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Supplement of

EcH₂O-iso 1.0: water isotopes and age tracking in a process-based, distributed ecohydrological model

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Table S1. Calibrated parameters used in this study, grouped according to their four components: soil units or vegetation types.

Name	Description
Soil-distributed (Peat, Gley, Podzol, Ranker)	
D_{soil}	Total soil depth (m)
D_{L1}	Depth of the 1 st hydrological layer (m)
D_{L2}	Depth of the 2 nd hydrological layer (m)
ϕ	Porosity ($\text{m}^3.\text{m}^{-3}$)
K_{hx}	Saturated horizontal hydraulic conductivity ($\text{m}.\text{s}^{-1}$) †
K_{hratio}	Ratio of vertical-to-horizontal hydraulic conductivity (–) †
λ_{BC}	Brooks-Corey exponent parameter (–)
ψ_{ae}	Air-entry pressure head (m)
θ_t	Residual soil moisture
k_{root}	Exponential root profile (m^{-1})
Vegetation-distributed (Pine, Heather, Peat Moss, Grass)	
$g_{s\text{max}}$	Maximal stomatal conductance ($\text{m}.\text{s}^{-1}$) †
CWS_{max}	Maximum interception storage per unit LAI (m) †
T_{opt}	Optimal photosynthesis temperature ($^{\circ}\text{C}$)
ψ_d	Soil water potential halving stomatal conductance (-m)
c	Sensitivity of stomatal conductance to soil water potential (–)
K_{beer}	Light attenuation coefficient (–)

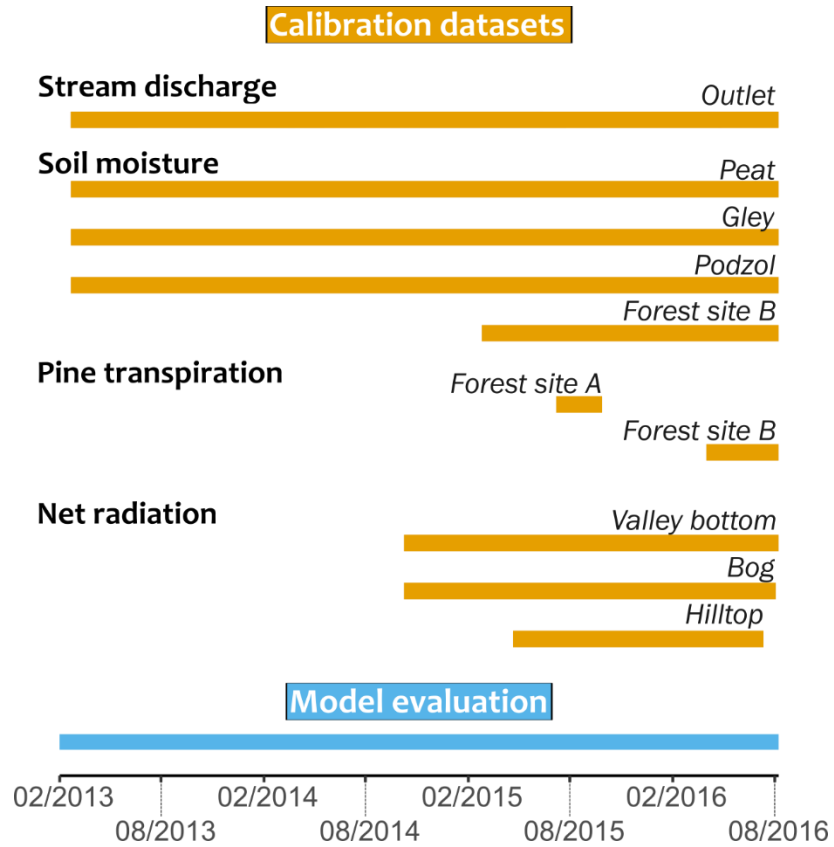


Figure S1. Temporal windows –at daily resolution– covered by each of the datasets (orange) at the different sites (italic font) grouped by observation type (bold font) used to calibrate the EcH₂O-iso model, while the full simulation period (blue) is used for evaluating the isotopes and age tracking module.

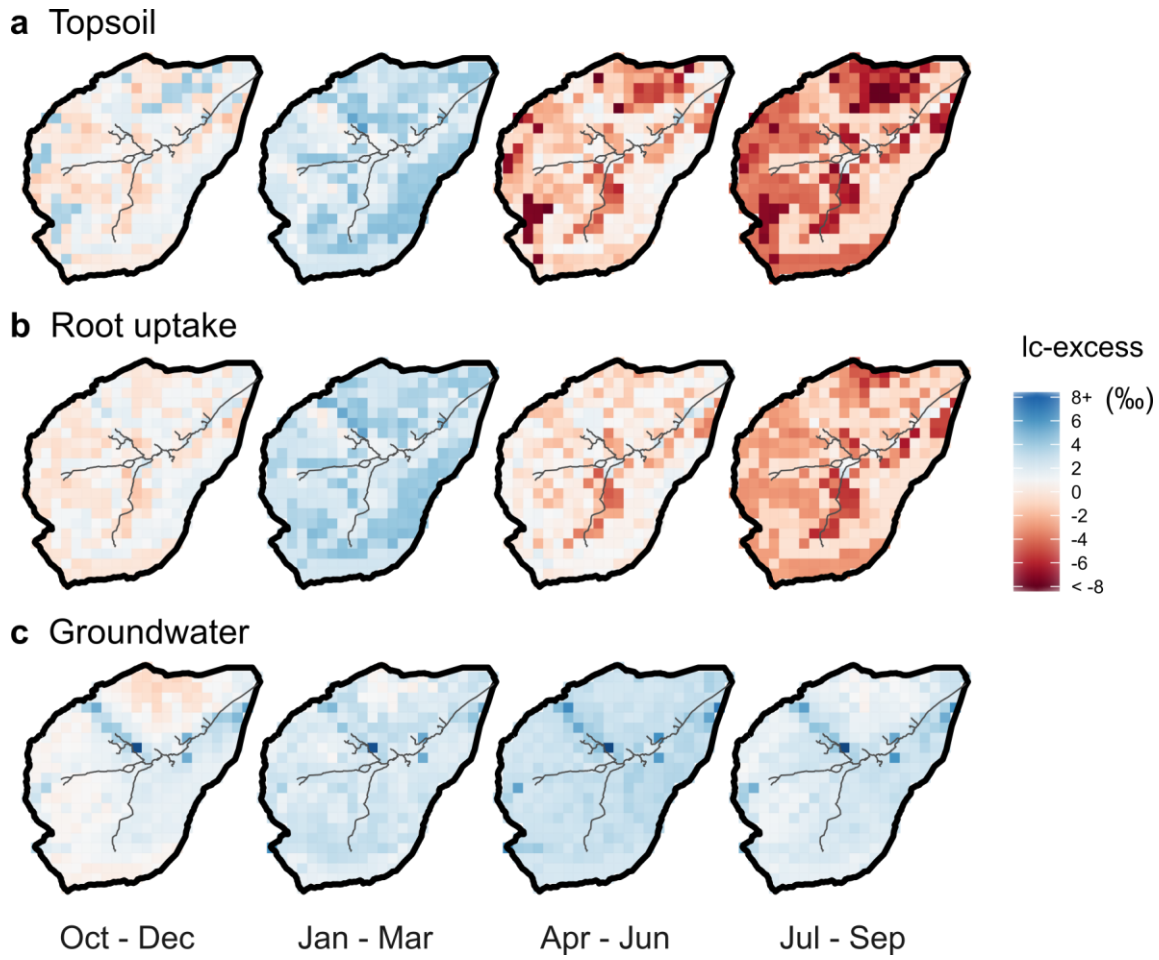


Figure S2. Seasonal average of lc -excess in the Bruntland Burn over the period 2013 – 2016, showing the ensemble median of simulations in (a) the topsoil layer, (b) root water uptake (summed of vegetation covers) and (c) groundwater.