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REWETTING FOR A RESILIENT EUROPE: ALIGNING DEFENCE, NATURE, AND SOCIAL GOALS

Russia's large-scale invasion of Ukraine has drastically changed the geopolitical reality in Europe. As the European Union (EU) reconsiders its defence strategy, both conventional military strategies and more unusual measures are being proposed. One such measure is the restoration of drained wetlands, particularly peatlands. The idea is that wetlands can prevent movement of military troops. Coincidentally, rewetting European wetlands for this purpose could also contribute to climate and nature conservation efforts. However, this is not a quick-fix solution and should be approached responsibly. Which means, rooted in ecological principles and social justice considerations.

WETLANDS' DEFENCE BENEFITS

The threat from Russia has prompted the EU, and especially countries bordering Russia, to consider how they can protect themselves against a possible invasion. In this context, wetland and rewetting approaches are increasingly discussed because of their potential defence advantages. Wetlands could function as a natural sponge since their soils retain large amounts of water, making the land surface waterlogged and impassable for heavy military equipment such as tanks and armoured vehicles.

Large tracts of the peatlands in Europe are located along sensitive border-areas, which makes rewetting drained peatland an interesting strategy to consider for EU security. As the EU Member States agreed to increase their defence spending to 5% of their GDP during the NATO Summit (June 2025)[1], it becomes important to engage in a nuanced discussion about the advantages and disadvantages of using wetlands as a defence strategy. If rewetting for defence purposes is approached carefully, it may also contribute to existing climate and biodiversity targets. At the same time, ethical dilemmas and social justice considerations should not be forgotten.

Percentage of peat cover per soil mapping unit.

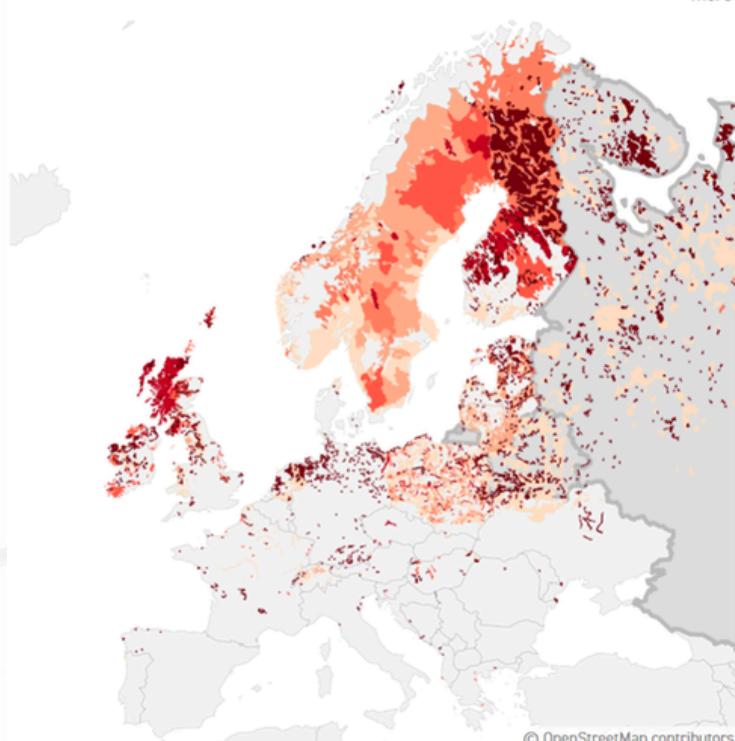


Figure from Hanne Cokelaere / POLITICO

[1] <https://www.nato.int/en/what-we-do/introduction-to-nato/defence-expenditures-and-natos-5-commitment>

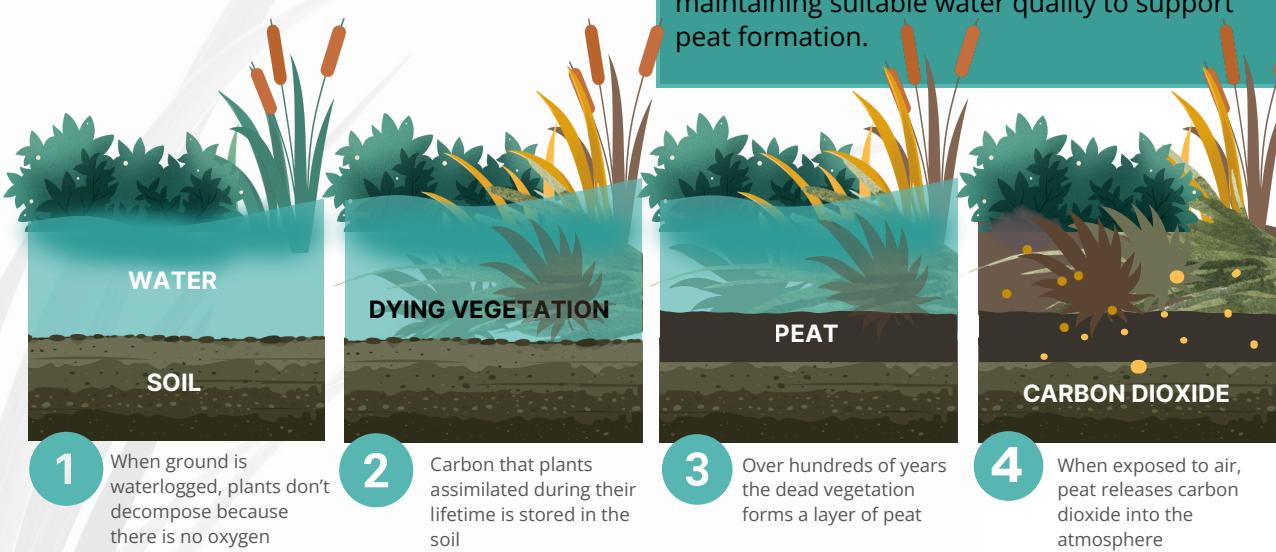
WETLANDS AS A MULTI-BENEFIT STRATEGY

Rewetting degraded wetlands is a key objective under the EU Nature Restoration Regulation (NRR). The NRR requires EU Member States to restore and maintain healthy wetlands. There is great potential to combine two of the EU's main concerns: strengthened defence and climate mitigation. In other words, restored wetlands could deliver ecological benefits besides enhancing national defence.

Wetlands are vital ecosystems that provide freshwater, control floods, and mitigate climate change. They are also biodiversity hotspots and provide habitats for countless plant and animal species [2]. Slowly rewetting drained wetlands could stop the release of CO₂, turn landscapes into carbon sinks, improve water quality and peatland-specific biodiversity, and also reduce flood risk [3]. The word *slowly* is important here. Raising water levels too quickly can harm peat formation processes, while a slower approach gives the ecosystem time to adjust and start functioning as a healthy wetland again.

HOW PEAT IS FORMED

Figure based on BBC[6]



[2] <https://www.ramsar.org/about/our-mission/importance-wetlands>

[3] <https://www.climatechangepost.com/news/rewetting-our-peatlands-not-only-serves-the-climate/>

[4] <https://peatlands.org/peat/peat-formation/>

[5] <https://arkrewilding.nl/nieuws/2024/veluwse-wetlands-nieuw-veen-nodig-voor-natuur-en-klimaat>

[6] <https://www.bbc.com/news/science-environment-61607510>

UNDERSTANDING SLOW PEAT FORMATION

To meet both biodiversity and climate targets, it is important to understand the process of peat formation. Peatlands develop under specific conditions: waterlogged ground, low pH, low nutrient availability, low oxygen supply and a reduced decomposition rate. Over many years these conditions lead to the build-up of a layer of dead plant material on the soil. Because oxygen levels are low, the remains of plants growing in these wetlands are only partially or not at all decomposed. As this partially decomposed material accumulates and becomes compacted under the weight of the overlying soil, peat is formed [4]. Within 20 years, peat can grow as much as half a metre in thickness [5].

In this process, water quality plays an important role. Peat-forming vegetation can only establish and persist when the water has a low nutrient concentration and a low pH. These conditions contribute to the slowed down microbial decomposition and favour peat accumulation. When peatlands are drained, the waterlogged conditions needed for peat formation disappear, causing peat to decompose and release stored CO₂. Rewetting is necessary to restore this process, but if nutrient-rich or alkaline water enters the system, peat-forming vegetation cannot recover, accelerating decomposition and greenhouse gas emissions. Successful rewetting therefore depends not only on restoring water levels, but also on maintaining suitable water quality to support peat formation.

ETHICAL DILEMMAS

Although rewetting as part of a military strategy adds another ecosystem function argument to the debate, it also raises serious ethical concerns. Treating nature mainly as a means for national defence can be problematic. When wetlands are valued primarily for their role in security, there is a risk that they are seen only as protective tools, rather than as landscapes with ecological, cultural, and intrinsic significance. This framing may ultimately prove counterproductive: if an area is no longer considered important for defence, its preservation may also become a lower priority.

In addition, human rights and land access considerations come into play in the large-scale rewetting of the EU flank. Not only is this a route taken by many refugees, but it also prevents access to the area by residents. Katarzina Nowak, a biologist at the Mammal Research Institute, is hesitant about integrating border security with rewetting wetlands. 'The security apparatus already weaponizes landscapes against people on the move and may further militarize and exclude the public from such natural areas. This won't bode well for human connection to borderland landscapes,' she says in an interview with Yale E360 [7]. This highlights the need for caution when aligning ecological restoration with security objectives.

The militarization of nature risks creating restricted and, at times, violent landscapes. This, in turn, potentially creates tensions and confrontations between park managers and local communities [8].



Photo: A damaged Russian vehicle mired in wetland in Moshchun, Ukraine, April 2022. Serhii Mykhachuk / Global Images Ukraine via Getty Images

[7] <https://e360.yale.edu/features/europe-wetland-defense>

[8] <https://www.oxfordbibliographies.com/display/document/obo-9780199766567/obo-9780199766567-0308.xml>

[9] <https://e360.yale.edu/features/europe-wetland-defense>

[10] <https://www.politico.eu/article/russia-defense-kyiv-ukraine-nato-eu-bogs-poland-war-germany/>

EXPERT OPINIONS

Below, we present expert opinions on the integration of nature conservation and rewetting for defence purposes. They outline the most relevant arguments and considerations raised on this subject:

- Many experts see linking national security to ecological restoration of wetlands as an opportunity.

"Throughout human history, battles were won or lost because of mountains, bogs, or rivers," says Bohdan Prots, head of the department of landscape and biota diversity at the State Museum of Natural History in Lviv. "So Ukraine and other European countries should remember this and use nature conservation and restoration to their advantage." [9]

- One expert explicitly highlights the importance of the National Restoration Plans as a key opportunity under the EU Nature Restoration Regulation.

'We are right now in the development of our national restoration plan, as many EU countries are,' says Aveliina Helm, professor of restoration ecology at the University of Tartu, 'and as part of that I see great potential to join those two objectives.' [10]



RECOMMENDATIONS

EU member states that consider wetland restoration as a defence strategy should incorporate a careful and long-term approach. This means applying ecological principles, considering social justice and building public support. Gradual rewetting can also contribute to climate or biodiversity goals alongside defence benefits.

ABOUT REWET

REWET (REstoration of WETlands to minimise emissions and maximise carbon uptake) is a “landscape level” laboratory for the restoration of wetlands at European scale. In the REWET project, funded by the European Union, NGOs, universities, companies, and institutions joined forces to study the full potential of wetlands areas as part of a climate change resilience strategy. With information from seven open laboratories, we are developing a comprehensive understanding of how European wetlands can best contribute to climate mitigation and adaptation.

Would you like to learn more?

- Visit the [REWET website](#)
- Or contact [Caspar Verwer](#)

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