is completed. Thus, drawing conclusions about the success of the enacted practices will be difficult.

Estonia has restored more than 10,000 hectares of damaged peatland habitats and 1,000 hectares of abandoned peat extraction sites.

High demand for high-quality horticultural peat continues to drive peat extraction. There are currently 128 operating peat extraction sites in Estonia, with licensed area of about 25,510 hectares,⁸ with 400-900 thousand tonnes of peat extracted annually.³ In order to ensure that peat extraction does not harm biodiversity, a list of severely damaged peatlands suitable for extraction have been approved by the decree of the Minister of the Environment.⁹ Peat extraction is prohibited outside these listed areas. Inclusion on the list does not mean an automatic extraction permit, but the granting of the permit is preceded by a thorough impact assessment. All depleted extraction areas have to be reclaimed after extraction by the extracting company.¹⁰

More than 7,000 hectares of the extraction sites are *Responsibly Produced Peat (RPP)* certified.¹¹ The Estonian Peat Association, an umbrella organization of peat extraction companies, has set a goal to rewet 5,000 hectares of depleted peatlands by 2030.

Germany

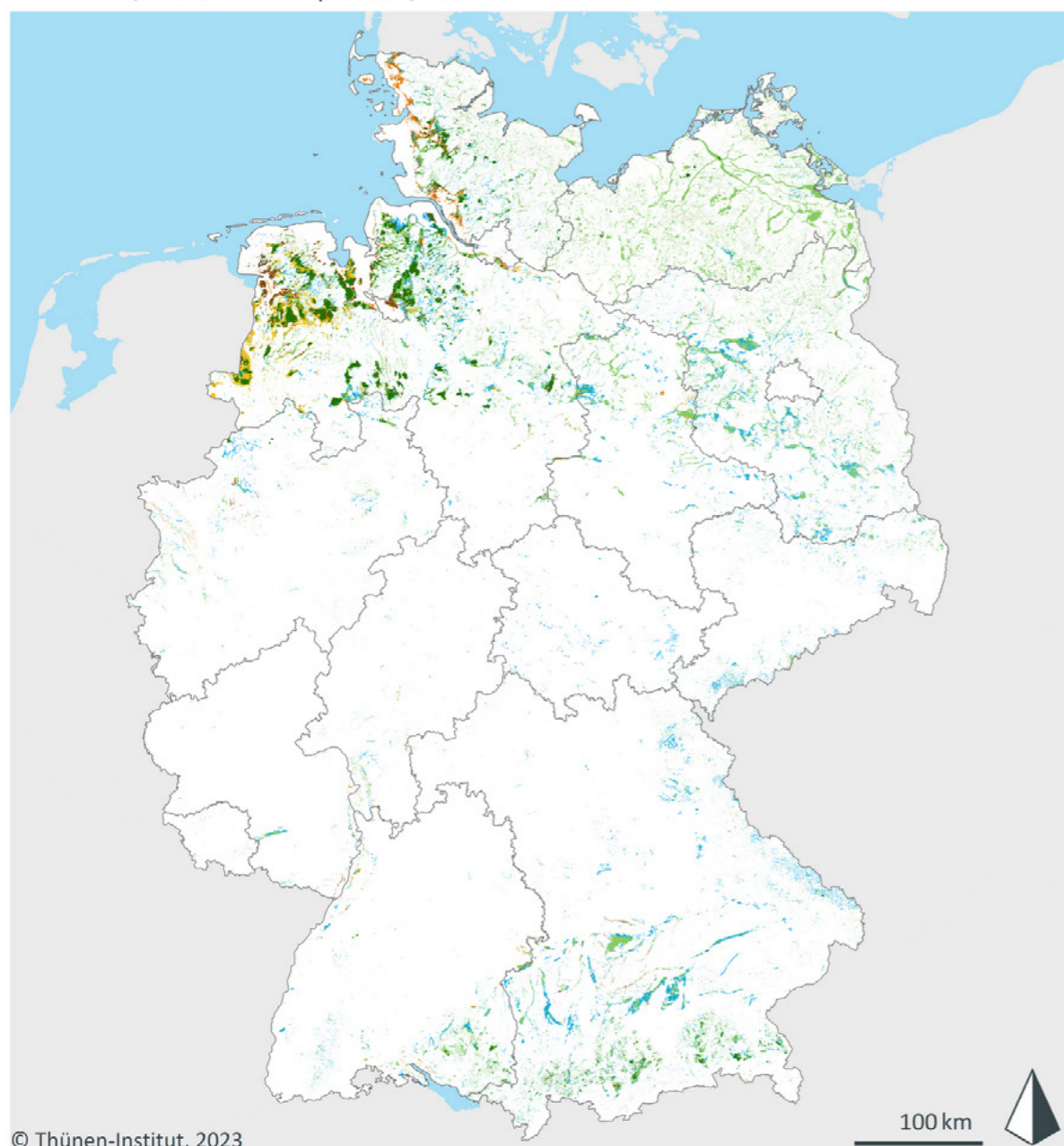
Peatland area (ha)	1,800,000 ha ¹
Degraded peatland (%)	92% ¹
Main peatland-related policy	<i>National Peatland Conservation Strategy (2022)</i>
Main sources of peatland funding	EU funds, national and sub-national funds
GHG emissions from degraded peatlands (annual)	43.29 million tonnes CO ₂ equivalent ²
Best practice for peatland protection and management	Restoration (bog, fen), stakeholder dialogues, paludiculture

Germany holds 1.8 million hectares of peatlands which is around 5% of the country's total area.¹ Under the Basic Law of the Federal Republic of Germany, the federal states (Länder) are the main parties responsible for implementing nature protection, agricultural and forestry land use and thus measures to protect and restore peatlands. The Federal Government and the states also cooperate in various areas of peatland management through a framework agreement.³

Peatlands have been drained in Germany since the 12th century, and drainage intensified beginning in the 18th century. Peat was extracted for a variety of uses, including fuel for energy, soil enrichment and as a substrate and growing medium in horticulture.⁴ Peat extraction still continues today. However, most peatland areas were drained to provide land for drainage-based agriculture in the 1960s and '70s, both in western and eastern Germany. Today, Germany has degraded more than 92% of its peatlands, mostly for agriculture, leaving a small percentage of peatlands in their natural state. It makes Germany the largest emitter of GHGs from peatlands in the EU.²

Germany is the largest emitter of GHGs from peatlands in the EU.

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2. Global Peatlands Assessment: The State of the World's Peatlands, 2022. <https://www.unep.org/resources/global-peatlands-assessment-2022>
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5. Estonian Ministry of Climate, Märgalade taastamine aitab vähendada kliimamuutusi ja suurendada elurikkust. 2022. <https://kliimaministeerium.ee/uudised/margalade-taastamine-aitab-vahendada-kliimamuutusi-ja-suurendada-elurikkust>
6. Küttim, M. et al. "The Distribution of Mires in Estonia: Paludified Forests, Open and Wooded Mires." The Current State and Ecological Restoration of Peatlands in Estonia, vol. 48, Dynamiques Environnementales, 2018, pp. 342-349.
7. Estonian Environmental Board, Märgade metsaelupaigatüüpide (*9080, *91D0, *91E0, 91F0 ning kaitsealadel asuvad kõdusoometsad) tegevuskava, 2023.
8. National Inventory Submission (NIR 2023)
9. Keskkonnaministri 27.12. määrus nr 87 „Kaevandamisega rikutud ja mahajäetud turbaalade ning kaevandamiseks sobivate turbaalade nimekiri” Lisa 2, 2016.
10. Earth's Crust Act.
11. Responsibly Produced Peat, 2024. <https://www.responsiblyproducedpeat.org/en/issued-rpp-certificates>



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Moorbodenkategorien

- Niedermoorboden
- Moorfolgeboden
- flach überdeckter Moorboden
- Hochmoorboden
- Tiefumbruchboden aus Moor
- mächtig überdeckter Moorboden

Datenquellen:

- GeoBasis-DE / BKG (2022)
- Bayerisches Landesamt für Umwelt (2021)
- Bayerische Vermessungsverwaltung (2022)
- Regierungspräsidium Freiburg, Landesamt für Geologie, Rohstoffe und Bergbau Baden-Württemberg (2022)
- Umweltatlas Berlin / Moore - Moorgebiete (2015)
- Landesamt für Bergbau, Geologie und Rohstoffe Brandenburg (2022)
- Geologischer Dienst für Bremen (2018)
- Behörde für Umwelt, Klima, Energie und Agrarwirtschaft Hamburg (2016)
- Hessisches Landesamt für Naturschutz, Umwelt und Geologie (2020)
- Landesamt für Umwelt, Naturschutz und Geologie Mecklenburg-Vorpommern (2022)
- Landesamt für Bergbau, Energie und Geologie Niedersachsen (2017)
- Geologischer Dienst Nordrhein-Westfalen (2021)
- Landesamt für Geologie und Bergbau Rheinland-Pfalz (2019)
- Landesamt für Umwelt- und Arbeitsschutz Saarland (2001)
- Sächsisches Landesamt für Umwelt, Landwirtschaft und Geologie (2020, 2011)
- Staatsbetrieb Geobasisinformation und Vermessung Sachsen (2021)
- Landesamt für Geologie und Bergwesen Sachsen-Anhalt (2014)
- Landesamt für Umwelt des Landes Schleswig-Holstein (2022)
- ThüringenForst AoR, Forstliches Forschungs- und Kompetenzzentrum Gotha (2022)
- Thüringer Landesamt für Umwelt, Bergbau und Naturschutz (1996-1974)

Figure 2. Distribution of organic soils across Germany, with 5% of its total area covered with peatlands.⁵

Restoring and protecting peatlands is now a significant part of the German climate agenda. This growing concern is due to increased awareness of scientific evidence and, unfortunately, to the increasing number of peat fires in recent summers. Sustainable peatland use practices in the country were already a research topic in the late 1990s, coining the term paludiculture.

Germany released its National Peatland Conservation Strategy in 2022, led by the Federal Ministry for the Environment, focusing on objectives and measures to restore and sustainably manage peatlands.¹ The strategy aims to bring together all relevant stakeholders to create successful cooperation for the protection and restoration of peatlands and targets a GHG emission reduction of 5 million tonnes of CO₂ equivalent per year from peat soils by 2030.

The peat industry has been important in Germany over the last century, including domestic extraction and increased imports of raw peat from other EU countries, mostly the Baltics. For this reason, an additional strategy was put in place in 2022, led by the Federal Ministry for Agriculture, to greatly reduce the use of peat in commercial horticulture by 2030 (2026 for hobby gardening).⁶ However, these goals are voluntary, and research still needs to be carried out to identify and provide alternatives to peat in sufficient quantity and price.

Germany aims to reduce its total GHG emissions by 65% of 1990 levels by 2030 and the main goal is to become greenhouse gas neutral by 2045.⁷ To reach these goals for the land use, land-use change and forestry (LULUCF) sector of the National Climate Act and the requirements of the EU LULUCF regulation, Germany considers the benefits of peatlands as nature-based solutions for climate and biodiversity. Therefore, a whole chapter is dedicated to the protection of intact peatlands and rewetting in the *Federal Action Plan on Nature-based Solutions for Climate and Biodiversity*.⁸

Germany released its National Peatland Conservation Strategy in 2022, focusing on objectives and measures to restore and sustainably manage peatlands.

The Federal Ministries of Environment and Agriculture both finance several large-scale projects to show the feasibility of paludiculture in different peatland-rich regions. A bottleneck identified in German policy is that several strategies and measures have been published, but some of these rely on voluntary actions (e.g. measures in the Peat Use Reduction Strategy) and there are no clear obligations to implement them. The measures should be complemented by targeted regulation to encourage change in the public and private sectors. Additionally, drainage-based agriculture on peatlands is still funded widely by the payments of the Common Agricultural Policy (CAP), acting as environmentally harmful subsidies.

Germany has a wide range of strategies and action plans dedicated to peatland restoration and conservation. Nevertheless, there is scope for improved coordination between the laws, responsible ministries and agencies, and regulatory frameworks. In addition, the German federal systems with land use and management responsibilities at the sub-national state (Länder) level can lead to policy contradictions and regional differences.⁹

Germany also promotes a sustainable form of agricultural use on peatlands in the form of paludiculture. Paludiculture means cultivation of biomass on wet and rewetted peatlands with plant species that contribute to the conservation of peat deposits and ideally to the formation of peat.¹⁰

German policies, strategies and solutions for rewetting peatlands are great long-term examples for countries that are still in the process of planning their actions to restore these sensitive ecosystems, notwithstanding all the obstacles. Germany should now focus on the development of attractive incentives and safeguards to increase the willingness among all stakeholders to push forward towards peatland restoration and implement its strategic and legal objectives.

Hungary

Peatland area (ha)	62,344 ha ¹
Degraded peatland (%)	97%
Main peatland-related policy	<i>National Biodiversity Strategy to 2030</i>
Main sources of peatland funding	EU funds (EARDF, ERDF, Cohesion Funds, LIFE projects)
GHG emissions from degraded peatlands (annual)	4.88 million tonnes CO ₂ equivalent ²
Best practice for peatland protection and management	All peatlands ³ are protected by law ('ex lege'), restoration projects under the Environment and Energy Efficiency Operational Programme

Hungary was once a wetland-rich country, with peatlands covering 1.1% of its territory,⁴ but as a result of drainage and river regulation over 97% of them have been lost in the past two centuries. By the end of the 20th century, the former peatland area had been reduced to a third of its former size and the peat resources to a quarter.^{5,6} Today, peatland habitats with active peat formation are relatively scarce in Hungary.

There is strong legal protection since 1996 for the remaining peatlands. According to *Act No. LIII of 1996 on Nature Conservation*, all mires in Hungary are protected (23.§ (2)). The law defines peatlands as “an area of land which is permanently or periodically exposed to water or where soil is periodically saturated with water and a significant part of which is occupied by a fen biotic community or fen living organisms or has soil with variable peat content or peat formation processes”.

The framework for the nature conservation-related tasks of climate adaptation is set out in the *5th National Nature Conservation Master Plan up to 2026*,⁷ which also involved updating the peatland registry in Hungary in 2020. As a result, 1193 tracts of peatlands were assessed, covering 62,344 hectares outside nature conservation areas. Additionally, there are around 21,000 hectares of peatlands in nature conservation areas.

1. Germany's National Peatland Conservation Strategy (Nationale Moorschutzstrategie), 2022. <https://www.bmu.de/download/nationale-moorschutzstrategie>.
2. Global Peatlands Assessment: The State of the World's Peatlands, 2022. <https://www.unep.org/resources/global-peatlands-assessment-2022>
3. Bund-Länder-Zielvereinbarung zum Klimaschutz durch Moorbodenschutz <https://www.bmu.de/download/bund-laender-zielvereinbarung-zum-moorbodenschutz>
4. MoorWissen Summary - Facts about Peatlands <https://www.moorwissen.de/moorwissen-summary.html>
5. Map source: Thünen-Institut, <https://www.thuenen.de/de/fachinstitute/agrar-klimaschutz/aktuelles-und-service/detail-aktuelles/aktualisierte-kulisse-der-organischen-boeden-in-deutschland-veroeffentlicht>
6. Going peat-free, protecting the climate - The Peat Use Reduction Strategy of the Federal Ministry of Food and Agriculture, Federal Ministry of Food and Agriculture (BMEL) Berlin, Germany, 2022. https://www.bmel.de/SharedDocs/Downloads/EN/Publications/peat-use-reduction-strategy.pdf?__blob=publicationFile&v=6
7. Federal Climate Change Act (Bundes-Klimaschutzgesetz), 2021.
8. Federal Action Plan on Nature-based Solutions for Climate and Biodiversity, 2023. https://www.bmu.de/fileadmin/Daten_BMU/Download_PDF/Naturschutz/ank_2023_kabinett_lang_en_bf.pdf
9. Legal Regulatory Framework of Peatland Exploitation, Draining and Restoration in Germany, 2018.
10. Wichtmann et al. (Ed.) Paludiculture – productive use of wet peatlands, 2016.

The National Peat Inventory was completed in 1980 and estimated the peat resources at around 400 million m³. The geographic distribution of peat resources is not uniform, 95% of it lies in the Transdanubian region. Most of the extracted peat and peat soil is used in agriculture for communal, horticultural and soil reclamation purposes. There are currently 24 registered mining sites – covering 1,876 hectares – extracting mature, fibrous peat and mixed peat. *The Act on the Spatial Planning of Hungary (No. CXXXIX. of 2018, Art. 25 and 26)*⁸ stipulates that in the ecological network core area and the ecological corridor zone no new target extraction sites or open-cast mining sites may be established, and existing open-cast mining sites may not be extended horizontally. These provisions have been in force since 2003.

In Hungary all peatlands are protected by law.

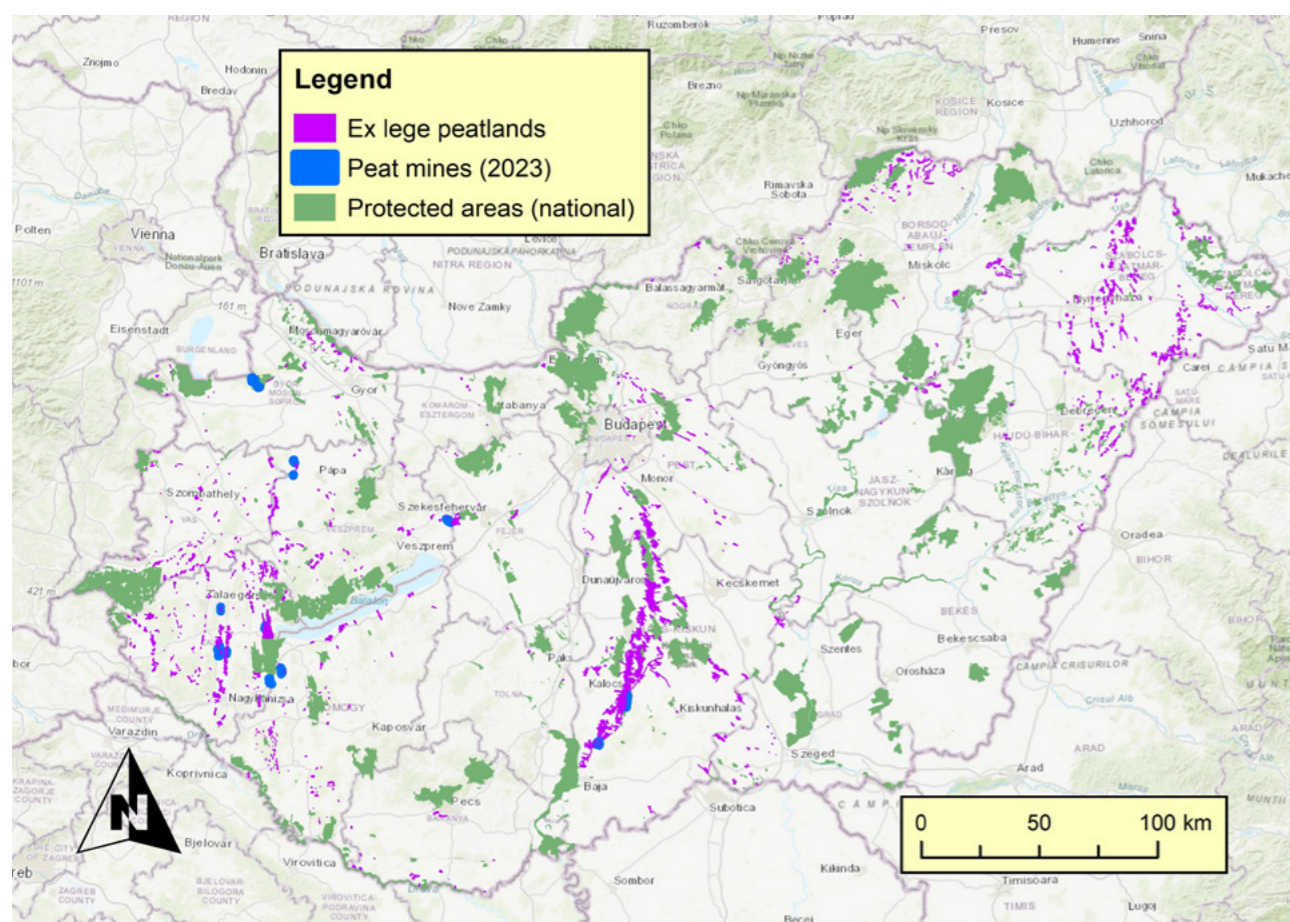


Figure 3. Distribution of peatlands in Hungary. Within protected areas peatlands are not shown on the map due to lack of geospatial data. The country was formerly rich in peatlands, but due to drainage in recent centuries, this ecosystem type covers only 0.7% of its total area at present. A quarter of the remnants are located in nature conservation areas (e.g. in National Parks).¹

The National Biodiversity Strategy to 2030 aims to increase understanding of the links between climate change and biodiversity conservation, to improve the resilience of ecosystems, and to conserve biodiversity to mitigate the impacts of climate change and promote adaptation. The strategy encourages the restoration of mire habitats, and advocates their removal from agricultural use and conversion to other land uses because of their vulnerability and their role in climate change mitigation (carbon storage).⁹

Act No. XLIV of 2020 on Climate Protection aims to reduce the country's greenhouse gas emissions by at least 40% by 2030 compared to 1990 levels.¹⁰ The act puts a large emphasis on the benefits of afforestation and not on the significant carbon storage benefits of peatlands.

The 2nd National Climate Change Strategy 2018-2030 – looking ahead to 2050 aims for the preservation and restoration of peatlands as most-threatened habitats, as well as to strengthen their role in climate mitigation (under the chapter on nature conservation).¹¹ The strategy contains the country's decarbonisation plan.

Hungary's CAP Strategic Plan (2023-2027) will include standards for protecting wetlands and peatlands. The standards will only be introduced from 2025 onwards due to required preparations for implementation: "Wetlands and peatlands contribute to the proper management of soils with high carbon sequestration, thereby promoting carbon sequestration and contributing to the fight against climate change (GAEC 2)."¹²

In the *Natura 2000 Prioritised Action Framework for 2021-2027*,¹³ several site-related maintenance and restoration measures (21 within and 8 outside the Natura 2000 areas) have been identified for mire habitat types (5 habitat types classified in this category). The measures are mainly aimed at restoring the water balance, managing woody vegetation and invasive species, managing the areas through mowing and grazing, as well as the control of game populations.

The conservation projects implemented under the *Environment and Energy Efficiency Operational Programme 2014-2020* have positively affected mire habitats – 56 projects in total, covering seven mire habitat types – and considerable good results in restoration have been achieved. Peatland restoration projects continued in the next financial cycle as well (2021-2027).

Despite having relatively small peatland area compared to the other countries assessed, Hungary's restoration efforts can still strongly contribute to GHG emission reductions.

1. Source: Nature Conservation Information System, Ministry of Agriculture, where 62,344 hectares of peatlands are reported. The coverage refers to ex lege peatlands, which are outside the nature conservation areas. A further approximately 21,000 hectares of peatlands are located within nature conservation areas (estimation).
2. Global Peatlands Assessment: The State of the World's Peatlands, 2022. <https://www.unep.org/resources/global-peatlands-assessment-2022>
3. Hungarian Law No. LIII of 1996 on Nature Conservation defines peatlands as 'an area of land which is permanently or periodically exposed to water or where soil is periodically saturated with water and a significant part of which is occupied by a fen biotic community or fen living organisms or has soil with variable peat content or peat formation processes'.
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7. Resolution No. 62 of the Parliament in 2022 on the V. National Nature Conservation Master Plan up to 2026. <https://cdn.kormany.hu/uploads/sheets/5/55/55e/55e3b72ed23a5980d06ac9021a5a2c2.pdf>
8. 2018. évi CXXXIX. törvény Magyarország és egyes kiemelt térségeinek területrendezési tervéről <https://njt.hu/jogszabaly/2018-139-00-00>
9. National Biodiversity Strategy to 2030, Hungary <https://www.biodiv.hu/hu/biologiai-sokfelesleg-egyvezmeny/hazai-vegrehajtas/nemzeti-biodiverzitas-strategia>
10. Law No. XLIV of 2020 on Climate Protection. Parliament of Hungary, 2020.
11. 2nd National Climate Change Strategy 2018-2030 looking ahead to 2050, Ministry of Innovation and Technology, Hungary, 2018.
12. Hungary's CAP Strategic Plan 2023-2027
13. Hungarian Natura 2000 Prioritised Action Framework 2021-2027 https://termeszetvedelem.hu/wp-content/uploads/2021/07/Natura2000_Intezkedesi_Terv_2021marcius.pdf

Peatland area (ha)	878,900 ha ¹
Degraded peatland (%)	74% ²
Main peatland-related policy	<i>Environmental Policy Guidelines 2021-2027, Latvian Guidelines for the sustainable use of peat 2020-2030</i>
Main sources of peatland funding	EU funds (EARDF, ERDF, Cohesion Funds, LIFE projects)
GHG emissions from degraded peatlands (annual)	12 million tonnes CO ₂ equivalent ¹
Best practice for peatland protection and management	Stabilisation of the peatland hydrological regime, restoration by Nature Conservation Agency and private companies

Peat resources in Latvia are one of the country's greatest natural resources and most important assets, playing a key role in both the conservation of natural diversity and the local economy.

The earliest records of fragmentary and occasional peat extraction in Latvia date from the second half of the 17th century and the early 18th century, when peat started to be used for heating. However, it was not until 1912 that Pēteris Nomals, the founder of bog research in Latvia, began to study Latvian peatland deposits more extensively, establishing the Bog Research Laboratory of the Baltic Hydrotechnical Department. Until 1940, peat was mainly produced and used for fuel, bedding in barns, fertiliser and soil improvement in agriculture. Latvia was among the first countries in Europe to restructure peat extraction from energy usage to extracting and processing it for horticultural needs.

Approximately 14% (878,900 hectares) of Latvia is covered by peatlands. Since the 20th century approximately 74% of the total area of peatlands has been drained for agriculture, forestry and peat extraction purposes.

As part of the EU Just Transition Fund territorial plan, recultivation measures are planned on an area of 13,600 hectares, which will result in GHG emission savings of 134.6 kt CO₂ equivalent per year.²

Peat deposits include peatlands with an area of more than 1 hectare and a peat thickness of more than 0.3 meters. According to the data of the State Limited Liability Company Latvian Environment, Geology and Meteorology Centre – Peat Foundation, there are 5799 deposits consisting of raised bogs, fens and transitional mires. Seven of these are larger than 5,000 hectares. Eighty-seven are between 1,001 to 5,000 hectares, and one hundred and nine are between 501-1,000 hectares. 69.7% of bog areas are in an intact state, 23.4% have been drained, 3.9% are used for peat extraction, 1.8% of peat reserves have already been used, and 1.2% have water reservoirs.

There are 1.7 billion tonnes³ of peat in the Latvian peatlands, which make up ~0.4% of the global peat resources.²

1.7 billion tons of peat are stored in Latvian peatlands, which make up ~0.4% of the global peat resources.

Mires with sparse vegetation comprise 4.9% of the total land area. 40% of the peatlands are included in specially protected nature territories (Natura 2000 sites, etc.), comprising of 258,040 hectares. The peat resource in the country is growing as Latvia is located in the geographical area in which precipitation exceeds evaporation.

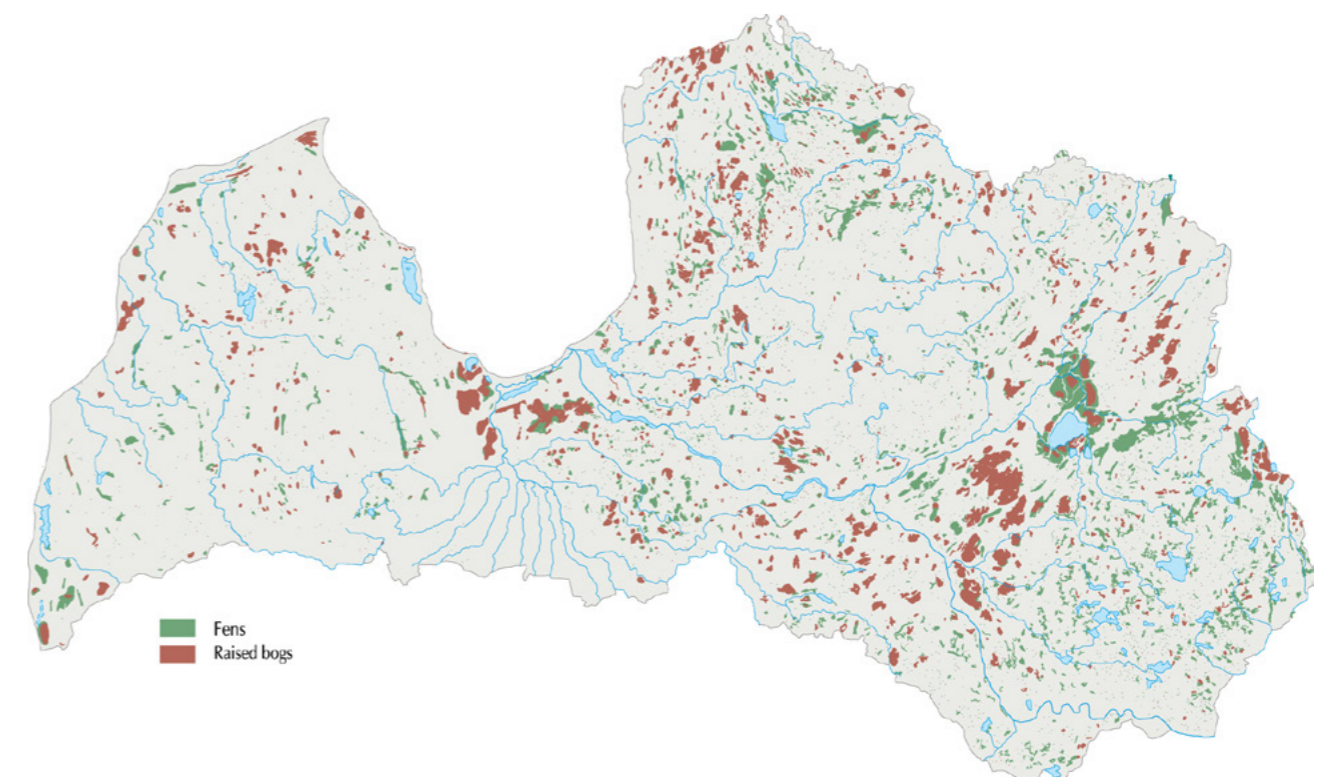


Figure 4. Peatlands cover 14% of the total land area in Latvia, consisting of fens, transitional mires and raised bogs.⁵

Habitat mapping in the country has been completed as part of the nature census process from 2017 to 2020.⁴ The identification of protected biotopes of EU importance took place in the project “*Creation of preconditions for better preservation of biological diversity and protection of ecosystems in Latvia*” which was carried out by the Latvian Nature Protection Board.

Peat extraction in Latvia takes place on 5% of the peatland territory.⁶ It is done in accordance with special legislation and the guidelines that determine the average amount of extraction per year.⁷ Peat extraction is possible only in those peatlands that have already been affected by amelioration (drainage). In 90% of the cases the preparation works or the extraction started 30-40 years ago. Mandatory reclamation of the extraction site after the end of peat extraction is determined by law.

According to the data of the State Environmental Service of Latvia, 127 peat extraction licenses have been issued for 25,739 hectares in one hundred bogs (2022).⁸

97% of the peat is harvested for horticultural uses. 1,6% of the total amount of peat produced in the country was used for energy purposes in the year of 2021.⁹ The share of peat in Latvia’s energy balance was 0.04%⁶ in 2021. Within the *Just Transition Territorial Plan for Latvia*, Latvia promises to phase out the extraction and use of peat for energy production by 2030.²

In the *Latvian Guidelines for the Sustainable Use of Peat 2020-2030*, the sustainable use of peat, promoting scientific research, innovative solutions for peat extraction and for recording GHG emissions are important goals. The Guideline sets out the objective: “*to identify opportunities for priority peatland rehabilitation in degraded peatland areas, including historic peat extraction sites (where peat extraction has ceased and has not been restored), unless peat extraction is feasible and is not planned*”.

Latvia has gained considerable experience in the last 20 years in the conservation and restoration of peatlands, in particular renaturalisation, through several LIFE projects and scientific activities, but there is a need for further cooperation with both ministerial and scientific institutions and stakeholders. Multi-stakeholder groups must come together to demand change and help to influence policymakers to make important decisions about peatland restoration practices and policies.

1. Global Peatlands Assessment: The State of the World's Peatlands, 2022. <https://www.unep.org/resources/global-peatlands-assessment-2022>

2. Just Transition Fund plan <https://likumi.lv/ta/id/334018-par-taisnigas-parkartosanas-teritorialo-planu>

3. Krīgere I., 2020. Krīgere, Ingrida. “Development of the Latvian Peat Industry over the Last 100 Years.” *Folia Geographica*, vol. 18, 2020, pp. 71–81, <https://doi.org/10.22364/fg.18.9>

4. <https://www.varam.gov.lv/jaunums/varam-sabiedriskai-apsriesanai-nodod-biotopu-kartesanas-informativo-zinojumu>

5. Map source: University of Latvia

6. National Inventory Submissions, 2023. <https://unfccc.int/ghg-inventories-annex-i-parties/2023>

7. Project report „Latvijas kūdras atradņu datu kvalitātes analīze, ieteikumu sagatavošana to uzlabošanai un izmantošanai valsts stratēģijas pamatdokumentu sagatavošanā”. Biedrība “homo ecos”. “Data quality analysis of Latvian peat deposits, preparation of recommendations for their improvement and use in the preparation of basic documents of the national strategy”.

8. Peat sector and sustainability – Ingrida Krīgere Member of the Board of LKA, Riga, 2022. https://www.latvijaskudra.lv/upload/prezentacijas/lka_tskomap.k.22.03.22..pdf

Lithuania

Peatland area (ha)	878,900 ha ¹
Degraded peatland (%)	68% ¹
Main peatland-related policy	<i>National Energy and Climate Action Plan (NECP) 2021-2030</i>
Main sources of peatland funding	EU funds (RRF)
GHG emissions from degraded peatlands (annual)	9.78 million tonnes CO ₂ equivalent ¹
Best practice for peatland protection and management	Contribution of private sector to the mitigation of climate change by rewetting peatlands, using carbon credits: MoorFutures-Standard ²

Peatlands cover around 878,900 hectares of the total land area in Lithuania, which represents 10% of the country’s total area. More than 75% of the country’s peatlands have been degraded due to intensive drainage starting in the 20th century.

158,160 hectares of Lithuanian peatlands are located in protected areas due to the *Law on Nature Conservation of 1959*. But it was in the 1990s that the Lithuanian government began to adopt several nature conservation laws and strategies mentioning peatlands as areas to be restored and protected.

The private sector in Lithuania is a frontrunner in contribution to the mitigation of climate change by rewetting peatlands.

However, with the adoption of the CAP in 2004, Lithuania massively expanded its arable land area, with an increase of more than 44% since 2005. Meadows shrink by almost 130,000 hectares each year. GHG emissions from converted agricultural land, including both mineral and organic soils, increased by increased by nearly

80% between 2005 and 2017.⁴ At present, about 45% of peatlands are used for agricultural purposes in Lithuania.

The country has a long history of peat extraction. Lithuania is the third largest peat exporter to European countries, after Estonia and Latvia.

The new *Lithuanian CAP Strategic Plan (2023-2027)* forbids peatland-damaging actions such as drainage from 2024 onwards, and the renovation of existing drainage systems is allowed on condition that it is not damaging to the peatland, which is difficult.⁵

from the Land Use, Land-Use Change and Forestry (LULUCF) sector. Unwillingness by landowners towards rewetting peatlands is also a challenge to tackle. Therefore, implementing the restoration process is complicated and time-consuming.

Lithuania has recently developed a new action plan and policy measure for peatland restoration, within the *EU Recovery and Resilience Facility (RRF)*, but the implementation and application of these measures has not yet been completed. The Lithuanian government should continue along this path of peatland restoration to help meet its climate targets and preserve the country's biodiversity. To go above and beyond, it would be beneficial to involve all stakeholders in this process.

The private sector in Lithuania is a frontrunner in contribution to the mitigation of climate change by rewetting peatlands. The MoorFutures² standard is used for carbon credits to estimate the impact on GHG when restoring peatlands. So far, the country does not have 'official' credits, but otherwise has everything in place, so since 2021, different peatlands have been restored with contribution from private bodies.

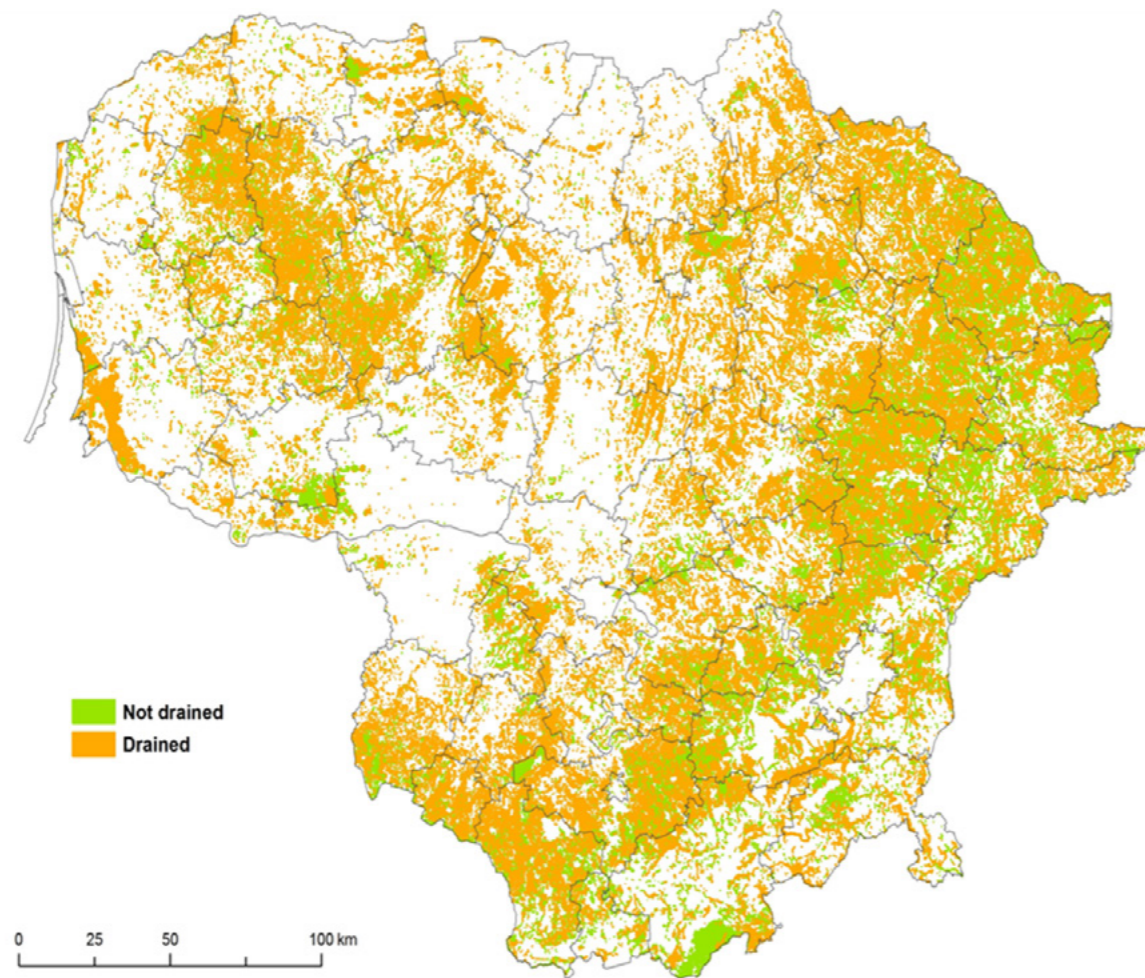


Figure 5. Peatlands cover 13% of the land area in Lithuania.³ (Peatland area exaggerated for display.)

Moreover, in 2021 Lithuania secured funding of about 16 million Euros under the Recovery and Resilience Plan to support the restoration of 8,000 hectares of degraded peatlands⁶ and another 8,000 hectares of wetland restoration are foreseen under its newly established *National Energy and Climate Action Plan (NECP) 2021-2030*.⁷

Although peatlands are well-known to be efficient climate-mitigators, they are not specifically mentioned in the *National Strategy for Climate Change Management (2021-2050)*⁸. The goal behind this strategy is to reduce GHG emissions by 100% (i.e. net-zero emission target) compared to 1990 levels by 2050 by switching to low-emission, innovative technologies including up to 20% GHG removals using natural carbon sinks

1. Global Peatlands Assessment: The State of the World's Peatlands, 2022. <https://www.unep.org/resources/global-peatlands-assessment-2022>
2. MoorFutures-Standard <https://www.moorfutures.de/konzept/>
3. Draft map provided by Foundation for Peatland Restoration and Conservation, Lithuania
4. Future farming: Healing Lithuania's Peatlands <https://meta.eeb.org/2020/06/09/future-farming-healing-lithuanias-peatlands/>
5. https://zum.lrv.lt/uploads/zum/documents/files/LT_versija/Naujiena/Leidiniai/LZUM_GAAB.pdf
6. Lithuania's Recovery and Resilience Plan, 2021.
7. National Energy and Climate Action Plan of the Republic of Lithuania for 2021-2030. https://energy.ec.europa.eu/system/files/2022-08/lt_national_necp_main_en.pdf
8. Resolution Approving The National Strategy For Climate Change Management Policy, Lithuania, 2012.

Poland

Peatland area (ha)	1,509,000 ha ¹
Degraded peatland (%)	84% ¹
Main peatland-related policy	<i>Strategy for the Protection of Wetlands (2022-2031)</i>
Main sources of peatland funding	EU funds
GHG emissions from degraded peatlands (annual)	31.03 million tonnes CO ₂ equivalent ¹
Best practice for peatland protection and management	Establishment of the European Peatland Policy Working Group – in the frame of the LIFE Multi Peat project

Peatlands cover 1,600,000 hectares of the country's area, however, 90% of them have been degraded. Therefore, Poland is the third largest emitter of CO₂ emissions from degraded peatlands in the EU.¹

Similarly to other European countries, Peatlands in Poland have been drained and turned into agricultural land. In some regions in Poland peat was also used as a fuel source.² Today, peat is mostly used for horticulture and gardening purposes. The old drainage network (ditches), and the ditch renewals have resulted in drained peatlands. The main threat to better-preserved peatlands is secondary succession of pine, birch, and willow as the result of draining from few decades ago.

After Germany and Finland, Poland is the EU's third largest emitter of CO₂ emissions from degraded peatlands.¹

With the implementation of Poland's *CAP Strategic Plan (GAEC 2)* the country plans to start peatland and wetland restoration from 2025 on, combined with some other schemes and programmes to restore peatlands in Poland.



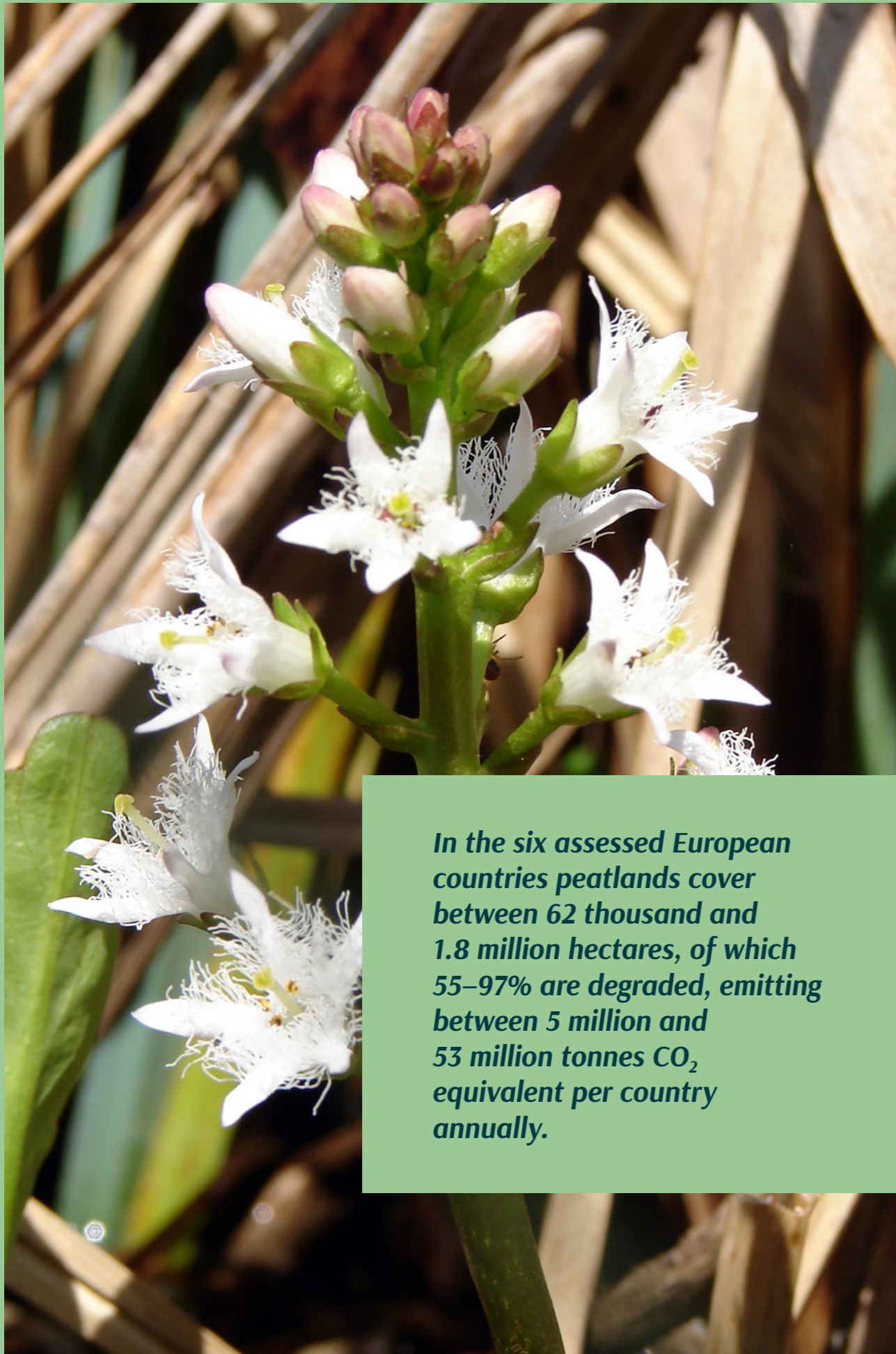
Figure 6. Distribution of peatlands with area larger than 1 ha in Poland.³ (Peatland area exaggerated for display.)

The *Strategy for the Protection of Wetlands (2022-2031)* includes a specific objective related to rewetting peatlands: the promotion of paludiculture methods among farmers.⁴

Peatlands are often mentioned as habitats crucial for biodiversity and as sensitive ecosystems that should be preserved and protected. Well-preserved peatlands have quite good legislation to protect them (mainly in Natura 2000 sites, nature reserves etc.). However, the biggest trouble is not the lack of proper legislation but rather a lack of proper implementation of nature conservation law, especially outside of Natura 2000 areas.

In Poland, the population is rather aware of the role of wetlands. However, there is a lack of appropriate financial schemes for farmers, hence there are no real and attractive benefits. Existing schemes are rather too complicated and do not compensate adequately compared with direct payments.

1. Global Peatlands Assessment: The State of the World's Peatlands, 2022. <https://www.unep.org/resources/global-peatlands-assessment-2022>
2. Higher ambition for Peatlands in the EU Nature Restoration Law Proposal, 2022. <https://europe.wetlands.org/download/6860/>
3. Map source: Halabowski D., Sowa A., Błońska A. – Rozmieszczenie, walory i ochrona torfowisk (Distribution, values and protection of mires in the Silesian Voivodeship) *Przegląd Przyrodniczy* XXVII, 4, 120-132, 2016.
4. Peatlands and wetlands in the new CAP: too little action to protect and restore, BirdLife Europe and European Environmental Bureau policy briefing, 2022. <https://www.birdlife.org/wp-content/uploads/2022/04/Analysis-Peatlands-Wetlands-CAP-strategic-plans-April2022.pdf>



In the six assessed European countries peatlands cover between 62 thousand and 1.8 million hectares, of which 55–97% are degraded, emitting between 5 million and 53 million tonnes CO₂ equivalent per country annually.

Summary

Peatland drainage has severely impacted each of the assessed countries. The issue of peatlands cannot be avoided when discussing climate targets. Governments must recognise the importance of protecting, restoring and sustainably managing them, as degraded peatlands significantly contribute to greenhouse gas emissions.

In the six assessed European countries peatlands cover between 62 thousand and 1.8 million hectares, of which 55–97% are degraded, emitting between 5 million and 53 million tonnes CO₂ equivalent per country annually.

The assessed countries aim to reduce their GHG emissions by from 40% (Hungary) up to 65% (Germany) by 2030 compared to 1990 levels and become climate neutral by 2045/2050 (Germany, Lithuania).

The new national CAP strategic plans look promising, as peatland and wetland restoration measures will be included from 2025 (Hungary, Poland, Germany – in the latter already currently).

National peatland strategies prepared by Germany and Estonia set an example for those countries which haven't yet prepared their own.

The European Parliament has also recognised the significance of protecting peatlands through various EU-specific regulations. The Nature Restoration Law currently under negotiations of European co-legislators would set a target for the EU to restore at least 20% of its land and sea areas by 2030, including restoration and rewetting of organic soils in agricultural use. Paludiculture can also be beneficial to several species which are endangered and can also contribute to the connectivity of wetland areas.¹ In case of its future adoption, it would mean a huge step forward in regard rewetting and restoring drained peatlands in the territory of Member States.

The *Land Use, Land-Use Change and Forestry (LULUCF)* regulation analyses how the land-use sector contributes to EU climate targets, while also offering carbon mitigation potential and providing food, wood, and other renewable resources.² In 2020, the EU's LULUCF sector accounted for the net removal of 230 million tonnes of CO₂, equal to 7% of the EU's total greenhouse gas emissions¹. However, without drainage of peatlands the removal would be even higher.

Central and Eastern European countries need increased dedicated national funding to advance implementation of their existing peatland-related policies. In all six countries assessed, EU funds represent the key funding source for peatlands (although in Germany and Estonia substantial amounts have been dedicated to peatland restoration from national funds). An unexploited potential is the involvement of the private sector for supporting climate-related targets (where Latvia and Lithuania can serve as an example).

1. Greenhouse Gas Emissions from Land Use, Land Use Change and Forestry in Europe, European Environment Agency, 2022. www.eea.europa.eu/ims/greenhouse-gas-emissions-from-land

2. United Nations. "Land Use, Land-Use Change and Forestry (LULUCF) | UNFCCC." Unfccc.int, 2017. <https://unfccc.int/topics/land-use/work-streams/land-use-land-use-change-and-forestry-lulucf>

Annex 1: Multi-stakeholder Workshop Event Reports

The event reports of the two multi-stakeholder workshops are available at ceeweb.org, including detailed results of the events accompanying this assessment (description, aim, presentations/video recording, results of interactive tasks, etc).

1, [Event report](https://www.ceeweb.org/publication.php?id=836)¹ Multi-stakeholder workshop (Improving Central and Eastern European Policy Responses to Protect, Restore and Sustainably Manage Peatlands in the Fight Against Climate Warming), Tata, Hungary, June 2023.

2, [Event report](https://www.ceeweb.org/publication.php?id=837)² Multi-stakeholder workshop (National Peatland Strategies and Peatland Restoration Opportunities for Climate Action), Webinar, November 2023.

1. <https://www.ceeweb.org/publication.php?id=836>
2. <https://www.ceeweb.org/publication.php?id=837>



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The opinions put forward in this publication are the sole responsibility of the author(s) and do not necessarily reflect the views of the Federal Ministry for Economic Affairs and Climate Action (BMWK).

The project 'Building the European Peatlands Initiative: a strong alliance for peatland climate protection in Europe' aims to enhance climate mitigation and reduction of GHG emissions through an improved pan-European collaboration for the conservation and restoration of peatlands, sustainable agricultural use of peatlands and regeneration of healthy soils.

