Figure S1: For each product, the daily % of probes ($N = 869$) with ≥ 1 soil moisture estimate, before masking the data based on soil temperature and snow depth. White indicates that there are no soil moisture estimates for any of the probes. The x-axis spans the evaluation period (March 31, 2015, to September 16, 2019).

Table S1: The calibrated parameter set used for the HBV simulations. We only calibrated the 7 parameters pertaining to the snow and soil routines and thus relevant for simulating soil moisture.

Parameter	Description	Calibration range	Calibrated value
BETA	Shape coefficient of recharge function ($-$)	1 to 6	5.37
FC	Maximum soil moisture storage (mm)	50 to 1000	145.48
LP	Soil moisture value above which actual evaporation reaches potential evaporation ($-$)	0.2 to 1	0.79
TT	Threshold temperature (°C)	-5 to 5	-0.58
CFMAX	Degree-day factor (mm °C^{-1} d^{-1})	0.5 to 10	1.12
CFR	Refreezing coefficient ($-$)	0 to 0.1	0.09
CWH	Water holding capacity ($-$)	0 to 0.2	0.09
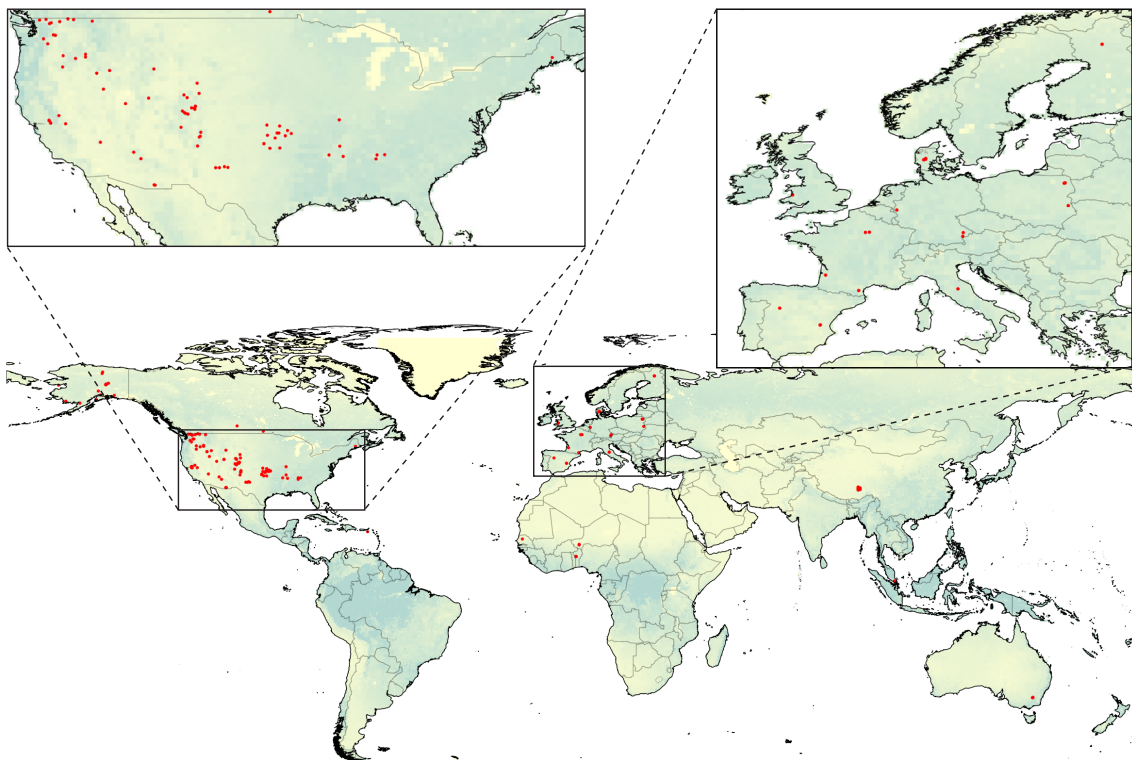
Figure S2: Location of the 177 independent probes used for the calibration of the HBV model.