

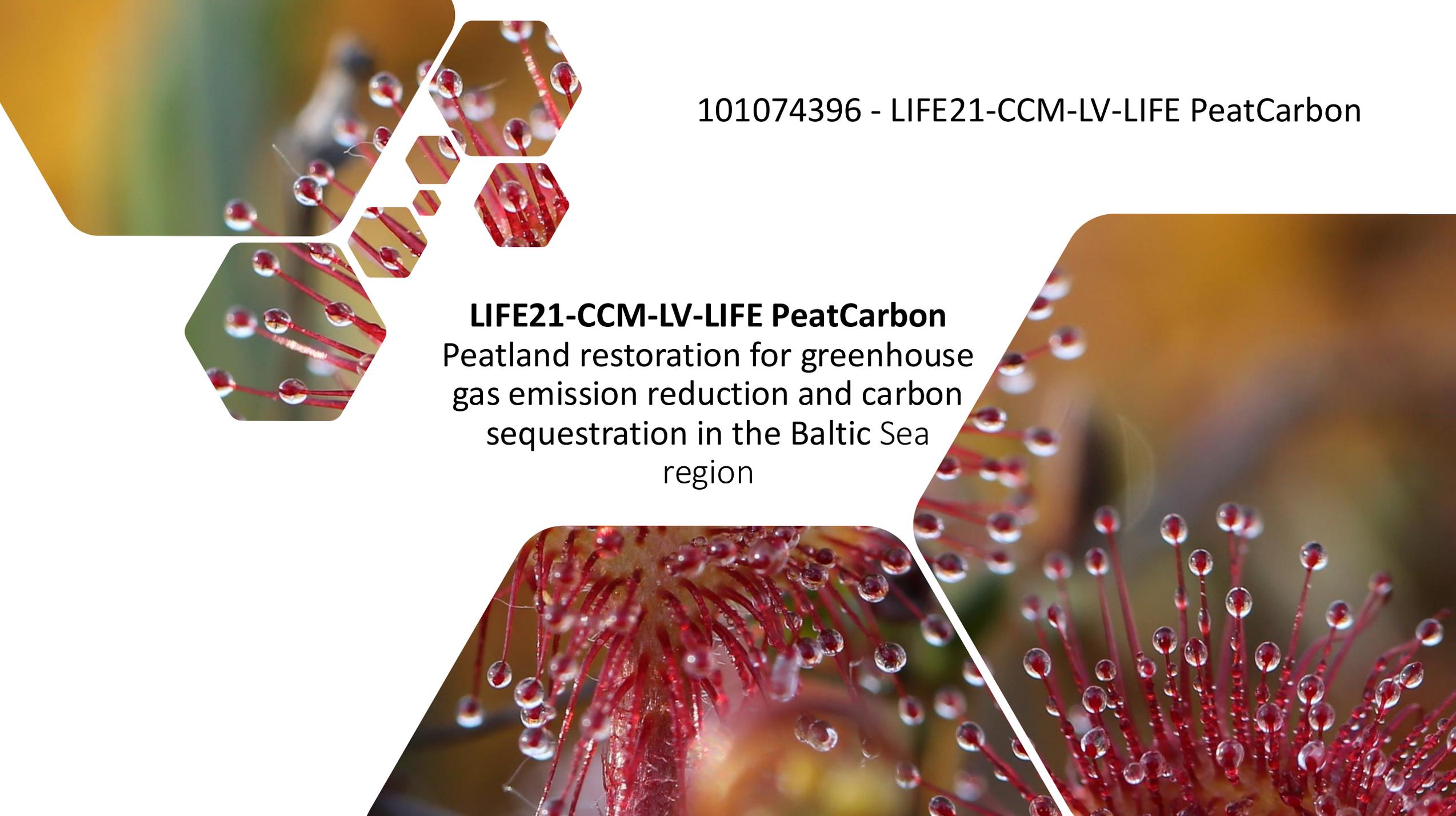


LATVIJAS  
UNIVERSITĀTE



# 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.

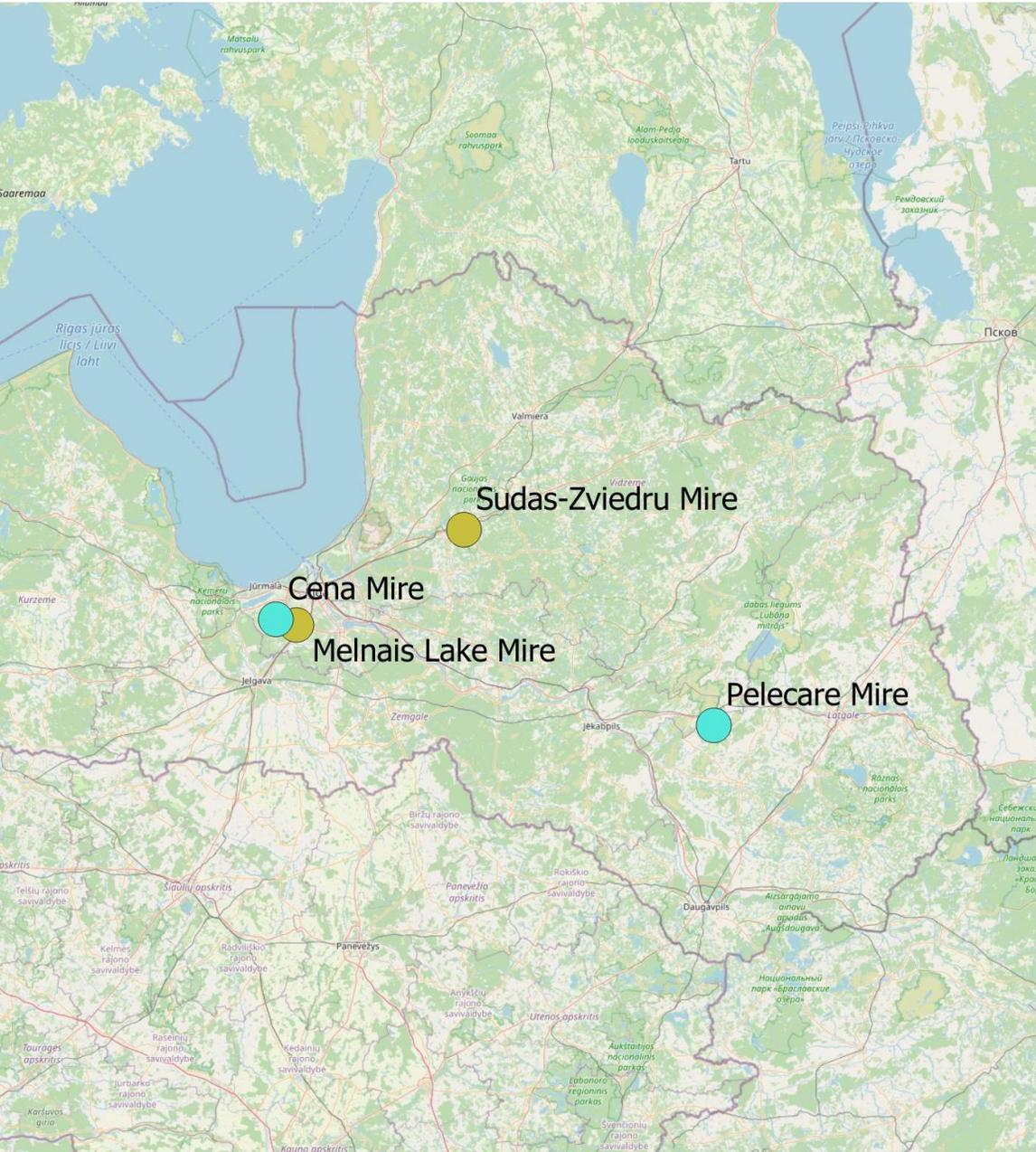


# Project tasks

- 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



Restoration  
location



0 25



# 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



# WP1.2. Reporting to EU

RESEARCH & INNOVATION  
Grant Management Services

European Commission

Help

Mara PAKALNE

MY PROJECT

Launch new interaction with the EU +

**Periodic Reporting**  
REP-101074396-1 - period  
01/07/2022 > 31/12/2024  
01 Jan 2025

Draft Submitted Observations Paid

**Continuous Reporting**  
101074396 - LIFE21-CCM-LV-LIFE PeatCarbon  
27 Jul 2022  
Started

Continuous reporting data

Process documents  
Process communications  
Process history

Latest Legal Data  
Active Processes  
Document Library  
Communication Centre

Project: 101074396 — LIFE21-CCM-LV-LIFE PeatCarbon — LIFE-2021-SAP-CLIMA  
EU Grants: Periodic report/Additional prefinancing report/Beneficiary termination report (LIFE): V2.0 – 01.12.2024

**TECHNICAL REPORT (PART B)**

**COVER PAGE**

Part B of the Technical Report must be downloaded from the Portal Technical Report (Part B)/Termination Report screen, completed and then assembled and re-uploaded as PDF on that screen.

PROJECT	
Project number:	101074396
Project name:	Peatland restoration for greenhouse gas emission reduction and carbon sequestration in the Baltic Sea region
Project acronym:	LIFE21-CCM-LV-LIFE PeatCarbon

REPORTING PERIOD	
* Please note that you must report on the entire reporting period.	
RP number:	1
Duration:	from 01/07/2022 to 31/12/2024

**TABLE OF CONTENTS**

TECHNICAL REPORT (PART B).....1  
COVER PAGE.....1

npakamar (EXTERNAL) HOW TO

Grant Management Project Continuous Report

101074396 (LIFE21-CCM-LV-LV...) LIFE-PJG  
Call: LIFE-2021-SAP-CLIMA  
Topic: LIFE-2021-SAP-CLIMA-CCM

Project Summary Deliverables Milestones Critical Risks Dissemination activities Communication Activities Financial support to 3rd parties

**Project Summary (for publication)**  
This summary should give readers a clear idea of what the project is about.

It should be written as a stand-alone text to promote the project. It should be structured but descriptive and easy to read. Diagrams or photographs illustrating the work of the project can be included (but only as images).

**Note:** We may publish this summary for publication/dissemination purposes. Use only diagrams and photographs for which you have the rights, avoid any references to information that is not publicly accessible and do not include any confidential information or personal data (e.g. names and addresses).

Context and overall objectives

Describe the context and overall objectives of your project

Aim of LIFE PeatCarbon project is the implementation of Climate Change Mitigation (CCM) measures in peatlands, adaptation and demonstration of innovative tools and applicable methods for GHG monitoring. The aim will be reached by improving knowledge and enhancing the capacity for applying the CCM measures, demonstration of approaches for the climate-smart management of degraded peatlands and monitoring of the success of the implementation in The Baltic Sea region, thus contributing to the EU commitments under The Paris Agreement and providing transferable and replicable tools for elaboration, implementation.

Planned results:

- The area where positive effect from CCM measures actions in the 4 project restoration sites will reach 5414 ha ct (5076 ha in Latvia and 338 ha Finland).
- The reduced amount of CO2 emission will comprise 37117 tons CO2 eq. yr#1in Latvia) and 3500 tons CO2 eq. yr#1 in Finland.
- Peatland restoration success of the earlier LIFE projects will be monitored in 3 sites in Latvia with the total area of 5213 ha by applying field measurement, remote sensing (RS), habitat, hydrology and GHG monitoring to follow the effect of peatland restoration.
- Replicable & transferable simulation model for cost-effective monitoring and estimation of project actions of GHG emissions will be applied.

Validate



# Letter from EC on the Monitoring Report



## 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

### 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.

### 1. Overall assessment

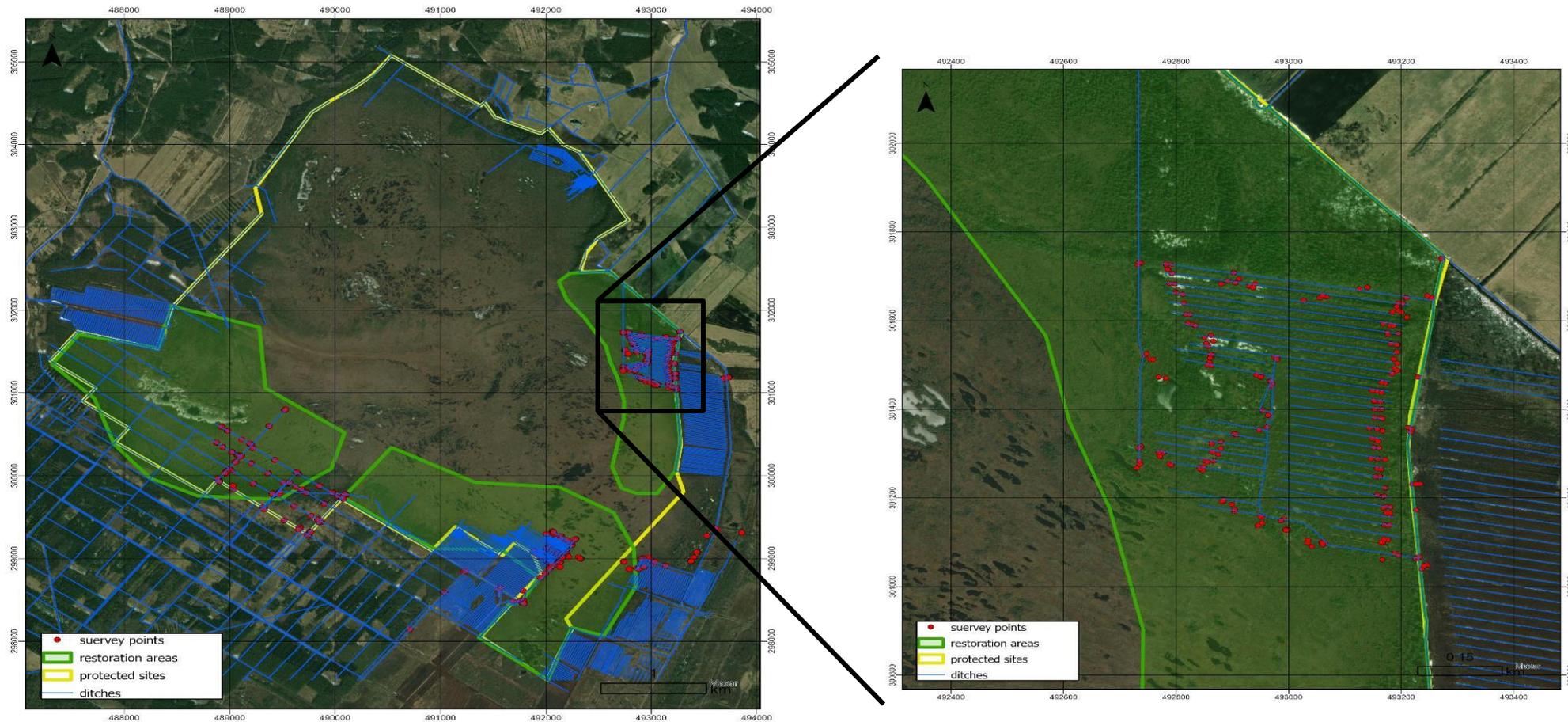
# WP2.3. Elaboration of technical documentation for the implementation of peatland restoration actions (AGS)

<b>PASŪTĪTĀJS</b>	<b>LATVIJAS UNIVERSITĀTE</b> REGISTRĀCIJAS NR.: 9000076669 ADRESE: RAINĀ BULVĀRIS 19, RĪGA LATVIJA, LV-1586
<b>IZSTRĀDĀTĀJS</b>	<b>SIA DDP</b> REGISTRĀCIJAS NR.: 40103584918 ADRESE: EDUĀRDA SMIĻĢA IELA 20A-20, RĪGA, LATVIJA, LV-1002 BŪVKOMERSANTA REGISTRĀCIJAS NUMURS: 11331
<b>OBJEKTS</b>	<b>Hydroloģiskā režīma atjaunošanas plāns dabas iegumam "Cenas Mire"</b>
<b>SĒJUMA NR.</b>	CC-Elag/Batav. 2122 1
<b>LĪGUMA NR.</b>	AGS2024/1
<b>DAĻAS</b>	MS
<b>PROJEKTĒŠANAS STADIJA</b>	BŪVPROJEKTS
<b>BŪVPROJEKTA VADĪTĀJS</b>	DIDZIS DĀLE
<b>PROJEKTĒŠANAS UZŅĒMUMA ATBILDĪGĀ PERSONA</b>	DIDZIS DĀLE
	<b>IZDRUKĀTĀ BŪVPROJEKTA DOKUMENTĀCIJA LEJUPLĀDĒTA NO BŪVNICĪBAS INFORMĀCIJAS SISTĒMAS, KUR TĀ IR ELEKTRONISKI PARAKSTĪTA UN APSTIPRINĀTA</b>

<b>PASŪTĪTĀJS</b>	<b>LATVIJAS UNIVERSITĀTE</b> REGISTRĀCIJAS NR.: 9000076669 ADRESE: RAINĀ BULVĀRIS 19, RĪGA LATVIJA, LV-1586
<b>IZSTRĀDĀTĀJS</b>	<b>SIA DDP</b> REGISTRĀCIJAS NR.: 40103584918 ADRESE: EDUĀRDA SMIĻĢA IELA 20A-20, RĪGA, LATVIJA, LV-1002 BŪVKOMERSANTA REGISTRĀCIJAS NUMURS: 11331
<b>OBJEKTS</b>	<b>Purva hidroloģiskā režīma stabilizācija dabas iegumā "Lielais Pelečāres purvs"</b>
<b>SĒJUMA NR.</b>	CC-Elag/Batav. 2122 1
<b>LĪGUMA NR.</b>	AGS2024/1
<b>DAĻAS</b>	MS
<b>PROJEKTĒŠANAS STADIJA</b>	BŪVPROJEKTS
<b>BŪVPROJEKTA VADĪTĀJS</b>	DIDZIS DĀLE
<b>PROJEKTĒŠANAS UZŅĒMUMA ATBILDĪGĀ PERSONA</b>	DIDZIS DĀLE
	<b>IZDRUKĀTĀ BŪVPROJEKTA DOKUMENTĀCIJA LEJUPLĀDĒTA NO BŪVNICĪBAS INFORMĀCIJAS SISTĒMAS, KUR TĀ IR ELEKTRONISKI PARAKSTĪTA UN APSTIPRINĀTA</b>

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



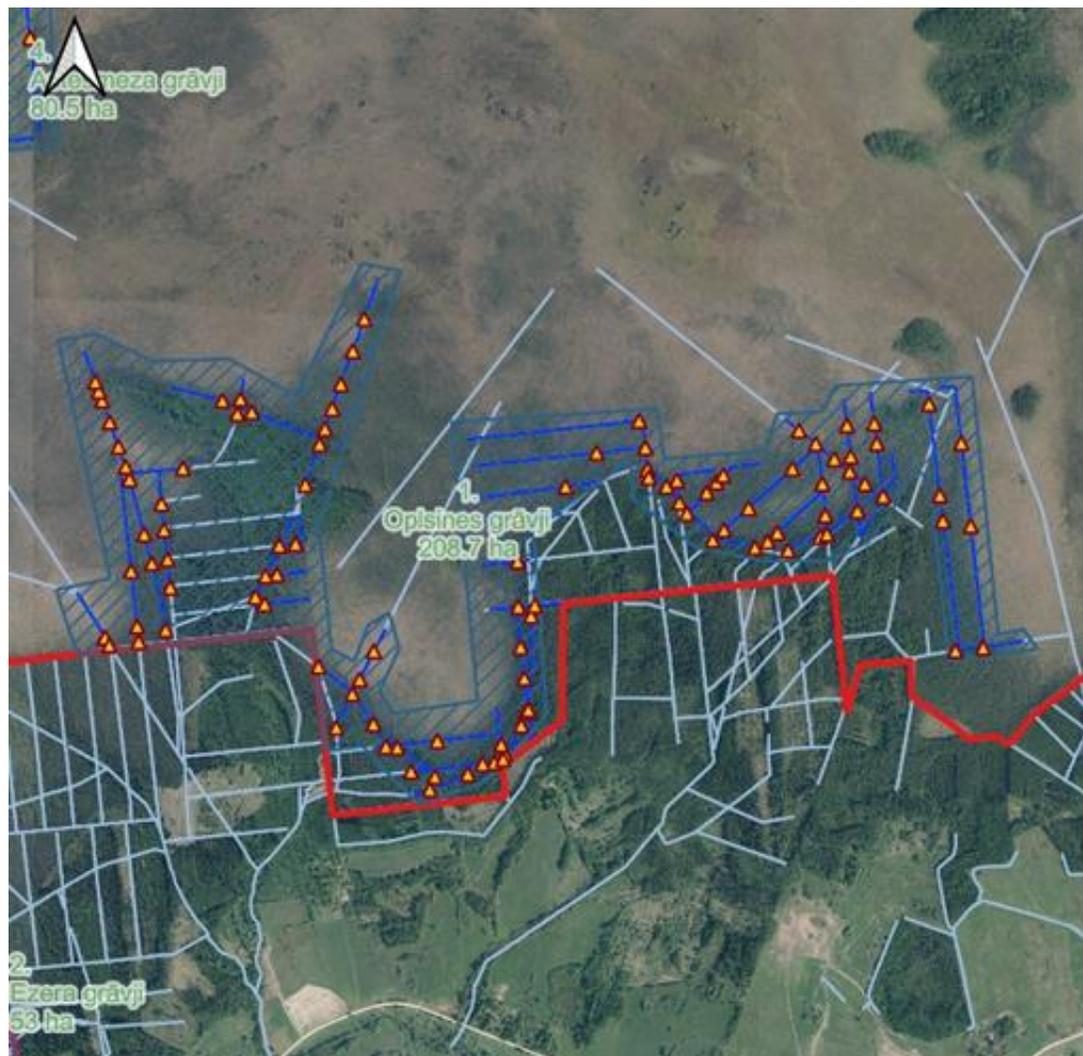
Peatland restoration area in Cenas Mire

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

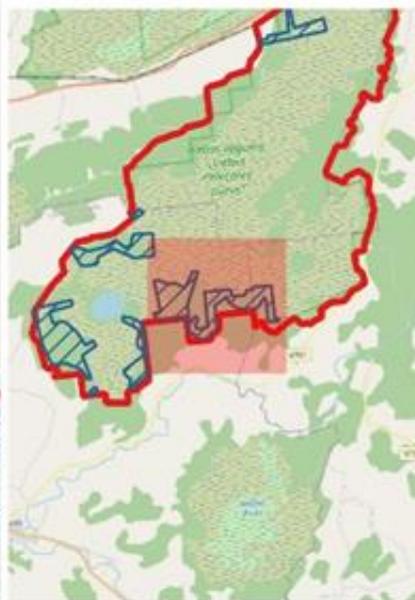
Cenas Mire, November 2025, implemented by AGS systems



# Peatland restoration areas in Lielais Pelečāres Mire



- ▲ Plānotie grāvju aizsprosti
- ▨ Atjaunšanas laukumi
- ▭ DL robeža
- Aizsprostojamie grāvji
- Citi grāvji



010200 m

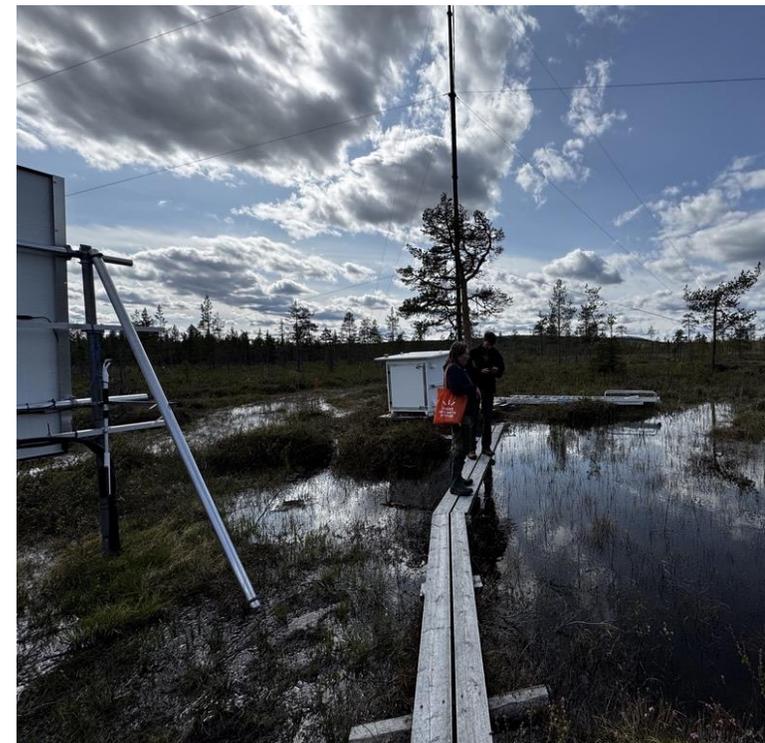


# Calibration of GEST types in Matorova and Välisuo Mires in Finland, June 14/15, 2025



## 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.

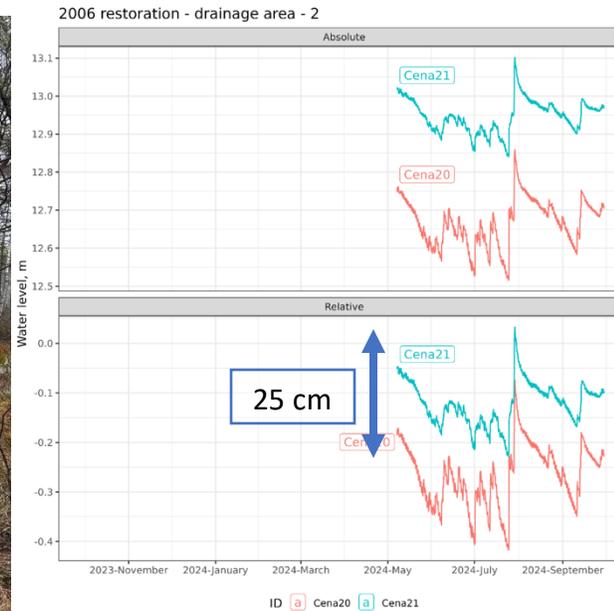


## WP 3.2. Vegetation monitoring in Sudas –Zviedru Mire

- 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



LU  
Relecare  
Data no. ZL6 logera  
10.09.2025 11:15  
56 55245 96 60425



# WP 3. 4. GHG monitoring in the project sites

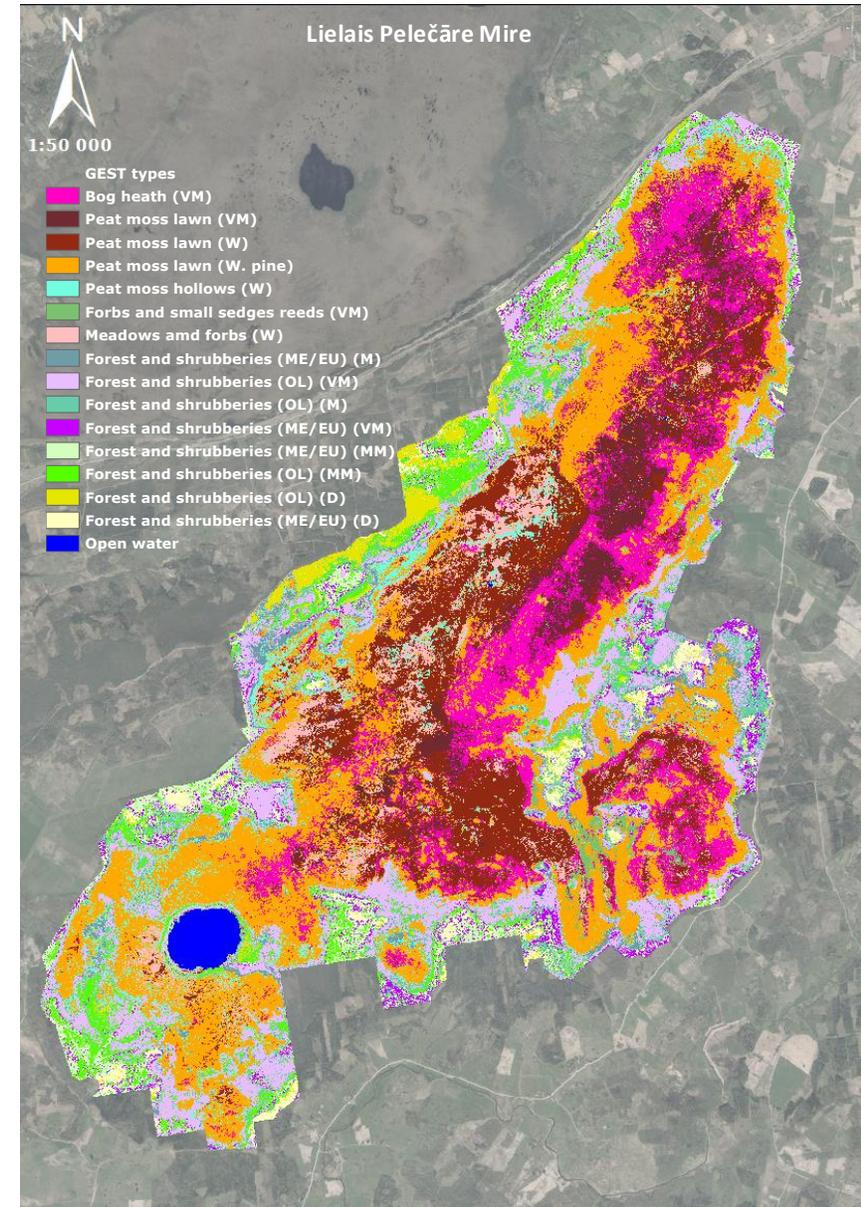
Implemented by  
SILAVA



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

## 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.

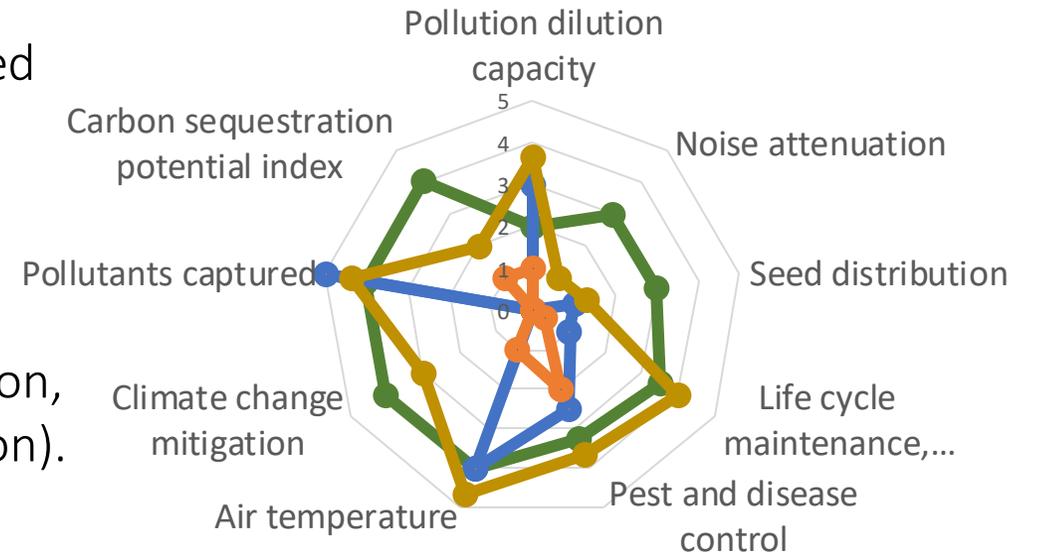
### Finland:

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

## Next Steps:

## Cena Mire Regulation and Maintenance ecosystem services

- EU-importance forest habitat
- Dystrophic lakes
- EU-importance peatland habitat
- Abandoned peat extracted areas



Data validation

Second-round ES assessment

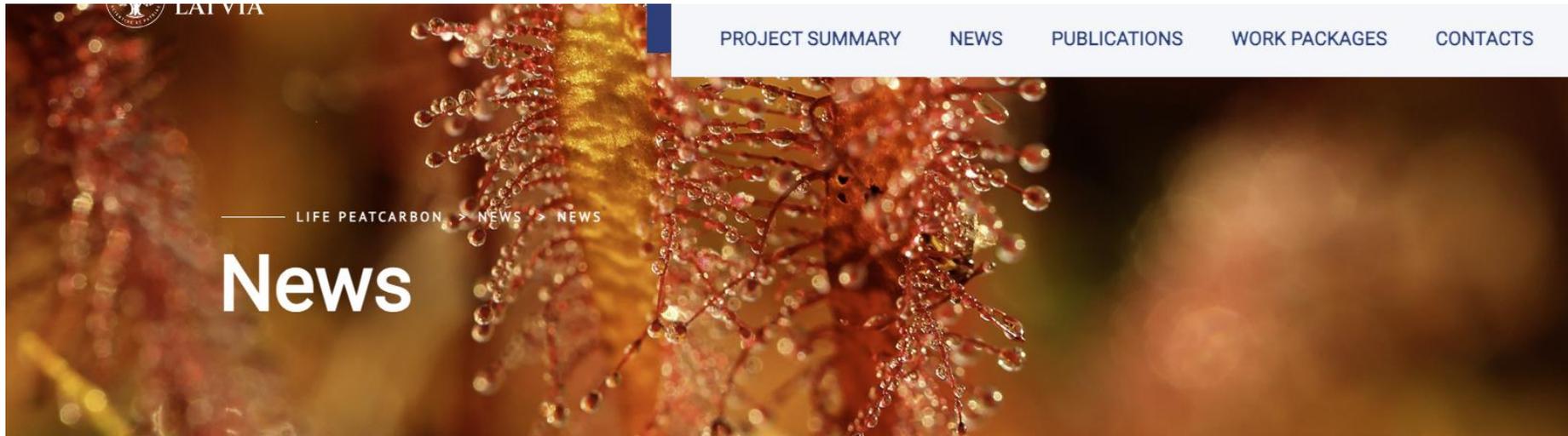
Ecosystem economic valuation

# 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



(LV) LIFE PeatCarbon Demonstration Seminar to Take Place in Latvia | 24.10.2025. →

(LV) An article about the LIFE PeatCarbon project published in the international publication "Open Access Government" | 24.10.2025. →

(LV) The international traveling photo exhibition "Peatlands and Climate Restoration stories" is on display at the Bulduri Technical

News

Information at the web page of Coordinating beneficiary and project beneficiaries

[www.peatcarbon.lu.lv](http://www.peatcarbon.lu.lv)

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



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

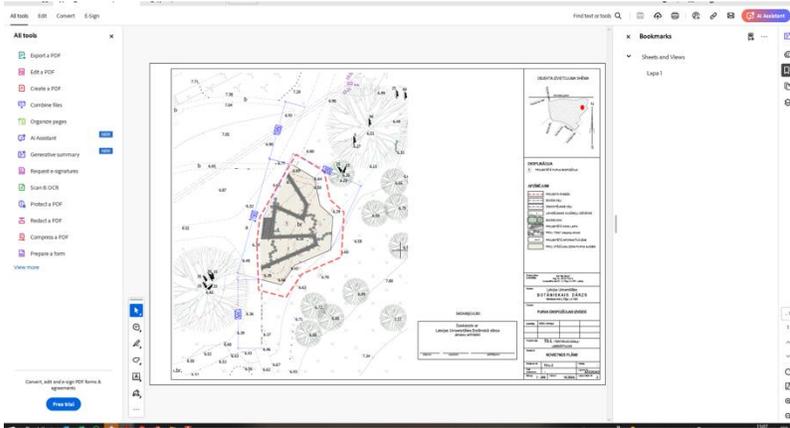


Event at the Latvian Embassy in Berlin, June 22, 2025

<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 restoration 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



## Peatland Restoration Guide Second Edition

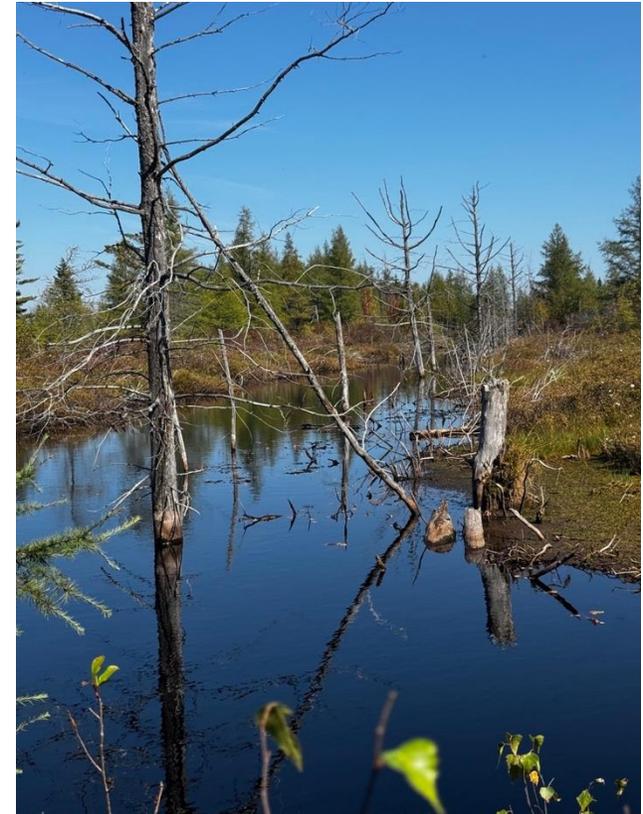
François Quinty and Line Rochefort



# *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*, *Chamaedaphne calyculata*, *Sarracenia purpurea*, *Kalmia angustifolia*, *Rhododendron groenlandicum*, *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*



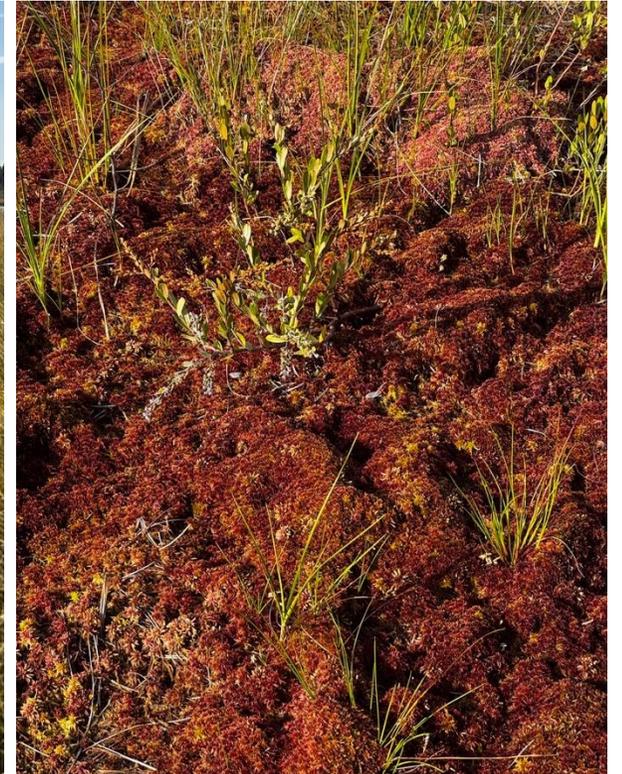


# Peatland restoration in Saint-Henri peat bog, Quebec region, Canada

- **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

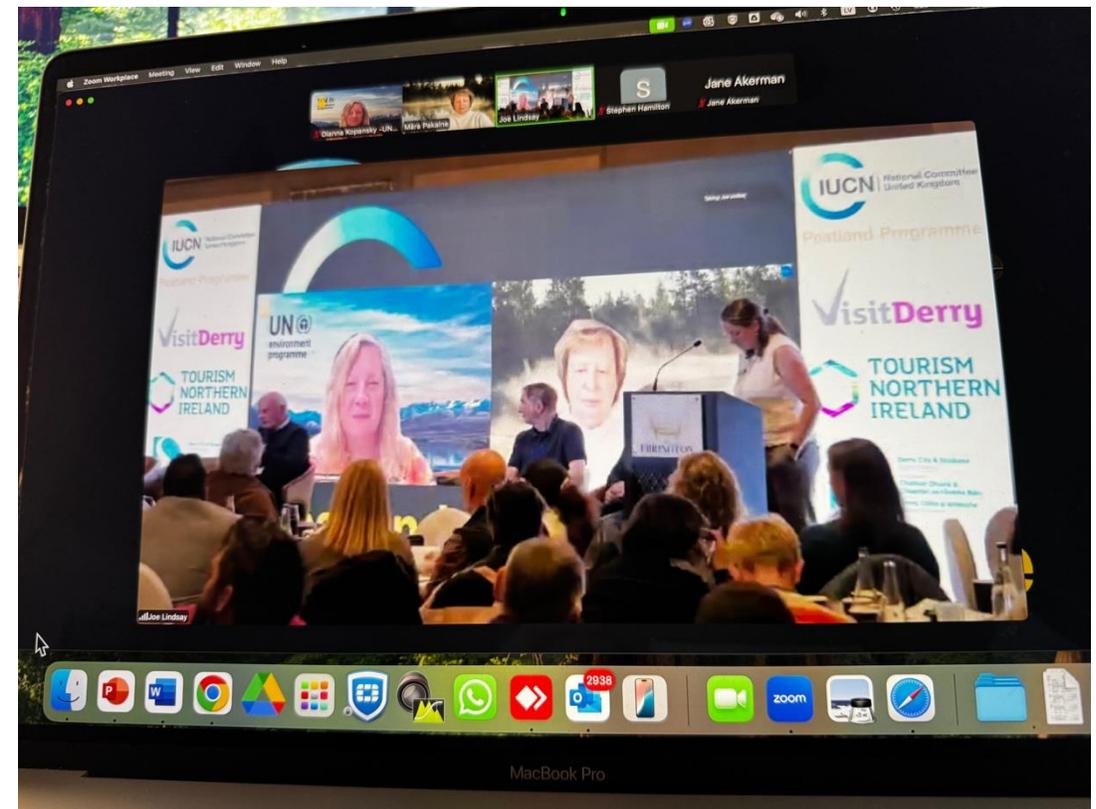
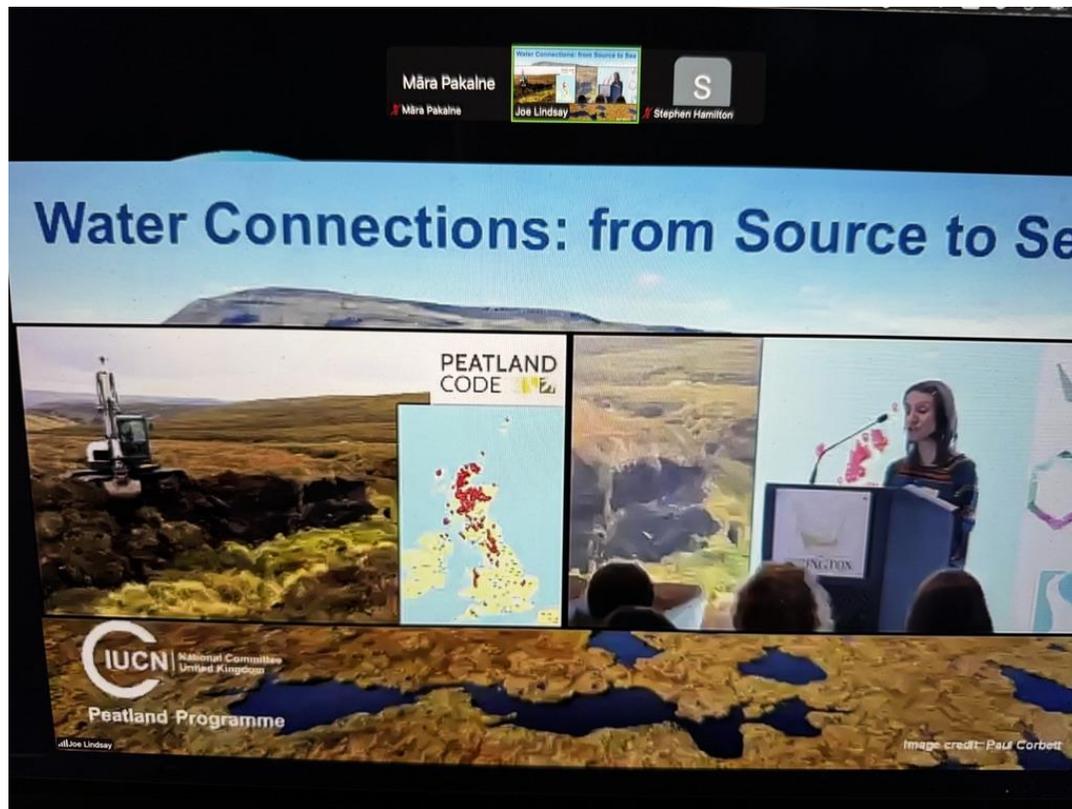
# IUCN Peatlands Conference from Source to Sea, Ireland, September 30, 2025

- <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

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/>

# CENAS TĪREKLIS



Project booklets were distributed at the seminar

[www.peatcarbon.lu.lv](http://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](http://www.peatcarbon.lu.lv)

Contact: Dr.biol. Māra Pakalne  
[mara.pakalne@lu.lv](mailto:mara.pakalne@lu.lv)

