

# **Supplementary information to 'Beyond ecological opportunity: prey diversity rather than abundance shapes predator niche variation'**

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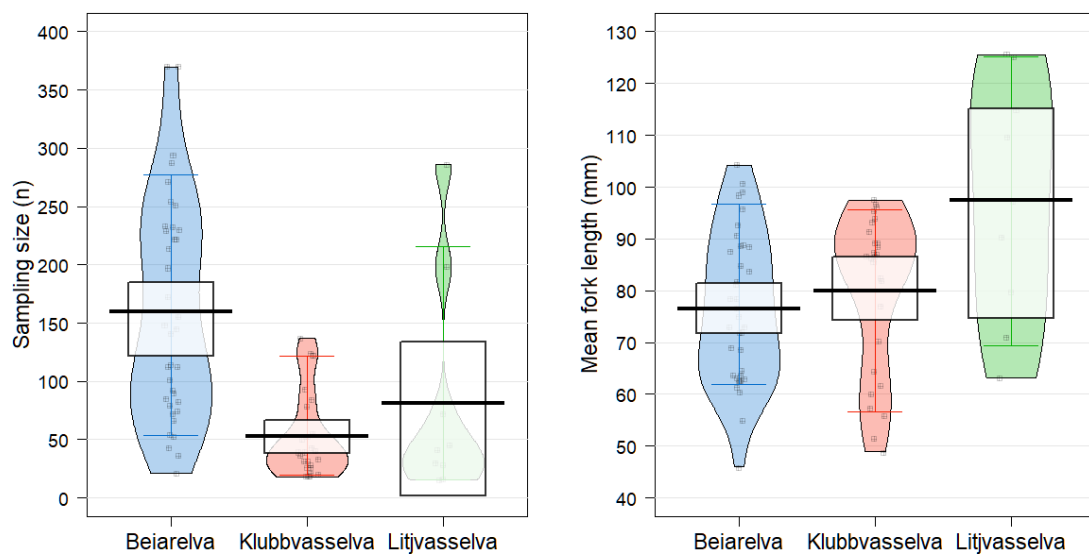
**-Appendix 1:** Details of samples distribution (*n*) according to river, year, month and sampling size.

Number of replicates per year and month among riverine systems. The number of replicates of fish density estimates in Beiarelva and Klubbvasselva are shown in brackets.

	Rivers			Total
	Beiarelva	Klubbvasselva	Litjvasselva	
Year				
1988	–	5 (4)	1	6
1989	8 (1)	5 (2)	2	15
1990	10 (3)	6 (3)	1	17
1991	7 (3)	5 (2)	3	15
1992	12 (3)	6 (2)	2	20
Month				
April	11	–	–	11
June	4	6	2	12
July	3 (1)	–	–	3
August	9 (8)	16 (13)	7	32
September	5 (1)	–	–	5
October	5	5	–	10
Total	37	27	9	73

Sampling sizes (number of individuals analysed per replicate) and population fish length among riverine systems.

	Sampling size	
	Mean $\pm$ S.E.	Range
Beiarelva	160.05 $\pm$ 15.45	21-370
Klubbvasselva	53.18 $\pm$ 7.06	18-137
Litjvasselva	81.22 $\pm$ 31.77	15-286



**-Appendix 2:** List of taxon present in the stomachs and in the benthos. L = larvae and N = nymph.

	Code name	Stomachs	Benthos
<b>Endogenous taxon (aquatic)</b>			
Nematoda	Nem	-	+
Hirudinea	Hir	-	+
Turbellaria	Tur	-	+
Hydracarina	Hyd	+	+
Ostracoda	Ost	+	+
Copepoda (Cyclopoida)	Cop	+	-
Oligochaeta	Oli	+	+
Sphaeriidae	Sph	-	+
Lymnaeidae	Lym	+	+
Planorbidae	Pla	+	+
Coleoptera	Col	+	+
Neuroptera (L)	Neu	+	+
<i>Pericoma</i> sp. – Psychodidae (L)	Psy	+	+
Ceratopogonidae (L)	Cer	+	+
Chironomidae (L)	Chi	+	+
Tipulidae (L)	Tip	+	+
Simuliidae (L)	Sim	+	+
Diptera – unidentified (L)	Dip	+	+
Plecoptera (N)	Ple	+	+
Trichoptera (L)	Tri	+	+
Megaloptera (L)	Meg	-	+
Hemiptera (Heteroptera)	Hem	+	+
Ephemeroptera (N)	Eph	+	+
<b>Fish prey</b>			
Fish	Fis	+	-
<b>Exogenous taxon (terrestrial)</b>			
Collembola (Entognatha)	Coll	+	-
Surface prey (unidentified terrestrial arthropods and emerged aquatic insects)	Ins	+	-

**-Appendix 3:** Nested design of models: checking the inclusion of random terms. Total niche width (TNW), within-individual component (WIC), between-individual component (BIC), inter-individual diet variation (WIC/TNW) and individual specialisation (PS<sub>i</sub>). Statistically significant model fits are marked in bold.

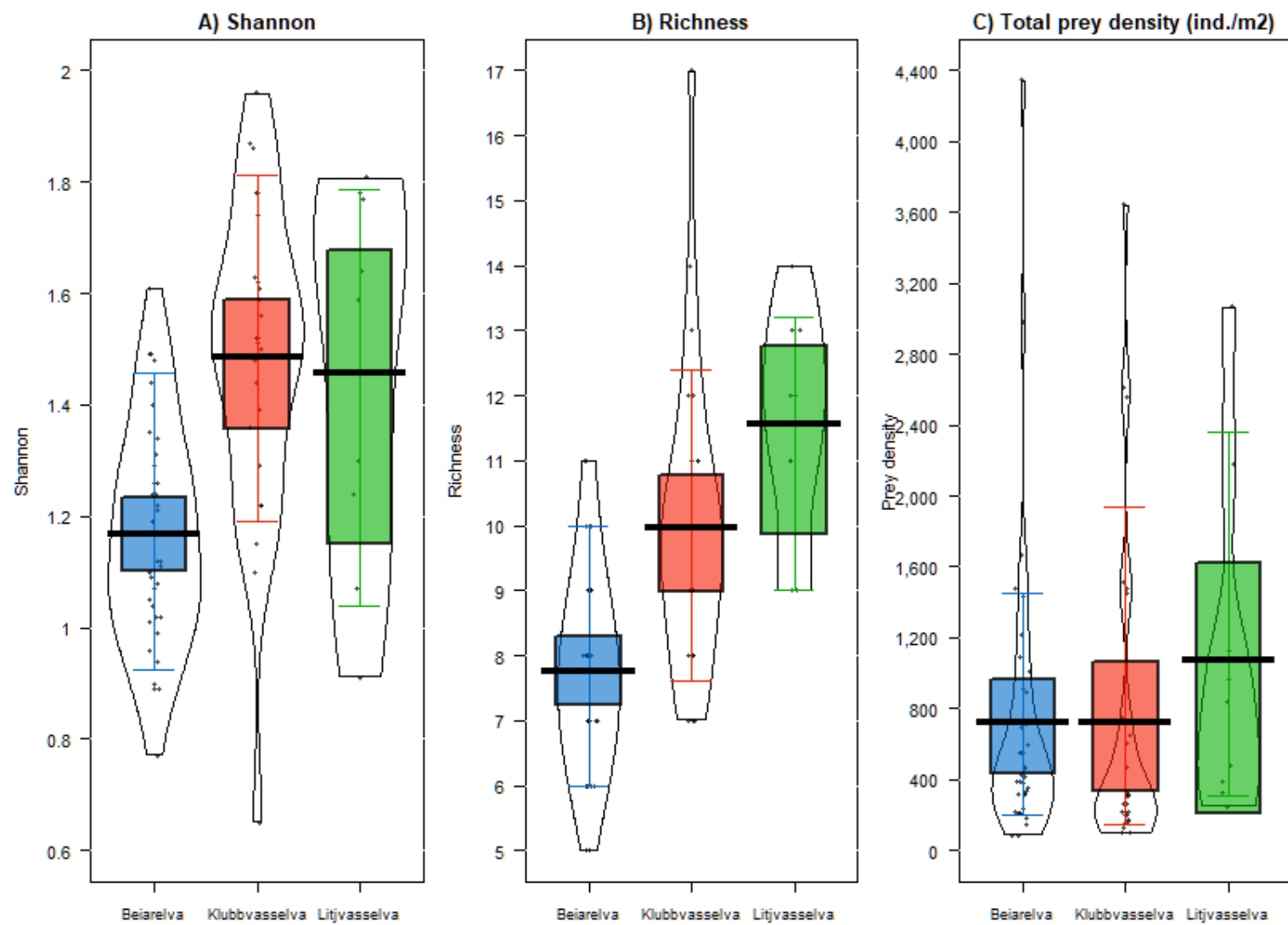
	Without random terms ( $\Delta$ AIC)	With random terms ( $\Delta$ AIC)	Likelihood ratio test	P-value
<b>Chesson (linear models)</b>				
Crustacea	555.9208	551.3931	8.52768	<b>0.0141</b>
Mollusca	-409.8541	551.3931	957.2472	<b>&lt;0.001</b>
Diptera	-210.6584	551.3931	758.0515	<b>&lt;0.001</b>
Trichoptera	-71.98370	-68.29801	0.3143137	0.8546
Coleoptera	7.882648	10.911396	0.9712511	0.6153
Ephemeroptera	-4765.647	-5030.042	268.3952	<b>&lt;0.001</b>
Plecoptera	-129.9188	-125.9188	0.000001	0.999
Other	-20.55148	-22.74687	6.195398	<b>0.0452</b>
<b>Niche components (linear models)</b>				
TNW vs. Shannon	-32.15228	-34.04786	5.895576	0.0525
TNW vs. Richness	-39.42625	-37.30479	1.878535	0.3909
TNW vs. Total density (ind/m <sup>2</sup> ) (ind/m <sup>2</sup> )	-29.99617	-33.92621	7.930039	<b>0.019</b>
TNW vs. Chironomidae density (ind/m <sup>2</sup> )	-30.32686	-33.81036	7.483501	<b>0.0237</b>
TNW vs. Ephemeroptera density (ind/m <sup>2</sup> )	-32.66849	-35.87311	7.204626	<b>0.0273</b>
TNW vs. Hydracarina density (ind/m <sup>2</sup> )	-30.45149	-33.99373	7.542245	<b>0.023</b>
TNW vs. Oligochaeta density (ind/m <sup>2</sup> )	-30.37398	-35.51358	9.139593	<b>0.0104</b>
TNW vs. Plecoptera density (ind/m <sup>2</sup> )	-29.76989	-33.90566	8.135772	<b>0.0171</b>
TNW vs. Simuliidae density (ind/m <sup>2</sup> )	-33.12723	-35.30304	6.175805	<b>0.0456</b>
TNW vs. Trichoptera density (ind/m <sup>2</sup> )	-37.02364	-40.38952	7.365879	<b>0.0251</b>
WIC vs. Shannon	-253.2098	-249.2098	0.000001	0.999
WIC vs. Richness	-246.2005	-242.2005	0.000001	0.999
WIC vs. Total density (ind/m <sup>2</sup> )	-248.2302	-244.2302	0.000001	0.999
WIC vs. Chironomidae density (ind/m <sup>2</sup> )	-247.5081	-243.5081	0.000001	0.999
WIC vs. Ephemeroptera density (ind/m <sup>2</sup> )	-249.3447	-245.3447	0.000001	0.999
WIC vs. Hydracarina density (ind/m <sup>2</sup> )	-246.1945	-242.1945	0.000001	0.999
WIC vs. Oligochaeta density (ind/m <sup>2</sup> )	-254.7017	-250.7017	0.000001	0.999
WIC vs. Plecoptera density (ind/m <sup>2</sup> )	-248.1822	-244.1822	0.000001	0.999
WIC vs. Simuliidae density (ind/m <sup>2</sup> )	-248.9552	-244.9552	0.000001	0.999
WIC vs. Trichoptera density (ind/m <sup>2</sup> )	-250.3296	-246.3296	0.000001	0.999
BIC vs. Shannon	-35.13827	-36.24846	5.110192	0.0777
BIC vs. Richness	-44.57087	-41.31076	0.7398886	0.6908
BIC vs. Total density (ind/m <sup>2</sup> )	-35.09384	-37.11762	6.023783	<b>0.0492</b>
BIC vs. Chironomidae density (ind/m <sup>2</sup> )	-34.57421	-36.25785	5.683641	0.0583
BIC vs. Ephemeroptera density (ind/m <sup>2</sup> )	-36.11652	-37.45580	5.339287	0.0693
BIC vs. Hydracarina density (ind/m <sup>2</sup> )	-35.03663	-36.62007	5.583447	0.0613
BIC vs. Oligochaeta density (ind/m <sup>2</sup> )	-34.31521	-36.51516	6.199944	<b>0.0451</b>
BIC vs. Plecoptera density (ind/m <sup>2</sup> )	-34.82039	-37.12629	6.305908	<b>0.0427</b>
BIC vs. Simuliidae density (ind/m <sup>2</sup> )	-36.53756	-37.27345	4.735894	0.0937
BIC vs. Trichoptera density (ind/m <sup>2</sup> )	-39.23402	-40.72246	5.488437	0.0643
WIC/BIC vs. Shannon	-330.9856	-326.9856	0.000001	0.999
WIC/BIC vs. Richness	-326.8409	-322.8409	0.000001	0.999
WIC/BIC vs. Total density (ind/m <sup>2</sup> )	-328.2995	-324.2995	0.000001	0.999
WIC/BIC vs. Chironomidae density (ind/m <sup>2</sup> )	-327.2457	-323.2457	0.000001	0.999
WIC/BIC vs. Ephemeroptera density (ind/m <sup>2</sup> )	-328.4501	-324.4501	0.000001	0.999
WIC/BIC vs. Hydracarina density (ind/m <sup>2</sup> )	-326.8463	-322.8463	0.000001	0.999
WIC/BIC vs. Oligochaeta density (ind/m <sup>2</sup> )	-332.3504	-328.3504	0.000001	0.999
WIC/BIC vs. Plecoptera density (ind/m <sup>2</sup> )	-331.0869	-327.0869	0.000001	0.999
WIC/BIC vs. Simuliidae density (ind/m <sup>2</sup> )	-328.0247	-324.0247	0.000001	0.999
WIC/BIC vs. Trichoptera density (ind/m <sup>2</sup> )	-330.1023	-326.1023	0.000001	0.999
PS <sub>i</sub> vs. Shannon	-248.2665	-245.3683	1.10179	0.5764
PS <sub>i</sub> vs. Richness	-256.7099	-252.7099	0.000001	0.999
PS <sub>i</sub> vs. Total density (ind/m <sup>2</sup> )	-247.9500	-246.6218	2.67181	0.2629
PS <sub>i</sub> vs. Chironomidae density (ind/m <sup>2</sup> )	-245.7330	-244.5166	2.783547	0.2486
PS <sub>i</sub> vs. Ephemeroptera density (ind/m <sup>2</sup> )	-247.0697	-244.9561	1.88638	0.3894

PS <sub>i</sub> vs. Hydracarina density (ind/m <sup>2</sup> )	-249.0992	-246.9792	1.879993	0.3906
PS <sub>i</sub> vs. Oligochaeta density (ind/m <sup>2</sup> )	-245.8732	-244.3485	2.475315	0.2901
PS <sub>i</sub> vs. Plecoptera density (ind/m <sup>2</sup> )	-246.2879	-245.3530	3.065132	0.216
PS <sub>i</sub> vs. Simuliidae density (ind/m <sup>2</sup> )	-247.1334	-244.7226	1.589255	0.4517
PS <sub>i</sub> vs. Trichoptera density (ind/m <sup>2</sup> )	-251.3521	-248.8292	1.477138	0.4778
<b>Niche components (multiple regression models)</b>				
TNW	-34.55809	-30.55809	0.000001	0.999
WIC	124.8272	128.8271	0.000001	0.999
BIC	-36.02433	-32.02433	0.000001	0.999
WIC/TNW	139.0848	143.0848	0.000001	0.999
PS <sub>i</sub>	-244.8626	-240.8626	0.000001	0.999

**-Appendix 4:** Preliminary analyses: trophic niche components, ecological opportunity and consumers densities.

A) Descriptive statistics of variables

	Beiarelva		Klubbvasselva		Litjvasselva	
	Mean $\pm$ S.E.	Range	Mean $\pm$ S.E.	Range	Mean $\pm$ S.E.	Range
<b>Prey availability</b>						
Shannon	1.17 $\pm$ 0.032	0.77-1.61	1.48 $\pm$ 0.054	0.65-1.96	1.46 $\pm$ 0.112	0.91-1.81
Richness	7.76 $\pm$ 0.252	5-11	9.96 $\pm$ 0.435	7-17	11.56 $\pm$ 0.580	9-14
Total prey density (number of individuals per m <sup>2</sup> )	725.3 $\pm$ 137.1	86.90-4351.7	718.80 $\pm$ 176.1	99.30-3645.50	1070.30 $\pm$ 319.2	245.50-3069.0
Chironomidae density (number of individuals per m <sup>2</sup> )	286.47 $\pm$ 67.92	13.80-188.83	224.18 $\pm$ 68.904	2.8-1169.70	363.07 $\pm$ 173.190	52.40-1691.0
Ephemeroptera density (number of individuals per m <sup>2</sup> )	301.21 $\pm$ 68.09	8.30-247.86	290.39 $\pm$ 91.193	11-1954.50	397.87 $\pm$ 1758.09	8.30-1693.80
Hydracarina density (number of individuals per m <sup>2</sup> )	15.92 $\pm$ 2.645	0-63.40	30.04 $\pm$ 5.391	1.3-104.80	106.69 $\pm$ 58.600	9.70-565.50
Oligochaeta density (number of individuals per m <sup>2</sup> )	24.12 $\pm$ 5.199	0-133.80	18.02 $\pm$ 3.676	0-75.90	11.64 $\pm$ 2.706	1.40-23.40
Plecoptera density (number of individuals per m <sup>2</sup> )	73.69 $\pm$ 19.905	4.10-451	97.907 $\pm$ 27.226	3-612.40	50.27 $\pm$ 12.014	5.50-115.90
Simuliida density (number of individuals per m <sup>2</sup> )	3.19 $\pm$ 1.082	0-23.40	19.75 $\pm$ 5.511	0-103.10	12.73 $\pm$ 4.219	0-35.90
Trichoptera density (number of individuals per m <sup>2</sup> )	14.04 $\pm$ 2.827	0-84.10	25.38 $\pm$ 5.866	0-109	94.71 $\pm$ 17.091	9.70-164.10
<b>Fish populations</b>						
Mean fish length (mm)	76.47 $\pm$ 2.36	45.81-104.29	80.01 $\pm$ 2.94	48.72-97.60	97.38 $\pm$ 7.68	63.15-125.57
Interspecific competition	0.009 $\pm$ 0.003	0-0.02	0.26 $\pm$ 0.045	0.07-0.65	—	—
Intraspecific competition	0.15 $\pm$ 0.044	0.01-0.47	0.11 $\pm$ 0.023	0.02-0.36	—	—
<b>Components of trophic niche</b>						
Total niche width (TNW)	1.60 $\pm$ 0.026	1.27-2.0	1.79 $\pm$ 0.038	1.29-2.17	1.78 $\pm$ 0.065	1.42-2.03
Within-individual component (WIC)	0.07 $\pm$ 0.005	0.02-0.19	0.09 $\pm$ 0.009	0.02-0.20	0.08 $\pm$ 0.018	0.04-0.21
Between-individual component (BIC)	1.52 $\pm$ 0.025	1.18-1.89	1.70 $\pm$ 0.038	1.20-2.09	1.70 $\pm$ 0.067	1.37-1.96
Inter-individual diet variation (WIC/TNW)	0.05 $\pm$ 0.003	0.01-0.1	0.05 $\pm$ 0.005	0.01-0.11	0.04 $\pm$ 0.010	0.02-0.12
Individual specialisation ( $PS_i$ )	0.26 $\pm$ 0.007	0.18-0.36	0.22 $\pm$ 0.009	0.15-0.34	0.22 $\pm$ 0.013	0.16-0.28



## B) Components of the trophic niche over ecological opportunity (total prey density, Shannon-Wiener's diversity index and species richness)

Summary table: Summary of the models explaining the components of the trophic niche (TNW, WIC, BIC, WIC/TNW and PS<sub>i</sub>) over ecological opportunity (total prey density, Shannon-Wiener's diversity index and species richness) including month as smoother term. Seasonal effects = s(Month). Edf = estimated degree of freedom for smooth terms are shown. Bootstrapped 95% confidence intervals (CI) for parametric coefficients. Statistically significant model fits are marked in bold.

Parametric coefficients		Dependent variable (components of the trophic niche)														
		TNW			WIC			BIC			WIC/TNW			PS <sub>i</sub>		
Constant (Intercept)	Estimate	1.530	1.092	1.604	0.023	0.073	0.129	1.518	1.014	1.468	0.020	0.055	0.0725	0.281	0.389	0.300
	t-value	14.530 ( <b>P&lt;0.001</b> )	5.696 ( <b>P&lt;0.001</b> )	9.635 ( <b>P&lt;0.001</b> )	1.018 (P=0.312)	1.551 (P=0.126)	3.745 ( <b>P&lt;0.001</b> )	14.700 ( <b>P&lt;0.001</b> )	5.477 ( <b>P&lt;0.001</b> )	9.123 ( <b>P&lt;0.001</b> )	1.518 (P=0.134)	2.040 ( <b>P=0.045</b> )	3.611 ( <b>P=0.001</b> )	11.742 ( <b>P&lt;0.001</b> )	8.977 ( <b>P&lt;0.001</b> )	7.998 ( <b>P&lt;0.001</b> )
	CI	1.394, 1.573	1.041, 1.342	1.366, 1.940	0.011, 0.012	0.066, 0.227	0.101, 0.199	1.632, 1.976	1.127, 1.164	1.267, 1.732	0.007, 0.014	0.035, 0.130	0.054, 0.118	0.689, 0.792	0.617, 0.618	0.667, 0.725
Shannon	Estimate	0.123			0.044			0.072			0.021			-0.029		
	t-value	1.583 (P=0.118)			2.662 ( <b>P=0.009</b> )			0.935 (P=0.353)			2.115 ( <b>P=0.038</b> )			-1.624 (P=0.109)		
	CI	0.104, 0.225			0.049, 0.055			-0.217, 0.039			0.026, 0.031			-0.013, 0.063		
Richness	Estimate		0.277			0.003			0.276			-0.003			-0.067	
	t-value		3.158 ( <b>P=0.002</b> )			0.165 (P=0.869)			3.256 ( <b>P=0.002</b> )			-0.285 (P=0.777)			-3.376 ( <b>P=0.001</b> )	
	CI		0.195, 0.319			-0.058, 0.014			0.231, 0.237			-0.037, 0.008			0.068, 0.068	
Total prey density (ind/m <sup>2</sup> )	Estimate			0.014			-0.008			0.024			-0.004			-0.009
	t-value			0.544 (P=0.588)			-1.415 (P=0.161)			0.912 (P=0.365)			-1.249 (P=0.216)			-1.516 (P=0.134)
	CI			-0.025, 0.057			-0.015, -0.003			-0.004, 0.081			-0.009, -0.001			0.009, 0.019
<u>Smooth terms</u>																
Seasonal effects	Edf	1.770	1.867	1.866	1.000	1.000	1.000	1.803	1.865	1.880	1.255	1.000	1.072	1.757	1.863	1.899
	F-value	6.139 ( <b>P=0.007</b> )	5.275 ( <b>P=0.012</b> )	7.503 ( <b>P=0.001</b> )	0.798 (P=0.375)	0.388 (P=0.535)	0.018 (P=0.895)	7.210 ( <b>P=0.002</b> )	5.695 ( <b>P=0.009</b> )	8.407 ( <b>P&lt;0.001</b> )	2.286 (P=0.174)	1.343 (P=0.250)	0.832 (P=0.414)	7.248 ( <b>P=0.003</b> )	5.899 ( <b>P=0.008</b> )	9.343 ( <b>P&lt;0.001</b> )
Observations		73	73	73	73	73	73	73	73	73	73	73	73	73	73	73
Adjusted R <sup>2</sup>		0.18	0.26	0.16	0.07	0.02	0.01	0.17	0.28	0.18	0.06	0.01	0.02	0.20	0.29	0.20
GCV		0.035	0.032	0.036	0.002	0.002	0.002	0.034	0.030	0.034	0.001	0.001	0.001	0.002	0.001	0.002
Deviance explained		20.7%	28.8%	19.2%	9.7%	0.6%	3.3%	20.5%	30.5%	21.2%	8.8%	2.6%	4.8%	22.73%	31.7%	23.6%

C) Components of the trophic niche over the absolute abundance of the most represented prey categories (number of individuals per m<sup>2</sup>)

**- Total niche width of a population (TNW)**

Summary table: Summary of the models explaining the components of TNW over abundance of the most represented prey categories (Chironomidae, Ephemeroptera, Hydracarina, Oligochaeta, Plecoptera, Simuliidae and Trichoptera) measured as ind/m<sup>2</sup> with month as smoother term. Seasonal effects = s(Month). Edf = estimated degree of freedom for smooth terms are shown. Bootstrapped 95% confidence intervals (CI) for parametric coefficients. Statistically significant model fits are marked in bold.

		<i>Dependent variable (TNW)</i>						
		Chironomidae	Ephemeroptera	Hydracarina	Oligochaeta	Plecoptera	Simuliidae	Trichoptera
Constant (Intercept)	Estimate	1.760	1.687	1.664	1.722	1.525	1.684	1.660
	<i>t</i> -value	20.641 ( <b><i>P</i> &lt; 0.001</b> )	18.002 ( <b><i>P</i> &lt; 0.001</b> )	41.565 ( <b><i>P</i> &lt; 0.001</b> )	42.308 ( <b><i>P</i> &lt; 0.001</b> )	16.755 ( <b><i>P</i> &lt; 0.001</b> )	76.744 ( <b><i>P</i> &lt; 0.001</b> )	39.853 ( <b><i>P</i> &lt; 0.001</b> )
	CI	1.664, 1.948	1.499, 1.849	1.540, 1.703	1.673, 1.825	1.488, 1.490	1.629, 1.723	1.561, 1.708
Chironomidae	Estimate	-0.014						
	<i>t</i> -value	-0.805 ( <i>P</i> = 0.424)						
	CI	-0.0459, 0.0033						
Ephemeroptera	Estimate		0.001					
	<i>t</i> -value		0.072 ( <i>P</i> = 0.943)					
	CI		-0.0329, 0.0342					
Hydracarina	Estimate			0.012				
	<i>t</i> -value			0.873 ( <i>P</i> = 0.386)				
	CI			0.0028, 0.0409				
Oligochaeta	Estimate				-0.012			
	<i>t</i> -value				-0.807 ( <i>P</i> = 0.422)			
	CI				-0.0387, 0.0011			
Plecoptera	Estimate					0.047		
	<i>t</i> -value					1.912 ( <i>P</i> = 0.060)		
	CI					0.049, 0.050		
Simuliidae	Estimate						0.019	
	<i>t</i> -value						1.891 ( <i>P</i> = 0.063)	
	CI						0.0180, 0.0279	
Trichoptera	Estimate							0.014
	<i>t</i> -value							0.939 ( <i>P</i> = 0.351)
	CI							-0.0012, 0.0429
<u>Smooth terms</u>								
Seasonal effects	Edf	1.789	1.851	1.803	1.85	1.916	1.733	1.872

	<i>F</i> -value	6.233 ( <i>P</i> = <b>0.002</b> )	6.948 ( <i>P</i> = <b>0.001</b> )	3.90 ( <i>P</i> = <b>0.037</b> )	6.969 ( <i>P</i> = <b>0.001</b> )	9.648 ( <i>P</i> < <b>0.001</b> )	6.174 ( <i>P</i> = <b>0.008</b> )	8.067 ( <i>P</i> = <b>0.001</b> )
Observations		73	73	73	73	73	73	73
Adjusted R <sup>2</sup>		0.16	0.15	0.16	0.16	0.20	0.18	0.16
GCV		0.036	0.036	0.036	0.036	0.034	0.035	0.036
Deviance explained (%)		18.9	18.6	19.1	19.3	23.4	21.6	19.7

### Within-individual component (WIC)

Summary table: Summary of the models explaining the components of WIC over over abundance of the most represented prey categories (Chironomidae, Ephemeroptera, Hydracarina, Oligochaeta, Plecoptera, Simuliidae and Trichoptera) measured as ind/m<sup>2</sup> with month as smoother term. Seasonal effects = s(Month). Edf = estimated degree of freedom for smooth terms are shown. Bootstrapped 95% confidence intervals (CI) for parametric coefficients. Statistically significant model fits are marked in bold.

		<i>Dependent variable (WIC)</i>						
		Chironomidae	Ephemeroptera	Hydracarina	Oligochaeta	Plecoptera	Simuliidae	Trichoptera
Constant (Intercept)	Estimate	0.101	0.110	0.080	0.103	0.075	0.079	0.086
	<i>t</i> -value	5.582 ( <i>P</i> < <b>0.001</b> )	5.489 ( <i>P</i> < <b>0.001</b> )	9.001 ( <i>P</i> < <b>0.001</b> )	11.653 ( <i>P</i> < <b>0.001</b> )	4.427 ( <i>P</i> < <b>0.001</b> )	15.670 ( <i>P</i> < <b>0.001</b> )	8.981 ( <i>P</i> < <b>0.001</b> )
	CI	0.0864, 0.1340	0.1033, 0.1366	0.0655, 0.0959	0.1038, 0.1108	0.0423, 0.1007	0.0695, 0.0880	0.0733, 0.1143
Chironomidae	Estimate	-0.004						
	<i>t</i> -value	-1.137 ( <i>P</i> = 0.259)						
	CI	-0.0096, -0.0016						
Ephemeroptera	Estimate		-0.006					
	<i>t</i> -value		-1.499 ( <i>P</i> = 0.138)					
	CI		-0.0104, -0.0051					
Hydracarina	Estimate			0.001				
	<i>t</i> -value			0.147 ( <i>P</i> = 0.884)				
	CI			-0.0044, 0.0058				
Oligochaeta	Estimate				-0.010			
	<i>t</i> -value				-2.946 ( <i>P</i> = <b>0.004</b> )			
	CI				-0.0114, -0.0114			
Plecoptera	Estimate					0.002		
	<i>t</i> -value					0.356 ( <i>P</i> = 0.723)		
	CI					-0.0046, 0.0134		
Simuliidae	Estimate						0.004	
	<i>t</i> -value						1.649 ( <i>P</i> = 0.104)	
	CI						0.0033, 0.0080	

Trichoptera	Estimate <i>t</i> -value CI							-0.002 -0.657 ( <i>P</i> = 0.514) -0.0125, 0.0026
<u>Smooth terms</u>								
Seasonal effects	Edf <i>F</i> -value	1.00 0.131 ( <i>P</i> = 0.719)	1.00 0.162 ( <i>P</i> = 0.688)	1.00 0.354 ( <i>P</i> = 0.554)	1.00 0.068 ( <i>P</i> = 0.794)	1.00 0.491 ( <i>P</i> = 0.486)	1.00 0.529 ( <i>P</i> = 0.008)	1.00 0.255 ( <i>P</i> = 0.001)
Observations		73	73	73	73	73	73	73
Adjusted R <sup>2</sup>		-0.01	0.01	-0.02	0.09	-0.02	0.01	-0.02
GCV		0.002	0.002	0.002	0.002	0.002	0.002	0.002
Deviance explained (%)		2.32	3.61	0.55	11.5	0.70	4.24	1.13

### Between-individual component (BIC)

Summary table: Summary of the models explaining the components of BIC over abundance of the most represented prey categories (Chironomidae, Ephemeroptera, Hydracarina, Oligochaeta, Plecoptera, Simuliidae and Trichoptera) measured as ind/m<sup>2</sup> with month as smoother term. Seasonal effects = s(Month). Edf = estimated degree of freedom for smooth terms are shown. Bootstrapped 95% confidence intervals (CI) for parametric coefficients. Statistically significant model fits are marked in bold.

		<i>Dependent variable (BIC)</i>						
		Chironomidae	Ephemeroptera	Hydracarina	Oligochaeta	Plecoptera	Simuliidae	Trichoptera
Constant (Intercept)	Estimate	1.658	1.573	1.584	1.620	1.463	1.605	1.574
	<i>t</i> -value	19.996 ( <b><i>P</i> &lt; 0.001</b> )	17.340 ( <b><i>P</i> &lt; 0.001</b> )	40.827 ( <b><i>P</i> &lt; 0.001</b> )	40.90 ( <b><i>P</i> &lt; 0.001</b> )	16.538 ( <b><i>P</i> &lt; 0.001</b> )	74.92 ( <b><i>P</i> &lt; 0.001</b> )	39.090 ( <b><i>P</i> &lt; 0.001</b> )
	CI	0.0864, 0.1340	1.371, 1.700	1.488, 1.619	1.55, 1.71	1.425, 1.445	1.550, 1.643	1.492, 1.614
Chironomidae	Estimate	-0.009						
	<i>t</i> -value	-0.557 ( <i>P</i> = 0.579)						
	CI	-0.0096, -0.0016						
Ephemeroptera	Estimate		0.008					
	<i>t</i> -value		0.449 ( <i>P</i> = 0.655)					
	CI		-0.0162, 0.0515					
Hydracarina	Estimate			0.012				
	<i>t</i> -value			0.882 ( <i>P</i> = 0.381)				
	CI			0.0027, 0.0389				
Oligochaeta	Estimate				-0.003			
	<i>t</i> -value				-0.20 ( <i>P</i> = 0.842)			
	CI				-0.0326, 0.0228			
Plecoptera	Estimate					0.042		
	<i>t</i> -value					1.743 ( <i>P</i> = 0.086)		
	CI					0.047, 0.047		

Simuliidae	Estimate <i>t</i> -value CI						0.015 1.53 ( <i>P</i> = 0.131) 0.0109, 0.0277	
Trichoptera	Estimate <i>t</i> -value CI							0.016 1.142 ( <i>P</i> = 0.257) 0.0059, 0.0454
<u>Smooth terms</u>								
Seasonal effects	Edf <i>F</i> -value	1.803 7.059 ( <b><i>P</i> = 0.001</b> )	1.864 7.963 ( <b><i>P</i> &lt; 0.001</b> )	1.798 4.237 ( <b><i>P</i> = 0.027</b> )	1.855 7.235 ( <b><i>P</i> &lt; 0.001</b> )	1.909 9.895 ( <b><i>P</i> &lt; 0.001</b> )	1.755 7.062 ( <b><i>P</i> = 0.004</b> )	1.872 8.797 ( <b><i>P</i> = 0.008</b> )
Observations		73	73	73	73	73	73	73
Adjusted R <sup>2</sup>		0.167	0.170	0.172	0.166	0.207	0.186	0.182
GCV		0.034	0.034	0.034	0.034	0.033	0.033	0.034
Deviance explained (%)		20	20.3	20.4	19.9	23.9	21.7	21.5

### Inter-individual diet variation (WIC/TNW)

Summary table: Summary of the models explaining the components of WIC/TNW over abundance of the most represented prey categories (Chironomidae, Ephemeroptera, Hydracarina, Oligochaeta, Plecoptera, Simuliidae and Trichoptera) measured as ind/m<sup>2</sup> with month as smoother term. Seasonal effects = s(Month). Edf = estimated degree of freedom for smooth terms are shown. Bootstrapped 95% confidence intervals (CI) for parametric coefficients. Statistically significant model fits are marked in bold.

		<i>Dependent variable (WIC/TNW)</i>						
		Chironomidae	Ephemeroptera	Hydracarina	Oligochaeta	Plecoptera	Simuliidae	Trichoptera
Constant (Intercept)	Estimate	0.055	0.062	0.049	0.058	0.042	0.047	0.051
	<i>t</i> -value	5.231 ( <b><i>P</i> &lt; 0.001</b> )	5.348 ( <b><i>P</i> &lt; 0.001</b> )	9.590 ( <b><i>P</i> &lt; 0.001</b> )	11.195 ( <b><i>P</i> &lt; 0.001</b> )	4.328 ( <b><i>P</i> &lt; 0.001</b> )	16.013 ( <b><i>P</i> &lt; 0.001</b> )	9.220 ( <b><i>P</i> &lt; 0.001</b> )
	CI	0.0427, 0.0809	0.0540, 0.0884	0.0418, 0.0612	0.0573, 0.0639	0.0226, 0.0547	0.0403, 0.0521	0.0432, 0.0660
Chironomidae	Estimate	-0.001						
	<i>t</i> -value	-0.686 ( <i>P</i> = 0.495)						
	CI	-0.0063, 0.0012						
Ephemeroptera	Estimate		-0.003					
	<i>t</i> -value		-1.271 ( <i>P</i> = 0.208)					
	CI		-0.0068, -0.0014					
Hydracarina	Estimate			-0.011				
	<i>t</i> -value			-0.294 ( <i>P</i> = 0.770)				
	CI			-0.0045, 0.0019				
Oligochaeta	Estimate				-0.005			
	<i>t</i> -value				-2.361 ( <b><i>P</i> = 0.021</b> )			

Plecoptera	CI				-0.0058, -0.0057			
	Estimate					0.002		
	<i>t</i> -value					0.590 ( <i>P</i> = 0.557)		
	CI					-0.0015, 0.0070		
Simuliidae	Estimate						0.001	
	<i>t</i> -value						1.10 ( <i>P</i> = 0.272)	
	CI						0.0004, 0.0038	
Trichoptera	Estimate							-0.001
	<i>t</i> -value							-0.693 ( <i>P</i> = 0.490)
	CI							-0.0063, 0.0012
<u>Smooth terms</u>								
Seasonal effects	Edf	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	<i>F</i> -value	1.397 ( <i>P</i> = 0.241)	1.385 ( <i>P</i> = 0.243)	1.033 ( <i>P</i> = 0.313)	0.407 ( <i>P</i> = 0.526)	2.158 ( <i>P</i> = 0.146)	2.052 ( <i>P</i> = 0.156)	1.534 ( <i>P</i> = 0.220)
Observations		73	73	73	73	73	73	73
Adjusted R <sup>2</sup>		0.004	0.020	-0.001	0.071	0.002	0.015	0.004
GCV		0.001	0.001	0.001	0.001	0.001	0.001	0.001
Deviance explained (%)		3.18	4.73	2.65	9.72	3.01	4.21	3.19

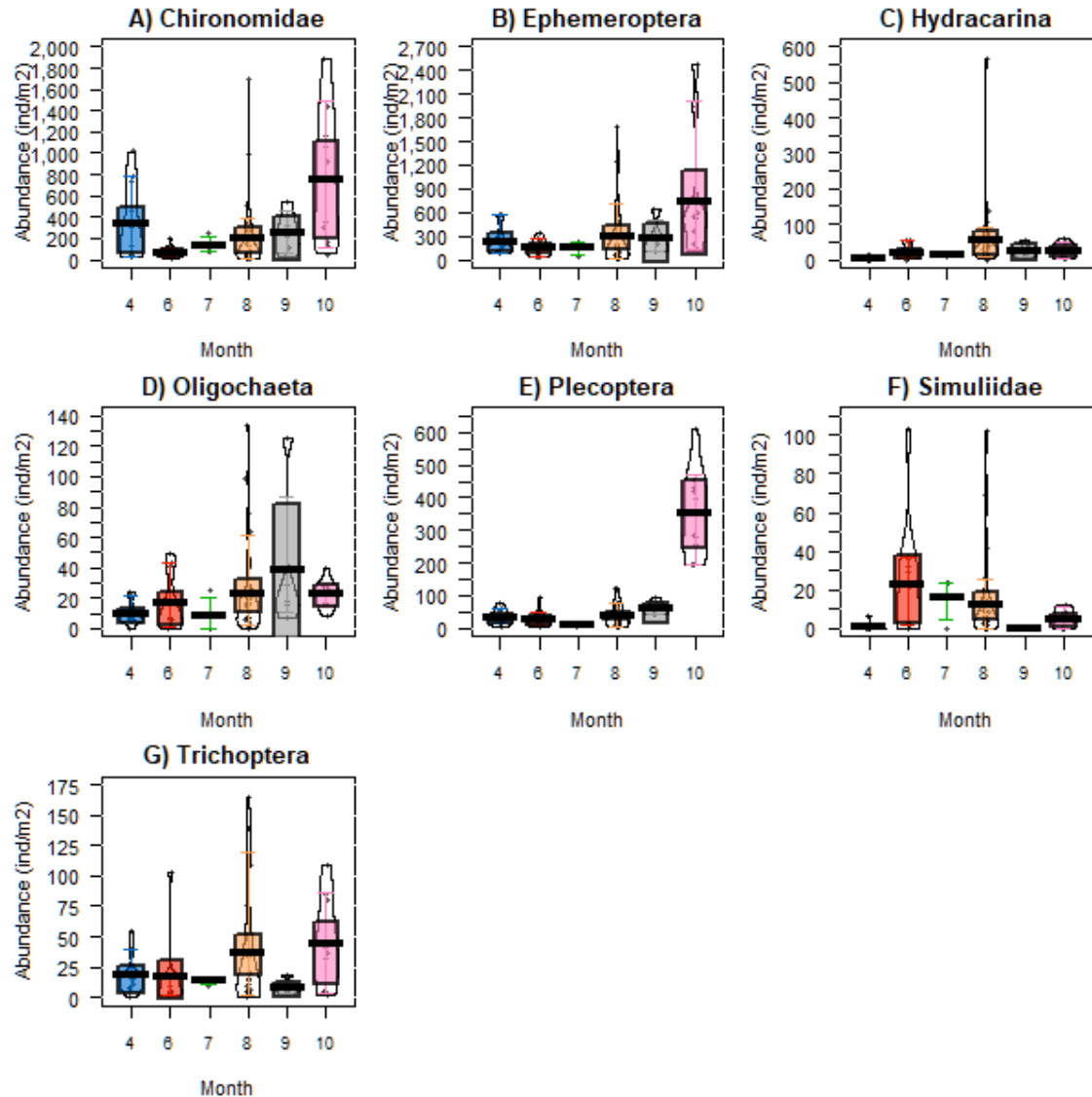
## Individual specialisation (PS<sub>i</sub>)

Summary table: Summary of the models explaining the components of PS<sub>i</sub> over abundance of the most represented prey categories (Chironomidae, Ephemeroptera, Hydracarina, Oligochaeta, Plecoptera, Simuliidae and Trichoptera) measured as ind/m<sup>2</sup> with month as smoother term. Seasonal effects = s(Month). Edf = estimated degree of freedom for smooth terms are shown. Bootstrapped 95% confidence intervals (CI) for parametric coefficients. Statistically significant model fits are marked in bold.

		<i>Dependent variable (PS<sub>i</sub>)</i>						
		Chironomidae	Ephemeroptera	Hydracarina	Oligochaeta	Plecoptera	Simuliidae	Trichoptera
Constant (Intercept)	Estimate	0.247	0.256	0.257	0.247	0.283	0.245	0.257
	<i>t</i> -value	12.619 ( <b><i>P</i> &lt; 0.001</b> )	12.043 ( <b><i>P</i> &lt; 0.001</b> )	28.796 ( <b><i>P</i> &lt; 0.001</b> )	26.519 ( <b><i>P</i> &lt; 0.001</b> )	13.683 ( <b><i>P</i> &lt; 0.001</b> )	48.358 ( <b><i>P</i> &lt; 0.001</b> )	27.426 ( <b><i>P</i> &lt; 0.001</b> )
	CI	0.2469, 0.2571	0.2585, 0.2659	0.2501, 0.2610	0.2431, 0.2431	0.280, 0.284	0.2447, 0.2447	0.2524, 0.2574
Chironomidae	Estimate	-0.001						
	<i>t</i> -value	-0.187 ( <i>P</i> = 0.852)						
	CI	-0.0029, -0.0008						
Ephemeroptera	Estimate		-0.006					
	<i>t</i> -value		-0.636 ( <i>P</i> = 0.527)					
	CI		-0.0045, -0.0031					
Hydracarina	Estimate			-0.001				

Oligochaeta	<i>t</i> -value							
	CI	-1.888 ( <i>P</i> = 0.063)						
	Estimate	-0.0044, 0.0058						
Plecoptera	<i>t</i> -value	-0.001						
	CI	-0.409 ( <i>P</i> = 0.684)						
	Estimate	0.0001, 0.0001						
Simuliidae	<i>t</i> -value	-0.011						
	CI	-1.981 ( <i>P</i> = 0.052)						
	Estimate	-0.001, 0.011						
Trichoptera	<i>t</i> -value	-0.003						
	CI	-1.214 ( <i>P</i> = 0.229)						
	Estimate	-0.0026, -0.0026						
<u>Smooth terms</u>	<i>t</i> -value	-0.005						
	CI	-1.678 ( <i>P</i> = 0.098)						
	Estimate	-0.0057, -0.0037						
Seasonal effects	Edf	1.845	1.868	1.719	1.862	1.917	1.773	1.876
	<i>F</i> -value	8.199 ( <b><i>P</i> &lt; 0.001</b> )	8.496 ( <b><i>P</i> &lt; 0.001</b> )	3.061 ( <i>P</i> = 0.080)	7.287 ( <b><i>P</i> &lt; 0.001</b> )	10.57 ( <b><i>P</i> &lt; 0.001</b> )	7.608 ( <b><i>P</i> = 0.002</b> )	9.251 ( <b><i>P</i> &lt; 0.001</b> )
Observations		73	73	73	73	73	73	73
Adjusted R <sup>2</sup>		0.174	0.180	0.204	0.175	0.224	0.185	0.206
GCV		0.002	0.002	0.002	0.002	0.002	0.002	0.002
Deviance explained (%)		20.7	21.2	23.4	20.8	25.5	21.6	23.8

D) Seasonal variation of the absolute abundance of the most represented prey categories (Chironomidae, Ephemeroptera, Hydracarina, Oligochaeta, Plecoptera, Simuliidae and Trichoptera) measured as ind/m<sup>2</sup>



**-Appendix 5:** Model selection table (15% confidence set) of the multiple regression models according to model averaging.

The best model is in bold (first position in the table). Models with support ( $\Delta AIC < 2$ ) are highlighted in grey. Length = fish length (mm). Absolute abundance of the most represented prey categories (Chironomidae, Ephemeroptera, Hydracarina, Oligochaeta, Plecoptera, Simuliidae and Trichoptera) measured as ind/m<sup>2</sup>.

Total niche width of a population (TNW)

Model	Intercept	Predictor variables										Smooth terms		Model statistics				
		Length	Hydracarina density	Oligochaeta density	Simuliidae density	Trichoptera density	Chironomidae density	Ephemeroptera density	Plecoptera density	Richness	Shannon	Seasonal effects	df	logLik	AIC	delta	weight	
802	1.04	0.00	—	—	—	—	-0.05	—	—	0.34	—	+	6	29.709	-46.184	0	0.076	
930	1.01	0.00	—	—	—	—	-0.05	—	0.03	0.30	—	+	7	30.804	-46.055	0.129	0.071	
801	1.09	—	—	—	—	—	-0.04	—	—	0.38	—	+	5	28.420	-45.836	0.348	0.064	
929	1.07	—	—	—	—	—	-0.04	—	0.03	0.34	—	+	6	29.583	-45.677	0.507	0.059	
934	1.03	0.00	—	-0.02	—	—	-0.05	—	0.03	0.31	—	+	8	31.577	-45.599	0.585	0.057	
806	1.05	0.00	—	-0.01	—	—	-0.05	—	—	0.35	—	+	7	30.220	-45.318	0.866	0.049	
933	1.08	—	—	-0.02	—	—	-0.04	—	0.03	0.34	—	+	7	30.372	-45.254	0.930	0.048	
932	0.96	0.00	-0.01	—	—	—	-0.05	—	0.03	0.33	—	+	8	31.337	-45.045	1.139	0.043	
805	1.11	—	—	-0.02	—	—	-0.04	—	—	0.38	—	+	6	28.927	-45.018	1.166	0.042	
804	1.00	0.00	-0.01	—	—	—	-0.05	—	—	0.36	—	+	7	30.140	-44.887	1.297	0.040	
994	1.03	0.00	—	—	—	—	-0.04	-0.02	0.03	0.32	—	+	8	31.180	-44.817	1.367	0.038	
936	0.97	0.00	-0.01	-0.02	—	—	-0.04	—	0.03	0.34	—	+	9	32.203	-44.767	1.417	0.037	
993	1.08	—	—	—	—	—	-0.04	-0.02	0.03	0.35	—	+	7	30.008	-44.540	1.644	0.033	
946	0.97	0.00	—	—	—	-0.01	-0.04	—	0.03	0.32	—	+	8	31.033	-44.480	1.704	0.032	
866	1.05	0.00	—	—	—	—	-0.05	-0.01	—	0.35	—	+	7	29.720	-44.384	1.800	0.031	
998	1.04	0.00	—	-0.02	—	—	-0.04	-0.02	0.04	0.32	—	+	9	31.931	-44.320	1.864	0.030	
1954	1.03	0.00	—	—	—	—	-0.05	—	0.03	0.31	-0.03	+	8	30.915	-44.263	1.921	0.029	
810	1.06	0.00	—	—	0.00	—	-0.05	—	—	0.33	—	+	7	29.677	-44.228	1.956	0.028	
931	1.03	—	-0.01	—	—	—	-0.04	—	0.03	0.36	—	+	7	29.883	-44.221	1.963	0.028	
818	1.03	0.00	—	—	—	0.00	-0.05	—	—	0.34	—	+	7	29.720	-44.212	1.972	0.028	
1826	1.04	0.00	—	—	—	—	-0.05	—	—	0.34	0.00	+	7	29.716	-44.207	1.977	0.028	
2018	1.10	0.00	—	—	—	—	-0.05	-0.03	0.05	0.36	-0.10	+	9	31.901	-44.169	2.015	0.028	
803	1.07	—	-0.01	—	—	—	-0.04	—	—	0.39	—	+	6	28.651	-44.154	2.030	0.027	
865	1.11	—	—	—	—	—	-0.04	-0.01	—	0.39	—	+	6	28.422	-44.118	2.066	0.027	
950	0.97	0.00	—	-0.02	—	-0.01	-0.04	—	0.04	0.33	—	+	9	31.853	-44.115	2.069	0.027	

## Within-individual component (WIC)

Model	Intercept	Predictor variables										Smooth terms	Model statistics				
		Length	Hydracarina density	Oligochaeta density	Simuliidae density	Trichoptera density	Chironomidae density	Ephemeroptera density	Plecoptera density	Richness	Shannon	Seasonal effects	df	logLik	AIC	delta	weight
1030	-3.529	0.006	—	-0.095	—	—	—	—	—	—	0.444	—	5	-50.072	110.144	0	0.149
1046	-3.532	0.007	—	-0.090	—	-0.047	—	—	—	—	0.458	—	6	-49.333	110.665	0.521	0.115
1174	-3.643	0.007	—	-0.102	—	-0.063	—	—	0.052	—	0.467	—	7	-48.813	111.626	1.482	0.071
1029	-3.040	—	—	-0.093	—	—	—	—	—	—	0.458	—	3	-51.865	111.730	1.586	0.067
1286	-3.300	0.007	—	-0.090	—	—	—	—	—	-0.150	0.475	—	6	-49.889	111.778	1.634	0.066
1158	-3.580	0.006	—	-0.101	—	—	—	—	0.024	—	0.446	—	6	-49.949	111.897	1.753	0.062
1094	-3.378	0.007	—	-0.091	—	—	—	-0.024	—	—	0.395	—	5	-49.958	111.916	1.772	0.061
1062	-3.440	0.007	—	-0.091	—	—	-0.021	—	—	—	0.413	—	6	-49.972	111.943	1.799	0.061
1032	-3.535	0.007	-0.011	-0.093	—	—	—	—	—	—	0.457	—	6	-50.006	112.011	1.867	0.059
1542	-3.519	0.006	—	-0.098	—	—	—	—	—	—	0.438	+	6	-50.021	112.042	1.898	0.058
1038	-3.550	0.006	—	-0.097	-0.006	—	—	—	—	—	0.459	—	5	-50.049	112.097	1.953	0.056
1558	-3.517	0.008	—	-0.095	—	-0.050	—	—	—	—	0.449	+	7	-49.209	112.417	2.273	0.048
1078	-3.556	0.007	—	-0.091	—	-0.049	0.006	—	—	—	0.467	—	7	-49.327	112.653	2.509	0.043
1110	-3.506	0.008	—	-0.089	—	-0.046	—	-0.004	—	—	0.449	—	7	-49.330	112.659	2.515	0.042
1048	-3.531	0.007	0.002	-0.090	—	-0.048	—	—	—	—	0.456	—	7	-49.331	112.662	2.518	0.042

## Between-individual component (BIC)

Model	Intercept	Predictor variables										Smooth terms		Model statistics				
		Length	Hydracarina density	Oligochaeta density	Simuliidae density	Trichoptera density	Chironomidae density	Ephemeroptera density	Plecoptera density	Richness	Shannon	Seasonal effects	df	logLik	AIC	delta	weight	
801	1.013	—	—	—	—	—	-0.039	—	—	0.361	—	+	5	30.503	-49.893	0	0.137	
929	0.994	—	—	—	—	—	-0.038	—	0.020	0.334	—	+	6	31.314	-49.182	0.712	0.096	
802	0.979	0.001	—	—	—	—	-0.041	—	—	0.336	—	+	6	31.135	-49.024	0.870	0.089	
1825	1.044	—	—	—	—	—	-0.042	—	—	0.380	-0.043	+	6	30.757	-48.312	1.582	0.062	
930	0.959	0.001	—	—	—	—	-0.040	—	0.020	0.310	—	+	7	31.900	-48.309	1.585	0.062	
803	0.988	—	-0.006	—	—	—	-0.037	—	—	0.376	—	+	6	30.774	-48.297	1.597	0.062	
1953	1.034	—	—	—	—	—	-0.043	—	0.025	0.357	-0.063	+	7	31.800	-48.067	1.826	0.055	
805	1.019	—	—	-0.006	—	—	-0.039	—	—	0.364	—	+	6	30.556	-48.064	1.829	0.055	
809	1.001	—	—	—	-0.001	—	-0.039	—	—	0.366	—	+	6	30.572	-48.008	1.886	0.053	
865	1.018	—	—	—	—	—	-0.038	-0.004	—	0.366	—	+	6	30.475	-47.932	1.961	0.051	
817	1.022	—	—	—	—	0.002	-0.040	—	—	0.357	—	+	6	30.500	-47.904	1.990	0.051	
931	0.957	—	-0.008	—	—	—	-0.037	—	0.023	0.354	—	+	7	31.650	-47.781	2.113	0.048	
769	1.014	—	—	—	—	—	—	—	—	0.276	—	+	4	28.750	-47.770	2.124	0.047	
804	0.939	0.001	-0.009	—	—	—	-0.039	—	—	0.355	—	+	7	31.550	-47.704	2.190	0.046	
1826	1.014	0.001	—	—	—	—	-0.045	—	—	0.358	-0.053	+	7	31.483	-47.631	2.262	0.044	
2017	1.097	—	—	—	—	—	-0.043	-0.025	0.041	0.397	-0.125	+	8	32.579	-47.561	2.333	0.043	

# Inter-individual diet variation (WIC/TNW)

Model	Intercept	Predictor variables										Smooth terms		Model statistics				
		Length	Hydracarina density	Oligochaeta density	Simuliidae density	Trichoptera density	Chironomidae density	Ephemeroptera density	Plecoptera density	Richness	Shannon	Seasonal effects	df	logLik	AIC	delta	weight	
70	-3.280	0.008	—	-0.077	—	—	—	-0.073	—	—	—	5	-57.104	124.208	0	0.075		
6	-3.551	0.007	—	-0.087	—	—	—	—	—	—	—	4	-58.161	124.323	0.115	0.071		
1030	-3.924	0.007	—	-0.089	—	—	—	—	—	0.298	—	5	-57.208	124.417	0.209	0.068		
1286	-3.440	0.008	—	-0.080	—	—	—	—	—	-0.317	0.364	6	-56.530	125.059	0.851	0.049		
1046	-3.927	0.008	—	-0.084	—	-0.049	—	—	—	—	0.312	6	-56.553	125.106	0.898	0.048		
22	-3.537	0.008	—	-0.083	—	-0.045	—	—	—	—	—	5	-57.614	125.227	1.020	0.045		
198	-3.297	0.007	—	-0.087	—	—	—	-0.098	0.055	—	—	6	-56.683	125.367	1.159	0.042		
66	-3.374	0.008	—	—	—	—	—	-0.089	—	—	—	4	-58.760	125.521	1.313	0.039		
1094	-3.601	0.007	—	-0.081	—	—	—	-0.052	—	—	0.194	5	-56.779	125.557	1.350	0.038		
1032	-3.940	0.007	-0.028	-0.085	—	—	—	—	—	—	0.331	6	-56.857	125.714	1.506	0.036		
38	-3.460	0.008	—	-0.081	—	—	-0.038	—	—	—	—	5	-57.862	125.724	1.516	0.035		
86	-3.306	0.008	—	-0.075	—	-0.031	—	-0.063	—	—	—	6	-56.866	125.732	1.525	0.035		
262	-3.190	0.008	—	-0.081	—	—	—	—	—	-0.202	—	5	-57.877	125.754	1.547	0.035		
1029	-3.401	—	—	-0.087	—	—	—	—	—	—	0.313	3	-58.899	125.799	1.591	0.034		
5	-2.992	—	—	-0.085	—	—	—	—	—	—	—	2	-59.905	125.811	1.603	0.034		
1038	-4.006	0.007	—	-0.096	-0.022	—	—	—	—	—	0.356	5	-56.924	125.848	1.640	0.033		
8	-3.533	0.007	-0.019	-0.085	—	—	—	—	—	—	—	5	-58.006	126.012	1.804	0.031		
326	-3.106	0.008	—	-0.074	—	—	—	-0.068	—	-0.108	—	6	-57.026	126.051	1.843	0.030		
72	-3.281	0.008	-0.010	-0.076	—	—	—	-0.070	—	—	—	5	-57.064	126.127	1.919	0.029		
102	-3.270	0.008	—	-0.075	—	—	-0.011	-0.069	—	—	—	5	-57.082	126.165	1.957	0.028		
582	-3.283	0.008	—	-0.075	—	—	—	-0.073	—	—	—	+	6	-57.097	126.194	1.986	0.028	
78	-3.278	0.008	—	-0.076	0.001	—	—	-0.073	—	—	—	5	-57.103	126.207	1.999	0.028		
1542	-3.938	0.007	—	-0.084	—	—	—	—	—	—	0.306	+	6	-57.126	126.253	2.045	0.027	
518	-3.553	0.007	—	-0.084	—	—	—	—	—	—	—	+	5	-58.126	126.253	2.045	0.027	
14	-3.553	0.007	—	-0.089	-0.006	—	—	—	—	—	—	—	4	-58.135	126.271	2.063	0.027	
1062	-3.851	0.007	—	-0.086	—	—	-0.017	—	—	—	0.272	—	6	-57.152	126.303	2.096	0.026	

## Individual specialisation (PS<sub>i</sub>)

Model	Intercept	Predictor variables										Smooth terms		Model statistics				
		Length	Hydracarina density	Oligochaeta density	Simuliidae density	Trichoptera density	Chironomidae density	Ephemeroptera density	Plecoptera density	Richness	Shannon	Seasonal effects)		df	logLik	AIC	delta	weight
<b>802</b>	<b>0.401</b>	<b>0.000</b>	—	—	—	—	<b>0.006</b>	—	—	<b>-0.070</b>	—	+		<b>6</b>	<b>136.745</b>	<b>-259.968</b>	<b>0</b>	<b>0.054</b>
770	0.400	0.000	—	—	—	—	—	—	—	-0.058	—	+		5	135.866	-259.960	0.008	0.054
769	0.389	—	—	—	—	—	—	—	—	-0.067	—	+		4	134.812	-259.898	0.070	0.052
930	0.407	0.000	—	—	—	—	0.006	—	-0.006	-0.063	—	+		7	137.656	-259.658	0.310	0.046
897	0.394	—	—	—	—	—	—	—	-0.006	-0.060	—	+		5	135.591	-259.435	0.533	0.041
898	0.405	0.000	—	—	—	—	—	—	-0.005	-0.052	—	+		6	136.583	-259.414	0.554	0.041
801	0.389	—	—	—	—	—	0.006	—	—	-0.079	—	+		5	135.370	-259.329	0.638	0.039
929	0.394	—	—	—	—	—	0.006	—	-0.006	-0.072	—	+		6	136.321	-259.038	0.930	0.034
810	0.420	0.000	—	—	0.002	—	0.006	—	—	-0.078	—	+		7	137.215	-258.830	1.138	0.031
778	0.417	0.000	—	—	0.002	—	—	—	—	-0.065	—	+		6	136.242	-258.701	1.267	0.029
938	0.428	0.000	—	—	0.002	—	0.007	—	-0.006	-0.072	—	+		8	138.196	-258.693	1.275	0.029
1793	0.400	—	—	—	—	—	—	—	—	-0.063	-0.015	+		5	135.066	-258.516	1.451	0.026
1794	0.409	0.000	—	—	—	—	—	—	—	-0.054	-0.014	+		6	136.085	-258.480	1.488	0.026
777	0.402	—	—	—	0.001	—	—	—	—	-0.073	—	+		5	135.074	-258.413	1.555	0.025
906	0.424	0.000	—	—	0.002	—	—	—	-0.006	-0.059	—	+		7	137.035	-258.276	1.691	0.023
818	0.395	0.000	—	—	—	-0.001	0.007	—	—	-0.067	—	+		7	136.795	-258.081	1.887	0.021
834	0.397	0.000	—	—	—	—	—	0.002	—	-0.061	—	+		6	135.893	-258.079	1.888	0.021
905	0.409	—	—	—	0.002	—	—	—	-0.006	-0.067	—	+		6	135.896	-258.052	1.916	0.021
806	0.402	0.000	—	-0.001	—	—	0.007	—	—	-0.070	—	+		7	136.782	-258.042	1.925	0.021
804	0.396	0.000	-0.001	—	—	—	0.007	—	—	-0.067	—	+		7	136.715	-258.036	1.932	0.021
1826	0.405	0.000	—	—	—	—	0.006	—	—	-0.068	-0.006	+		7	136.759	-258.033	1.935	0.021
833	0.386	—	—	—	—	—	—	0.002	—	-0.070	—	+		5	134.833	-258.025	1.942	0.020
961	0.391	—	—	—	—	—	—	0.003	-0.007	-0.064	—	+		6	135.870	-258.013	1.954	0.020
774	0.400	0.000	—	0.000	—	—	—	—	—	-0.057	—	+		6	135.884	-257.999	1.969	0.020
771	0.383	—	-0.001	—	—	—	—	—	—	-0.063	—	+		5	134.818	-257.988	1.979	0.020
866	0.401	0.000	—	—	—	—	0.006	0.001	—	-0.071	—	+		7	136.733	-257.984	1.984	0.020
772	0.397	0.000	-0.001	—	—	—	—	—	—	-0.056	—	+		6	135.851	-257.982	1.985	0.020
962	0.401	0.000	—	—	—	—	—	0.003	-0.007	-0.056	—	+		7	136.842	-257.970	1.997	0.020
786	0.402	0.000	—	—	—	0.000	—	—	—	-0.059	—	+		6	135.867	-257.970	1.998	0.020
773	0.389	—	—	0.000	—	—	—	—	—	-0.067	—	+		5	134.826	-257.930	2.037	0.020
785	0.388	—	—	—	—	0.000	—	—	—	-0.066	—	+		5	134.813	-257.907	2.061	0.019
809	0.402	—	—	—	0.001	—	0.006	—	—	-0.086	—	+		6	135.684	-257.883	2.084	0.019
994	0.405	0.000	—	—	—	—	0.006	0.002	-0.007	-0.065	—	+		8	137.749	-257.856	2.111	0.019
1921	0.402	—	—	—	—	—	—	—	-0.005	-0.058	-0.012	+		6	135.720	-257.784	2.184	0.018
937	0.411	—	—	—	0.002	—	0.006	—	-0.006	-0.080	—	+		7	136.697	-257.745	2.223	0.018
1922	0.412	0.000	—	—	—	—	—	—	-0.005	-0.049	-0.011	+		7	136.704	-257.704	2.264	0.017
932	0.404	0.000	-0.001	—	—	—	0.006	—	-0.006	-0.062	—	+		8	137.637	-257.684	2.284	0.017
934	0.407	0.000	—	0.000	—	—	0.006	—	-0.006	-0.063	—	+		8	137.659	-257.672	2.295	0.017

**-Appendix 6:** Analyses for the subset of data that included fish density.

Model selection table (15% confidence set) according to model averaging. The best model is in bold (first position in the table). Models with support ( $\Delta AIC < 2$ ) are highlighted in grey. Length = fish length (mm). Absolute abundance of the most represented prey categories (Chironomidae, Ephemeroptera, Hydracarina, Oligochaeta, Plecoptera, Simuliidae and Trichoptera) measured as ind/m<sup>2</sup>.

Total niche width of a population (TNW)

Model	Intercept	Predictor variables													Model statistics				
		Length	Interspecific competition	Intraspecific competition	Hydracarina density	Oligochaeta density	Simuliidae density	Trichoptera density	Chironomidae density	Ephemeroptera density	Plecoptera density	Richness	Shannon	Interspecific-Intraspecific interaction	df	logLik	AIC	delta	weight
<b>1154</b>	<b>1.206</b>	<b>0.007</b>	—	—	—	—	—	—	<b>-0.077</b>	—	—	<b>0.039</b>	—	—	<b>5</b>	<b>10.041</b>	<b>-10.082</b>	<b>0</b>	<b>0.113</b>
1218	1.155	0.007	—	—	—	—	—	-0.029	-0.070	—	—	0.045	—	—	6	10.628	-9.255	0.826	0.074
1156	1.007	0.007	-0.057	—	—	—	—	—	-0.086	—	—	0.053	—	—	6	10.377	-8.755	1.327	0.058
130	1.470	0.008	—	—	—	—	—	—	-0.072	—	—	—	—	—	4	8.342	-8.685	1.397	0.056
1162	1.228	0.007	—	—	0.010	—	—	—	-0.079	—	—	0.035	—	—	6	10.098	-8.196	1.885	0.044
1170	1.213	0.007	—	—	—	0.006	—	—	-0.079	—	—	0.038	—	—	6	10.081	-8.162	1.920	0.043
138	1.451	0.007	—	—	0.032	—	—	—	-0.079	—	—	—	—	—	5	9.078	-8.155	1.926	0.043
3202	1.231	0.007	—	—	—	—	—	—	-0.080	—	—	0.040	-0.025	—	6	10.071	-8.142	1.940	0.043
1410	1.199	0.007	—	—	—	—	—	—	-0.080	0.006	—	0.038	—	—	6	10.062	-8.124	1.958	0.042
1186	1.225	0.007	—	—	—	—	0.003	—	-0.078	—	—	0.037	—	—	6	10.057	-8.114	1.968	0.042
1158	1.185	0.007	—	-0.010	—	—	—	—	-0.076	—	—	0.038	—	—	6	10.047	-8.093	1.989	0.042
1666	1.207	0.007	—	—	—	—	—	—	-0.077	—	-0.002	0.039	—	—	6	10.042	-8.083	1.998	0.041
1220	0.962	0.007	-0.056	—	—	—	—	-0.028	-0.078	—	—	0.058	—	—	7	10.963	-7.926	2.156	0.038
1226	1.193	0.007	—	—	0.021	—	—	-0.034	-0.072	—	—	0.037	—	—	7	10.876	-7.752	2.330	0.035
162	1.506	0.007	—	—	—	—	0.016	—	-0.076	—	—	—	—	—	5	8.809	-7.618	2.464	0.033
1730	1.127	0.007	—	—	—	—	—	-0.036	-0.069	—	0.024	0.045	—	—	7	10.769	-7.538	2.544	0.032
1474	1.137	0.007	—	—	—	—	—	-0.031	-0.074	0.012	—	0.043	—	—	7	10.732	-7.464	2.618	0.030
1234	1.164	0.007	—	—	—	0.009	—	-0.030	-0.072	—	—	0.044	—	—	7	10.725	-7.450	2.632	0.030
1250	1.184	0.007	—	—	—	—	0.005	-0.029	-0.070	—	—	0.042	—	—	7	10.665	-7.330	2.752	0.028
202	1.434	0.007	—	—	0.044	—	—	-0.031	-0.073	—	—	—	—	—	6	9.647	-7.295	2.787	0.028
3266	1.174	0.007	—	—	—	—	—	-0.028	-0.072	—	—	0.046	-0.017	—	7	10.643	-7.286	2.795	0.028
1222	1.125	0.007	—	-0.014	—	—	—	-0.029	-0.068	—	—	0.044	—	—	7	10.641	-7.281	2.800	0.028
132	1.530	0.007	0.034	—	—	—	—	—	-0.068	—	—	—	—	—	5	8.519	-7.037	3.044	0.025
386	1.434	0.007	—	—	—	—	—	—	-0.079	0.016	—	—	—	—	5	8.503	-7.007	3.075	0.024

## Within-individual component (WIC)

Model	Intercept	Predictor variables													Model statistics				
		Length	Interspecific competition	Intraspecific competition	Hydracarina density	Oligochaeta density	Simuliidae density	Trichoptera density	Chironomidae density	Ephemeroptera density	Plecoptera density	Richness	Shannon	Interspecific-Intraspecific interaction	df	logLik	AIC	delta	weight
2580	-5.330	0.015	-0.360	—	—	-0.137	—	—	—	—	0.212	—	0.582	—	7	-8.544	31.088	0	0.045
2056	-5.811	0.019	-0.364	-0.349	—	—	—	—	—	—	—	—	0.541	—	6	-9.816	31.632	0.544	0.034
2584	-5.865	0.016	-0.377	-0.251	—	-0.108	—	—	—	—	0.207	—	0.550	—	8	-7.825	31.650	0.562	0.034
2612	-5.420	0.014	-0.404	—	—	-0.138	0.042	—	—	—	0.233	—	0.598	—	8	-7.865	31.731	0.643	0.032
2588	-5.474	0.015	-0.394	—	0.062	-0.139	—	—	—	—	0.182	—	0.597	—	8	-7.998	31.996	0.908	0.028
2068	-5.152	0.018	-0.363	—	—	-0.075	—	—	—	—	—	—	0.641	—	6	-10.147	32.293	1.205	0.024
2076	-5.382	0.017	-0.409	—	0.085	-0.090	—	—	—	—	—	—	0.650	—	7	-9.188	32.375	1.287	0.023
2052	-4.975	0.016	-0.318	—	—	—	—	—	—	—	—	—	0.536	—	5	-11.211	32.422	1.333	0.023
2836	-5.740	0.014	-0.368	—	—	-0.139	—	—	—	0.062	0.184	—	0.752	—	8	-8.232	32.465	1.377	0.022
2	-3.671	0.015	—	—	—	—	—	—	—	—	—	—	—	—	3	-13.242	32.483	1.395	0.022
2568	-5.934	0.017	-0.351	-0.394	—	—	—	—	—	—	0.099	—	0.475	—	7	-9.334	32.668	1.579	0.020
2324	-5.836	0.017	-0.376	—	—	-0.092	—	—	—	0.098	—	—	0.898	—	7	-9.389	32.778	1.690	0.019
2620	-5.543	0.013	-0.431	—	0.056	-0.140	0.039	—	—	—	0.204	—	0.610	—	9	-7.397	32.795	1.706	0.019
530	-3.916	0.013	—	—	—	-0.114	—	—	—	—	0.229	—	—	—	5	-11.419	32.839	1.751	0.019
6	-4.267	0.017	—	-0.286	—	—	—	—	—	—	—	—	—	—	4	-12.440	32.880	1.791	0.018
2072	-5.722	0.019	-0.381	-0.266	—	-0.047	—	—	—	—	—	—	0.605	—	7	-9.447	32.894	1.806	0.018
3604	-5.617	0.015	-0.404	—	—	-0.140	—	—	—	—	0.209	0.022	0.605	—	8	-8.474	32.947	1.859	0.018
2644	-5.313	0.015	-0.354	—	—	-0.138	—	-0.014	—	—	0.225	—	0.573	—	8	-8.522	33.044	1.955	0.017
2708	-5.292	0.015	-0.360	—	—	-0.135	—	—	-0.007	—	0.212	—	0.573	—	8	-8.539	33.078	1.990	0.017
2616	-5.771	0.015	-0.402	-0.178	—	-0.118	0.029	—	—	—	0.222	—	0.570	—	9	-7.560	33.121	2.032	0.016
6152	-4.932	0.016	0.028	0.098	—	—	—	—	—	—	—	—	0.571	0.239	7	-9.582	33.163	2.075	0.016
8	-4.788	0.019	-0.176	-0.344	—	—	—	—	—	—	—	—	—	—	5	-11.623	33.246	2.158	0.015
2592	-5.831	0.016	-0.394	-0.193	0.039	-0.116	—	—	—	—	0.189	—	0.567	—	9	-7.638	33.277	2.189	0.015
2064	-5.813	0.018	-0.375	-0.315	0.036	—	—	—	—	—	—	—	0.536	—	7	-9.647	33.295	2.206	0.015
2676	-5.383	0.013	-0.394	—	—	-0.143	0.050	-0.043	—	—	0.276	—	0.575	—	9	-7.662	33.324	2.236	0.015
532	-4.289	0.014	-0.159	—	—	-0.120	—	—	—	—	0.241	—	—	—	6	-10.675	33.349	2.261	0.014
2060	-5.120	0.015	-0.345	—	0.063	—	—	—	—	—	—	—	0.528	—	6	-10.724	33.447	2.359	0.014
520	-5.141	0.017	-0.191	-0.409	—	—	—	—	—	—	0.140	—	—	—	6	-10.725	33.450	2.362	0.014
776	-5.254	0.018	-0.287	-0.522	—	—	—	—	—	-0.100	0.179	—	—	—	7	-9.731	33.462	2.374	0.014
828	-4.329	0.013	-0.428	—	0.109	-0.131	0.088	—	—	-0.172	0.288	—	—	—	9	-7.739	33.478	2.390	0.014

## Between-individual component (BIC)

Model	Intercept	Predictor variables													Model statistics				
		Length	Interspecific competition	Intraspecific competition	Hydracarina density	Oligochaeta density	Simuliidae density	Trichoptera density	Chironomidae density	Ephemeroptera density	Plecoptera density	Richness	Shannon	Interspecific-Intraspecific interaction	df	logLik	AIC	delta	weight
1154	1.164	0.006	—	—	—	—	—	—	-0.071	—	—	0.039	—	—	5	11.174	-12.348	0	0.099
1218	1.103	0.006	—	—	—	—	—	-0.035	-0.062	—	—	0.046	—	—	6	12.142	-12.284	0.064	0.096
1156	0.987	0.006	-0.051	—	—	—	—	—	-0.079	—	—	0.052	—	—	6	11.467	-10.934	1.414	0.049
1220	0.933	0.007	-0.049	—	—	—	—	-0.034	-0.070	—	—	0.058	—	—	7	12.438	-10.875	1.472	0.048
1234	1.117	0.006	—	—	—	0.014	—	-0.037	-0.066	—	—	0.045	—	—	7	12.405	-10.811	1.537	0.046
3202	1.230	0.006	—	—	—	—	—	—	-0.078	—	—	0.043	-0.064	—	6	11.395	-10.791	1.557	0.046
3266	1.162	0.006	—	—	—	—	—	-0.034	-0.069	—	—	0.050	-0.055	—	7	12.319	-10.639	1.709	0.042
1474	1.081	0.006	—	—	—	—	—	-0.038	-0.067	0.015	—	0.044	—	—	7	12.307	-10.614	1.733	0.042
1170	1.177	0.006	—	—	—	0.010	—	—	-0.074	—	—	0.038	—	—	6	11.302	-10.604	1.743	0.041
130	1.431	0.007	—	—	—	—	—	—	-0.066	—	—	—	—	—	4	9.286	-10.572	1.776	0.041
1666	1.173	0.006	—	—	—	—	—	—	-0.071	—	-0.014	0.040	—	—	6	11.240	-10.479	1.868	0.039
1158	1.221	0.006	—	0.027	—	—	—	—	-0.074	—	—	0.040	—	—	6	11.224	-10.447	1.900	0.038
1226	1.121	0.006	—	—	0.010	—	—	-0.037	-0.063	—	—	0.042	—	—	7	12.207	-10.413	1.934	0.038
1410	1.157	0.006	—	—	—	—	—	—	-0.074	0.006	—	0.038	—	—	6	11.204	-10.408	1.940	0.038
1730	1.087	0.006	—	—	—	—	—	-0.039	-0.062	—	0.013	0.046	—	—	7	12.193	-10.386	1.962	0.037
1222	1.149	0.006	—	0.022	—	—	—	-0.034	-0.065	—	—	0.047	—	—	7	12.177	-10.353	1.995	0.037
1162	1.159	0.006	—	—	-0.002	—	—	—	-0.071	—	—	0.040	—	—	6	11.176	-10.353	1.995	0.037
1186	1.162	0.006	—	—	—	—	0.000	—	-0.071	—	—	0.039	—	—	6	11.174	-10.348	2.000	0.037
1250	1.113	0.006	—	—	—	—	0.002	-0.035	-0.062	—	—	0.045	—	—	7	12.147	-10.293	2.054	0.036
1090	0.867	0.006	—	—	—	—	—	-0.048	—	—	—	0.045	—	—	5	9.831	-9.662	2.686	0.026
3282	1.198	0.006	—	—	—	0.017	—	-0.036	-0.075	—	—	0.050	-0.073	—	8	12.714	-9.428	2.920	0.023
138	1.417	0.006	—	—	0.024	—	—	—	-0.071	—	—	—	—	—	5	9.713	-9.425	2.922	0.023
1236	0.959	0.006	-0.045	—	—	0.013	—	-0.036	-0.072	—	—	0.057	—	—	8	12.659	-9.318	3.029	0.022
1682	1.217	0.006	—	—	—	0.022	—	—	-0.075	—	-0.039	0.039	—	—	7	11.644	-9.287	3.060	0.021

## Inter-individual diet variation (WIC/TNW)

Model	Intercept	Predictor variables													Model statistics				
		Length	Interspecific competition	Intraspecific competition	Hydracarina density	Oligochaeta density	Simuliidae density	Trichoptera density	Chironomidae density	Ephemeroptera density	Plecoptera density	Richness	Shannon	Interspecific-Intraspecific interaction	df	logLik	AIC	delta	weight
<b>2580</b>	<b>-5.75</b>	<b>0.01</b>	<b>-0.39</b>	—	—	<b>-0.15</b>	—	—	—	—	<b>0.29</b>	—	<b>0.45</b>	—	<b>7</b>	<b>-10.629</b>	<b>35.258</b>	<b>0</b>	<b>0.028</b>
532	-4.93	0.01	-0.24	—	—	-0.14	—	—	—	—	0.31	—	—	—	6	-11.757	35.515	0.257	0.025
2588	-5.94	0.01	-0.44	—	0.08	-0.15	—	—	—	—	0.25	—	0.47	—	8	-9.836	35.671	0.413	0.023
2644	-5.85	0.01	-0.43	—	—	-0.14	—	0.08	—	—	0.21	—	0.50	—	8	-9.965	35.930	0.672	0.020
529	-3.84	—	—	—	—	-0.13	—	—	—	—	0.35	—	—	—	4	-14.049	36.099	0.841	0.019
531	-4.21	—	-0.20	—	—	-0.14	—	—	—	—	0.37	—	—	—	5	-13.076	36.153	0.895	0.018
2584	-6.25	0.01	-0.41	-0.24	—	-0.12	—	—	—	—	0.29	—	0.42	—	8	-10.097	36.194	0.936	0.018
2132	-5.77	0.02	-0.45	—	—	-0.09	—	0.13	—	—	—	—	0.58	—	7	-11.110	36.219	0.962	0.017
536	-5.57	0.01	-0.27	-0.27	—	-0.11	—	—	—	—	0.31	—	—	—	7	-11.121	36.241	0.983	0.017
540	-5.08	0.01	-0.27	—	0.08	-0.14	—	—	—	—	0.28	—	—	—	7	-11.140	36.280	1.022	0.017
2579	-4.96	—	-0.35	—	—	-0.15	—	—	—	—	0.35	—	0.43	—	6	-12.181	36.362	1.105	0.016
530	-4.38	0.01	—	—	—	-0.13	—	—	—	—	0.30	—	—	—	5	-13.230	36.460	1.202	0.015
328	-5.52	0.02	-0.40	-0.44	—	—	—	0.16	—	-0.13	—	—	—	—	7	-11.295	36.589	1.332	0.015
520	-5.77	0.01	-0.27	-0.41	—	—	—	—	—	—	0.19	—	—	—	6	-12.301	36.603	1.345	0.014
2708	-6.06	0.01	-0.40	—	—	-0.16	—	—	0.06	—	0.29	—	0.52	—	8	-10.334	36.668	1.411	0.014
2120	-6.30	0.02	-0.43	-0.33	—	—	—	0.11	—	—	—	—	0.46	—	7	-11.354	36.708	1.450	0.014
2587	-5.19	—	-0.40	—	0.09	-0.15	—	—	—	—	0.31	—	0.45	—	7	-11.366	36.731	1.473	0.014
596	-4.94	0.01	-0.25	—	—	-0.13	—	0.06	—	—	0.26	—	—	—	7	-11.387	36.774	1.516	0.013
539	-4.40	—	-0.24	—	0.08	-0.14	—	—	—	—	0.33	—	—	—	6	-12.420	36.840	1.583	0.013
2116	-5.52	0.01	-0.39	—	—	—	—	0.11	—	—	—	—	0.45	—	6	-12.436	36.872	1.614	0.013
796	-4.99	0.01	-0.36	—	0.11	-0.14	—	—	—	-0.09	0.29	—	—	—	8	-10.443	36.886	1.628	0.013
840	-5.85	0.02	-0.41	-0.52	—	—	—	0.11	—	-0.13	0.15	—	—	—	8	-10.475	36.949	1.692	0.012
68	-4.67	0.01	-0.23	—	—	—	—	0.11	—	—	—	—	—	—	5	-13.477	36.953	1.696	0.012
2652	-5.97	0.01	-0.46	—	0.07	-0.15	—	0.06	—	—	0.20	—	0.51	—	9	-9.478	36.957	1.699	0.012
792	-5.68	0.01	-0.35	-0.38	—	-0.10	—	—	—	-0.08	0.33	—	—	—	8	-10.485	36.970	1.712	0.012
2612	-5.79	0.01	-0.42	—	—	-0.15	0.02	—	—	—	0.30	—	0.46	—	8	-10.504	37.007	1.749	0.012
2	-4.05	0.01	—	—	—	—	—	—	—	—	—	—	—	—	3	-15.505	37.009	1.751	0.012
72	-5.44	0.02	-0.27	-0.32	—	—	—	0.11	—	—	—	—	—	—	6	-12.516	37.032	1.774	0.012
1561	-3.21	—	—	—	0.12	-0.12	—	—	—	—	0.31	-0.10	—	—	6	-12.518	37.035	1.777	0.012
2648	-6.29	0.01	-0.44	-0.21	—	-0.12	—	0.08	—	—	0.22	—	0.47	—	9	-9.519	37.037	1.779	0.012
2836	-6.00	0.01	-0.40	—	—	-0.15	—	—	—	0.04	0.27	—	0.56	—	8	-10.530	37.059	1.802	0.011
776	-5.87	0.02	-0.36	-0.52	—	—	—	—	—	-0.09	0.23	—	—	—	7	-11.532	37.063	1.805	0.011
2140	-5.92	0.01	-0.48	—	0.07	-0.10	—	0.11	—	—	—	—	0.58	—	8	-10.540	37.081	1.823	0.011
513	-3.69	—	—	—	—	—	—	—	—	—	0.19	—	—	—	3	-15.562	37.124	1.866	0.011
1562	-3.71	0.01	—	—	0.12	-0.12	—	—	—	—	0.26	-0.11	—	—	7	-11.581	37.161	1.903	0.011
788	-4.86	0.01	-0.27	—	—	-0.14	—	—	—	-0.04	0.33	—	—	—	7	-11.581	37.161	1.903	0.011
3604	-5.99	0.01	-0.43	—	—	-0.15	—	—	—	—	0.29	0.02	0.47	—	8	-10.586	37.171	1.914	0.011
856	-5.68	0.02	-0.40	-0.39	—	-0.09	—	0.10	—	-0.12	0.25	—	—	—	9	-9.604	37.208	1.950	0.011
4	-4.52	0.01	-0.21	—	—	—	—	—	—	—	—	—	—	—	4	-14.605	37.209	1.952	0.011
1553	-3.43	—	—	—	—	-0.13	—	—	—	—	0.36	-0.05	—	—	5	-13.605	37.210	1.952	0.011
2712	-6.74	0.01	-0.42	-0.28	—	-0.13	—	—	0.08	—	0.28	—	0.51	—	9	-9.613	37.225	1.967	0.011
1554	-3.95	0.01	—	—	—	-0.12	—	—	—	—	0.31	-0.06	—	—	6	-12.627	37.254	1.997	0.010
2592	-6.20	0.01	-0.44	-0.14	0.06	-0.14	—	—	—	—	0.26	—	0.45	—	9	-9.673	37.347	2.089	0.010
564	-4.96	0.01	-0.25	—	—	-0.14	0.02	—	—	—	0.32	—	—	—	7	-11.678	37.355	2.097	0.010

## Individual specialisation (PS<sub>i</sub>)

Model	Intercept	Predictor variables													Model statistics				
		Length	Interspecific competition	Intraspecific competition	Hydracarina density	Oligochaeta density	Simuliidae density	Trichoptera density	Chironomidae density	Ephemeroptera density	Plecoptera density	Richness	Shannon	Interspecific-Intraspecific interaction	df	logLik	AIC	delta	weight
<b>138</b>	<b>0.315</b>	<b>-0.001</b>	—	—	<b>-0.014</b>	—	—	—	<b>0.016</b>	—	—	—	—	—	<b>5</b>	<b>44.413</b>	<b>-78.827</b>	<b>0</b>	<b>0.066</b>
1162	0.357	-0.001	—	—	-0.010	—	—	—	0.016	—	—	-0.006	—	—	6	45.181	-78.362	0.465	0.053
1154	0.380	-0.001	—	—	—	—	—	—	0.014	—	—	-0.011	—	—	5	44.021	-78.041	0.785	0.045
202	0.319	-0.001	—	—	-0.017	—	—	0.007	0.014	—	—	—	—	—	6	44.986	-77.972	0.855	0.043
1226	0.365	-0.001	—	—	-0.012	—	—	0.007	0.014	—	—	-0.007	—	—	7	45.925	-77.850	0.976	0.041
170	0.308	-0.001	—	—	-0.014	—	-0.003	—	0.016	—	—	—	—	—	6	44.806	-77.612	1.214	0.036
154	0.313	-0.001	—	—	-0.014	-0.003	—	—	0.017	—	—	—	—	—	6	44.667	-77.335	1.492	0.031
234	0.311	-0.001	—	—	-0.017	—	-0.004	0.008	0.015	—	—	—	—	—	7	45.619	-77.238	1.589	0.030
394	0.322	-0.001	—	—	-0.013	—	—	—	0.017	-0.003	—	—	—	—	6	44.545	-77.090	1.736	0.028
1164	0.402	-0.001	0.013	—	-0.009	—	—	—	0.018	—	—	-0.010	—	—	7	45.524	-77.047	1.779	0.027
1156	0.431	-0.002	0.015	—	—	—	—	—	0.016	—	—	-0.014	—	—	6	44.456	-76.911	1.915	0.025
142	0.329	-0.001	—	0.006	-0.014	—	—	—	0.015	—	—	—	—	—	6	44.450	-76.899	1.927	0.025
650	0.313	-0.001	—	—	-0.015	—	—	—	0.016	—	0.002	—	—	—	6	44.446	-76.892	1.935	0.025
1178	0.354	-0.001	—	—	-0.009	-0.003	—	—	0.017	—	—	-0.006	—	—	7	45.439	-76.878	1.948	0.025
140	0.312	-0.001	-0.002	—	-0.014	—	—	—	0.016	—	—	—	—	—	6	44.422	-76.845	1.982	0.025
2186	0.315	-0.001	—	—	-0.014	—	—	—	0.016	—	—	—	0.000	—	6	44.413	-76.827	2.000	0.024
1170	0.375	-0.001	—	—	—	-0.004	—	—	0.015	—	—	-0.010	—	—	6	44.399	-76.799	2.028	0.024
218	0.316	-0.001	—	—	-0.016	-0.004	—	0.007	0.015	—	—	—	—	—	7	45.345	-76.690	2.136	0.023
1242	0.362	-0.001	—	—	-0.012	-0.004	—	0.008	0.015	—	—	-0.007	—	—	8	46.307	-76.614	2.212	0.022
1418	0.361	-0.001	—	—	-0.010	—	—	—	0.017	-0.002	—	-0.006	—	—	7	45.266	-76.532	2.295	0.021
458	0.329	-0.001	—	—	-0.016	—	—	0.007	0.016	-0.004	—	—	—	—	7	45.255	-76.511	2.316	0.021
1158	0.409	-0.002	—	0.014	—	—	—	—	0.013	—	—	-0.010	—	—	6	44.250	-76.501	2.326	0.021
1228	0.406	-0.001	0.012	—	-0.012	—	—	0.007	0.016	—	—	-0.010	—	—	8	46.238	-76.475	2.352	0.020
1194	0.348	-0.001	—	—	-0.011	—	-0.001	—	0.016	—	—	-0.006	—	—	7	45.236	-76.472	2.354	0.020
1218	0.387	-0.001	—	—	—	—	—	0.004	0.013	—	—	-0.011	—	—	6	44.236	-76.472	2.354	0.020
1410	0.384	-0.001	—	—	—	—	—	—	0.016	-0.004	—	-0.010	—	—	6	44.233	-76.465	2.362	0.020
3210	0.350	-0.001	—	—	-0.010	—	—	—	0.017	—	—	-0.007	0.007	—	7	45.230	-76.460	2.367	0.020
250	0.306	-0.001	—	—	-0.016	-0.005	-0.004	0.009	0.016	—	—	—	—	—	8	46.209	-76.419	2.408	0.020
1166	0.368	-0.001	—	0.005	-0.010	—	—	—	0.015	—	—	-0.006	—	—	7	45.206	-76.412	2.415	0.020
1674	0.355	-0.001	—	—	-0.010	—	—	—	0.016	—	0.002	-0.006	—	—	7	45.203	-76.406	2.421	0.020
186	0.304	-0.001	—	—	-0.013	-0.004	-0.004	—	0.018	—	—	—	—	—	7	45.185	-76.369	2.457	0.019
1482	0.371	-0.001	—	—	-0.012	—	—	0.008	0.015	-0.004	—	-0.007	—	—	8	46.137	-76.273	2.553	0.019
1174	0.427	-0.002	—	0.026	—	-0.007	—	—	0.013	—	—	-0.009	—	—	7	45.107	-76.215	2.612	0.018
1258	0.350	-0.001	—	—	-0.013	—	-0.002	0.008	0.015	—	—	-0.005	—	—	8	46.074	-76.148	2.679	0.017
1666	0.381	-0.001	—	—	—	—	—	—	0.014	—	-0.002	-0.011	—	—	6	44.046	-76.091	2.736	0.017
3202	0.376	-0.001	—	—	—	—	—	—	0.015	—	—	-0.011	0.004	—	6	44.036	-76.072	2.755	0.017
1186	0.380	-0.001	—	—	—	—	0.000	—	0.014	—	—	-0.011	—	—	6	44.021	-76.042	2.785	0.016
204	0.314	-0.001	-0.003	—	-0.016	—	—	0.007	0.014	—	—	—	—	—	7	45.015	-76.030	2.797	0.016
666	0.302	-0.001	—	—	-0.015	-0.006	—	—	0.017	—	0.010	—	—	—	7	45.013	-76.027	2.800	0.016