Science-Driven Solutions for Peatland Restoration and Management

Peatlands are wetland ecosystems formed by the slow accumulation of plant material under waterlogged, oxygen-poor conditions. Despite covering only 3.8% of the Earth's surface, **they store about 25% of global soil carbon.** When intact, peatlands act as carbon sinks and regulate water cycles; when drained or exploited, they release CO_2, methane, and nitrous oxide, accelerating climate change and increasing the risk of floods, droughts, and wildfires. Today, nearly **12% of peatlands worldwide and over 90% in Central Europe are degraded.**

ForPeat addresses this challenge by developing sustainable management and restoration solutions for forested peatlands to enhance carbon sequestration, improve soil health, and support biodiversity. The project combines monitoring systems, modelling tools, and nature-based solutions aligned with climate adaptation strategies to reduce emissions and strengthen the long-term resilience of peatland ecosystems.

ForPeat brings together **22 partners from 15 European countries**, including SMEs, universities, and research centres. The consortium covers disciplines such as biology, chemistry, forestry, ecology, environmental engineering, data analysis, policy, and social sciences, among others.

Together, ForPeat develops **practical, science-based solutions for the sustainable restoration and management of forest peatlands**, balancing climate action, biodiversity conservation, and bioeconomic needs.

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FOREST PEATLAND ECOSYSTEM ASSESSMENT AND TARGETED MANAGEMENT FOR ENHANCED CARBON SEQUESTRATION, BIODIVERSITY AND WATER QUALITY

Overall budget: €9,999,470
Duration: 48 months
Start date: 1 October 2025
End date: 30 September 2029

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Open Labs: Living Laboratories for Restoration

ForPeat has established 8 Open Labs across Europe, serving as real-world testing sites where sustainable forest peatland management practices are implemented and evaluated. These Open Labs generate essential data on carbon sequestration, biodiversity, water quality, and soil health, providing both a strong scientific basis and practical examples to support the scaling up of restoration solutions.

1 **Sanginjoki, Kivalo, Lettosuo & Ylpässuo,** Finland
2 **Rumba,** Estonia
3 **Weerribben Wieden National Park,** Netherlands
4 **Karlstift,** Austria
5 **Biebrza National Park,** Poland
6 **Paul da Gouxa,** Portugal
7 **Alpe di Villandro,** Italy
8 **Uppsala,** Sweden

Objectives

- Demonstrate sustainable forest management practices through real-life case studies in Open Labs.
- Advance monitoring techniques for peatland forest management
- Model and evaluate trade-offs and co-benefits of different management approaches of forest peat soils.
- Develop policy recommendations of best practices for the sustainable management of forest peat soils.
- Integrate Social Science and Humanities and citizen science in the project activities.
- Communicate and disseminate project results and cluster with relevant forest and peatlands initiatives.