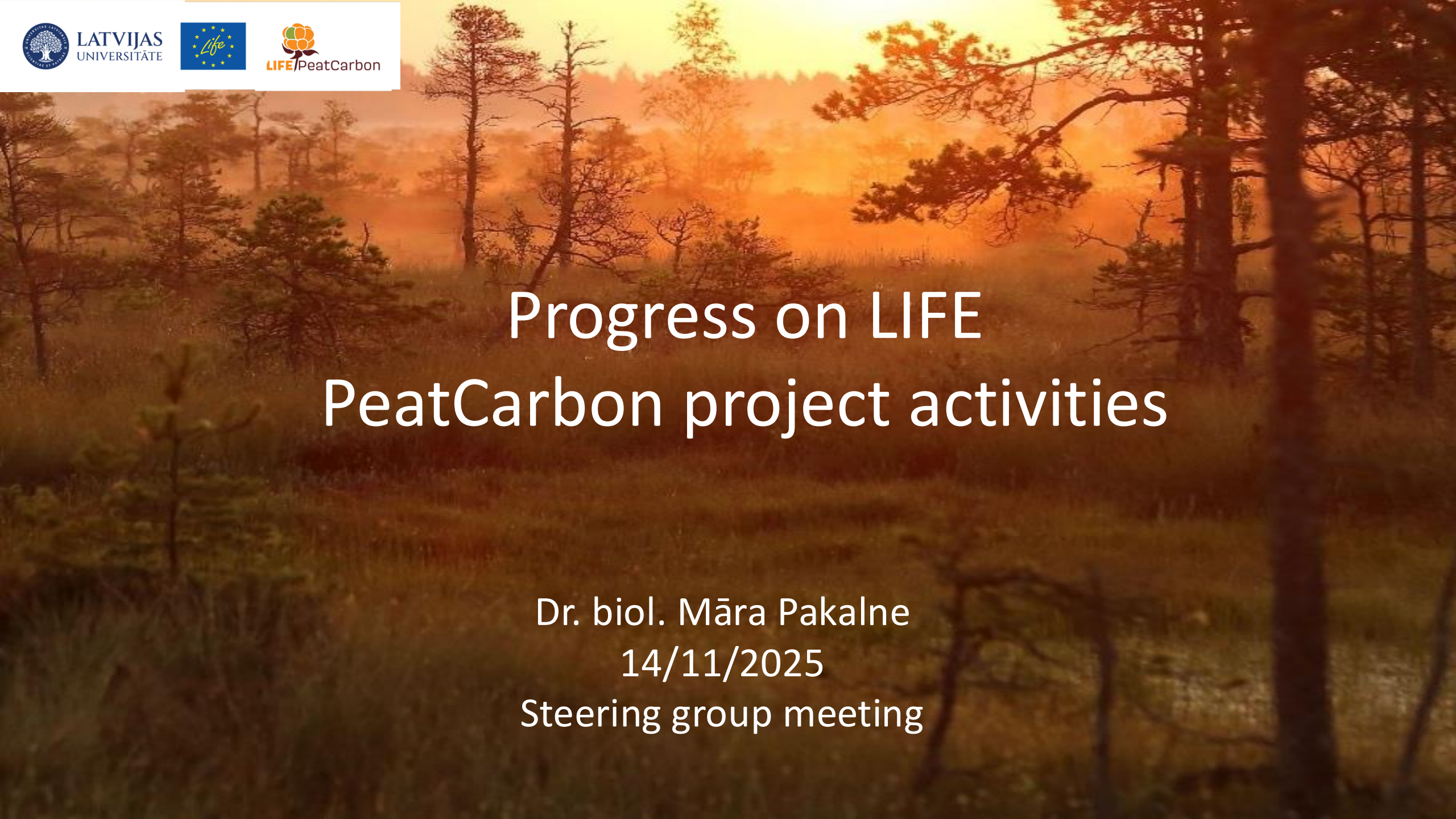


Progress on LIFE PeatCarbon project activities

Dr. biol. Māra Pakalne

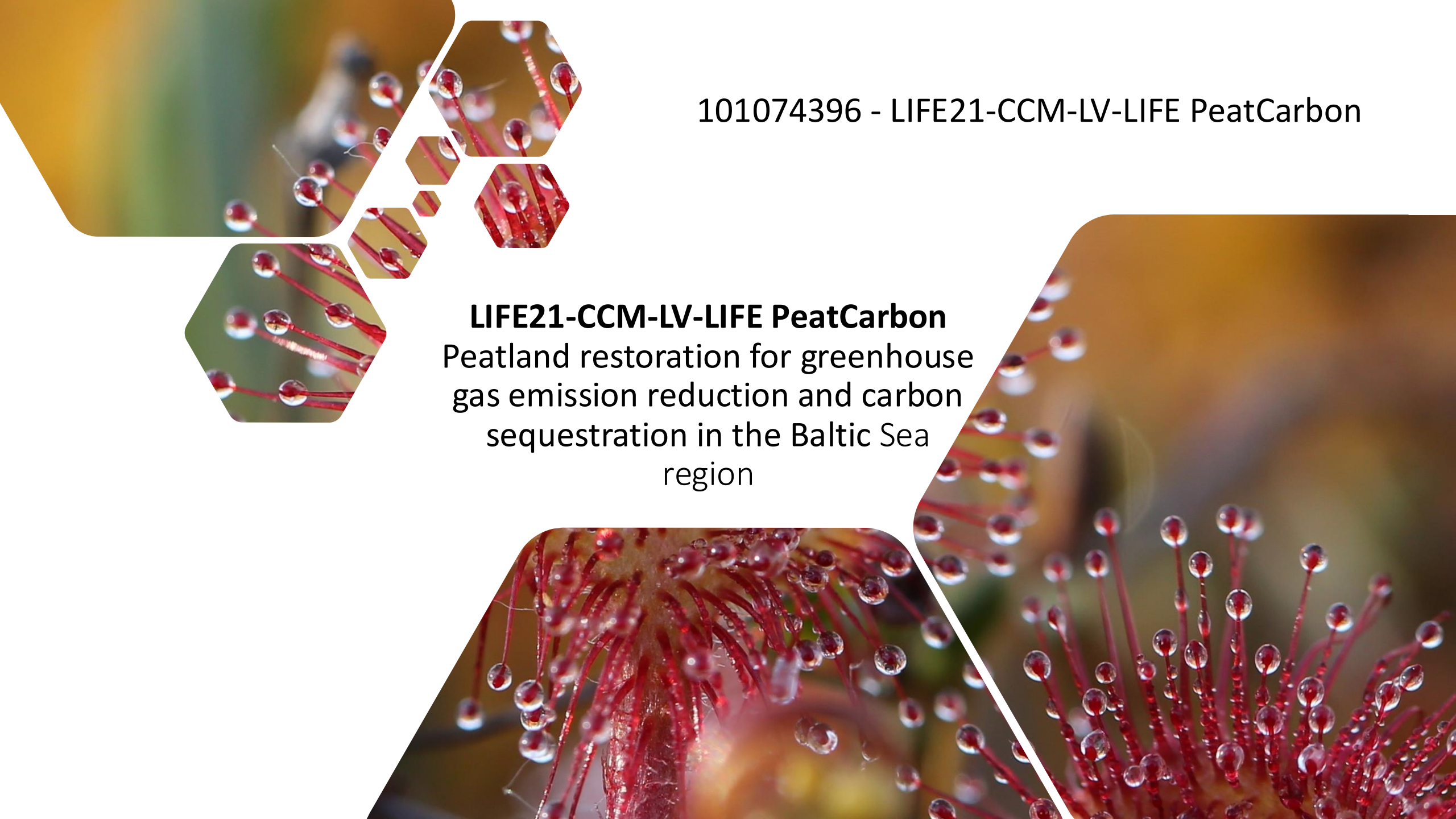
14/11/2025

Steering group meeting

101074396 - LIFE21-CCM-LV-LIFE PeatCarbon

LIFE21-CCM-LV-LIFE PeatCarbon

Peatland restoration for greenhouse gas emission reduction and carbon sequestration in the Baltic Sea region



LIFE21-CCM-LV-LIFE PeatCarbon

Peatland restoration for greenhouse gas emission reduction and carbon sequestration in the Baltic Sea region

Project location: Latvia, Finland, Germany and Denmark

Duration: 01/07/22 - 30/06/27

Coordinating beneficiary: University of Latvia

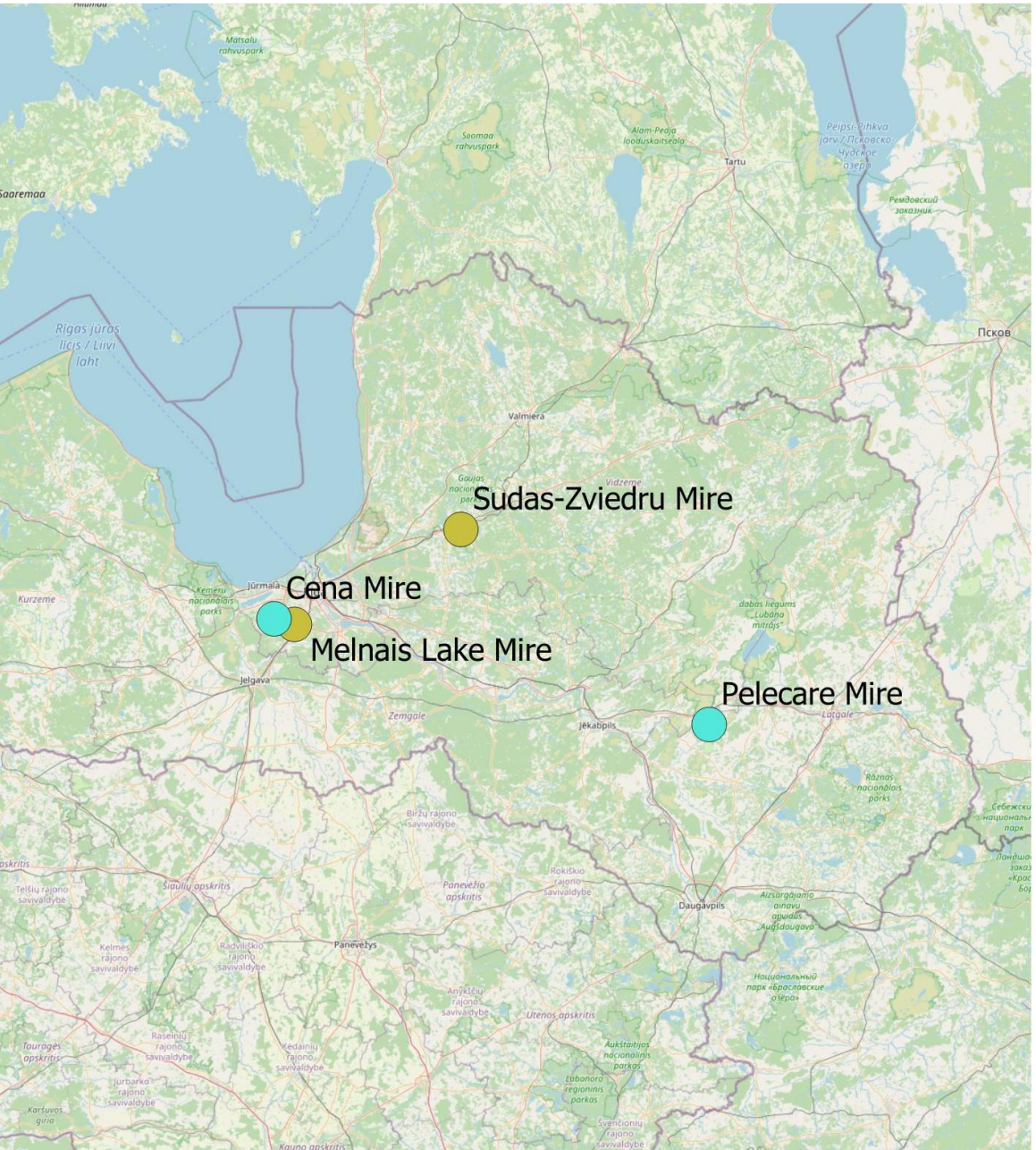
The main objectives

- Reduction of greenhouse gas (GHG) emissions in the peatlands of Latvia and Finland, including habitats of EU importance, like 7110* Active raised bogs, 7120 Degraded raised bogs.
- Testing innovative monitoring methods for the comprehensive assessment of GHG emissions in Latvia.
- Monitoring of CCM measures in 2 restoration sites in Latvia - Lielais Pelečāre and Cena Mire Nature Reserves and 2 sites in Finland - Välisuo and Matorova Mires, as well as 3 LIFE Project sites where peatland restoration was carried out previously.

Project tasks

- Internationally applicable **Best Practice Book** on peatland restoration experience for GHG emission reduction
- The **Ecosystem model** of the project sites will be used for **upscaling to country** level.

Project locations in Latvia



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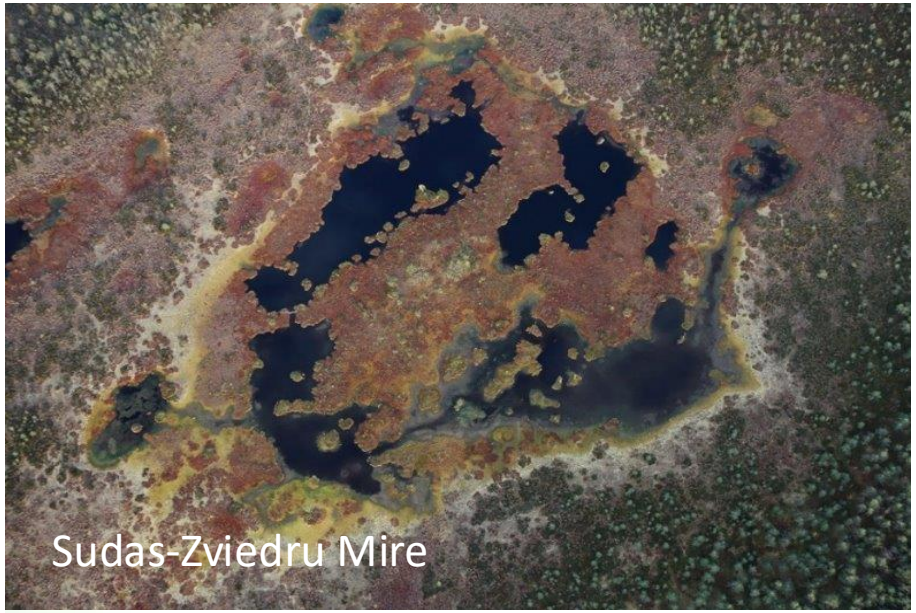
Project sites



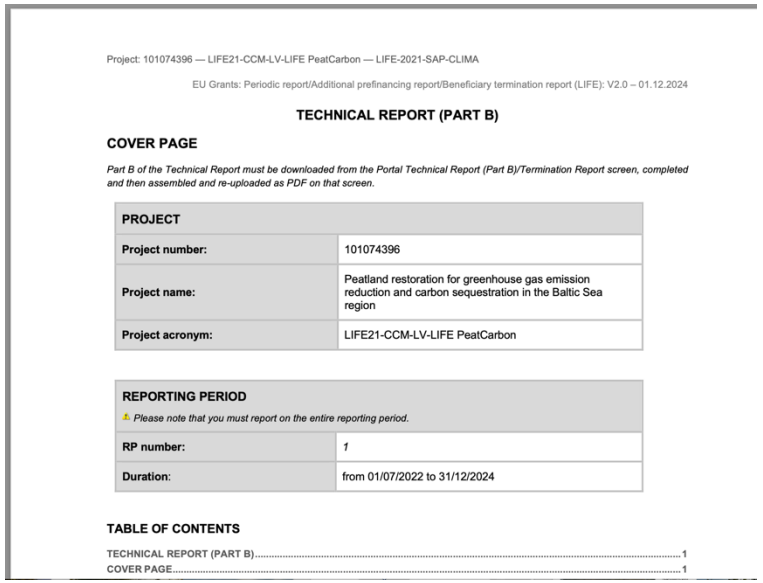
Project work packages

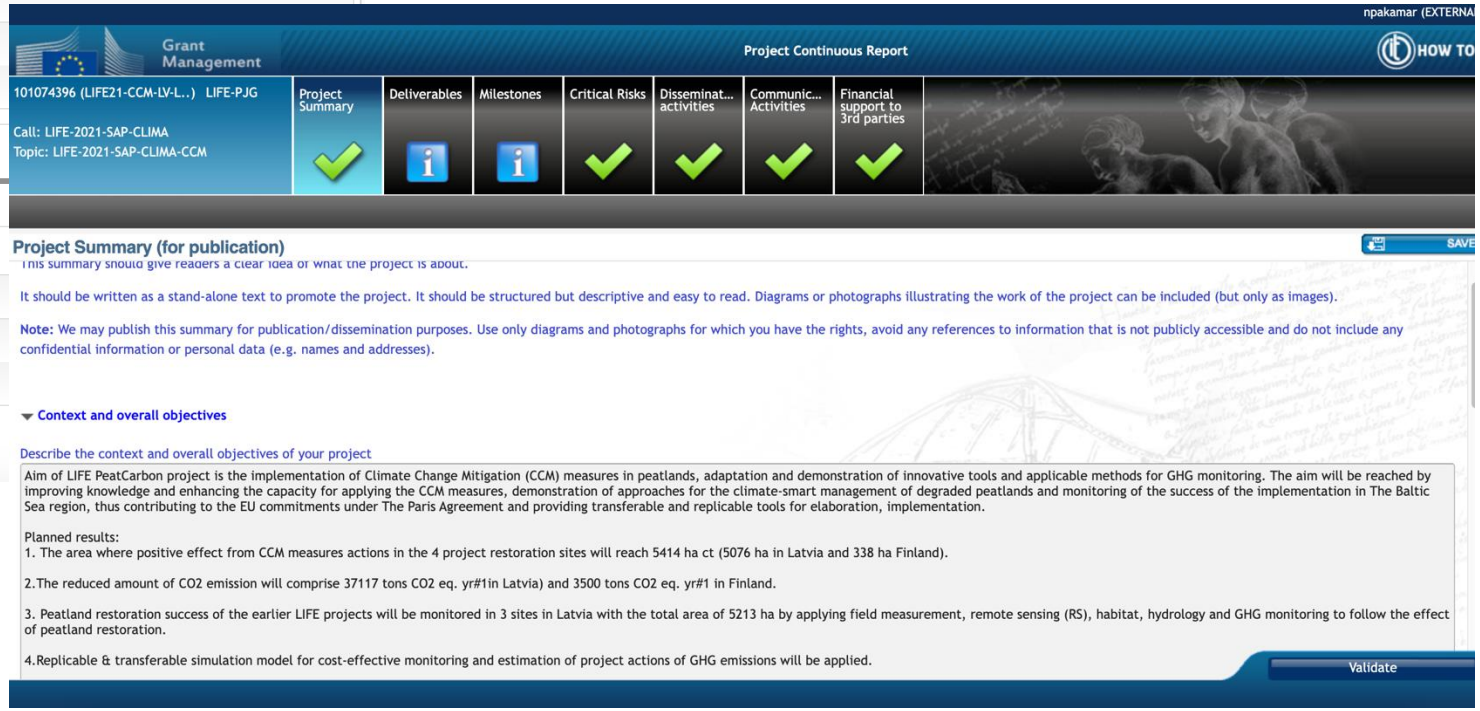
WP 1	• Project management and coordination
WP2	• Initial studies, elaboration of documentation,implementation of selected CCM peatland restoration measures
WP3	• Monitoring of peatland GHG emissions, vegetation and hydrology to evaluate the success of CCM measures
WP4	• Monitoring the impact of project actions
WP5	• Dissemination and communication
WP6	• Sustainability, replication and exploitation of the project results

WP1.1. Project management and coordination

Previous Steering and Scientific group meeting on April 16, 2025

WP1.2. Reporting to EU





Letter from EC on the Monitoring Report

EUROPEAN CLIMATE, INFRASTRUCTURE AND ENVIRONMENT EXECUTIVE AGENCY (CINEA)

CINEA.D - Natural resources, climate, sustainable blue economy and clean energy
D.1 - LIFE Energy + LIFE Climate

ASSESSMENT OF A PERIODIC REPORT

PROJECT	
Project number:	LIFE21 CCM/LV/101074396
Project acronym:	LIFE PeatCarbon
Project name:	Peatland restoration for greenhouse gas emission reduction and carbon sequestration in the Baltic Sea region
Call:	LIFE-2021-SAP-CLIMA
Topic:	LIFE-2021-SAP-CLIMA-CCM
Type of action:	LIFE Project Grants
Service:	CINEA D.D.1 - LIFE Energy + LIFE Climate
Project starting date:	01/07/2022
Project duration:	60.0

ASSESSMENT	
Period covered:	from 01/07/2022 to 31/12/2024
Reporting period number:	1
Date of the latest version of Description of the Action (DoA) against which the assessment is performed	27/07/2022
Date of meeting with consortium (if applicable i.e. if a meeting was organised during the periodic report assessment	27/01/2025

1. Overall assessment

1

General comments
The project has achieved most of its objectives and milestones/outputs/outcomes for the period, with relatively minor deviations.
The implementation of the project is progressing towards reaching its objectives. Main achievements: The project has successfully completed the pre-restoration hydrogeological field and model studies in all project peatland sites. The hydrological, vegetation, microbiology and GHG emission monitoring is ongoing as planned. The peatland restoration activities have been completed in Finland. Project's visibility is ensured with high quality dissemination material. The project is actively working on the development of remote sensing (RS) tool for the evaluation of GHG emissions from peatlands and on the calibration of the ecosystem model for managed and restored peatlands. In Latvia the restoration works have been delayed for 1 year, as communicated earlier to the CINEA, and the COO is certain that restoration works in Latvia will be completed by the end of 2025 as planned. Apart from this justified delay, no other implementation issues are noted.

WP2.3. Elaboration of technical documentation for the implementation of peatland restoration actions (AGS)

PASŪTĪTĀJS	LATVIJAS UNIVERSITĀTE REĢISTRĀCIJAS NR.: 90000076669 ADRESE: RAIŅA BULVĀRIS 19, RĪGA LATVIJA, LV-1586
IZSTRĀDĀTĀJS	SIA DDP REĢISTRĀCIJAS NR.: 40103584918 ADRESE: EDUARDA SMILĢA IELA 20A-20, RĪGA, LATVIJA, LV-1002 BŪVKOMERSANTA REĢISTRĀCIJAS NUMURS: 11331
OBJEKTS	Hidroloģiskā režīma atjaunošanas plāns dabas liegumam "Cenas tīrelis"
SĒJUMA NR.	1
LĪGUMA NR.	AGS2024/1
DAĻAS	MS
PROJEKTĒŠANAS STADIJA	BŪVPROJEKTS
BŪVPROJEKTA VADĪTĀJS	*DIDZIS DĀLE*
PROJEKTĒŠANAS UZŅĒMUMA ATBILDĪGĀ PERSONA	*DIDZIS DĀLE*

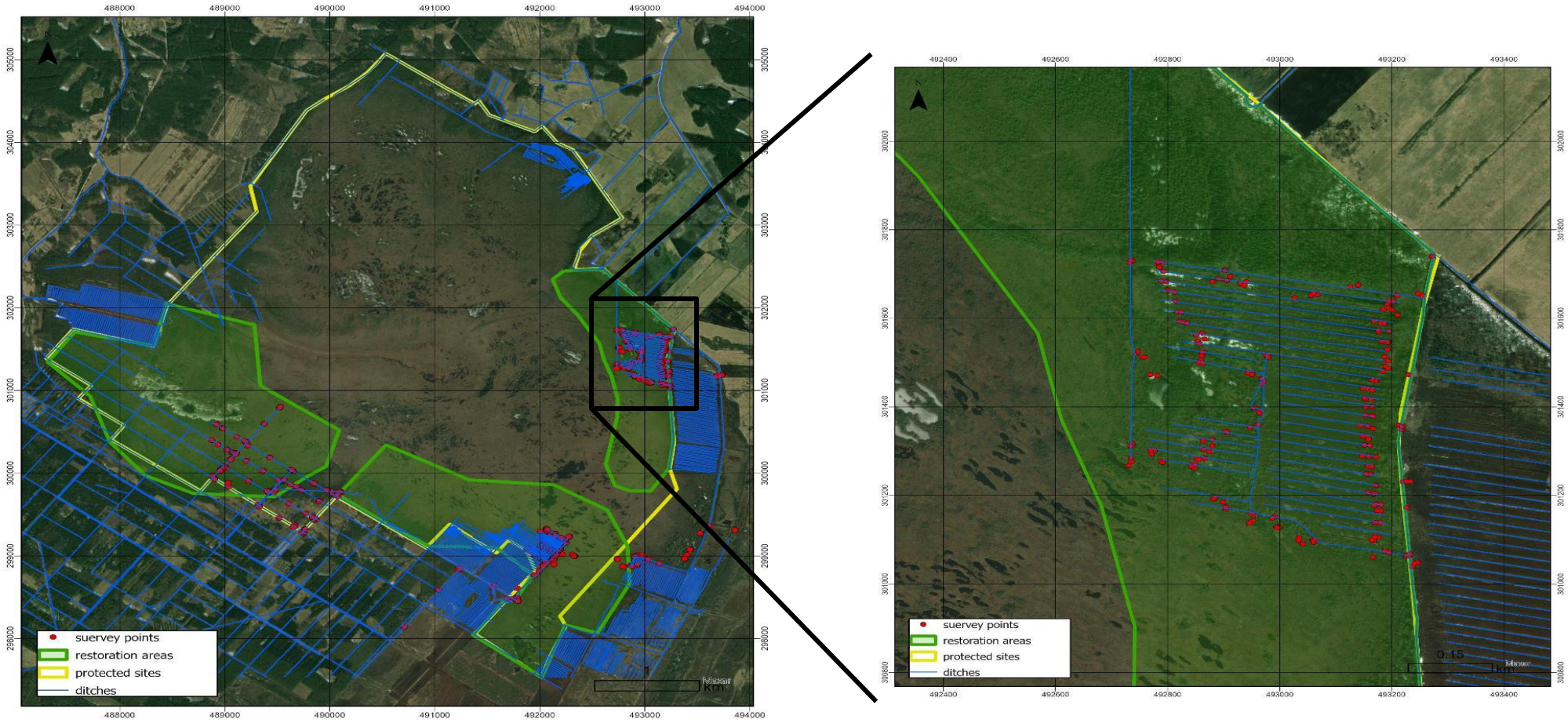
IZDRUKĀTĀ BŪVPROJEKTA DOKUMENTĀCIJA LEJUPLĀDĒTA NO BŪVNIECĪBAS INFORMĀCIJAS SISTĒMAS, KUR TĀ IR ELEKTRONISKI PARAKSTĪTA UN APSTIPRINĀTA

PASŪTĪTĀJS	LATVIJAS UNIVERSITĀTE REĢISTRĀCIJAS NR.: 90000076669 ADRESE: RAIŅA BULVĀRIS 19, RĪGA LATVIJA, LV-1586
IZSTRĀDĀTĀJS	SIA DDP REĢISTRĀCIJAS NR.: 40103584918 ADRESE: EDUARDA SMILĢA IELA 20A-20, RĪGA, LATVIJA, LV-1002 BŪVKOMERSANTA REĢISTRĀCIJAS NUMURS: 11331
OBJEKTS	Purva hidroloģiskā režīma stabilizēšana dabas liegumā "Lielais Pelečāres purvs"
SĒJUMA NR.	1
LĪGUMA NR.	AGS2024/1
DAĻAS	MS
PROJEKTĒŠANAS STADIJA	BŪVPROJEKTS
BŪVPROJEKTA VADĪTĀJS	*DIDZIS DĀLE*
PROJEKTĒŠANAS UZŅĒMUMA ATBILDĪGĀ PERSONA	*DIDZIS DĀLE*

IZDRUKĀTĀ BŪVPROJEKTA DOKUMENTĀCIJA LEJUPLĀDĒTA NO BŪVNIECĪBAS INFORMĀCIJAS SISTĒMAS, KUR TĀ IR ELEKTRONISKI PARAKSTĪTA UN APSTIPRINĀTA

Technical designs for peatland restoration in Cenas Mire and Lielais Pelečāre Mire

WP2.4. Peatland rewetting for implementation of CCM measures in the project sites

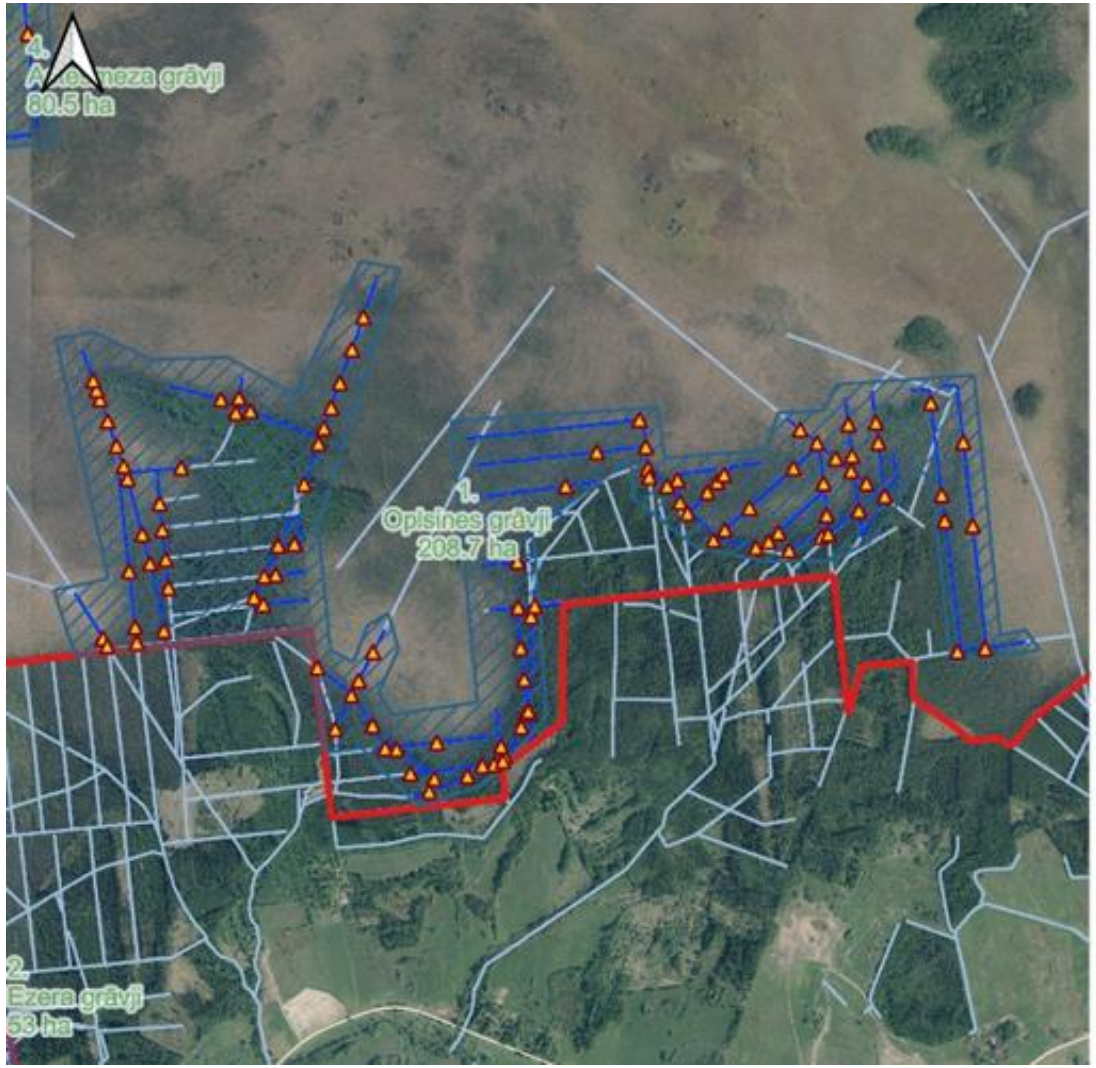


Peatland restoration area in Cenas Mire

WP 2.4. Peatland rewetting for the implementation CCM measures in the project sites

Cenas Mire, November 2025, implemented by AGS systems

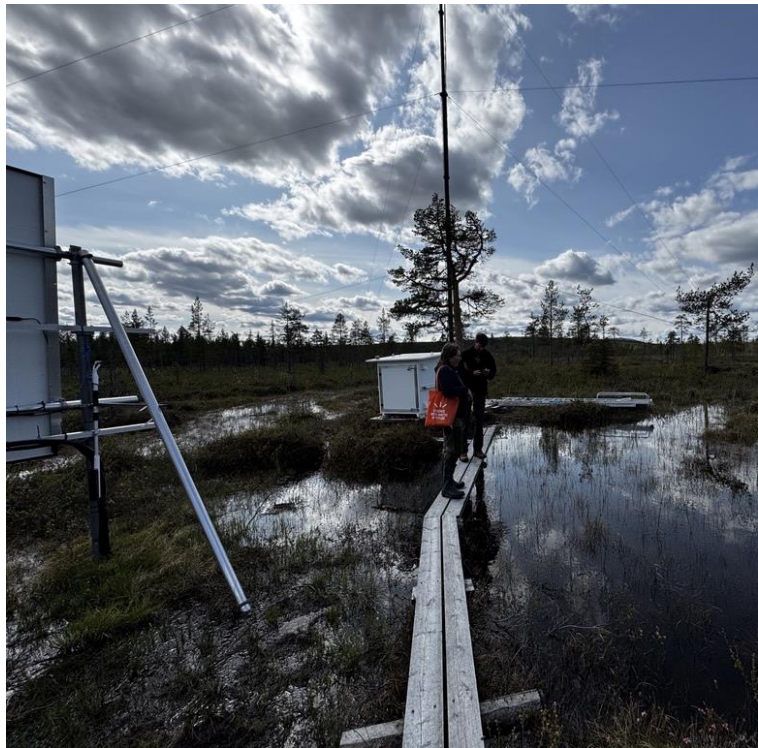
Peatland restoration areas in Lielais Pelečāres Mire



Calibration of GEST types in Matorova and Välisuo Mires in Finland, June 14/15, 2025

WP2.3. Peatland restoration results in Finland, June 2025

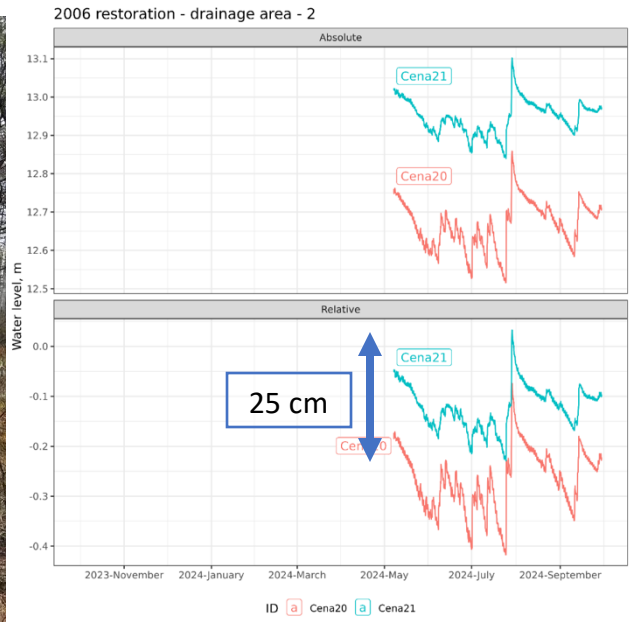
1. Drainage ditches closed in Matorova and Välisuo Mires in 2024
2. Trees cut in 2024
3. Area rewetted as a result of water table rise; also near the Eddy covariance tower.



WP 3.2. Vegetation monitoring in Sudas –Zviedru Mire

- Peat dams built in 2017
- Area near drainage ditches rewetted
- Recovery of mire vegetation
- Ditch filling-in with *Sphagnum cuspidatum* and other mire species

WP 3.3 Hydrological monitoring in Cenas Mire, dams built in 2006



WP 3. 4.
GHG monitoring in the project sites

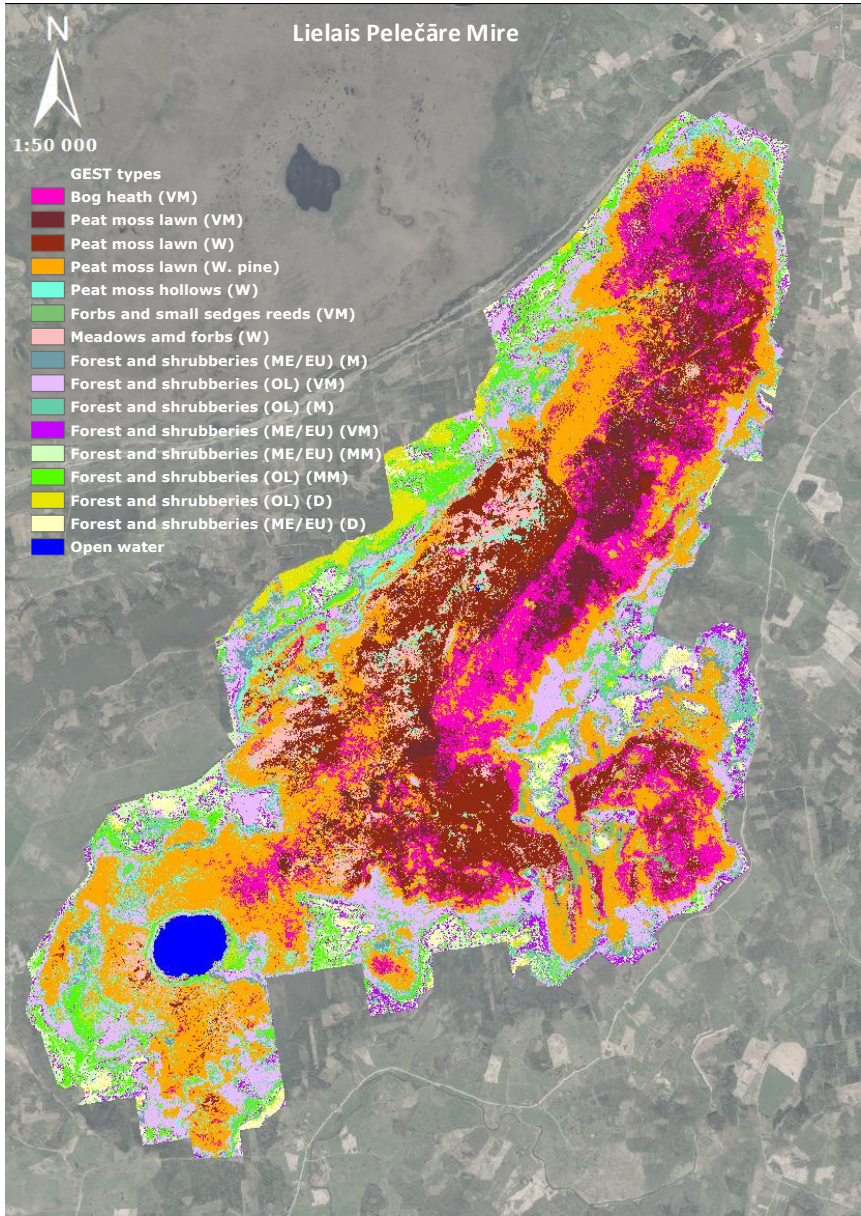
Implemented by
SILAVA

T.3.7. Development of remote sensing (RS) tool for detecting GHG fluxes in peatlands

Institute for Environmental Solutions

Remote sensing results and GEST types in Latvia

- Completed GEST type mapping for Lielais Pelēčāres Mire from high-resolution airborne data and tested upscaling possibilities using Sentinel satellite data
- Two reference data gathering campaigns in Sudas-Zviedru Mire to survey spectrally different areas and detected changes between two observations
- Discussion with Finnish partners about the necessary inputs for GHG modelling and work on their preparation
- Testing remote sensing-based moisture regime assessment



WP4.1 Monitoring the project performance

This action foresees monitoring, assessment, and evaluation of implementation of actions against the Project objectives which include:

- Implementation of CCM measures in degraded peatlands to reduce GHG emissions in Latvia, Finland
- Testing innovative monitoring methods for the comprehensive assessment of GHG emissions originating
- Development of Guidelines for application of replicable and transferable RS and modelling tools

- Carrying out dissemination, awareness raising and training activities

4.2. Assessment of ecosystem services

ES Assessment Working Group Meeting

- 19 February 2025, Latvia
- 11 June 2025, Finland

Preliminary Results:

Latvia:

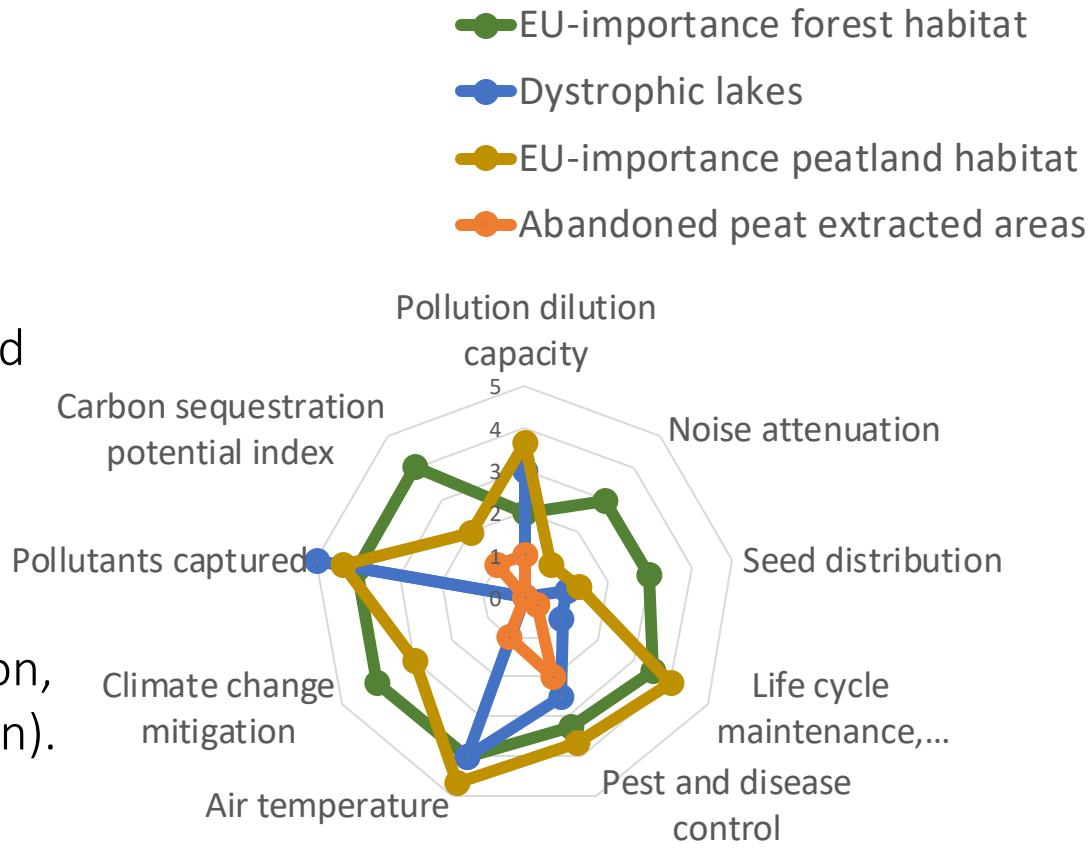
Degraded **regulating ES** (GHG mitigation, water purification, microclimate) due to past peat extraction.
High restoration potential—rewetting and re-vegetation expected to enhance carbon sequestration, water regulation, and habitat quality. Priority site for targeted ES recovery.

Finland:

Overall a high-performing regulating and maintenance ES (filtration, erosion control, carbon storage, water flow regulation, pollination).

Cena Mire

Regulation and Maintenance ecosystem services



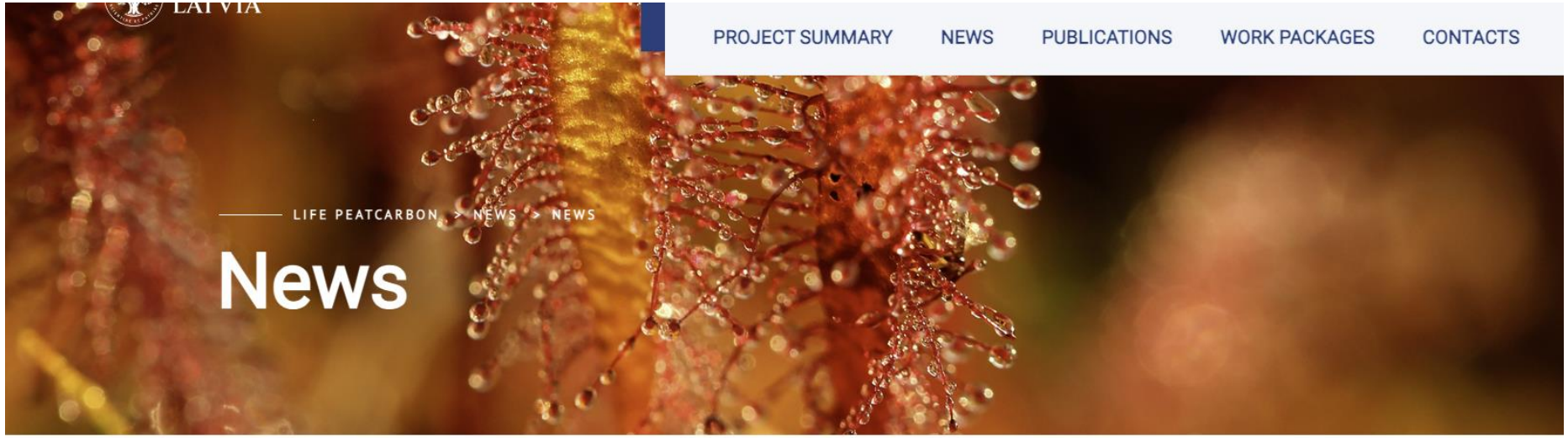
Next Steps:

Data validation → Second-round ES assessmen → Ecosystem economic valuation

WP5. Dissemination and communications actions of the project

WP5.1. Communication Strategy and Plan - support system for Implementation and Monitoring (WP3, WP4) tasks (NABU)

WP 5.2.Dissemination of project information via web



Information at the web page of Coordinating beneficiary and project beneficiaries

www.peatcarbon.lu.lv

WP5.4. Elaboration of transportable photo exhibition showing peatlands role in CCM

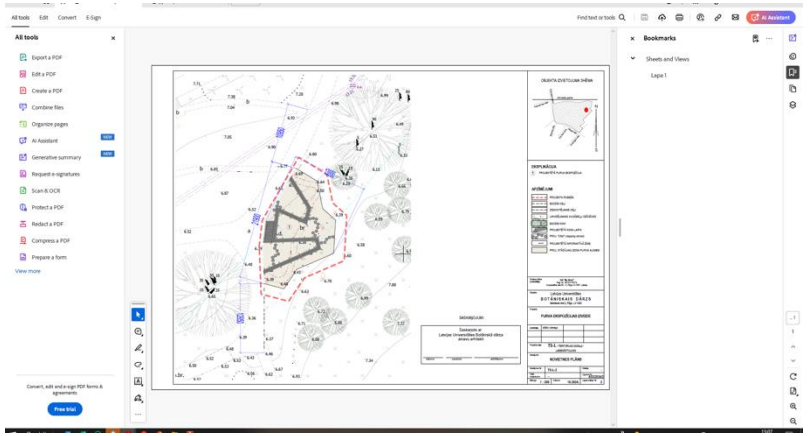
WP5.6.Upscaling project results to international decissionmakers in Germany (NABU)

Event at the Latvian Embassy in Berlin, June 22, 2025

https://www.peatcarbon.lu.lv/en/news/news/

The event brought together scientists, policymakers, civil society, and private sector representatives from across Europe to explore one central theme: how restoring peatlands can drive a greener, climate-resilient, and financially viable future.

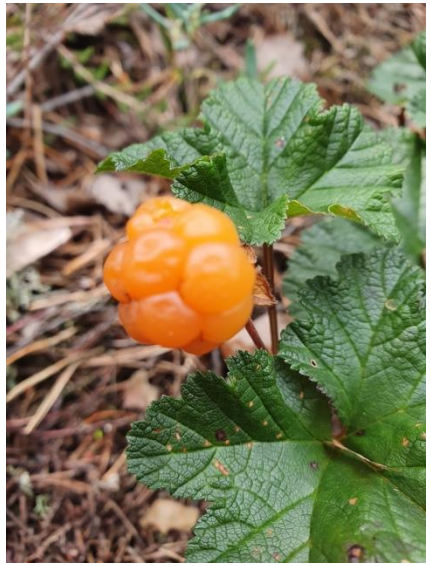
WP 5.7. Establishing peatland exposition at the Botanical Garden of University of Latvia



Peatland exposition at the Botanical Garden









WP5.8. Networking, participation in seminars, conferences

12 INTECOL Wetlands and 20th European Society of Wetland Scientists Conference, July 2025 in Tartu

The conference was attended by 272 participants from 37 countries.
https://www.peatcarbon.lu.lv/en/news/news/

Diverse themes discussed:

- Hydrological and vegetation studies in peatlands
- GHG measurement in peatlands
- Peatland restoration and management
- Wetland ecology

Restoration results in Laiuse peatland, Estonia

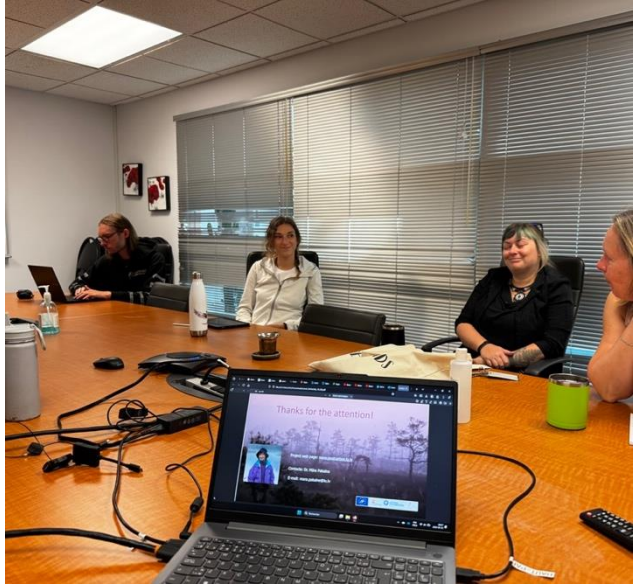
- Drainage ditches closed
- Former peat extraction field rewetted
- re-growth of mire species
- Decrease of GHG emissions observed

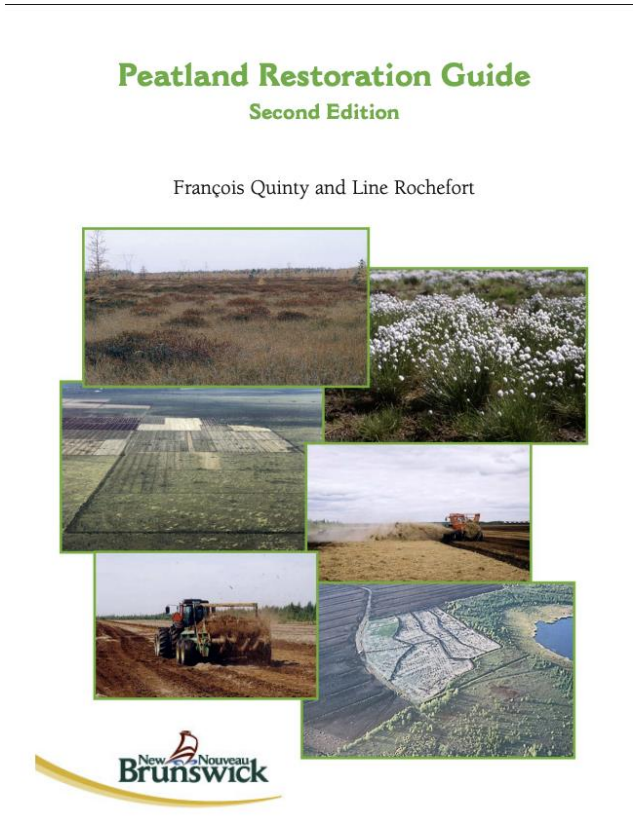
Presenting LIFE PeatCarbon project at NATO Climate Change and Security Centre of Excellence, Montreal, Canada, September 15, 2025

- Discussion about peatland role in CCM
- LIFE PeatCarbon project activities and results
- Peatland restoaration techniques
- Borderland peatland rewetting for defence

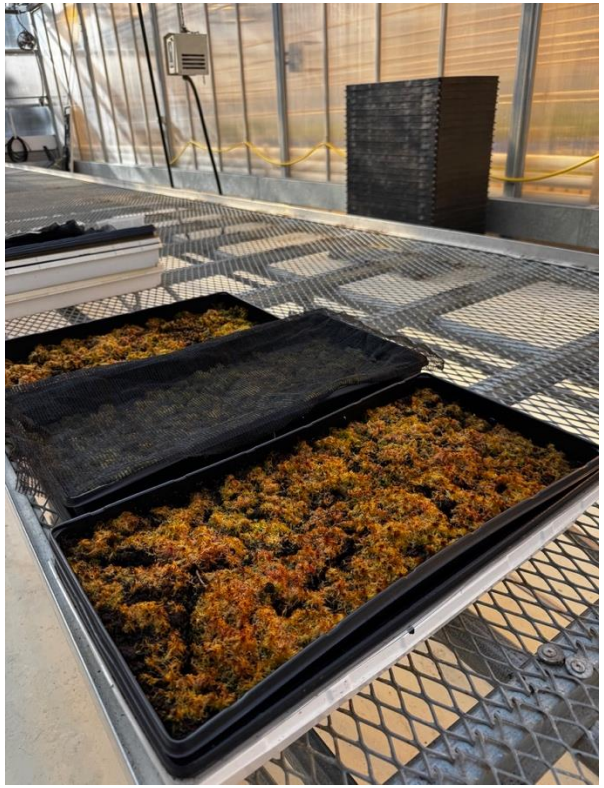
Sharing experience with peatland experts from Laval University, Canada, September 18, 2025

- Discussion on peatland restoration methodology
- Vegetation and hydrology monitoring
- Peatland rewetting experience in Canada and Latvia





Sphagnum growth experiment at Laval University, Canada



Peatland rewetting by building of dams on a drainage ditch in Grande-Plée-Bleue bog, Quebec region, Canada

Grande-Plée-Bleue bog

Originated 9500 years ago, pools developed only about 1000 years ago

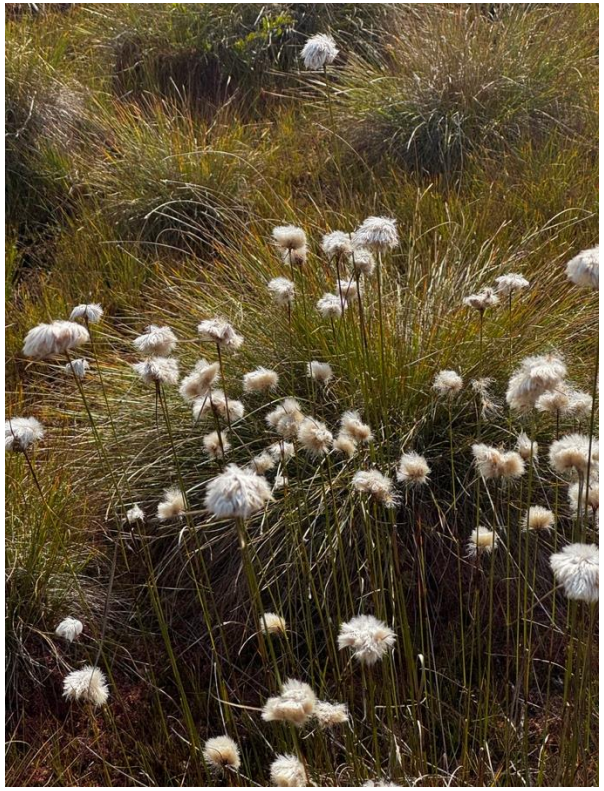
Picea mariana, Larix laricina, Chamaedaphmne calyculata, Sarracenia purpurea, Kalmia angustifolia, Rhododendron groendlandicum , Vaccinium angustifolium, Vaccinium oxycoccus, Nuphar variegata, Rubus chamaemorus, Eriohorum virginicum, Sphagnum angustifolium, S. balticum, S. medium, S. rubellum, S. linbergii, S. rusowii, S. papillosum, S. majus, S. tenellum, S. wulfianum

Peatland restoration in Saint-Henri peat bog, Quebec region, Canada

- **STOP 1.1 – RESTORED 2019 (4 YEARS POST-RESTORATION)**
- **STOP 1.2 – RESTORED 2013 (10 YEARS POST-RESTORATION)**
- **STOP 1.3 – REWETTED 1995 (28 YEARS POST-RESTORATION)**
- **STOP 1.4 – DONOR SITE 2013 (10 YEARS OLD)**

- Moss Layer Transfer technique, *Polytrichum strictum* is a nursing plant before rewetting of a peatland.

Peatland restoration area in Saint-Henri peat bog, September 25, 2025

- *Sphagnum* carpet established in the rewetted areas
- Re-appearance of characteristic mire species

BOG4LIFE International Symposium – Peatland Perspectives: restoring for tomorrow, October 8-10, 2025

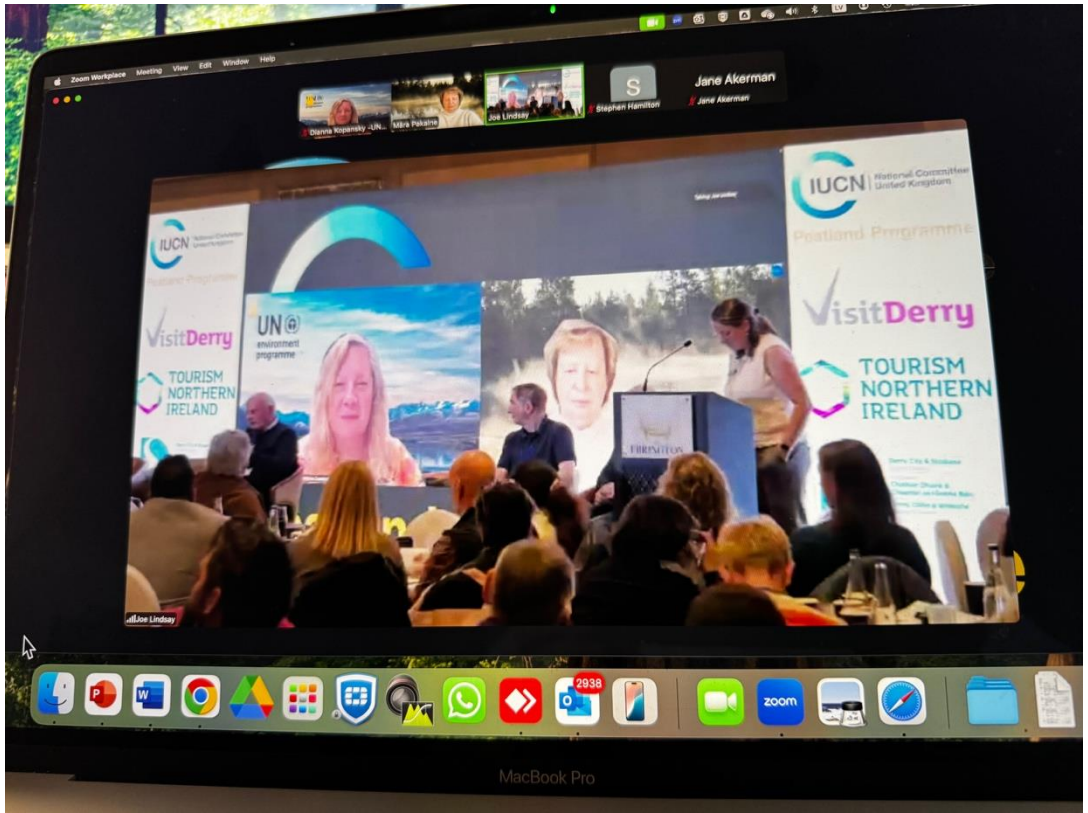
Sharing knowlwdge on peatland restoration

IUCN Peatlands Conference from Source to Sea, Ireland, September 30, 2025

- https://historicengland.org.uk/images-books/publications/peatland-historic-environment-peat-restoration/

Peatlands and the Historic Environment: Guidance for Carrying out Peat Restoration

Published 7 August 2025



LIFE PeatCarbon project presented at Virtual Peatlands Pavillion

Pavillion is shown at UN Climate Change Conference COP30 in Belém, Brazil from November 6-21, 2025.

LIFE PeatCarbon peatland restoration knowledge shared with National Army forces and Ministry of Defence of Latvia on October 24, 2025, Deutsche Welle news

WP6. Sustainability, Replication, Exploitation activities

ETHNOEXPERT
your sustainability consultant

In 2025, the EthnoExpert team, in close cooperation with project partners and external experts, continued work in the following key areas:

- **Testing carbon accounting approaches** for peatland restoration projects, including:
  - IPCC Guidelines for National Greenhouse Gas Inventories
  - The GEST (Greenhouse Gas Emission Site Type) approach
  - Other scientifically validated or pilot-tested methodologies
- Development of **sample Carbon Credit Project documentation** for the Cena Mire site in Latvia, aligned with Verra's VM0036 methodology.
- **Collaboration with external stakeholders** – including the LIFE MultiPeat project, CINEA, and DG CLIMA – on carbon certification frameworks for peatland restoration initiatives.
- **Concept development for a decision-support tool** to inventory and prioritize drained peatland sites in the Baltic Sea region based on their **GHG emission reduction potential**.

WP6.1. Knowledge transfer to stakeholders Demonstration seminar

Building of peat dams in Cenas Mire, November 6, 2025

https://www.peatcarbon.lu.lv/en/news/news/

Project booklets were distributed at the seminar

www.peatcarbon.lu.lv

Monitoring peatland restoration in Cenas Mire

Shooting video on peatland restoration

November 8, 2025, in Cenas Mire restoration area

Next activities

- Completing peatland restoration in Cenas Mire and Lielais Pelečāres Mire
- Peatland Restoration Report
- Annual monitoring reports and report for the innovative CO2 measurements
- Best Practice Book on peatland restoration experience
- Photo Book
- Presenting project results in seminars, conferences and other meetings
- Communication with Latvian and Finnish policy makers
- Updating information on carbon credits

Thanks for the attention!

Web page
www.peatcarbon.lu.lv

Contact: Dr.biol. Māra Pakalne
mara.pakalne@lu.lv