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# Peatlands

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Greetings from COP30  
AsiaFlux 2025  
Growing Media Talks



Greetings from the Irish Agriculture and Peatlands 2025 Road Trip  
IPS Annual Convention and International Peatland Conference in Ireland 8 - 11 June 2026  
The IUCN UK Peatland Programme's 15th annual conference & Northern Ireland Peatland Strategy  
Sustainability of Growing Media - Session Highlights from Growing Media 2025 in Freising, Germany  
IVG Industry Day for Growing Media and Substrates 2025 - Focus on Challenges and Opportunities  
After peat extraction, productive land becomes available - the challenge lies in profitability  
Balancing stakeholder interests in the Wietingsmoor: Ecosystem services as a key  
Climate change effects on mesofauna communities in peatlands

# BELEM CLIMATE SUMMIT

# After peat extraction, productive land becomes available - the challenge lies in profitability

**R**educing the use of peat for energy production has been one of the key measures in Finland's efforts to cut greenhouse gas emissions. The tightening of energy taxation and the rising price of emission allowances have significantly weakened the competitiveness of energy peat, leading to a collapse in its use. Peat accounted for less than 2% of Finland's total energy consumption last year, compared to 7% in 2010.

The decline in peat extraction has resulted in economic losses in regions where peat extraction has been an important business, creating an urgent need to find alternative sources of income. In Central Ostrobothnia, peat extraction areas are concentrated in the Kaustinen subregion, one of the areas most affected by the phase-out of peat extraction in Finland.

## Focus on economic utilisation

When peat production ends for any reason, the remaining areas become available for alternative uses. So far, most former peat production sites have been converted to forestry or agriculture, and some have been turned into wetlands. Establishing vegetation cover on bare peat soil is the minimum requirement, but landowners remain interested in finding economically viable ways to utilise these areas.

The project "Turvetuotantoalueet kestävään käyttöön - TURKE" (Peat production sites towards Sustainable Use) examined the suitability of former peat production areas in Central Ostrobothnia for various after-uses. It also assessed the profitability and regional economic impacts of producing selected biomass crops, as well as the environmental effects of some biomass-based value chains.

The project was coordinated by the Natural Resources Institute Finland (Luke) in cooperation with the Geological Survey of Finland (GTK), Centria University of Applied Sciences, and the Kokkola University Consortium Chydenius. The project received funding from the European Union and the Regional Council of Central Ostrobothnia as part of the Just Transition Programme.

## Potential especially for agricultural use

A spatial analysis was carried out for approximately 5,200 hectares of peat extraction areas in Central Ostrobothnia at different stages of use, of which about 3,400 hectares were identified as recently used or still active. Their after-use potential was assessed for selected plant species - reed canary grass, industrial hemp, willow, and downy birch - based on factors such as peat layer thickness, subsoil type, and hydrological conditions. Areas with a high risk of acid sulphate

soils, which restrict land use, were also identified. The analysis showed that about 2,100 hectares are suitable for cultivation and around 1,200 hectares for afforestation, with some overlap between these two options. More than 2,400 hectares were deemed suitable for wetland restoration. Finnish agricultural policy aims to reduce climate emissions from peat soils, so former peat production areas are not eligible for standard agricultural subsidies. This makes most agricultural cultivation options unprofitable.

Among the studied alternatives, downy birch cultivation proved the most profitable. It grows well on former peat fields and has low production costs. Downy birch could become a competitive raw material for biochar production, although harvesting would only be possible after about 20 years. Leasing land for solar power projects, however, can be more profitable than afforestation even at relatively low rental levels. Willow cultivation, by contrast, is difficult to make profitable under the yield levels achievable on former peat extraction sites.

## Reed canary grass - the most promising field crop

There is long-term experience in cultivating reed canary grass on cutaway peatlands dating back to

the early 2000s when it was grown for energy use. The decline in energy peat production has also reduced the availability of bedding and growing peat. Reed canary grass could be a competitive bedding material if its price were based on absorbency, although it does not fully match peat in quality.

Reed canary grass could also serve as a material for growing media aiding efforts to reduce the use of peat-based substrates. Furthermore, it could be utilised for biogas production in sufficiently large facilities, although there is a risk that biogas made from biomass grown on peat soils may not be classified as sustainable under the Renewable Energy Directive.

Fibre hemp has attracted significant interest among farmers, with more than 1,500 hectares cultivated in Finland last year. It is an annual crop that could perform reasonably well on former peatlands if drainage is adequate, according to measurements conducted in the project.

However, there is currently no market for fibre hemp due to the bankruptcy of the company that had planned to start its processing. From an environmental perspective, the cultivation of perennial crops is preferable to annual ones.



Multiple post-use options can often coexist on the same peat production area, as shown in this image—agriculture, forestry, and wetlands. Solar and wind power represent new ways to continue energy production on former peat extraction sites. Photo: Johannes Karhula, Datapalvelu 64N

# Restoration of cutaway peatlands - a new source of income for landowners?

Offsetting the regional economic losses associated with the phase-out of peat extraction will be unattainable unless a substantial share of biomass is processed locally into value-added products.

The restoration of former peat extraction areas could become an economically attractive option for landowners as carbon markets develop.

The EU is currently preparing the Carbon Removals and Carbon Farming Regulation, which would create these markets for peatland rewetting. In the future, restoration could also help compensate for the rewetting obligations for cultivated peat soils set by the EU Restoration Regulation. The state may also have an interest in providing compensation for rewetting.

Companies aiming to participate in carbon markets have already shown interest in acquiring or

managing cutaway peatlands. This would allow maintaining peat-based agricultural fields, which are particularly important for cattle farming.

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## Wetlands in action

### SESSION 2

From Perception to Action:  
Engaging Citizens in Wetland Restoration and Conservation

December 16<sup>th</sup>, 2025

11:00-12:00 (CET)

Online

#### Speakers:

Annika Tienhaara (Natural Resources Institute Finland)  
Patrick Graf (Catholic University of Leuven)  
Lorenzo Pugliese (Aarhus University)



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