# Peatland hydrological monitoring results in Latvian project sites

**Andis Kalvāns, Konrāds Popovs**
University of Latvia

LIFE PeatCarbon project No. 01074396-LIFE21-CCM-LV-LIFE

Project Scientific Group Meeting

September 26, 2024

LATVIJAS UNIVERSITĀTE

LIFE PeatCarbon

# Hydrological monitoring

**Aim**

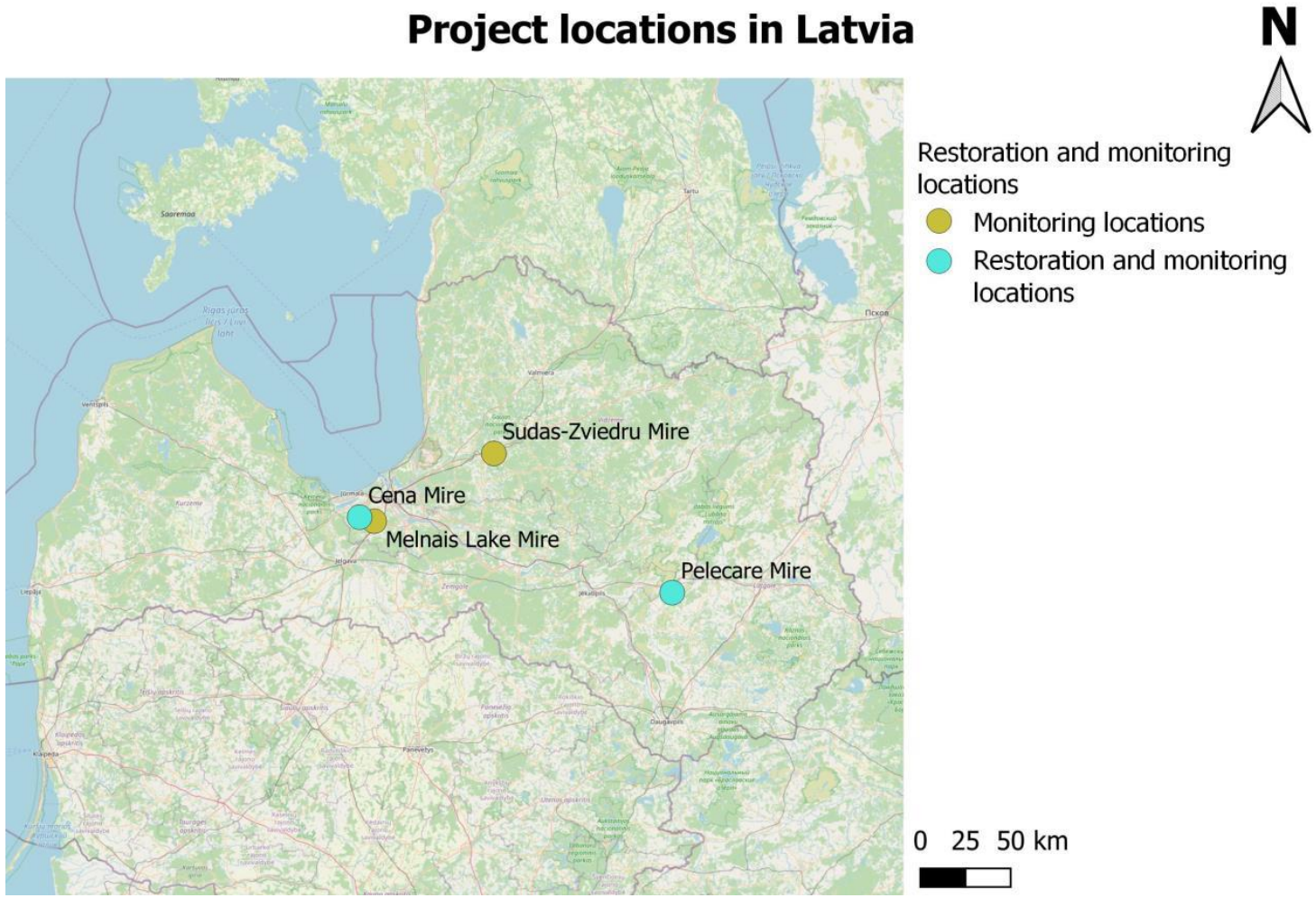
- Evaluate the impact of the hydrological restoration

**Task**

- Quantitively measure the changes if of the water table and runoff after restoration

**Approach**

- Measure gradients - profile lines
- Comparison:  pristine – restored – not- restored

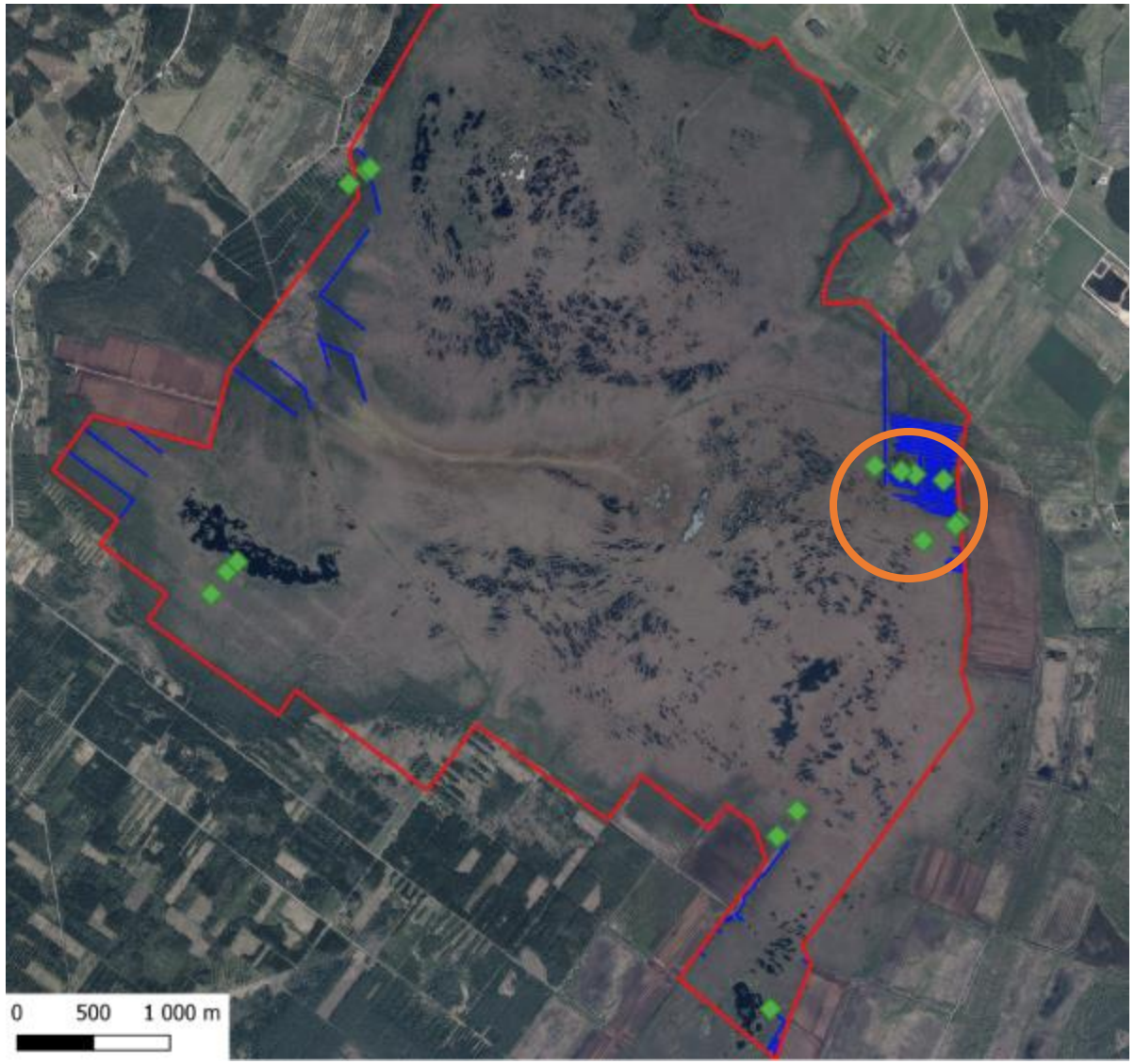


# Summary

- 4 mires
- 53 water level monitoring sites
- 2 weather stations
- 2 soil water stations
- 4 surface water sampling locations
- 2 discharge estimation sites


Cena Mire

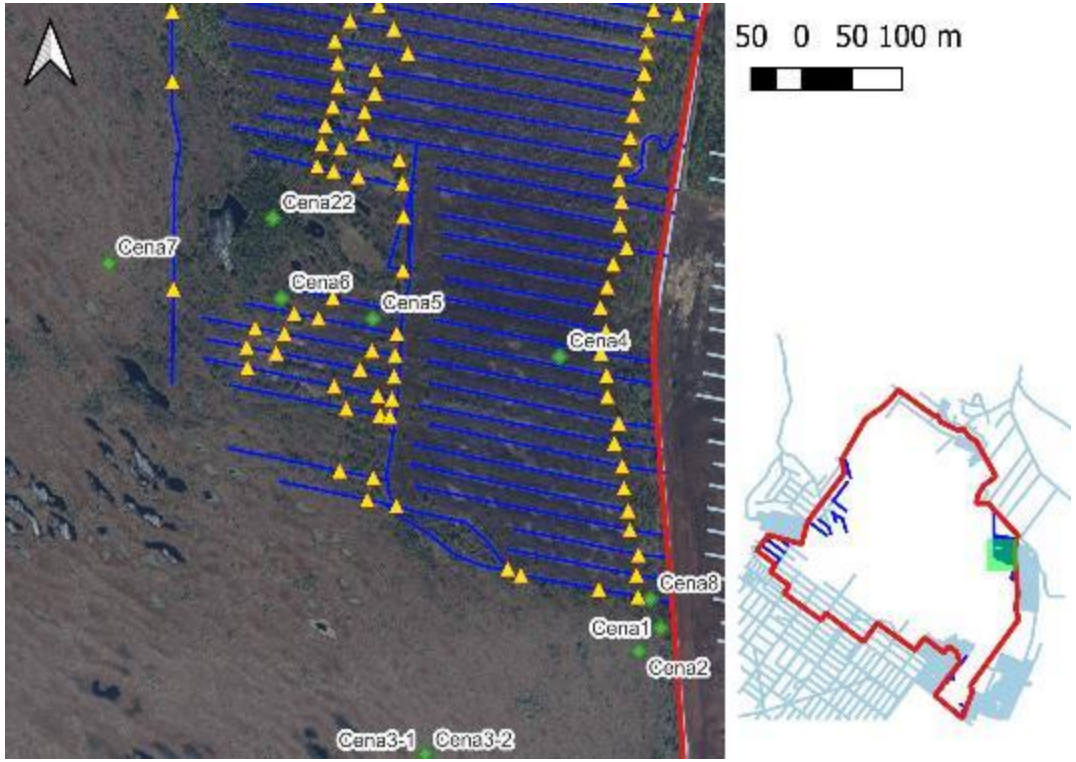
# Cena mire: hydrological monitoring



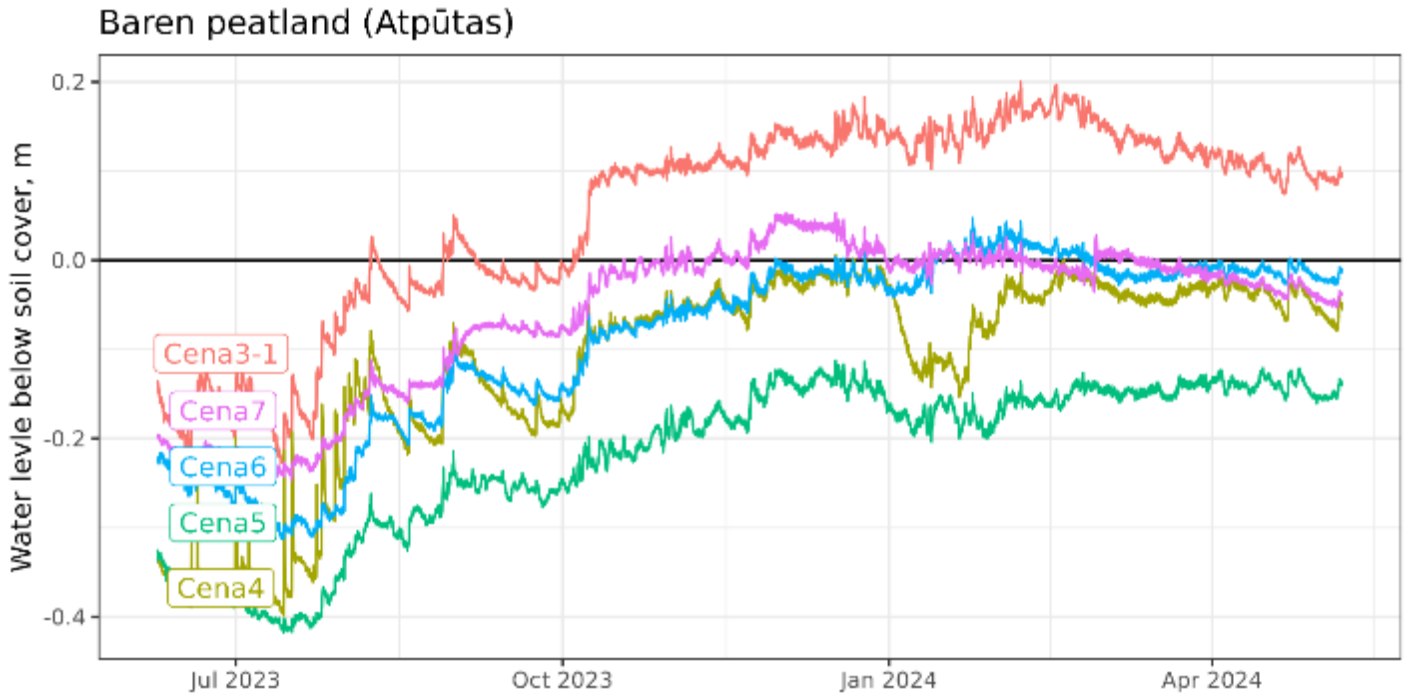

**Owerviev**

- 19 water level observation wells installed
  - 5 probes since 2023-05
  - 14 probe since 2024-06
- 6 groups of welss
- 1 discharge monitoring site (water level + salt tracing)

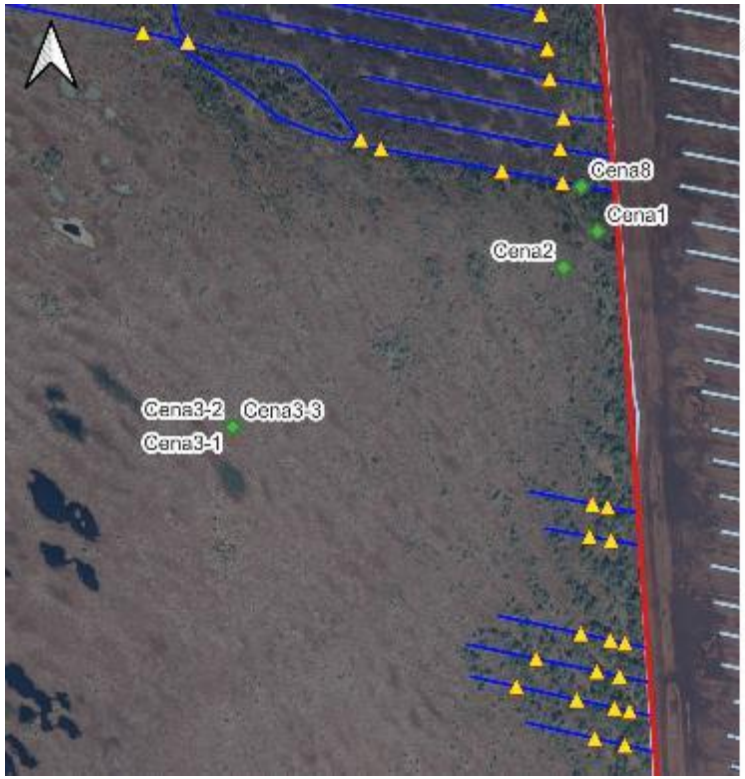
# 1. Baren patland (Atputas)

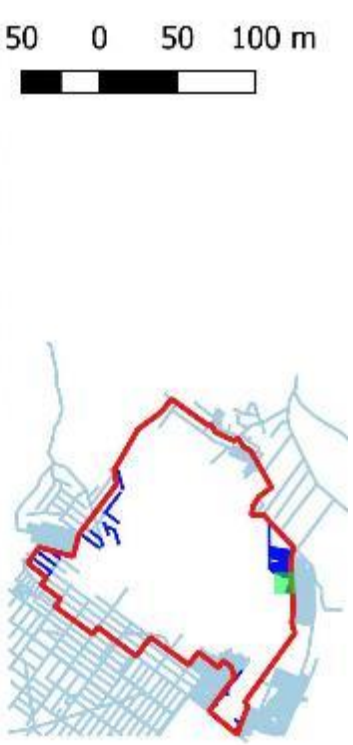




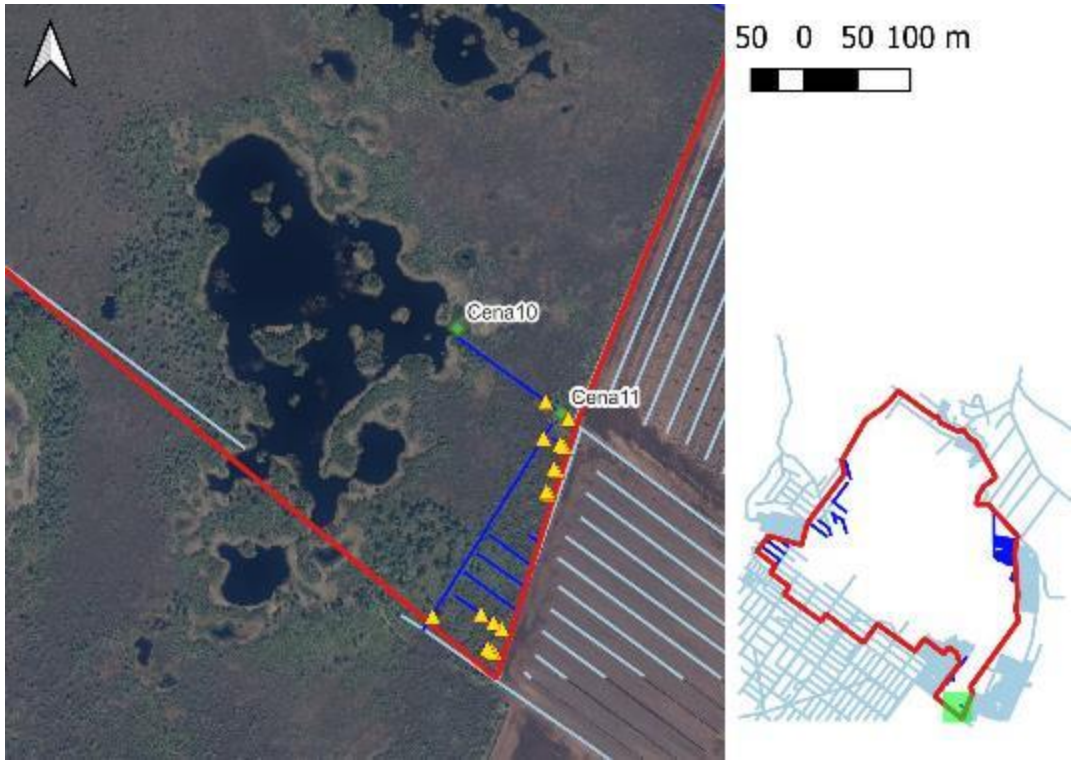



# 2. Gradient pristine to deep contort ditch



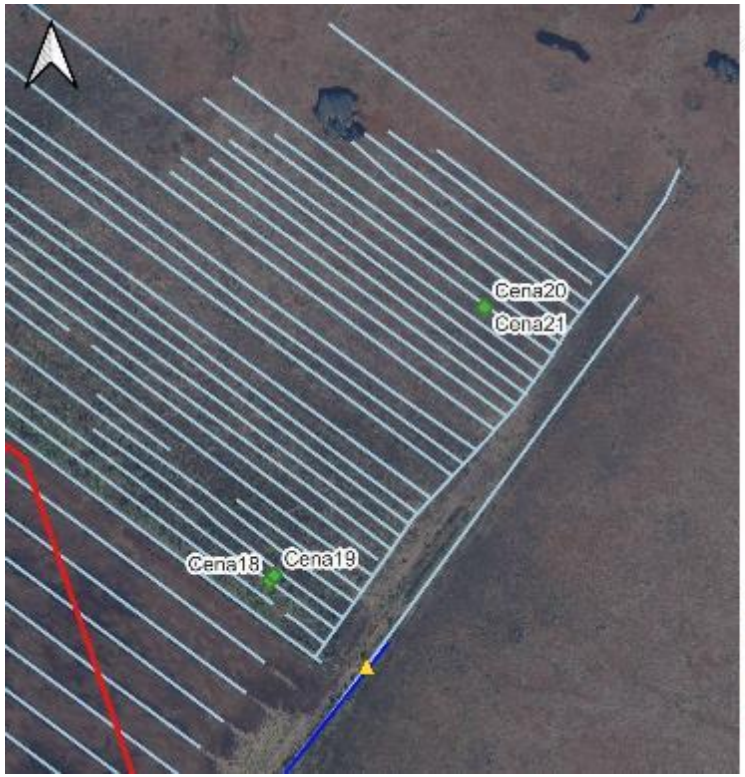

# 3. Partly drained bog pool

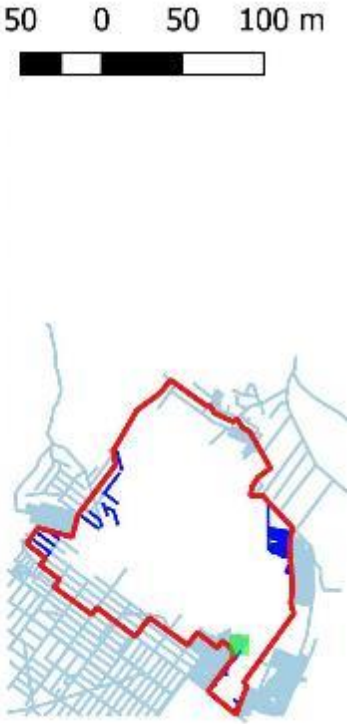


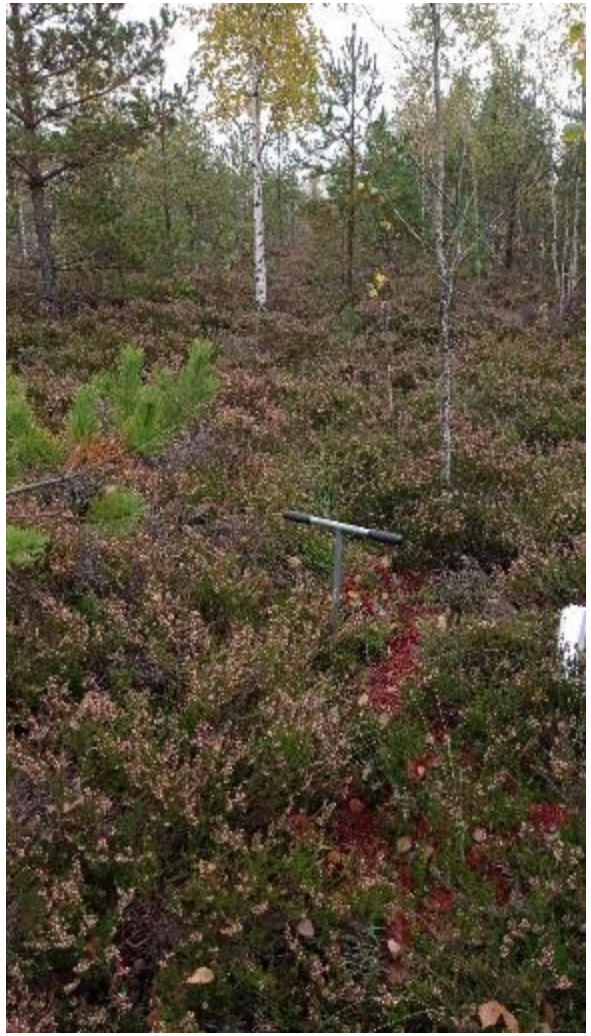




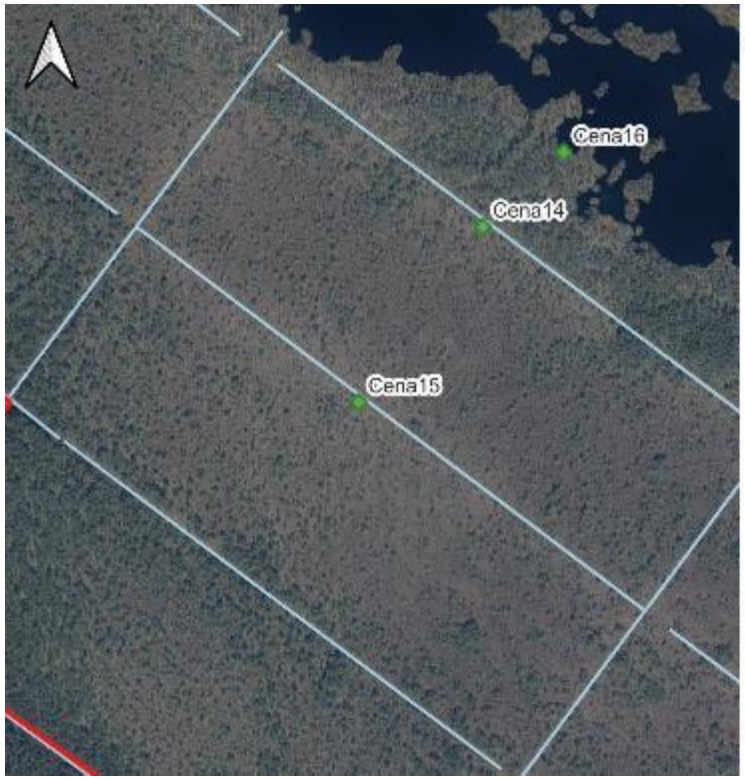
# 4. Historically resorted, closely space ditches



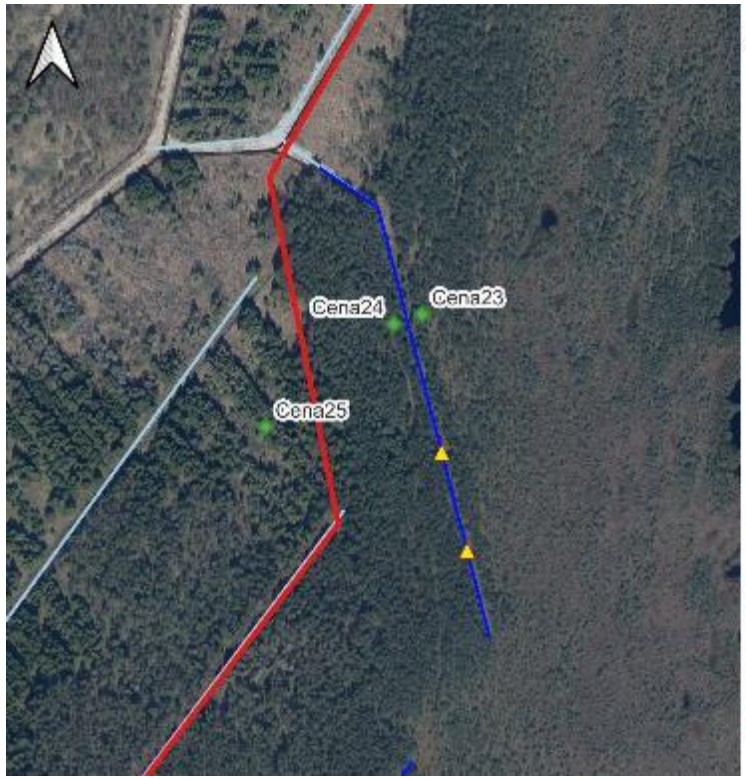



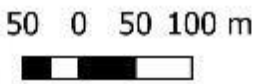



# 5. Historically restored, Lake Skaista




# 6. Large ditch and distal woodland

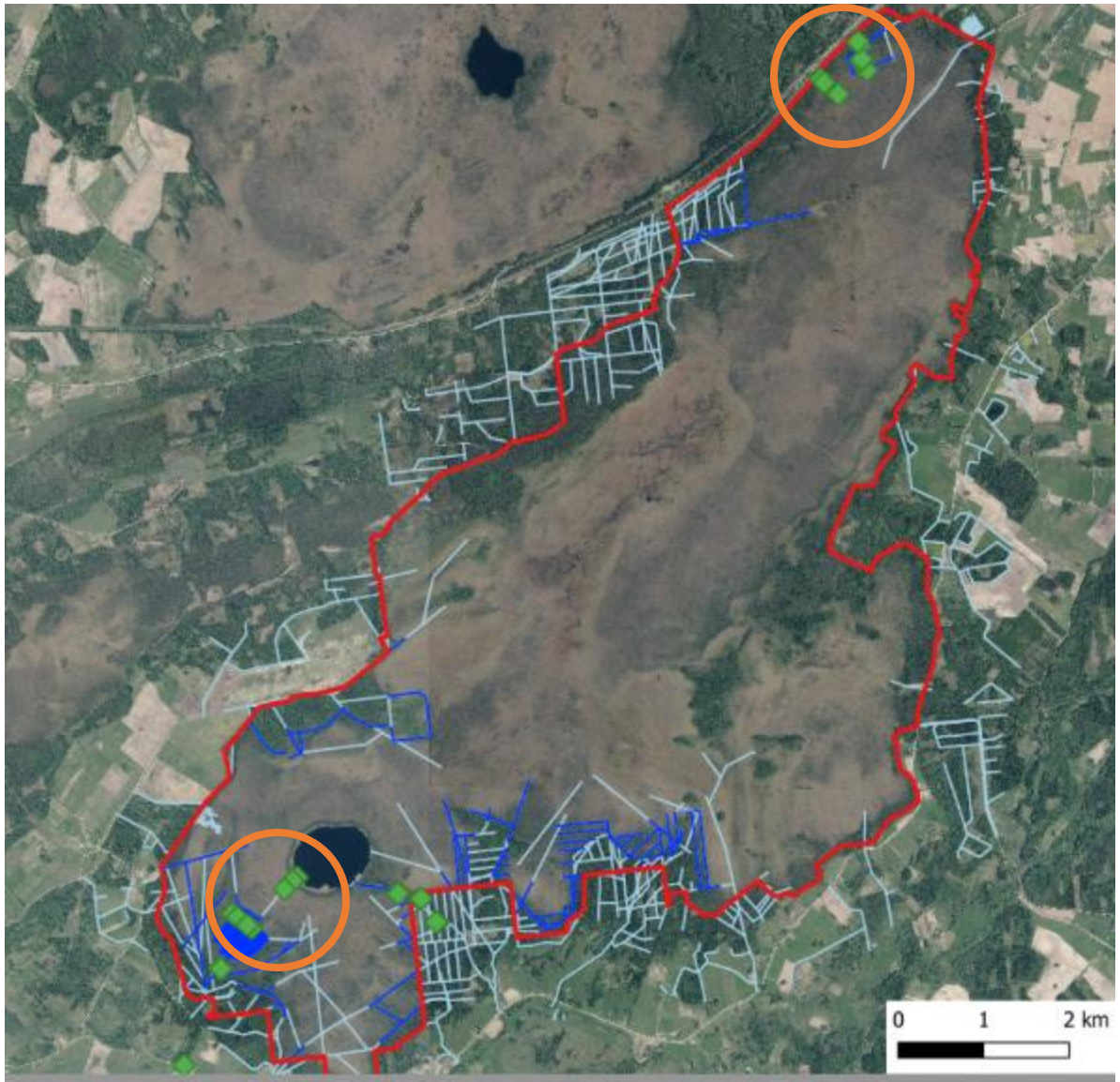




Lielais Pelečāre Mire

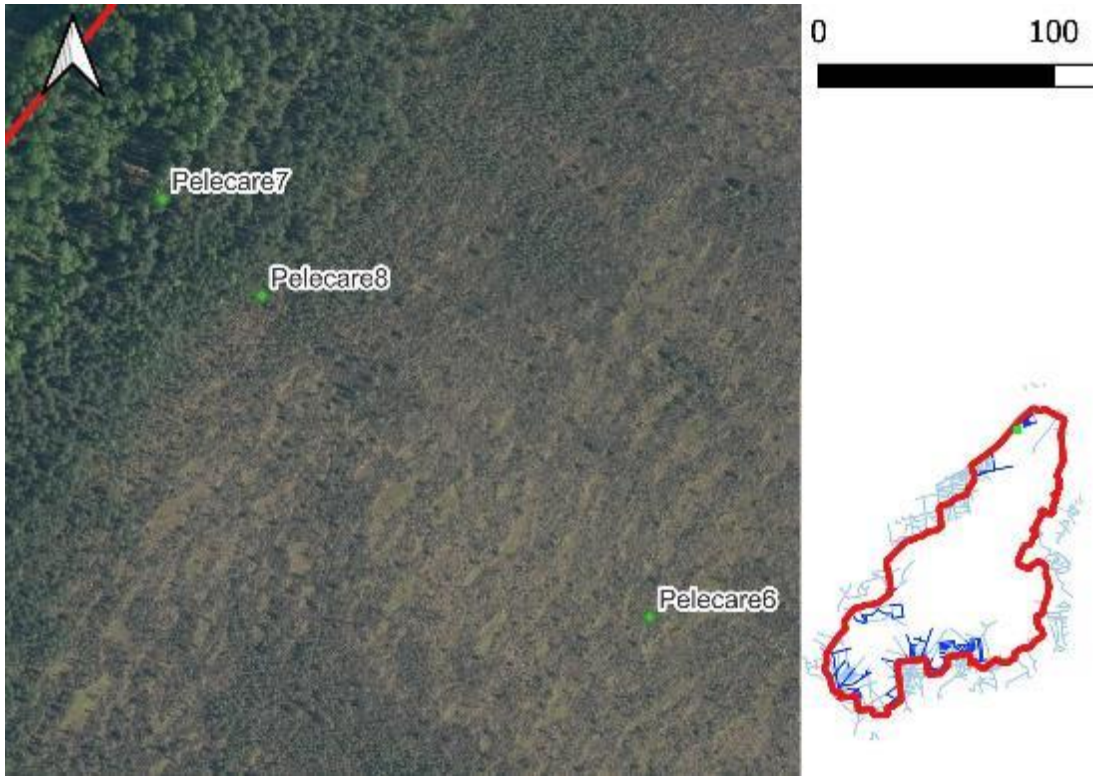
# Lielais Pelečāre mire: hydrological monitoring




**Owerviev**

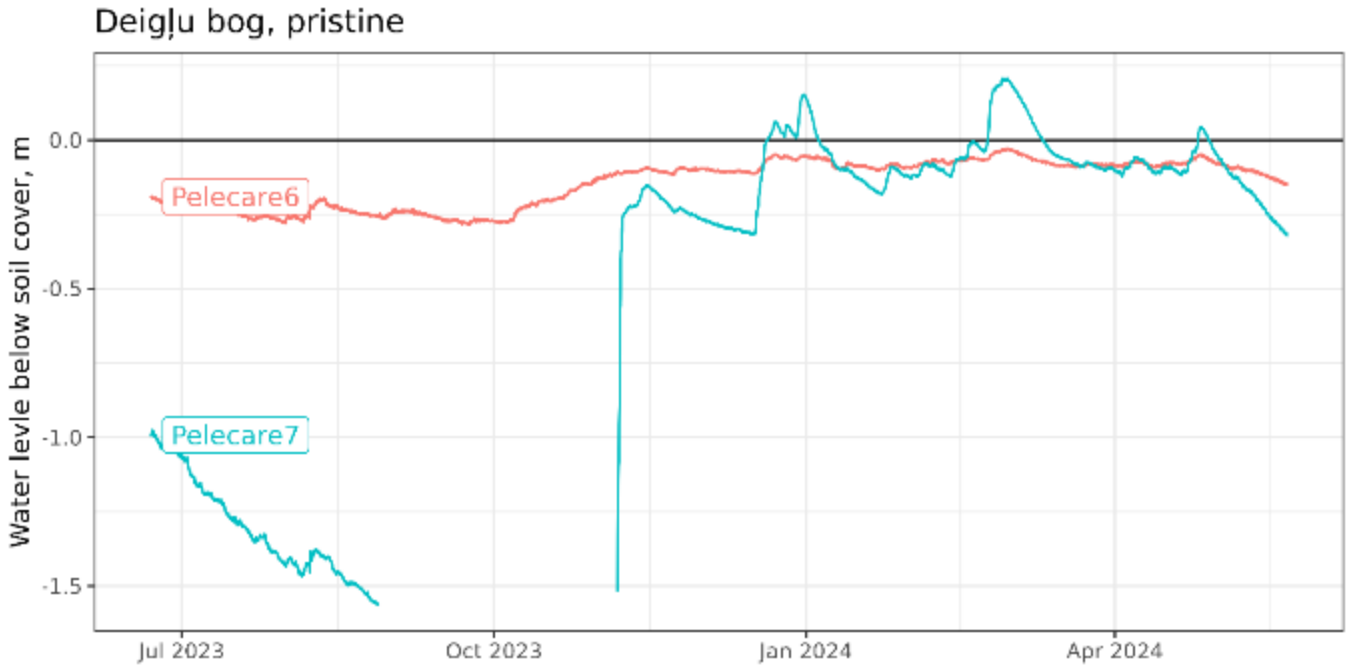
- 25 water level observation wells installed
  - 13 Leve logger probes since 2023-06
  - 12  Leve logger probes since 2024-06
- 2 soil water potential and content monitoring points at 3 depth levels
- 1 discharge monitoring site (water level + salt tracing)
- Meteorological station
  - Open peatland
  - Forest site
- 5 groups of observations

# 1. Deiglu bog, pristine

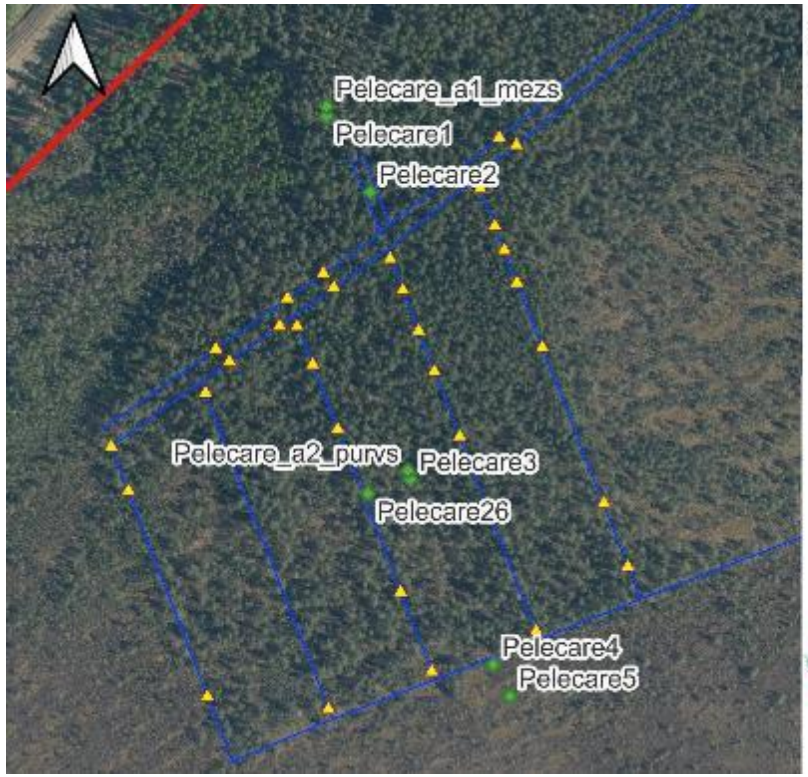




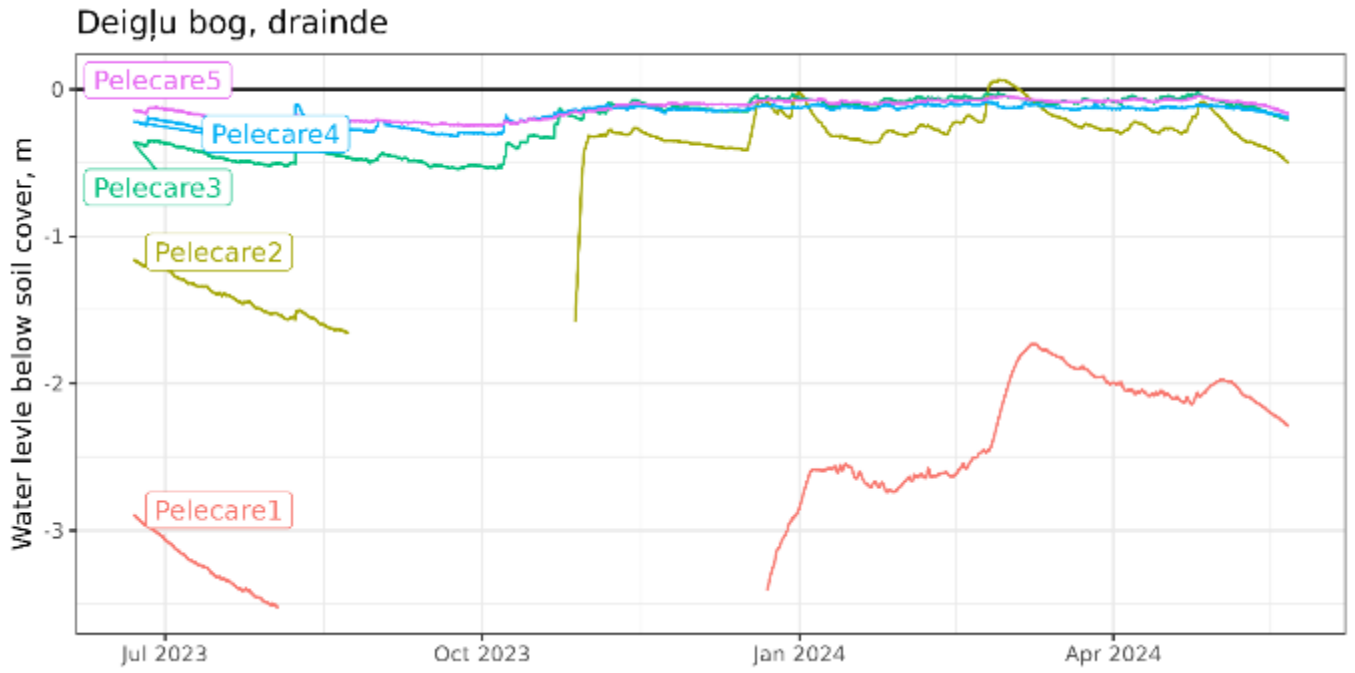




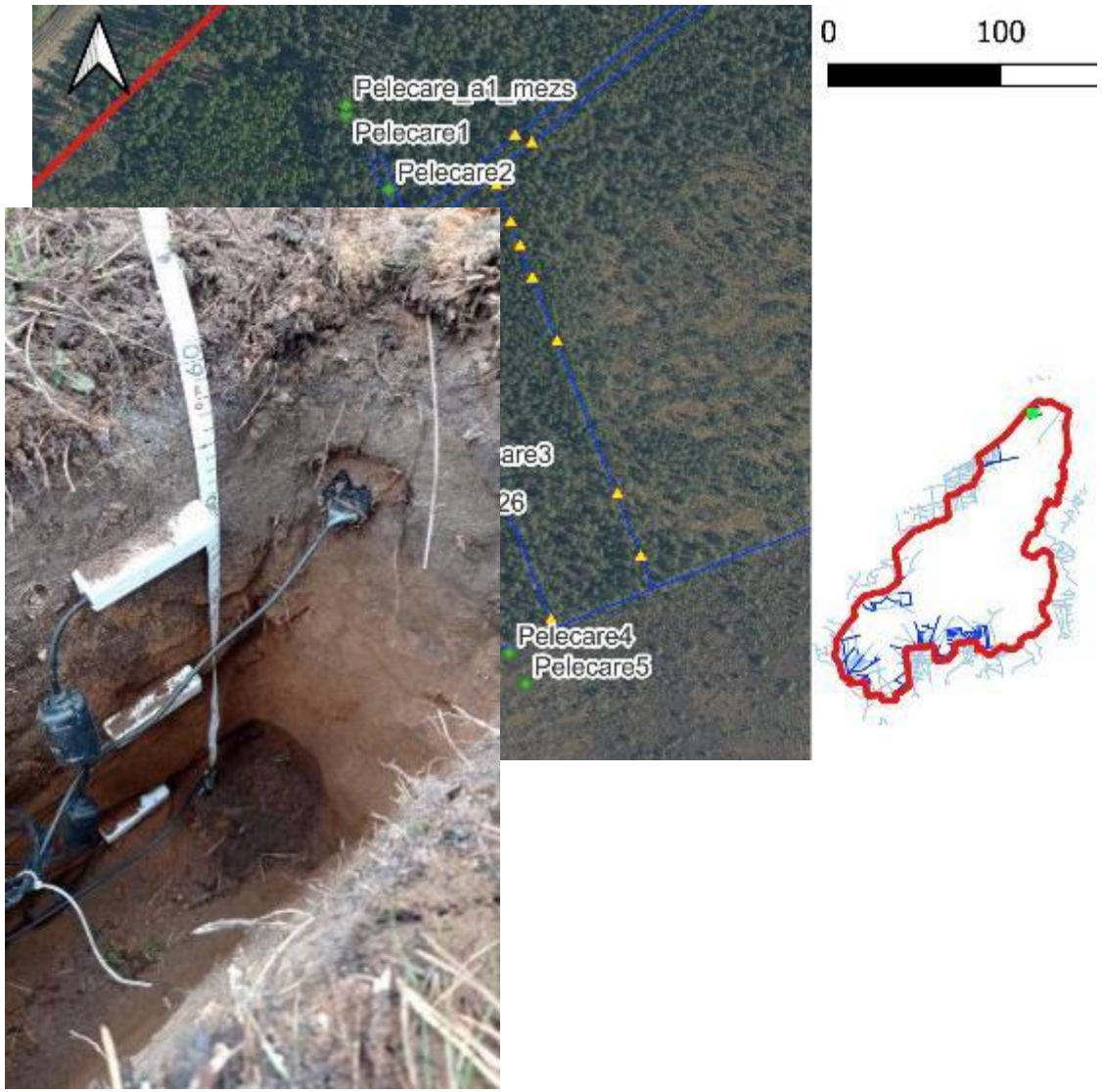
# 2. Deiglu bog, drained and forested





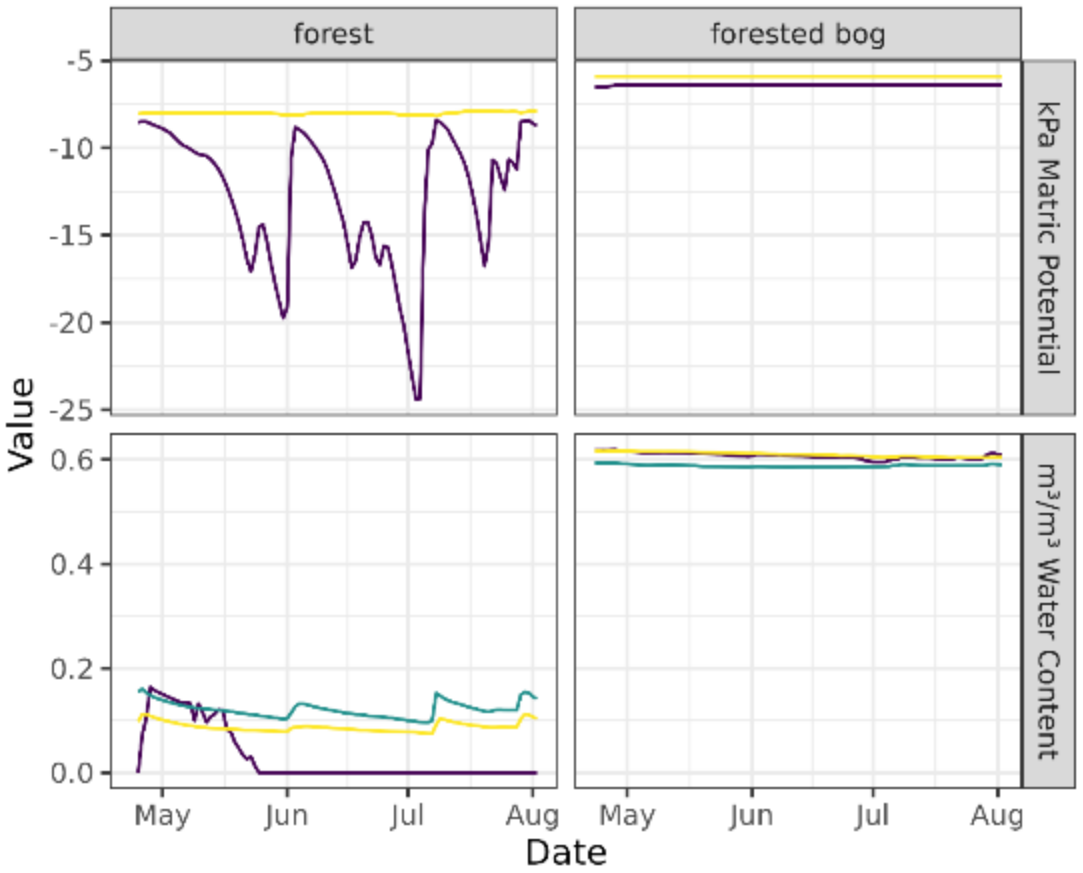


# 2. Deiglu bog, drained and forested

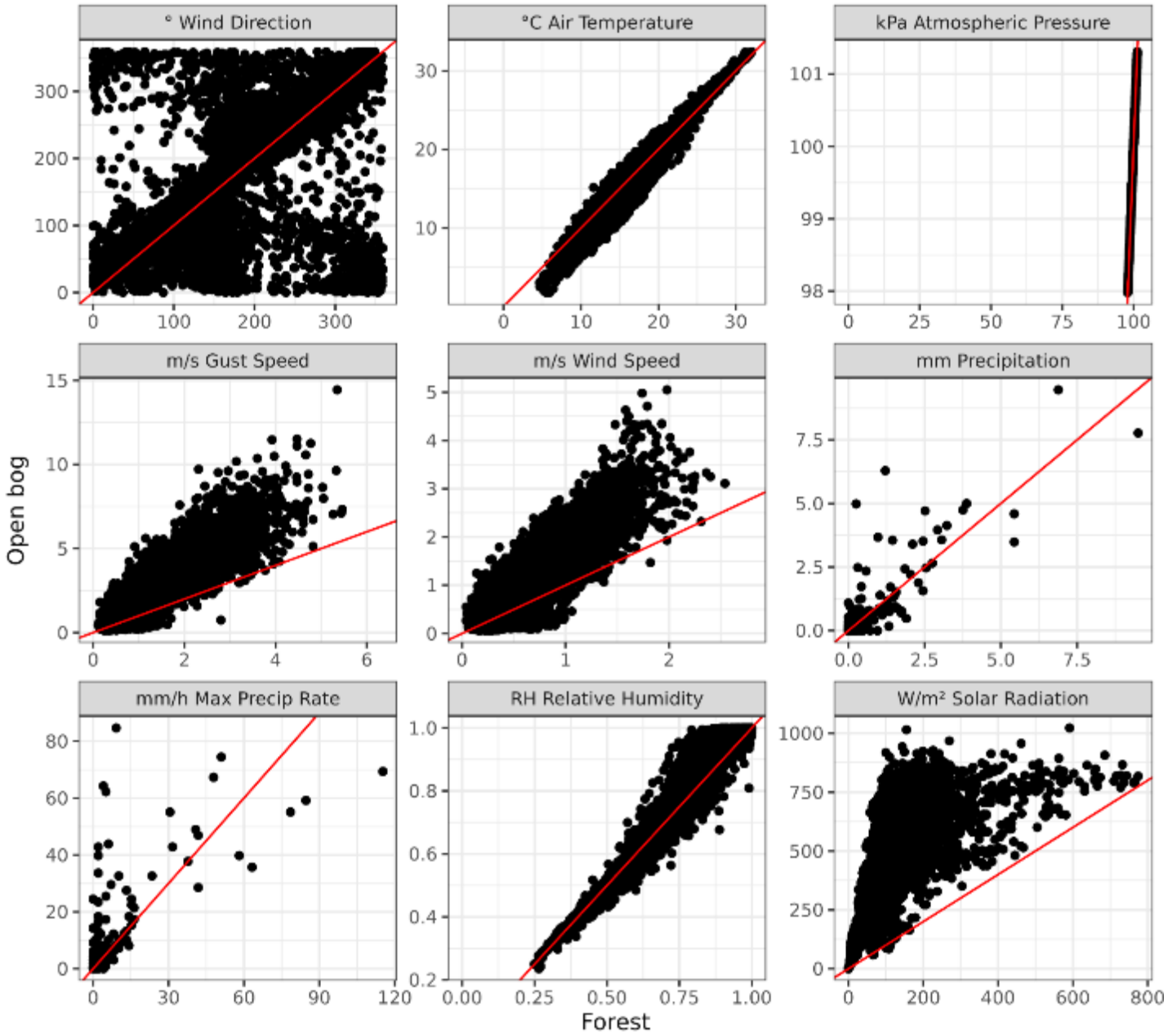




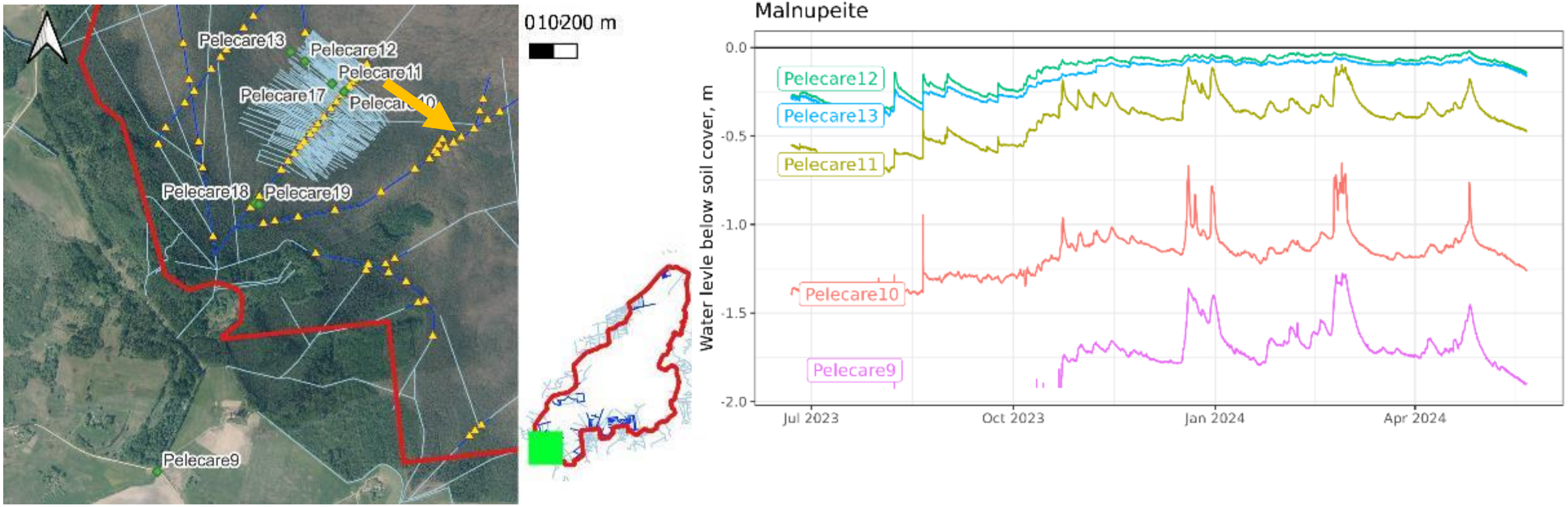




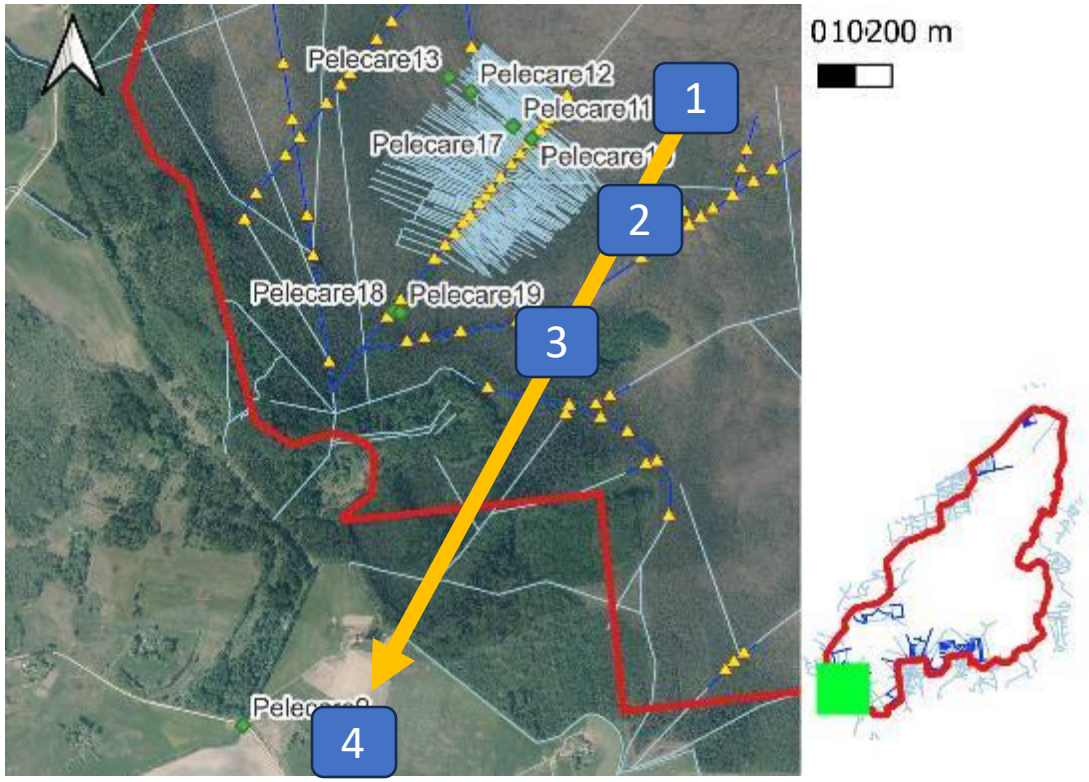
# 2. Deiglu bog, drain and forested

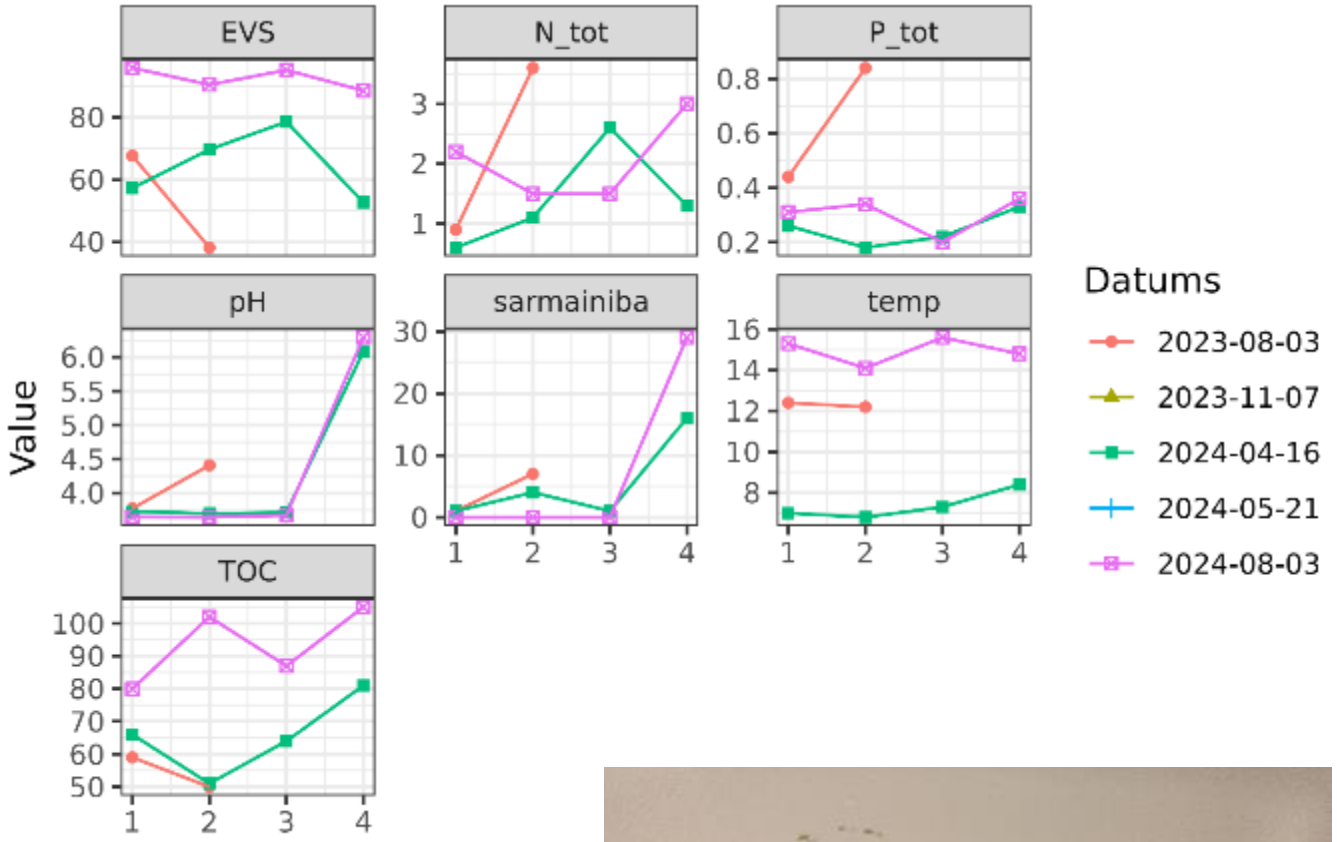


# 3. Malnupeite, heavily drained forested peatland

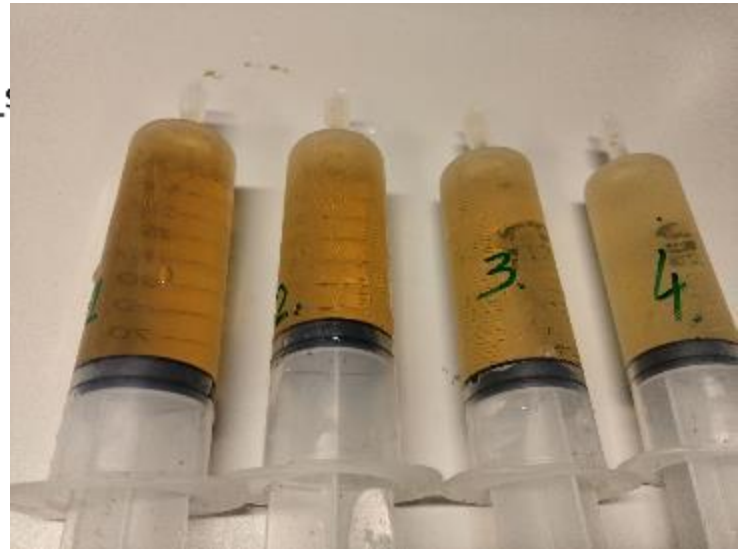


# 3. Malnupeite, heavily drained forested peatland

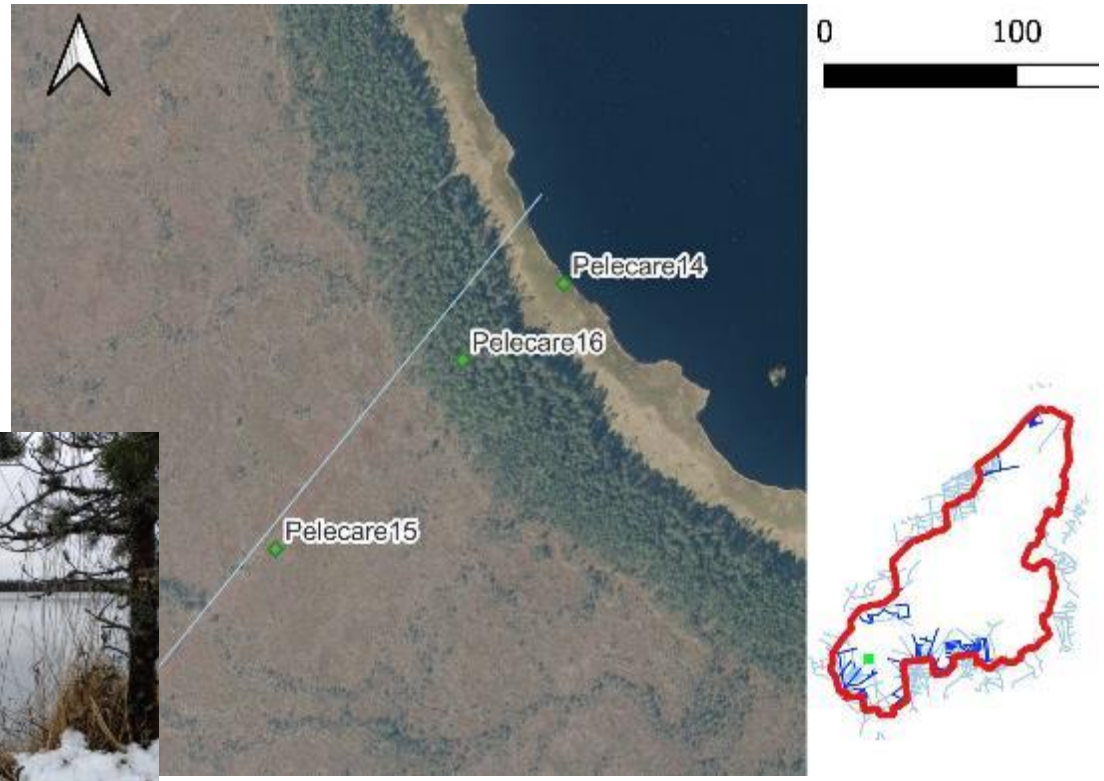


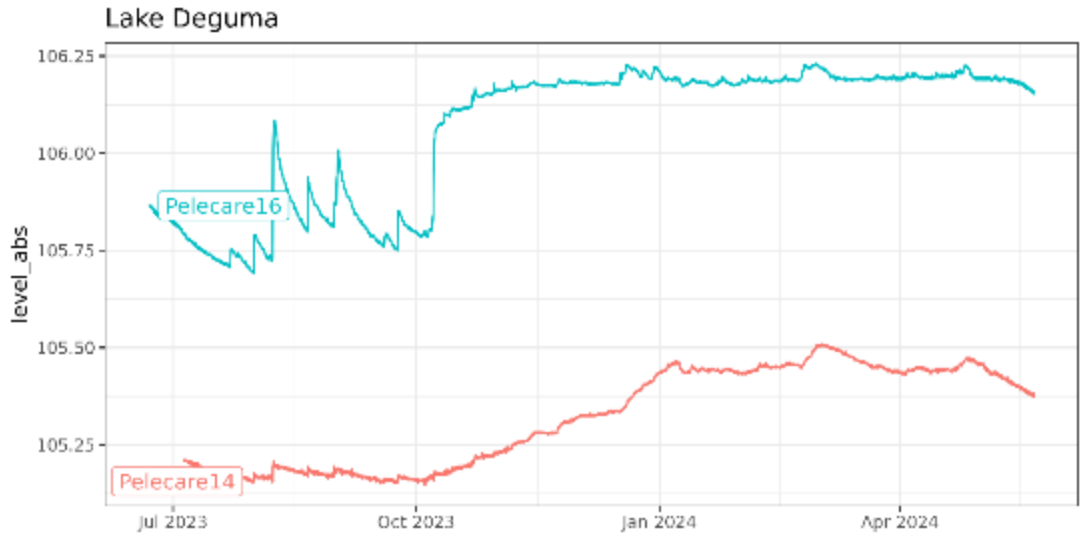

Point_

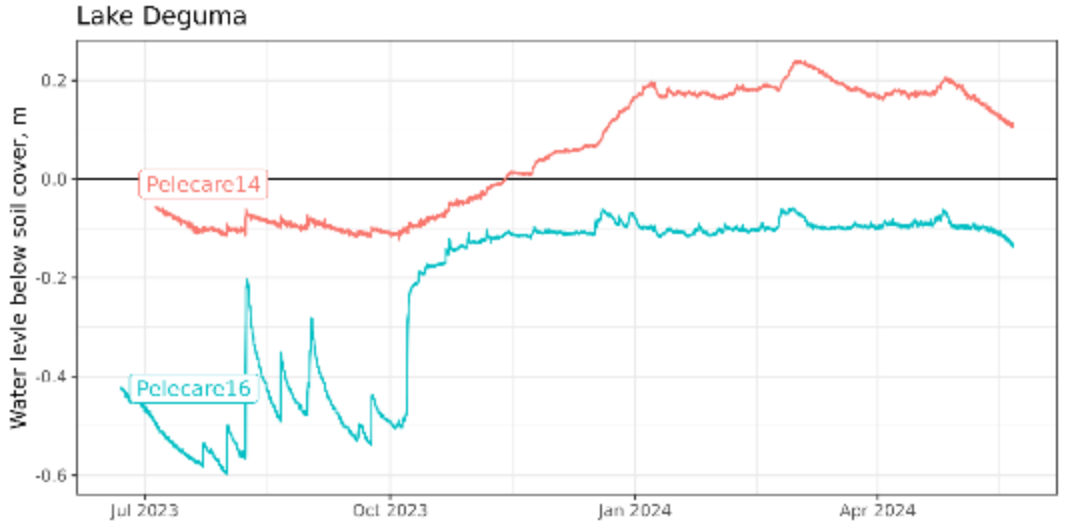


# 4. Lake Deguma, gradient to lake

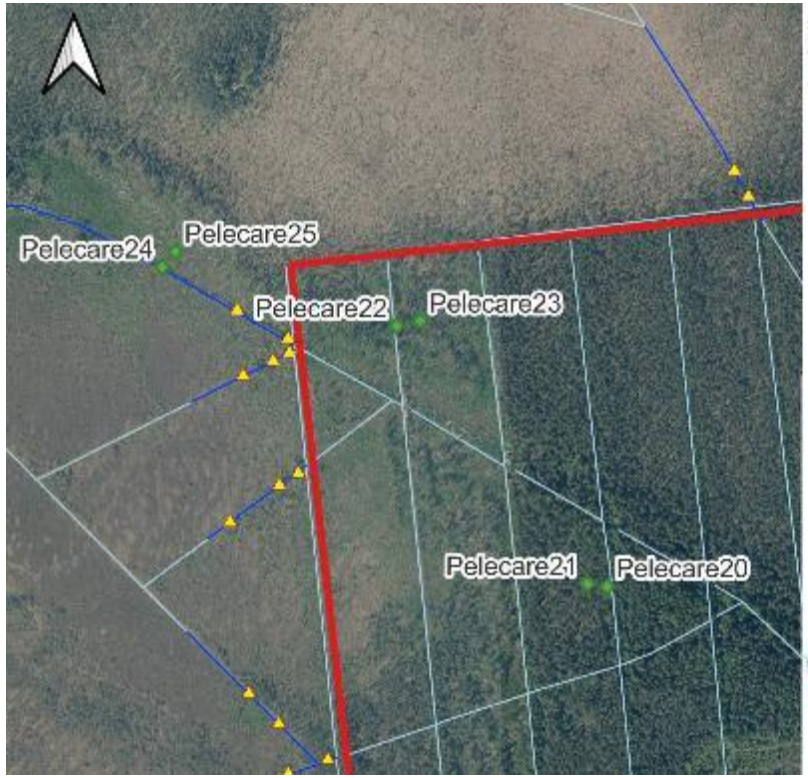


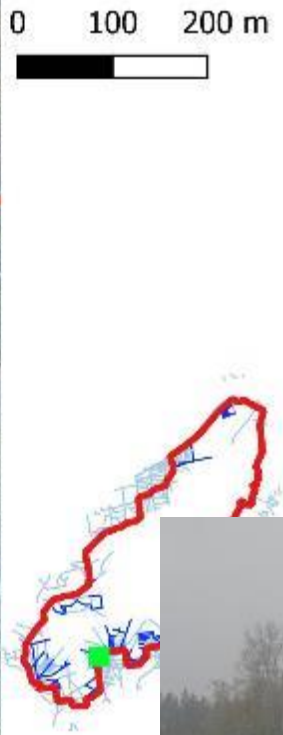


# 5. Azara ditch – restored to non-restored comparison




# Melnais Lake Mire

# Melnais Lake Mire

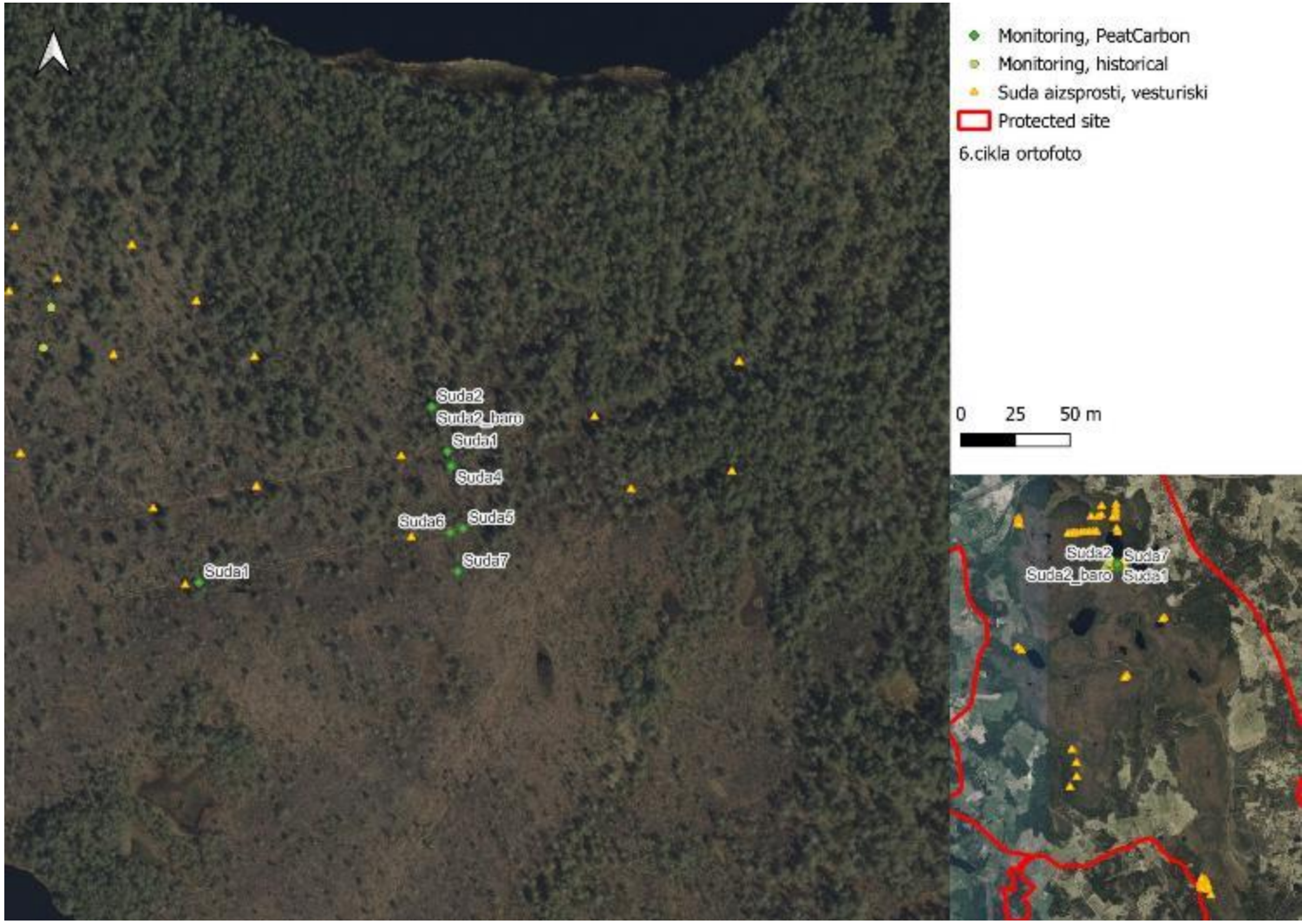
- The dray-ditch site – is there a potential for natural recovery?
- Why here is a forest belt in the bog?
- Do we see development of longitudinal water level gradient in the dich?

# Sudas-Zviedru Mire

# Sudas-Zviedru Mire

**Aims**

- Water gradient from mire to wooded peatland
- The longitudional gradient in a dammed ditch
- Smal-scale gradient to the ditch




What's next?

# What's next?

- Download and re-analyse the data – November 2024
- Relocate the soil water monitoring station
- Consider the weather station


Thanks for the attention!