

Supplementary Material

Table S1. SIMPER analysis of water quality variables contributing to differences (Euclidean distance) between rivers at sites below dams and Site 3 on the unregulated river

FRP (log), log of filtered reactive phosphorus; Temp, temperature (°C); TP (log), log of total phosphorus; NH₃ (log), log of ammonia; EC (log), log of electrical conductivity; DO, dissolved oxygen; NO_x (log), log of the oxides of nitrogen. UR, unregulated river; MR, moderately regulated river; HR, heavily regulated river

Variable	Mean for the	Mean for the	Consistency ratio	Contribution (%)
	UR	MR		
Temperature	15.9	15.2	0.78	89.94
DO	9.29	9.73	0.86	7.81
EC	2.24	1.73	1.87	0.81
pH	7.59	7.22	1.12	0.56
NH ₃ (log)	0.77	0.93	0.77	0.28
NO _x (log)	1.39	1.21	1.07	0.26
TP (log)	1.35	1.16	0.91	0.14
TN (log)	2.19	2.15	0.88	0.10
FRP (log)	1.03	0.90	0.72	0.10
	UR	HR		
Temperature	15.9	14.0	0.70	77.00
DO	9.29	10.5	0.65	20.98
NO _x (log)	1.39	1.88	1.41	0.75
NH ₃ (log)	0.77	1.04	0.92	0.55
TN (log)	2.19	2.54	1.22	0.38
pH	7.59	7.62	0.81	0.14
FRP (log)	1.03	0.91	0.68	0.08
TP (log)	1.35	1.24	0.77	0.08
EC	2.24	2.27	0.77	0.05
	MR	HR		
Temperature	15.2	14.0	0.80	65.82
DO	9.73	10.5	0.67	28.24
NO _x (log)	1.21	1.88	1.38	2.25
EC	1.73	2.27	2.60	1.28
NH ₃ (log)	0.925	1.04	0.95	0.83
pH	7.22	7.62	1.29	0.79
TN (log)	2.15	2.54	2.00	0.71
TP (log)	1.16	1.24	0.79	0.06
FRP (log)	0.90	0.91	0.68	0.02

Table S2. SIMPER analysis of benthic algal genera contributing to differences (Bray-Curtis distance) between rivers at sites below dams and Site 3 on the unregulated river

UR, unregulated river; MR, moderately regulated river; HR, heavily regulated river

Genus	Mean abundance for the	Mean abundance for the	Consistency ratio	Contribution (%)
	UR	MR		
<i>Cocconeis</i>	69.41	31.49	1.42	12.07
<i>Oscillatoria</i>	10.85	39.80	0.98	11.47
<i>Navicula</i>	18.89	43.63	1.45	9.35
<i>Leptolyngbya</i>	22.02	19.89	0.89	9.20
<i>Oedogonium</i>	20.41	21.82	0.87	9.18
<i>Synedra</i>	25.02	42.74	1.32	7.42
<i>Ankistrodesmus</i>	20.88	11.72	1.22	6.73
<i>Amphora</i>	4.23	22.82	1.19	6.11
<i>Tabellaria</i>	13.27	13.51	1.04	4.88
<i>Trachelomonas</i>	12.52	12.99	1.08	4.73
	UR	HR		
<i>Navicula</i>	18.89	23.57	1.62	5.99
<i>Cocconeis</i>	69.41	46.53	1.34	9.26
<i>Oscillatoria</i>	10.85	32.18	1.30	10.19
<i>Ankistrodesmus</i>	20.88	0.00	1.23	6.30
<i>Melosira</i>	0.00	24.36	1.16	7.80
<i>Synedra</i>	25.02	43.97	1.14	6.66
<i>Surirella</i>	0.00	24.01	1.09	7.02
<i>Oedogonium</i>	20.41	8.36	1.04	6.56
	MR	HR		
<i>Navicula</i>	43.63	23.57	1.63	7.12
<i>Oscillatoria</i>	39.80	32.18	1.35	10.76
<i>Amphora</i>	22.82	5.96	1.26	5.50
<i>Cocconeis</i>	31.49	46.53	1.24	7.40
<i>Melosira</i>	14.02	24.36	1.17	6.55
<i>Tabellaria</i>	13.51	7.57	1.10	3.60
<i>Surirella</i>	0.00	24.01	1.08	6.34
<i>Leptolyngbya</i>	19.89	12.52	1.00	6.20

Table S3. Macroinvertebrate families contributing to assemblage differences (Bray-Curtis distance) between sites below dams and Site 3 on the unregulated river

UR, unregulated river; MR, moderately regulated river; HR, heavily regulated river

Family	Frequency for the	Frequency for the	Consistency ratio	Contribution (%)
	UR	MR		
Amelotopsidae	1.00	0.00	13.01	10.33
Gomphidae	1.00	0.00	13.01	10.33
Philopotamidae	1.00	0.00	13.01	10.33
Psephenidae	1.00	0.25	1.66	7.88
Calocidae/Helicophidae	1.00	0.25	1.66	7.73
Leptophlebiidae	1.00	0.25	1.66	7.73
Dugesiidae	0.00	0.75	1.66	7.64
	UR	HR		
Amelotopsidae	1.00	0.00	12.39	6.18
Calocidae/Helicophidae	1.00	0.00	12.39	6.18
Leptophlebiidae	1.00	0.00	12.39	6.18
Psephenidae	1.00	0.00	12.39	6.18
Corixidae	0.00	0.75	1.66	4.69
Ecnomidae	0.00	0.75	1.66	4.69
Elmidae	1.00	0.25	1.66	4.69
Gomphidae	1.00	0.25	1.66	4.69
Gripopterygidae	1.00	0.25	1.66	4.69
Hydrobiosidae	1.00	0.25	1.66	4.64
Physidae	0.00	0.75	1.66	4.64
Corydalidae	1.00	0.25	1.66	4.53
Philopotamidae	1.00	0.25	1.66	4.53
	MR	HR		
Corixidae	0.00	0.75	1.66	6.87
Ecnomidae	0.00	0.75	1.66	6.87
Elmidae	1.00	0.25	1.66	6.87
Gripopterygidae	1.00	0.25	1.66	6.87
Hydrobiosidae	1.00	0.25	1.66	6.79
Physidae	0.00	0.75	1.66	6.79
Dugesiidae	0.75	0.00	1.67	6.67
Corydalidae	1.00	0.25	1.67	6.6