Table S1. Geographical coordinates, elevation, and catchment of the eight selected sampling springs in the two study areas of Baumberge and Schöppinger Berg.

Study area	Spring name with selected outlet	Code	lat.	lon.	Elevation (m a.s.l.)	River catch-ment area
Baumberge	Arning East b	BB1	51° 57' 57'' N	7° 21' 56'' E	99	Münstersche Aa / Ems
	Arning West b	BB2	51° 57' 56'' N	7° 23' 58'' E	98	
	Stever a	BB3	51° 57' 13'' N	7° 22' 11'' E	107	Stever / Lippe / Rhein
	Stever new	BB4	51° 57' 14'' N	7° 22' 12'' E	107	
Schöppinger Berg	Werning a	SB1	52° 6' 33'' N	7° 14' 15'' E	82	Vechte
	Leerbach a	SB2	52° 6' 25'' N	7° 17' 50'' E	86.6	Steinfurter Aa / Vechte / Ijsselmeer
	Schwarthoff d	SB3	52° 6' 6'' N	7° 17' 50'' E	86	
	Kirche a	SB4	52° 5' 36'' N	7° 17' 50'' E	84.5	Vechte / Ijs-selmeer

Table S2. Abundant taxa recorded in Baumberge and Schöppinger Berg springs within five sampling campaigns (Nov.2018, Jan., April., Jul. and Oct. 2019).

Ecological category	Taxa group	Species	Baumberge				Schöppinger Berg			
			BB1	BB2	BB3	BB4	SB1	SB2	SB3	SB4
stygobites	Crustaceans	amphipods				7	1			
		cyclopoids	31	273	20	39	64	139	22	3
		harpacticoids	2	27	3	5	6			
		ostracods	2	30	3		5			
		isopods			1		1			
		syncarida				1				
	Worms	oligochaete	10	6	5	3				
		nematodes			4		2	2	2	1
		micro turbellaria	2	5	4	1	1	2		
	Arthropods	acari		1	3	1	3	2	2	
	Mollusca	gastropods		2	1					
non-stygobites	Crustaceans	amphipods	2	29	2		4		1	6
		cyclopoids	96	199	6	13	17	82	9	3
		isopods		1	1	1				
	Insects	other insects			6	3	1			
		diptera	13	5	31	3	34	2		
	Worms	nematodes	1			2				
		oligochaete	6							
		macro turbellaria	20	4	22	3	10	1	1	

Table S3. Spearman correlation coefficient matrix (correlation coefficients are significant at $p \leq 0.01$ (two-tailed)) for biotic and abiotic parameters in the BB springs at Baumberge from Nov. 2018 to Oct. 2019 in five sampling campaigns.

Parameter	$\overline{I_{sb\_d}}$	$\overline{I_{sb\_V}}$	$\overline{I_{sf\_d}}$	$\overline{I_{sf\_V}}$	GFI	sb_{TOT}	sf_{TOT}	Detritus	h_{GW}	V	EC	DO	pH	Temp.
Temp.														
pH														
DO														
EC					-0.6				0.4					
V									0.4					
h_{GW}	0.4				-0.5									
Detritus	0.4	0.5	0.4	0.4	0.5	0.5	0.5							
sf_{TOT}	0.7	0.9	0.7	0.9		0.9								
sb_{TOT}	0.6	0.9	0.7	0.8										
GFI		0.4												
$\overline{I_{sf\_V}}$	0.7	0.9	0.7											
$\overline{I_{sf\_d}}$	0.9	0.6												
$\overline{I_{sb\_V}}$	0.5													
$\overline{I_{sb\_d}}$														

Table S4. Spearman correlation coefficients matrix (correlation coefficients are significant at $p \leq 0.01$ (2-tailed)) for biotic and abiotic parameters in the SB springs at Schöppinger Berg from Nov. 2018 to Oct. 2019 in five sampling campaigns.

Parameter	$\overline{I_{sb\_d}}$	$\overline{I_{sb\_V}}$	$\overline{I_{sf\_d}}$	$\overline{I_{sf\_V}}$	GFI	sb_{TOT}	sf_{TOT}	Detritus	h_{GW}	V	EC	DO	pH	Temp.
Temp.														
pH														
DO	0.7		0.6			0.6	0.5	0.5		0.5				
EC					-0.7			-0.6						
V								0.6						
h_{GW}														
Detritus	0.5				0.7									
sf_{TOT}	0.7		0.8			0.9								
sb_{TOT}	0.8		0.8											
GFI														
$\overline{I_{sf\_V}}$		0.9												
$\overline{I_{sf\_d}}$	0.9													
$\overline{I_{sb\_V}}$														
$\overline{I_{sb\_d}}$														

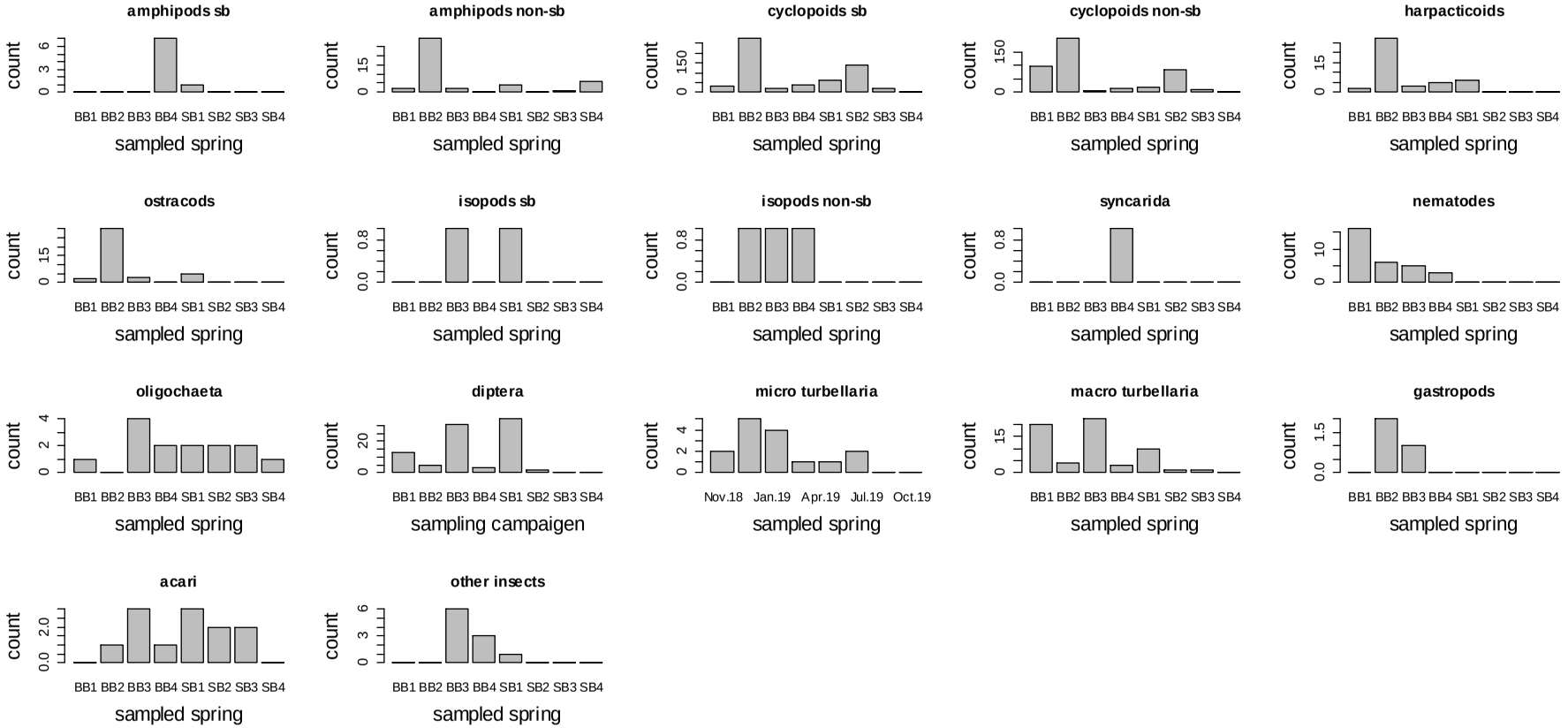

Figure S1. Matrix of bar plots of different types of invertebrates for each sampled spring.

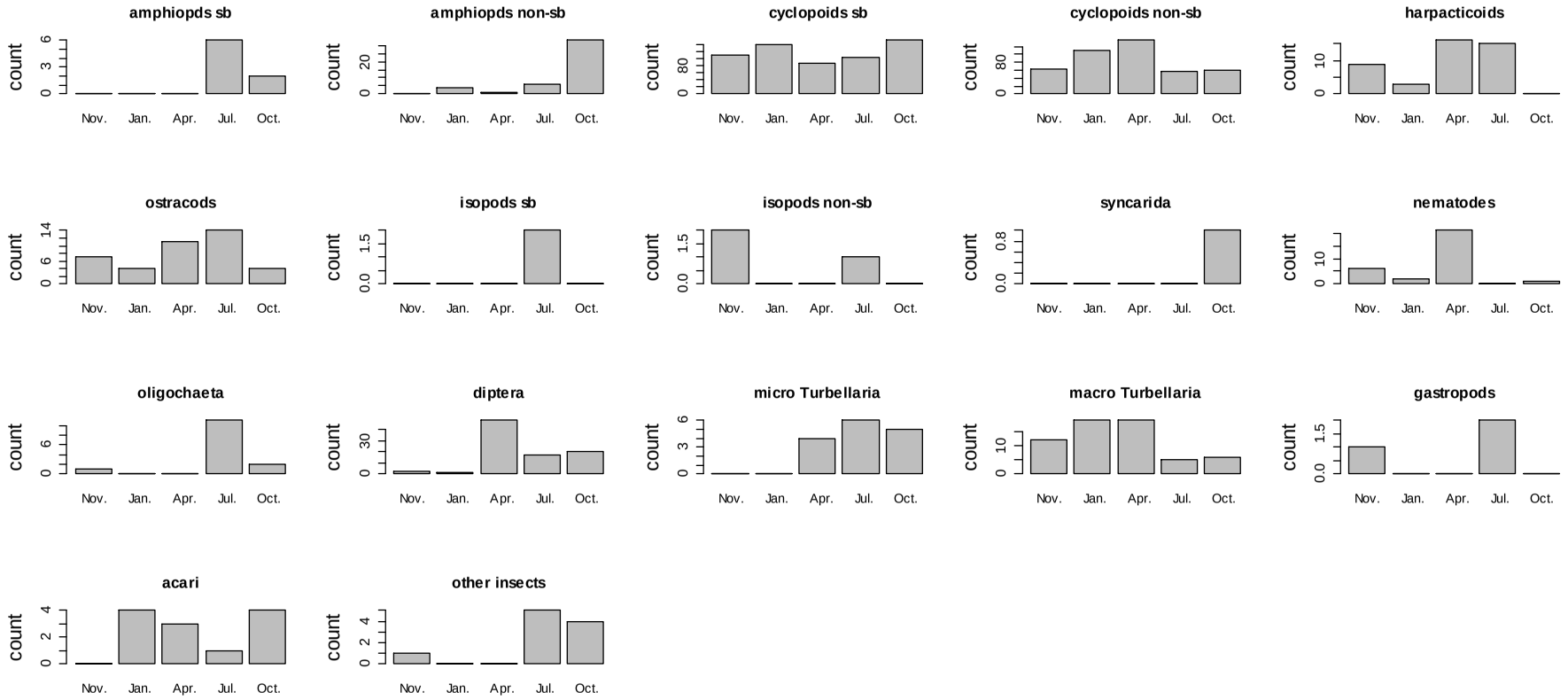

Figure S2. Matrix of bar plots of different types of invertebrates for different sampling campaigns.

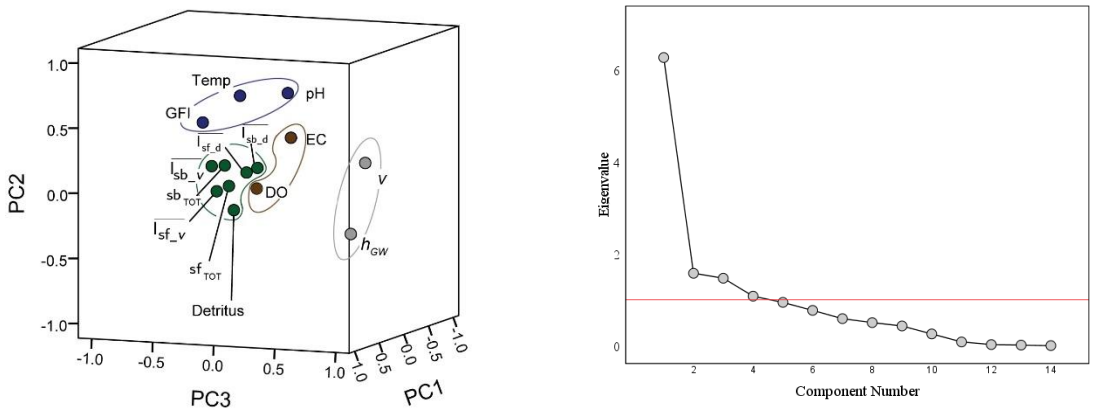

Figure S3. Scree plot (right) and component plot in rotated space (left) of principal component loadings of 14 variables for 80 samples collected from Nov. 2018 to Oct. 2019 in five sampling campaigns in Baumberge (horizontal red line: eigenvalue = 1

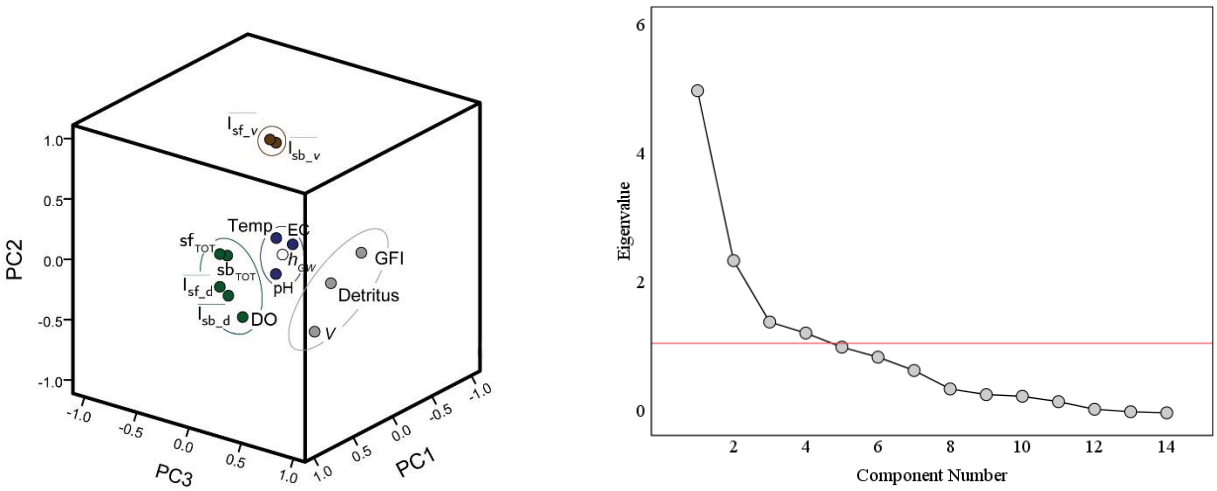

Figure S4. Scree plot (right) and component plot in rotated space (left) of principal component loadings of 14 variables for 80 samples collected from Nov. 2018 to Oct. 2019 in five sampling campaigns in Schöppinger Berg (horizontal red line: eigenvalue = 1).