



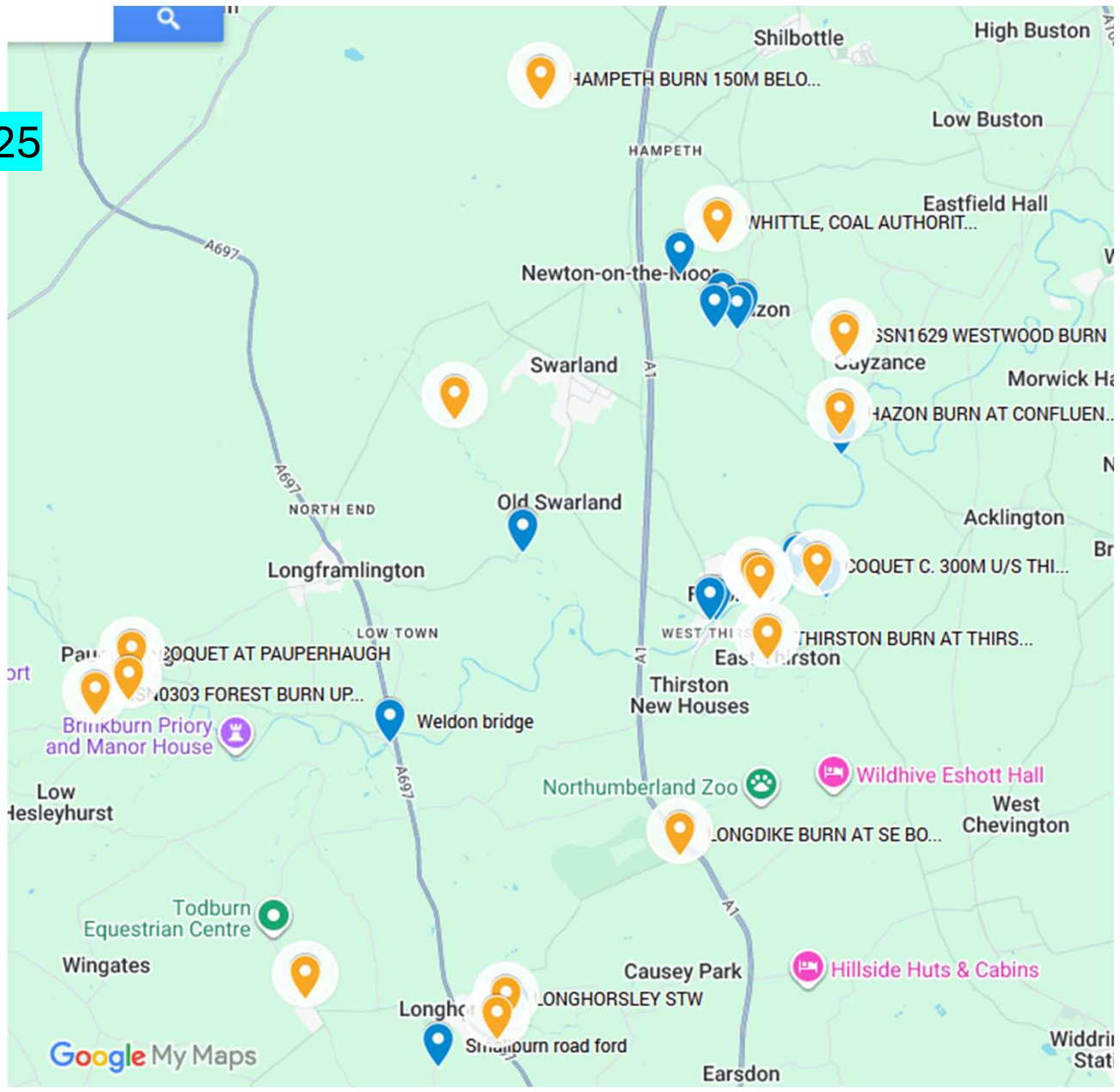


Coquet River Action Group



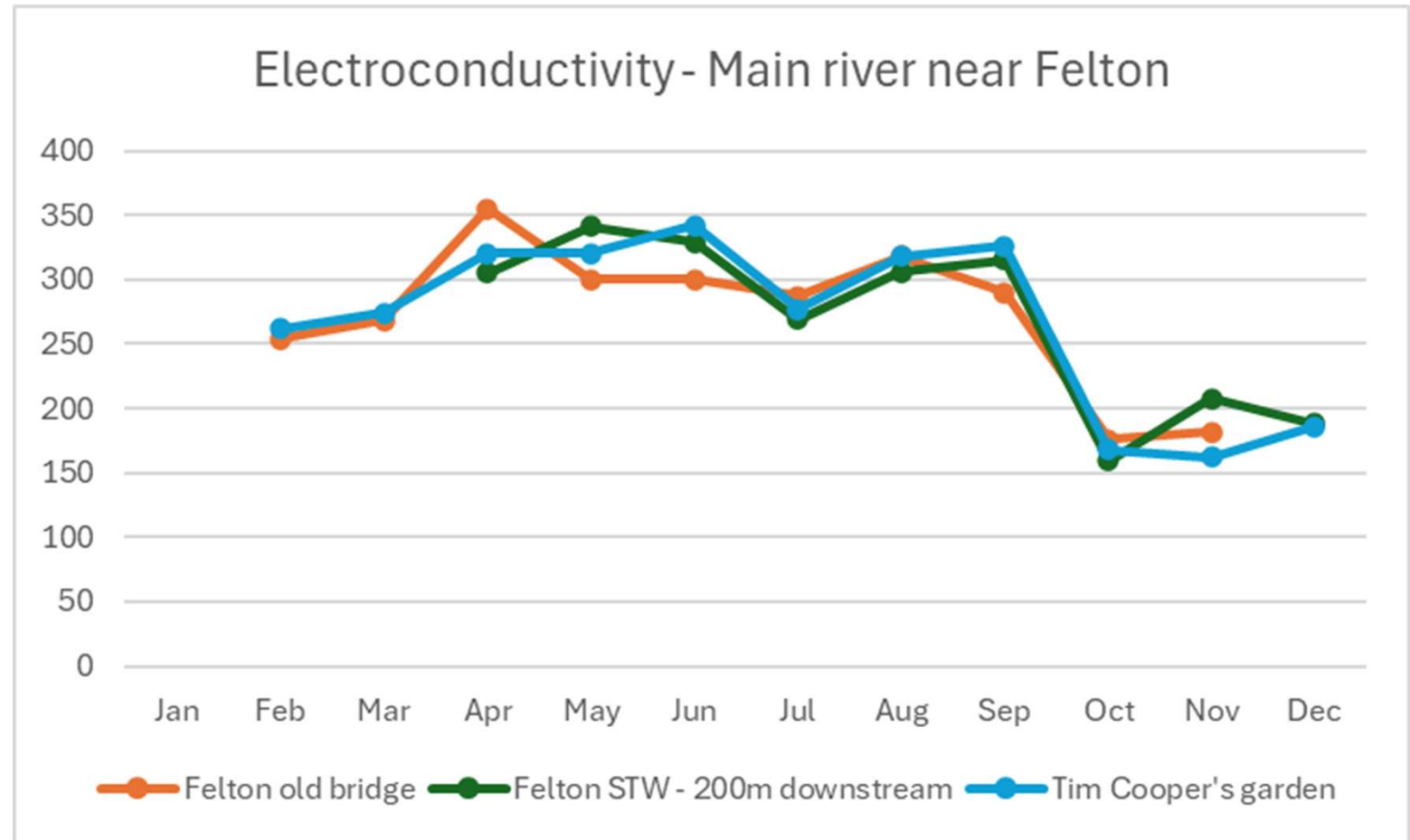
Test sites in 2025

-  CRAG test sites
-  EA test sites

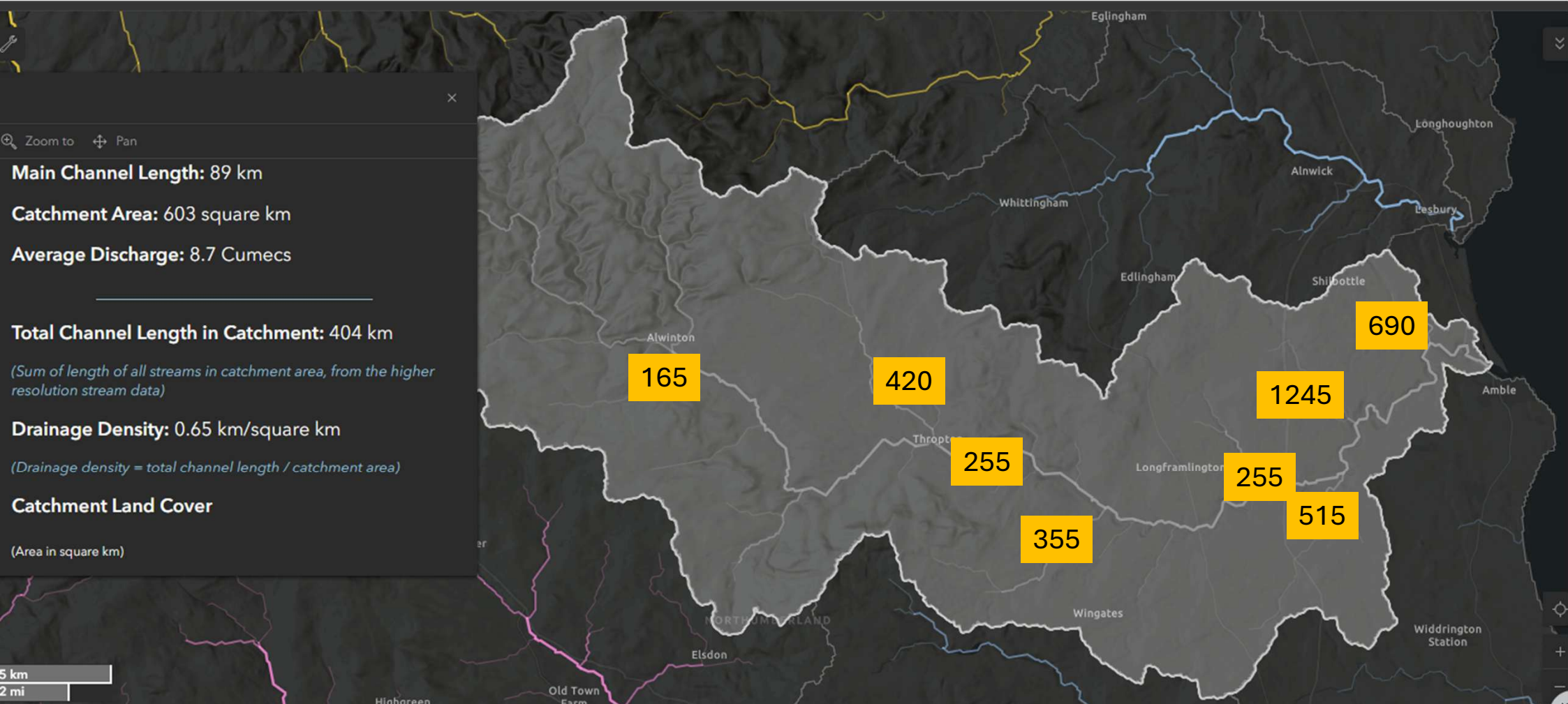


Electroconductivity (μ Siemens)

- EC is a measure of the dissolved minerals in the water
- Dry summer leads to increase in EC
- Felton STW doesn't contribute to EC reading (mostly the soils it is draining and agriculture)



Electroconductivity (μ Siemens) – Down the Coquet

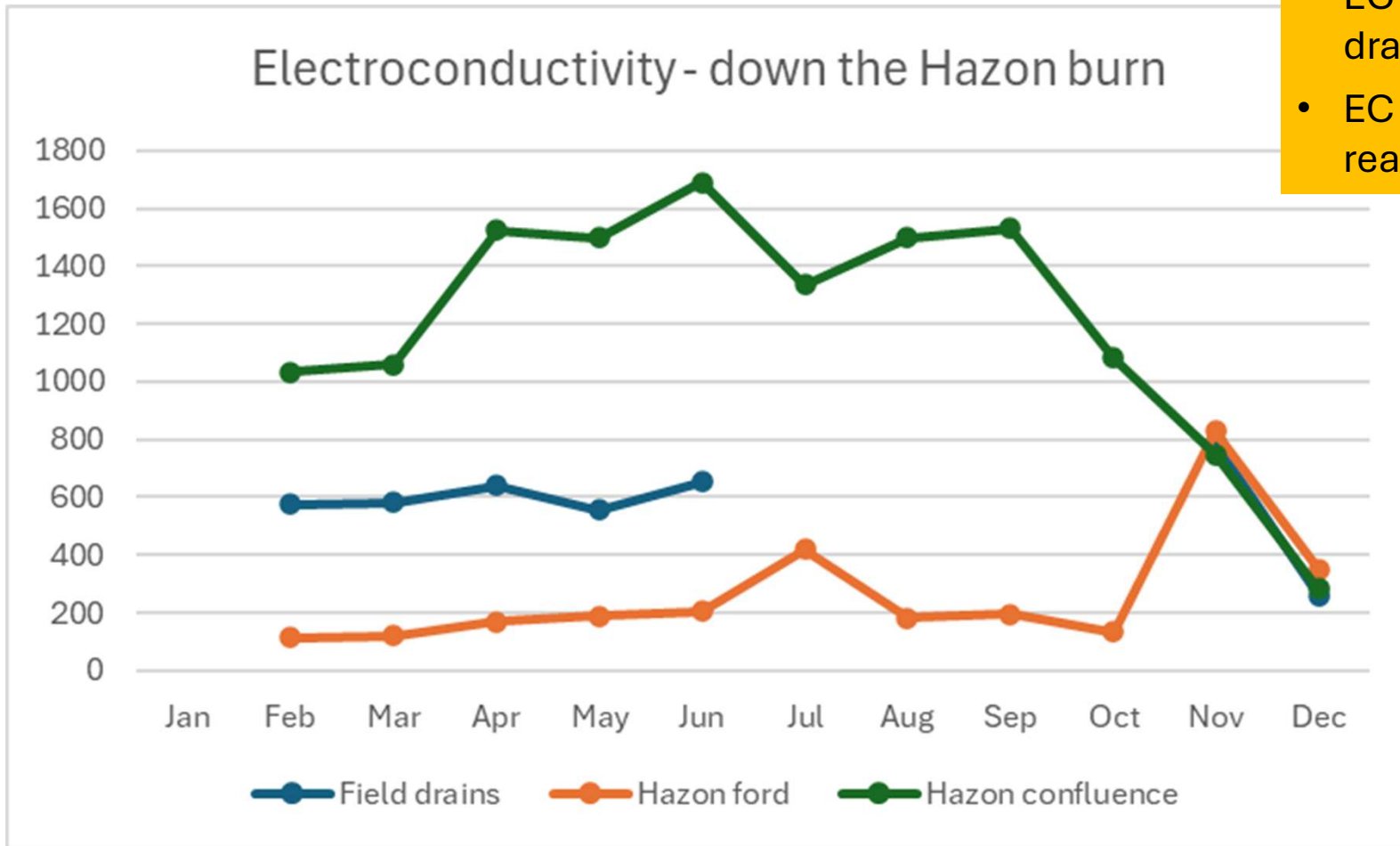


Microgrammes per Litre	WHITTLE	WESTWOOD
	COAL MINE	BURN
Aluminium, Dissolved	20	20
Arsenic, Dissolved	1	
Barium, Dissolved	16	86
Boron, Dissolved	1000	100
Cadmium, Dissolved	0.01	0.01
Chromium, Dissolved	0.5	0.5
Copper, Dissolved	0.1	0.5
Iron, Dissolved	8600	69
Lead, Dissolved	0.1	0.1
Lithium, Dissolved	160	100
Manganese, Dissolved	380	51
Mercury, Dissolved	0.01	
Nickel, Dissolved	0.58	0.53
Selenium, Dissolved	1	
Strontium, Filtered	2400	350
Zinc, Dissolved	0.87	1.3
Milligrammes per Litre		
Bromate	0.002	
Bromide	0.19	
Calcium, Dissolved	180	93
Chloride	44	29
Iodide	0.003	
Magnesium, Dissolved	80	19
Potassium, Dissolved	19	2.4
Silica, reactive as SiO2	9.2	6.6
Sodium, Dissolved	300	17
Sulphate, Dissolved as SO4	880	57



Electroconductivity (μ Siemens)

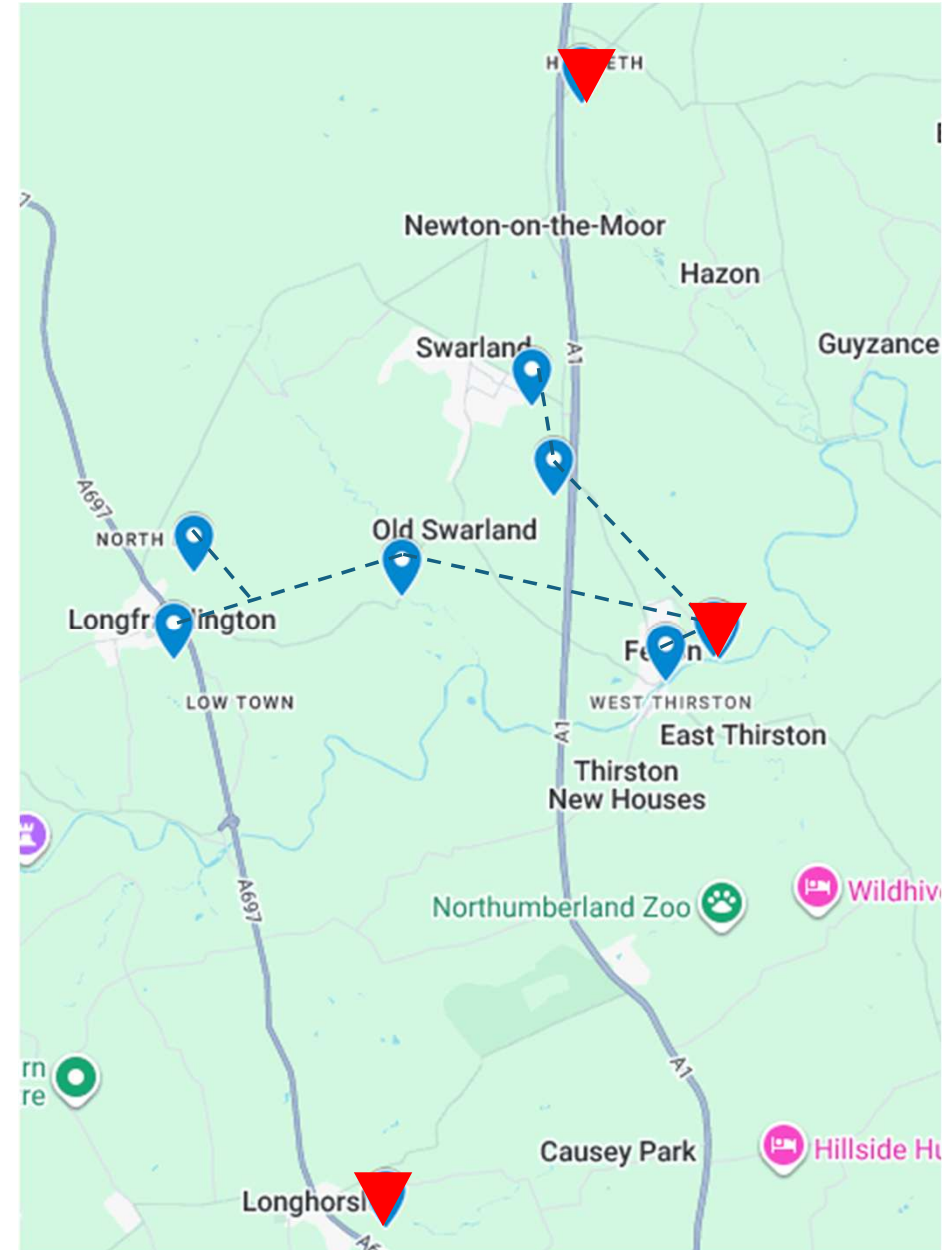
- Field drains have high EC
- EC is diluted once the field drain mixes in the burn
- EC is very high once it reaches the main river



Sewage discharges 2025

Site name	Discharges	Hours	Average hours per discharge
Felton STW	234	599	2.56
Swarland Lanehead PS	23	152	6.61
Swarland Old sewage works CSO	19	65	3.42
Hampeth STW	46	65	1.41
Longhorsley STW	26	63	2.42
Felton Rec Ground CSO	70	37	0.53
Lonframlington Old Hall SSO	75	36	0.48
Swarland Fence PS	133	33	0.25
Felton Main Street CSO	23	0	0.00
Longframlington New Hall Farm CSO	39	0	0.00

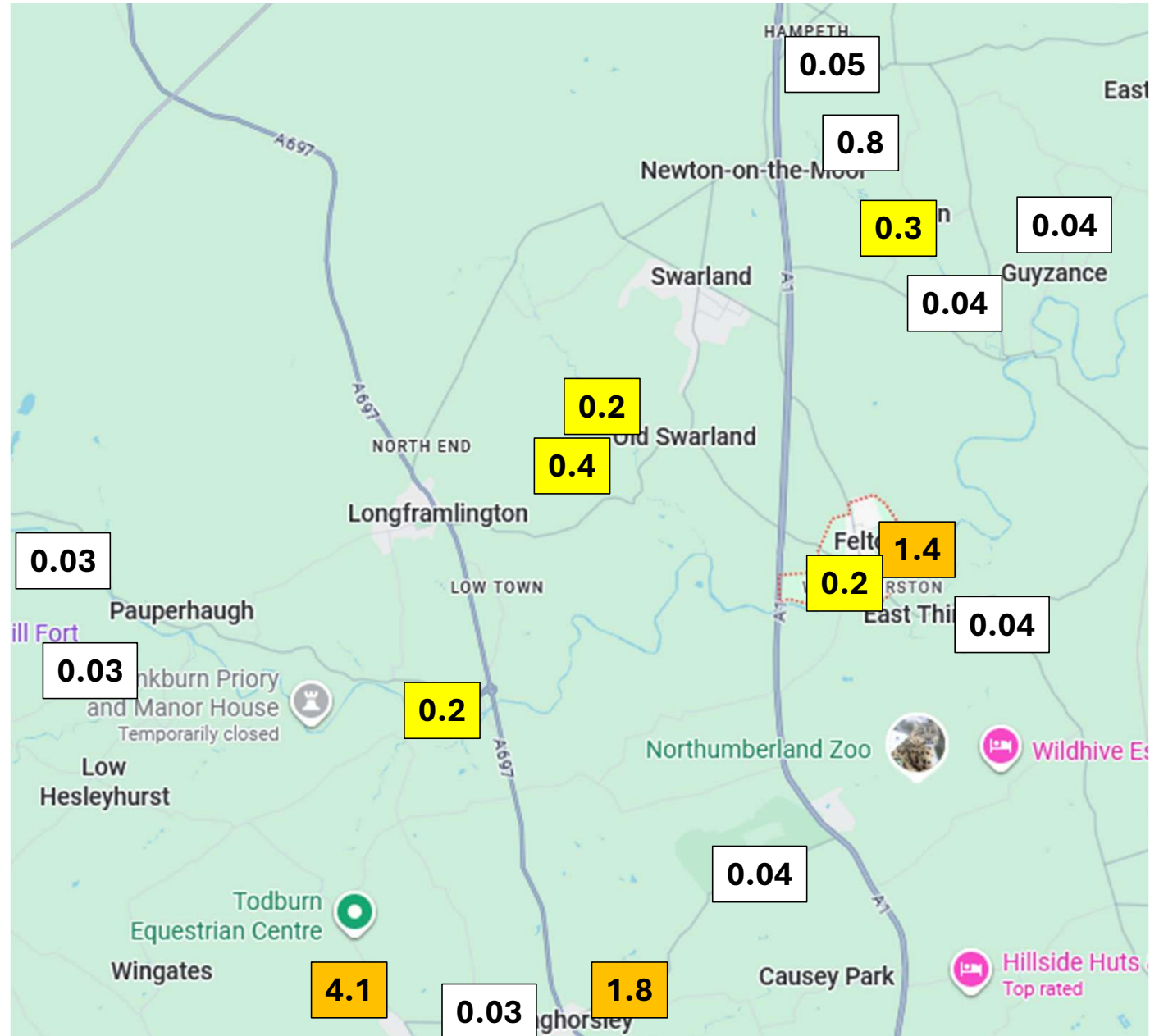
Top 5 along the Coquet	Hours
Felton STW	599
Thropton & Snitter STW	194
Shilbottle STW	169
Togston STW	168
Swarland Lanehead PS	152



Ammonia as N (mg/L)

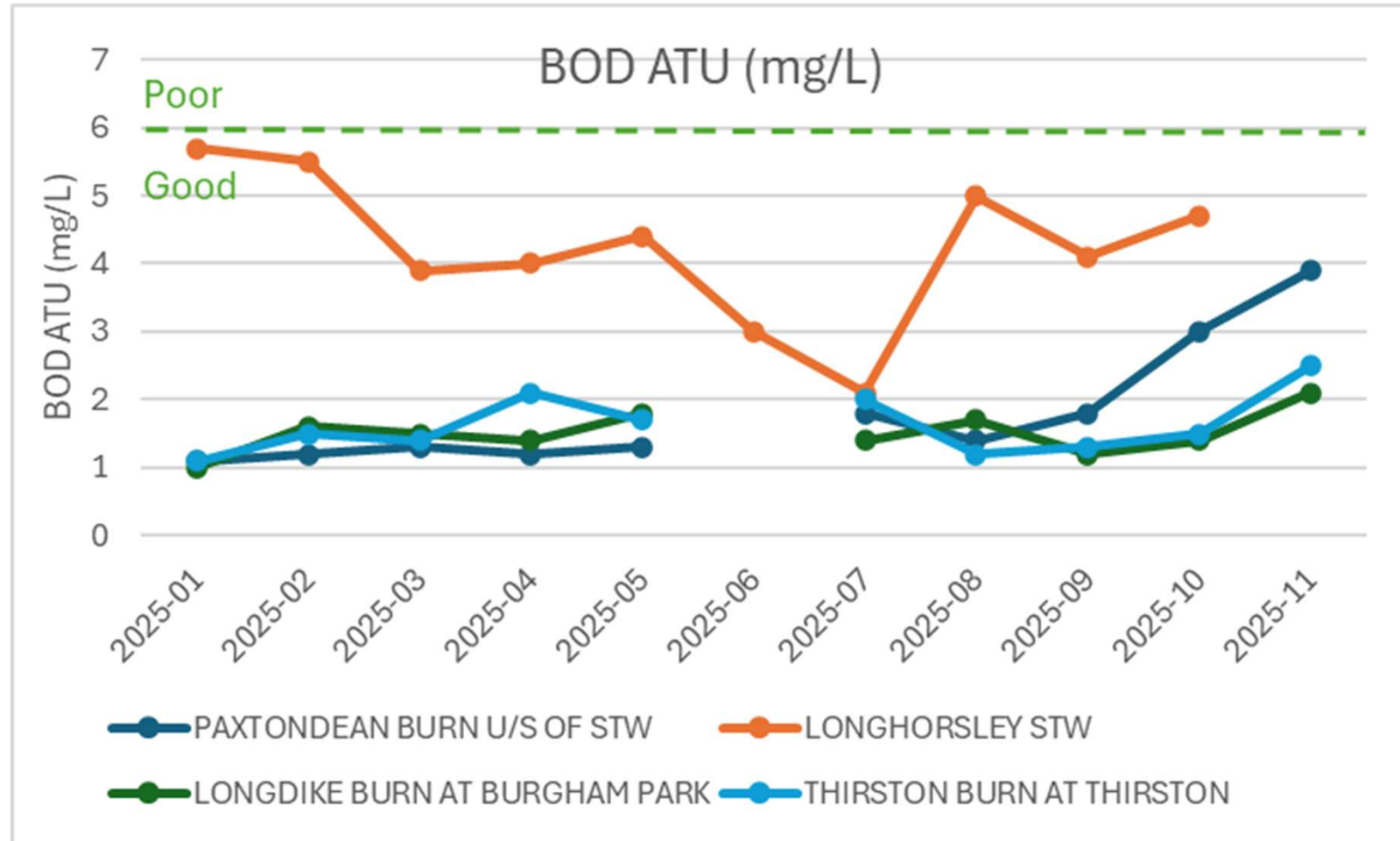
- None of the CRAG measurements are above standards
- CRAG measurements generally higher than EA measurements
- Values above standards at STW outlets and Forget-me-not caravan park

SSSI standard = 0.25 mg/L
WFD standard = 1.10 mg/L



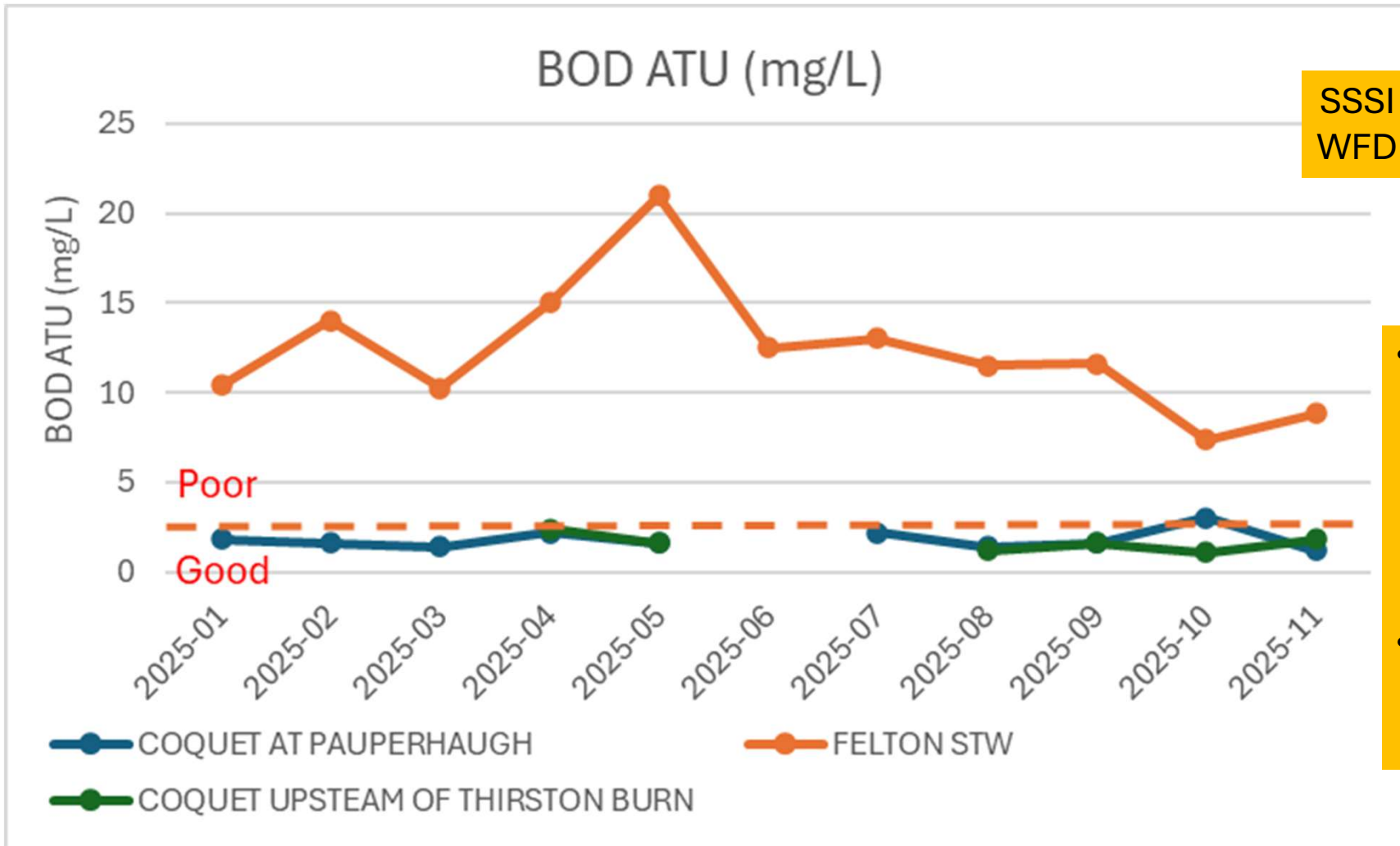
Biological Oxygen Demand (mg/L) – Down the Paxtondene/Longdike/Thirston burns

- BOD low upstream of the STW, high at the STW outlet, and then dilutes
- Increase in BOD in October and November when it started raining
- Increase strongest upstream of the STW



SSSI standard = 2.5 mg/L
WFD standard = 6.0 mg/L

Biological Oxygen Demand (mg/L) – Down the main river

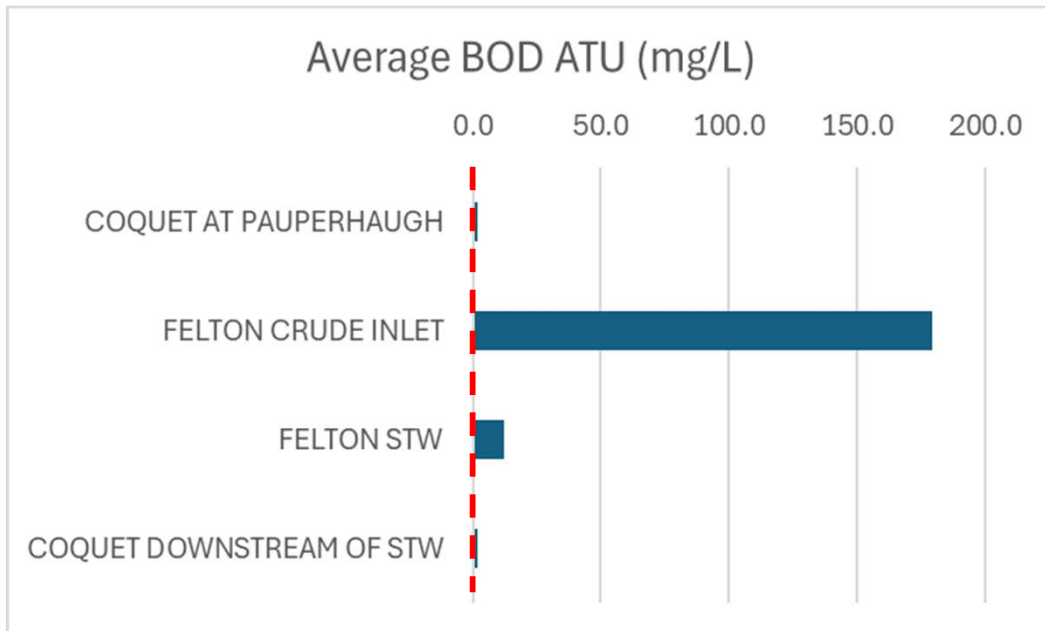


SSSI standard = 2.5 mg/L
WFD standard = 6.0 mg/L

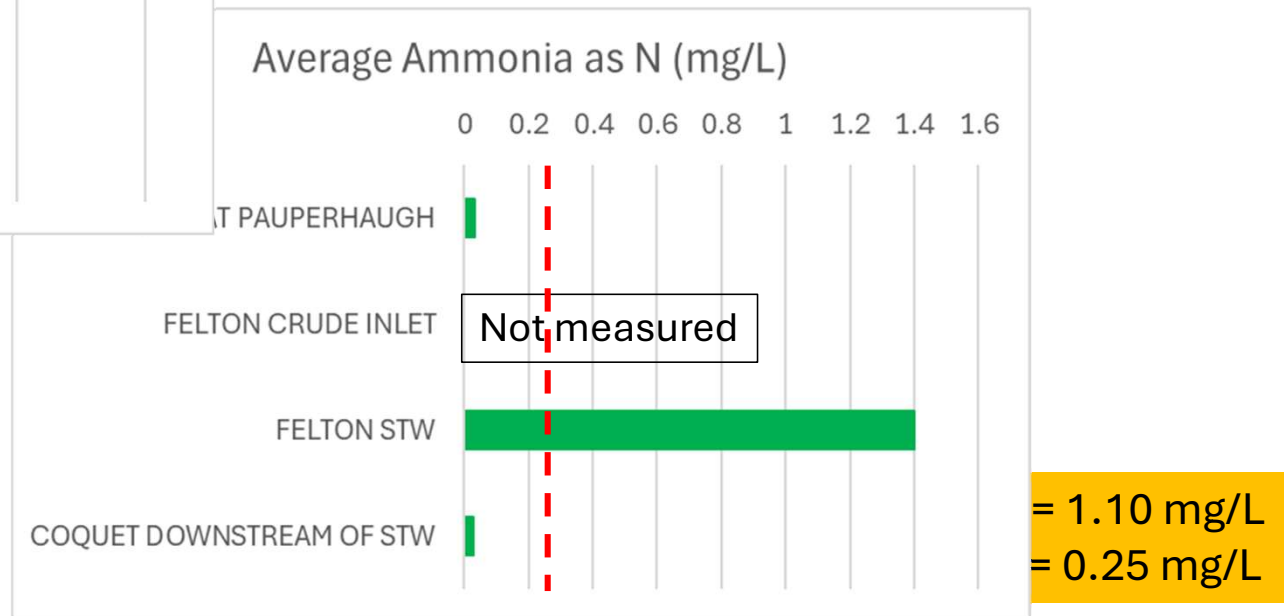
- As for Longdike burn, BOD low upstream of the STW, high at the STW outlet, and then dilutes
- No particular change with rainfall

Treatment in an STW – BOD and Ammonia

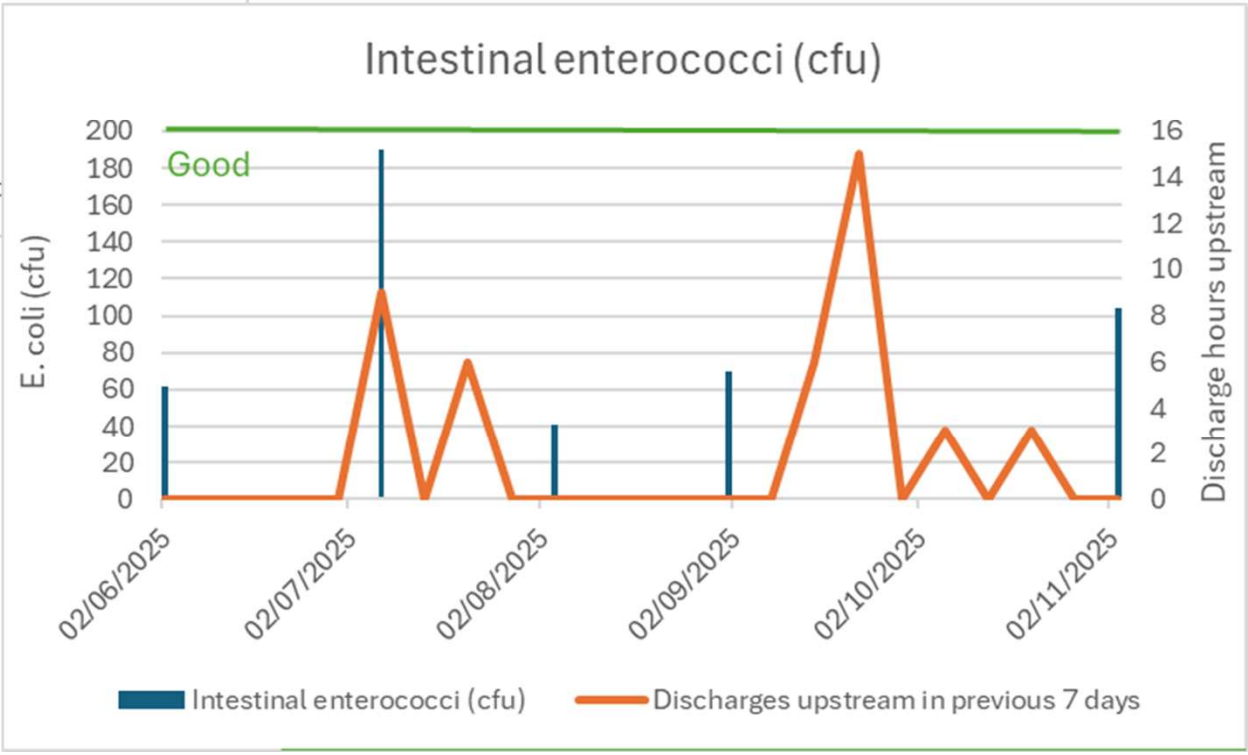
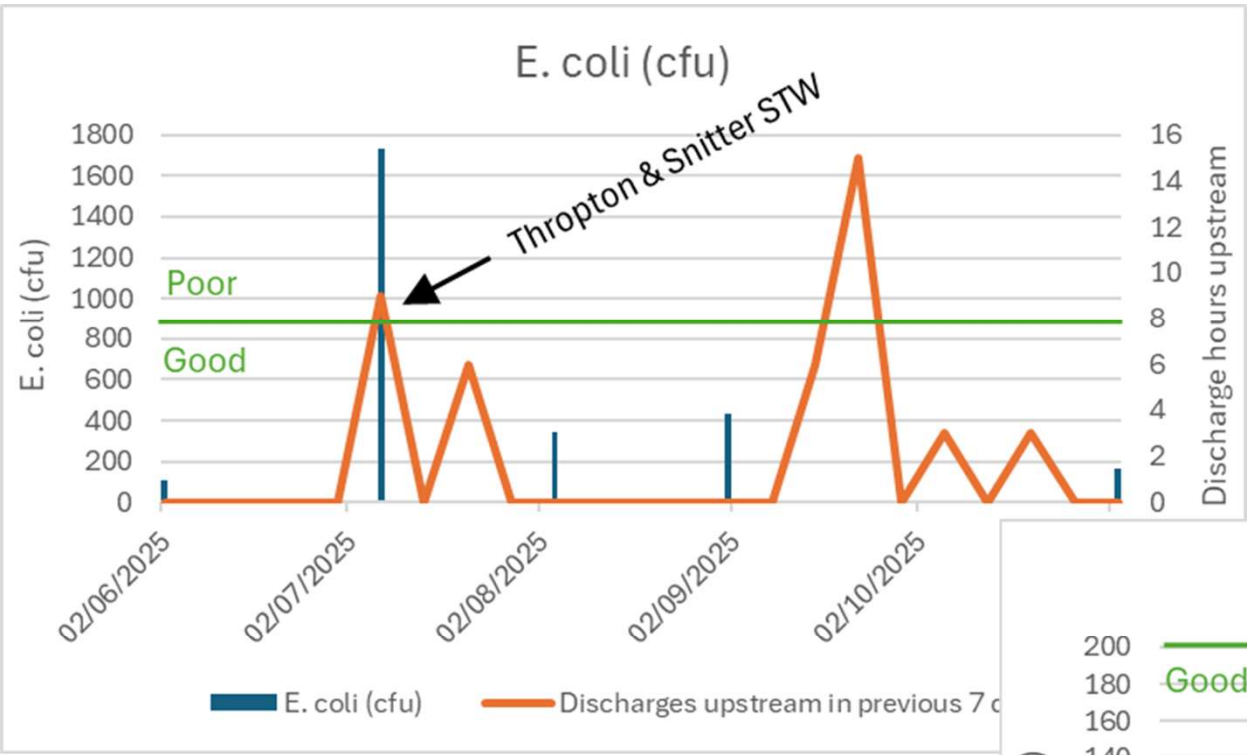
- Inlet BOD is extremely high
- STW allows solids and many chemicals to settle out
- Outlet BOD and Ammonia still higher than standards
- 200 metres downstream chemicals have diluted to levels below standard
- Dilution is much less in tributaries



WFD standard = 6.0 mg/L
SSSI standard = 2.5 mg/L



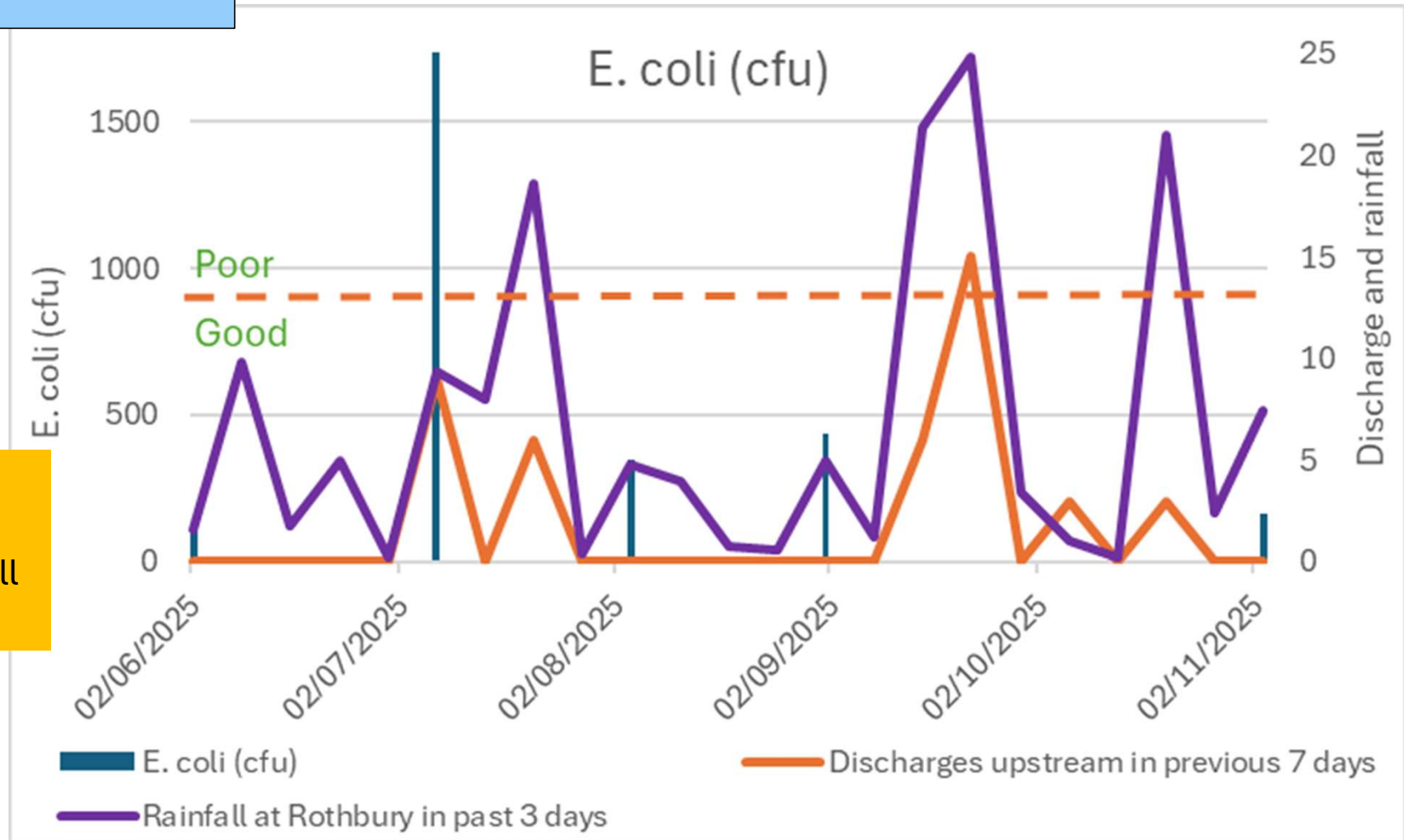
Sewage spills and E. coli Brinkburn



- Clear relationship between sewage discharges and E. coli
- E. Coli live in the river for (at least) 7 days and travel down the river for 8 miles

Sewage spills and E. coli Brinkburn

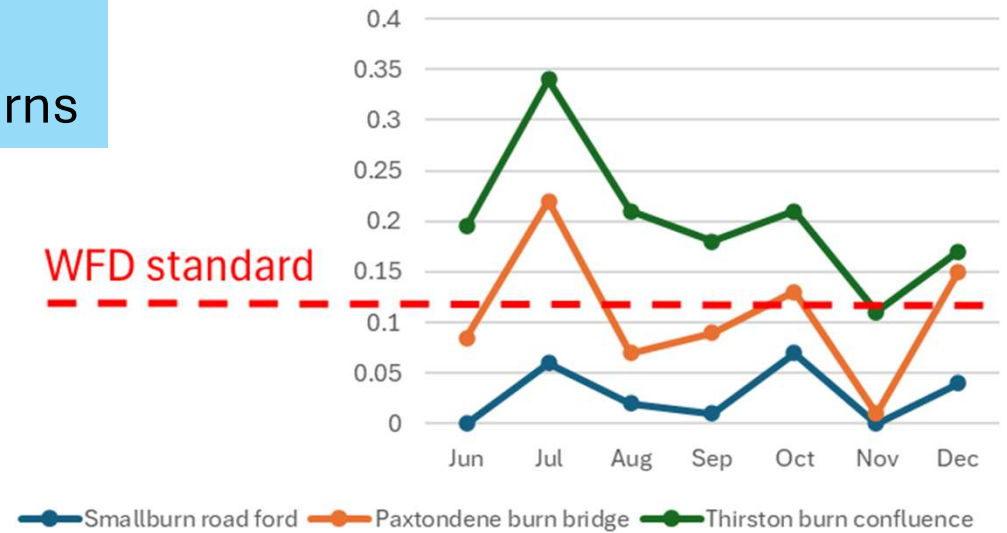
- Clear relationship between sewage discharges, rainfall and E. coli



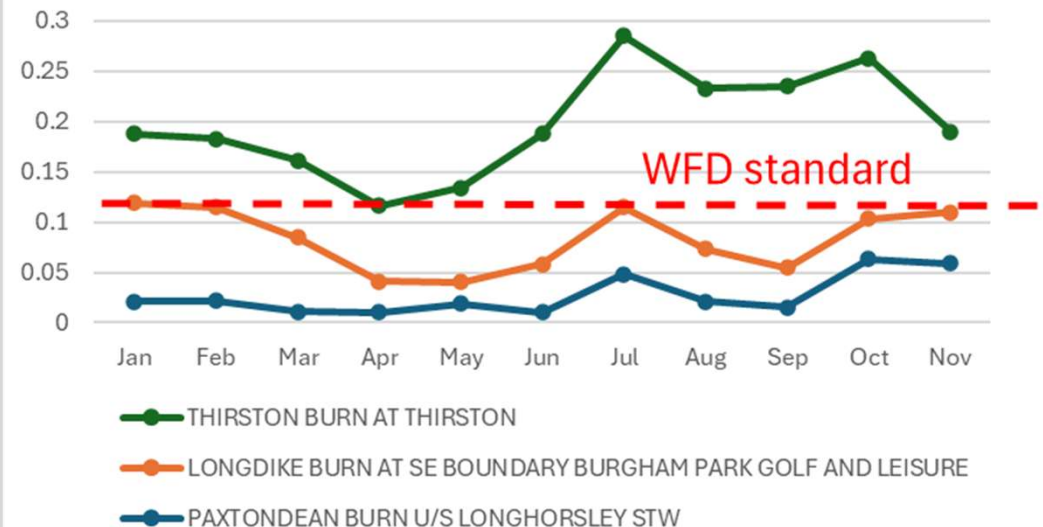
Phosphate as P (mg/L) – Down the Paxtondene/Longdike/Thirston burns

- Phosphate levels increase from Paxtondene burn to Longdike burn to Thirston burn (soil or agricultural??)
- CRAG data and EA data tell the same story
- Thirston burn phosphate levels are above the standard at all times of the year

CRAG - Paxtondene & Thirston burns

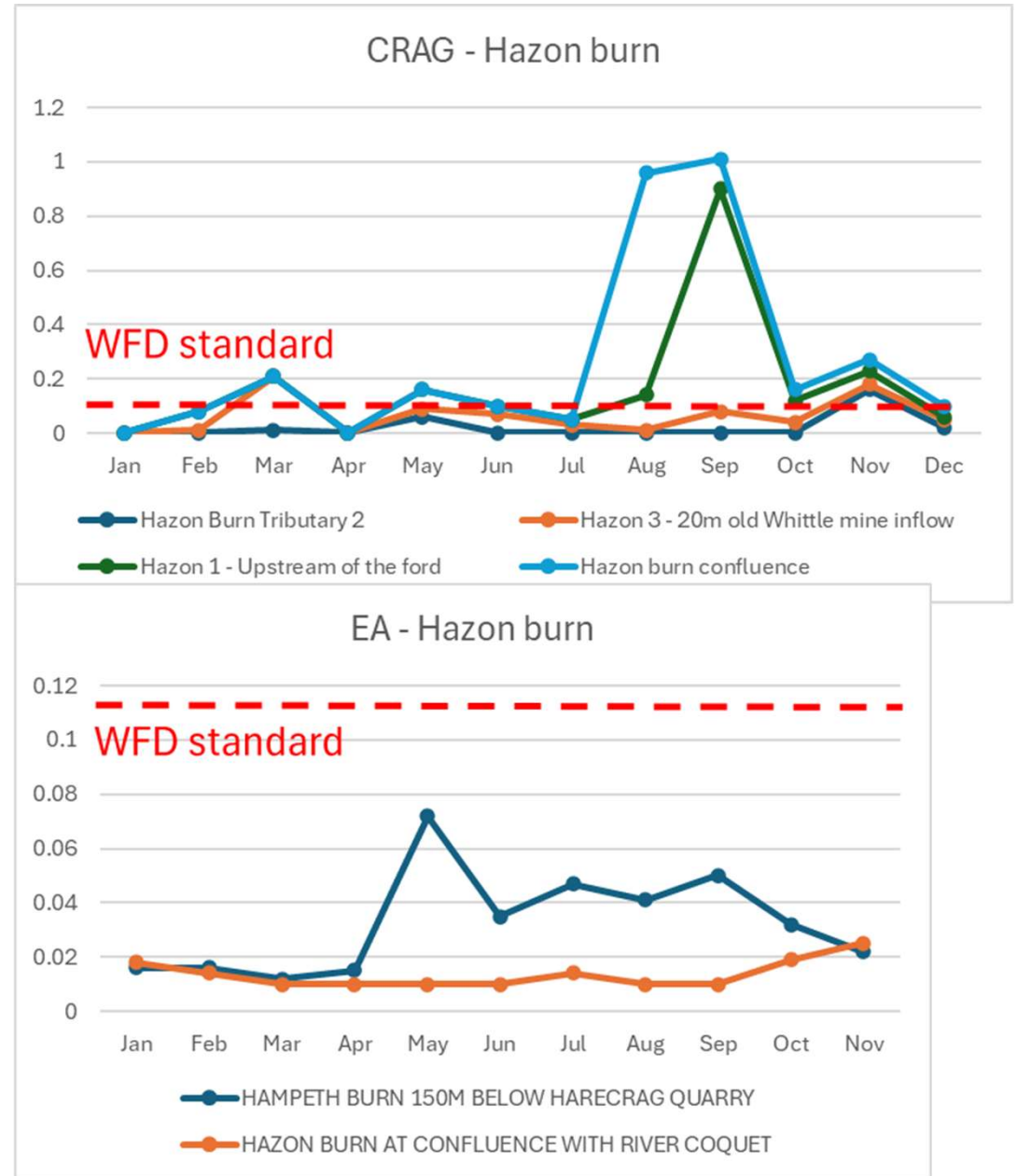


EA - Paxtondene and Thirston burns



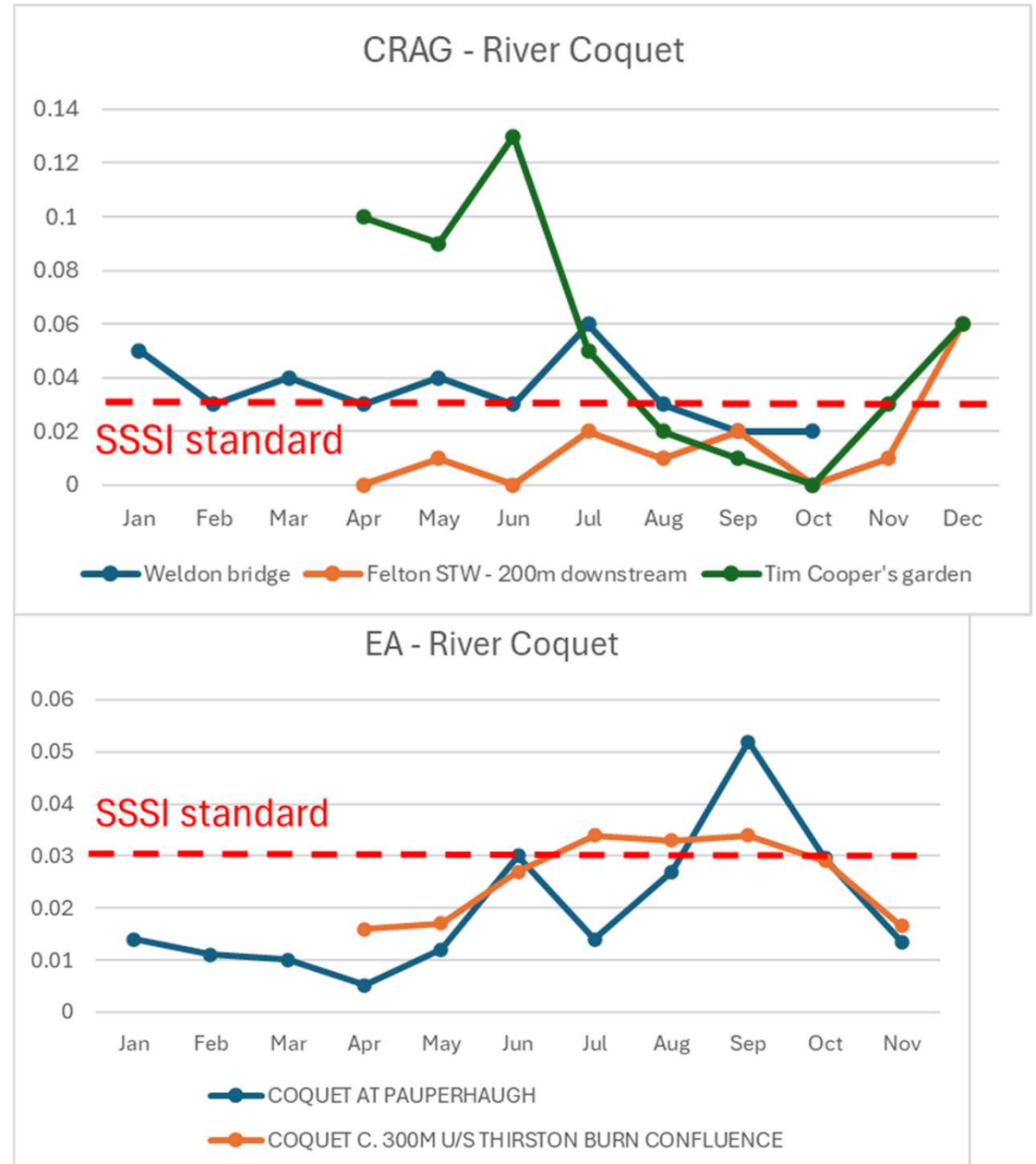
Phosphate as P (mg/L) – Down the Hazon burn

- CRAG finds high phosphate levels in August and September, EA doesn't
- Phosphate not due to mine inflow, nor from field drain (fertilizer event?)



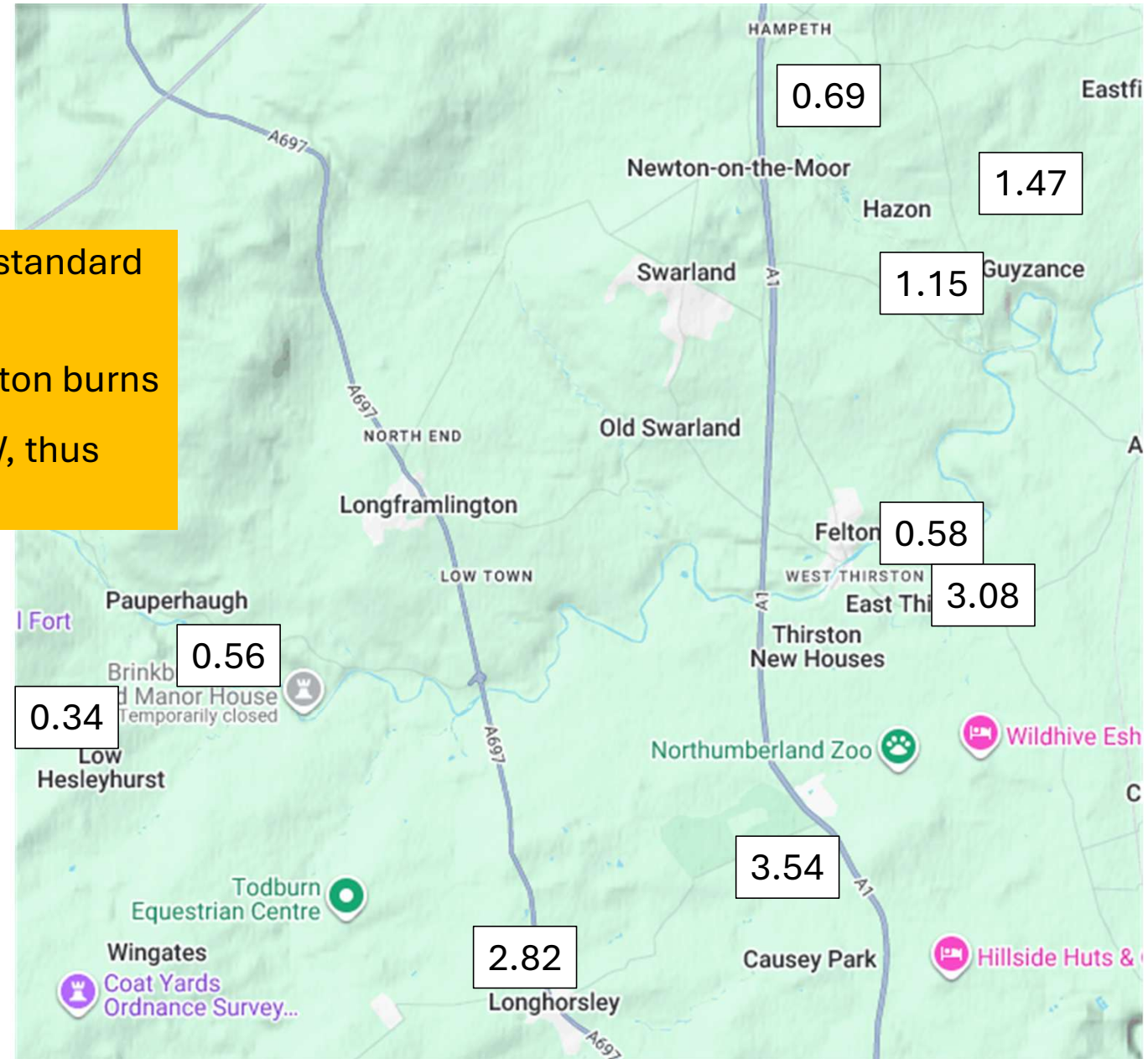
Phosphate as P (mg/L) – Down the main river

- Less good relationship between CRAG and EA measurements
- All measurements similar to standard



Nitrate as N (mg/L)

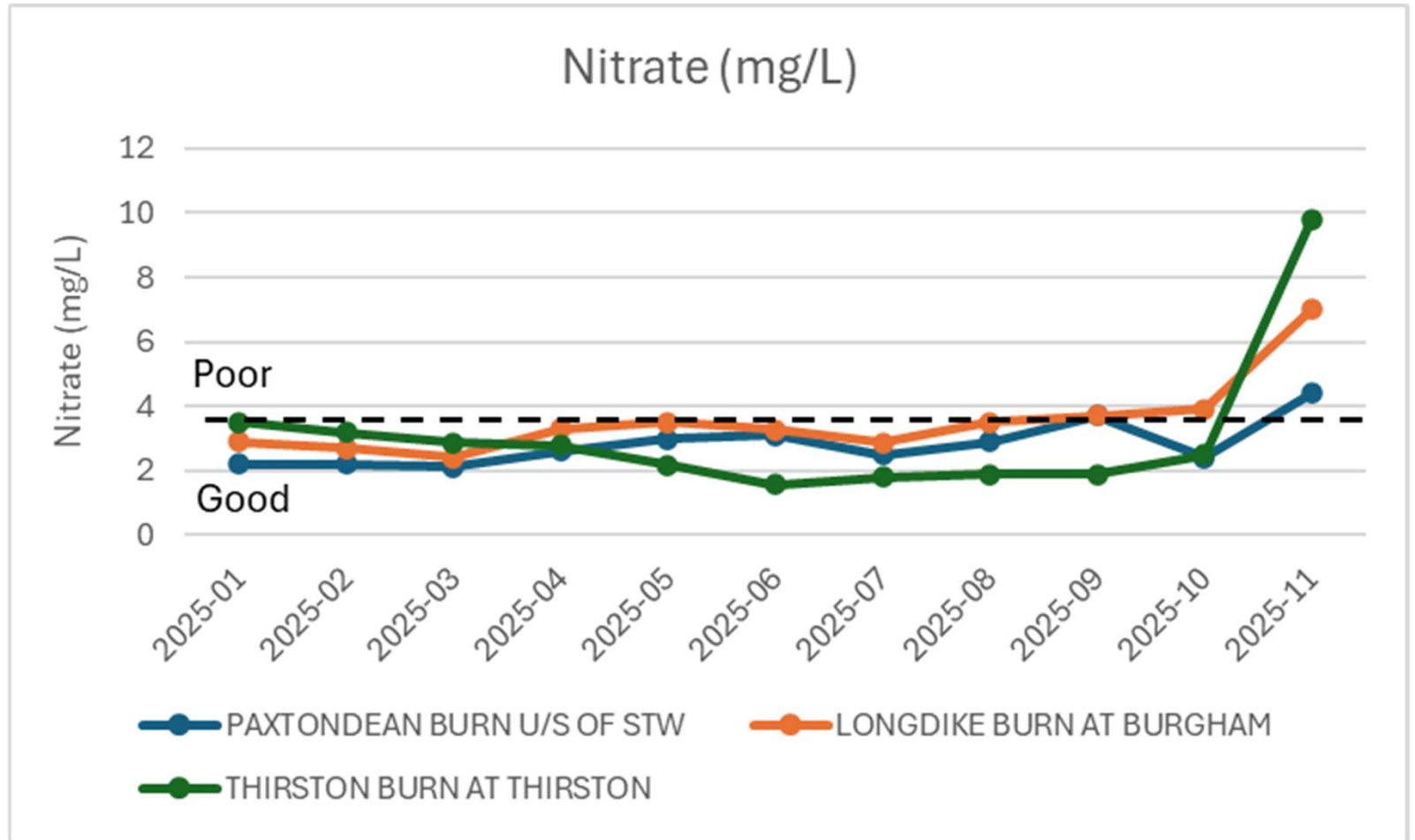
- No nitrate levels above the standard
- Highest levels are along the Paxtondene/Longdike/Thirston burns
- 2.82 value upstream of STW, thus soil or agriculture related



WFD standard = 3.7 mg/L

Nitrate as N (mg/L) – Paxtondene, Longdike and Thirston burns – EA data

- Nitrate levels at or about the standard for most of the year
- Increases in November (when it rains). Supports suggestion that soil or agricultural run-off is the cause.



WFD Standard = 3.7 mg/L

What have the tests shown us:

- We can see the effect of seasons on chemicals in the water
- We can clearly link heavy rainfall events to sewage overflow to E. coli levels
- We can see the impact of STW overflows and soil or agricultural run-off on chemicals in the water
- We can pin-point some specific problem STWs (Longhorsley and Felton) and soil or agricultural run-off (Paxtondene, Longdike and Thirston burn, and Hazon burn)

Liam (from Warkworth) has been working on the website. You will soon be able to see your measurements in (almost) real time.

What this information had led to (and why it is important to keep up measuring chemicals):

We are now working with government agencies and other organisations:

- Harbour Commissioners and councils and Swimmers and many other groups on bathing water status (party at the Puffin festival)
- EA on nitrate measurement
- Newcastle University on modelling nutrient flow in the estuary
- Durham Wildlife Trust (Stronger Shores) seagrass survey
- NWT on peat restoration (and possibly other projects)
- Northumbria Water Ltd on Felton Environmental Improvements
- Natural England and Northumberland National Parks – Protective Site Strategy
 - NICRE are keen to get your views about how you connect with the river (handouts – please go online and register your thoughts)

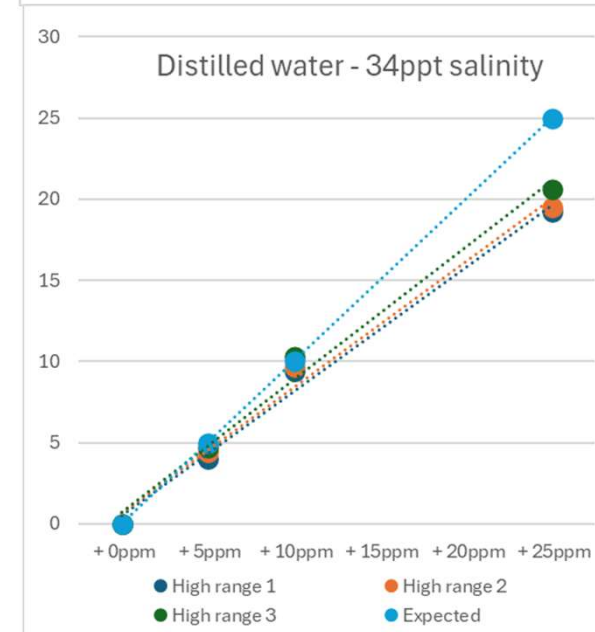
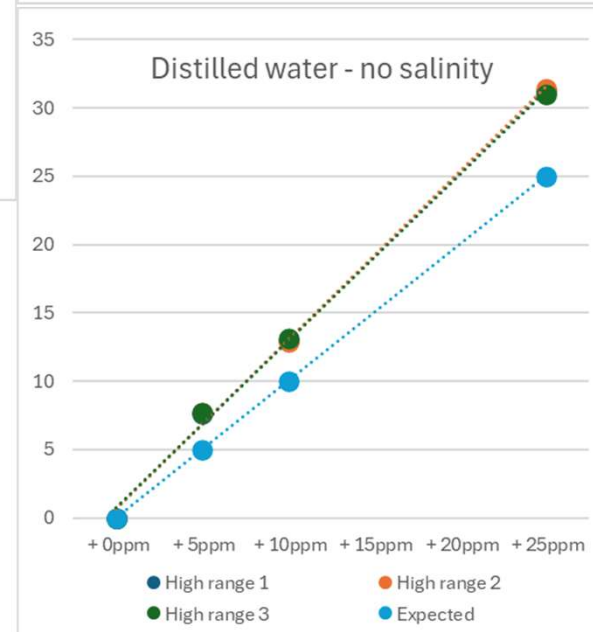
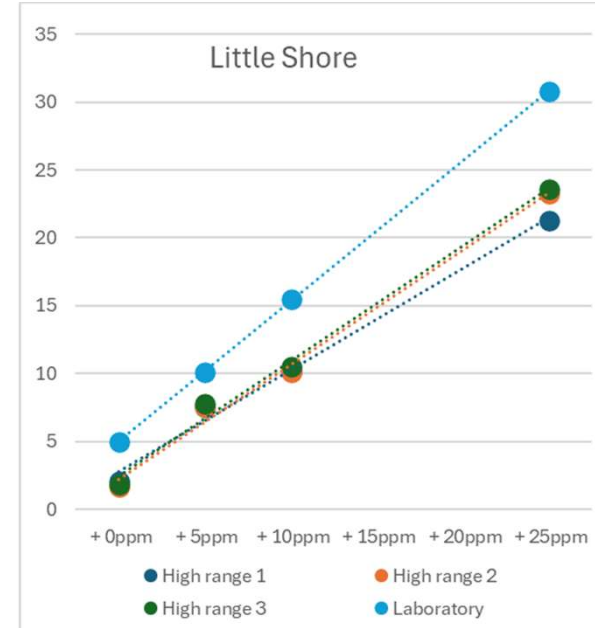
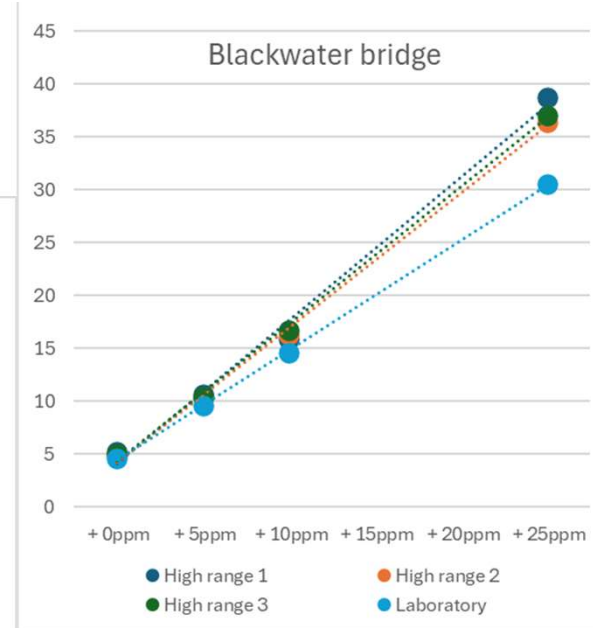
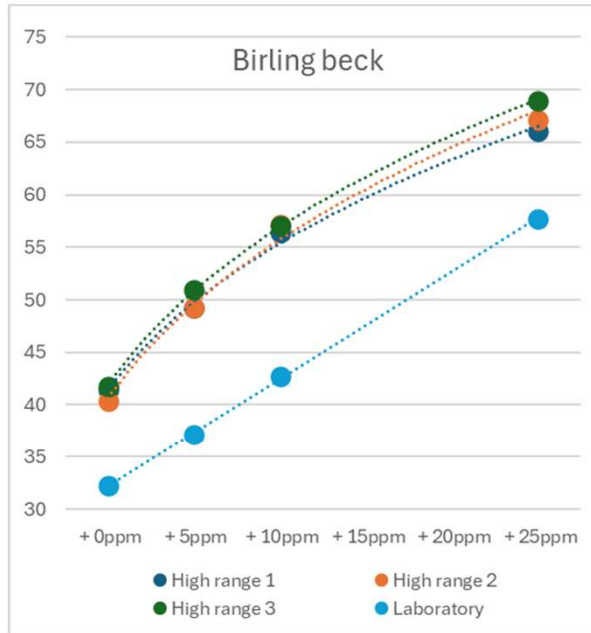
Nitrate meter testing with the Environment Agency

- Nitrate meters appeared to measure differently from laboratories
- 3 samples and 2 controls (saline versus freshwater), 8 different meters or tests



Nitrate meter testing with the Environment Agency

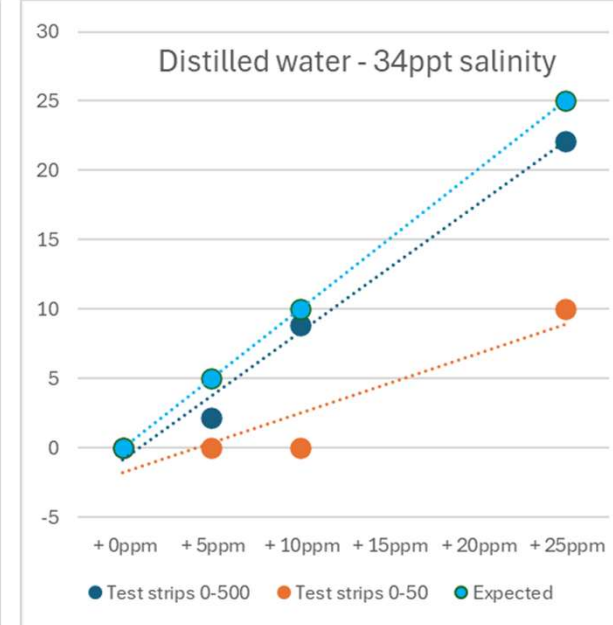
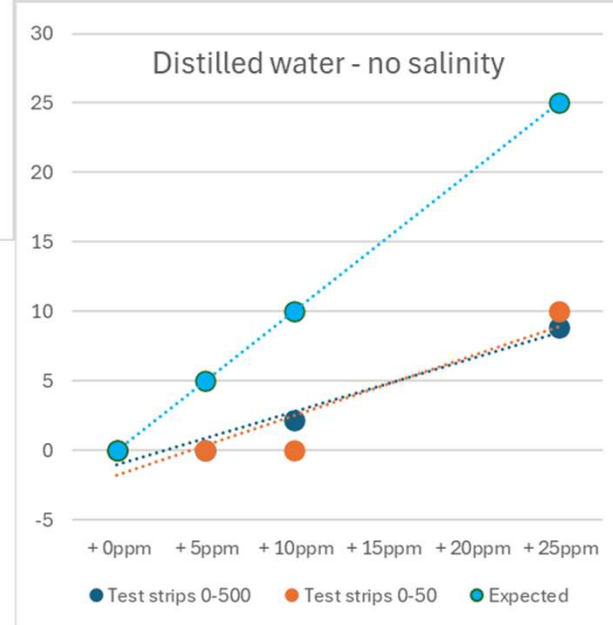
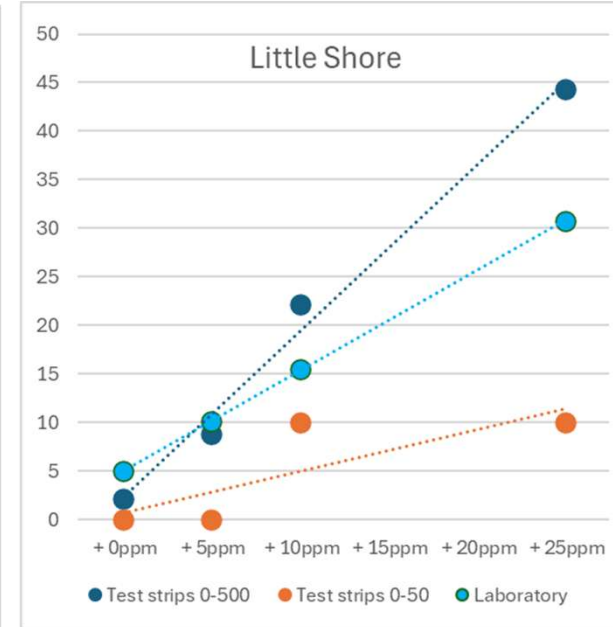
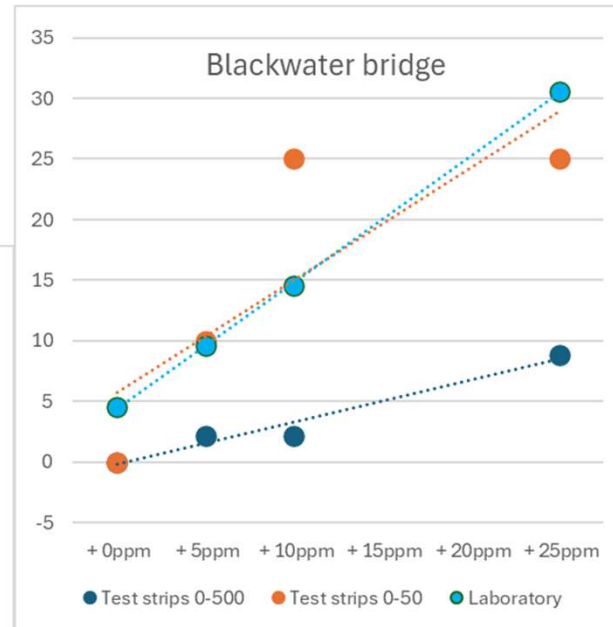
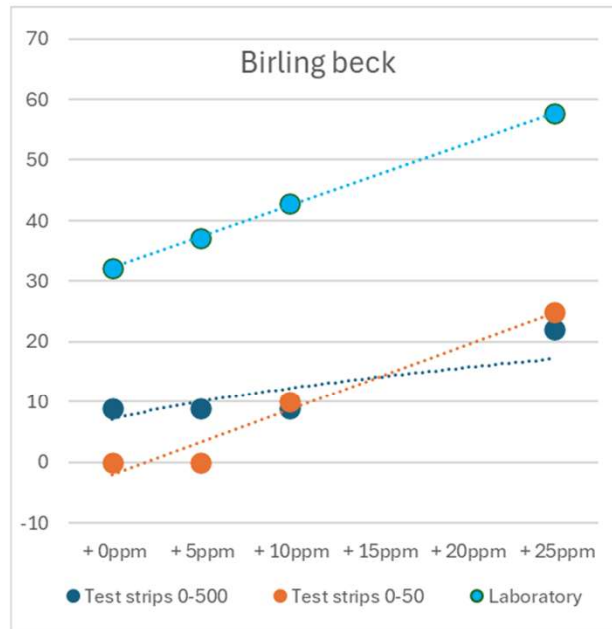
Hanna high-range meters



- Little Shore and saline control – meter measurement was lower than laboratory measurement (light blue)
- Birling Beck, Blackwater bridge and no salinity control – meter measurement was higher than the laboratory measurement

Nitrate meter testing with the Environment Agency

Test strips



- Test strip measurement all over the place, but generally much lower than the laboratory measurement

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What next

Local projects:

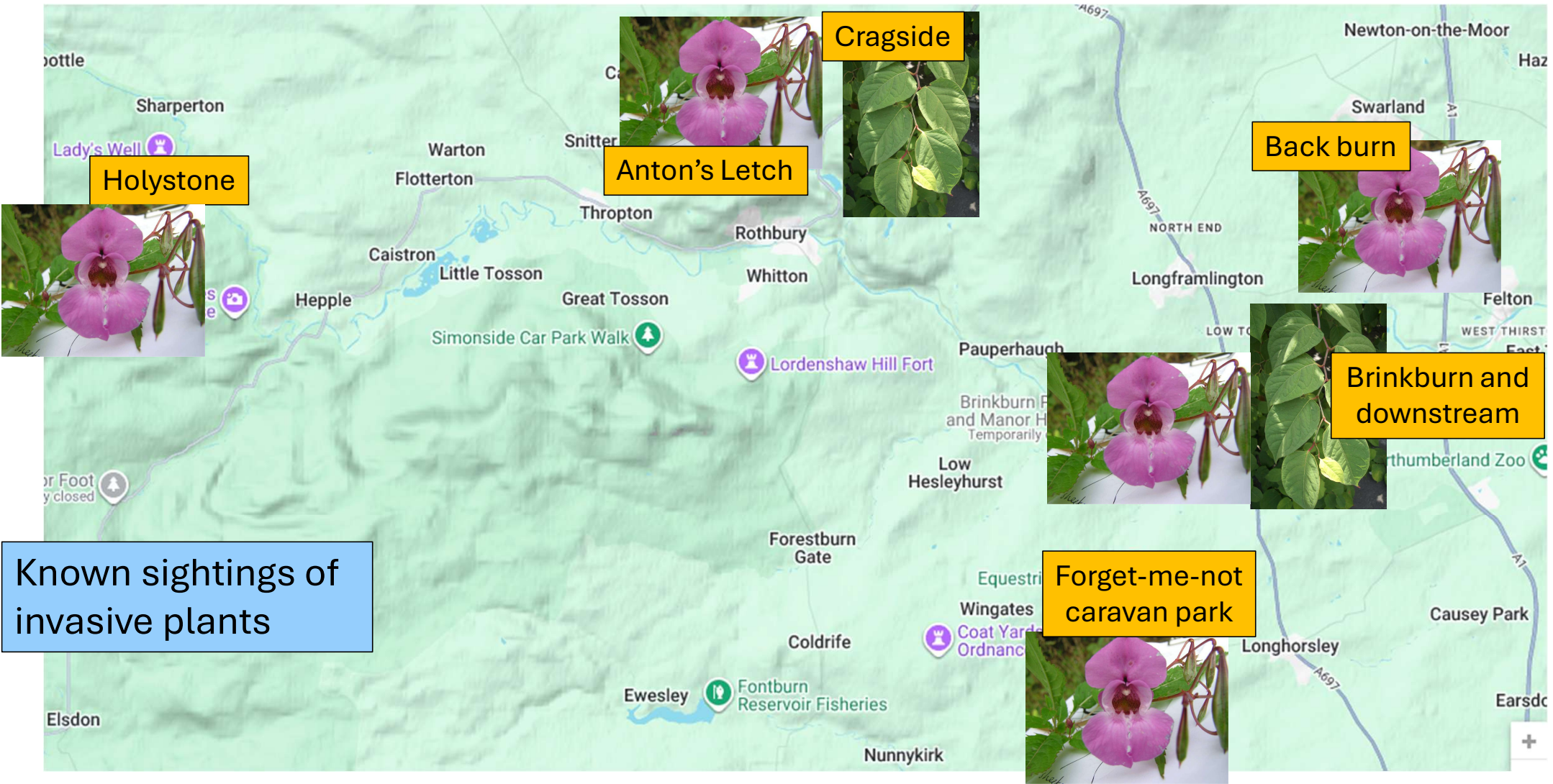
- Upriver (NWT and Natural England), downriver (DWT, Newcastle University, SAS, EA)
- Is there anything in our region that CRAG could support or help facilitate?

Biological monitoring:

- We have seen how E. coli tests are a useful addition to the nutrient testing – where should we do more?
- Regular riverfly monitoring (more training days, Peter from Warkworth keen to help)

Invasive weeds:

- Working to track down sources of Himalayan balsam and Japanese knotweed (**Do you know local landowners, do you know groups that regularly walk along the river, do you have suggestions where we could put signposts at beginnings of walks?**)
- Plan to remove plants from these source sites this year (stem injection, working groups)



Known sightings of invasive plants

Holystone



Anton's Letch



Cragside



Back burn



Brinkburn and downstream



Forget-me-not caravan park

