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Ecological impacts of the non-native macrophyte *Crassula helmsii* on Freshwater Macroinvertebrate Assemblages in Dartmoor National Park, UK

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Appendix

Table 8 Occurrence across all ponds of all macroinvertebrate taxa observed in this study

Taxon	FG	Absent						Dominant			Sparse		
		CAD_D	DART	FOGG	WHITE	YELV_B	YELV_C	CAD_A	CAD_B	CAD_E	CAD_C	YELV_A	SHAUG
<i>Aeshna cyanea</i> ^a	Pr	0	0	2	0	0	0	0	0	0	0	0	1
<i>Agabus bipustulatus</i>	Pr	5	5	0	1	0	1	0	1	1	2	4	5
<i>Agabus nebulosus</i>	Pr	0	0	0	0	2	0	0	0	0	0	0	0
<i>Agabus sp.</i> ^a	Pr	11	26	3	6	2	18	3	11	0	9	12	7
<i>Argyroneta aquatica</i>	Pr	0	0	0	0	0	0	0	1	0	1	0	1
<i>Asellus aquaticus</i>	DS	0	0	0	0	0	0	0	0	6	0	0	0
<i>Bithynia tentaculata</i>	Sc	0	0	0	0	0	0	0	0	2	0	0	0
<i>Callicorixia praeusta</i>	Sc	0	0	0	0	4	0	0	0	0	0	0	0
Ceratopogonidae ^a	Pr	0	3	0	1	0	0	0	1	1	1	1	4
Chaoboridae ^a	Pr	0	6	1	1	0	1	0	0	0	1	0	4
<i>Chirocephalus diaphanus</i>	DS	0	0	0	0	0	0	0	0	0	0	2	0
Chironominae ^a	GC	1	2	0	12	6	4	0	0	0	0	10	0
<i>Cloeon dipterum</i> ^a	GC	0	10	0	0	1	0	2	98	0	0	0	73
<i>Cloeon simile</i> ^a	GC	0	0	0	0	0	0	0	3	0	0	0	0
<i>Coenagrion puella</i> ^a	Pr	1	0	0	0	0	0	25	0	0	0	0	0
<i>Cordulegaster boltonii</i> ^a	Pr	0	0	0	0	0	0	0	0	1	0	0	0
<i>Corixa punctata</i>	Sc	0	6	0	0	0	0	0	0	0	0	0	0

Table 8 Continued

Taxon	FG	Absent						Dominant			Sparse		
		CAD_D	DART	FOGG	WHITE	YELV_B	YELV_C	CAD_A	CAD_B	CAD_E	CAD_C	YELV_A	SHAUG
<i>Crangonyx pseudogracilis</i> *	DS	17	0	1	0	0	0	39	2	55	5	0	0
Daphniidae	FC	0	0	0	5	14	7	0	0	0	0	0	0
Diamesinae ^a	GC	0	7	0	2	1	1	0	5	0	0	0	1
<i>Dryops luridus</i>	DS	2	0	0	0	0	0	0	0	1	0	0	0
Ecnomidae ^a	Pr	0	0	0	0	1	0	0	0	0	0	0	0
Ephydriidae ^a	GC	0	0	0	0	0	0	0	0	0	1	0	0
<i>Haemopsis sanguisuga</i>	Pr	0	0	0	0	0	0	0	0	0	1	0	0
<i>Haliphus lineatocollis</i>	Pr	1	0	0	0	0	0	0	7	0	0	0	0
<i>Helobdella stagnalis</i>	Pr	1	0	0	0	6	0	0	0	0	0	0	0
<i>Helophorus aequalis</i>	GC	0	0	0	0	0	2	0	0	0	1	0	0
<i>Helophorus flavipes</i>	GC	3	0	0	2	1	1	0	0	0	0	0	0
<i>Helophorus grandis</i>	GC	0	0	0	0	0	0	0	0	2	0	0	0
<i>Hesperocorixia linnaei</i>	Sc	0	0	0	0	1	0	0	0	0	0	0	0
<i>Hesperocorixia moesta</i>	Sc	0	1	0	0	0	0	2	1	1	0	0	0
<i>Hesperocorixia sahlbergi</i>	Sc	0	0	2	0	0	0	0	0	0	0	0	0
Hydrachnidia	Pr	6	0	1	0	0	0	0	2	4	0	0	0
<i>Hydroporus pubescens</i>	Pr	14	1	0	0	17	1	0	0	0	0	1	0

Table 8 Continued

Taxon	FG	Absent						Dominant			Sparse		
		CAD_D	DART	FOGG	WHITE	YELV_B	YELV_C	CAD_A	CAD_B	CAD_E	CAD_C	YELV_A	SHAUG
<i>Hydroporus</i> sp. ^a	Pr	0	0	0	2	0	5	0	8	0	0	2	0
<i>Hydroporus tessellatus</i>	Pr	0	0	0	0	0	2	0	0	0	0	0	0
<i>Hygrobia hermanni</i>	Pr	0	0	0	0	3	0	0	0	0	0	0	0
<i>Hygrotus confluens</i>	Pr	0	0	0	0	8	0	0	0	0	0	0	0
<i>Hygrotus inaequalis</i>	Pr	0	0	0	0	1	0	0	0	0	0	0	0
<i>Ilybius</i> sp. ^a	Pr	0	0	0	5	0	13	1	8	5	2	5	5
<i>Laccophilus minutus</i>	Pr	0	0	0	0	4	0	0	1	0	0	0	2
<i>Lepidostoma hirtum</i> ^a	DS	0	0	0	0	0	0	1	0	0	0	0	0
<i>Libellula depressa</i> ^a	Pr	0	0	0	0	0	0	6	4	0	0	0	0
<i>Limnephilus affinis</i> ^a	DS	5	0	0	0	1	1	1	0	1	0	1	0
<i>Limnephilus vittatus</i> ^a	DS	0	0	0	0	1	0	0	0	0	0	0	0
Lumbriculidae	GC	1	1	13	0	0	0	0	0	5	11	0	0
Naididae	GC	1	19	60	2	14	1	0	5	3	11	8	24
<i>Notonecta obliqua</i>	Pr	1	0	0	0	2	0	0	0	0	0	0	1
<i>Odontocerum albicorne</i> ^a	GC	0	0	0	0	0	0	0	0	2	0	0	1
Oligochaeta "smooth"	GC	0	0	0	0	2	0	0	0	0	7	0	2
Orthoclaadiinae ^a	GC	0	8	0	7	1	12	0	6	0	1	2	5

Table 8 Continued

Taxon	FG	Absent						Dominant			Sparse		
		CAD_D	DART	FOGG	WHITE	YELV_B	YELV_C	CAD_A	CAD_B	CAD_E	CAD_C	YELV_A	SHAUG
<i>Paracorixia concinna</i>	Sc	0	0	0	0	29	0	0	0	0	0	0	0
<i>Physa fontinalis</i>	Sc	0	0	0	0	0	0	3	0	0	0	0	0
<i>Physella acuta</i> *	Sc	0	0	0	0	93	0	48	136	148	89	0	0
<i>Pisidium</i> sp.	FC	0	0	0	0	0	0	0	0	26	2	0	8
<i>Platycnemis</i> sp. ^a	Pr	0	0	0	0	0	0	4	0	0	0	0	0
Podonominae ^a	GC	0	0	0	1	0	1	0	0	0	0	0	10
<i>Potamopyrgus antipodarum</i> *	Sc	0	0	0	0	0	0	0	1	0	0	0	0
<i>Proclleon pennulatum</i> ^a	GC	0	5	0	0	2	0	0	8	0	0	0	13
<i>Radix balthica</i>	Sc	0	0	0	0	0	0	102	4	1	30	0	0
Sciomyzidae ^a	Pr	0	0	0	0	0	0	0	16	1	2	0	0
Scirtidae ^a	DS	0	0	1	0	0	0	0	0	0	0	0	0
<i>Sericostoma personatum</i> ^a	Sc	0	0	0	0	2	0	0	0	0	1	0	0
<i>Sigara lateralis</i>	Sc	0	1	0	0	9	0	0	0	0	0	0	0
<i>Sigara limitata</i>	Sc	0	0	0	0	0	0	1	0	0	0	0	0
<i>Sigara nigrolineata</i>	Sc	0	9	0	0	0	3	0	2	0	0	0	0
<i>Sigara scotti</i>	Sc	0	0	0	0	0	0	1	1	0	0	0	0
<i>Sigara</i> sp. ^a	Sc	0	7	0	0	49	0	0	0	0	0	0	0
<i>Sigara stagnalis</i>	Sc	0	0	1	0	0	0	6	1	0	0	0	0
<i>Sympetrum striolatum</i> ^a	Pr	0	0	0	0	0	0	0	6	0	0	0	0
Tanypodinae ^a	Pr	0	28	3	16	20	10	0	3	3	4	4	6
Tipulidae ^a	DS	0	0	0	0	0	0	0	1	0	3	0	1
Turbellaria	Pr	1	0	0	0	0	0	0	0	2	0	0	0

Notes ^a larva; * non-native to Britain (NBN Atlas website at <https://www.nbnatlas.org/>, accessed: 23 February 2021)

Table 9 Occurrence of macrophytes taxa observed in this study

Taxon	Absent						Dominant			Sparse		
	CAD_D	DART	FOGG	WHITE	YELV_B	YELV_C	CAD_A	CAD_B	CAD_E	CAD_C	YELV_A	SHAUG
<i>Equisetum</i> sp.			+				+					
<i>Crassula helmsii</i>							+	+	+	+	+	+
<i>Juncus</i> sp.	+	+	+	+	+	+	+	+	+	+	+	+
<i>Hydrocotyle vulgaris</i>		+			+		+	+		+		
<i>Potamogeton polygonifolius</i>	+	+	+				+	+	+	+		+
<i>Hypericum elodes</i>							+					
<i>Glyceria declinata</i>	+	+		+	+	+	+	+	+	+	+	+
<i>Eleocharis palustris</i>	+		+				+	+		+		+
<i>Sphagnum</i> sp.			+				+			+		
<i>Myriophyllum spicatum</i>		+	+				+					
<i>Ranunculus aquatilis</i>		+			+		+		+	+		+
<i>Phragmites</i> sp.	+							+				
<i>Carex pendula</i>	+	+	+		+	+	+	+	+	+	+	+
<i>Potamogeton natans</i>		+	+									
<i>Alisma plantago aquatica</i>			+									
<i>Trichophorum cespitosum</i>			+	+	+							+
<i>Callitriche palustris</i>				+	+	+						

Table 10 Results of SIMPER analysis for the species contributing to the dissimilarity between macroinvertebrate assemblages (ponds grouped by invasion category). Taxa are listed in order of their contribution to the differences between assemblages

Taxon	Category		AD	SD	AD/ SD	AA		Contribution (%)	ρ
	x	y				x	y		
<i>Physella acuta</i>	D	S	0.09	0.05	1.60	1.91	0.60	10.71	0.001
<i>Crangonyx pseudogracilis</i>	D	S	0.06	0.05	1.24	1.09	0.23	7.48	0.002
<i>Radix balthica</i>	D	S	0.05	0.05	1.00	0.89	0.42	6.72	0.004
Naididae	D	S	0.04	0.04	1.19	0.31	0.88	5.6	0.158
<i>Agabus</i> sp. (larva)	D	S	0.04	0.03	1.27	0.40	0.89	5.24	0.703
<i>Cloeon dipterum</i>	D	S	0.04	0.05	0.85	0.64	0.37	5.15	0.023
<i>Ilybius</i> sp. (larva)	D	S	0.03	0.03	1.01	0.55	0.44	4.01	0.895
<i>Pisidium</i> sp.	D	S	0.03	0.04	0.68	0.41	0.16	3.39	0.012
Tanypodinae	D	S	0.03	0.03	0.82	0.24	0.40	3.36	0.998
<i>Coenagrion puella</i>	D	S	0.02	0.04	0.60	0.41	0.00	3.11	0.019
<i>Agabus bipusulatus</i>	D	S	0.02	0.03	0.75	0.11	0.38	2.77	0.908
Chironominae	D	S	0.02	0.04	0.60	0.00	0.32	2.73	0.897
<i>Proclleon pennulatum</i>	D	S	0.02	0.03	0.61	0.21	0.23	2.51	0.114
Sciomyzidae	D	S	0.02	0.03	0.67	0.33	0.11	2.34	0.019
Orthoclaadiinae	D	S	0.02	0.03	0.65	0.09	0.31	2.25	0.991
Lumbriculidae	D	S	0.02	0.03	0.55	0.13	0.22	2.09	0.155
Hydrachnidia	D	S	0.02	0.03	0.60	0.29	0.00	2.05	0.678
<i>Libellula depressa</i>	D	S	0.02	0.03	0.52	0.27	0.00	2.04	0.005
Ceratopogonidae	D	S	0.01	0.02	0.62	0.11	0.24	1.84	0.363
<i>Sigara stagnalis</i>	D	S	0.01	0.03	0.43	0.19	0.00	1.34	0.015
<i>Hesperocorixia moesta</i>	D	S	0.01	0.02	0.43	0.18	0.00	1.31	0.012
<i>Limnephilus affinis</i>	D	S	0.01	0.02	0.42	0.11	0.06	1.15	0.986
Diamesinae	D	S	0.01	0.02	0.42	0.14	0.06	1.15	0.787
<i>Laccophilus minutus</i>	D	S	0.01	0.02	0.41	0.06	0.11	1.13	0.416
<i>Argyroneta aquatica</i>	D	S	0.01	0.02	0.42	0.06	0.11	1.11	0.319
<i>Asellus aquaticus</i>	D	S	0.01	0.03	0.33	0.14	0.00	1.03	0.034
Tipulidae	D	S	0.01	0.02	0.42	0.06	0.13	1.01	0.27
<i>Hydroporus</i> sp. (larva)	D	S	0.01	0.02	0.34	0.09	0.07	0.98	0.89

Table 10 Continued

Taxon	Category		AD	SD	AD/ SD	AA		Contribution (%)	p
	x	y				x	y		
<i>Oligochaeta smooth</i>	D	S	0.01	0.02	0.35	0.00	0.16	0.87	0.43
<i>Odontocerum albicorne</i>	D	S	0.01	0.02	0.34	0.07	0.06	0.85	0.469
<i>Helophorus grandis</i>	D	S	0.01	0.02	0.34	0.11	0.00	0.85	0.039
<i>Halipus lineatocollis</i>	D	S	0.01	0.02	0.34	0.14	0.00	0.83	0.041
<i>Sigara scotti</i>	D	S	0.01	0.02	0.34	0.11	0.00	0.81	0.039
Turbellaria	D	S	0.01	0.02	0.35	0.11	0.00	0.78	0.593
<i>Platycnemis</i> sp.	D	S	0.01	0.03	0.23	0.08	0.00	0.75	0.083
Chaoboridae	D	S	0.01	0.02	0.34	0.00	0.13	0.75	0.876
Podonominae	D	S	0	0.02	0.24	0.00	0.10	0.56	0.805
<i>Sympetrum striolatum</i>	D	S	0	0.02	0.24	0.09	0.00	0.52	0.129
<i>Notonecta obliqua</i>	D	S	0	0.02	0.24	0.00	0.06	0.49	0.783
<i>Physa fontinalis</i>	D	S	0	0.02	0.24	0.07	0.00	0.47	0.116
<i>Chirocephalus diaphanus</i>	D	S	0	0.02	0.24	0.00	0.07	0.48	0.68
<i>Lepidostoma hirtum</i>	D	S	0	0.02	0.24	0.06	0.00	0.46	0.087
<i>Sigara limitata</i>	D	S	0	0.02	0.24	0.06	0.00	0.46	0.107
<i>Bithynia tentaculata</i>	D	S	0	0.01	0.24	0.07	0.00	0.44	0.12
<i>Cloeon simile</i>	D	S	0	0.01	0.24	0.07	0.00	0.43	0.129
<i>Helophorus aequalis</i>	D	S	0	0.01	0.24	0.00	0.06	0.43	0.873
<i>Dryops luridus</i>	D	S	0	0.01	0.24	0.06	0.00	0.4	0.7
<i>Cordulegaster boltonii</i>	D	S	0	0.01	0.24	0.06	0.00	0.38	0.117
<i>Hydroporus pubescens</i>	D	S	0	0.01	0.24	0.00	0.06	0.37	0.999
<i>Sigara nigrolineata</i>	D	S	0	0.01	0.24	0.07	0.00	0.36	0.712
<i>Potamopyrgus antipodarum</i>	D	S	0	0.01	0.24	0.06	0.00	0.35	0.121
<i>Haemopsis sanguisuga</i>	D	S	0	0.01	0.24	0	0.06	0.34	0.666
Ephydridae	D	S	0	0.01	0.24	0	0.06	0.33	0.655
<i>Aeshna cyanea</i>	D	S	0	0.01	0.24	0	0.06	0.32	0.668

Table 10 Continued

Taxon	Category		AD	SD	AD/ SD	AA		Contribution (%)	p
	x	y				x	y		
<i>Sericostoma personatum</i>	D	S	0	0.01	0.24	0	0.06	0.32	0.901
<i>Physella acuta</i>	D	A	0.11	0.05	2.24	1.91	0.25	12.01	0.001
<i>Crangonyx pseudogracilis</i>	D	A	0.07	0.05	1.26	1.09	0.18	7.37	0.001
<i>Radix balthica</i>	D	A	0.06	0.06	0.95	0.89	0.00	6.44	0.001
<i>Agabus</i> sp. (larva)	D	A	0.04	0.04	1.18	0.40	0.83	4.92	0.435
Tanypodinae	D	A	0.04	0.04	1.14	0.24	0.73	4.66	0.321
<i>Cloeon dipterum</i>	D	A	0.03	0.05	0.71	0.64	0.00	3.96	0.247
<i>Ilybius</i> sp. (larva)	D	A	0.03	0.03	1.03	0.55	0.37	3.94	0.646
Orthoclaadiinae	D	A	0.03	0.04	0.80	0.09	0.48	3.46	0.454
<i>Coenagrion puella</i>	D	A	0.03	0.04	0.64	0.41	0.06	3.12	0.002
<i>Pisidium</i> sp.	D	A	0.02	0.04	0.60	0.41	0.00	2.81	0.067
Naididae	D	A	0.02	0.03	0.72	0.31	0.19	2.66	1
Hydrachnidia	D	A	0.02	0.03	0.73	0.29	0.18	2.61	0.04
Chironominae	D	A	0.02	0.04	0.60	0.00	0.34	2.4	0.914
<i>Agabus bipusulatus</i>	D	A	0.02	0.03	0.67	0.11	0.30	2.39	0.935
<i>Limnephilus affinis</i>	D	A	0.02	0.03	0.68	0.11	0.29	2.3	0.287
<i>Hydroporus pubescens</i>	D	A	0.02	0.03	0.60	0.00	0.36	2.27	0.238
Daphniidae	D	A	0.02	0.03	0.60	0.00	0.38	2.14	0.114
<i>Libellula depressa</i>	D	A	0.02	0.03	0.52	0.27	0.00	1.94	0.001
Sciomyzidae	D	A	0.02	0.03	0.59	0.33	0.00	1.91	0.087
Diamesinae	D	A	0.01	0.03	0.48	0.14	0.12	1.54	0.38
<i>Procloeon pennulatum</i>	D	A	0.01	0.03	0.43	0.21	0.00	1.33	0.808
<i>Hydroporus</i> sp. (larva)	D	A	0.01	0.03	0.42	0.09	0.15	1.32	0.607
<i>Sigara stagnalis</i>	D	A	0.01	0.03	0.43	0.19	0.00	1.27	0.002
<i>Hesperocorixia moesta</i>	D	A	0.01	0.03	0.43	0.18	0.00	1.25	0.001
<i>Sigara</i> sp. (larva)	D	A	0.01	0.03	0.32	0.00	0.20	1.02	0.437
Turbellaria	D	A	0.01	0.02	0.42	0.11	0.06	1.03	0.231
<i>Asellus aquaticus</i>	D	A	0.01	0.03	0.33	0.14	0.00	0.98	0.008
Ceratopogonidae	D	A	0.01	0.02	0.42	0.11	0.06	0.97	0.939
Lumbriculidae	D	A	0.01	0.02	0.34	0.13	0.00	0.88	0.881

Table 10 Continued

Taxon	Category		AD	SD	AD/ SD	AA		Contribution (%)	p
	x	y				x	y		
<i>Helophorus grandis</i>	D	A	0.01	0.02	0.35	0.11	0.00	0.81	0.004
<i>Sigara scotti</i>	D	A	0.01	0.02	0.34	0.11	0.00	0.78	0.003
<i>Haliplus lineatocollis</i>	D	A	0.01	0.02	0.35	0.14	0.00	0.78	0.002
<i>Helophorus flavipes</i>	D	A	0.01	0.02	0.35	0.00	0.11	0.77	0.458
Chaoboridae	D	A	0.01	0.02	0.35	0.00	0.11	0.76	0.793
<i>Helobdella stagnalis</i>	D	A	0.01	0.02	0.34	0.00	0.11	0.75	0.414
<i>Platycnemis</i> sp.	D	A	0.01	0.03	0.24	0.08	0.00	0.72	0.004
<i>Dryops luridus</i>	D	A	0.01	0.02	0.34	0.06	0.06	0.71	0.444
<i>Sigara nigrolineata</i>	D	A	0.01	0.02	0.34	0.07	0.07	0.69	0.452
Podonominae	D	A	0.01	0.02	0.35	0.00	0.11	0.68	0.732
<i>Agabus nebulosus</i>	D	A	0	0.01	0.35	0.00	0.11	0.54	0.437
<i>Laccophilus minutus</i>	D	A	0	0.01	0.34	0.06	0.06	0.5	0.895
<i>Sympetrum striolatum</i>	D	A	0	0.02	0.24	0.09	0.00	0.49	0.005
<i>Physa fontinalis</i>	D	A	0	0.02	0.24	0.07	0.00	0.45	0.006
<i>Lepidostoma hirtum</i>	D	A	0	0.02	0.24	0.06	0.00	0.44	0.008
<i>Sigara limitata</i>	D	A	0	0.02	0.24	0.06	0.00	0.45	0.007
<i>Odontocerum albicorne</i>	D	A	0	0.02	0.24	0.07	0.00	0.43	0.689
<i>Bithynia tentaculata</i>	D	A	0	0.02	0.24	0.07	0.00	0.42	0.007
<i>Cloeon simile</i>	D	A	0	0.02	0.24	0.07	0.00	0.41	0.005
<i>Notonecta obliqua</i>	D	A	0	0.01	0.24	0.00	0.06	0.37	0.902
<i>Hygrotus confluens</i>	D	A	0	0.01	0.24	0.00	0.09	0.36	0.659
<i>Cordulegaster boltonii</i>	D	A	0	0.01	0.24	0.06	0.00	0.37	0.003
<i>Helophorus aequalis</i>	D	A	0	0.01	0.24	0.00	0.07	0.35	0.899
<i>Hydroporus tessellatus</i>	D	A	0	0.01	0.24	0.00	0.07	0.35	0.663
<i>Potamopyrgus antipodarum</i>	D	A	0	0.01	0.24	0.06	0.00	0.33	0.005

Table 10 Continued

Taxon	Category		AD	SD	AD/ SD	AA		Contribution (%)	p
	x	y				x	y		
<i>Sigara lateralis</i>	D	A	0	0.01	0.24	0.00	0.07	0.31	0.659
Tipulidae	D	A	0	0.01	0.24	0.06	0.00	0.28	0.904
<i>Argyroneta aquatica</i>	D	A	0	0.01	0.24	0.06	0.00	0.29	0.911
<i>Sericostoma personatum</i>	D	A	0	0.01	0.24	0	0.07	0.28	0.884
<i>Hygrotus inaequalis</i>	D	A	0	0.01	0.24	0	0.06	0.23	0.659
Naididae	S	A	0.06	0.06	1.13	0.88	0.19	7.94	0.001
Tanypodinae	S	A	0.05	0.05	1.05	0.40	0.73	6.66	0.003
<i>Agabus</i> sp. (larva)	S	A	0.05	0.05	0.95	0.89	0.83	5.98	0.09
<i>Physella acuta</i>	S	A	0.05	0.06	0.73	0.60	0.25	5.78	1
Chironominae	S	A	0.04	0.05	0.77	0.32	0.34	5.28	0.002
Orthoclaadiinae	S	A	0.04	0.05	0.84	0.31	0.48	5.28	0.003
<i>Ilybius</i> sp. (larva)	S	A	0.04	0.04	0.88	0.44	0.37	4.925	0.102
Agabus bipusulatus	S	A	0.04	0.04	0.81	0.38	0.30	4.586	0.011
<i>Crangonyx pseudogracilis</i>	S	A	0.03	0.05	0.53	0.23	0.18	3.46	0.997
<i>Hydroporus pubescens</i>	S	A	0.03	0.04	0.61	0.06	0.36	3.45	0.002
<i>Radix balthica</i>	S	A	0.03	0.04	0.60	0.42	0.00	3.277	0.994
<i>Limnephilus affinis</i>	S	A	0.02	0.04	0.61	0.06	0.29	3	0.041
<i>Cloeon dipterum</i>	S	A	0.02	0.05	0.49	0.37	0.00	2.9	0.925
Daphniidae	S	A	0.02	0.04	0.58	0.00	0.38	2.9	0.003
Ceratopogonidae	S	A	0.02	0.03	0.56	0.24	0.06	2.13	0.135
<i>Proclleon pennulatum</i>	S	A	0.02	0.04	0.42	0.23	0.00	2.01	0.54
Hydrachnidia	S	A	0.02	0.04	0.42	0.00	0.18	1.94	0.718
Chaoboridae	S	A	0.01	0.03	0.47	0.13	0.11	1.85	0.014
Lumbriculidae	S	A	0.01	0.03	0.42	0.22	0.00	1.85	0.361
<i>Hydroporus</i> sp. (larva)	S	A	0.01	0.03	0.42	0.07	0.15	1.61	0.248
Diamesinae	S	A	0.01	0.03	0.38	0.06	0.12	1.58	0.451
Podonominae	S	A	0.01	0.03	0.41	0.10	0.11	1.58	0.032
<i>Laccophilus minutus</i>	S	A	0.01	0.03	0.40	0.11	0.06	1.5	0.173
<i>Sigara</i> sp. (larva)	S	A	0.01	0.03	0.32	0.00	0.20	1.35	0.041

Table 10 Continued

Taxon	Category		AD	SD	AD/ SD	AA		Contribution (%)	p
	x	y				x	y		
<i>Argyroneta aquatica</i>	S	A	0.01	0.03	0.34	0.11	0.00	1.21	0.247
<i>Notonecta obliqua</i>	S	A	0.01	0.03	0.33	0.06	0.06	1.159	0.044
<i>Pisidium sp</i>	S	A	0.01	0.03	0.34	0.16	0.00	1.14	0.986
<i>Helophorus flavipes</i>	S	A	0.01	0.03	0.34	0.00	0.11	1.11	0.026
<i>Helobdella stagnalis</i>	S	A	0.01	0.03	0.33	0.00	0.11	1.08	0.018
<i>Oligochaeta smooth</i>	S	A	0.01	0.02	0.35	0.16	0.00	1.08	0.003
<i>Helophorus aequalis</i>	S	A	0.01	0.02	0.33	0.06	0.07	1	0.048
Tipulidae	S	A	0.01	0.02	0.34	0.13	0.00	0.97	0.29
Sciomyzidae	S	A	0.01	0.02	0.35	0.11	0.00	0.81	0.979
<i>Sericostoma personatum</i>	S	A	0.01	0.02	0.34	0.06	0.07	0.72	0.075
<i>Agabus nebulosus</i>	S	A	0.01	0.02	0.34	0.00	0.11	0.71	0.041
<i>Chirocephalus diaphanus</i>	S	A	0.01	0.02	0.24	0.07	0.00	0.64	0.003
<i>Odontocerum albicorne</i>	S	A	0.00	0.02	0.24	0.06	0.00	0.63	0.401
Turbellaria	S	A	0.00	0.02	0.23	0.00	0.06	0.53	0.764
<i>Coenagrion puella</i>	S	A	0.00	0.02	0.23	0.00	0.06	0.53	0.997
<i>Sigara nigrolineata</i>	S	A	0.00	0.02	0.24	0.00	0.07	0.51	0.487
<i>Dryops luridus</i>	S	A	0.00	0.02	0.23	0.00	0.06	0.5	0.47
<i>Hygrotus confluens</i>	S	A	0.00	0.02	0.24	0.00	0.09	0.47	0.115
<i>Hydroporus tessellatus</i>	S	A	0.00	0.02	0.24	0.00	0.07	0.47	0.1
<i>Haemopis sanguisuga</i>	S	A	0.00	0.01	0.24	0.06	0.00	0.43	0.006
Ephydriidae	S	A	0.00	0.01	0.24	0.06	0.00	0.42	0.005
<i>Aeshna cyanea</i>	S	A	0.00	0.01	0.24	0.06	0.00	0.41	0.006
<i>Sigara lateralis</i>	S	A	0.00	0.01	0.24	0.00	0.07	0.39	0.115
<i>Hygrotus inaequalis</i>	S	A	0.00	0.01	0.24	0.00	0.06	0.3	0.116

Notes AD, average dissimilarity; SD, standard deviation; AA, average abundance; D, dominant; S, sparse; A, absent. Bold-faced type indicates significant values ($p \leq 0.05$)