Ecography

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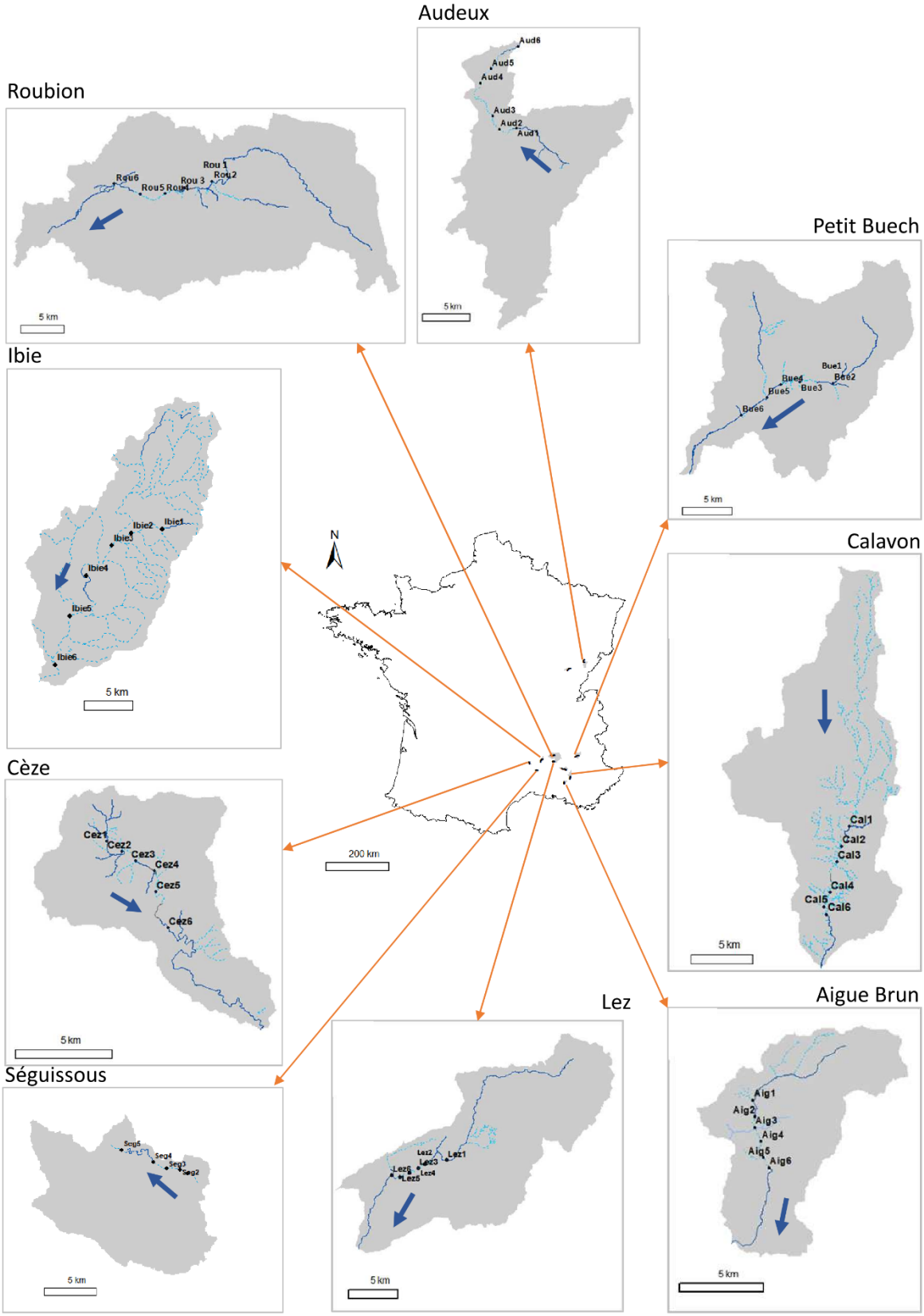
Supplementary material

Appendix 1: Map of all other basins and sites. Reaches are represented as reported on Figure 2.



Appendix 2: Environmental characteristics of the different basins

A- Electrical conductivity, pH, water temperature, dissolved oxygen concentration and oxygen saturation were measured with Hach Lange® HQ40d et HQ14d devices at each sampling site.

Mean values, standard deviation and variation coefficient are presented below.

River	Spatial arrange-ment	Temperature (°C)			pH			Conductivity (S/m)			O2 (mg/L)			O2 saturation (%)		
		mean	sd	cv	mean	sd	cv	mean	sd	cv	mean	sd	cv	mean	sd	cv
aigue brun	DDB	14.0	5.0	35.8	8.2	0.2	2.9	445.50	60.18	13.51	10.82	0.88	8.13	106.4	8.6	8.1
audeux	DDB	8.2	4.1	50.2	8.4	0.2	1.9	431.13	51.13	11.86	12.23	1.14	9.33	104.8	17.3	16.5
calavon	DDB	10.2	4.6	45.4	8.0	0.5	6.6	720.66	142.94	19.83	9.67	2.92	30.16	87.9	23.8	27.1
ceze	DDB	11.2	4.8	43.1	7.3	0.3	3.7	64.33	9.41	14.63	10.43	1.35	12.95	97.6	5.3	5.5
lez	DDB	13.0	3.6	27.6	8.1	0.2	2.6	449.77	29.79	6.62	10.34	1.21	11.69	99.2	11.4	11.5
petit buech	DDB	10.5	5.7	54.3	8.2	0.2	3.0	341.00	60.39	17.71	10.46	1.11	10.64	101.8	5.0	4.9
roubion	DDB	12.0	5.4	44.9	8.1	0.2	2.8	503.98	58.39	11.59	11.29	1.16	10.27	105.5	12.1	11.5
toulourenc	DDB	13.0	7.0	53.9	8.2	0.2	2.1	495.47	66.51	13.42	10.61	1.35	12.76	104.6	10.8	10.3
clauge	UDB	6.8	4.0	59.1	6.8	0.4	6.2	41.30	53.03	128.39	11.26	1.40	12.41	92.9	7.4	7.9
ibie	UDB	12.1	3.6	30.2	7.8	0.2	2.9	509.50	28.79	5.65	10.15	1.66	16.32	91.7	19.1	20.8
seguissous	UDB	12.1	4.9	40.7	7.8	0.2	3.0	617.33	108.71	17.61	9.88	1.53	15.47	92.9	12.4	13.4
-	All DDB	10.8	5.4	50.6	8.1	0.4	5.1	416.4	178.3	42.8	10.9	1.6	14.9	101.6	12.8	12.6
-	All UDB	9.4	4.6	49.3	7.3	0.7	8.8	322.7	267.0	82.7	10.8	1.6	15.2	93.2	12.4	13.3

B – Results of pairwise Wilcoxon-tests for pH, conductivity and oxygen concentration

Gray cells are not significant.

pH

	aigue brun	audeux	calavon	ceze	clauge	ibie	lez	petit buech	roubion	seguissous	toulourenc	
aigue brun	*NA*											*DDB*
audeux	0.795	*NA*										*DDB*
calavon	0.206	0.056	*NA*									*DDB*
ceze	0.000	0.000	0.000	*NA*								*DDB*
clauge	0.000	0.000	0.000	0.000	*NA*							**UDB**
ibie	0.000	0.000	0.001	0.000	0.000	*NA*						**UDB**
lez	0.000	0.000	0.154	0.000	0.000	0.000	*NA*					DDB
petit buech	0.033	0.000	0.937	0.000	0.000	0.000	0.016	*NA*				*DDB*
roubion	0.000	0.000	0.309	0.000	0.000	0.000	0.667	0.040	*NA*			*DDB*
seguissous	0.000	0.000	0.010	0.000	0.000	0.340	0.000	0.000	0.000	*NA*		**UDB**
toulourenc	0.084	0.000	0.722	0.000	0.000	0.000	0.001	0.602	0.004	0.000	*NA*	*DDB*
	DDB	*DDB*	*DDB*	*DDB*	**UDB**	**UDB**	*DDB*	*DDB*	*DDB*	**UDB**	*DDB*	

Conductivity

	aigue brun	audeux	calavon	ceze	clauge	ibie	lez	petit buech	roubion	seguissous	toulourenc	
aigue brun	*NA*											*DDB*
audeux	0.476	*NA*										*DDB*
calavon	0.000	0.000	*NA*									*DDB*
ceze	0.000	0.000	0.000	*NA*								*DDB*
clauge	0.000	0.000	0.000	0.000	*NA*							**UDB**
ibie	0.000	0.000	0.000	0.000	0.000	*NA*						**UDB**
lez	0.003	0.359	0.000	0.000	0.000	0.000	*NA*					DDB
petit buech	0.000	0.000	0.000	0.000	0.000	0.000	0.000	*NA*				*DDB*
roubion	0.000	0.000	0.000	0.000	0.000	0.116	0.000	0.000	*NA*			*DDB*
seguissous	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	*NA*		**UDB**
toulourenc	0.000	0.000	0.000	0.000	0.000	0.129	0.000	0.000	0.412	0.000	*NA*	*DDB*
	DDB	*DDB*	*DDB*	*DDB*	**UDB**	**UDB**	*DDB*	*DDB*	*DDB*	**UDB**	*DDB*	

Dissolved oxygen concentration

	aigue brun	audeux	calavon	ceze	clauge	ibie	lez	petit buech	roubion	seguissous	toulourenc	
aigue brun	*NA*											*DDB*
audeux	0.000	*NA*										*DDB*
calavon	0.290	0.000	*NA*									*DDB*
ceze	0.159	0.000	0.663	*NA*								*DDB*
clauge	0.037	0.002	0.016	0.001	*NA*							**UDB**
ibie	0.051	0.000	0.756	0.402	0.000	*NA*						**UDB**
lez	0.077	0.000	0.828	0.701	0.000	0.612	*NA*					DDB
petit buech	0.169	0.000	0.731	0.994	0.000	0.413	0.662	*NA*				*DDB*
roubion	0.110	0.000	0.026	0.002	0.505	0.001	0.000	0.001	*NA*			*DDB*
seguissous	0.010	0.000	0.720	0.139	0.000	0.468	0.155	0.096	0.000	*NA*		**UDB**
toulourenc	0.435	0.000	0.421	0.448	0.006	0.210	0.254	0.499	0.013	0.044	*NA*	*DDB*
	DDB	*DDB*	*DDB*	*DDB*	**UDB**	**UDB**	*DDB*	*DDB*	*DDB*	**UDB**	*DDB*	

C – Tests on spatial beta diversity with different subsets to account for environmental heterogeneity

To test for the effect of environmental heterogeneity on spatial beta diversity, we removed the Clauge river (UDB with high variability of pH and conductivity) and the Audeux and Lez rivers (DDB with low variability in pH and conductivity) and reran the test: spatial beta diversity is still much higher at UDB compared to DDB (0.293 vs 0.238, $F= 11.7$, $p<0.001$***).

To test for a possible confounding effect of catchment size, we removed the largest UDB (Ibie river) and the three smallest DDB (Cèze, Aigue Brun and Toulourenc rivers) and reran the models: spatial beta diversity was still much higher on UDB compared to DDB (0.281 vs 0.254, $F=4.5$, $p = 0.033$*).

We also explored for a potential effect of the %drying length and hypothesized that a longer portion drying may lead to a higher spatial beta diversity even if this is not obvious. We removed the UDB with the longest dry reach (Ibie river) and the three DDB with the smallest drying reach (Roubion, Petit Buech, and Toulourenc rivers). Spatial beta diversity was still higher on UDB compared to DDB (0.281 vs 0.244, $F=8.0$ $p = 0.005$**).

These results suggests that observed patterns in the manuscript are robust.

Appendix 3: Functional traits

Appendix 3A: List of traits and modalities from Tachet et al. (2010) used in functional beta diversity analyses.

Traits	Modalities
2- Life cycle duration	Short (≤ 1 year)
	Long (> 1 year)
3- Potential number of cycles per year	Semivoltine
	Univoltine
	Multivoltine
4- Aquatic stages	Egg
	Larva
	Nymph
	Adult
5- Reproduction	Ovoviviparity
	Isolated eggs (Free)
	Isolated eggs (Cemented)
	Clutches (Cemented or fixed)
	Clutches (Free)
	Clutches (In vegetation)
	Clutches (Terrestrial)
	Asexual reproduction
6- Dispersal	Aquatic passive
	Aquatic active
	Aerial passive
	Aerial active
7- Resistance forms	Eggs, Statoblasts
	Cocoons
	Housings against desiccation
	Diapause or dormancy
	None
8- Respiration	Tegument
	Gill
	Plastron
	Spiracle
	Hydrostatic vesicle
9- Locomotion and substrate relation	Flier
	Surface swimmer
	Full water swimmer
	Crawler
	Burrower
	Interstitial
	Temporarily attached
	Permanently attached

Appendix 3B: Coding from Tachet 2010 for selected traits for taxa from our dataset

Code trait	2	2	3	3	3	4	4	4	4	5	5	5	5	5	5	5	5	6	6	6	6	7	7	7	7	7	8	8	8	8	8	9	9	9	9	9	9	9	9
Code modality	1	2	1	2	3	1	2	3	4	1	2	3	4	5	6	7	8	1	2	3	4	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	6	7	8
acentrella	3	0	0	3	0	3	3	0	0	0	0	0	3	0	0	0	0	2	1	1	2	0	0	0	0	2	1	2	0	0	0	0	0	1	4	0	0	0	0
acroloxus	3	0	0	3	0	3	0	0	3	0	0	0	3	0	0	0	0	2	1	0	0	0	0	0	0	2	3	0	0	0	0	0	0	0	1	3	0	0	0
aeshnidae	1	3	2	1	0	2	3	0	0	0	0	0	0	0	3	1	0	1	1	0	3	1	0	0	1	2	1	3	0	0	0	0	0	0	5	0	0	0	0
agabus	0	3	0	3	1	3	3	0	2	0	0	0	3	0	1	0	0	1	1	0	3	0	0	0	0	3	1	0	0	3	0	1	0	3	3	0	0	0	0
agapetus	3	0	0	3	1	3	3	3	0	0	0	0	3	0	0	0	0	1	2	1	1	0	2	0	2	0	3	0	0	0	0	0	0	0	1	0	0	3	0
agraylea	3	0	0	1	3	3	3	3	0	0	0	0	3	0	0	0	0	1	1	1	1	0	0	0	0	3	3	0	0	0	0	0	0	1	3	0	0	1	0
agriotypus	3	0	0	3	0	3	3	3	1	0	0	3	0	0	0	0	0	0	0	0	3	0	0	0	3	0	3	0	0	3	0	0	0	1	0	0	0	1	3
allogamus	3	0	0	3	0	3	3	3	0	0	0	0	1	0	0	0	0	0	2	0	3	0	0	0	0	3	3	2	0	0	0	0	0	0	5	0	0	0	0
allotrichia	3	0	0	1	3	3	3	3	0	0	0	0	3	0	0	0	0	1	1	1	1	0	0	0	0	3	3	0	0	0	0	0	0	0	3	0	0	1	0
amphinemura	3	0	0	3	0	3	3	0	0	0	0	3	0	0	0	0	0	2	2	0	1	1	0	0	2	2	3	2	0	0	0	0	0	0	5	0	0	0	0
anabolia	3	0	0	3	0	3	3	3	0	0	0	0	3	0	0	0	0	3	2	0	3	0	0	0	3	1	2	3	0	0	0	0	0	0	5	0	0	0	0
anacaena	1	3	0	3	1	3	3	0	2	0	0	0	3	0	0	0	0	0	1	0	3	0	0	0	0	3	1	0	1	3	0	1	0	3	3	0	0	0	0
ancylus	3	0	0	3	0	3	0	0	3	0	0	0	3	0	0	0	0	2	1	1	0	0	0	0	0	2	3	0	0	0	0	0	0	0	3	0	0	2	0
anthomyiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
antocha	1	0	0	3	1	2	1	0	0	0	1	0	1	0	0	0	0	0	1	2	1	0	0	0	0	2	1	0	0	3	0	0	0	0	2	3	0	0	0
asellidae	2	2	0	1	3	3	3	0	3	3	0	0	0	0	0	0	0	3	0	0	0	0	0	0	2	2	0	3	0	0	0	0	0	0	3	0	2	0	0
asellus	3	1	0	1	3	3	3	0	3	3	0	0	0	0	0	0	0	3	0	0	0	0	0	0	2	2	0	3	0	0	0	0	0	0	3	0	2	0	0
atherix	3	1	1	3	0	0	3	0	0	0	0	0	0	0	0	3	0	0	1	0	1	0	0	0	0	3	0	1	0	0	0	0	0	0	5	0	2	0	0
athripsodes	3	0	0	3	0	3	3	3	0	0	0	0	3	0	0	0	0	2	1	1	3	0	0	0	0	3	2	3	0	0	0	0	0	0	5	0	0	0	0
atrichops	3	1	1	3	0	0	3	0	0	0	0	0	0	0	0	3	0	1	1	0	1	0	0	0	0	3	0	1	0	0	0	0	0	0	5	0	0	0	0
baetis	3	0	0	2	3	3	3	0	0	0	0	1	3	0	0	0	0	3	2	1	3	2	0	0	0	2	1	2	0	0	0	0	0	3	4	0	1	0	0
bathyomphalus	3	0	0	3	0	3	0	0	3	0	0	0	3	0	0	0	0	2	1	0	0	0	0	0	1	1	3	0	0	0	0	0	1	0	3	0	0	0	0
beraea	3	0	0	3	0	3	2	3	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	0	0	3	0	0	0	0	0	0	0	5	0	0	0	0
beraeamyia	2	0	0	3	0	3	3	3	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	0	0	3	0	0	0	0	0	0	0	5	0	0	0	0
besdolus	0	3	3	0	0	3	3	0	0	0	0	0	3	0	0	0	0	1	2	0	1	0	0	0	0	3	3	0	0	0	0	0	0	0	5	0	0	0	0
bidessus	1	3	0	1	3	3	3	0	2	0	0	0	3	0	0	0	0	1	1	0	3	0	0	0	0	3	1	0	0	3	0	1	0	3	3	0	1	0	0
bithynia	3	3	0	3	0	3	0	0	3	0	0	0	3	0	0	0	0	2	1	0	0	0	0	0	1	1	1	3	0	0	0	0	0	0	3	1	0	0	0
blephariceridae	2	0	0	2	1	2	3	2	0	0	0	0	3	0	0	0	0	2	1	0	1	1	0	0	2	0	1	3	0	0	0	0	0	0	2	0	0	2	1
boyeria	0	3	3	0	0	2	3	0	0	0	0	0	0	0	3	0	0	2	0	0	3	0	0	0	1	3	1	3	0	0	0	0	0	0	5	0	0	0	0
brachyptera	3	0	0	3	0	3	3	0	0	0	0	3	0	0	0	0	0	2	2	0	1	1	0	0	2	0	3	0	0	0	0	0	0	0	5	1	1	0	0
bythinella	3	0	0	3	0	3	0	0	3	0	0	3	0	0	0	0	0	3	1	0	0	0	0	0	1	1	1	3	0	0	0	0	0	0	3	1	0	0	0
caenis	3	0	0	1	3	3	3	0	0	0	1	2	0	0	0	0	0	2	1	1	1	2	0	0	1	2	1	3	0	0	0	0	0	0	5	1	1	0	0
calanoida	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
calopteryx	2	2	1	3	0	3	3	0	0	0	0	0	0	0	3	0	0	2	1	0	2	0	0	0	2	2	1	3	0	0	0	0	0	1	4	0	0	0	0
capnioneura	1	2	2	1	0	3	3	0	0	1	0	0	0	0	0	0	0	2	2	0	2	2	0	0	0	1	3	0	0	0	0	0	0	0	5	1	1	0	0
centroptilum	3	0	0	0	3	3	3	0	0	0	0	3	0	0	0	0	0	2	2	1	2	1	0	0	0	3	1	2	0	0	0	0	0	3	1	1	0	0	0
ceratopogonidae	3	0	0	2	1	0	3	2	0	0	0	0	3	0	0	0	0	1	0	0	2	1	0	0	0	3	0	3	0	0	0	0	1	1	4	1	0	0	0
chaetopteryx	3	0	0	3	0	3	3	3	0	0	0	0	3	0	0	0	0	0	1	0	3	0	0	0	2	1	2	2	0	0	0	0	0	0	5	0	0	0	0
cheumatopsyche	3	0	0	3	2	3	3	3	0	0	0	0	3	0	0	0	0	3	1	1	3	0	0	0	0	3	2	3	0	0	0	0	0	0	2	0	0	3	0
chimarra	3	0	0	3	0	3	3	3	0	0	0	0	3	0	0	0	0	1	1	1	1	0	0	0	0	0	3	1	0	0	0	0	0	0	2	0	0	3	0
chironomini	3	0	0	1	3	0	3	3	0	1	0	0	1	3	0	0	0	2	1	3	1	0	0	0	1	3	3	1	0	0	0	0	0	1	3	2	1	2	0
diamesinae	3	0	0	1	3	1	2	3	0	0	0	0	2	1	0	2	0	2	1	1	1	0	0	0	0	3	3	1	0	0	0	0	0	1	3	1	2	1	0
orthocladiinae	3	0	0	1	3	1	2	3	0	0	0	0	2	1	0	2	0	2	1	1	1	0	0	0	0	3	3	1	0	0	0	0	0	1	3	1	2	1	0
tanypodinae	3	0	0	3	0	0	3	3	0	0	0	0	1	3	0	0	0	2	1	1	1	0	0	0	0	3	3	1	0	0	0	0	0	3	2	1	1	0	0
tanytarsini	3	0	0	3	3	0	3	3	0	1	0	0	1	3	0	0	0	1	1	3	1	0	0	0	1	3	3	1	0	0	0	0	0	2	3	0	1	2	0
chloroperla	1	3	3	1	0	3	3	0	0	0	0	2	2	0	0	0	0	3	2	0	1	0	0	0	0	3	3	0	0	0	0	0	0	0	4	0	2	0	0
chloroperlidae	2	1	2	2	0	3	3	0	0	0	0	3	1	0	0	0	0	2	2	0	1	0	0	0	0	3	3	0	0	0	0	0	0	0	4	0	1	0	0
choroterpes	3	0	0	3	1	3	3	0	0	0	0	3	0	0	0	0	0	1	1	1	1	3	0	0	0	1	1	3	0	0	0	0	0	0	5	0	0	0	0
cloeon	3	0	0	1	3	3	3	0	0	3	1	1	0	0	0	0	0	1	2	1	2	0	0	0	0	3	1	2	0	0	0	0	0	3	1	0	0	0	0
coelostoma	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0
coenagrionidae	2	1	1	2	1	2	3	0	0	0	0	0	0	0	3	0	0	1	1	0	3	0	0	0	1	2	1	3	0	0	0	0	0	0	5	0	0	0	0
cordulegaster	0	3	3	0	0	2	3	0	0	0	3	0	0	0	0	1	0	2	0	0	3	0	0	0	0	3	1	3	0	0	0	0	0	0	1	4	0	0	0
corduliidae	0	3	3	0	0	3	3	0	0	0	2	0	1	1	0	0	0	1	1	0	3	0	0	0	0	2	1	3	0	0	0	0	0	0	3	2	0	0	0
corixidae	3	0	0	1	2	3	3	0	2	0	0	1	3	0	0	0	0	1	2	0	2	0	0	0	1	0	1	0	2	3	0	1	0	5	0	0	0	0	0
crunoecia	0	3	3	0	0	3	2	3	0	0	0	0	3	0	0	0	0	1	1	1	1	0	0	0	0	0	2	2	0	0	0	0	0	0	5	0	0	0	0
culicidae	3	0	0	2	2	1	3	3	0	0	2	0	0	2	0	1	0	0	0	2	3	2	0	0	2	1	0	0	0	3	0	0	5	1	0	0	0	0	0
cyclopoida	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
cyphon	1	3	0	3	0	3	3	0	0	0	0	0	0	0	0	3	0	0	1	0	3	0	0	0	0	3	1	3	0	0	0	0	0	0	5	0	0	0	0
dendrocoelum	3	1	0	3	0	3	3	0	3	0	0	0	3	0	0	0	0	0	3	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	5	0	0	0	0
deronectes	1	3	0	1	3	3	3	0	2	0	0	0	3	0	0	0	0	2	1	0	3	0	0	0	0	3	1	0	0	3	0	1	0	3	3	0	0	0	0
dicranota	3	0	0	3	1	2	2	0	0	0	1	0	0	1	0	0	0	2	1	0	1	0	0	0	0	2	0	0	0	3	0	0	0	0	2	2	0	0	0
dinocras	0	3	3	0	0	3	3	0	0	0	0	3	0	0	0	0	0	1	2	0	1	2	0	0	2	1	0	3	0	0	0	0	0	0	5	0	0	0	0
diplostraca	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
dixa	3	0	0	3	0	2	3	2	0	0	0	0	3	1	0	1	0	3	1	1	0	0	0	0	2	0	0	0	0	3	0	0	3	1	1	0	0	1	0
dolichopodidae	0	0	0	3	0	1	2	1	0	0	2	0	0	0	1	2	0	0	0	1	1	0	2	0	1	0	0	0	0	3	0	0	0	0	5	0	0	0	0
drusus	3	1	1	3	0	3	3	3	0	0	0	0	3	0	0	1	0	3	2	0	2	0	0	0	0	1	3	2	0	0	0	0	0	0	5	0	0	0	0
dryops	1	3	0	3	0	1	2	0	1	0	0	0	0	0	1	3	0	0	1	0	3	0	0	0	0	3	3	0	3	3	0	2	0	0	3	3	0	0	0
dugesia	0	3	0	3	0	3	3	0	3	0	0	0	2	0	0	0	2	0	2	0	0	2	0	0	0	1	3	0	0	0	0	0	1	0	5	0	0	0	0
colymbetinae	0	3	0	3	1	3	3	0	2	0	0	0	2	0	2	0	0	1	1	0	3	0	0	0	0	3	1	0	0	3	0	1	0	3	3	0	0	0	0
dytiscidae	1	3	0	2	2	3	3	0	2	0	0	0	2	0	1	0	0	0	1	0	3	0	0	0	0	3	1	0	0	3	0	1	0	3	3	0	0	0	0
dytiscus	0	3	0	3	0	3	3	0	2	0	0	0	0	0	3	0	0	0	1	0	3	0	0	0	0	3	1	0	0	3	0	1	0	3	3	0	0	0	0
ecdyonurus	3	1	1	3	0	3	3	0	0	0	2	0	3	0	0	0	0	3	1	1	3	2	0	0	1	2	1	3	0	0	0	0	0	1	5	0	0	0	0
electrogena	3	0	0	3	0	3	3	0	0	0	1	2	0	0	0	0	0	3	1	1	3	2	0	0	1	2	1	3	0	0	0	0	0	1	5	0	0	0	0
elmis	1	3	0	3	0	3	3	0	2	0	0	0	3	0	0	0	0	2	1	0	2	0	0	0	0	3	1	3	3	0	0	1	0	0	4	0	1	0	0
elodes	1	3	0	3	0	3	3	0	0	0	0	0	0	0	0	3	0	1	1	0	3	0	0	0	0	3	1	3	0	0	0	0	0	0	5	0	0	0	0
elophila	3	0	0	3	0	2	3	3	0	0	0	0	3	0	0	0	0	0	0	0	3	0	3	0	3	0	1	0	2	3	0	0	0	0	0	0	0	0	0
clinocerinae	3	0	0	3	1	0	3	3	0	0	0	0	0	0	0	3	0	1	1	0	3	0	0	0	0	0	1	0	0	1	0	0	0	0	2	1	1	0	0
hemerodromiinae	3	0	0	3	2	0	2	3	0	0	0	0	0	0	0	1	0	1	1	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	2	1	1	0	0
epeorus	3	0	0	3	0	3	3	0	0	0	0	3	0	0	0	0	0	2	1	1	3	1	0	0	1	3	1	3	0	0	0	0	0	0	5	0	0	0	0
ephemera	1	3	3	1	0	3	3	0	0	0	0	3	1	0	0	0	0	1	1	1	3	2	0	0	3	0	1	3	0	0	0	0	0	0	1	4	0	0	0
ephemeroptera	3	0	0	3	1	3	3	0	0	0	1	2	1	0	0	0	0	2	2	1	2	1	0	0	0	2	1	3	0	0	0	0	0	1	3	0	0	0	0
eriopterini	3	0	0	3	1	2	2	0	0	0	1	0	0	1	0	0	0	0	1	0	1	0	0	0	0	3	0	0	0	3	0	0	0	0	1	5	0	0	0
erpobdella	1	3	1	3	0	3	3	0	2	0	0	0	3	0	0	0	0	1	1	1	0	0	0	0	0	3	3	0	0	0	0	0	0	1	3	1	0	1	0
esolus	1	3	0	3	0	3	3	0	2	0	0	0	3	0	0	0	0	2	1	0	2	0	0	0	0	3	1	3	3	0	0	1	0	0	4	0	1	0	0
galba	3	0	0	0	3	3	0	0	1	0	0	0	3	0	0	0	0	2	1	0	0	0	0	0	1	0	3	0	0	0	0	0	0	0	3	0	0	0	0
gammarus	1	3	0	0	3	3	3	0	3	3	0	0	0	0	0	0	0	3	2	0	0	0	0	0	0	3	0	3	0	0	0	0	0	2	3	0	1	0	0
gerris	2	3	0	2	3	1	2	0	2	0	0	1	2	0	0	3	0	1	2	0	3	2	0	0	3	1	0	0	0	3	0	3	4	0	0	0	0	0	0
glossiphonia	1	3	0	3	0	3	3	0	2	2	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	3	0	0	1	0
glossosoma	3	0	0	2	1	3	3	3	0	0	0	0	3	0	0	0	0	1	2	1	1	0	2	0	2	0	3	0	0	0	0	0	0	0	1	0	0	3	0
glossosomatidae	3	0	0	2	1	3	3	3	0	0	0	0	3	0	0	0	0	1	2	1	1	0	1	0	1	1	3	0	0	0	0	0	0	0	3	0	0	2	0
glyphotaelius	3	1	1	3	0	1	3	3	0	0	0	0	1	0	0	3	0	1	1	0	3	0	0	0	3	0	2	2	0	0	0	0	0	0	5	0	0	0	0
gomphus	0	3	3	0	0	3	3	0	0	0	1	3	0	0	0	0	0	2	0	0	3	3	0	0	0	0	1	3	0	0	0	0	0	0	1	4	0	0	0
gyraulus	3	1	0	3	0	3	0	0	3	0	0	0	3	0	0	0	0	2	2	0	0	0	0	0	1	1	3	0	0	0	0	0	1	0	3	0	0	0	0
habroleptoides	3	0	0	3	0	3	3	0	0	0	0	0	3	0	0	0	0	2	1	1	1	0	0	0	0	3	1	3	0	0	0	0	0	0	3	1	0	0	0
habrophlebia	3	0	0	3	0	3	3	0	0	0	1	3	0	0	0	0	0	1	1	1	1	2	0	0	1	1	1	3	0	0	0	0	0	1	3	0	0	0	0
halesus	3	0	0	3	0	3	3	3	0	0	0	0	3	0	0	0	0	1	2	0	3	0	0	0	1	3	3	2	0	0	0	0	0	0	5	0	0	0	0
haliplus	1	3	0	1	3	3	3	0	2	0	0	0	0	0	3	0	0	1	1	0	3	0	0	0	0	3	3	0	0	3	0	1	0	3	3	0	0	0	0
harpacticoida	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
helobdella	3	1	0	3	1	3	3	0	3	2	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	4	1	0	1	0
helochares	1	3	0	3	1	3	3	0	2	0	0	0	3	0	0	0	0	0	1	0	3	0	0	0	0	3	1	0	1	3	0	1	0	3	3	0	0	0	0
helophorus	1	3	0	3	1	1	1	0	2	0	0	0	0	0	0	3	0	1	1	0	3	0	0	0	0	3	0	0	1	3	0	1	0	3	3	0	0	0	0
heptagenia	3	1	1	3	0	3	3	0	0	0	1	2	0	0	0	0	0	3	1	1	3	1	0	0	2	2	1	3	0	0	0	0	0	1	5	0	0	0	0
hippeutis	3	0	0	3	0	3	0	0	3	0	0	0	3	0	0	0	0	2	1	0	0	0	0	0	1	0	3	0	0	0	0	0	1	0	3	0	0	0	0
hirudo	0	3	3	0	0	1	3	0	2	0	0	0	3	0	0	2	0	3	1	1	0	0	0	0	0	3	3	0	0	0	0	0	0	0	3	0	0	2	0
hydraena	1	3	0	3	1	3	0	0	3	0	0	0	0	0	0	3	0	2	1	0	3	0	0	0	0	3	0	0	3	2	0	1	0	3	3	0	0	0	0
hydrochara	0	3	0	3	1	3	3	0	2	0	0	0	3	0	0	0	0	0	1	0	3	0	0	0	0	3	1	0	2	3	0	1	0	3	3	0	0	0	0
hydrocyphon	1	3	0	3	0	3	3	0	0	0	0	0	0	0	0	3	0	2	1	0	3	0	0	0	0	3	1	3	0	0	0	0	0	0	5	0	0	0	0
hydrometra	3	0	0	3	1	0	2	0	2	0	0	1	0	0	3	0	0	1	3	0	1	0	0	0	3	0	0	0	0	3	0	1	4	0	2	0	0	0	0
hydrophilidae	1	3	0	3	1	3	3	0	2	0	0	0	3	0	0	0	0	0	1	0	3	0	0	0	0	3	1	0	1	3	0	1	0	3	3	0	0	0	0
hydroporus	1	3	0	1	3	3	3	0	2	0	0	0	3	0	0	0	0	0	1	0	3	0	0	0	0	3	1	0	0	3	0	1	0	3	3	0	0	0	0
hydropsyche	3	0	0	2	2	3	3	3	0	0	0	0	3	0	0	0	0	3	2	1	3	0	0	0	0	3	2	3	0	0	0	0	0	0	2	0	0	3	0
hydroptila	3	0	0	2	3	3	3	3	0	0	0	0	3	0	0	0	0	1	1	2	1	0	0	0	0	3	3	1	0	0	0	0	0	0	3	0	0	1	0
hydrozoa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
hygrotus	1	3	0	1	3	3	3	0	2	0	0	0	3	0	0	0	0	0	1	0	3	0	0	0	0	3	1	0	0	3	0	1	0	3	3	0	0	0	0
ilybius	0	3	0	3	1	3	3	0	2	0	0	0	0	0	3	0	0	0	1	0	3	0	0	0	0	3	1	0	0	3	0	1	0	3	3	0	0	0	0
isoperla	1	3	2	3	0	3	3	0	0	0	0	1	2	0	0	0	0	2	2	0	2	2	0	0	1	1	3	0	0	0	0	0	0	0	4	0	1	0	0
ithytrichia	3	0	0	3	0	3	3	3	0	0	0	0	3	0	0	0	0	1	1	2	1	0	0	0	0	3	2	2	0	0	0	0	0	0	3	0	0	1	0
jaera	3	0	0	0	3	3	3	0	3	3	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	0	1	0	0
labiobaetis	3	0	0	2	3	3	3	0	0	0	0	1	3	0	0	0	0	3	2	1	3	2	0	0	0	2	1	2	0	0	0	0	0	3	4	0	1	0	0
laccobius	1	3	0	3	1	3	3	0	2	0	0	0	3	0	0	0	0	1	1	0	3	0	0	0	0	3	1	0	1	3	0	1	0	3	3	0	0	0	0

Code trait	2	2	3	3	3	4	4	4	4	5	5	5	5	5	5	5	5	6	6	6	6	7	7	7	7	7	8	8	8	8	8	9	9	9	9	9	9	9	9
Code modality	1	2	1	2	3	1	2	3	4	1	2	3	4	5	6	7	8	1	2	3	4	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	6	7	8
laccornis	1	3	0	1	3	3	3	0	2	0	0	0	3	0	0	0	0	0	1	0	3	0	0	0	0	3	1	0	0	3	0	1	0	3	3	0	0	0	0
lepidostoma	3	1	0	3	1	3	3	3	0	0	0	0	3	0	0	0	0	1	1	1	2	0	0	0	0	2	2	2	0	0	0	0	0	0	5	0	0	0	0
leuctra	3	1	1	3	0	3	3	0	0	0	0	3	0	0	0	0	0	2	2	0	1	1	0	0	0	3	3	0	0	0	0	0	0	0	5	2	1	0	0
limnephilidae	2	0	0	3	0	3	3	3	0	0	0	0	2	0	0	1	0	0	2	0	2	0	0	0	1	1	2	2	0	0	0	0	0	0	5	0	0	0	0
limnephilus	3	0	0	3	0	3	3	3	0	0	0	0	3	0	0	1	0	0	1	0	2	2	0	0	0	2	2	2	0	0	0	0	0	0	5	0	0	0	0
limnius	1	3	0	3	0	3	3	0	2	0	0	0	3	0	0	0	0	2	1	0	2	0	0	0	0	3	1	3	3	0	0	1	0	0	4	0	1	0	0
hexatoma	1	0	0	3	1	2	2	0	0	0	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	2	0	0	0	3	0	0	0	0	1	4	0	0	0
hexatomini	1	0	0	3	1	2	2	0	0	0	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	2	0	0	0	3	0	0	0	0	1	4	0	0	0
liponeura	3	0	0	3	2	2	3	2	0	0	0	0	3	0	0	0	0	2	1	0	1	2	0	0	3	0	1	3	0	0	0	0	0	0	2	0	0	2	2
lype	3	0	0	0	3	3	3	3	0	0	0	0	3	0	0	0	0	1	1	1	1	0	0	0	0	3	3	0	0	0	0	0	0	0	2	0	0	3	1
melampophylax	1	0	0	3	0	3	3	3	0	0	0	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3	3	2	0	0	0	0	0	0	5	0	0	0	0
mesophylax	1	0	0	3	0	3	3	3	0	0	0	0	1	0	0	0	0	0	2	0	3	0	0	0	2	2	2	2	0	0	0	0	0	0	5	0	0	0	0
mesovelia	3	0	0	0	3	1	2	0	2	0	0	1	0	0	3	0	0	0	2	0	1	3	0	0	1	0	0	0	0	3	0	1	4	0	1	0	0	0	0
metalype	3	0	0	0	3	3	3	3	0	0	0	0	3	0	0	0	0	1	1	1	1	0	0	0	0	3	3	0	0	0	0	0	0	0	2	0	0	3	0
metreletus	3	0	0	3	0	3	3	0	0	0	1	3	0	0	0	0	0	1	3	1	2	2	0	0	0	2	1	2	0	0	0	0	0	5	0	0	0	0	0
micrasema	2	1	1	2	0	3	3	3	0	0	0	0	2	0	0	0	0	0	1	1	2	0	0	0	0	3	3	2	0	0	0	0	0	0	3	0	0	1	0
micronecta	3	0	0	0	2	3	3	0	3	0	0	3	2	0	0	0	0	3	1	0	0	0	0	0	1	0	1	0	1	1	0	0	0	3	2	0	0	0	0
micropterna	3	0	0	3	0	3	3	3	0	0	0	0	3	0	0	0	0	0	1	0	3	0	0	0	2	1	2	2	0	0	0	0	0	0	5	0	0	0	0
mystacides	3	0	0	3	0	3	3	3	0	0	0	0	3	0	0	0	0	1	1	1	2	0	0	0	0	3	3	1	0	0	0	0	0	1	4	0	0	0	0
naucoris	3	0	0	1	1	2	3	0	2	0	0	1	0	0	3	0	0	1	3	0	2	0	0	0	1	0	0	0	0	3	0	1	2	3	0	0	0	0	0
nebrioporus	1	3	0	1	3	3	3	0	2	0	0	0	3	0	0	0	0	2	1	0	3	0	0	0	0	3	1	0	0	3	0	1	0	3	3	0	0	0	0
nematoda	1	1	0	3	0	3	1	0	2	0	0	0	3	0	0	0	0	2	1	1	0	0	0	0	0	3	3	0	0	0	0	0	0	1	2	0	0	2	0
nemoura	2	2	2	2	0	3	3	0	0	0	0	3	1	0	0	0	0	2	2	0	2	0	0	0	1	3	3	0	0	0	0	0	0	0	5	0	0	0	0
nemurella	3	1	1	3	0	3	3	0	0	0	0	2	2	0	0	0	0	3	2	0	1	0	0	0	1	2	3	0	0	0	0	0	0	0	5	0	0	0	0
niphargus	0	3	3	0	0	3	3	0	3	3	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	1	3	0	0	0	0	0	1	3	1	3	0	0
ochthebius	1	3	0	3	1	3	0	0	2	0	0	0	0	0	0	3	0	1	1	0	3	0	0	0	0	3	0	0	2	3	0	1	0	3	3	0	0	0	0
ellulidae.corduliidae	1	2	2	1	0	3	3	0	0	0	2	1	0	0	0	0	0	1	1	0	3	0	0	0	0	2	1	3	0	0	0	0	0	1	3	1	0	0	0
odontocerum	3	2	2	3	0	3	3	3	0	0	0	0	0	0	0	3	0	3	1	1	2	0	0	0	0	3	2	3	0	0	0	0	0	0	3	2	0	0	0
oecetis	3	0	0	3	1	3	3	3	0	0	0	0	3	0	0	0	0	1	1	1	3	0	0	0	0	3	2	3	0	0	0	0	0	1	4	0	0	0	0
oligochaeta	0	1	0	0	2	3	3	0	3	0	1	1	1	0	0	0	2	1	0	0	0	0	2	0	0	1	3	0	0	0	0	0	0	1	0	1	1	0	0
oligoneuriella	3	0	0	3	0	3	3	0	0	0	3	1	0	0	0	0	0	3	1	1	2	3	0	0	0	0	1	3	0	0	0	0	0	1	4	0	0	0	0
onychogomphus	0	3	3	1	0	3	3	0	0	0	1	3	0	0	0	0	0	2	1	0	3	3	0	0	0	0	1	3	0	0	0	0	0	0	2	3	0	0	0
orectochilus	1	3	0	3	0	3	3	0	2	0	0	0	3	0	0	0	0	2	2	0	3	0	0	0	0	3	1	3	0	3	0	1	3	3	3	0	0	0	0
orthotrichia	3	0	0	1	3	3	3	3	0	0	0	0	3	0	0	0	0	1	1	2	1	0	0	0	0	3	3	1	0	0	0	0	0	0	1	0	0	3	0
ostracoda	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
oulimnius	1	3	0	3	0	3	3	0	2	0	0	0	3	0	0	0	0	2	1	0	2	0	0	0	0	3	1	3	3	0	0	1	0	0	4	0	1	0	0
paraleptophlebia	3	0	0	3	0	3	3	0	0	0	0	3	0	0	0	0	0	2	1	1	3	0	0	0	0	3	1	3	0	0	0	0	0	1	4	1	0	0	0
pedicia	3	0	0	3	1	2	2	0	0	0	1	0	0	1	0	0	0	2	1	0	1	0	0	0	0	2	0	0	0	3	0	0	0	0	2	2	0	0	0
pediciidae	3	0	0	3	1	2	2	0	0	0	1	0	0	1	0	0	0	2	1	0	1	0	0	0	0	2	0	0	0	3	0	0	0	0	2	2	0	0	0
perla	0	3	3	0	0	3	3	0	0	0	0	3	0	2	0	0	0	1	2	0	1	2	0	0	0	2	0	3	0	0	0	0	0	0	5	0	0	0	0
perlodes	0	3	1	3	0	3	3	0	0	0	0	3	0	0	0	0	0	1	2	0	1	2	0	0	0	3	3	0	0	0	0	0	0	0	5	0	0	0	0
philopotamus	3	0	0	3	0	3	3	3	0	0	0	0	3	0	0	0	0	1	1	1	1	0	0	0	2	2	3	0	0	0	0	0	0	0	2	0	0	3	0
physella	3	0	0	3	0	3	0	0	3	0	0	0	3	0	0	0	0	2	1	0	0	0	0	0	1	1	3	0	0	0	0	0	0	0	3	0	0	0	0
pilaria	1	0	0	3	1	2	2	0	0	0	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	2	0	0	0	3	0	0	0	0	1	4	0	0	0
pisidium	2	3	0	3	3	3	3	0	3	3	0	0	0	0	0	0	0	3	1	1	0	1	0	0	1	0	1	3	0	0	0	0	0	0	1	4	1	2	0
planorbidae	3	0	0	3	0	3	0	0	3	0	0	0	3	0	0	0	0	2	1	0	0	0	0	0	1	1	3	0	0	0	0	0	1	0	3	0	0	0	0
planorbis	3	0	0	3	1	3	0	0	3	0	0	0	3	0	0	0	0	2	1	0	0	0	0	1	1	0	3	2	0	0	0	0	2	0	4	0	0	0	0
plectrocnemia	2	1	1	2	2	3	3	3	0	0	0	0	2	1	0	0	0	2	1	1	2	0	0	0	0	3	3	0	0	0	0	0	0	1	1	0	0	3	0
polycelis	0	3	0	3	0	3	3	0	3	0	0	0	2	0	0	0	1	1	2	0	0	3	0	0	0	0	3	0	0	0	0	0	1	0	5	0	1	0	0
polycentropodidae	3	0	0	2	3	3	3	3	0	0	0	0	3	0	0	0	0	2	1	1	2	0	0	0	0	3	3	0	0	0	0	0	0	1	1	0	0	3	0
polycentropus	3	1	1	3	2	3	3	3	0	0	0	0	3	0	0	0	0	1	1	1	2	0	0	0	1	3	3	0	0	0	0	0	0	1	1	0	0	3	0
pomatinus	1	3	0	3	0	1	3	0	2	0	0	0	0	0	0	3	0	0	1	0	3	0	0	0	0	3	3	0	3	2	0	1	0	0	3	3	0	0	0
potamanthus	3	0	0	3	0	3	3	0	0	0	0	1	0	0	0	0	0	2	1	1	3	0	0	0	1	2	1	3	0	0	0	0	0	1	4	1	2	0	0
potamophylax	3	0	0	3	0	3	3	3	0	0	0	0	3	0	0	0	0	0	1	0	3	0	0	0	2	1	2	2	0	0	0	0	0	0	5	0	0	3	0
potamopyrgus	3	1	0	1	3	3	0	0	3	3	0	0	0	0	0	0	0	3	2	2	0	0	0	0	1	0	1	3	0	0	0	0	0	0	3	1	0	0	0
proasellus	1	3	0	1	2	3	3	0	3	3	0	0	0	0	0	0	0	3	0	0	0	0	0	0	2	2	0	3	0	0	0	0	0	0	3	0	2	0	0
procloeon	3	0	0	1	3	3	3	0	0	0	0	3	0	0	0	0	0	1	2	1	2	3	0	0	0	0	1	2	0	0	0	0	0	3	1	0	0	0	0
protonemura	3	0	0	3	0	3	3	0	0	0	0	3	0	0	0	0	0	2	2	0	1	1	0	0	1	3	3	2	0	0	0	0	0	0	5	0	0	0	0
psychodidae	3	0	0	1	3	2	2	2	0	1	0	1	3	0	0	0	0	3	1	0	1	0	0	0	0	3	0	0	0	3	0	0	1	0	2	0	0	0	0
psychomyia	3	0	0	1	3	3	3	3	0	0	0	0	3	0	0	0	0	1	1	1	1	0	0	0	0	3	3	0	0	0	0	0	0	0	2	0	0	3	1
radix	2	3	0	3	0	3	0	0	3	0	0	0	3	0	0	0	0	2	1	0	0	0	0	0	2	0	3	0	0	0	0	0	1	0	3	0	0	0	0
rhabdiopteryx	3	0	0	3	0	3	3	0	0	0	0	3	0	0	0	0	0	2	2	0	1	0	0	0	0	3	3	0	0	0	0	0	0	0	5	0	0	0	0
rhagionidae	3	1	1	3	0	0	2	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	5	0	0	0	0
rhithrogena	3	1	1	3	0	3	3	0	0	0	1	1	3	0	0	0	0	3	2	1	3	2	0	0	0	2	1	3	0	0	0	0	0	1	5	0	1	0	0
rhyacophila	3	2	1	2	1	3	3	3	0	0	0	3	0	1	0	0	0	3	2	1	2	1	0	0	2	3	2	2	0	0	0	0	0	2	3	0	0	1	0
riolus	1	3	0	3	0	3	3	0	2	0	0	0	3	0	0	0	0	2	1	0	2	0	0	0	0	3	1	3	3	0	0	1	0	0	4	0	0	0	0
scatophagidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
scleroprocta	3	0	0	3	1	2	2	0	0	0	1	0	0	1	0	0	0	0	1	0	1	0	0	0	0	3	0	0	0	3	0	0	0	0	1	5	0	0	0
sericostoma	3	1	2	3	1	3	3	3	0	0	0	0	3	0	0	0	0	2	1	1	1	0	0	0	1	3	2	2	0	0	0	0	0	0	4	1	1	0	0
serratella	3	0	0	3	1	3	3	0	0	0	1	3	0	0	1	0	0	2	3	1	3	2	0	0	1	1	1	3	0	0	0	0	0	1	5	0	0	0	0
setodes	3	0	0	3	0	3	3	3	0	0	0	0	3	0	0	0	0	1	1	1	2	0	0	0	0	3	3	2	0	0	0	0	0	1	3	1	0	0	0
sialis	0	3	3	1	0	0	3	0	0	0	0	0	3	0	0	3	0	0	2	0	1	0	0	0	0	0	0	3	0	1	0	0	0	1	4	3	0	0	0
silo	3	0	0	3	0	3	3	3	0	0	0	0	3	0	0	0	0	1	1	1	2	0	0	0	0	3	2	3	0	0	0	0	0	0	4	0	0	2	1
simuliidae	3	1	0	2	3	2	3	3	0	0	1	0	3	1	0	1	0	2	2	3	1	1	0	0	1	0	3	1	0	2	0	0	0	0	2	0	1	4	0
siphlonurus	3	0	0	3	0	3	3	0	0	0	1	3	0	0	1	0	0	1	2	1	3	3	0	0	0	0	1	2	0	0	0	0	0	3	1	0	0	0	0
siphonoperla	2	1	1	2	0	3	3	0	0	0	0	3	0	0	0	0	0	2	2	0	1	0	0	0	0	3	3	0	0	0	0	0	0	0	4	1	1	0	0
sisyra	3	0	0	2	2	0	3	0	0	0	1	0	0	1	0	3	0	2	2	0	2	0	3	0	3	0	0	3	0	2	0	0	0	2	3	0	0	0	0
sphaerium	1	3	0	3	3	3	3	0	3	3	0	0	0	0	0	0	0	3	1	1	0	0	0	0	1	0	1	3	0	0	0	0	0	0	1	4	0	2	0
stenelmis	1	3	0	3	0	3	3	0	2	0	0	0	3	0	0	0	0	2	1	0	2	0	0	0	0	3	1	3	3	0	0	1	0	0	4	0	1	0	0
stenophylax	3	0	0	3	0	3	3	3	0	0	0	0	3	0	0	0	0	0	1	0	3	0	0	0	2	1	2	2	0	0	0	0	0	0	5	0	0	3	0
stratiomyidae	2	1	0	3	0	1	2	2	0	0	3	0	2	0	0	1	0	1	1	1	3	0	0	0	3	0	0	0	0	3	0	0	3	0	3	0	0	0	0
synagapetus	3	1	1	3	0	3	3	3	0	0	0	0	3	0	0	0	0	1	2	1	1	0	0	0	0	3	3	0	0	0	0	0	0	0	3	0	0	2	0
tabanidae	3	0	0	3	0	1	2	0	0	0	0	0	3	0	0	2	0	0	1	0	3	0	0	0	1	3	0	0	0	3	0	0	1	0	2	5	0	0	0
taeniopteryx	3	0	0	3	0	3	3	0	0	0	0	3	0	0	0	0	0	2	2	0	1	0	0	0	1	2	3	2	0	0	0	0	0	0	5	1	1	0	0
tinodes	3	0	0	2	3	3	3	3	0	0	0	0	3	0	0	0	0	2	1	1	1	0	0	0	0	3	3	0	0	0	0	0	0	0	2	0	0	3	1
tipulidae	2	3	1	3	1	2	2	2	0	0	3	0	0	0	0	1	0	0	1	0	1	0	2	0	0	2	2	1	0	3	0	0	0	0	1	4	0	0	0
torleya	3	0	0	3	0	3	3	0	0	0	0	3	0	0	0	0	0	2	1	1	2	0	0	0	0	3	1	3	0	0	0	0	0	0	5	0	0	0	0
trichostegia	3	0	0	3	0	1	3	3	0	0	0	0	1	0	0	3	0	0	2	1	2	0	0	0	3	0	2	2	0	0	0	0	0	0	5	0	0	0	0
tricladida	1	2	0	3	0	3	3	0	3	0	0	0	3	0	0	0	1	0	2	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	5	0	0	0	0
trombidiforma	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
valvata	3	2	0	3	0	3	0	0	3	0	0	0	3	0	0	0	0	2	1	0	0	0	0	0	1	1	1	3	0	0	0	0	0	0	2	3	0	0	0
velia	3	0	0	3	1	0	2	0	2	0	0	0	3	0	0	3	0	1	3	0	1	0	0	0	3	0	0	0	0	3	0	1	4	0	0	0	0	0	0
wormaldia	0	3	3	0	0	3	3	3	0	0	0	0	3	0	0	0	0	1	2	1	1	0	0	0	0	3	3	1	0	0	0	0	0	0	2	0	0	3	0
zwicknia	3	0	0	3	0	3	3	0	0	3	1	0	0	0	0	0	0	1	2	0	1	0	0	0	3	1	3	0	0	0	0	0	0	0	5	1	1	0	0

Appendix 4: Temporal features of drying events for each site over the two years of sampling

River	Drying pattern	Site	Regime	Number	Duration
aigue brun	downstream	aig1	P	0	0
		aig2	P	0	0
		aig3	I	15	148
		aig4	I	27	217
		aig5	I	17	300
		aig6	P	0	0
audeux	downstream	aud1	P	0	0
		aud2	I	8	67
		aud3	I	3	11
		aud4	I	50	165
		aud5	I	48	176
		aud6	P	0	0
petit buech	downstream	bue1	P	0	0
		bue2	P	0	0
		bue3	I	13	60
		bue4	I	5	13
		bue5	P	0	0
		bue6	P	0	0
calavon	downstream	cal1	P	0	0
		cal2	I	5	29
		cal3	I	8	39
		cal4	I	46	145
		cal5	I	19	78
		cal6	P	0	0
ceze	downstream	cez1	P	0	0
		cez2	P	0	0
		cez3	P	0	0
		cez4	I	6	30
		cez5	I	3	50
		cez6	P	0	0
clauge	upstream	cla1	I	18	140
		cla2	I	9	186
		cla3	I	14	80
		cla4	I	13	110
		cla5	P	0	0
		cla6	P	0	0
ibie	upstream	ibi1	I	18	224
		ibi2	I	19	215
		ibi3	I	12	235
		ibi4	P	0	0
		ibi5	I	4	36
		ibi6	I	17	209
lez	downstream	lez1	P	0	0
		lez2	I	11	93
		lez3	I	15	133
		lez4	I	5	78
		lez5	I	2	76
		lez6	P	0	0
roubion	downstream	rou1	P	0	0
		rou2	P	0	0
		rou3	P	0	0
		rou4	I	7	100
		rou5	I	3	88
		rou6	P	0	0
seguissous	upstream	seg1	I	5	45
		seg2	I	2	0
		seg3	P	0	0
		seg4	I	28	170
		seg5	I	33	220
toulourenc	downstream	tou1	P	0	0
		tou2	P	0	0
		tou3	P	0	0
		tou4	I	11	19
		tou5	I	11	19
		tou6	P	0	0

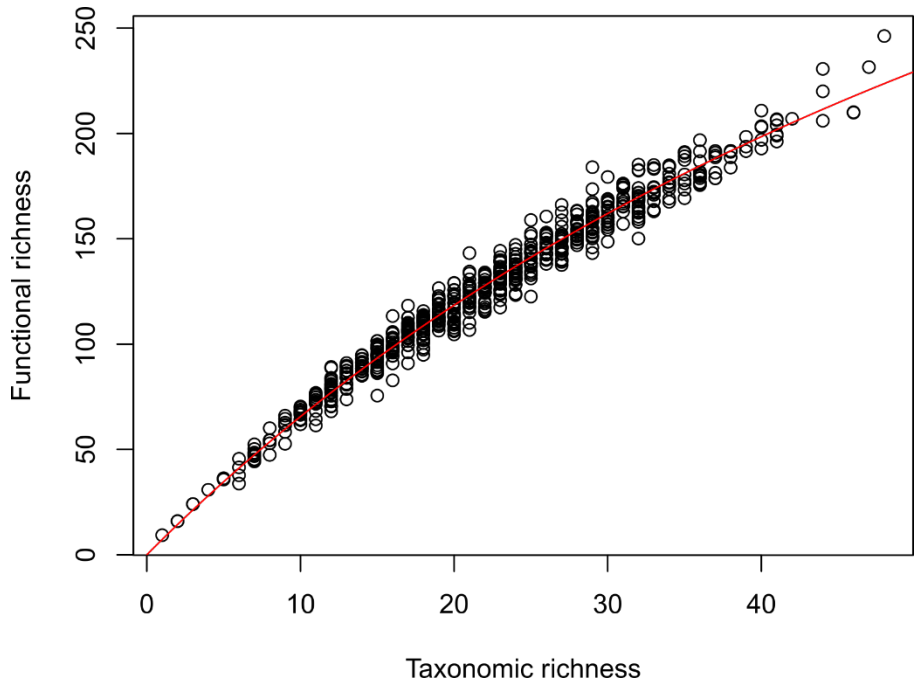
Appendix 5: Taxa list with number of occurrences

Group	Taxa	Number of occurrences
Achaeta	Erpobdella	60
	Glossiphonia	10
	Helobdella	10
	Hirudo	2
Amphipoda	Gammarus	370
	Nyphargus	46
Bivalvia	Sphaerium	1
Cladocera	Anomopodes	100
Coleoptera	Agabus	22
	Anacaena	1
	Bidessus	2
	Coelambus	1
	Coelostoma	1
	Colymbetinae	10
	Cyphon	50
	Deronectes	6
	Dryops	80
	Dytiscidae	26
	Dytiscus	1
	Elmis	257
	Elodes	29
	Esolus	428
	Haliplus	1
	Helochares	1
	Helophorus	4
	Hydraena	171
	Hydrochara	2
	Hydrocyphon	74
	Hydrophilidae	11
	Hydroporus	8
	Ilybius	2
	Laccobius	3
	Laccornis	8
	Limnius	210
	Nebrioporus	2
	Ochthebius	1
	Orectochilus	52
	Oulimnius	85
	Pomatinus	20
	Riolus	96
	Scirtidae	2
	Stenelmis	16
	Stictonectes	0
Copepoda	Calanoides	1
	Cyclopoides	351
	Harpacticoides	100
Diptera	Anthomyiidae	7
	Antocha	84
	Atherix	92
	Atrichops	11
	Blephariceridae	2
	Ceratopogonidae	415
	Chironomini	424
	Clinocerinae	265
	Culicidae	1
	Diamesinae	48
	Dicranota	232
	Dixa	18
	Dolichopodidae	17
	Eloephila	2
	Eriopterini	59
	Hemerodrominae	289
	Hexatoma	106
	Hexatomini	99
	Liponeura	2
	Orthocladinae	652
	Pedicia	2
	Pedicini	3
	Pilaria	20
	Psychodidae	63
	Rhagionidae	14
	Scatophagidae	1
	Scleroprocta	1
	Simulidae	593
	Stratiomyidae	53
	Tabanidae	66
	Tanypodinae	493
	Tanytarsini	543
	Tipulidae	39
Ephemeroptera	Acentrella	167
	Baetis	561
	Caenis	251
	Centroptilum	19
	Choroterpes	6
	Cloeon	4
	Ecdyonurus	374
	Electrogena	126
	Epeorus	87
	Ephemera	71
	Ephemeropteres	4
	Habroleptoides	148
	Habrophlebia	166
	Heptagenia	2
	Heptageniidae	22
	Labiobaetis	1
	Leptophlebiidae	95
	Metreletus	9
	Oligoneuriella	82
	Paraleptophlebia	14
	Potamanthus	3
	Procloeon	6
	Rhitrogena	282
	Seratella	288
	Siphlonurus	14
	Torleya	19
Gastropoda	Acroloxus	3
	Ancylus	56
	Bathyomphalus	6
	Bythinella	12
	Bythinia	7
	Galba	24
	Gyraulus	16
	Hippeutis	8
	Limnaeidae	2
	Physella	25
	Pisidium	57
	Planorbiidae	3
	Planorbis	1

	Potamopyrgus	37
	Radix	56
	Valvata	15
Hemiptera	Corixidae	5
	Gerris	5
	Hydrometra	1
	Mesovelia	1
	Micronecta	4
	Naucoris	1
	Velia	4
Hydracarina	Hydracariens	468
Hydrozoa	Hydrozoaires	53
Hymenoptera	Agriotypus	1
Isopoda	Asellidae	2
	Asellus	8
	Jaera	1
	Proasellus	8
Megaloptera	Sialis	7
Nemathelminthes	Nemathelminthes	17
Nematoda	Nematodes	352
Neuroptera	Sisyra	2
Odonata	Aeshnidae	1
	Boyeria	3
	Caenagrionidae	1
	Calopteryx	1
	Cordulegaster	3
	Cordulidae	2
	Gomphus	8
	Libellulidae/Cordulidae	3
	Onychogomphus	47
Oligochaeta	Oligochetes	588
Ostracoda	Ostracodes	401
Plecoptera	Amphinemura	129
	Besdolus	7
	Brachyptera	289
	Capnioneura	104
	Chloroperla	24
	Chloroperlidae	19
	Dinocras	10
	Isoperla	464
	Leuctra	536
	Nemoura	345
	Nemurella	2
	Perla	168
	Perlidae	12
	Perlodes	16
	Perlodidae	22
	Protonemura	207
	Rhabdiopetryx	28
	Siphonoperla	70
	Taeniopterygidae	15
	Taeniopteryx	32
	Zwicknia	207
Trichoptera	Agapetus	25
	Agraylea	2
	Allogamus	16
	Allotrichia	6

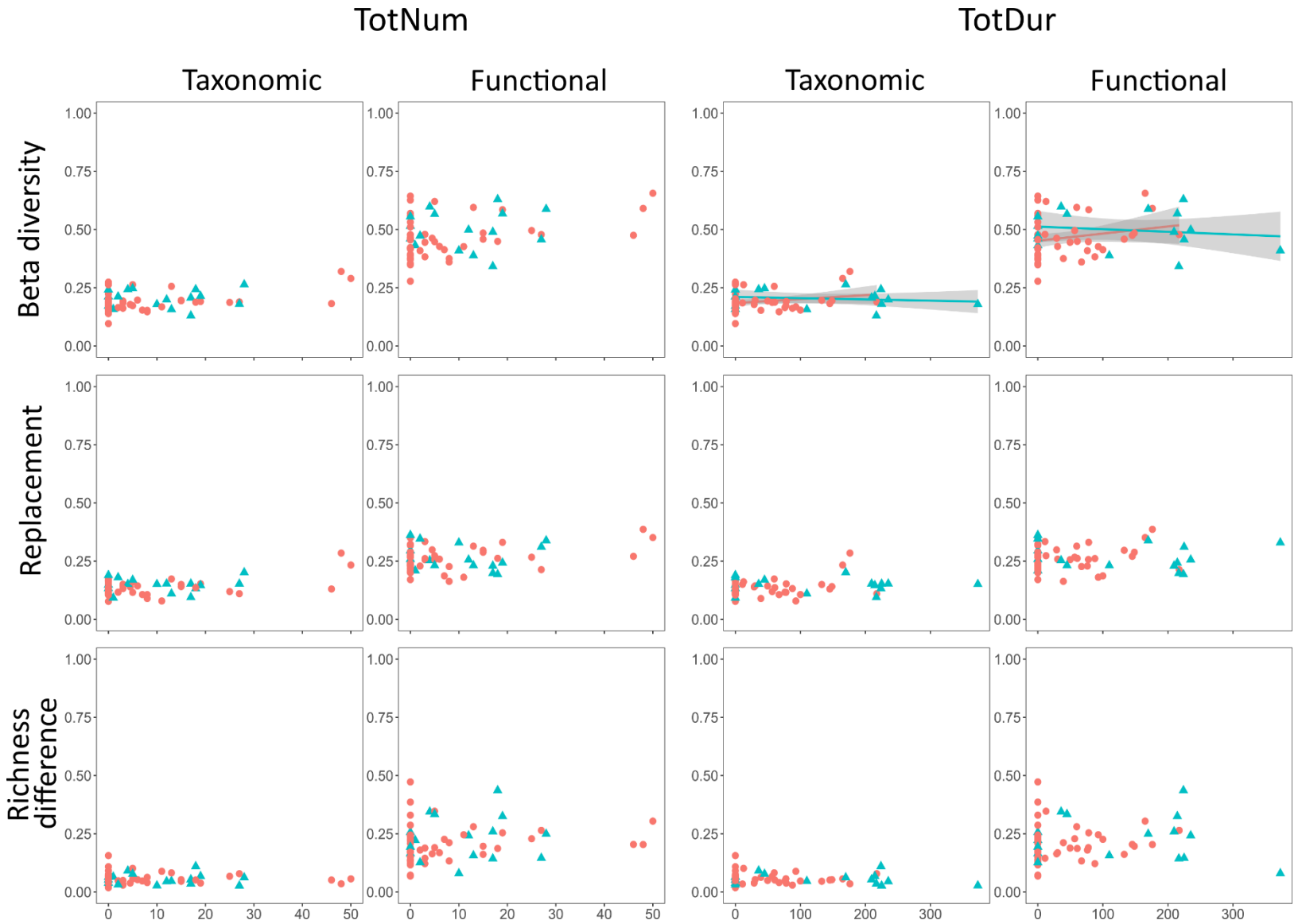
	Anabolia	5
	Athripsodes	45
	Beraea	6
	Beraeidae	2
	Beraemyia	6
	Brachycentridae	1
	Chaetopteryx	4
	Cheumatopsyche	65
	Chimarra	2
	Crunoecia	2
	Drusus	12
	Glossosoma	8
	Glossosomatidae	10
	Glyphotaelius	3
	Goeridae	5
	Halesus	6
	Hydropsyche	405
	Hydroptila	175
	Hydroptilidae	2
	Ithitrichia	1
	Lepidostoma	6
	Leptoceridae	2
	Limnephilidae	84
	Limnephilus	17
	Lype	5
	Melampophylax	29
	Mesophylax	18
	Metalype	3
	Micrasema	6
	Micropterna	53
	Mystacides	5
	Odontocerum	35
	Oecetis	2
	Oligostomis	0
	Orthotrichia	1
	Philopotamidae	12
	Philopotamus	13
	Plectrocnemia	20
	Polycentropodidae	18
	Polycentropus	36
	Potamophylax	42
	Psychomyia	4
	Psychomyidae	1
	Rhyacophila	302
	Sericostoma	105
	Setodes	11
	Silo	27
	Stenophylax	3
	Synagapetus	18
	Tinodes	67
	Trichostegia	1
	Wormaldia	19
Tricladida	Dendrocoelum	19
	Dugesia	75
	Polycelis	99
	Triclades	53

Appendix 6. Relation between functional richness and taxonomic richness (right) with a saturation curve (d: 611, t-value: 39.381, $p < 0.001$ ***, e: 83, t-value: 29.963, $p < 0.001$ ***).

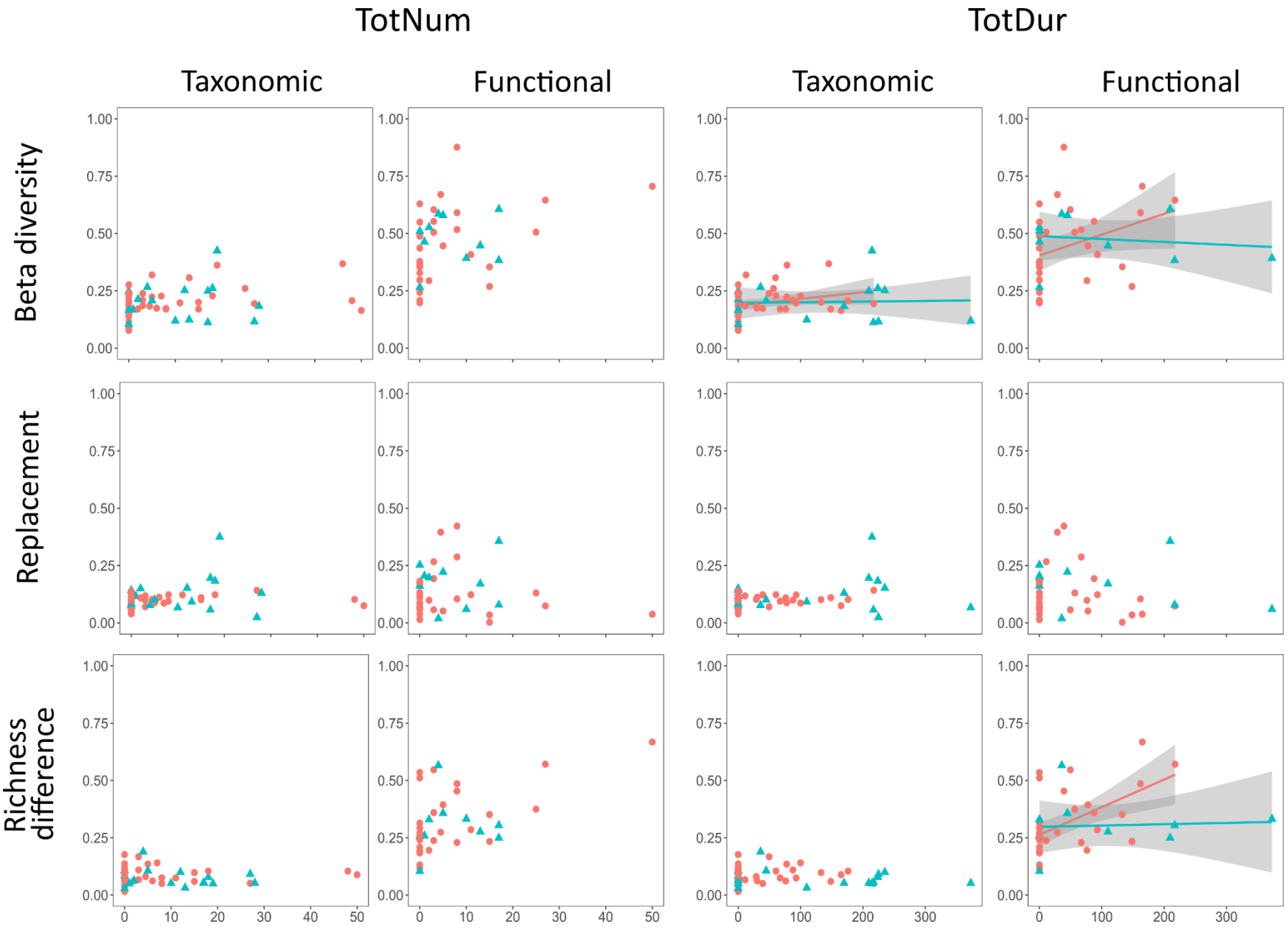


Appendix 7: Plots as reported in Figure 5 for the two subsets of dispersal groups separately.

7A for aerial dispersers



7B for aquatic dispersers



Appendix 8: Comparison of spatial beta diversity patterns for separated samples and averaged samples.

		F value	P-value	Mean UDB	Mean DDB
Mean a and b (as in the manuscipt)	Beta diversity	12.7	**< 0.001**	0.288	0.245
	Replacement	0.7	0.414	0.158	0.151
	Richness difference	7.9	**0.005**	0.130	0.094
Samples a	Beta diversity	13.2	**< 0.001**	0.314	0.271
	Replacement	0.3	0.613	0.161	0.157
	Richness difference	7.9	**0.005**	0.153	0.114
Samples b	Beta diversity	4.4	**0.005**	0.300	0.272
	Replacement	0.8	0.379	0.166	0.158
	Richness difference	4.0	**0.036**	0.134	0.114