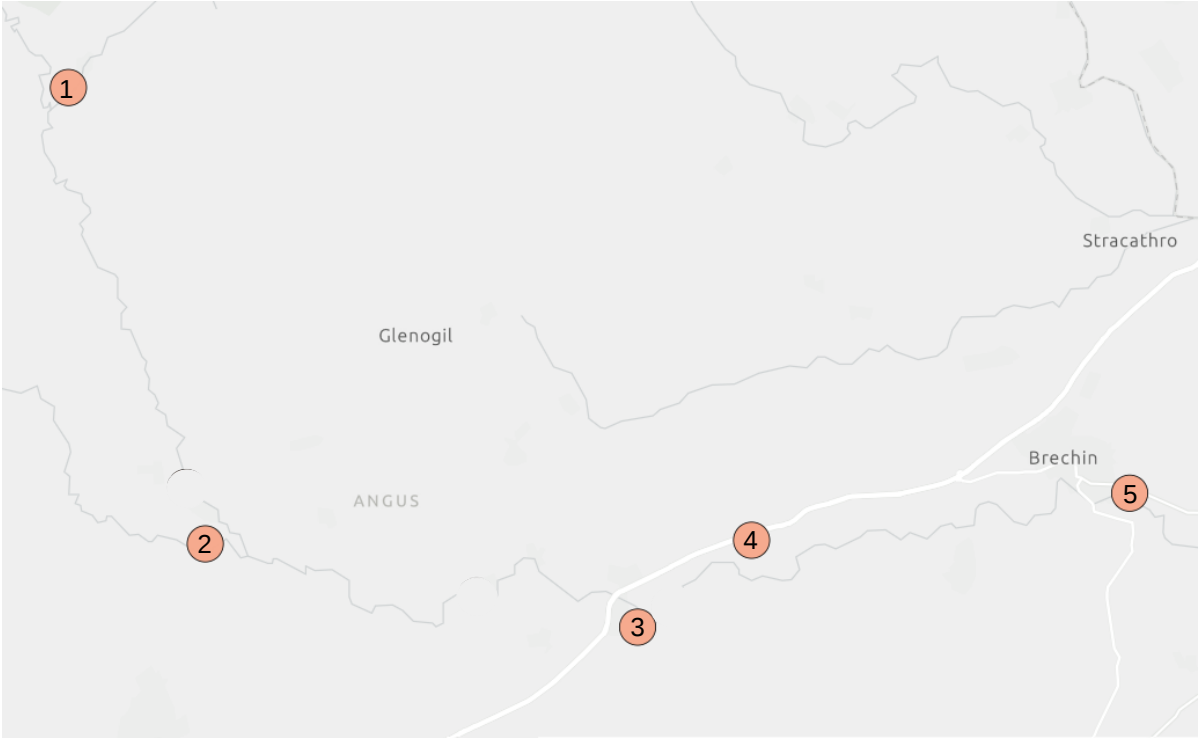


Esk Rivers & Fisheries Trust:

Angus Esk *Autumn Survey 2024*



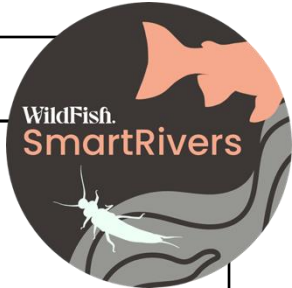
Ordnance Survey data © Crown copyright and database right 2024

Sites

- 1: Rottal Burn
- 2: Prosen Water
- 3: Lemno Burn

- 4: Noran Water
- 5: Dalgety

Summary



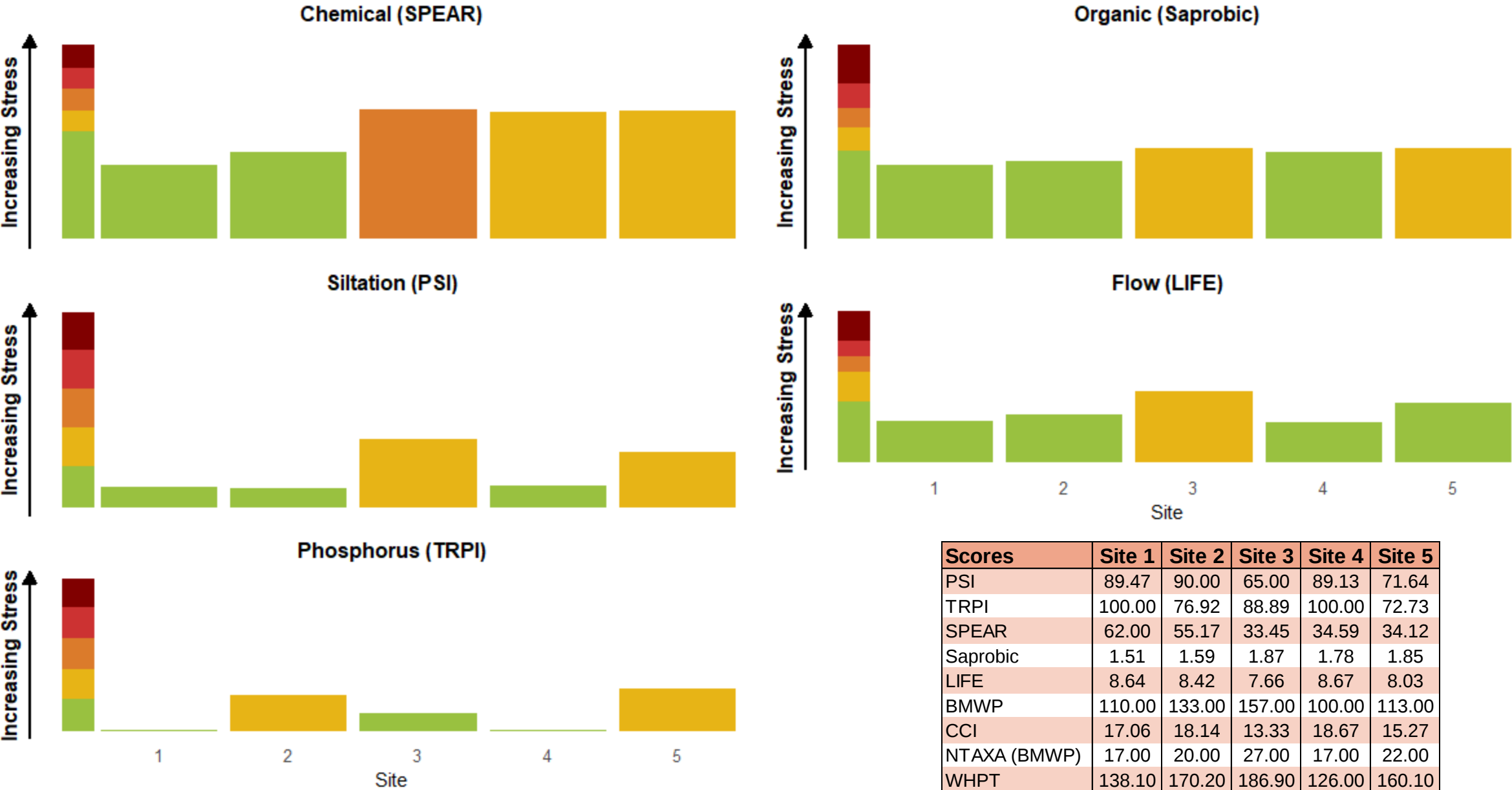
Water Quality Scores:

- Chemical Pressure: Unimpacted scores at sites 1 and 2. Low impact at sites 4 and 5. Moderate impact at site 3.
- Organic Pressure: Unimpacted scores at sites 1, 2, and 4. Low impact at sites 3 and 5.
- Sediment Pressure: Unimpacted scores at sites 1, 2, and 4. Low impact at sites 3 and 5.
- Flow Pressure: Unimpacted scores at sites 1, 2, 4, and 5. Low impact at site 3.
- Phosphorus Pressure: Unimpacted scores at sites 1, 3, and 4. Low impact at sites 2 and 5.

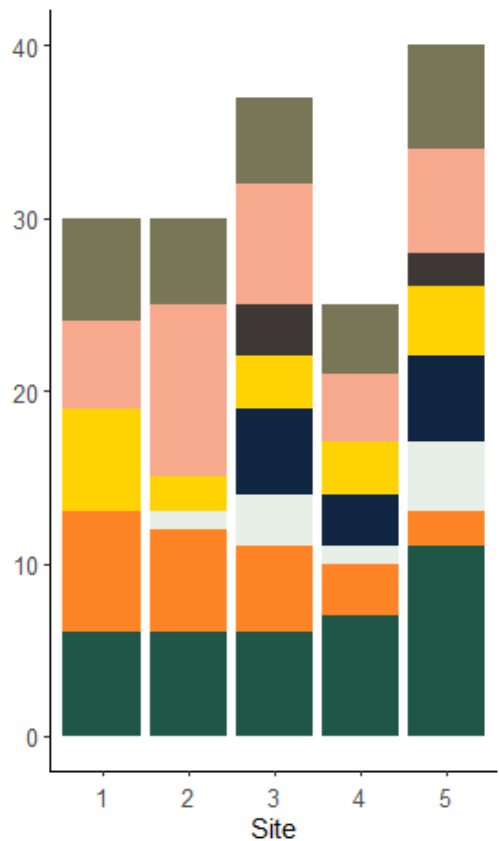
Invertebrates:

- Total species richness was highest at site 5 (40) and lowest at site 4 (25). True fly diversity was particularly high at site 5, with beetle, mollusc, and the miscellaneous taxa groups also having higher relative diversity.
- Total abundance was highest at site 5 (949) and lowest at site 2 (324). Caddisfly and mayfly numbers accounted for 74% of individuals at site 5 (see below).
- Riverfly species richness was highest at sites 1 and 2 (18) and lowest at site 4 (10). Mayfly and stonefly diversity was highest at site 1, with caddisfly diversity highest at site 2.
- Riverfly abundance was highest at site 5 (730) and lowest at site 2 (249). Site 5 had high relative numbers of mayfly with large dark olives (*Baetis rhodani*) making up most of the numbers. Caddisfly numbers were also high at site 5, with two caseless species (*Hydropsyche siltalai* and *Rhyacophila dorsalis*). Site 1 had the highest numbers of stoneflies particularly within the genus *Leuctra*.

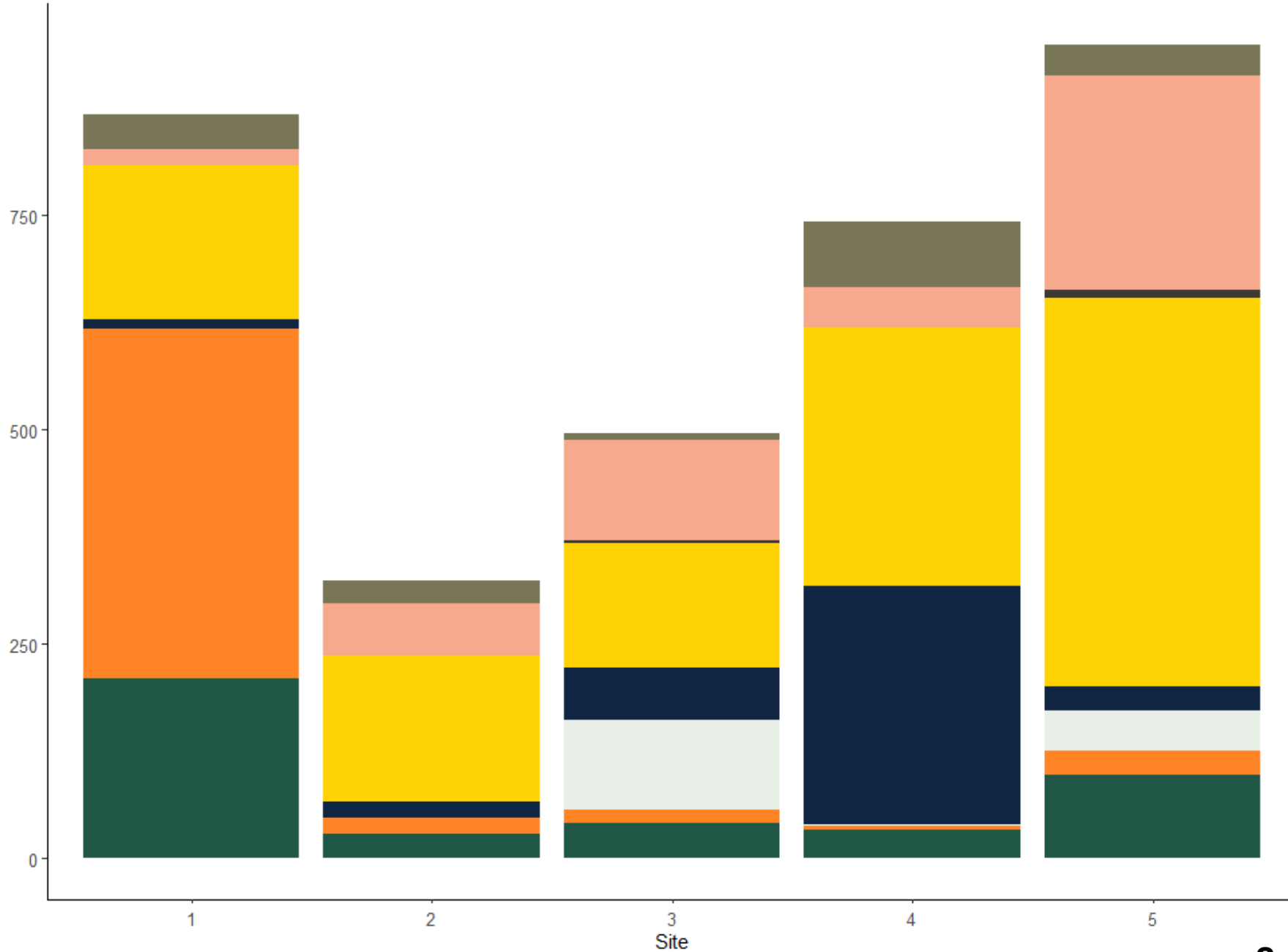
Water Quality Scores



Total Species



Total Abundance

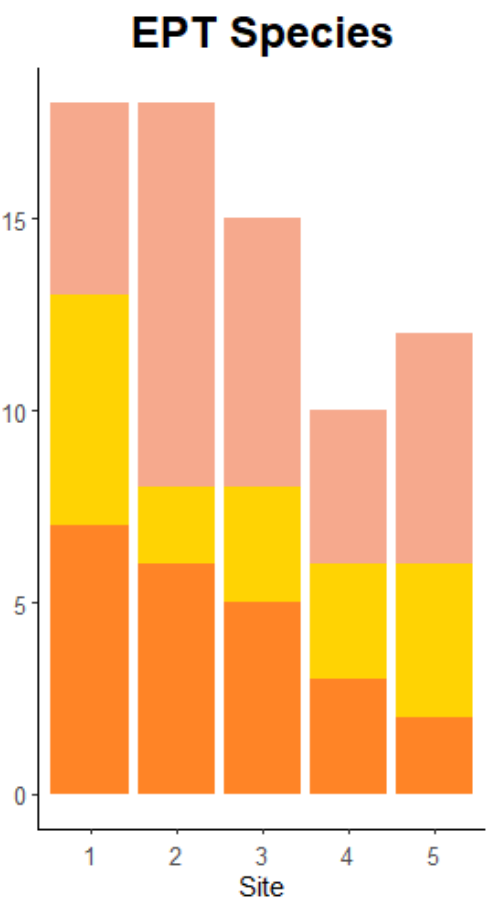


Autumn 2024

Site	Total Species	Total Abundance
1	32 (5)	868
2	31 (0)	324
3	37 (4)	496
4	25 (1)	742
5	40 (5)	949

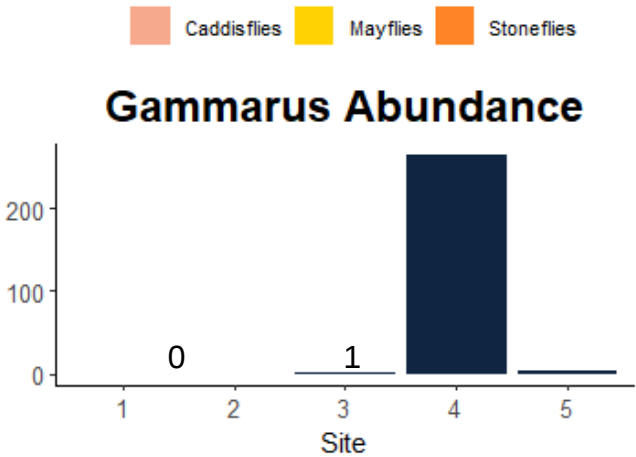
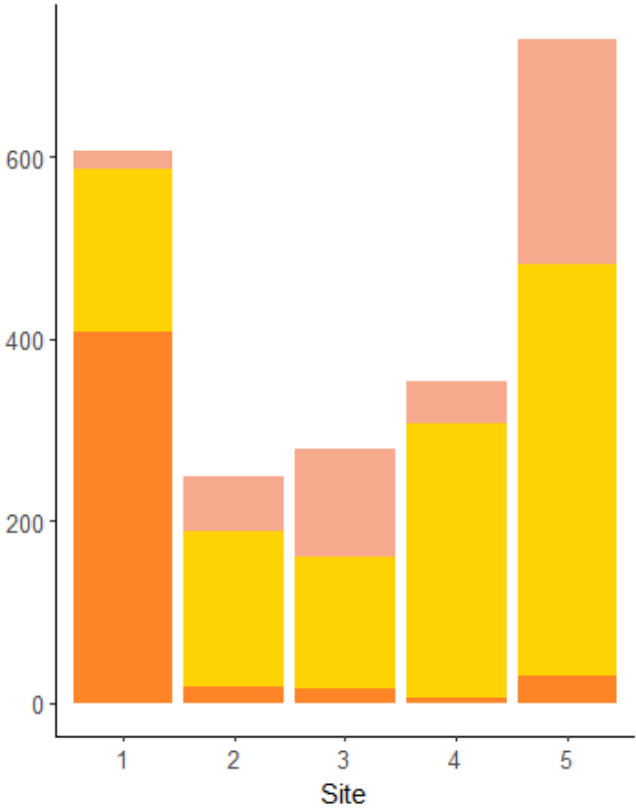
(X) shows potential repeat observations. These are highlighted grey on pg.4.

EPT Abundance

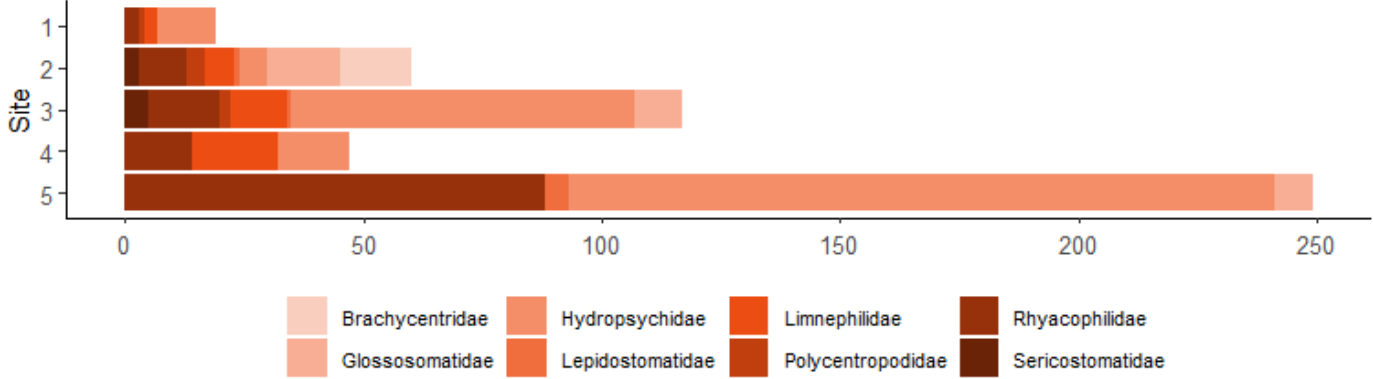


Site	EPT	EPT
1	18 (4)	606
2	18 (0)	249
3	15 (1)	278
4	10 (0)	354
5	12 (2)	730

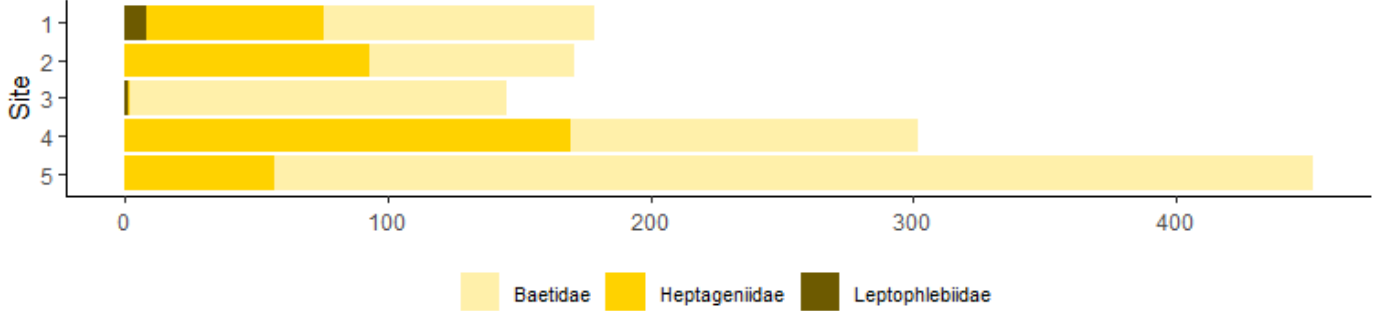
(X) shows potential repeat observations.
These are highlighted grey on pg.4.



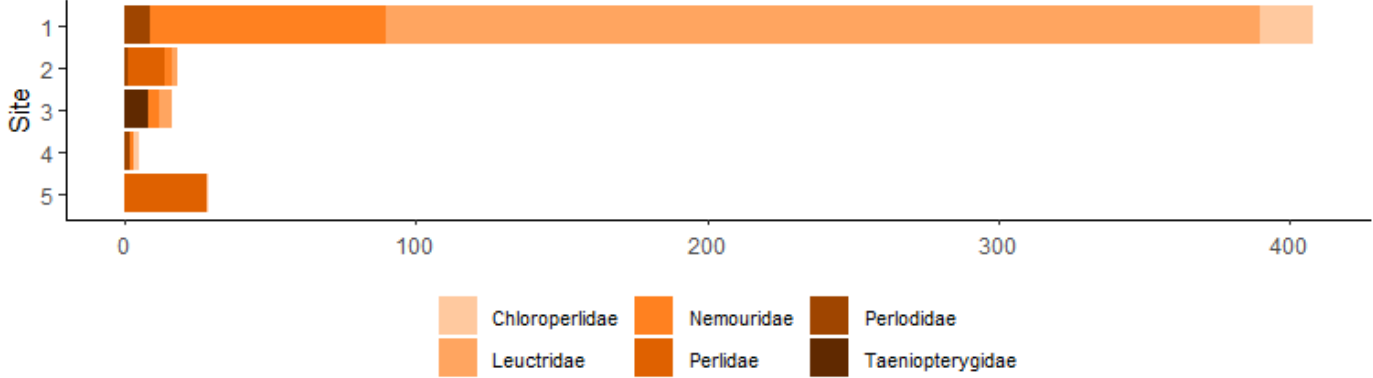
Caddisflies



Mayflies



Stoneflies



Invertebrate Samples

Order	Family	Taxon	Site 1	Site 2	Site 3	Site 4	Site 5
Coleoptera	Dytiscidae	Dytiscidae	0	0	1	0	0
		Oreodytes sanmarkii	15	2	3	0	0
		Platambus maculatus	9	0	0	0	0
	Elmidae	Elmis aenea	9	3	1	2	2
		Esolus parallelepipedus	0	0	0	0	1
		Limnius volckmari	5	14	2	29	22
		Oulimnius	2	7	0	41	4
	Gyrinidae	Orectochilus villosus	0	0	1	0	7
	Hydraenidae	Hydraena gracilis	0	1	0	4	1
	Scirtidae	Cyphon	1	0	0	0	0
Total			41	27	8	76	37

Order	Family	Taxon	Site 1	Site 2	Site 3	Site 4	Site 5
Trichoptera	Brachycentridae	Brachycentrus subnubilus	0	15	0	0	0
	Glossosomatidae	Agapetus	0	15	10	0	4
		Glossosoma boltoni	0	0	0	0	4
	Hydropsychidae	Hydropsyche instabilis	0	0	0	15	0
		Hydropsyche pellucidula	0	5	0	0	2
		Hydropsyche siltalai	12	1	72	0	146
	Lepidostomatidae	Lepidostoma hirtum	0	1	1	0	5
	Limnephilidae	Chaetopteryx villosa	0	1	0	0	0
		Drusus annulatus	0	0	0	3	0
		Ecclisopteryx dalecarlica	3	5	0	15	0
		Limnephilidae	0	0	12	0	0
	Polycentropodidae	Polycentropodidae	1	0	0	0	0
		Polycentropus	0	0	2	0	0
		Polycentropus flavomaculatus	0	4	0	0	0
	Rhyacophilidae	Rhyacophila	1	0	0	0	0
		Rhyacophila dorsalis	2	10	15	14	88
	Sericostomatidae	Sericostoma personatum	0	3	5	0	0
Total			19	60	117	47	249

Order	Family	Taxon	Site 1	Site 2	Site 3	Site 4	Site 5
Arhynchobdellida	Erpobdellidae	Erpobdella	0	0	2	0	5
		Erpobdella octoculata	0	0	1	0	5
Rhynchobdellida	Glossiphoniidae	Glossiphonia complanata	0	0	1	0	0
Total			0	0	4	0	10

Invertebrate Samples

Autumn 2024

Order	Family	Taxon	Site 1	Site 2	Site 3	Site 4	Site 5
Ephemeroptera	Baetidae	Baetis	40	0	0	0	95
		Baetis rhodani/atlanticus	63	78	143	132	300
	Heptageniidae	Ecdyonurus torrentis	0	0	0	2	0
		Rhithrogena	25	0	0	0	30
		Rhithrogena semicolorata	43	93	1	168	27
	Leptophlebiidae	Leptophlebiidae	0	0	1	0	0
		Paraleptophlebia	7	0	0	0	0
		Paraleptophlebia submarginata	1	0	0	0	0
Total			179	171	145	302	452

Order	Family	Taxon	Site 1	Site 2	Site 3	Site 4	Site 5
Amphipoda	Gammaridae	Gammarus pulex	0	0	1	265	0
		Gammarus pulex/fossarum	0	0	0	0	5
Isopoda	Asellidae	Asellus aquaticus	0	0	1	0	1
Oligochaeta	Oligochaeta	Eiseniella tetraeda	1	0	0	0	1
		Oligochaeta	10	18	56	8	19
Tricladida	Dendrocoelidae	Dendrocoelum lacteum	0	0	0	0	2
	Planariidae	Polycelis	0	0	1	0	0
		Polycelis felina	0	0	1	4	0
Total			11	18	60	277	28

Order	Family	Taxon	Site 1	Site 2	Site 3	Site 4	Site 5
Ph. Mollusca	Ancylidae	Ancylus fluviatilis	0	0	52	2	0
	Hydrobiidae	Potamopyrgus antipodarum	0	1	51	0	39
	Lymnaeidae	Ampullaceana balthica	0	0	2	0	2
	Physidae	Physa acuta	0	0	0	0	5
	Planorbidae	Bathyomphalus contortus	0	0	0	0	1
Total			0	1	105	2	47

Invertebrate Samples

Order	Family	Taxon	Site 1	Site 2	Site 3	Site 4	Site 5
Plecoptera	Chloroperlidae	Chloroperla tripunctata	0	0	0	2	1
		Siphonoperla torrentium	18	0	0	0	0
	Leuctridae	Leuctra	300	2	3	0	0
		Leuctra fusca	0	0	1	0	0
	Nemouridae	Amphinemura sulcicollis	36	1	0	0	0
		Nemoura avicularis	0	0	2	0	0
		Protonemura	20	0	0	0	0
		Protonemura meyeri	25	1	2	1	0
	Perlidae	Dinocras cephalotes	0	3	0	0	0
		Perla bipunctata	0	10	0	0	28
	Perlodidae	Isoperla grammatica	6	0	0	0	0
		Perlodes mortoni	3	1	0	2	0
	Taeniopterygidae	Taeniopteryx nebulosa	0	0	8	0	0
Total			408	18	16	5	29

Order	Family	Taxon	Site 1	Site 2	Site 3	Site 4	Site 5
Diptera	Ceratopogonidae	Ceratopogonidae	0	0	2	0	3
	Chironomidae	Chironomidae	114	15	26	18	17
		Tanypodinae	1	0	0	1	0
		Tanytarsini	0	1	0	0	0
	Dixidae	Dixa	0	1	0	0	0
	Empididae	Clinocera	3	6	0	3	0
		Hemerodromia	0	0	0	0	2
	Limoniidae	Eloeophila	0	2	0	1	1
		Hexatoma	1	0	0	0	2
		Pilaria	0	0	0	0	1
	Muscidae	Limnophora	1	0	0	0	1
	Pediciidae	Dicranota	90	4	7	8	20
	Psychodidae	Psychodidae	0	0	1	0	0
	Simuliidae	Simulium	0	0	3	1	45
		Simulium argyreatum/variegatum	0	0	0	0	1
		Simulium cryophilum	0	0	0	1	0
	Tipulidae	Tipula	0	0	2	0	4
Total			210	29	41	33	97