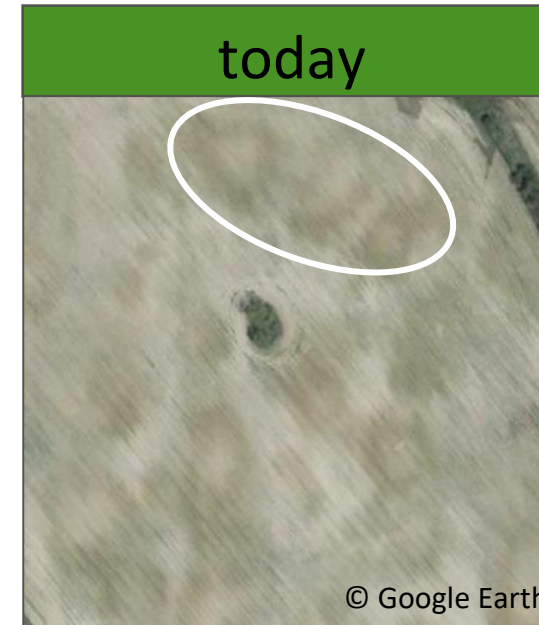
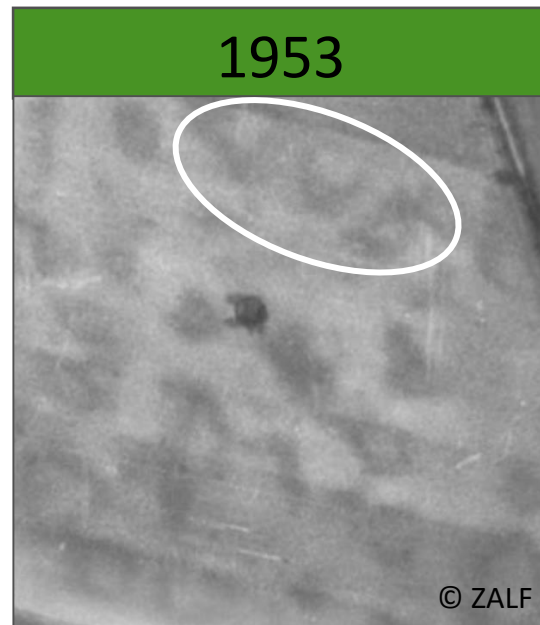


Tillage erosion as an important driver of soil organic carbon (SOC) dynamics long before agricultural mechanisation

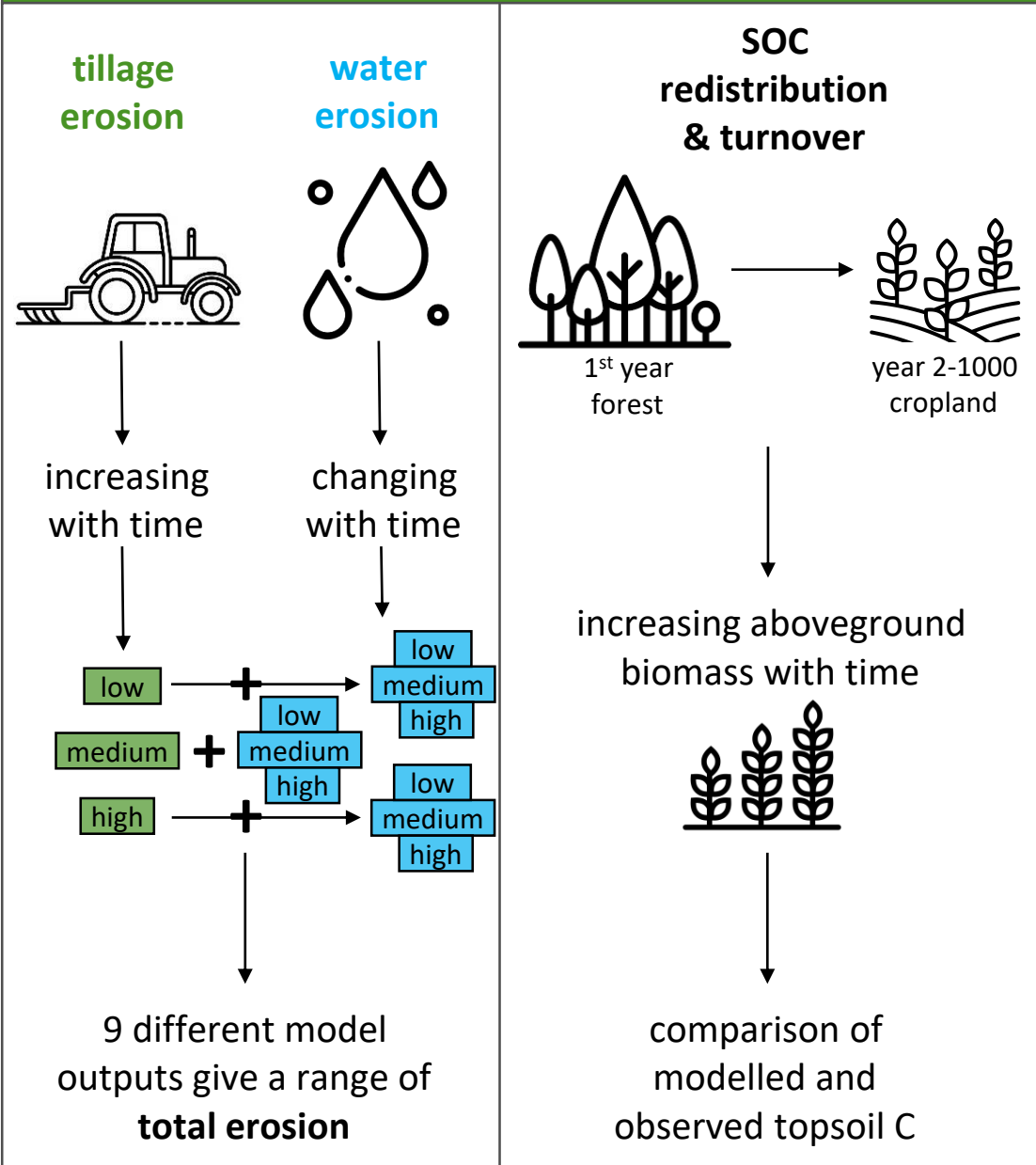
Öttl, L. K., Wilken, F., Degg, M.-R., Wehrhan, M., Juřicová, A., Sommer, M., and Fiener, P.



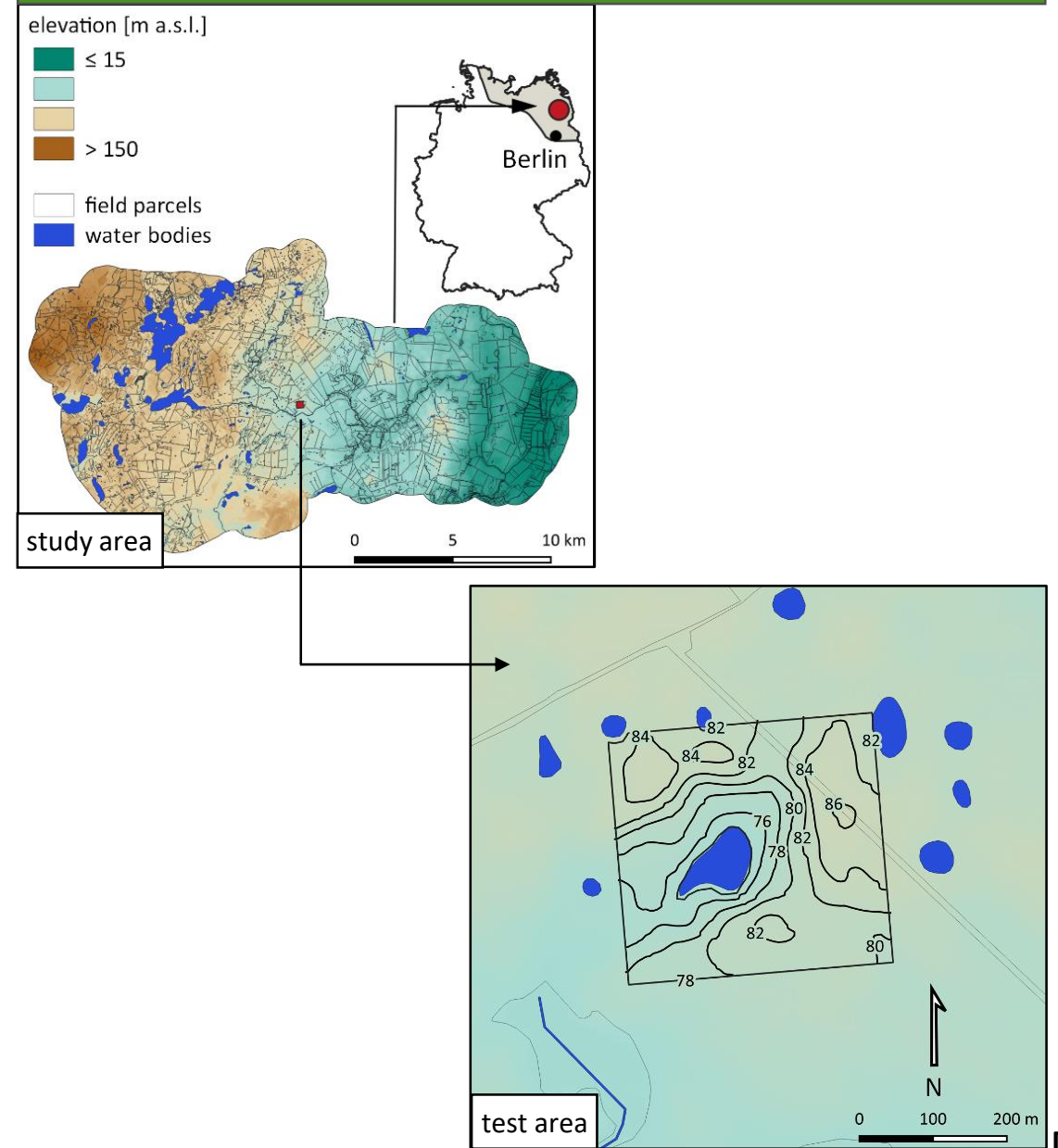
Contact:

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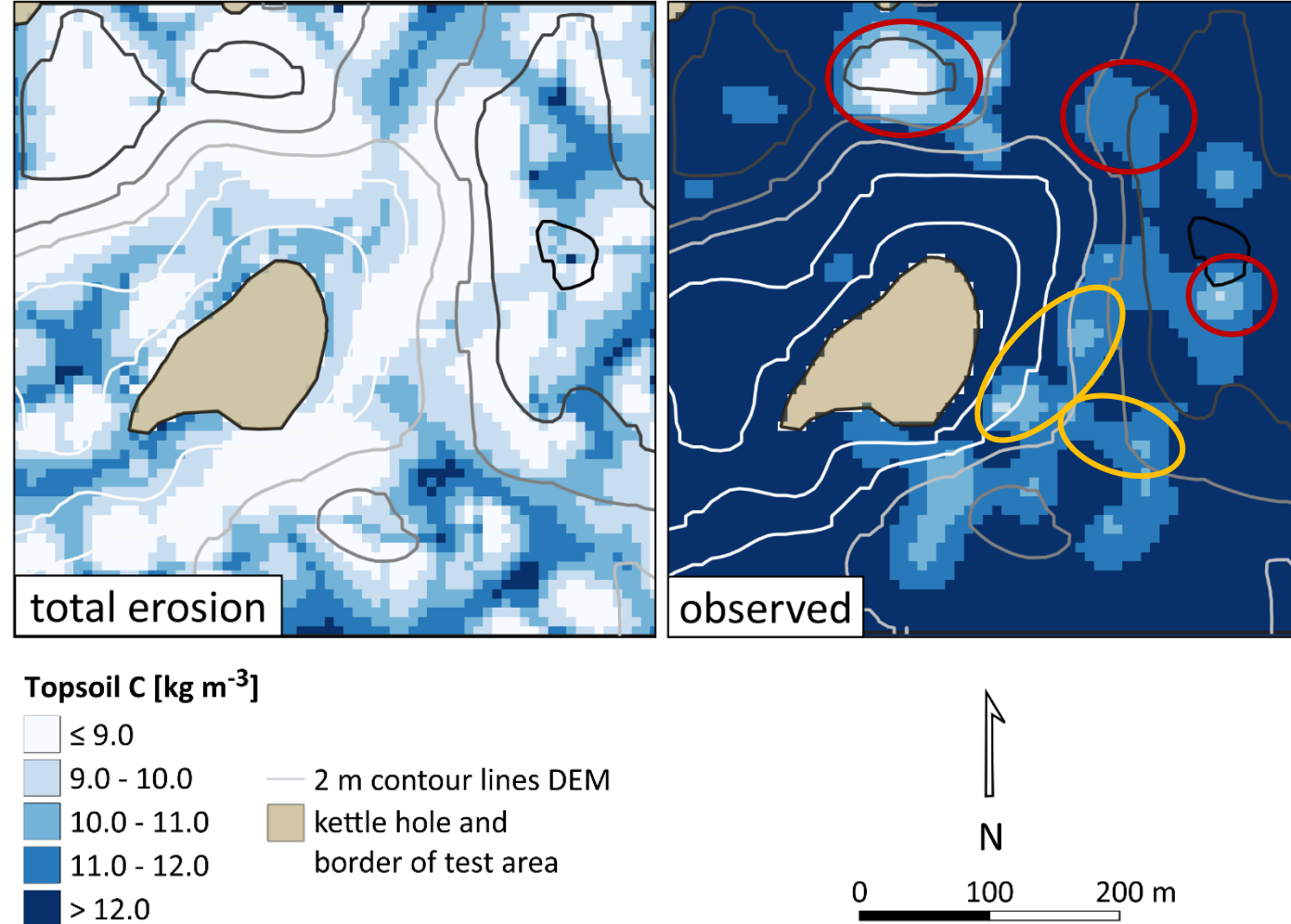
Soil & SOC redistribution modelled with SPEROS-C for 1000 years:



Study area ($\approx 200 \text{ km}^2$) & test area ($\approx 4.2 \text{ ha}$):

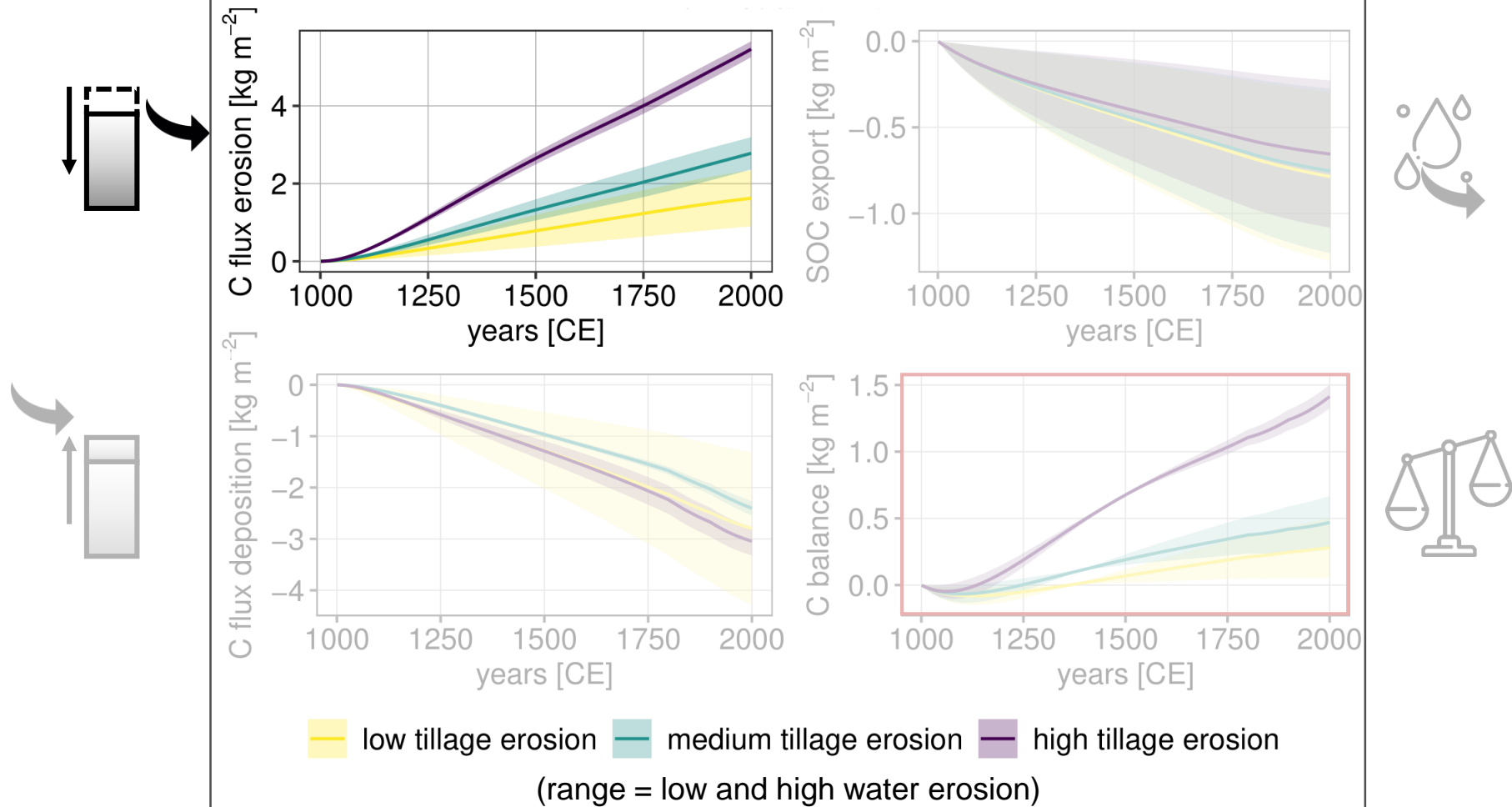


Spatial pattern of modelled (mean of the 9 realisations)
& observed topsoil C:



- C depletion at hilltops can only be explained by tillage erosion
- water erosion explains C depletion at steep slopes and in thalwegs

Modelled cumulative C fluxes & C balance over 1000 years for the 9 realisations:



- C balance dominated by tillage erosion
- tillage erosion-dominated soil redistribution leads to a C sink