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GROUNDWATER TABLE DEPTH MONITORING DATASET (2023-2025) FROM AN EXTRACTED KAIGU PEATLAND SECTION IN CENTRAL LATVIA

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OPEN HYDROLOGICAL BASELINE

Two years of 30-min raw pressure records from six wells across four GEST classes support transparent calibration, hydrological modelling and rewetting design in Baltic cut-over peatlands.

WHY THIS DATASET

Drainage and peat extraction destabilise water regimes, yet high-frequency groundwater observations from Northern European cut-over peatlands remain scarce. Baseline data are essential for rewetting, paludiculture and greenhouse-gas assessment.

FIRST OPEN BALTIC DATASET

High-frequency raw groundwater pressure from an extracted peatland.

DATASET AT A GLANCE

30 MIN	sampling interval
JUN 2023-MAY 2025	monitoring period
6 WELLS + 1 BAROMETER	measurement network
GEST 5, 6, 15, 20	contrasting site types

FILE STRUCTURE

1 INFO
Dataset description, fields and units.

2 WATER MONITORING
Raw absolute pressure in cm H2O from WTD1-WTD6, with separate date and time fields.

3 BAROMETER DATA
Reference atmospheric pressure recorded by the logger at WTD2.

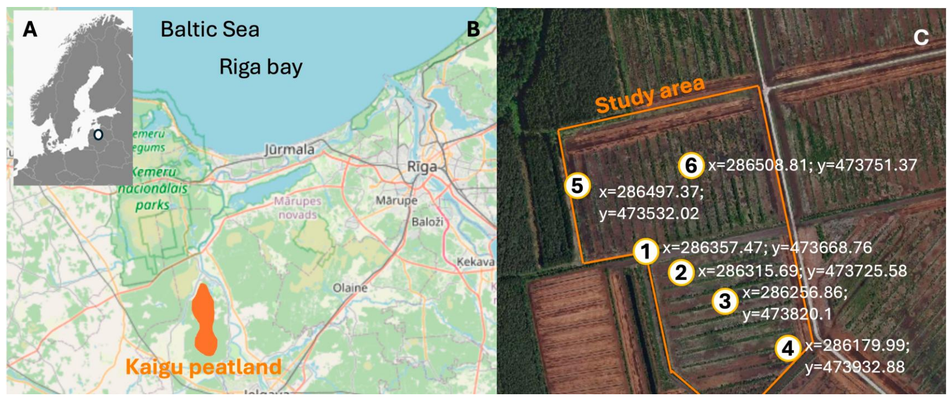
PROCESSING STATUS

Original logger outputs
- timestamps formatted to UTC +3
- duplicate timestamps removed
- short gaps below 1% annotated
- no atmospheric, elevation or offset correction

RAW BY DESIGN

Users retain full control over barometric compensation, vertical referencing and calibration.

STUDY SITE AND MONITORING NETWORK



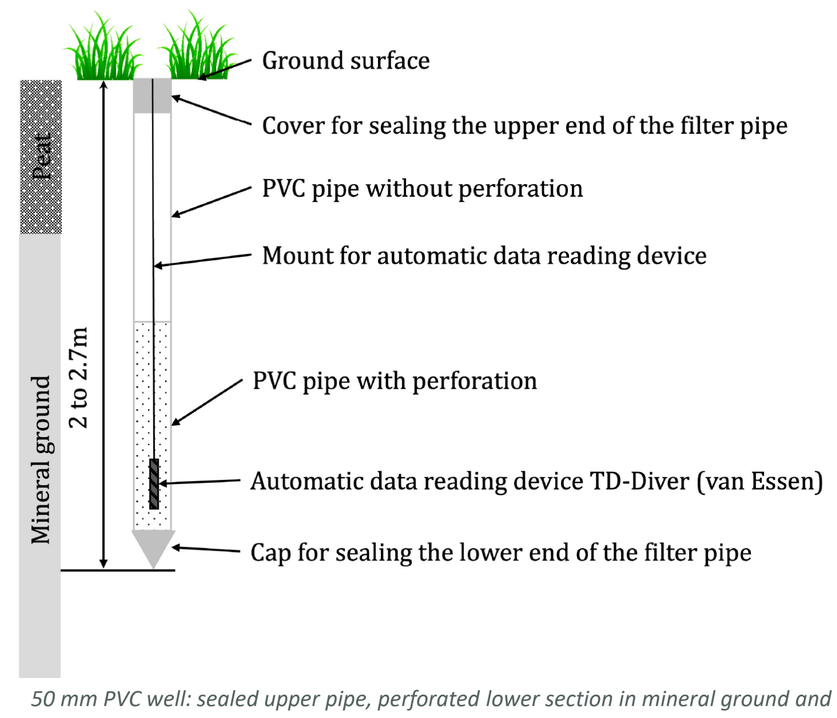
Kaigu peatland, central Latvia. The monitored 16.4-ha sector is a formerly extracted area undergoing spontaneous reed and shrub recolonisation.

16.4 ha	0.3-2.8 m	56°43'N
study sector	peat thickness	23°35'E

ECOHYDROLOGICAL RANGE

- **GEST 5** dry bare peat
- **GEST 6** moist lawns on bare peat
- **GEST 15** tall reed stands
- **GEST 20** open water or drainage ditches

FIELD SETUP



50 mm PVC well: sealed upper pipe, perforated lower section in mineral ground and TD-Diver logger suspended in the saturated zone.

MONITORING PROTOCOL Absolute pressure and temperature logged automatically. Manual water-depth checks and RTK GPS benchmarks verified stability.

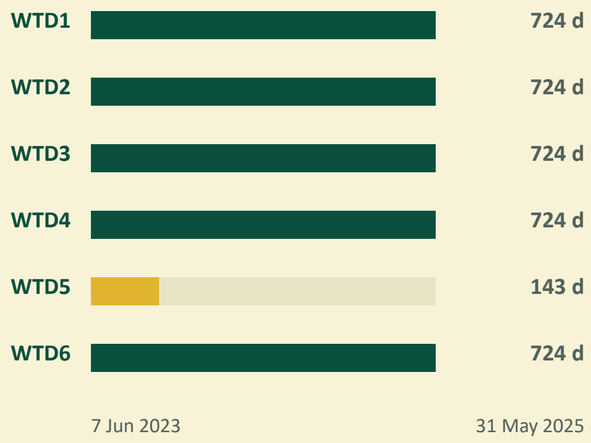
HYDRAULIC HEAD

$$H = Pabs - Patm + z$$

Users select their own barometric and elevation reference.

DATA COVERAGE

Duration of raw records



FIVE WELLS: 724 DAYS

Minor interruptions remained below 1%.

QUALITY AND LIMITATIONS

MANUAL CHECKS

Depth-to-water readings were compared with logger trends during field visits, including 31 October 2023 and 25 June 2025.

KNOWN LIMITS

WTD5 contains 143 days of data and the logger was later lost. Some winter months may include frost-related noise.

REUSE POTENTIAL

1 CORRECT
Calculate groundwater head or water-table depth with preferred references.

2 MODEL
Calibrate hydrological and groundwater models.

3 COMPARE
Assess pressure behaviour across GEST classes and peatland sites.

4 DESIGN
Evaluate rewetting, natural inundation and paludiculture options.

OPEN DATA

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