Online material

Appendix

Table S1. Summary of the variables determined on the eight stream sites and outcomes of univariate statistical analyses. Paired-t tests were used for the comparison between mature and harvested sites. Spearman rank correlations were used to determine the contributions of the variables included in multivariate analyses (PCA and PCO) to principal components.

Variables	Description	Range Min	Range Max	Paired t test t	Paired t test P	Ordination type	r_s axis 1	P	r_s axis 2	P
Altitude (m a.s.l.)	Single value	330	700	−0.1	0.94	PCA	−0.98	0	0.19	0.67
Catchment area (km²)	Single value	0.63	5.9	0.5	0.62	PCA	0.95	0	−0.21	0.62
Slope (m.m⁻¹)	Single value	0.04	0.19	0	0.99	PCA	0.38	0.36	−0.43	0.3
Distance from source (km)	Single value	1.5	4	0.6	0.59	PCA	0.78	0.04	0.18	0.7
Harvested area (km²)	Single value	0	0.07	5.6	0.01	PCA	0.11	0.84	0.84	0.02
Percent catchment harvested (%)	Single value	0	4.8	2.5	0.09	PCA	−0.16	0.7	0.89	0.01
Stream length harvested (m)	Single value	0	550	3.5	0.04	PCA	0.37	0.39	0.74	0.06
PARs (µmol.s⁻¹.m⁻²)	Mean ($n = 6$ dates)	2	322	6.7	0.01	PCA	−0.1	0.84	0.83	0.02
Chlorophyll-a content of periphyton (µg.cm⁻²)	Single value	0.19	1.59	2.2	0.11	PCA	0.72	0.06	0.32	0.46
Percent canopy openness (%)	Mean ($n = 3$ canopy pictures)	0.6	40.3	5.9	0.01	PCA	−0.17	0.7	0.95	0
Dominant channel form (pool = 0, riffle = 1, rapid = 2)	Most frequent ($n = 10$ transects)	1	2	1	0.39	PCA	0.17	0.7	−0.17	0.67
Bankfull width (m)	Mean ($n = 10$ transects)	1.9	4.5	−0.7	0.53	PCA	0.81	0.02	−0.45	0.27
Wetted channel width (m)	Mean ($n = 10$ transects)	1.8	3.8	−0.1	0.9	PCA	0.9	0.01	−0.51	0.2
Water depth (cm)	Mean ($n = 30$ points)	6.1	10.4	0.6	0.57	PCA	0.34	0.43	0.05	0.94
Standard deviation of water depth (cm)	SD ($n = 30$ points)	3.7	7.9	−1.7	0.18	PCA	−0.2	0.62	−0.2	0.62
Ratio of bankfull width to bankfull water depth	Mean ($n = 10$ transects)	3.5	9.6	−6.3	0.01	PCA	0.83	0.02	−0.66	0.08
Mean grain size (cm)	$n = 30$ particles	8.7	45.7	−0.7	0.53	PCA	0.6	0.13	−0.62	0.12
Sorting coefficient (d_{75}/d_{25})	$n = 30$ particles	7.1	46.8	−0.8	0.46	PCA	−0.29	0.5	−0.29	0.5
Large wood index (m³.m⁻¹ transect)	Mean ($n = 10$ transects)	0	0.02	0.5	0.66	PCA	0.52	0.2	−0.17	0.7
Mean daily temperature (°C)	Based on 62 days continuous monitoring	10.8	12.4	1.5	0.23	PCA	0.74	0.05	−0.22	0.58
Standard deviation of mean daily temperature (°C)	Based on 62 days continuous monitoring	1.48	2.5	−0.5	0.66	PCA	0.53	0.2	−0.53	0.17
pH	Mean ($n = 5$ dates)	6.2	7.5	1.7	0.19	PCA	0.66	0.1	0.11	0.84
Conductivity (µS.cm⁻¹)	Mean ($n = 5$ dates)	41	129	2.4	0.1	PCA	0.29	0.5	0.38	0.36
Alcalinity (mg CaCO₃.L⁻¹)	Mean ($n = 3$ dates)	5.8	43.3	2.3	0.11	PCA	0.55	0.17	0.14	0.75
Soluble reactive phosphorus (µg P.L⁻¹)	Mean ($n = 3$ dates)	1.9	17.6	0.4	0.68	PCA	0.85	0.02	−0.27	0.5
Nitrate (µg N.L⁻¹)	Mean ($n = 3$ dates)	954	1343	0.4	0.72	PCA	0.62	0.12	−0.19	0.67
Chloroperlidae	Abundance summed across 12 (alder) + 12 (beech) litter bags	4	80	−3.4	0.04	PCO	0.6	0.13	−0.55	0.15
Nemouridae	Abundance summed across 12 (alder) + 12 (beech) litter bags	110	873	1.5	0.23	PCO	0.12	0.79	0.43	0.3
Leuctridae	Abundance summed across 12 (alder) + 12 (beech) litter bags	44	505	−0.3	0.8	PCO	−0.31	0.46	−0.29	0.5
Taeniopterigidae	Abundance summed across 12 (alder) + 12 (beech) litter bags	0	10	2.4	0.1	PCO	0.29	0.5	0.46	0.27

Table S1. (*Contd.*)

Variables	Description	Range		Paired t test		Ordination type	Spearman rank correlation with synthetic axes			
		Min	Max	t	P		r_s axis 1	P	r_s axis 2	P
Perlidae	Abundance summed across 12 (alder) + 12 (beech) litter bags	1	128	−3.6	0.04	PCO	0.69	0.07	−0.57	0.15
Perlodidae	Abundance summed across 12 (alder) + 12 (beech) litter bags	8	44	−1	0.4	PCO	−0.59	0.13	−0.11	0.79
Baetidae	Abundance summed across 12 (alder) + 12 (beech) litter bags	2	421	1.4	0.27	PCO	−0.16	0.7	0.79	0.03
Leptophlebiidae	Abundance summed across 12 (alder) + 12 (beech) litter bags	12	330	0.9	0.46	PCO	0.48	0.24	0.14	0.75
Heptageniidae	Abundance summed across 12 (alder) + 12 (beech) litter bags	8	91	1.3	0.3	PCO	0.07	0.88	0.52	0.2
Ephemeridae	Abundance summed across 12 (alder) + 12 (beech) litter bags	0	8	0.1	0.89	PCO	0.36	0.43	0.18	0.7
Hydropsychidae	Abundance summed across 12 (alder) + 12 (beech) litter bags	7	605	0.7	0.56	PCO	0.38	0.36	0.21	0.62
Philopotamidae	Abundance summed across 12 (alder) + 12 (beech) litter bags	1	7	−1.5	0.22	PCO	−0.18	0.67	−0.64	0.1
Sericostomatidae	Abundance summed across 12 (alder) + 12 (beech) litter bags	1	93	0.1	0.9	PCO	−0.48	0.24	−0.17	0.7
Polycentropodidae	Abundance summed across 12 (alder) + 12 (beech) litter bags	0	8	−0.3	0.77	PCO	−0.4	0.33	0.16	0.75
Glossosomatidae	Abundance summed across 12 (alder) + 12 (beech) litter bags	0	12	0.2	0.88	PCO	0.01	1	−0.06	0.88
Leptoceridae	Abundance summed across 12 (alder) + 12 (beech) litter bags	0	11	2.3	0.1	PCO	−0.54	0.17	0.12	0.79
Rhyacophilidae	Abundance summed across 12 (alder) + 12 (beech) litter bags	0	30	5.1	0.01	PCO	0.02	0.98	0.76	0.04
Goeridae	Abundance summed across 12 (alder) + 12 (beech) litter bags	0	10	2.3	0.11	PCO	0.11	0.84	0.57	0.15
Lepidostomatidae	Abundance summed across 12 (alder) + 12 (beech) litter bags	0	4	−0.4	0.72	PCO	−0.07	0.88	−0.55	0.15
Brachycentridae	Abundance summed across 12 (alder) + 12 (beech) litter bags	0	118	0.9	0.44	PCO	−0.14	0.75	0.33	0.46
Limnephilidae	Abundance summed across 12 (alder) + 12 (beech) litter bags	1	67	−0.3	0.82	PCO	−0.32	0.43	0.05	0.94
Odontoceridae	Abundance summed across 12 (alder) + 12 (beech) litter bags	0	10	1	0.39	PCO	−0.66	0.08	−0.19	0.62
Gammaridae	Abundance summed across 12 (alder) + 12 (beech) litter bags	0	1116	0.4	0.7	PCO	−0.93	0	0.19	0.67
Planariidae	Abundance summed across 12 (alder) + 12 (beech) litter bags	8	379	0.8	0.49	PCO	−0.86	0.01	0.07	0.88
Chironomidae	Abundance summed across 12 (alder) + 12 (beech) litter bags	472	3149	0.5	0.68	PCO	0.93	0	−0.12	0.79

Variable	Description								
Tipulidae	Abundance summed across 12 (alder) + 12 (beech) litter bags	0	8	−1.4	0.25	PCO	−0.39	0.33	−0.51	0.2
Simuliidae	Abundance summed across 12 (alder) + 12 (beech) litter bags	9	166	−3.2	0.05	PCO	0.02	0.98	−0.12	0.79
Ceratopogonidae	Abundance summed across 12 (alder) +12 (beech) litter bags	0	13	0	0.97	PCO	−0.32	0.43	−0.49	0.22
Limoniidae	Abundance summed across 12 (alder) +12 (beech) litter bags	1	16	−1.6	0.2	PCO	−0.59	0.13	−0.41	0.3
Empididae	Abundance summed across 12 (alder) +12 (beech) litter bags	5	36	−0.4	0.73	PCO	−0.86	0.01	0	1
Athericidae	Abundance summed across 12 (alder) +12 (beech) litter bags	0	47	0.6	0.57	PCO	0.31	0.46	0.21	0.62
Dixidae	Abundance summed across 12 (alder) +12 (beech) litter bags	0	5	0.1	0.94	PCO	−0.6	0.12	−0.03	0.94
Water mites	Abundance summed across 12 (alder) +12 (beech) litter bags	12	45	0.7	0.55	PCO	0.29	0.5	0.68	0.08
Coenagrionidae	Abundance summed across 12 (alder) + 12 (beech) litter bags	0	4	1	0.39	PCO	−0.08	0.84	−0.07	0.88
Calopterygidae	Abundance summed across 12 (alder) +12 (beech) litter bags	0	45	0.6	0.59	PCO	0.28	0.54	0.06	0.94
Elmidae	Abundance summed across 12 (alder) +12 (beech) litter bags	3	111	1.9	0.15	PCO	−0.19	0.67	0.98	0
Gyrinidae	Abundance summed across 12 (alder) +12 (beech) litter bags	0	14	1	0.39	PCO	0.58	0.15	0.58	0.15
Helodidae	Abundance summed across 12 (alder) +12 (beech) litter bags	0	25	0.6	0.61	PCO	−0.74	0.05	−0.02	0.98
Hydraenidae	Abundance summed across 12 (alder) +12 (beech) litter bags	0	36	−0.4	0.7	PCO	−0.54	0.17	−0.13	0.75
Oligochètes	Abundance summed across 12 (alder) +12 (beech) litter bags	1	45	1	0.37	PCO	−0.48	0.22	0.28	0.54
Ancylidae	Abundance summed across 12 (alder) +12 (beech) litter bags	0	5	1.7	0.2	PCO	−0.11	0.79	0	1
Hydrobiidae	Abundance summed across 12 (alder) +12 (beech) litter bags	0	18	−0.3	0.79	PCO	−0.56	0.15	−0.24	0.54
Total invertebrate count	Abundance summed across 12 (alder) + 12 (beech) litter bags	2373	5565	3.8	0.03					
Density of age > 1 trout	Single value on study reach (no m-2)	0	0.33	−1	0.41					
Total length of age > 1 trout (cm)	Median value by site (cm)	8.7	12.2	2.3	0.15					
Total length of age > 1 trout (cm)	Minimum value by site (cm)	5.8	9.4	5	0.04					
Total length of age > 1 trout (cm)	Maximum value by site (cm)	13.8	20.7	−0.2	0.88					
Body condition parameter of age > 1 trout	Slope of major axis regression of ln-transformed body mass against ln-transformed body length	2.8	3.2	0.8	0.53					
Body condition parameter of age > 1 trout	Intercept of major axis regression of ln-transformed body mass against ln-transformed body length	−4.9	−4	−1.4	0.29					
Breakdown rate of alder litter (day-1)	Nonlinear regression coefficient (n = 3 sampling dates × 4 replicate litter bags)	0.03	0.12	1.3	0.28					
Breakdown rate of beech litter (day-1)	Nonlinear regression coefficient (n = 3 sampling dates × 4 replicate litter bags)	0.01	0.08	1	0.41					