

SOIL MOISTURE DYNAMIC OF AN EXPERIMENTAL GAP OPENING IN A SESSILE OAK – HORNBEAM FOREST ECOSYSTEM

PILIS LÉK EXPERIMENT



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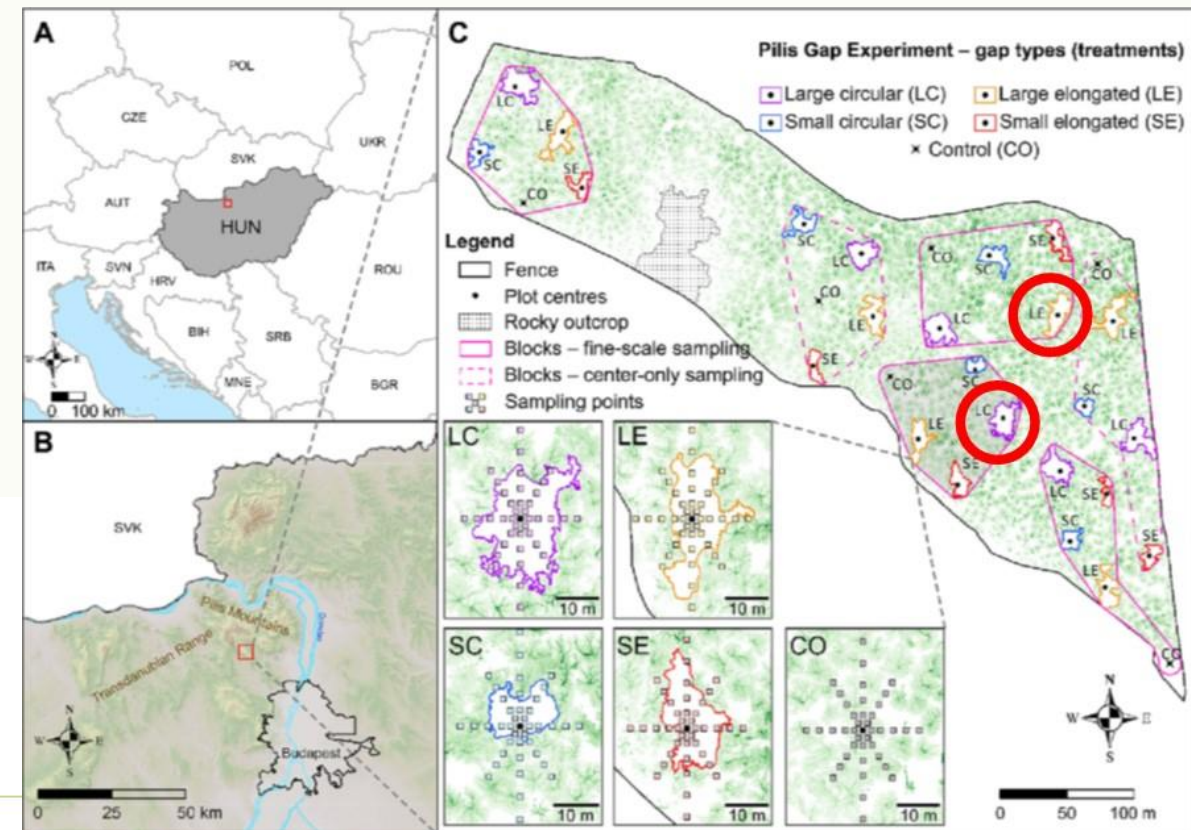
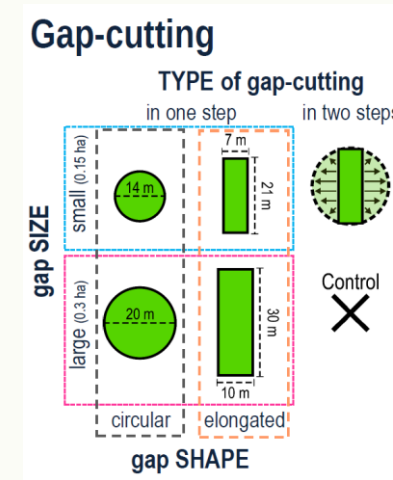
² MTA Centre for Ecological Research, Institute of Ecology and Botany



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Pilis Gap Experiment

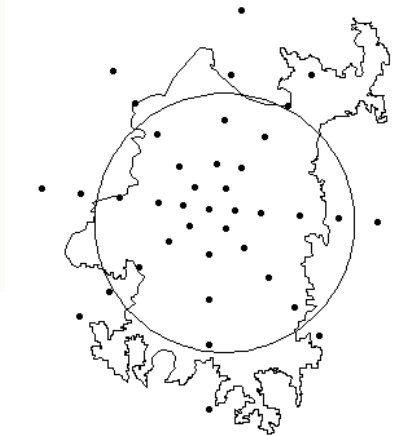
- Cooperative open-field study of Centre for Ecological Research, Institute of Ecology and Botany and Pilisi Parkerdő Zrt.
- Hosszúhegy (Pilis Mountains, Hungary)
- 2018 - beginning of the survey, 2019 - gap cutting
- **Stand type:** 90 years old, two-layered sessile oak-hornbeam forest stand
- **Area:** 9,7 ha
- **Topography:** northeast-facing, 390-460 m above sea level
- **Bedrock and soil type:** sandstone and limestone with loess; luvisols and rendzic leptsol, soil depth 0.5-1.5 m
- **Regional climate:** humid continental (9,0-9,5 °C; 650 mm/yr)



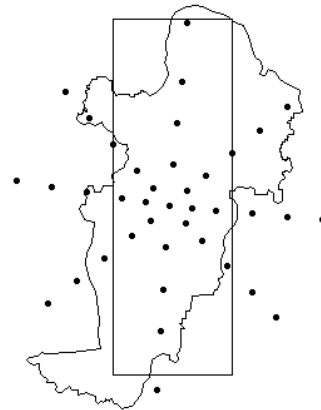
The gaps I studied; measuring methods



- Systematic sampling design
- 41 points/gap



4 LC – Large circle gap
in block 4



3 LE – Large elongated gap
in block 3

Dormant season 2023

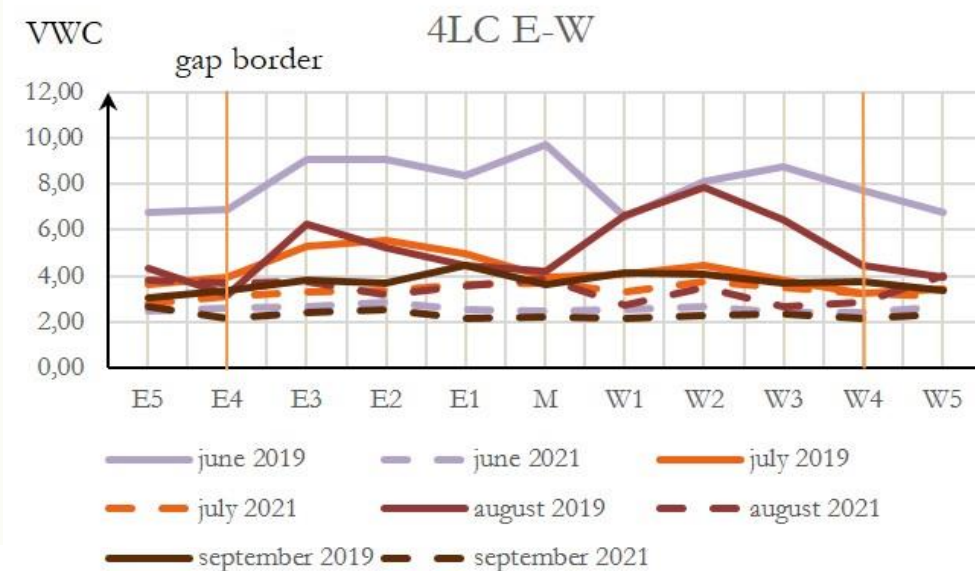
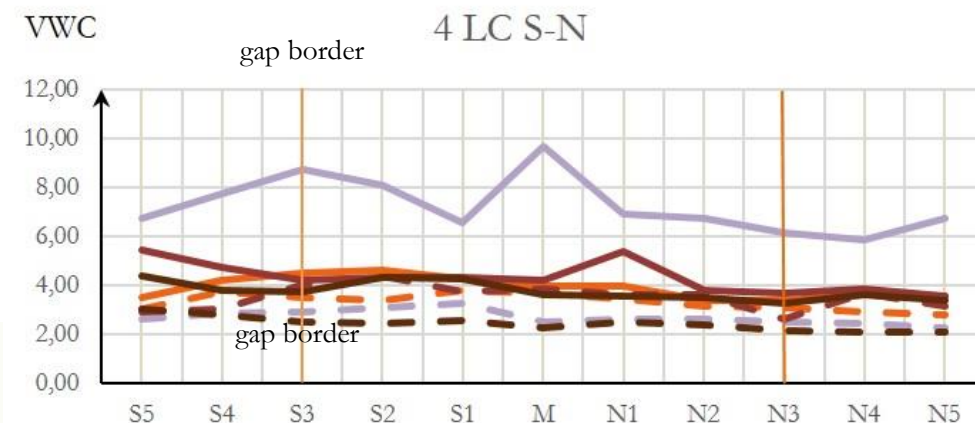
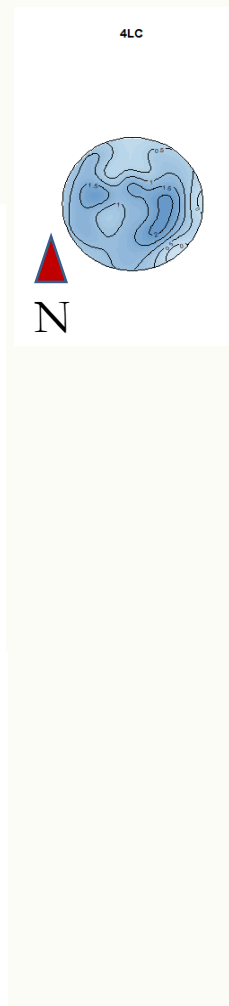
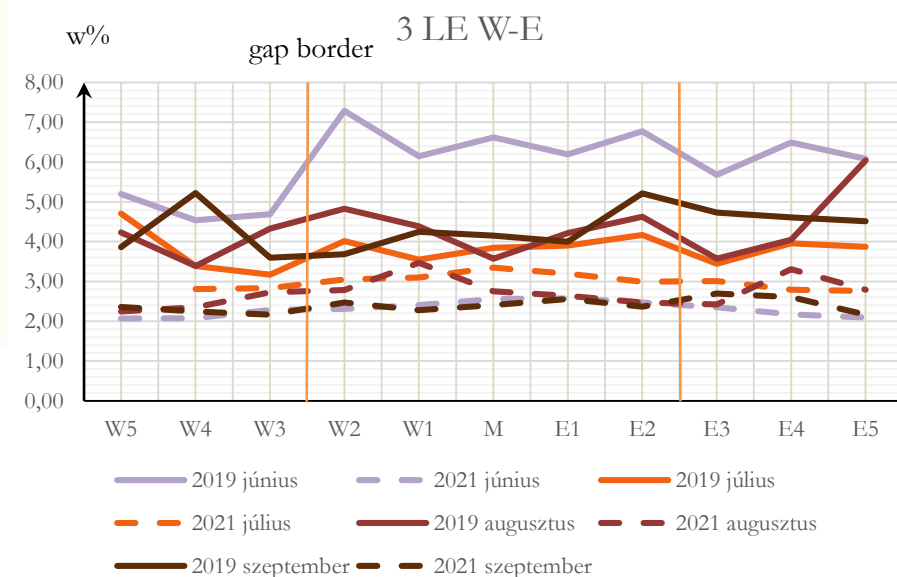
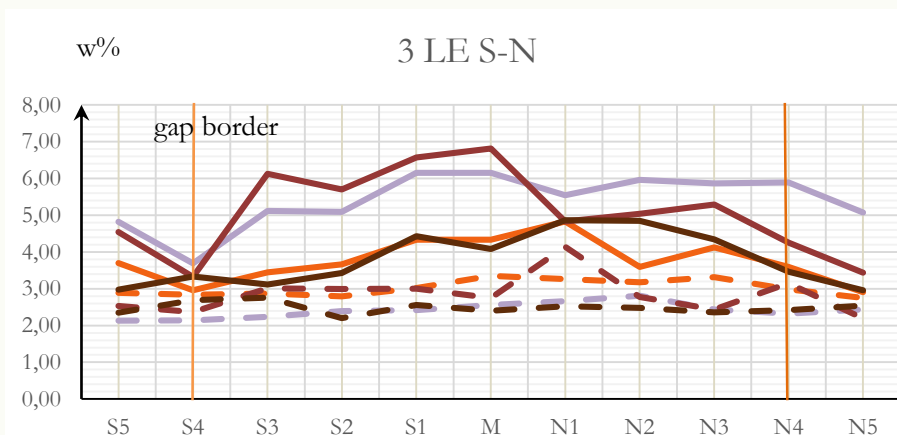
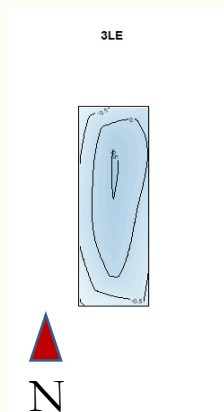
Soil moisture measuring:

- Both gaps
- Field Scout TDR 300
- 5 data/point
- VWC% calculating with calibration formula
- Descriptive statistics
- Interpolated soil moisture maps and error maps

Soil physical parameters:

- In large circle gap
- Soil sample taken with tubes on 17 measurement points
- Laboratory tests (moist/dry weight measurements, porosity calculation, grain-size distribution)

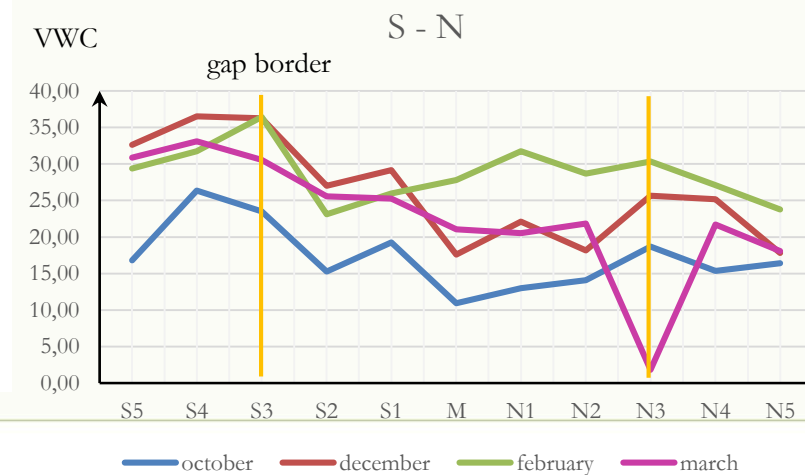
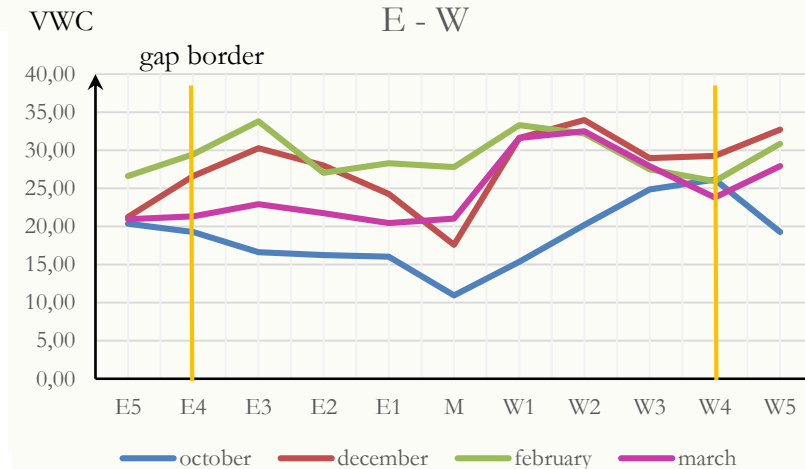
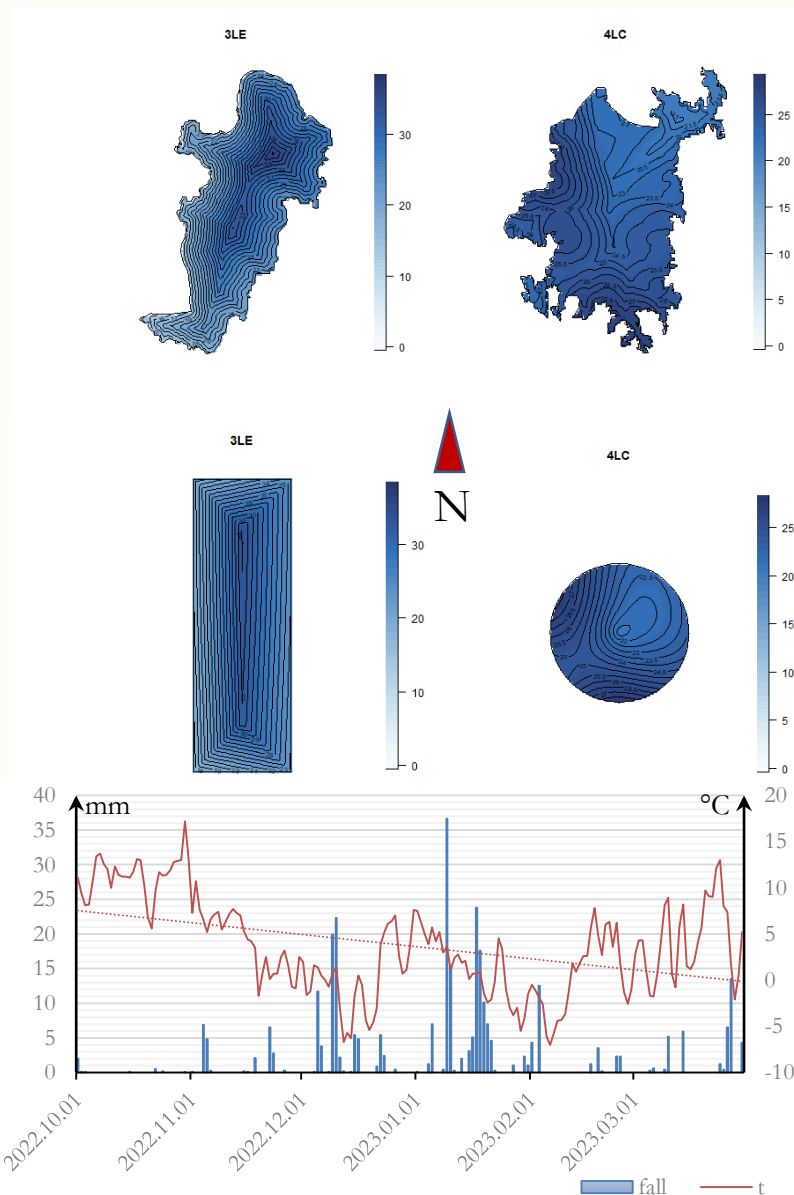
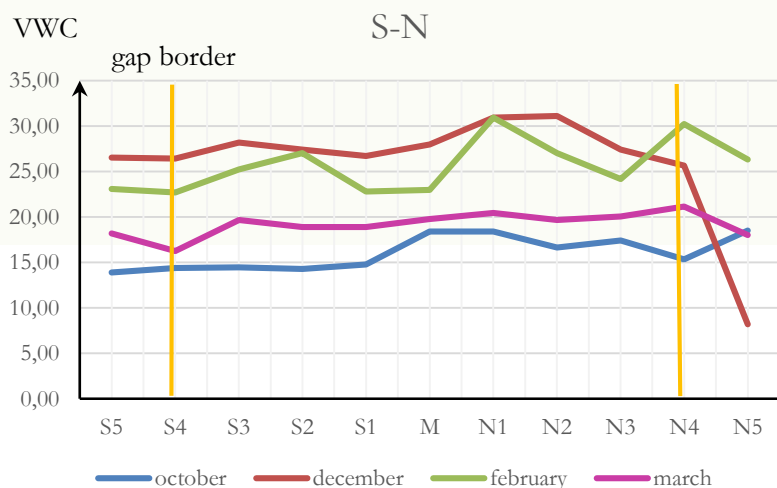
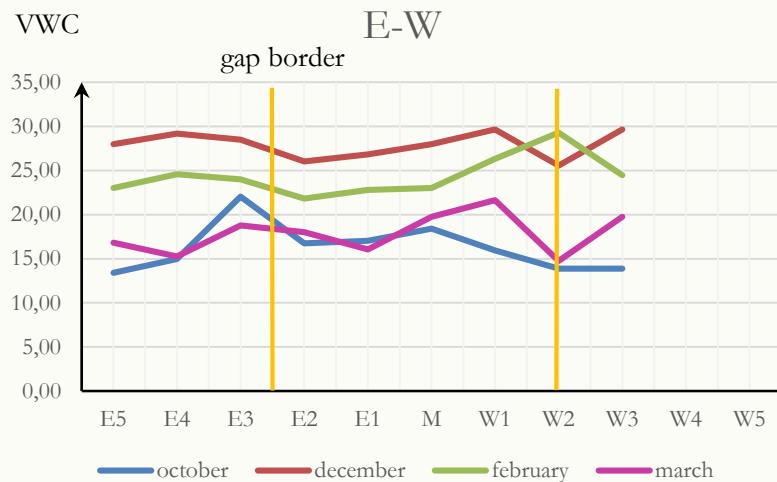
Vegetation season soil moisture dynamics 2019-2021 3LE



3 LE

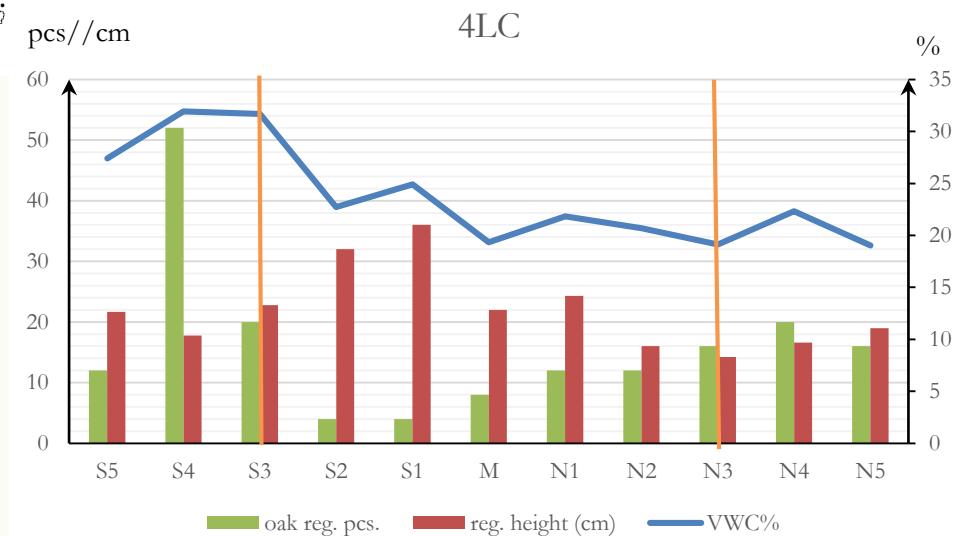
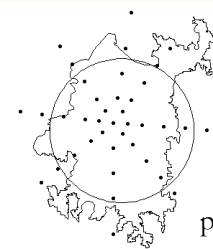
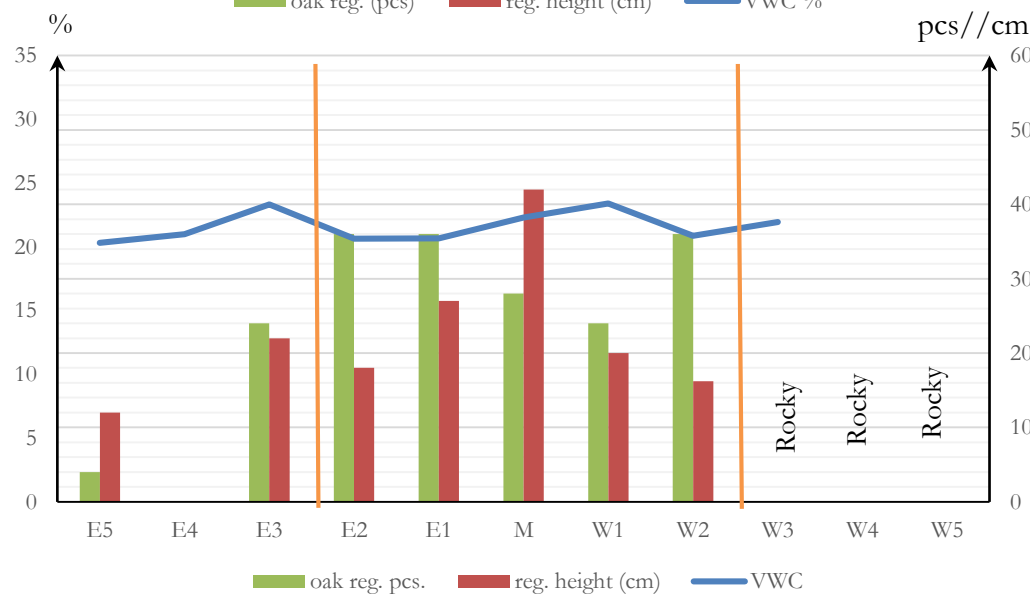
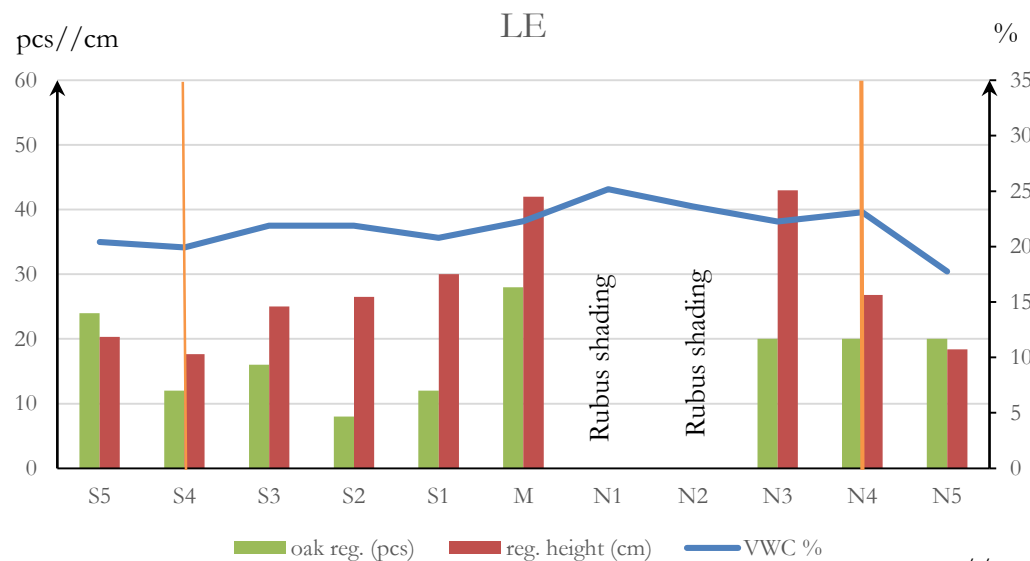
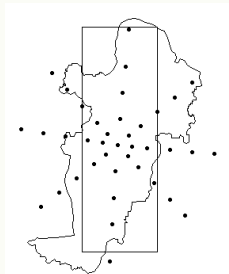
Dormant season 2023

4 LC



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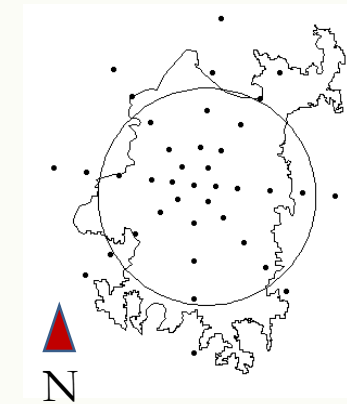
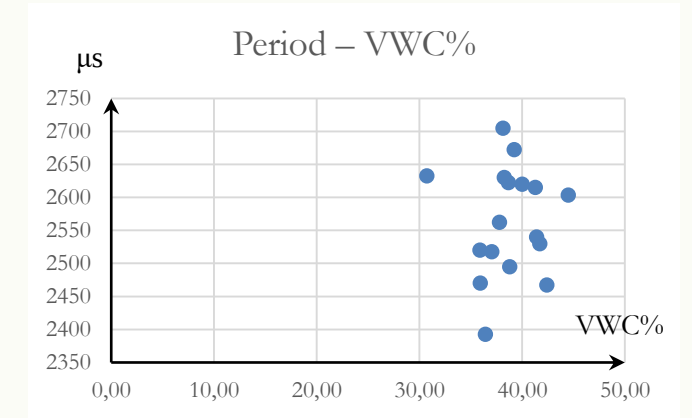
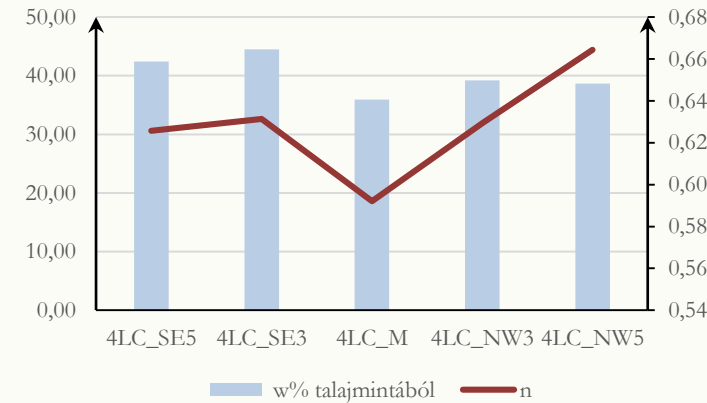
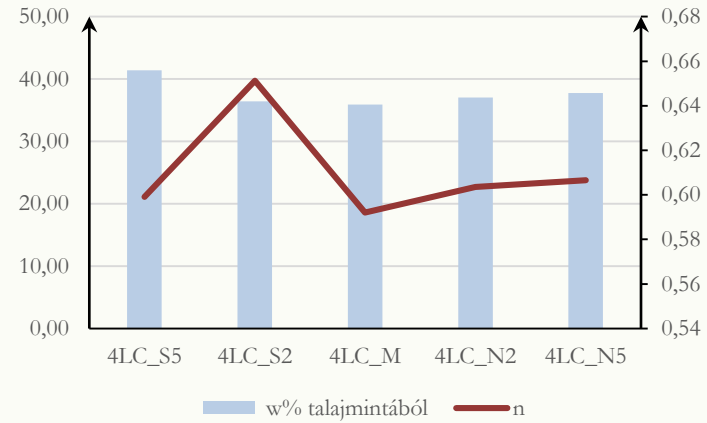
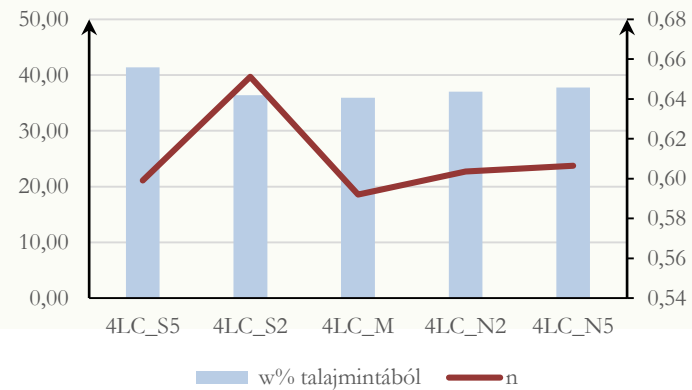
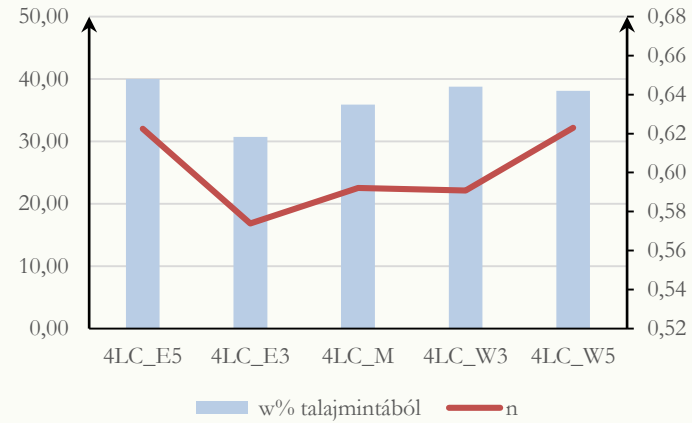
Thank you for your attention!

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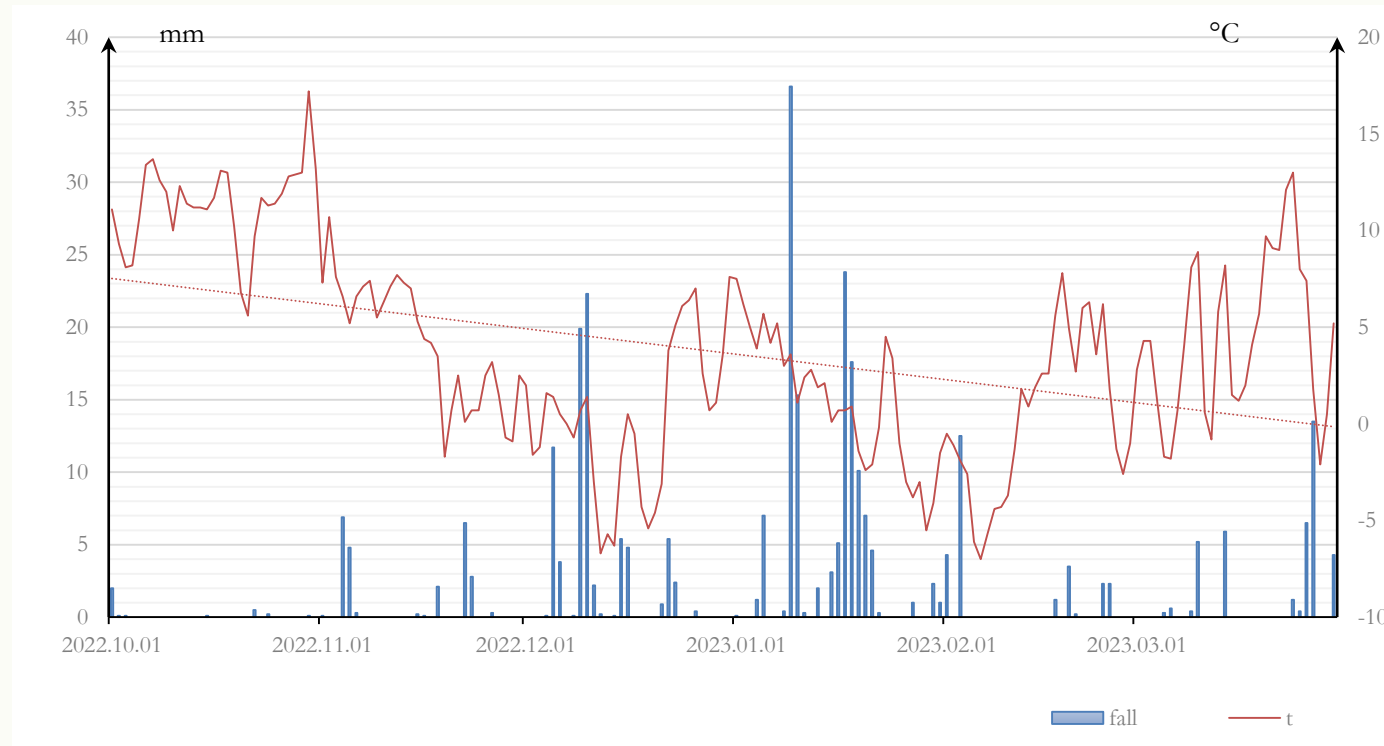


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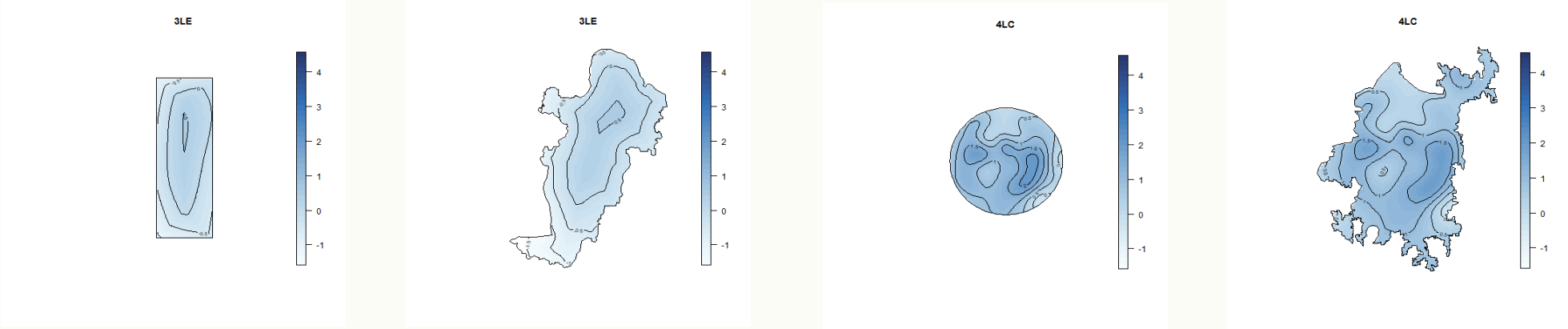
4 LC soil physicals



Rainfall and temperature 2023 dormant season



Vegetation season



N

Dormant season

