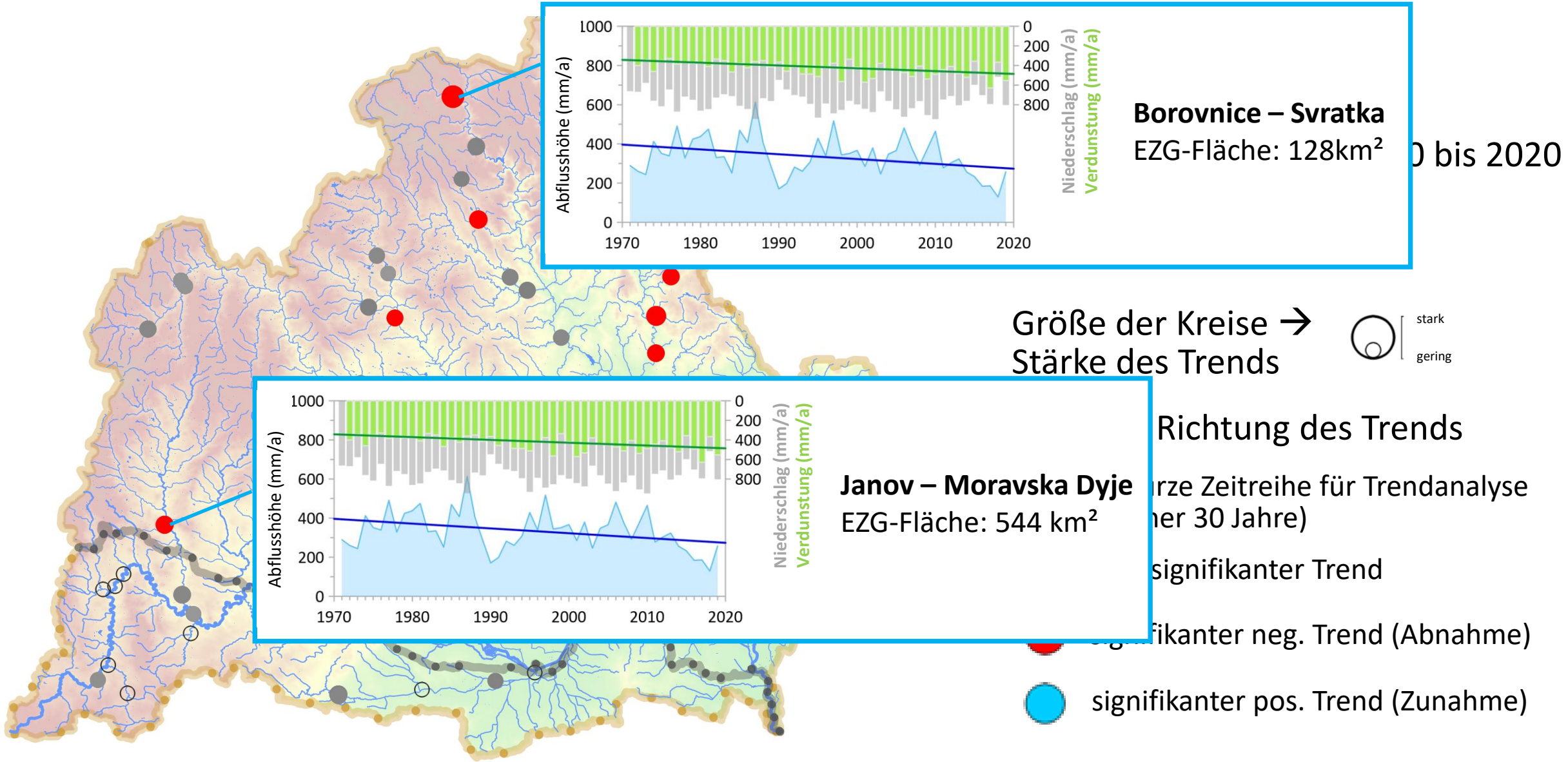


# T1 Datenanalyse



# Trends der Niederwasserabflüsse (z.B. $Q_{95}$ )

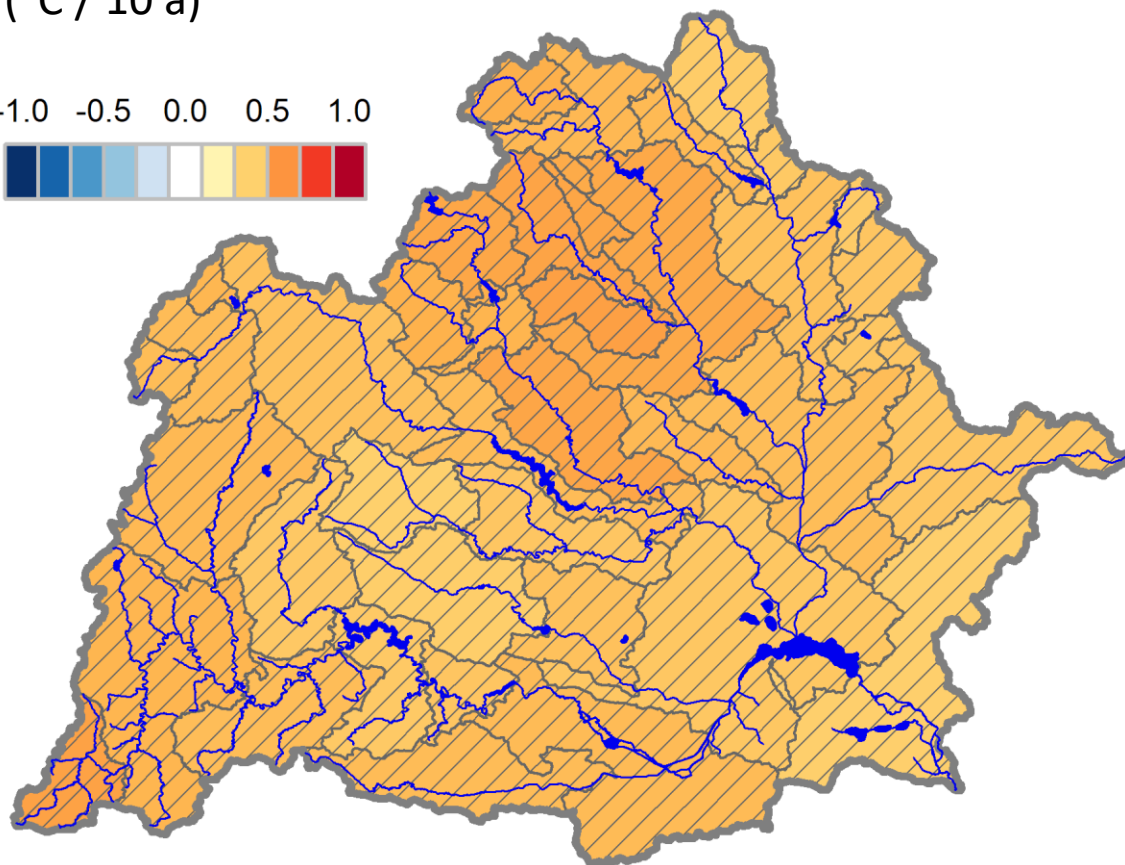
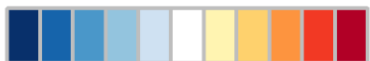


# Trendanalyse - Lufttemperatur

1981-2020

Lufttemperatur  
(°C / 10 a)

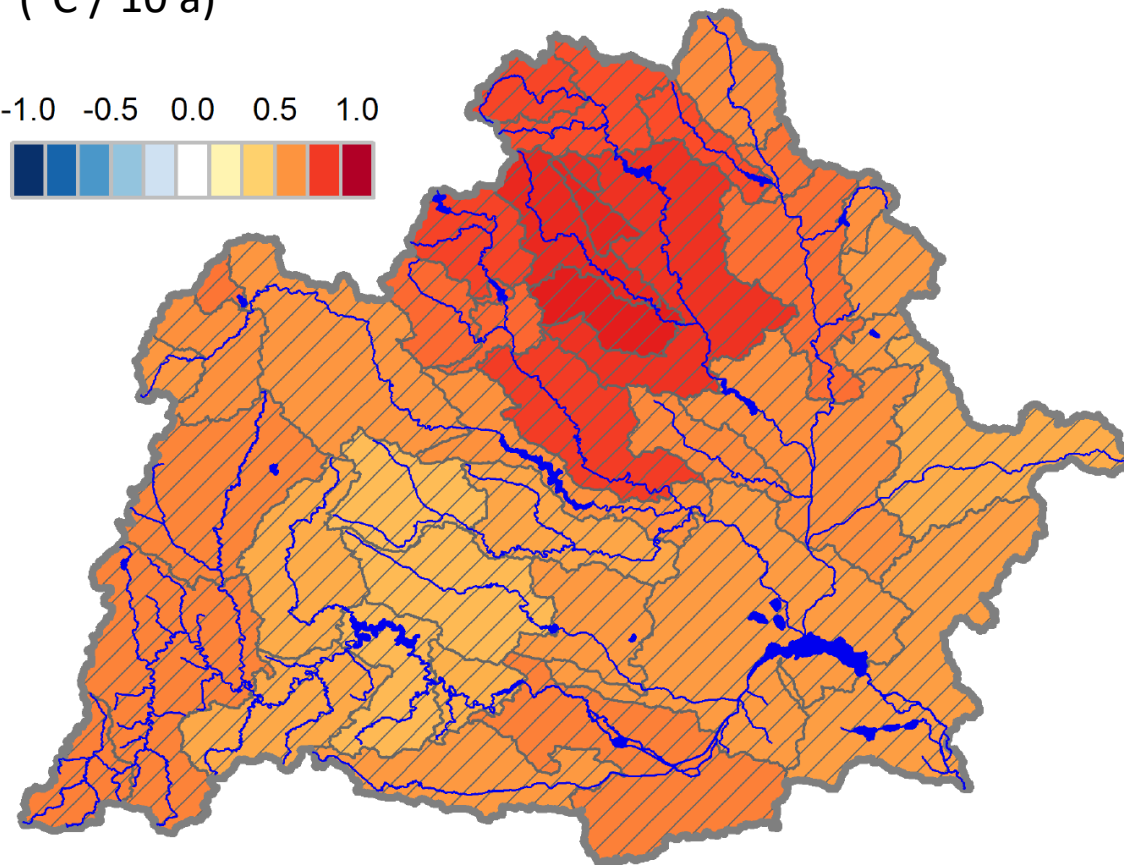
-1.0 -0.5 0.0 0.5 1.0



2000-2020

Lufttemperatur  
(°C / 10 a)

-1.0 -0.5 0.0 0.5 1.0

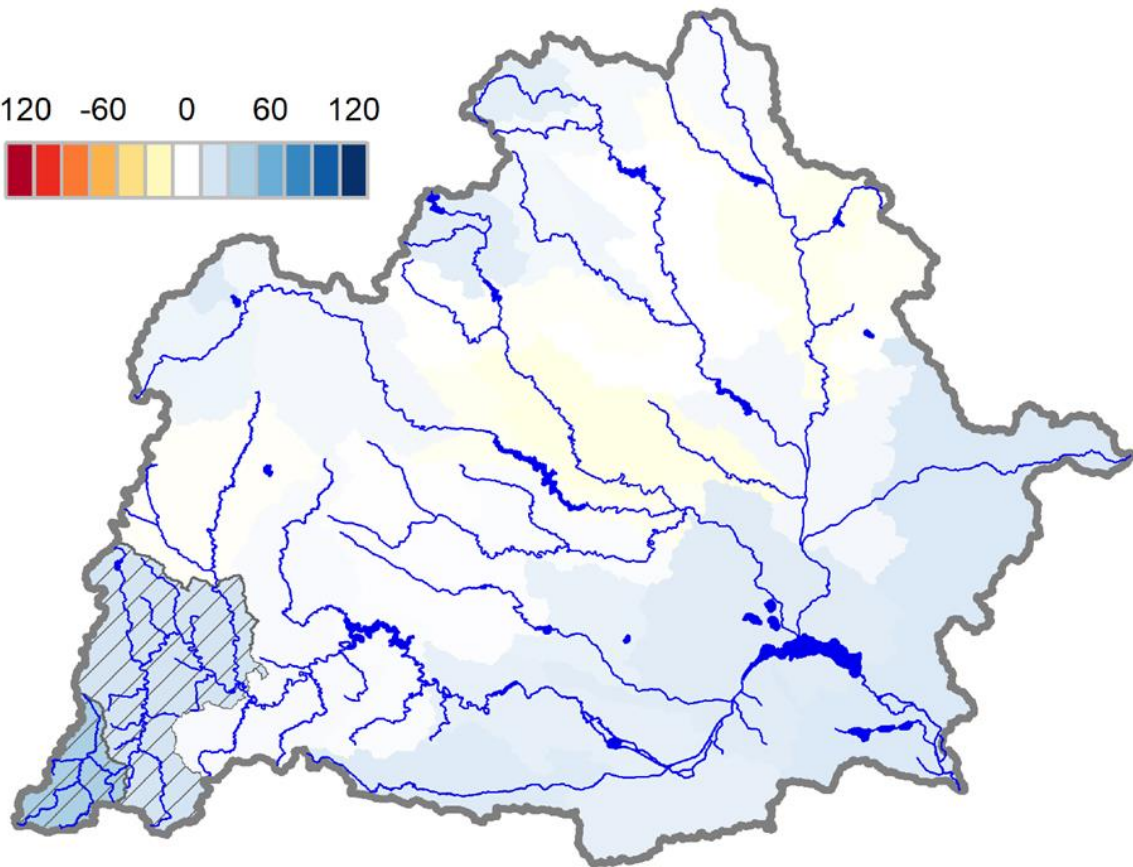
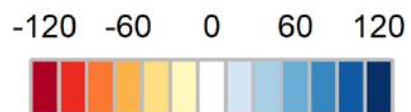


 Signifikanter Trend (5%)

# Trendanalyse - Niederschlag

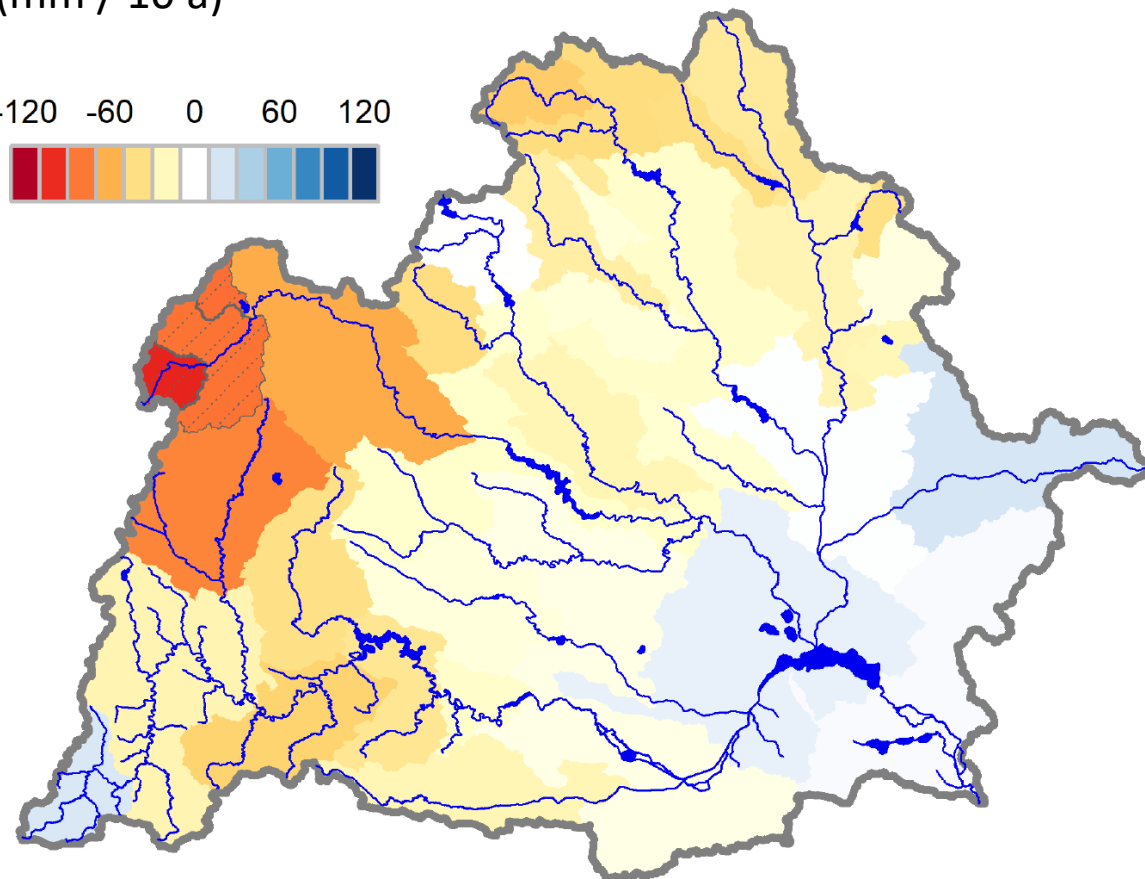
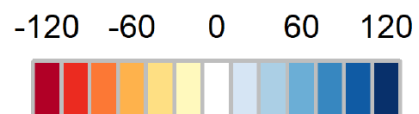
**1981-2020**

Jahresniederschlag  
(mm / 10 a)



**2000-2020**

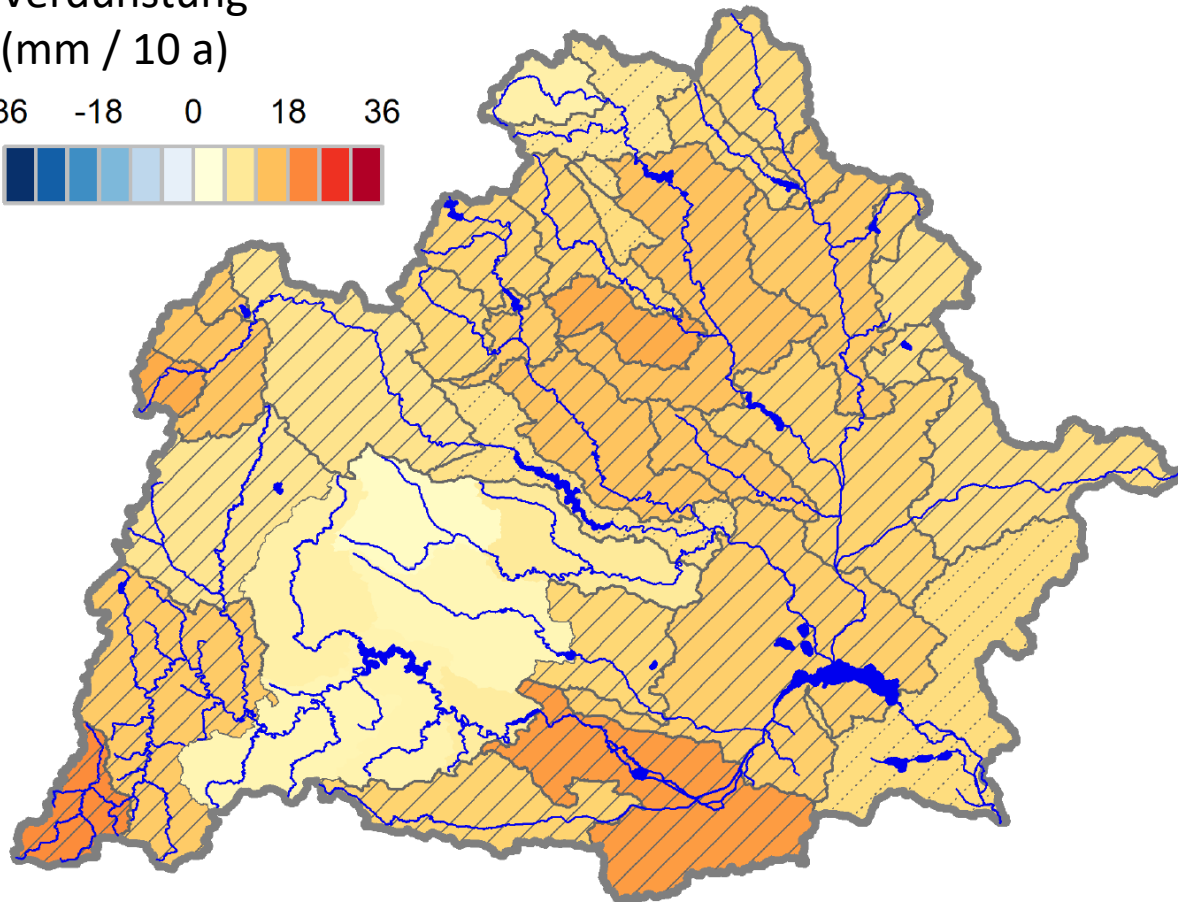
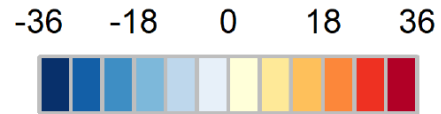
Jahresniederschlag  
(mm / 10 a)



# Trendanalyse - potentielle Verdunstung

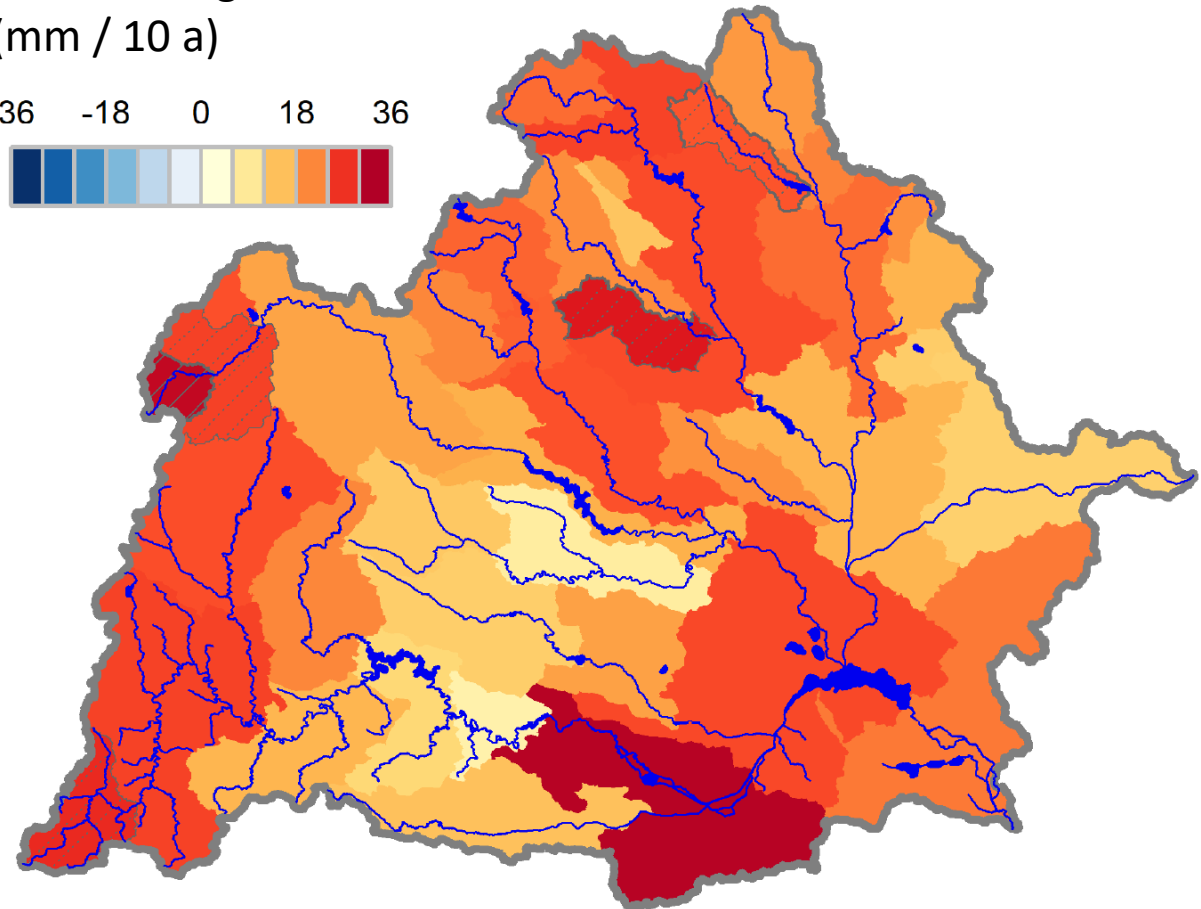
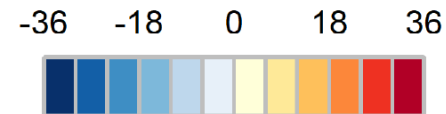
**1981-2020**

Jährliche potentielle  
Verdunstung  
(mm / 10 a)



**2000-2020**

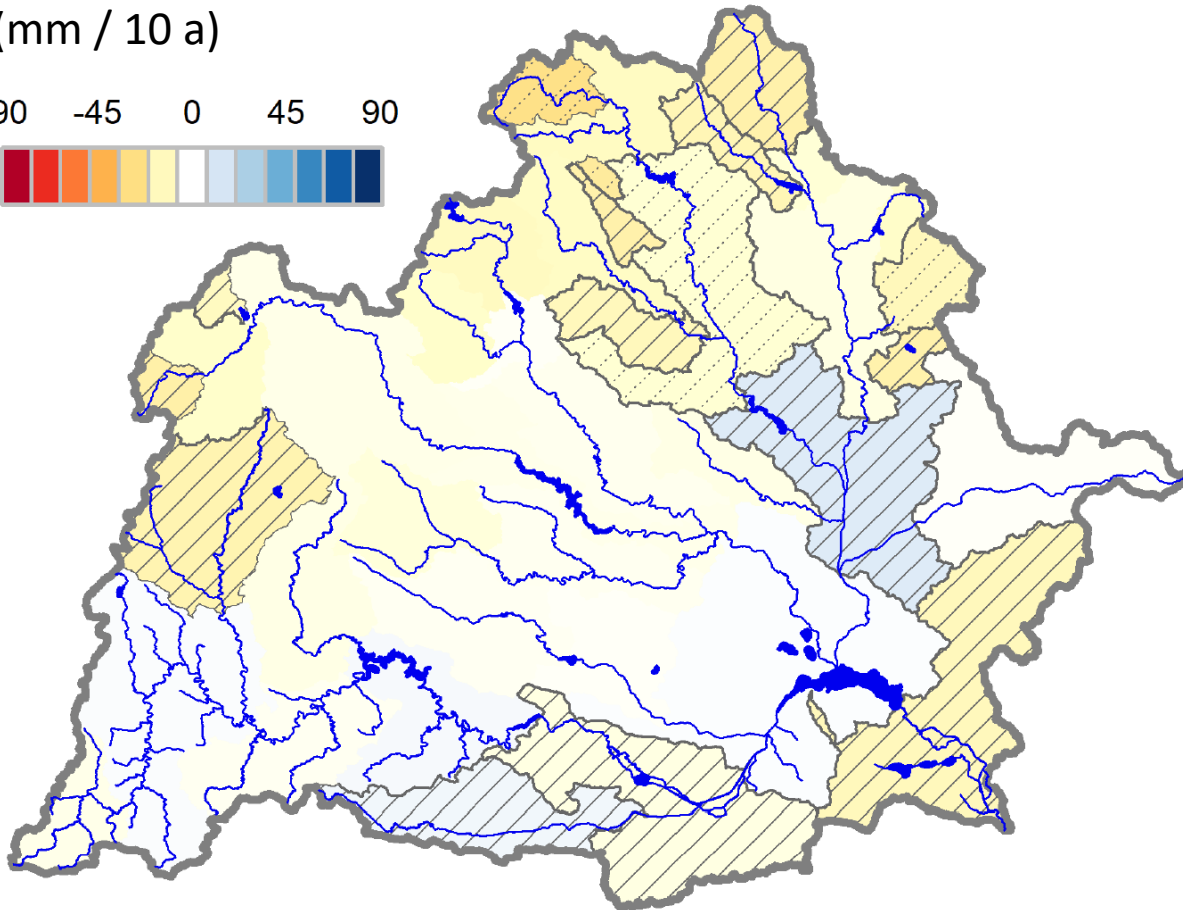
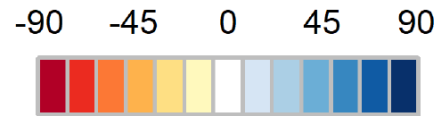
Jährliche potentielle  
Verdunstung  
(mm / 10 a)



# Trendanalyse - Abfluss

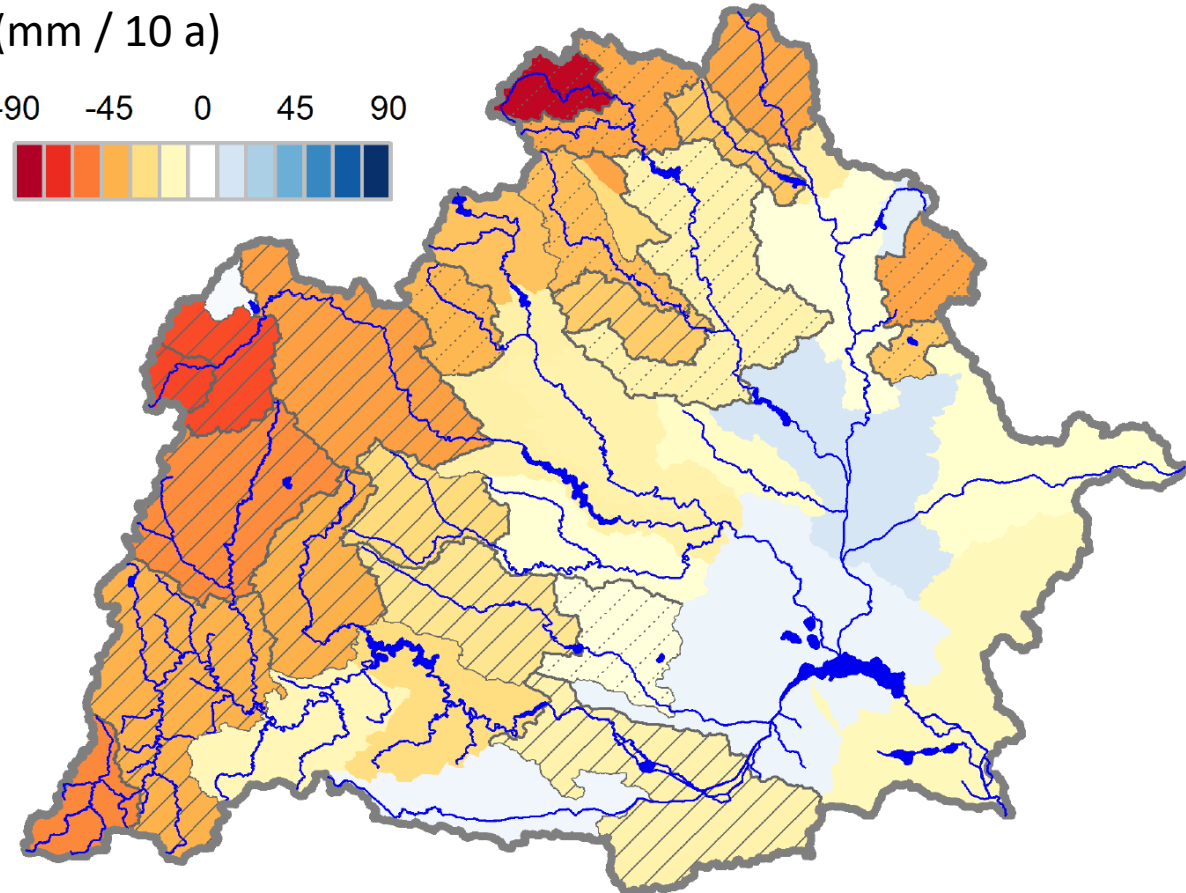
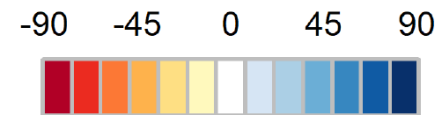
1981-2020

Jährliche Abflusshöhe  
(mm / 10 a)



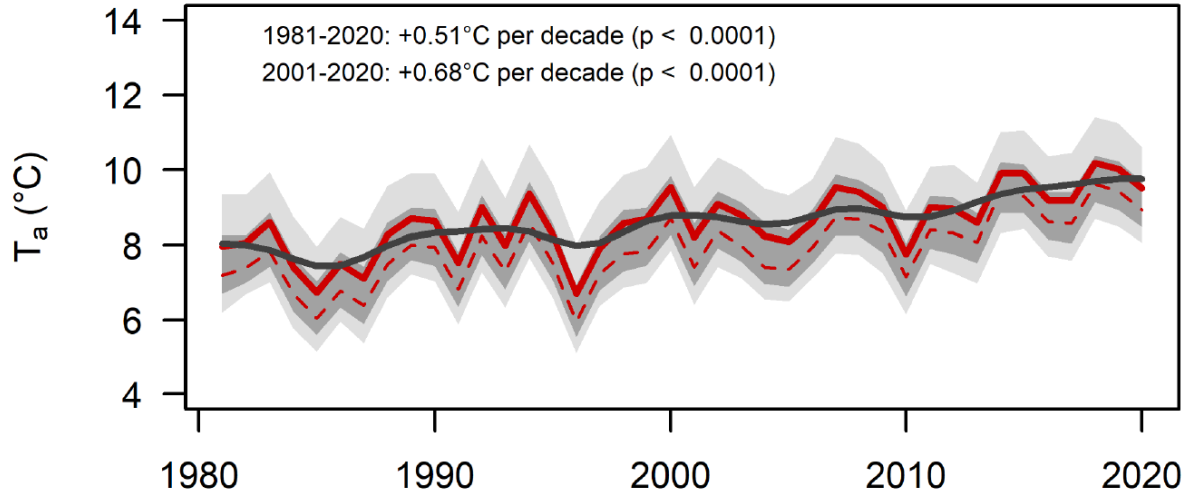
2000-2020

Jährliche Abflusshöhe  
(mm / 10 a)

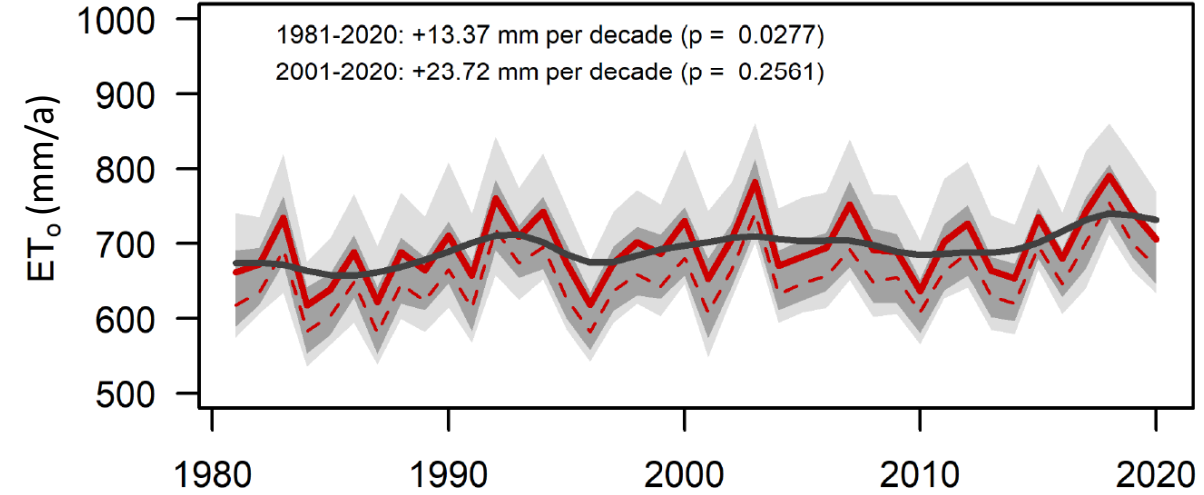


# Trendanalyse - Gebietsmittel

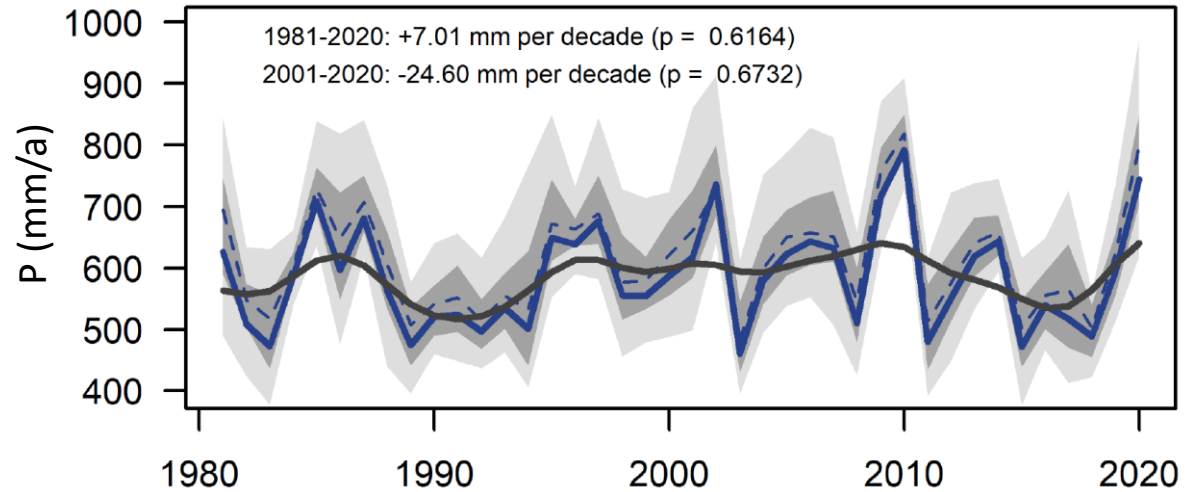
## Lufttemperatur



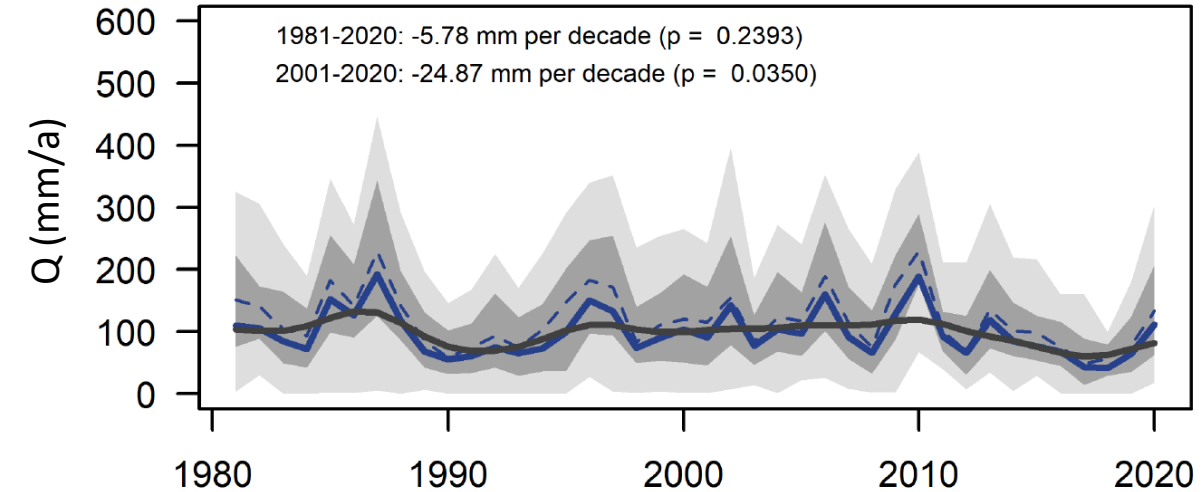
## Verdunstung



## Niederschlag



## Abflusshöhe





# Trendanalyse - Gebietsmittel

## 1981-2020

### Änderungen pro Dekade

Lufttemperatur  
Niederschlag  
Verdunstung  
**Abflusshöhe**

Variable	Period					
	AN	GS	DJF	MAM	JJA	SON
$T_a$ (°C)	+0.51	+0.49	+0.49	+0.42	+0.69	+0.41
$P$ (mm)	+7.01	+3.57	-3.18	-2.56	+4.29	+7.64
$ET_o$ (mm)	+13.37	+12.70	+0.51	+5.24	+8.46	-1.01
$P - ET_o$ (mm)	-6.45	-13.54	-3.11	-8.41	-3.63	+8.75
<b>Q (mm)</b>	<b>-5.78</b>	<b>-2.93</b>	<b>-1.13</b>	<b>-5.53</b>	<b>-0.30</b>	<b>-0.29</b>

**AN** ... ganzes Jahr  
(12 Monate)  
**GS** ... Vegetationsperiode  
(April bis September)  
(6 Monate)

**DJF** ... Winter  
(Dezember, Jänner, Februar)  
(3 Monate)

**MAM** ... Frühling  
(März, April, Mai)

**JJA** ... Sommer  
(Juni, Juli, August)

**SON** ... Herbst  
(Sept., Oktober, November)

## 2000-2020

Lufttemperatur  
Niederschlag  
Verdunstung  
**Abflusshöhe**

Variable	Period					
	AN	GS	DJF	MAM	JJA	SON
$T_a$ (°C)	+0.68	+0.41	+1.31	+0.38	+0.74	+0.71
$P$ (mm)	-24.60	-15.61	-12.53	-10.67	-18.40	+12.92
$ET_o$ (mm)	+23.72	+13.82	+3.80	+2.52	+5.84	+3.87
$P - ET_o$ (mm)	-66.10	-30.35	-12.22	-13.40	-30.86	+4.60
<b>Q (mm)</b>	<b>-24.87</b>	<b>-10.21</b>	<b>-5.47</b>	<b>-11.79</b>	<b>-2.09</b>	<b>-3.24</b>

## CZ – Daten:

- Beobachtete Werte für die Periode 2013 – 2020 (Entnahmen > 500 m<sup>3</sup>/ Monat bzw. 6000 m<sup>3</sup>/ Jahr)
- Konsenswassermengen (Monatswerte)
- Wichtige Kategorien:
  - Trinkwasserversorgung
  - Energieerzeugung
  - Landwirtschaftliche Nutzung
  - Industrie

## AT – Daten:

- Konsenswassermengen (Jahreswerte)
- Kategorien:
  - Trinkwasserversorgung (ca. 0,2%)
  - Landwirtschaftliche Nutzung (ca. 8,3%)
  - Industrie (ca. 91,5 %)

Surface water abstraction (Mill. m<sup>3</sup>/month)

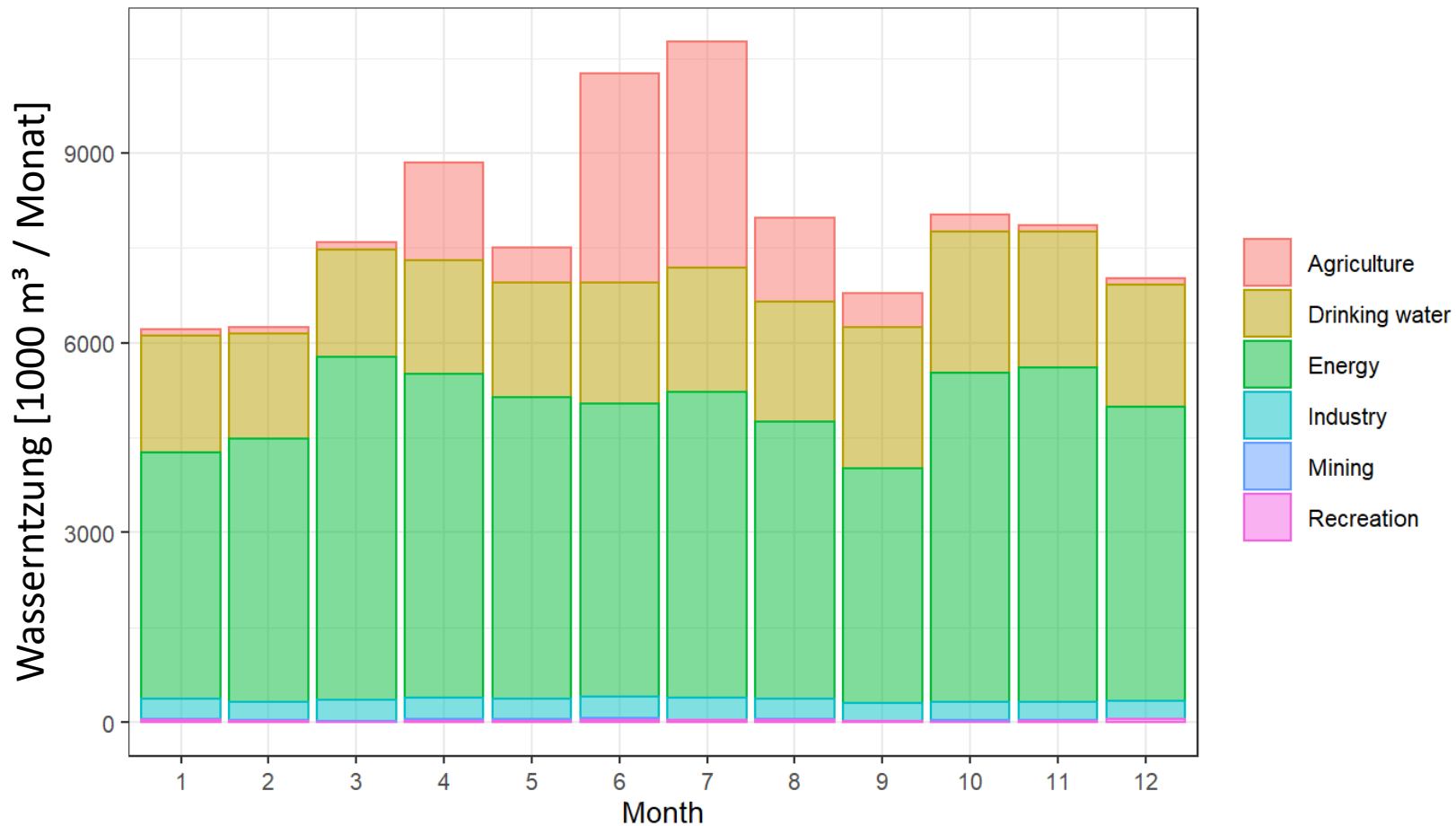


**CZ: 124 Mill. m<sup>3</sup>/yr (88.8%)**

**AT: 15 Mill. m<sup>3</sup>/yr (11.2%)**

# Wassernutzungsdaten

Ausgangsszenario für das Gesamtgebiet  
(basierend auf den Daten für 2019)



**Zukunftsszenarien**



# Future scenarios for entire basin

% changes as compared to 2019

Scenario		Industry	Drinking water	Agriculture	Energy	Recreation
SCENARIO_CZ	Based on current studies (from Czech Republic)	+ 0 %	+ 0 %	+ 50 % *	+ 10 %	+ 20 %
SCENARIO_AT	Based on current studies (from Austria: Wasserzukunft NÖ)	+ 5 %	+ 20 %	+ 50 %	+ 0 %	+ 0 %
SCENARIO_+10	Increase in all sectors	+ 10 %	+ 10 %	+ 10 %	+ 10 %	+ 10 %
SCENARIO_0	Current values	0 %	0 %	0 %	0 %	0 %
SCENARIO_-10	Decrease in all sectors **	- 10 %	- 10 %	- 10 %	- 10 %	- 10 %

\* Agriculture (primarily based on results of the projects “Centrum voda” and published in Agriculture Water Management (Potopová, V. et al, 2022)

\*\* Not very realistic: a scenario involving water treatment, after discussions from drinking water companies, it is now difficult to find savings (89 l/person/day - Czechia, 135 l/person/day - Austria)

**DANKE FÜR DIE AUFMERKSAMKEIT**

