

Litter and deadwood water retention processes in a temperate mixed forest

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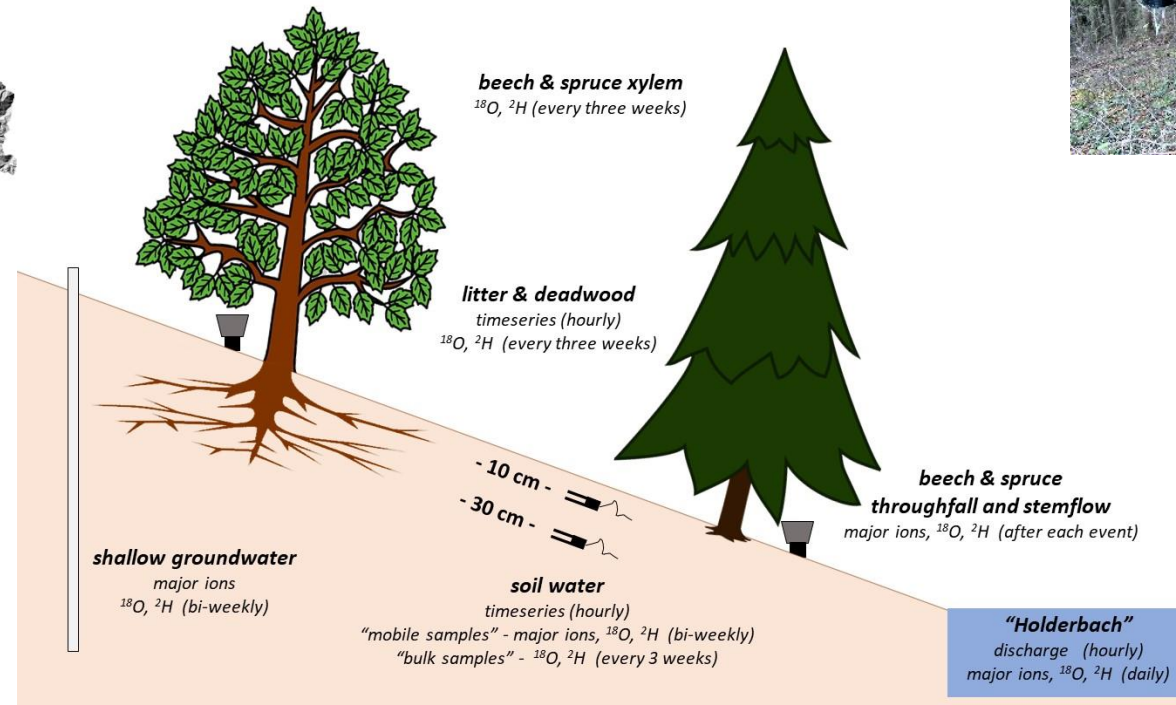
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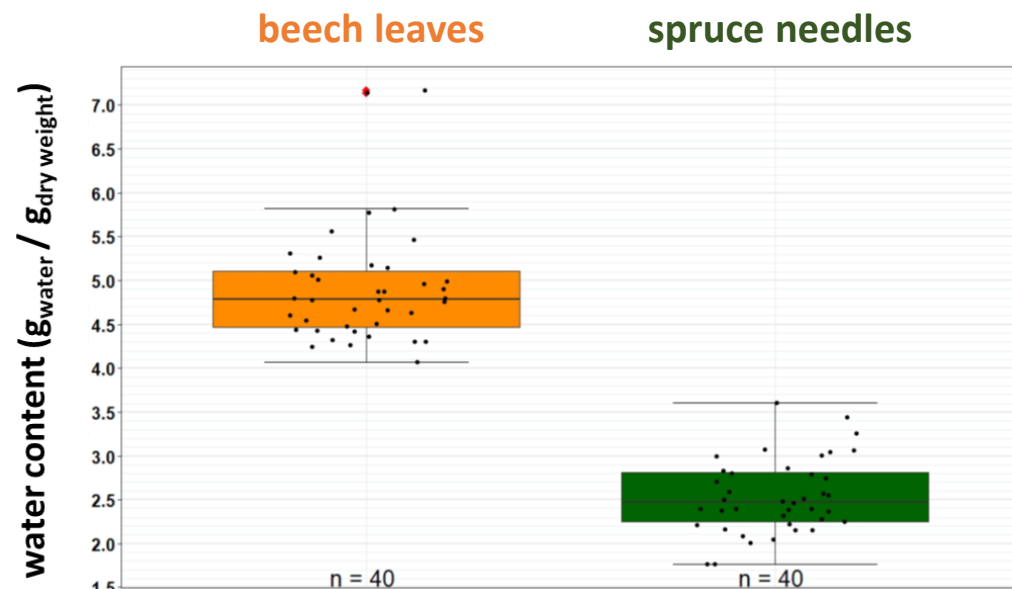
- 0.3 km² catchment
- beech & spruce mixed forest
- hillslope with small creek at the bottom



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Substantial water retention in litter for up to 48h

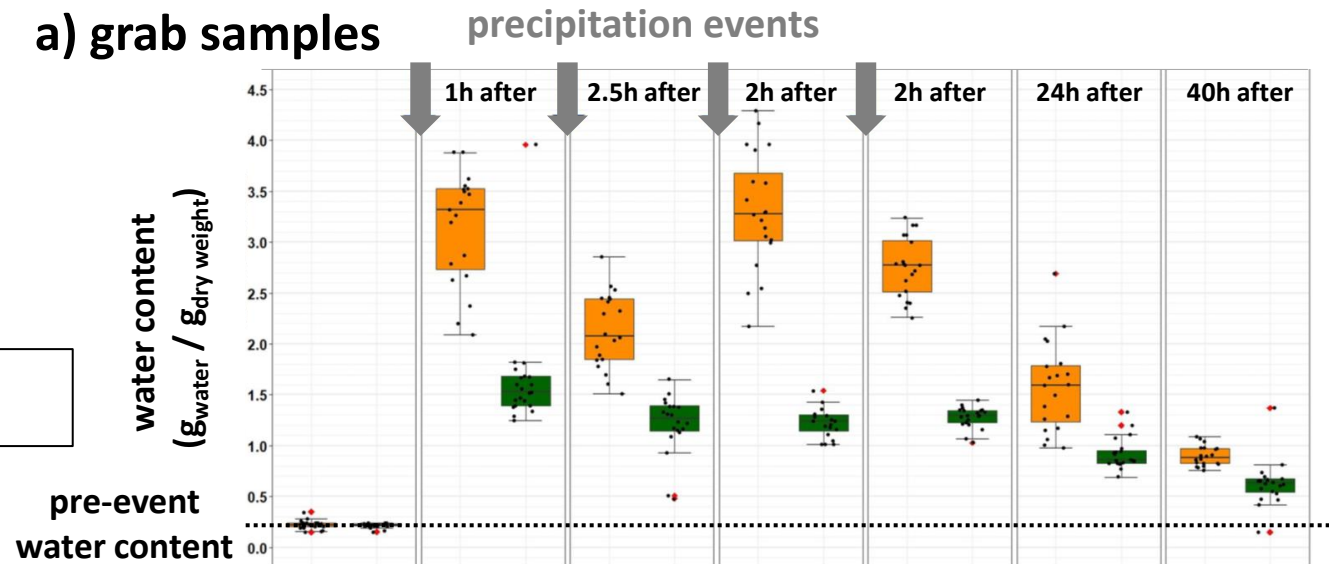
maximum water retention capacity



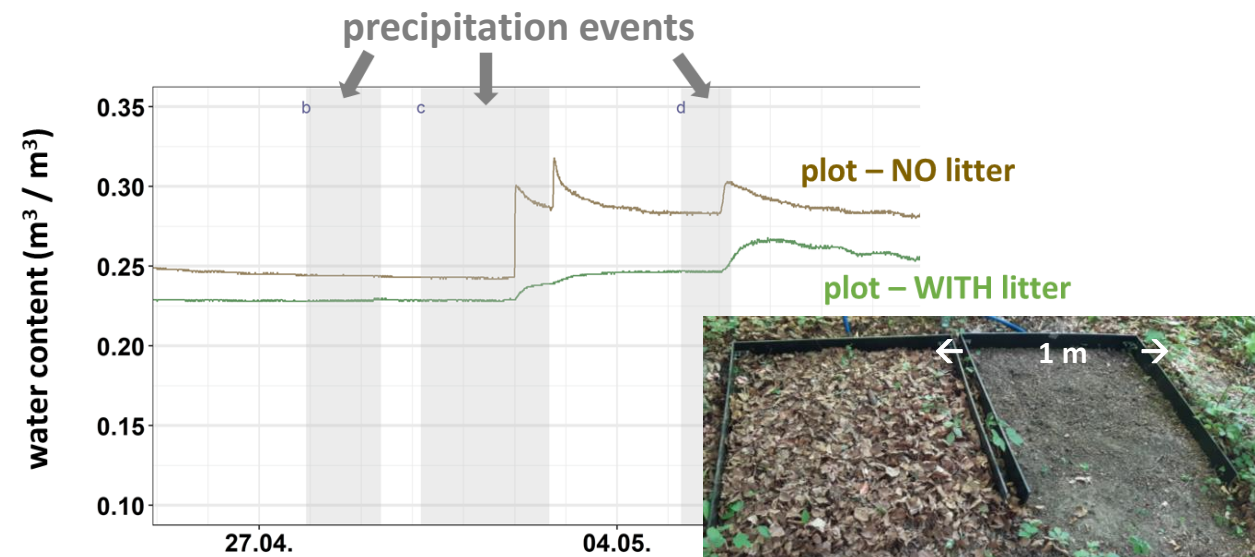
leaf litter ~ 4.7 x dry weight
needle litter ~ 2.4 x dry weight

water retention in the litter layer

a) grab samples



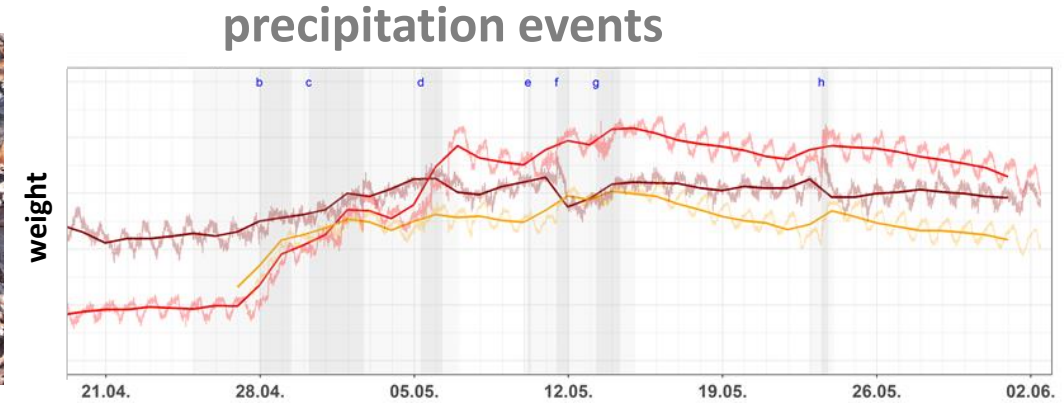
b) soil moisture measurements (10cm depth)



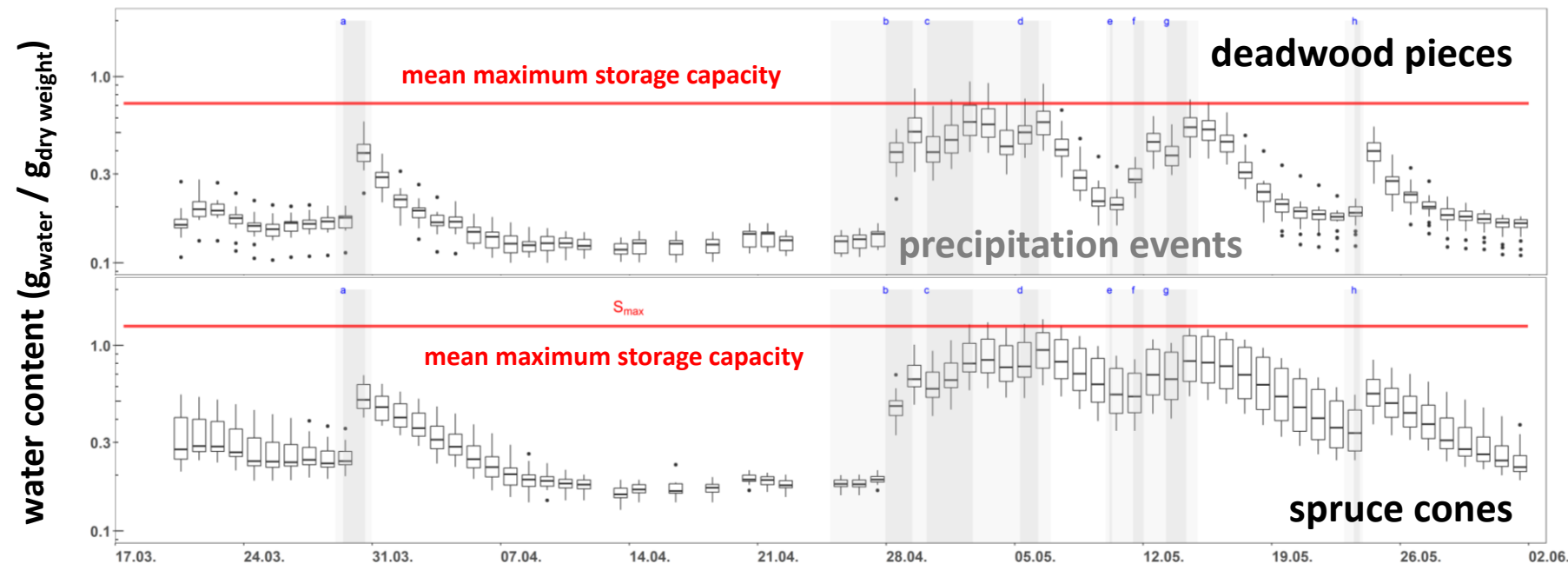
Substantial water retention in deadwood for over a week

water cycling in deadwood

a) diurnal cycles of water deposition from dew & fog



b) daily measurement of deadwood pieces (n = 40) & spruce cones (n = 20)



Conclusions

- **forest litter** (beech leaves & spruce needles) **retains** substantial amounts of **precipitation** and **contributes to evaporation** for > 48 hours
- **deadwood** is **hydrated by dew & fog** and contributes to evaporation (diurnal cycles) as well as **stores precipitation** for > one week

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