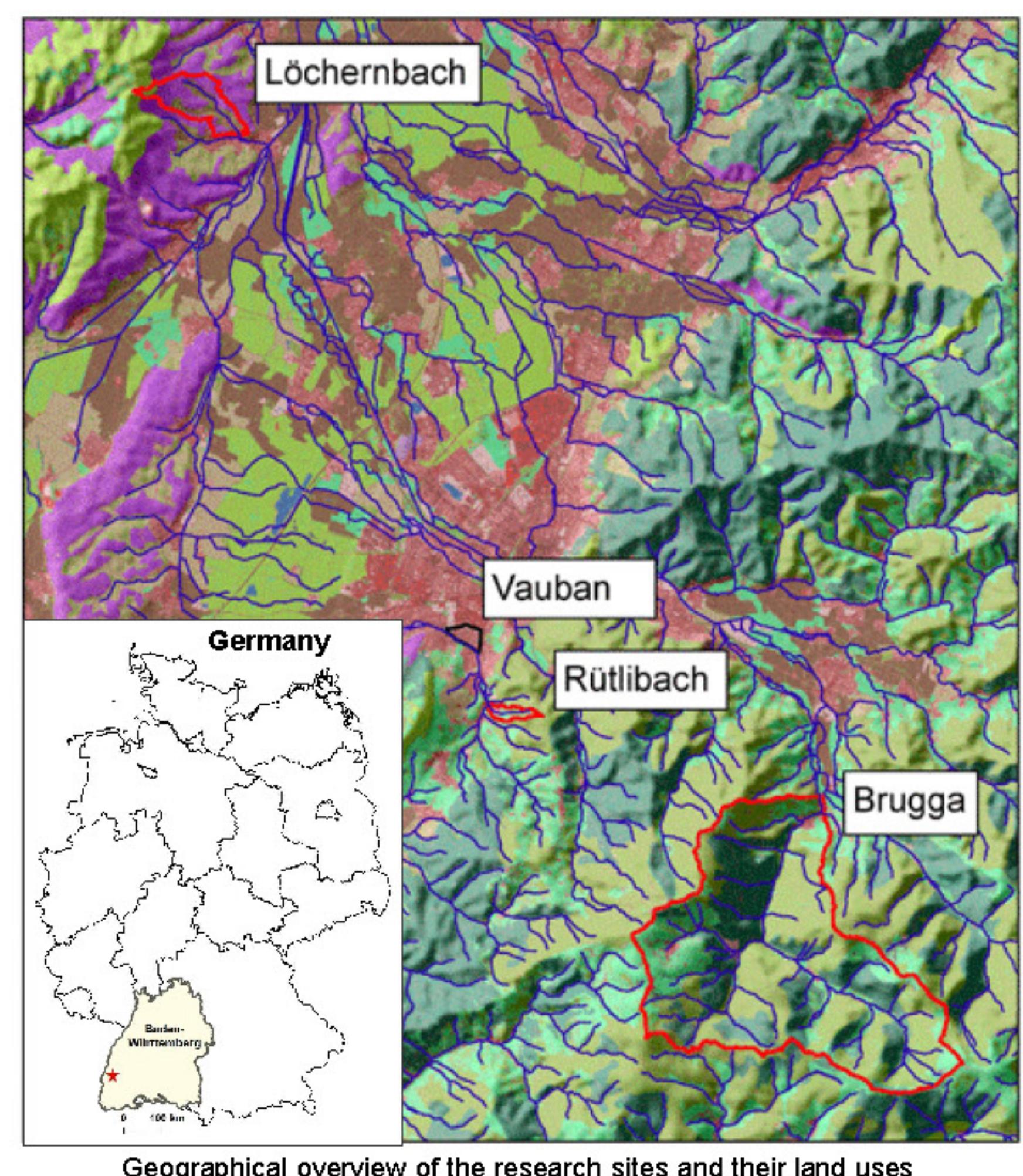


The beauty of long-term hydrological datasets: Showcasing four different catchments in South-Western Germany

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Introduction

- Long-term datasets of multiple sources ensure detailed comprehension of hydrological and biogeochemical interactions within catchments.
 - We present four catchments in South-
- Western Germany differing in size, land cover, water chemistry, topography, bedrock, soil types and rainfall-runoff characteristics that have been monitored for more than ten years.



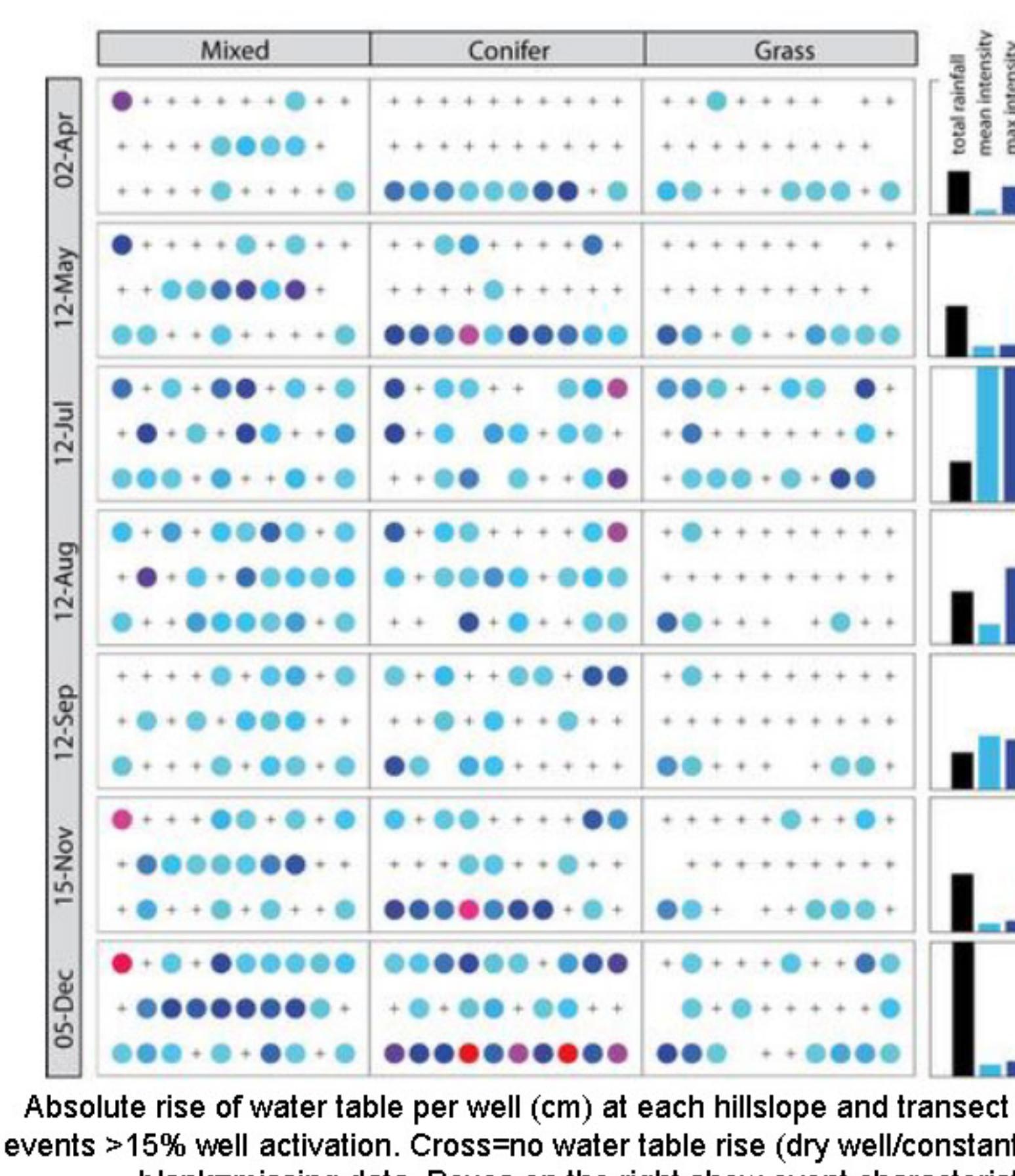
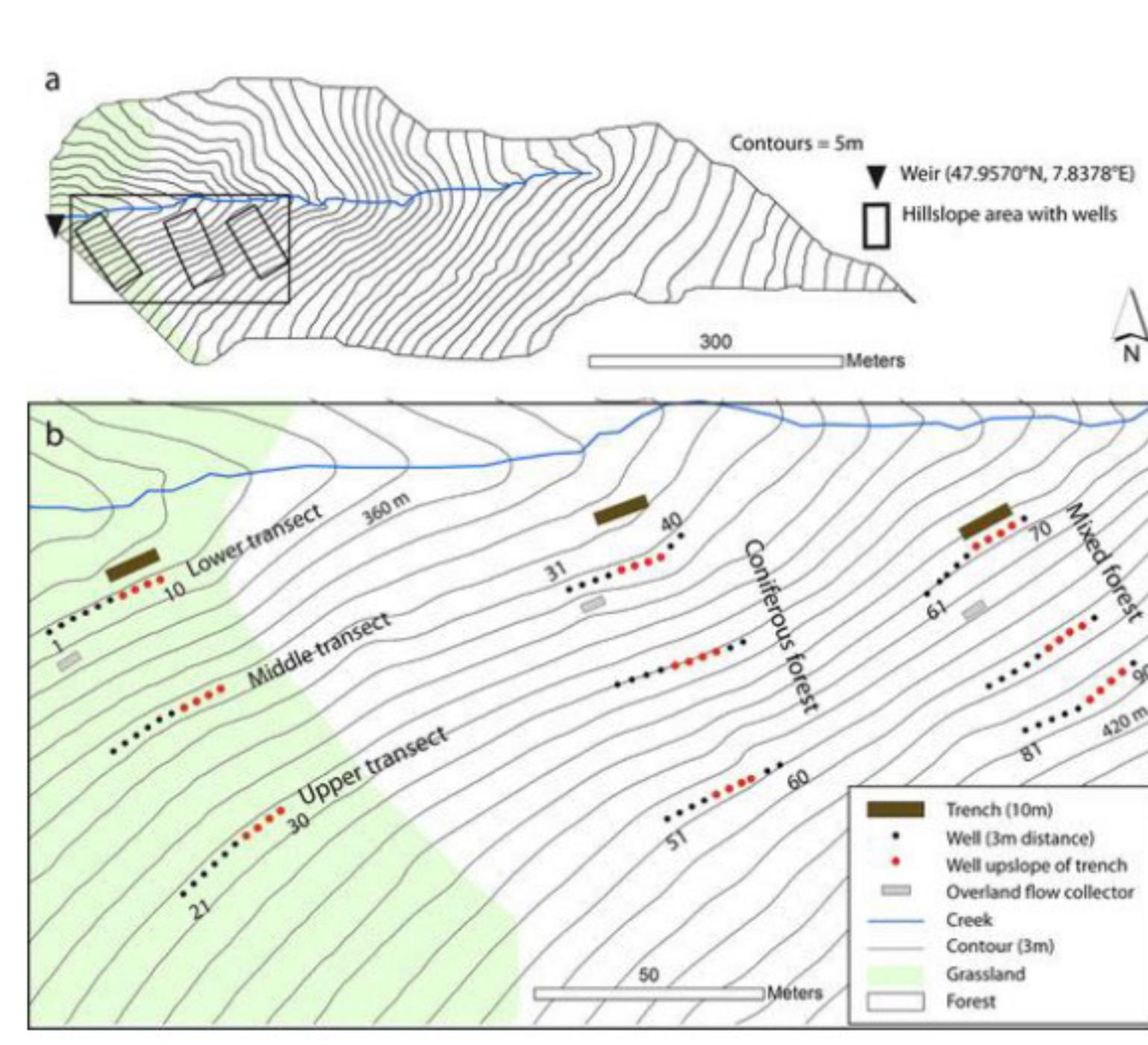
Site Characteristics

Parameter	Brugga		Loechernbach		Vauban		Ruetlibach	
Area [km ²]	40.1		1.7		0.16		0.21	
Coordinates	47.937756, 7.951661		48.101006, 7.73016		47.974813, 7.8247924		47.95708, 7.83781	
Elevation range [m a.s.l.]	1493-434		380-213		236		340-585	
Basin type	Mountainous		Submountainous		Urban		Zero-order	
Ø Annual precipitation [mm]	1730		850		856		970	
Evapotranspiration [mm]	566		625		378			
Land use [%]	Forest: 75.7; grassland: 21.8; acres: 1.5; impervious: 0.9		Vineyard: 62; mixed agriculture: 18; steep acclivities: 12; roads: 4; forest: 4		Urban: 100		Forest; grassland	
Soils	Brown earth, gley, podsol		Pararendzina, Gley		Urban		Cambisols	
Geology	Gneiss, Migmatite		Carbonatic Loess		Fluvial sediments		Crystalline bedrock overlain by periglacial drift cover	
Discharge [m ³ /s] (Qmin, Qmax, Qmean)	0.2, 33.6, 1.6		0.0005, 7.3, 0.013					

Impressions from our research sites



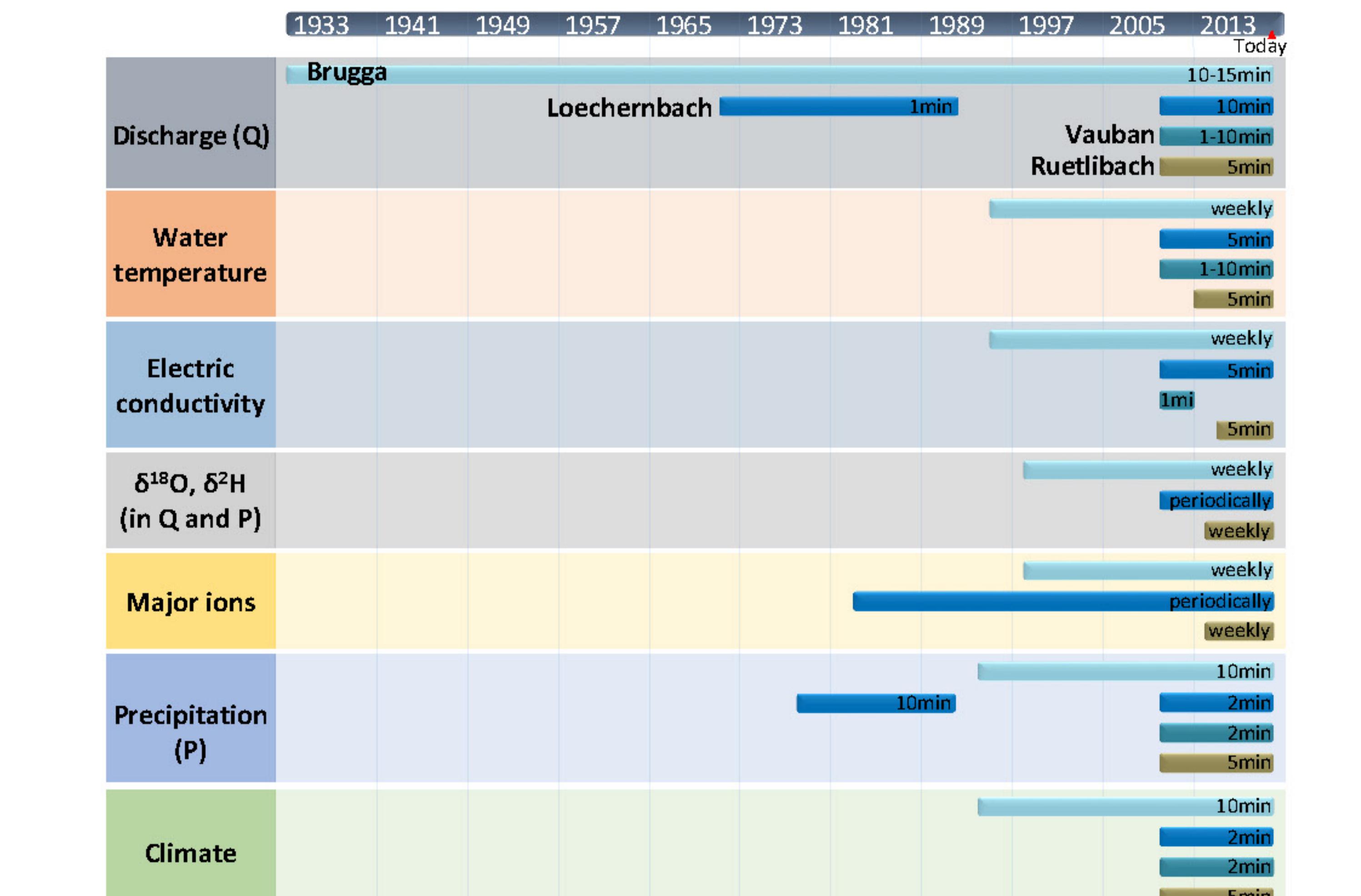
Research at the Ruetlibach



Absolute rise of water table per well (cm) at each hillslope and transect for selected events >15% well activation. Cross= no water table rise (dry well/constant water table); blank=missing data. Boxes on the right show event characteristics.

- During April and May predominantly, wells on the lower transects become activated
- During June through October well activation is spatially more variable
- In summer, saturation zones seem to extend upslope and are of limited horizontal extent
- The pattern returns to activation of the lower and middle transects in November and December
- High spatial variability of absolute rise for each event

Data availability



- Further datasets of e.g. pH, nitrate, pesticides, turbidity, surface runoff, groundwater levels and temperature and soil moisture are available for most of our four research sites.
- These long-term dataset provide great opportunities to assess hydrological flowpaths, residence times, topographic influences, and land use effects on water quality and quantity.
- We are interested in collaborations! Have ideas? Join us!