

SmartRivers Data Summary

Chilterns Conservation Board

River Chess 2022 – 2025



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Sites

- 1: Broadwater Bridge
- 2: Main River (Marshfield)
- 3: Little Chess
- 4: Trout Rise
- 5: Scotsbridge Mill
- 6: Caravan Lane

Samples Collected <i>Site/Year/Season</i>	2022		2023		2024		2025	
	S	A	S	A	S	A	S	A
1. Broadwater Bridge	✓	✓	✓	✓	✓	✓	✓	-
2. Main River (Marshfield)	✓	✓	✓	✓	✓	✓	✓	-
3. Little Chess	✓	✓	✓	✓	✓	✓	✓	-
4. Trout Rise	✓	✓	✓	✓	✓	✓	✓	-
5. Scotsbridge Mill	✓	✓	✓	✓	✓	✓	✓	-
6. Caravan Lane	✓	✓	✓	✓	✓	✓	✓	-

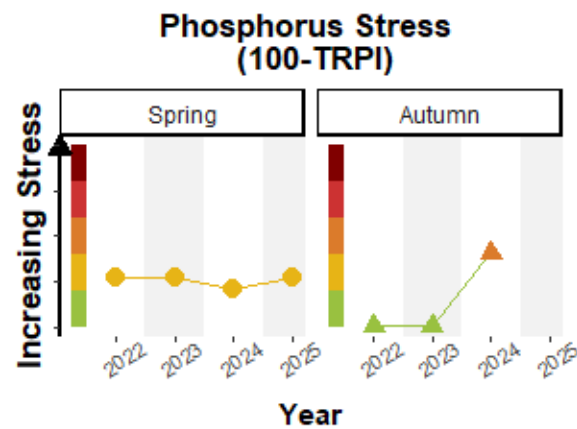
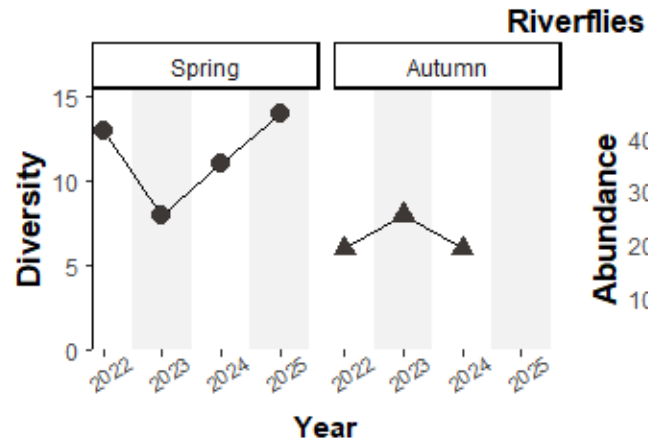
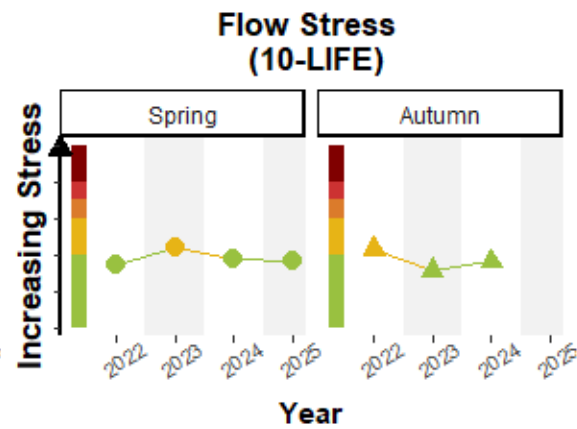
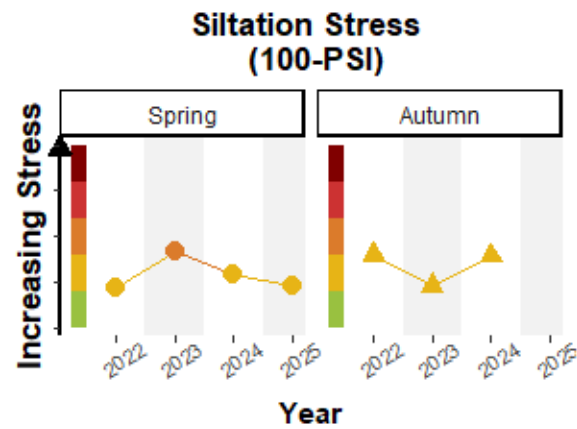
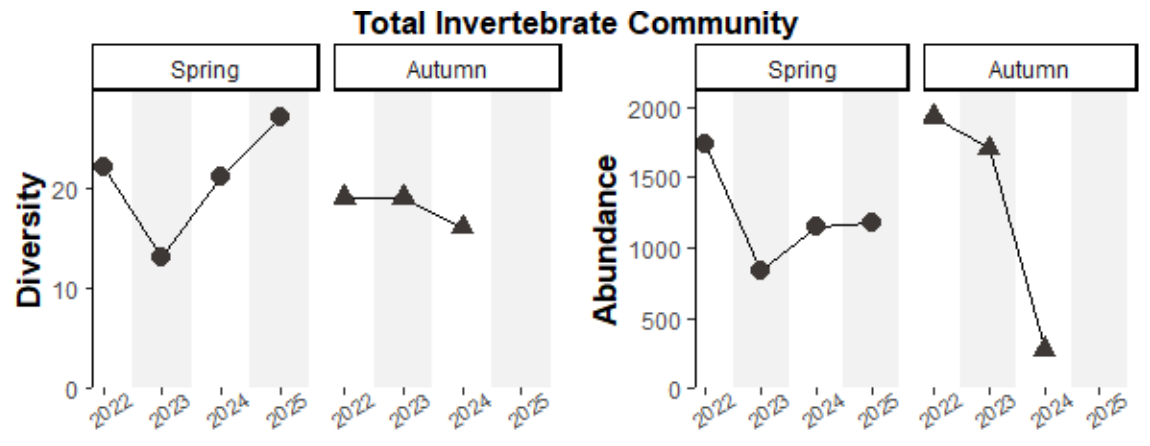
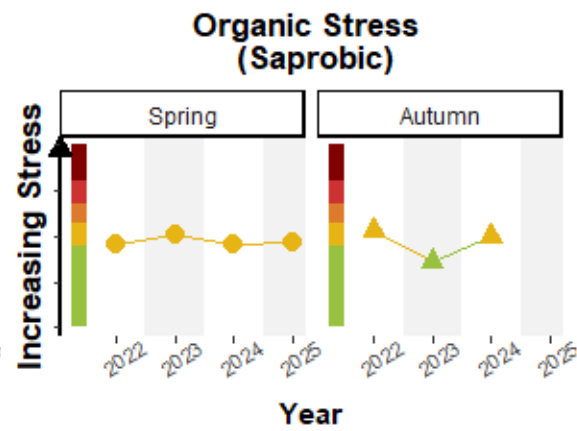
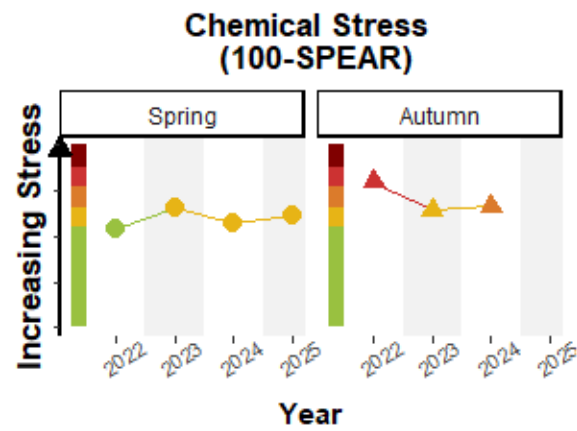
Comments:

42 samples collected and processed with autumn 2025 pending.

For the spring data the water quality metrics have indicated some concerning scores over the monitoring period for sediment in 2023 and chemicals and phosphorus in 2024.

For the autumn data there are some stark scores showing concerning levels of impact over the monitoring period. Chemical impacts are particularly notable with some sites showing stress across all years of monitoring.

Diversity and abundance data is quite variable. General trend of declines in 2023 with subsequent recovery/partial recovery. Freshwater shrimp numbers were a key driver of these changes for the total community. Similar patterns observed for riverflies.



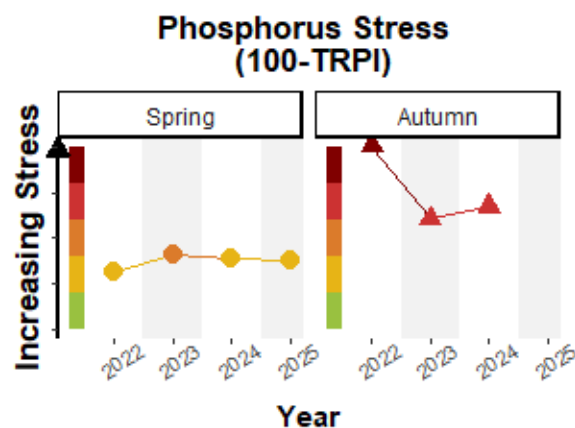
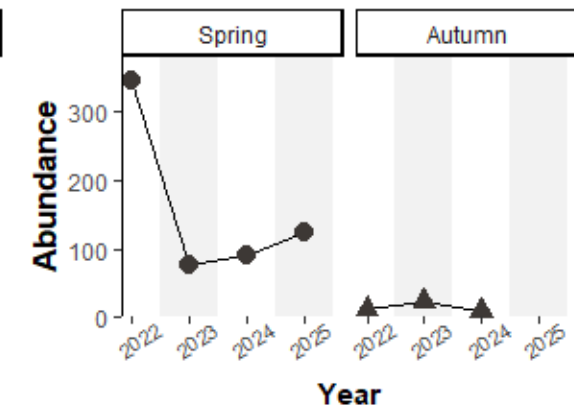
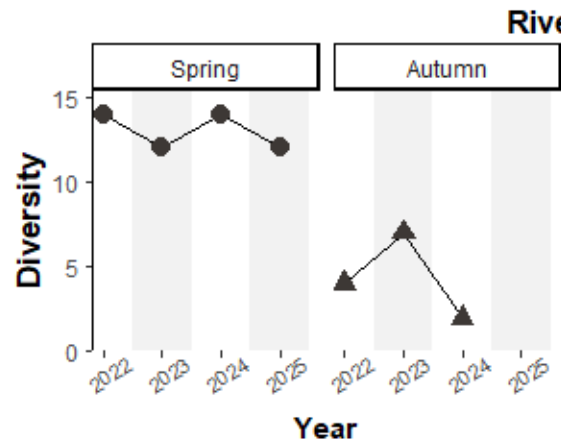
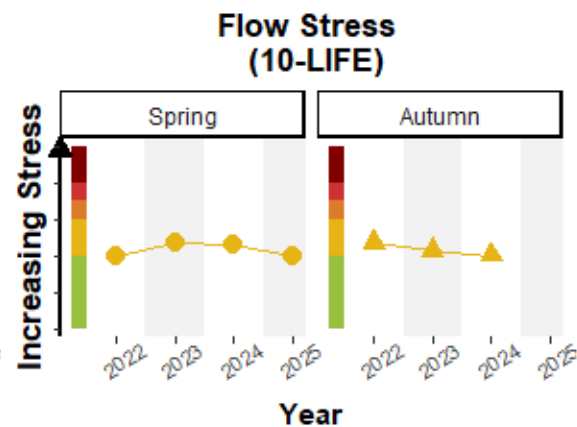
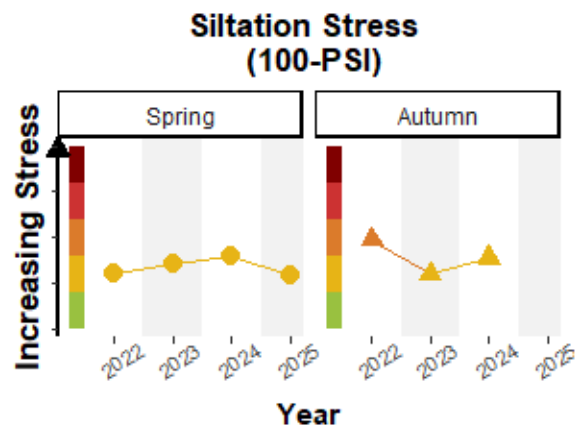
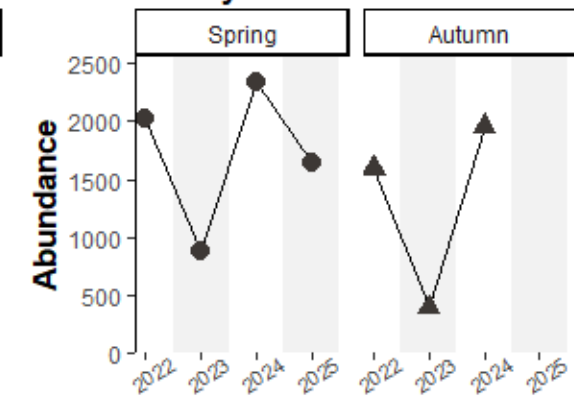
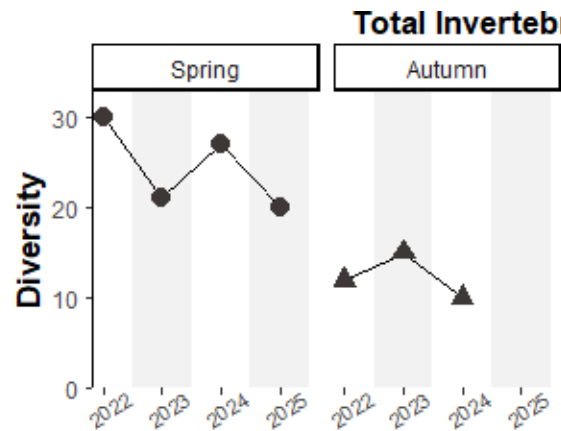
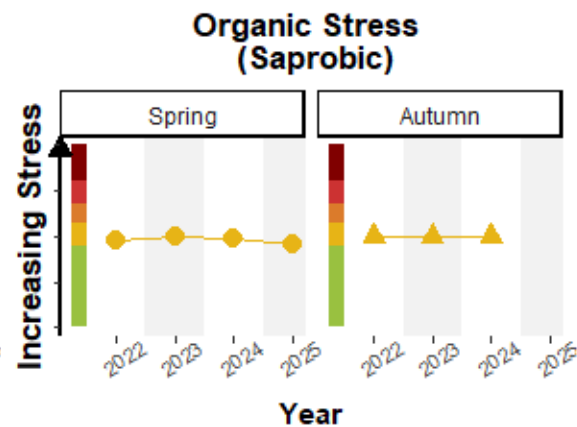
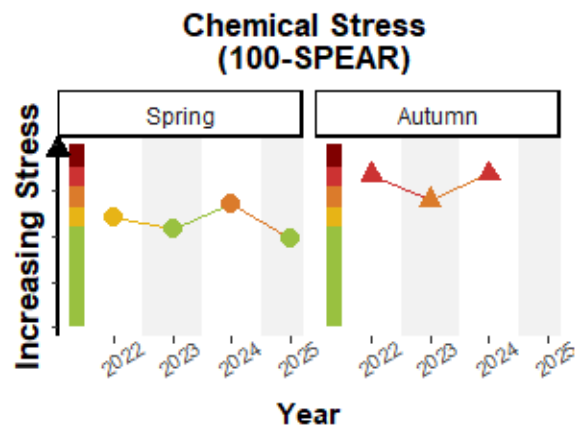
River Chess 2022 - 2025

Broadwater Bridge

Comments:

Water Quality: Concerning impact scores for chemicals (Aut '22 & '24), sediment (Spr '23), and phosphorus (Aut '24). **Diversity:** Spring surveys showed a decline in '23 with a subsequent recovery in both the total and riverfly communities. Autumn surveys more stable. **Abundance:** Reduction in spring invertebrate numbers in '23 linked to freshwater shrimp and New Zealand mud snail numbers, with recovery in subsequent surveys linked to the former. In autumn changes to total community again linked to species above. Riverfly spike in 2023 due to large number of colonial *Agapetus* sp. caddisflies.





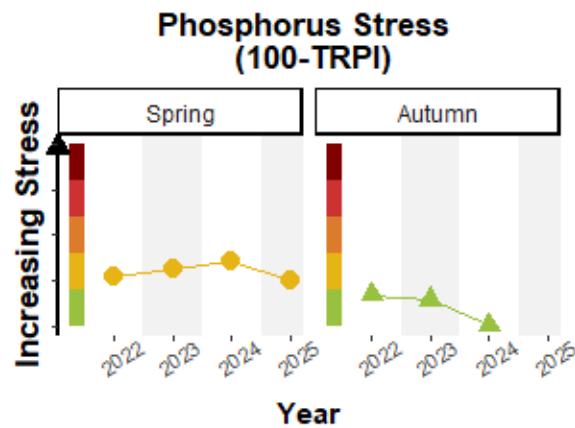
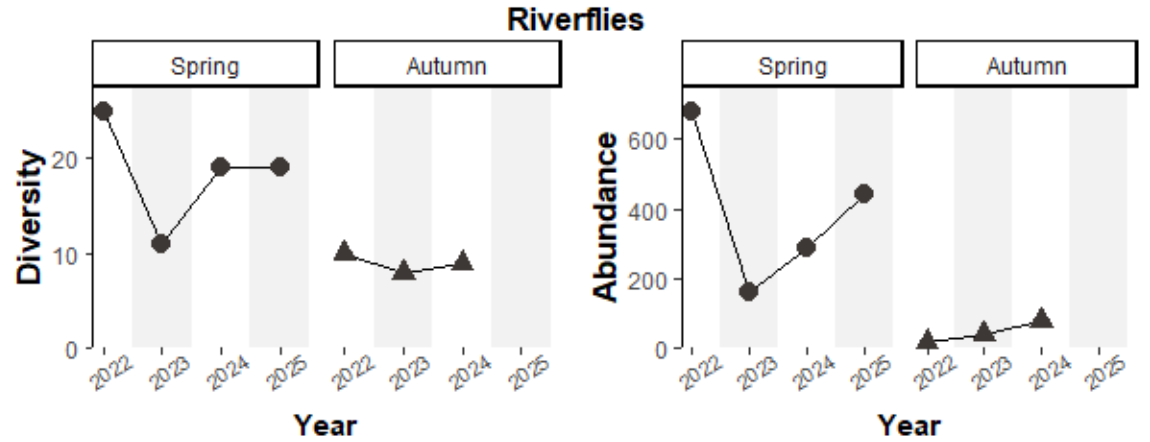
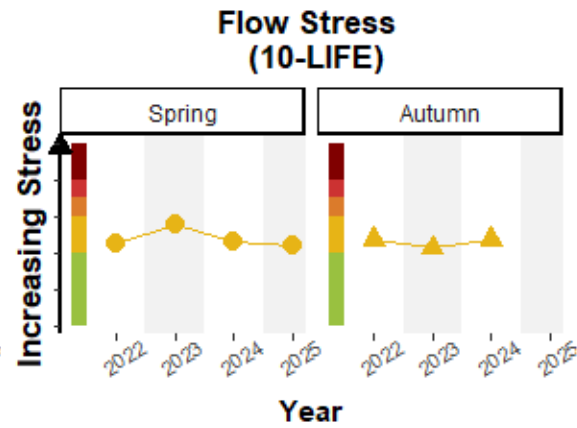
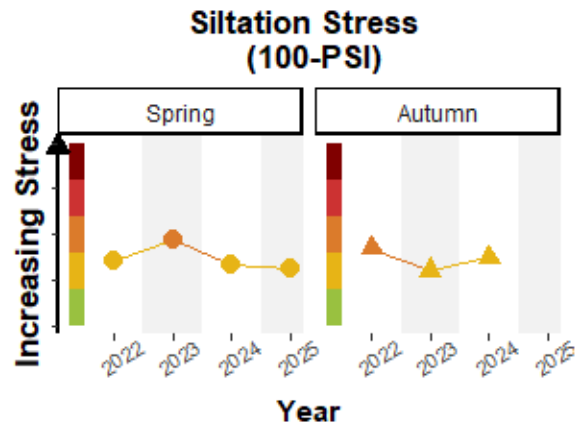
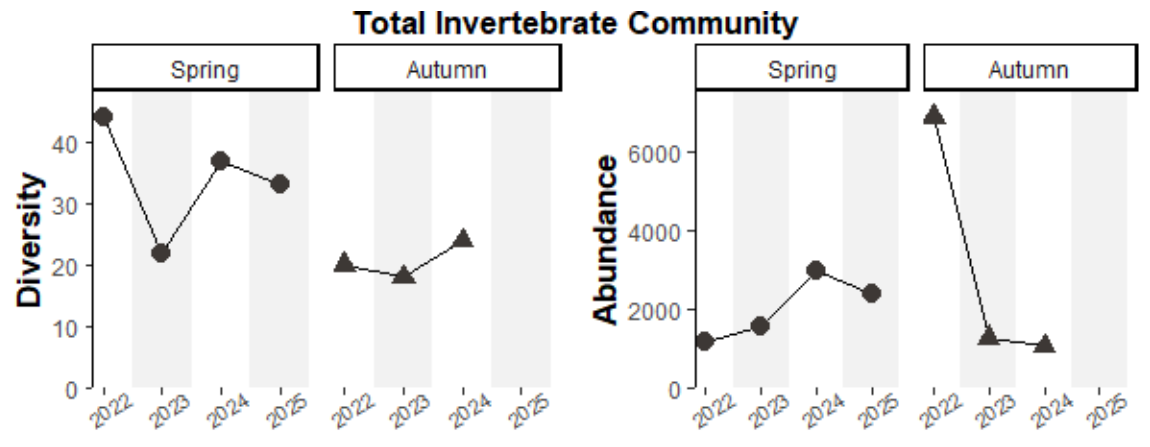
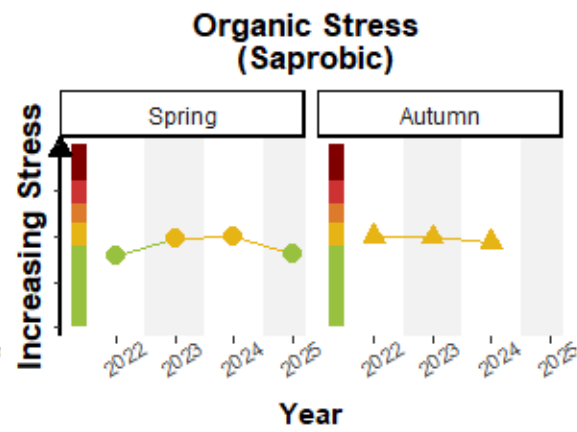
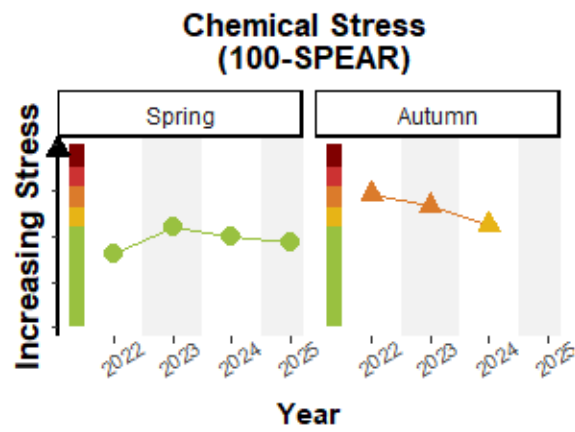
River Chess 2022 - 2025

Main River (Marshfield)

Comments:

Water Quality: Concerning impact scores for chemicals (Spr '24 & Aut '22-'24), sediment (Aut '22), phosphorus (Spr '23 & Aut '22-'24). **Diversity:** Fluctuating over the years but overall trend looks to be declining. Very low riverfly diversity in autumn '24. **Abundance:** Lots of variation in total community counts, highs in spring and autumn 2024 associated with higher freshwater shrimp and true fly counts. Sharp drop in spring riverfly abundance between '22 and '23 primarily due to a reduction in mayflies (blue-winged olives and large dark olives). Slight recovery in spring but autumn remains very low.





River Chess 2022 - 2025

Little Chess (Marshfield)

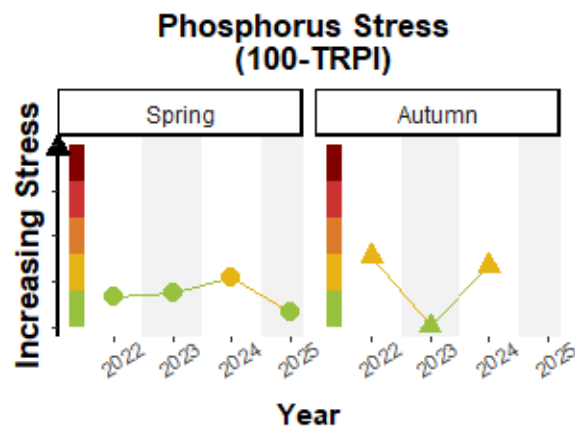
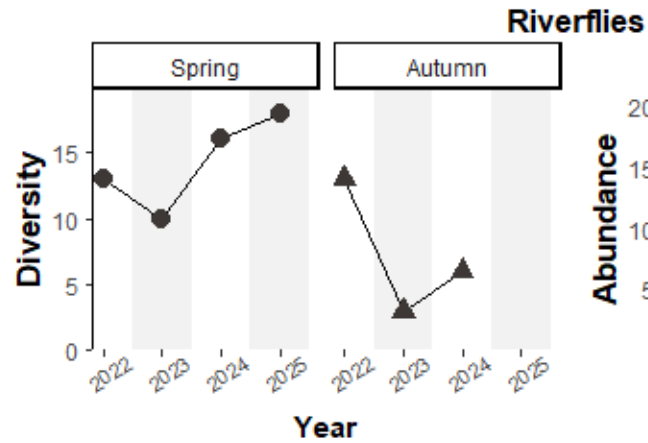
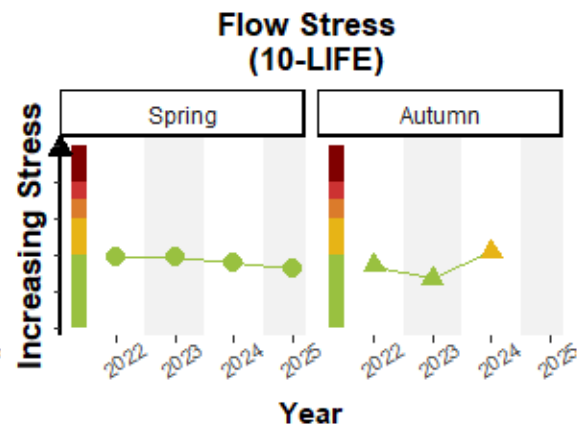
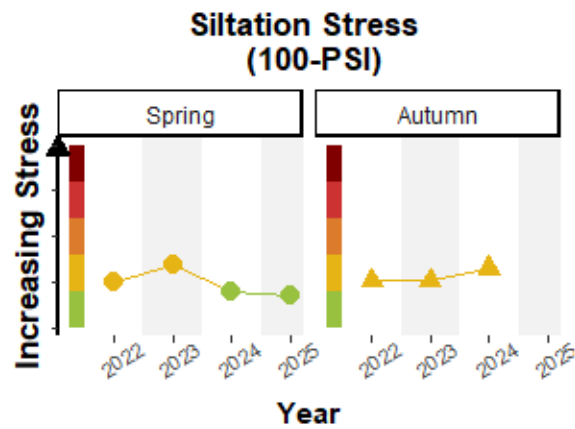
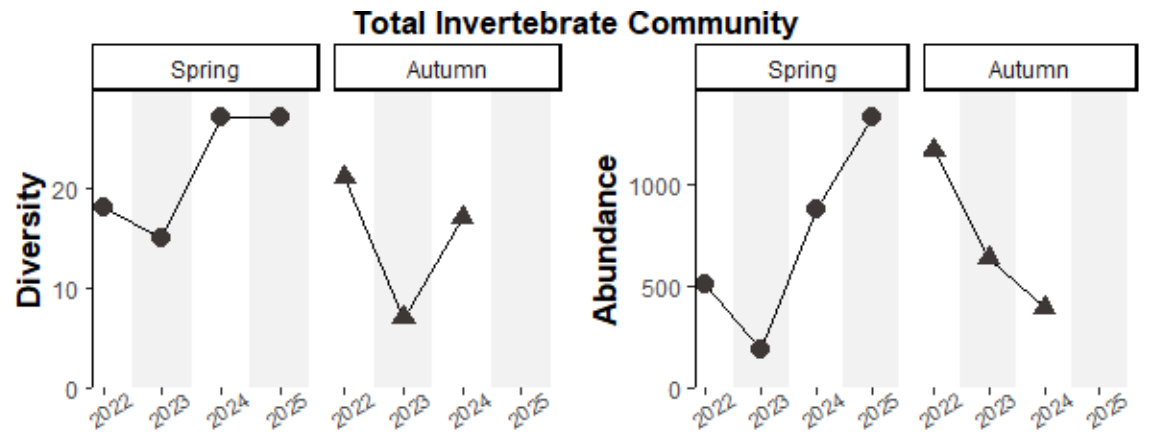
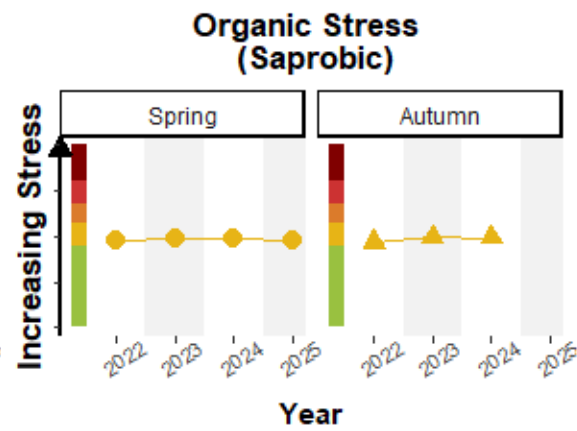
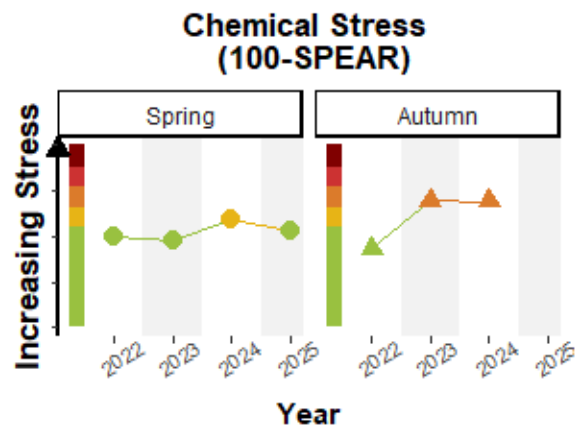
Comments:

Water Quality: Concerning impact scores for chemicals (Aut '22 & '23) and sediment (Aut '22 & Spr '23).

Diversity: Drop in diversity in '23, particularly for spring surveys, followed by a partial recovery.

Abundance: For the spring surveys an overall increase in total community numbers mainly linked to freshwater shrimp, while riverflies markedly declined in '23 with a subsequent recovery. Autumn surveys showed a sharp drop in '23, again due to shrimp numbers (6820 to 1223 individuals). Riverflies numbers slightly increased due to of cased caddis numbers (~50 individuals in '24).





River Chess 2022 - 2025

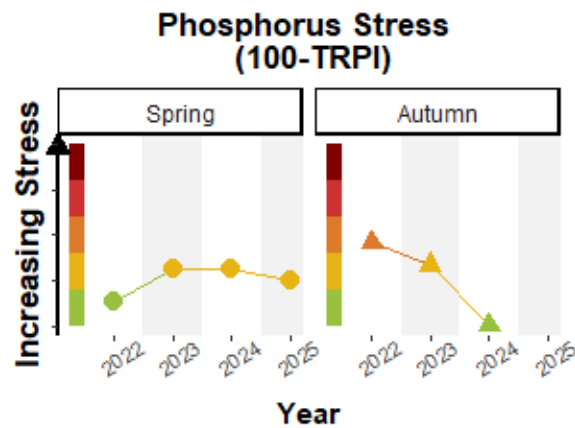
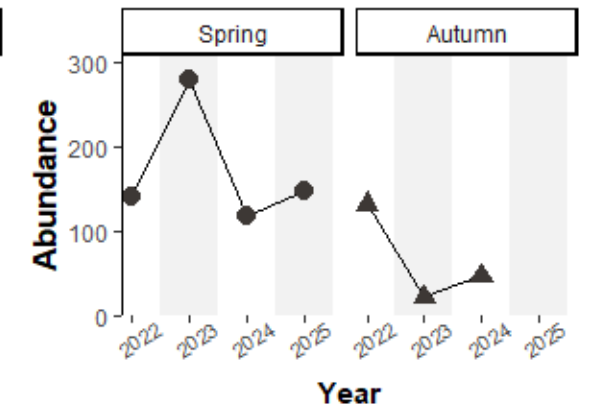
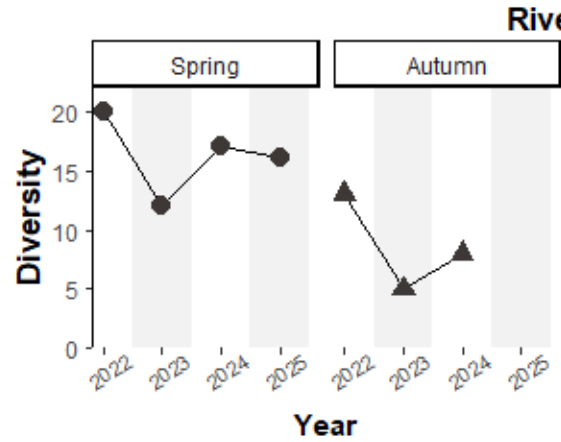
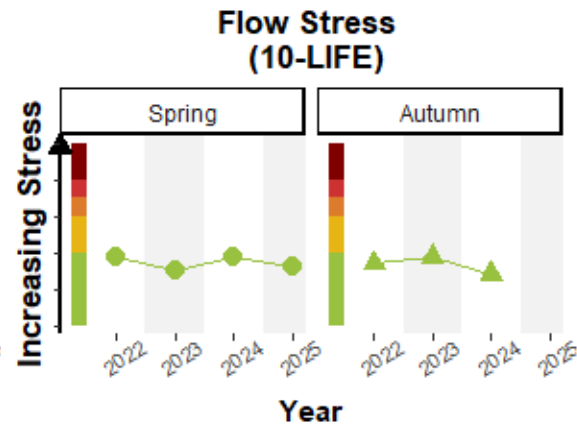
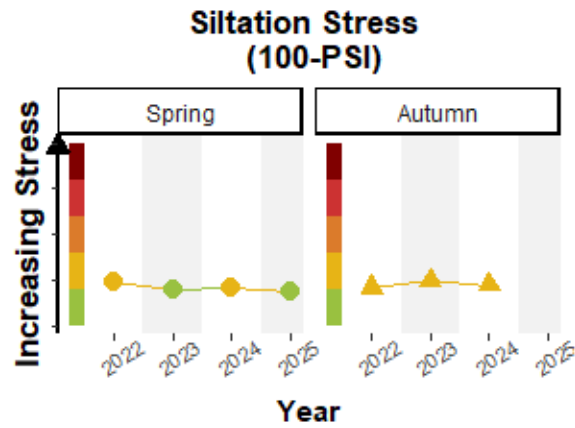
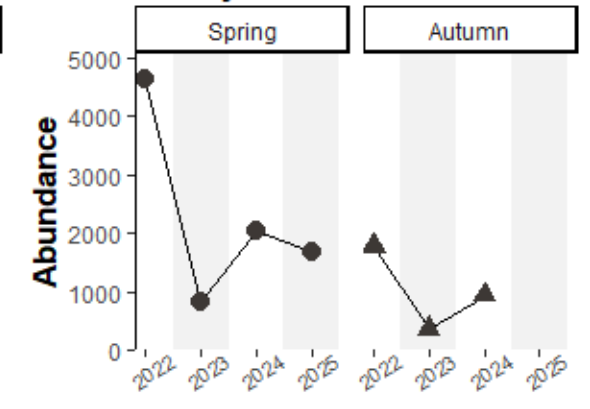
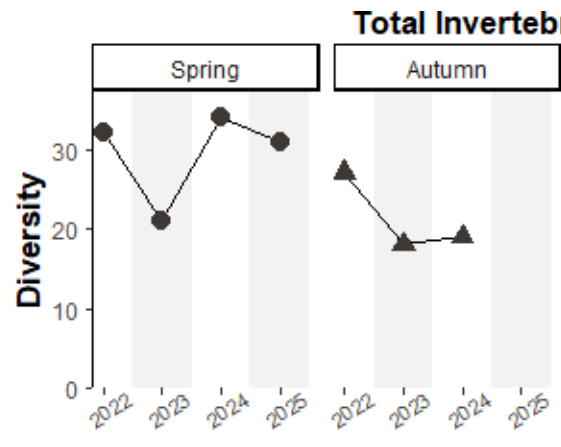
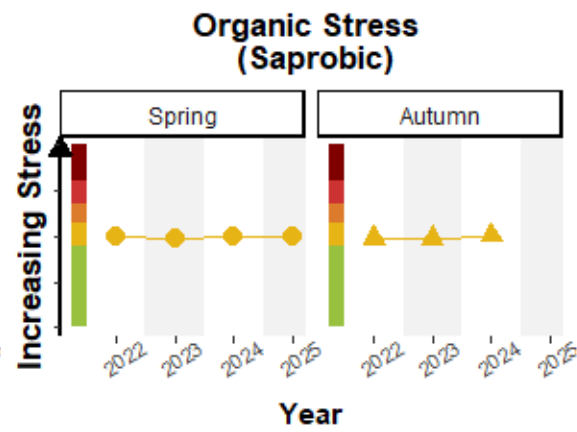
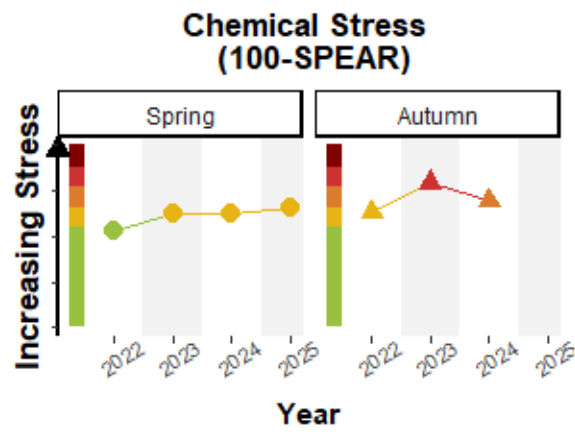
Trout Rise

Comments:

Water Quality: Concerning impact scores for chemical in recent autumn monitoring ('23 & '24).

Diversity: Diversity initially reduced in '23 followed by a partial recovery in autumn, while spring surveys show diversity higher now than the initial benchmarking. **Abundance:** Spring abundance shows a similar pattern to diversity with higher counts in '23 and '24. Autumn surveys show a sharp drop in '23 driven primarily by reduction in freshwater shrimp and riffle beetle numbers for the total community, and green drake and prong-gilled mayflies for riverflies.





River Chess 2022 - 2025

Scotsbridge Mill

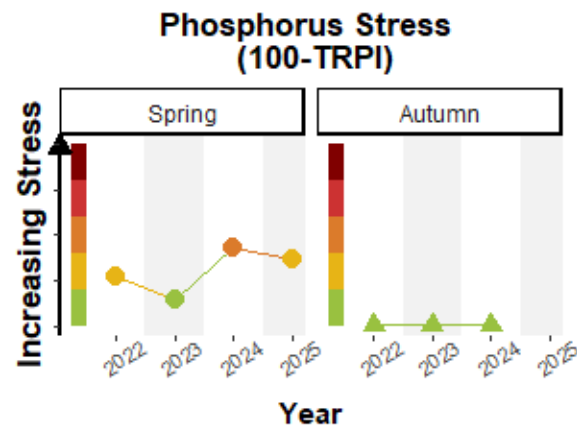
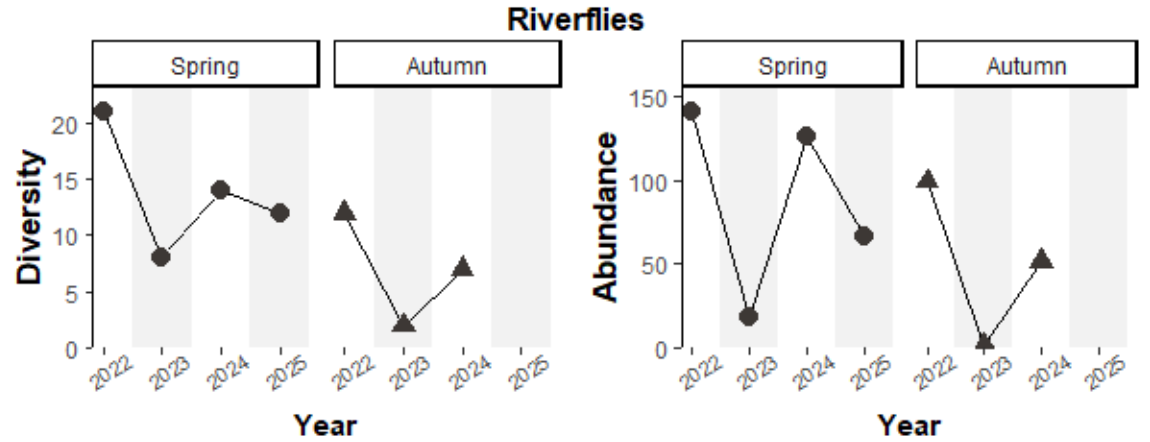
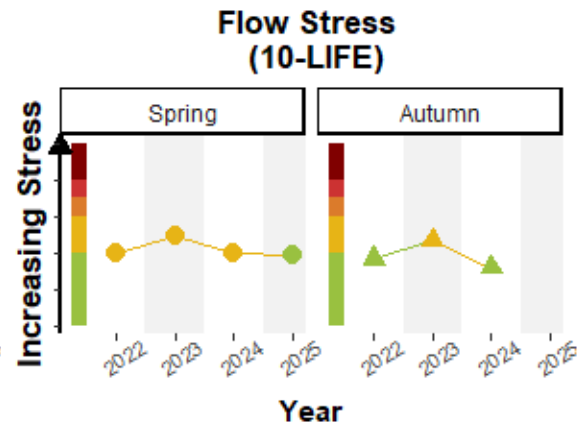
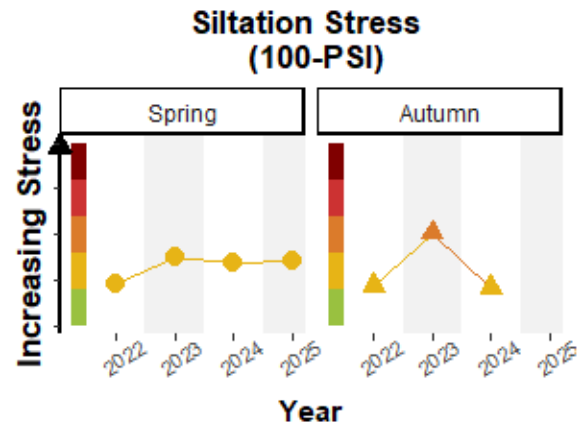
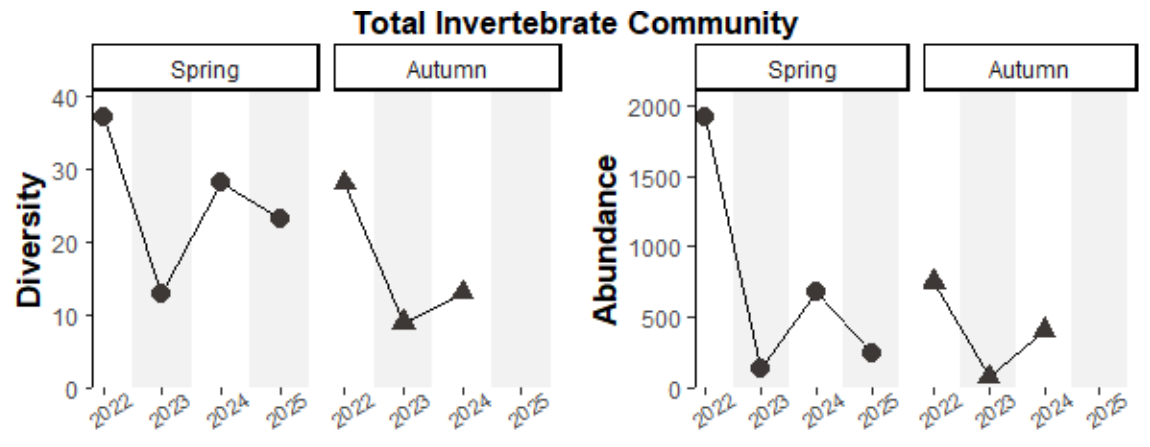
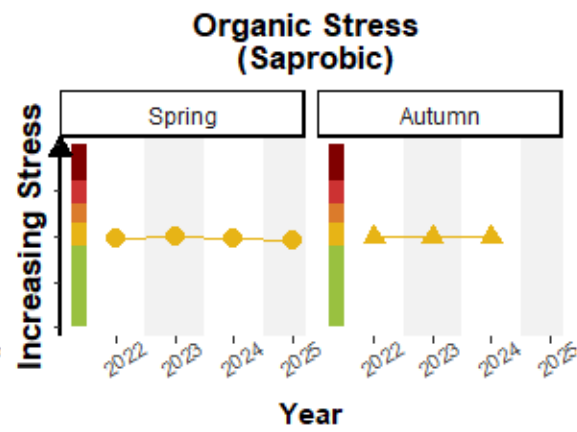
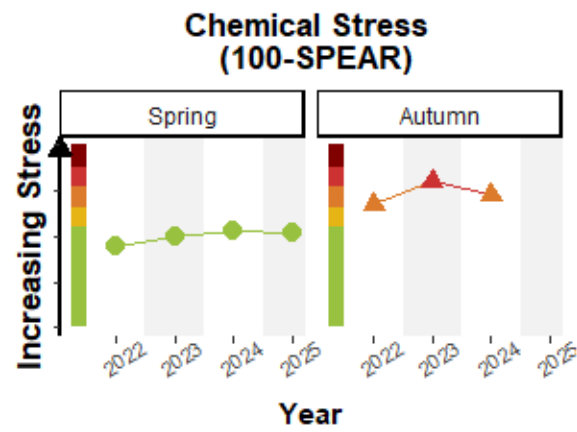
Comments:

Water Quality: Concerning impact scores for chemicals (Aut '23 & '24) and phosphorus (Spr '22).

Diversity: Similar pattern to other sites with an initial decline in '23 and subsequent recovery/partial recovery, particularly for spring. **Abundance:** Total community abundance declined in '23 with a subsequent increase, for both seasons freshwater shrimp numbers were a key driver. For riverflies,

conversely in there was an increase in spring '23 with a number of mayfly species found in high relative numbers. Autumn riverfly numbers dropped in '23 followed by a slight recovery in '24.





River Chess 2022 - 2025

Caravan Lane

Comments:

Water Quality: Concerning impact scores for chemicals (Aut '22-'24), sediment (Aut '23), and phosphorus (Spr '24). **Diversity:** Sharp drop in '23 for both seasons with a partial recovery in more recent surveys. **Abundance:** For both seasons there were sharp declines in '23 with some recovery in '24. As with other sites the stark differences in the total community primarily linked to freshwater shrimp numbers, for riverflies the decline was linked to general lack of species and low numbers. Spring '25 again showed a decline in invertebrate numbers it will be interesting to see if autumn data follows this pattern.

