# Hydrogeological modeling in Latvia

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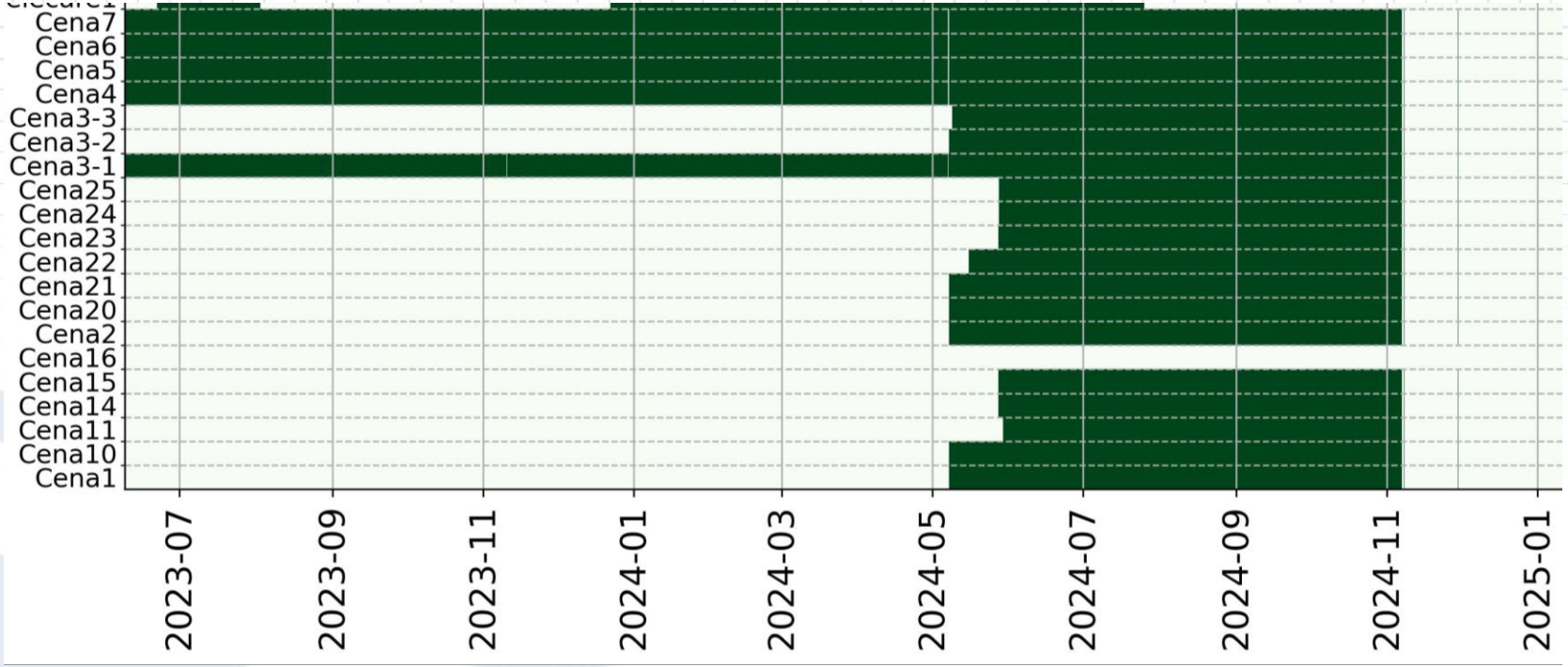
# Progress since Dec-2023

1. Early-2023: model development for Cena mire and Great Pelečāre bog model (Python scripts & MODFLOW freeware)
2. Mid-2023: reference runs with non-calibrated models
3. End-2023: measure evaluation with non-calibrated model
4. 2024: observation analysis, re-running and assesment of impact of measures with non-alibrated model
5. Now: calibration

# Cena: data availability, 20 stations



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# Cena

## data points

**5 – ok**

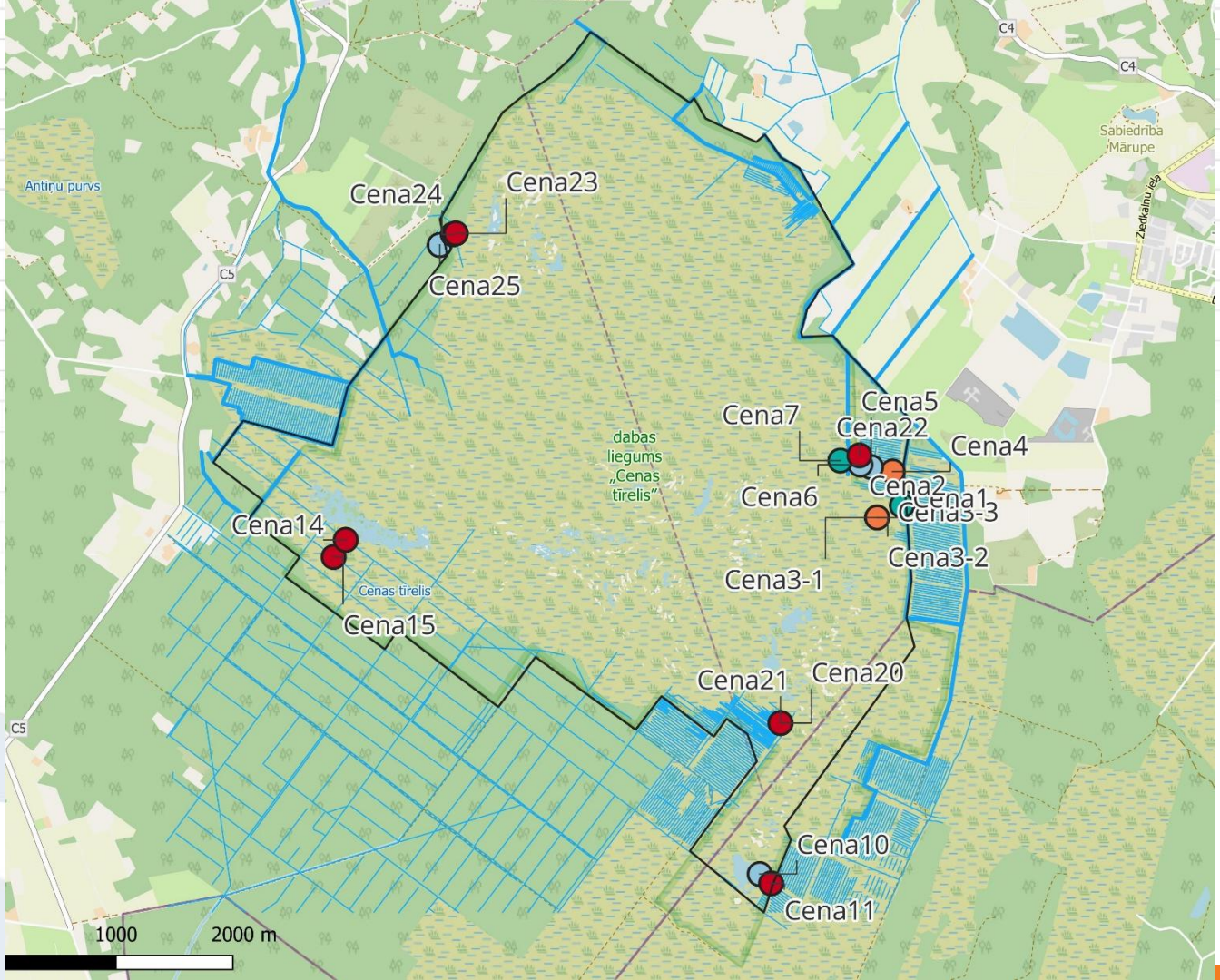
**4 – level ok, sub-grid effect**

**3 – level off**

**2 – amplitude off**

**1 – ditch effects**

**0 – big errors (trend, obs off)**



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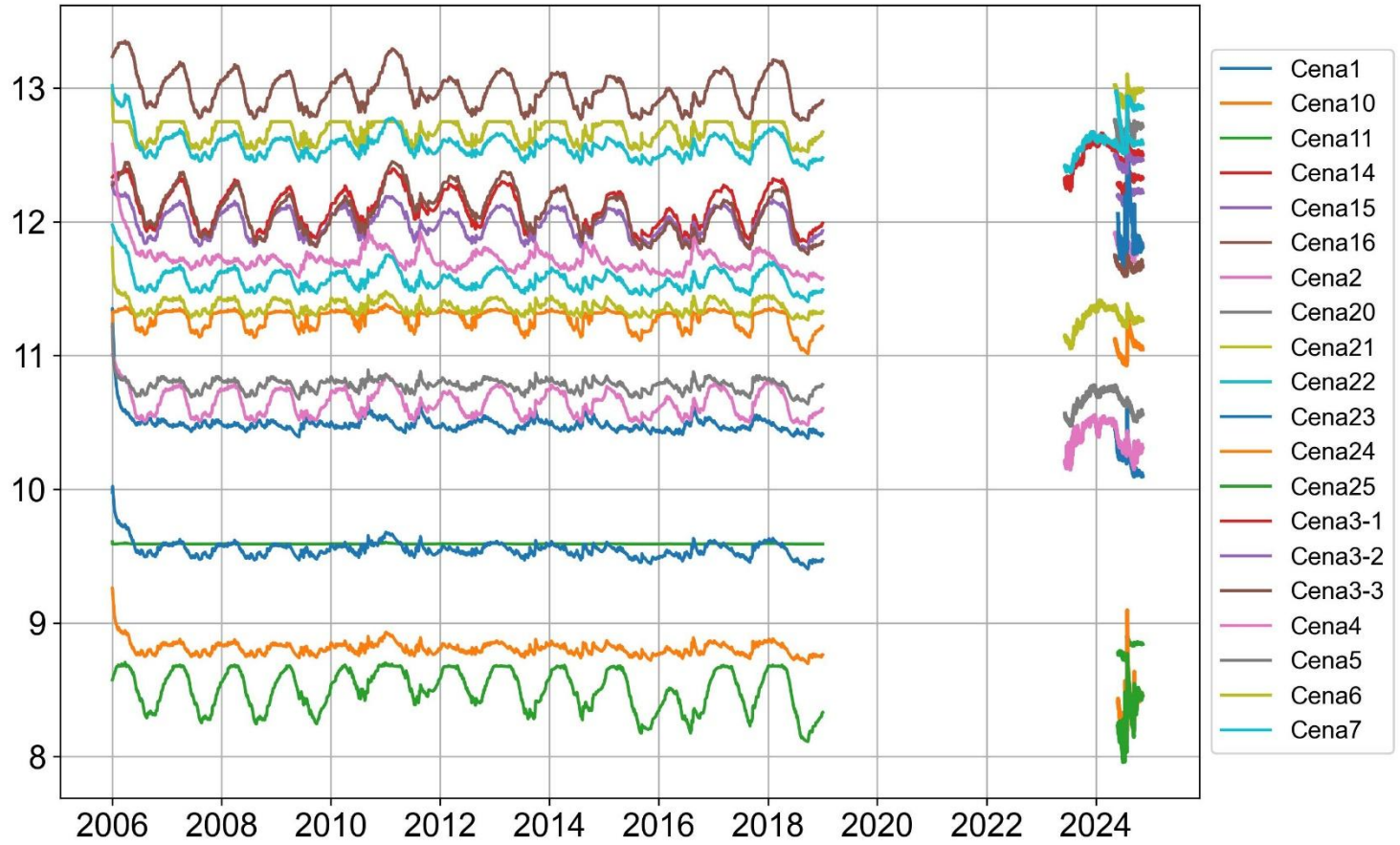
# Cena:

## model vs observations



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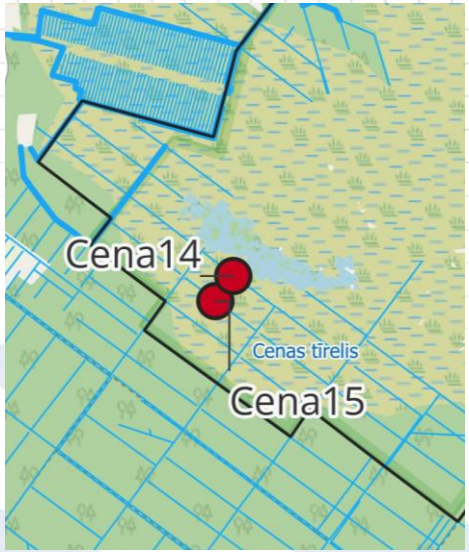
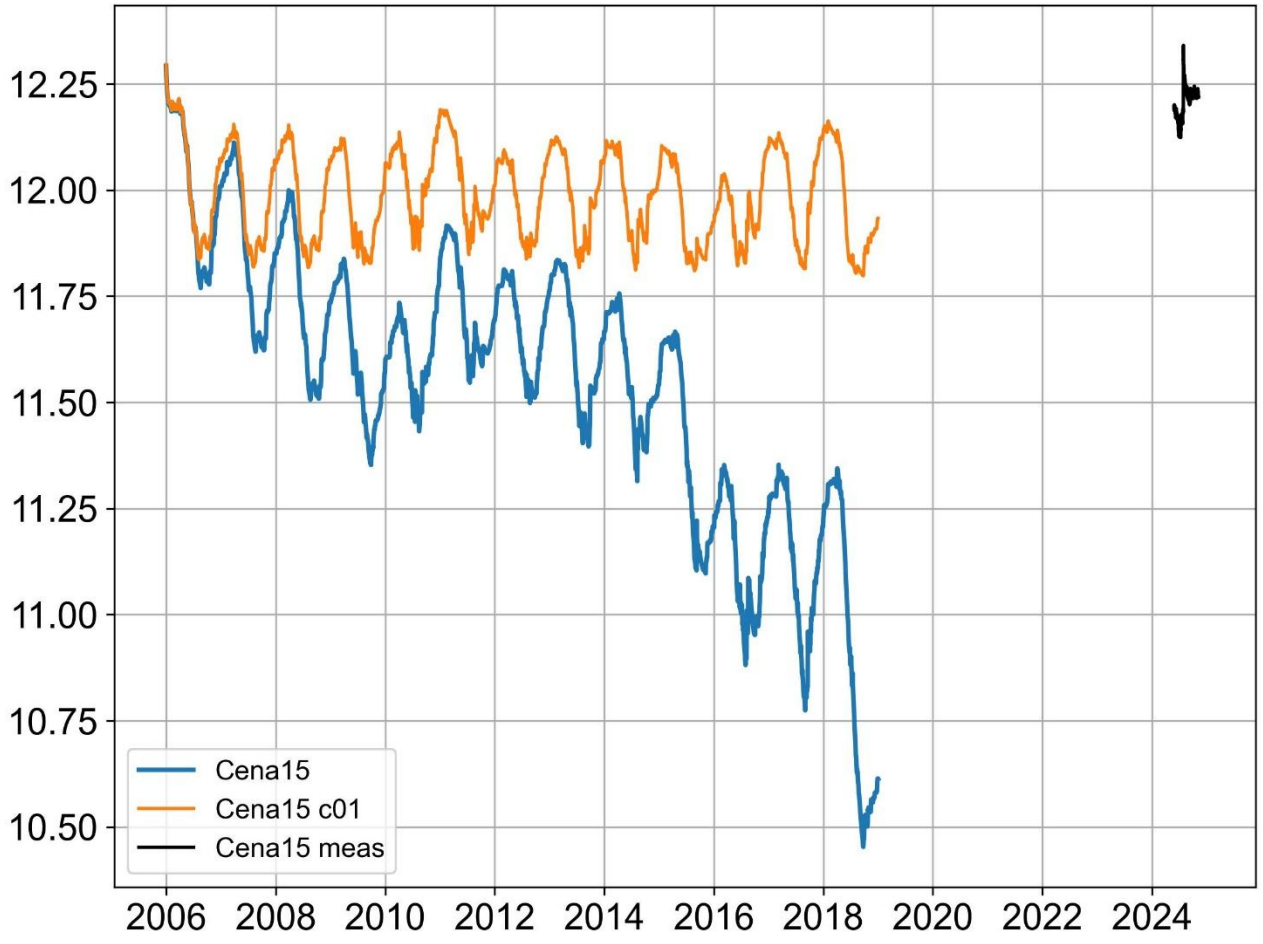
# Cena: example of successful calibration (evaporation depth)



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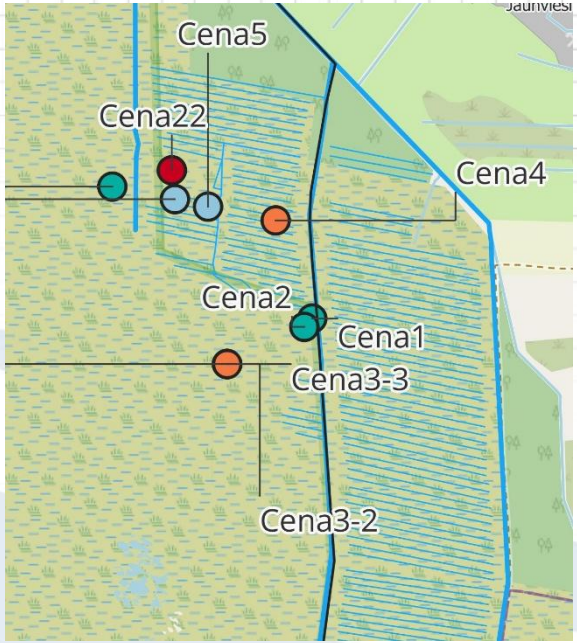
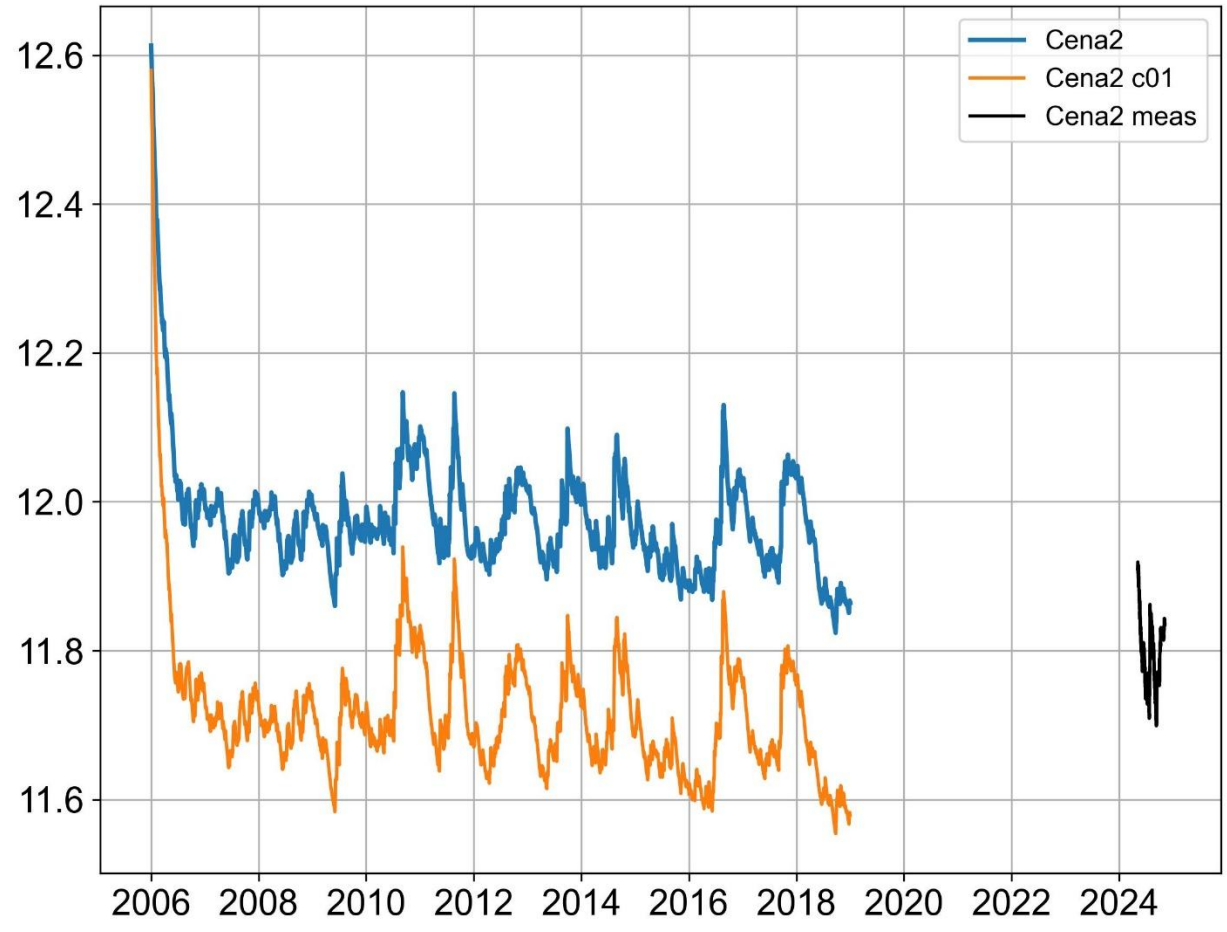
# Cena: example of calibration overkill (culvert connections)



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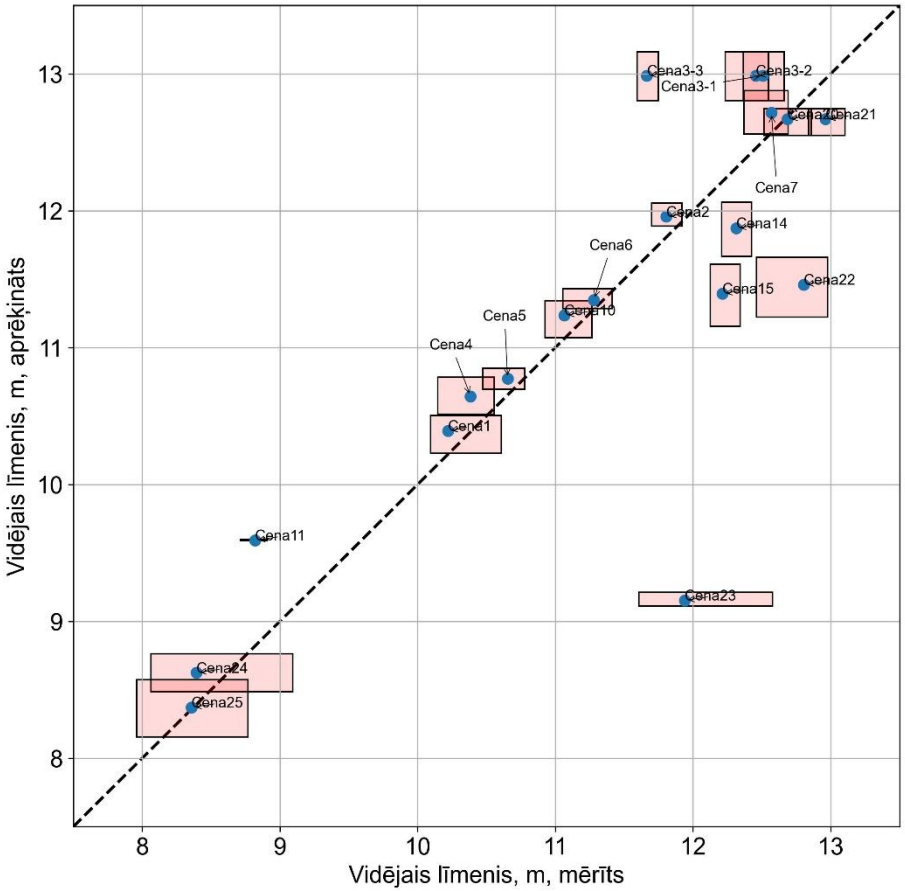
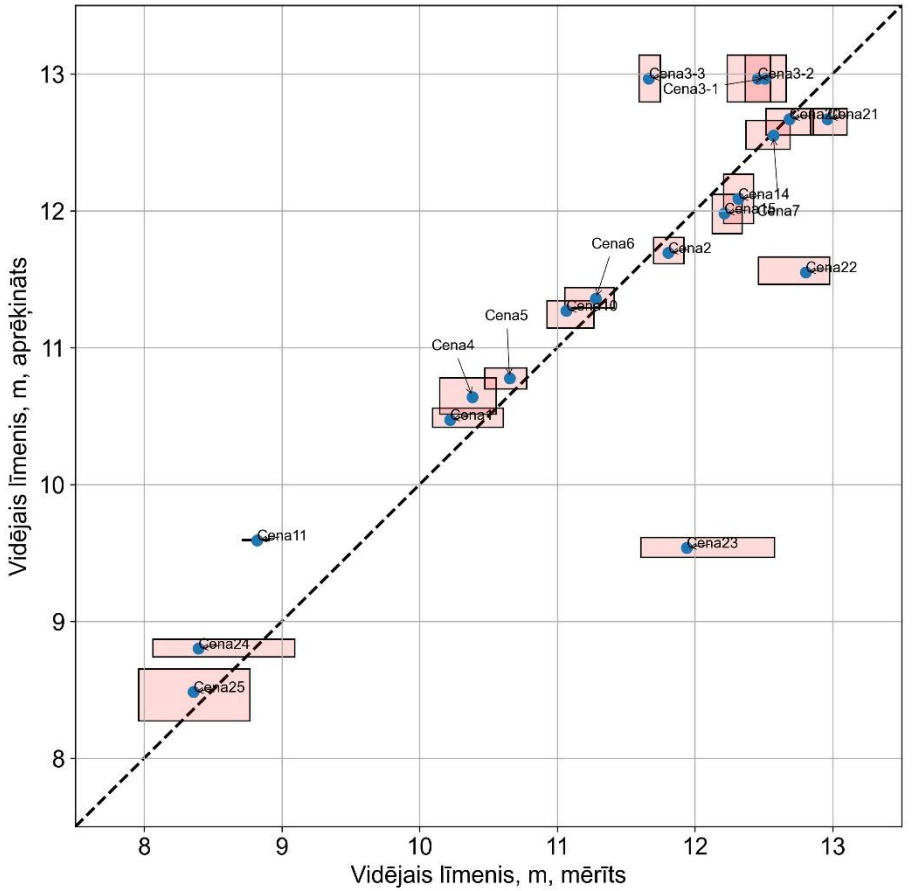
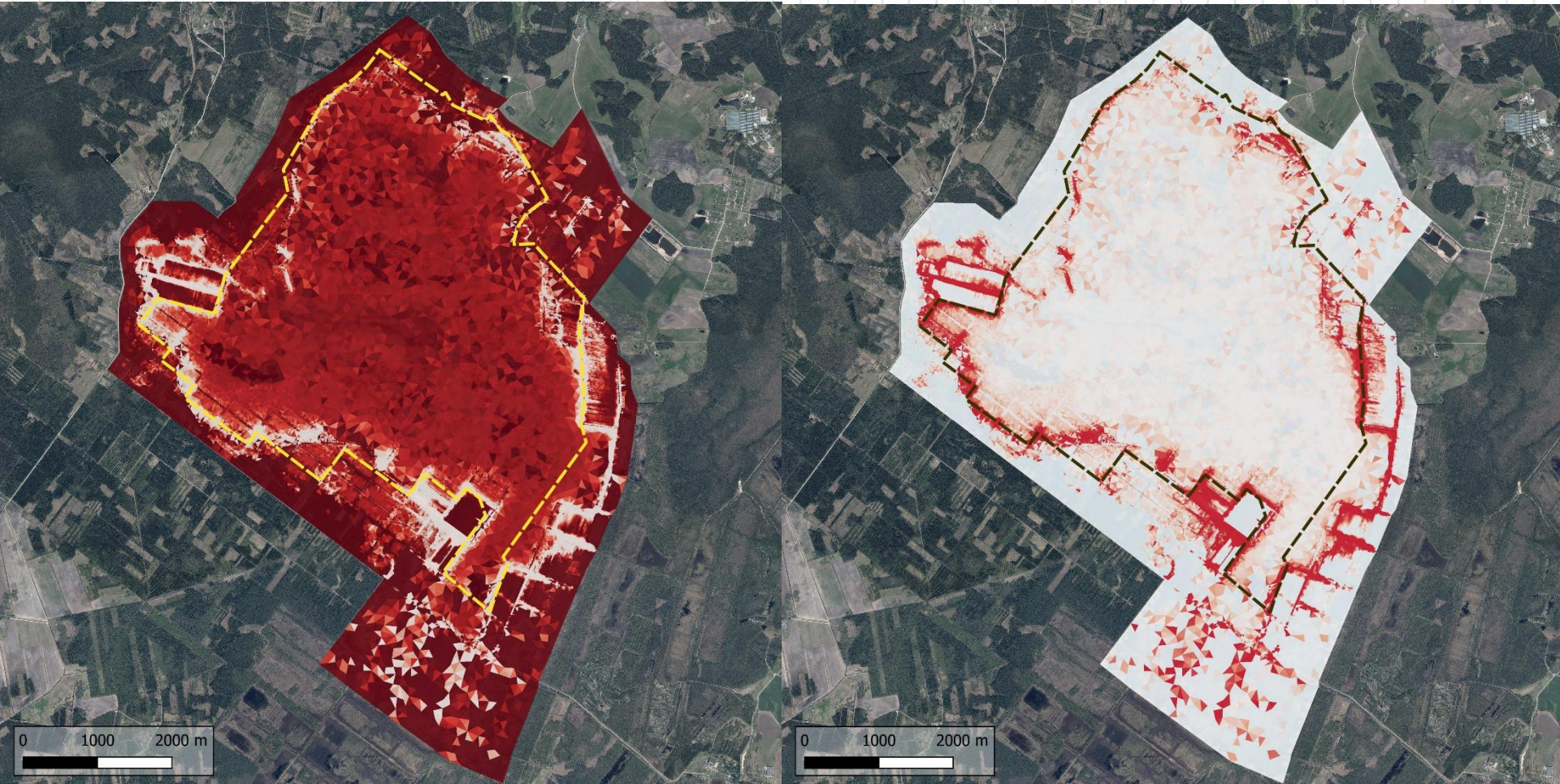
# Cena: example of overall model performance and one calibration step

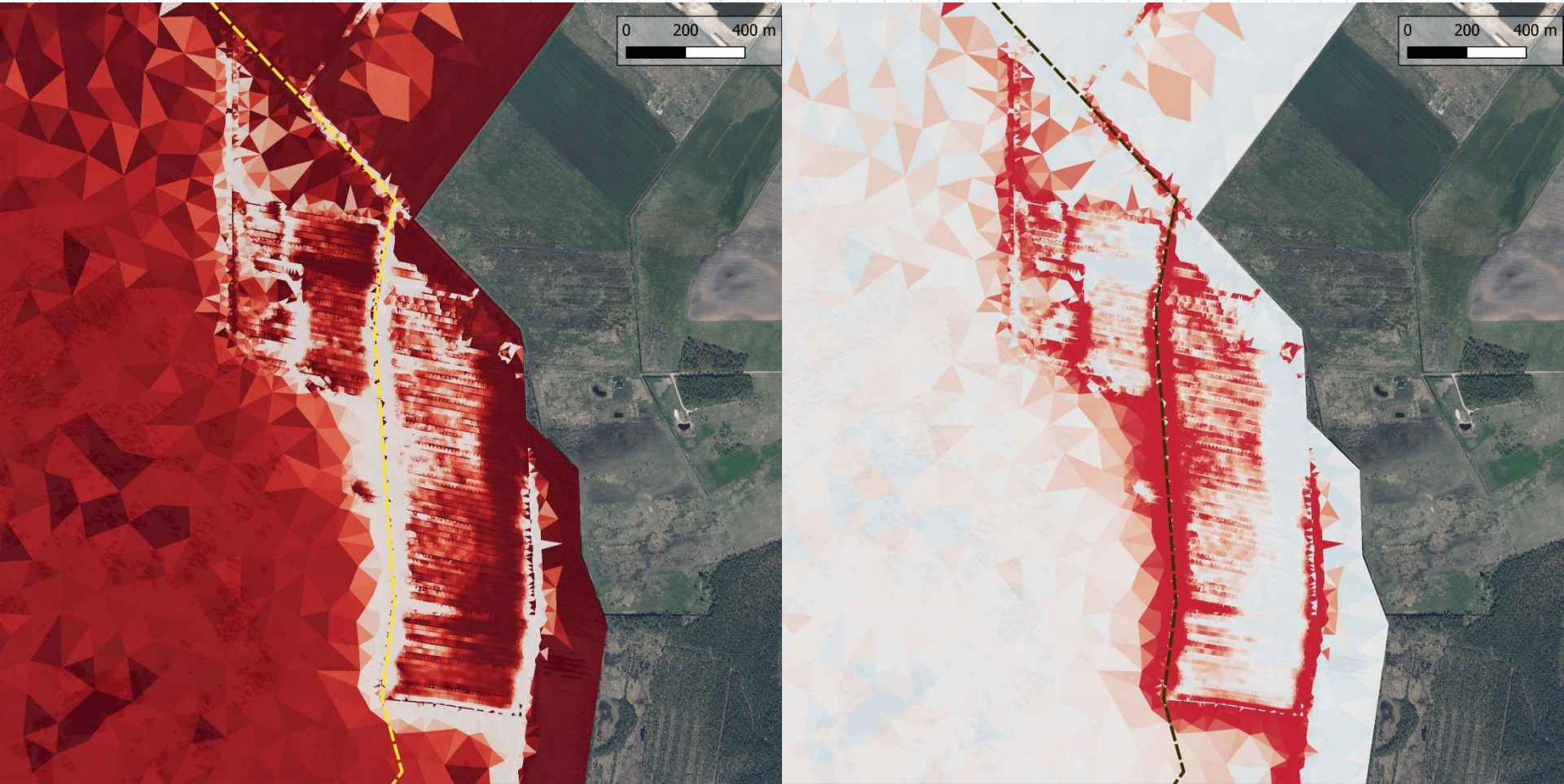


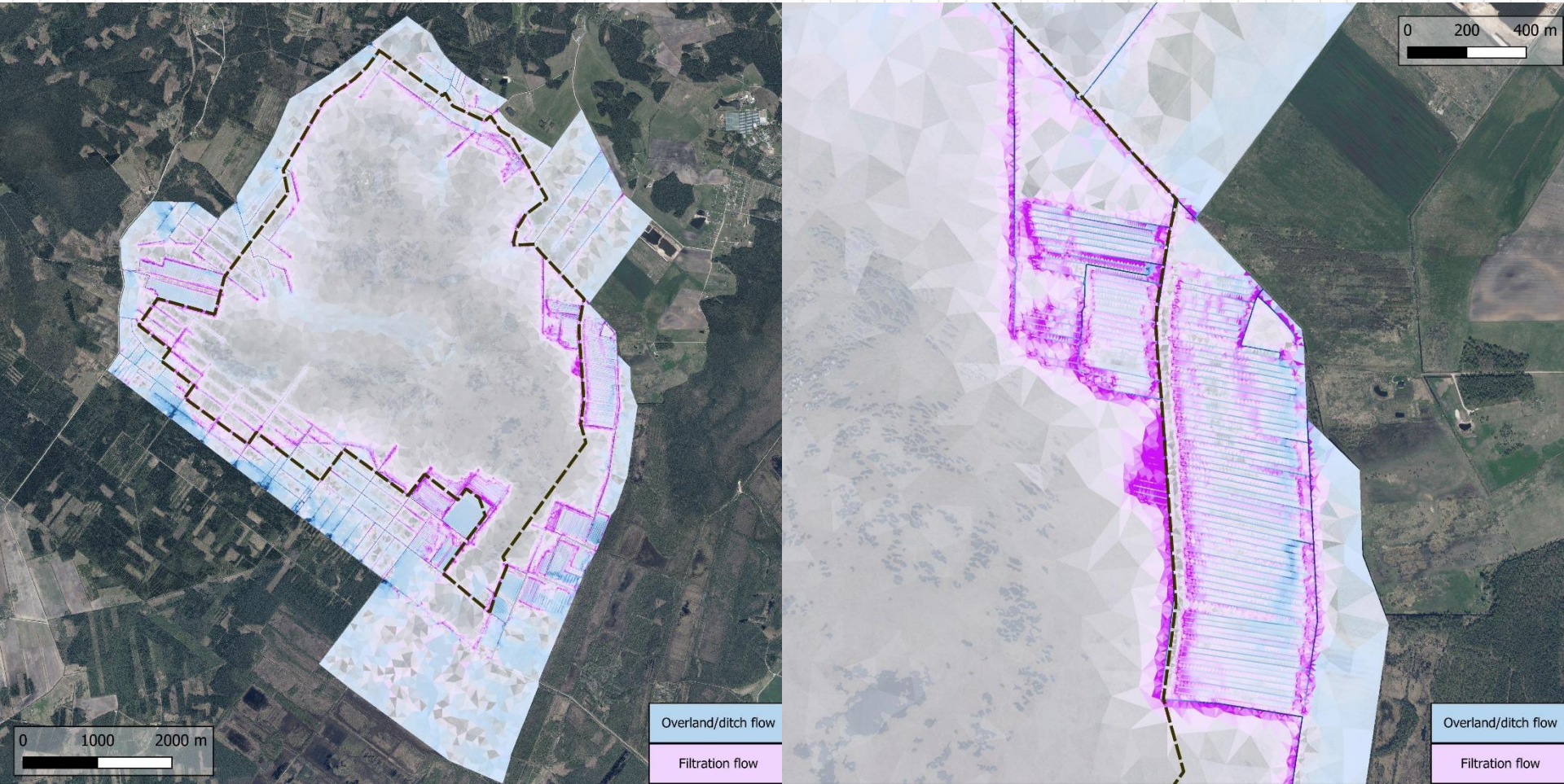
# Cena: evapotranspiration (left) vs runoff (right)



# Cena: evapotranspiration (left) vs runoff (right) in zoom



# Cena: overland (blue) vs filtration (magenta) runoff



# Thanks for attention



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