

Online Material

Supplementary material I. Complete list and abundances (ind·m⁻²) of macroinvertebrate taxa collected within the study area. Protocols followed national standards and no protected species were collected. Samples were then preserved in 85% alcohol and identified in laboratory at species, genus, subfamily, and family level by using Tachet et al. (2000) taxonomic guide.

Site	Latitude	Longitude	Taxa	Abundance			
AMA1	41°29'10.40"N	13°17'22.19"E	<i>Baetis</i> sp.	544			
			<i>Bithynia</i> sp.	16			
			Chironomidae	32			
			<i>Crunoecia</i> sp.	48			
			Dixidae	32			
			<i>Ecdyonurus</i> sp.	192			
			<i>Echinogammarus</i> sp.	288			
			Elminthidae	96			
			<i>Epeorus</i> sp.	32			
			<i>Erpobdella</i> sp.	32			
			<i>Glossiphonia</i> sp.	16			
			Hydracarinae	48			
			Hydraenidae	32			
			<i>Hydropsiche</i> sp.	176			
			<i>Lasiocephala</i> sp.	64			
			<i>Leuctra</i> sp.	32			
			Lumbricidae	16			
			<i>Serratella</i> sp.	32			
			Simuliidae	80			
			Stratiomyidae	48			
			AMA2	41°27'33.12"N	13°11'58.04"E	<i>Baetis</i> sp.	656
<i>Bithynia</i> sp.	32						
<i>Caenis</i> sp.	192						
Ceratopogonidae	16						
Chironomidae	96						
<i>Echinogammarus</i> sp.	96						
Elminthidae	80						
<i>Ephemera</i> sp.	192						
Haplotaenidae	32						
Hydraenidae	48						
<i>Hydropsiche</i> sp.	64						
<i>Philopotamus</i> sp.	16						
<i>Planorbis</i> sp.	16						
<i>Platycnemis</i> sp.	16						
<i>Rhythrogena</i> sp.	240						
Tubificidae	16						
<i>Wormaldia</i> sp.	32						
AMA3	41°20'25.10"N	13°10'23.44"E				<i>Bithynia</i> sp.	656
						<i>Calopteryx</i> sp.	192
						Chironomidae	240
						<i>Helobdella</i> sp.	32
			<i>Planaria</i> sp.	32			
			<i>Platycnemis</i> sp.	48			
			Athericidae	48			
ANI1	41°52'28.85"N	13°17'40.90"E	<i>Baetis</i> sp.	2144			
			<i>Dinocras</i> sp.	128			
			<i>Ecdyonurus</i> sp.	16			
			Elminthidae	160			
			<i>Epeorus</i> sp.	528			
			Hydracarinae	64			
			Hydraenidae	32			
			<i>Isoperla</i> sp.	96			
			<i>Leuctra</i> sp.	336			
			Limoniidae	176			
			<i>Protonemoura</i> sp.	496			
			Psychodidae	16			

Supplementary material I. Continued.

Site	Latitude	Longitude	Taxa	Abundance
ANI2	41°54'04.81"N	13°08'30.48"E	<i>Rhyacophila sp.</i>	112
			<i>Rhythrogena sp.</i>	288
			Athericidae	144
			<i>Baetis sp.</i>	816
			Blephariceridae	48
			Chironomidae	656
			<i>Dinocras sp.</i>	112
			Elminthidae	144
			<i>Epeorus sp.</i>	48
			<i>Glossosoma</i>	32
			Hydraenidae	256
			<i>Micrasema sp.</i>	400
			<i>Rhyacophila sp.</i>	48
			<i>Rhythrogena sp.</i>	96
			<i>Sericostoma sp.</i>	432
			Simuliidae	2992
			ANI3	42°01'17.30"N
Athericidae	64			
<i>Baetis sp.</i>	448			
Blephariceridae	16			
Chironomidae	352			
<i>Dinocras sp.</i>	96			
<i>Ecdyonurus sp.</i>	32			
<i>Echinogammarus sp.</i>	32			
Elminthidae	176			
<i>Epeorus sp.</i>	16			
<i>Erpobdella sp.</i>	16			
Hydraenidae	112			
<i>Hydropsiche sp.</i>	144			
<i>Isoperla sp.</i>	96			
<i>Leuctra sp.</i>	80			
Lumbricidae	16			
<i>Perla sp.</i>	144			
<i>Rhyacophila sp.</i>	48			
<i>Rhythrogena sp.</i>	32			
<i>Sericostoma sp.</i>	16			
<i>Serratella sp.</i>	160			
ANI4	41°55'36.30"N	12°40'06.40"E	Simuliidae	128
			Stratiomyidae	16
			<i>Baetis sp.</i>	32
			Chironomidae	128
			<i>Echinogammarus sp.</i>	96
ARR1	42°02'07.30"N	12°18'38.25"E	Haplotaixidae	64
			<i>Asellus sp.</i>	48
			<i>Baetis sp.</i>	128
			<i>Caenis sp.</i>	48
			Chironomidae	64
			Haplotaixidae	16
			<i>Hydropsiche sp.</i>	16
ARR2	41°52'10.73"N	12°10'58.36"E	Simuliidae	80
			Chironomidae	208
			<i>Glossiphonia sp.</i>	16
			Haplotaixidae	32
			<i>Hydropsiche sp.</i>	16
			Lumbricidae	16
			<i>Micronecta sp.</i>	16
			<i>Platycnemis sp.</i>	32
			Simuliidae	64
<i>Viviparus sp.</i>	32			

Supplementary material I. Continued.

Site	Latitude	Longitude	Taxa	Abundance			
AUS1	41°20'46.12"N	13°44'58.96"E	<i>Baetis sp.</i>	176			
			<i>Calopteryx sp.</i>	64			
			Chironomidae	672			
			<i>Echinogammarus sp.</i>	224			
			<i>Erpobdella sp.</i>	48			
			Girinidae	16			
			Hydracarinae	400			
			<i>Hydropsiche sp.</i>	16			
			Lumbricidae	32			
			<i>Lymnaea sp.</i>	400			
			<i>Serratella sp.</i>	160			
			Simuliidae	192			
			AUS2	41°16'08.76"N	13°47'16.43"E	<i>Bithynia sp.</i>	192
						<i>Caenis sp.</i>	48
Ceratopogonidae	16						
<i>Echinogammarus sp.</i>	176						
<i>Helobdella sp.</i>	32						
Lumbricidae	80						
<i>Micronecta sp.</i>	16						
<i>Platycnemis sp.</i>	64						
COS2	41°39'32.36"N	13°21'47.48"E				<i>Baetis sp.</i>	1232
						Chironomidae	1056
			<i>Erpobdella sp.</i>	128			
			Simuliidae	208			
FIB1	41°41'23.98"N	13°36'10.95"E	<i>Asellus sp.</i>	48			
			<i>Baetis sp.</i>	272			
			<i>Bithynia sp.</i>	48			
			Ceratopogonidae	16			
			Chironomidae	16			
			<i>Echinogammarus sp.</i>	5696			
			Elminthidae	240			
			<i>Erpobdella sp.</i>	32			
			Hydracarinae	16			
			<i>Limnephilus sp.</i>	32			
			<i>Rhyacophila sp.</i>	48			
			<i>Serratella sp.</i>	80			
			Simuliidae	32			
			FAR1	42°13'53.06"N	12°46'06.22"E	<i>Baetis sp.</i>	496
<i>Chaetopteryx</i>	16						
Chironomidae	48						
<i>Dinocras sp.</i>	32						
<i>Ecdyonurus sp.</i>	48						
<i>Echinogammarus sp.</i>	592						
Elminthidae	64						
<i>Ephemera sp.</i>	128						
<i>Odontocerum sp.</i>	48						
<i>Rhyacophila sp.</i>	16						
<i>Rhythrogena sp.</i>	16						
<i>Serratella sp.</i>	80						
FAR2	42°14'03.50"N	12°42'20.22"E				<i>Baetis sp.</i>	1920
						<i>Calopteryx sp.</i>	16
			Dryopidae	32			
			<i>Ecdyonurus sp.</i>	128			
			<i>Echinogammarus sp.</i>	640			
			Elminthidae	336			
			<i>Habrophlebia sp.</i>	32			
			<i>Leuctra sp.</i>	192			

Supplementary material I. Continued.

Site	Latitude	Longitude	Taxa	Abundance
FAR3	42°12'27.97"N	12°38'11.23"E	Lumbricidae	32
			<i>Odontocerum sp.</i>	64
			<i>Perla sp.</i>	32
			<i>Sericostoma sp.</i>	16
			<i>Serratella sp.</i>	400
			Simuliidae	2000
			Athericidae	112
			<i>Baetis sp.</i>	224
			Ceratopogonidae	16
			Chironomidae	48
			<i>Echinogammarus sp.</i>	32
			Elminthidae	16
			<i>Erpobdella sp.</i>	64
			<i>Hydropsiche sp.</i>	240
			Lumbricidae	48
			<i>Perla sp.</i>	16
LIR3	41°47'30.19"N	13°34'28.64"E	<i>Rhyacophila sp.</i>	32
			<i>Serratella sp.</i>	48
			<i>Baetis sp.</i>	96
			Ceratopogonidae	16
			<i>Echinogammarus sp.</i>	192
			Elminthidae	144
			Haplotaixidae	144
			<i>Hydropsiche sp.</i>	64
			Lumbricidae	48
			Chironomidae	48
LIR4	41°32'51.34"N	13°31'00.86"E	<i>Corixa sp.</i>	96
			<i>Echinogammarus sp.</i>	64
			Haplotaixidae	416
			<i>Lestes sp.</i>	32
			<i>Caenis sp.</i>	16
MAR1	42°31'01.64"N	11°55'08.72"E	Chironomidae	32
			Elminthidae	32
			Hydracarinae	2400
			Lumbricidae	16
			<i>Physa sp.</i>	16
			<i>Sphaerium sp.</i>	16
			<i>Theodoxus sp.</i>	32
			<i>Caenis sp.</i>	16
			Ceratopogonidae	16
			Chironomidae	192
MAR2	42°23'42.49"N	11°52'47.47"E	Elminthidae	16
			Lumbricidae	32
			<i>Physa sp.</i>	32
			Ceratopogonidae	32
			Chironomidae	512
MAR3	42°15'44.90"N	11°45'27.59"E	Psychodidae	16
			<i>Allogamus sp.</i>	16
			<i>Chaetopteryx sp.</i>	16
MIG1	42°12'51.27"N	12°06'43.56"E	Chironomidae	272
			Dytiscidae	16
			<i>Echinogammarus sp.</i>	32
			Girinidae	16
			<i>Habrophlebia sp.</i>	48
			<i>Lestes sp.</i>	16
			<i>Leuctra sp.</i>	80
			Naididae	64

Supplementary material I. Continued.

Site	Latitude	Longitude	Taxa	Abundance			
MIG2	42°08'12.08"N	12°02'04.18"E	<i>Physa sp.</i>	48			
			<i>Pisidium sp.</i>	48			
			<i>Platycnemis sp.</i>	256			
			Chironomidae	80			
			Dytiscidae	16			
			Naididae	32			
MIG3	42°14'26.25"N	11°54'40.18"E	<i>Physa sp.</i>	32			
			Chironomidae	160			
			Lumbricidae	160			
SAC1	41°49'47.19"N	13°00'40.25"E	<i>Physa sp.</i>	32			
			<i>Baetis sp.</i>	48			
			<i>Bithynia sp.</i>	16			
			Chironomidae	608			
			<i>Hydropsiche sp.</i>	128			
			Lumbricidae	64			
			<i>Serratella sp.</i>	1312			
			Simuliidae	48			
			Tabanidae	32			
			Tubificidae	32			
SAC2	41°45'43.03"N	12°58'54.39"E	<i>Asellus sp.</i>	272			
			<i>Baetis sp.</i>	384			
			<i>Caenis sp.</i>	48			
			Chironomidae	3296			
			<i>Dina sp.</i>	16			
			<i>Erpobdella sp.</i>	48			
			<i>Hydropsiche sp.</i>	304			
			Lumbricidae	16			
			<i>Planorbis sp.</i>	16			
			<i>Serratella sp.</i>	176			
			<i>Silo sp.</i>	32			
			Simuliidae	16			
			<i>Ancylus sp.</i>	96			
			Anthomyiidae	16			
SAC3	41°32'48.53"N	13°21'37.97"E	<i>Baetis sp.</i>	176			
			<i>Bithynia sp.</i>	240			
			Chironomidae	2048			
			<i>Dina sp.</i>	48			
			Haplotaenidae	96			
			<i>Hydropsiche sp.</i>	48			
			<i>Planaria sp.</i>	16			
			Tubificidae	16			
			SAL1	42°12'34.13"N	13°11'01.68"E	<i>Baetis sp.</i>	1360
						<i>Caenis sp.</i>	16
						Chironomidae	208
						Dytiscidae	32
						<i>Habrophlebia sp.</i>	384
						<i>Serratella sp.</i>	64
SAL2	42°21'45.83"N	12°55'34.78"E	Simuliidae	464			
			Athericidae	16			
			<i>Baetis sp.</i>	144			
			Ceratopogonidae	16			
			Chironomidae	416			
			<i>Echinogammarus sp.</i>	64			
			Elminthidae	48			
			<i>Gordius sp.</i>	16			
			<i>Habrophlebia sp.</i>	192			
			<i>Leuctra sp.</i>	16			
			Limoniidae	128			
			<i>Serratella sp.</i>	48			

Supplementary material I. Continued.

Site	Latitude	Longitude	Taxa	Abundance
TRE1	42°11'01.96"N	12°22'39.89"E	Simuliidae	416
			<i>Asellus sp.</i>	16
			Athericidae	16
			<i>Calopteryx sp.</i>	48
			Chironomidae	64
			<i>Dinocras sp.</i>	48
			<i>Echinogammarus sp.</i>	144
			Elminthidae	32
			<i>Hydropsiche sp.</i>	112
			<i>Limnephilus sp.</i>	96
			<i>Micrasema sp.</i>	16
			Psychodidae	16
			<i>Rhyacophila sp.</i>	32
			<i>Serratella sp.</i>	544
			Simuliidae	240
TRE2	42°16'55.16"N	12°25'28.57"E	Tipulidae	32
			Chironomidae	208
			<i>Hydropsiche sp.</i>	32
			<i>Micronecta sp.</i>	32
			Simuliidae	32
TUR2	42°22'3.41"N	12°52'23.74"E	<i>Aeschna sp.</i>	32
			<i>Allogamus sp.</i>	16
			Athericidae	32
			<i>Bithynia sp.</i>	144
			Chironomidae	144
			<i>Dinocras sp.</i>	128
			<i>Ecdyonurus sp.</i>	16
			<i>Echinogammarus sp.</i>	720
			Elminthidae	16
			<i>Ephemera sp.</i>	336
			<i>Habrophlebia sp.</i>	48
			<i>Leuctra sp.</i>	80
			<i>Limnephilus sp.</i>	80
			Lumbricidae	48
			<i>Sericostoma sp.</i>	32
VEL1	42°31'19.47"N	13°07'10.05"E	<i>Serratella sp.</i>	48
			Athericidae	16
			<i>Baetis sp.</i>	1696
			Ceratopogonidae	32
			<i>Chaetopteryx sp.</i>	16
			Chironomidae	48
			<i>Ecdyonurus sp.</i>	32
			Elminthidae	48
			<i>Habrophlebia sp.</i>	32
			<i>Leuctra sp.</i>	688
			<i>Limnephilus sp.</i>	32
			Limoniidae	16
			Lumbricidae	32
			<i>Lymnaea sp.</i>	192
			<i>Rhyacophila sp.</i>	48
<i>Rhythrogena sp.</i>	160			
VEL2	42°25'30.60"N	13°04'34.29"E	<i>Serratella sp.</i>	2448
			Simuliidae	896
			Tipulidae	16
			<i>Baetis sp.</i>	608
			Chironomidae	352
<i>Ecdyonurus sp.</i>	192			

Supplementary material I. Continued.

Site	Latitude	Longitude	Taxa	Abundance
VEL3	42°23'39.85"N	12°52'49.25"E	Elminthidae	176
			<i>Ephemera sp.</i>	16
			<i>Hydropsiche sp.</i>	16
			<i>Isoperla sp.</i>	48
			<i>Leuctra sp.</i>	2224
			Limoniidae	32
			<i>Protonemoura sp.</i>	48
			<i>Rhyacophila sp.</i>	96
			<i>Rhythrogena sp.</i>	16
			<i>Serratella sp.</i>	448
			Simuliidae	32
			<i>Allogamus sp.</i>	32
			<i>Baetis sp.</i>	48
			Chironomidae	224
			<i>Dugesia sp.</i>	336
			<i>Ecdyonurus sp.</i>	16
			<i>Echinogammarus sp.</i>	96
			Elminthidae	48
			<i>Erpobdella sp.</i>	16
			<i>Isoperla sp.</i>	32
<i>Limnephilus sp.</i>	672			
<i>Rhyacophila sp.</i>	16			

Supplementary material II. Summary table with index and metric values per sampling site. *a* = total abundance; *e* = evenness; *H* = Shannon-Wiener index; *IFF* = River Functionality Index value; *LUI* = Land Use Index; *R* = taxonomic richness. For sampling sites acronyms. See Figure 1 caption.

Hydroecoregion	Site	Metrics		Indices			
		IFF / IFF class	LUI	<i>a</i>	<i>e</i>	<i>H</i>	<i>R</i>
H13	ANI1	280 / I	11	4640	0.66	1.69	13
	ANI2	280 / I	5	6432	0.64	1.68	14
	ANI3	175 / III	59	2256	0.78	2.33	20
	COS2	53 / IV-V	171	2624	0.50	0.69	4
	FIB1	161 / III	137	6576	0.19	0.49	13
	FAR1	285 / I	13	1584	0.68	1.63	11
	FAR2	180 / III	48	5840	0.79	2.08	14
	FAR3	210 / II	31	896	0.85	2.12	12
	LIR3	210 / II	17	704	0.91	1.76	7
	LIR4	72 / IV	210	656	0.71	1.14	5
	SAL1	205 / II	29	2528	0.72	1.40	7
	SAL2	175 / III	19	1520	0.78	1.95	12
	TUR2	161 / III	39	1920	0.85	2.30	15
	VEL1	230 / II	11	6448	0.62	1.71	16
	VEL2	167 / III	64	4304	0.54	1.39	13
VEL3	147 / III	49	1536	0.78	1.80	10	
H14	ANI4	79 / IV	215	320	0.92	1.28	4
	ARR1	108 / III-IV	142	400	0.84	1.63	7
	ARR2	86 / IV	131	432	0.95	2.08	9
	MAR1	132 / III	37	2560	0.98	2.03	8
	MAR2	92 / IV	45	304	0.69	1.23	6
	MAR3	67 / IV	95	560	0.32	0.35	3
	MIG1	190 / II-III	31	928	0.77	1.92	12
	MIG2	221 / II	10	160	0.91	1.26	4
	MIG3	210 / II	6	352	0.95	1.04	3
	TRE1	230 / II	55	1456	0.74	2.02	15
	TRE2	63 / IV	55	304	1.00	1.38	4
H15	AMA1	163 / III	45	1856	0.78	2.25	18
	AMA2	125 / III	173	1840	0.73	2.01	16
	AMA3	63 / IV	73	1200	0.89	1.05	6
	AUS1	155 / III	94	2400	0.68	1.68	12
	AUS2	34 / V	165	624	0.78	1.63	8
	SAC1	203 / II	68	2288	0.47	1.04	9
	SAC2	158 / III	52	4624	0.71	0.98	11
	SAC3	140 / III	190	2800	0.83	1.90	10