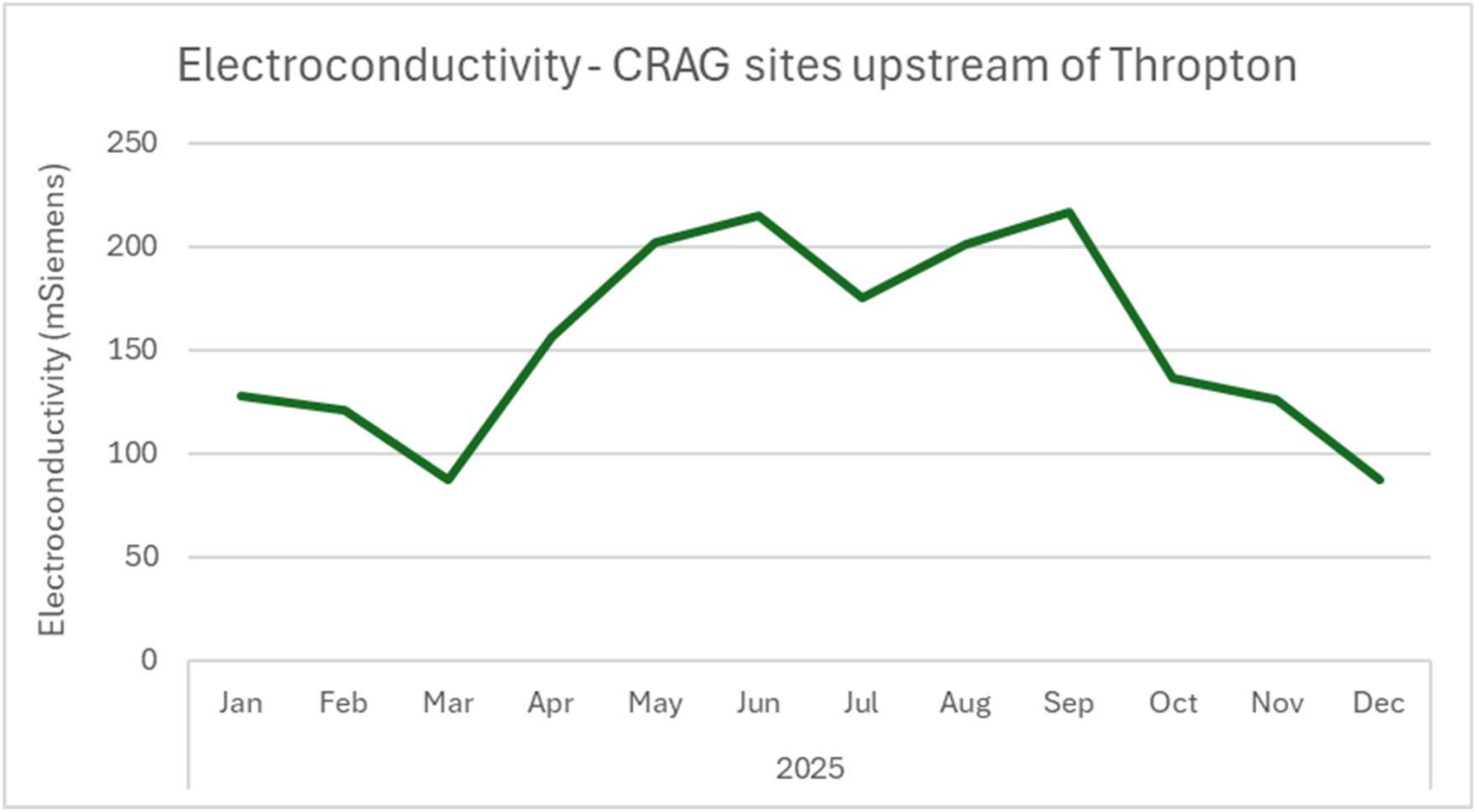
Coquet River Action Group

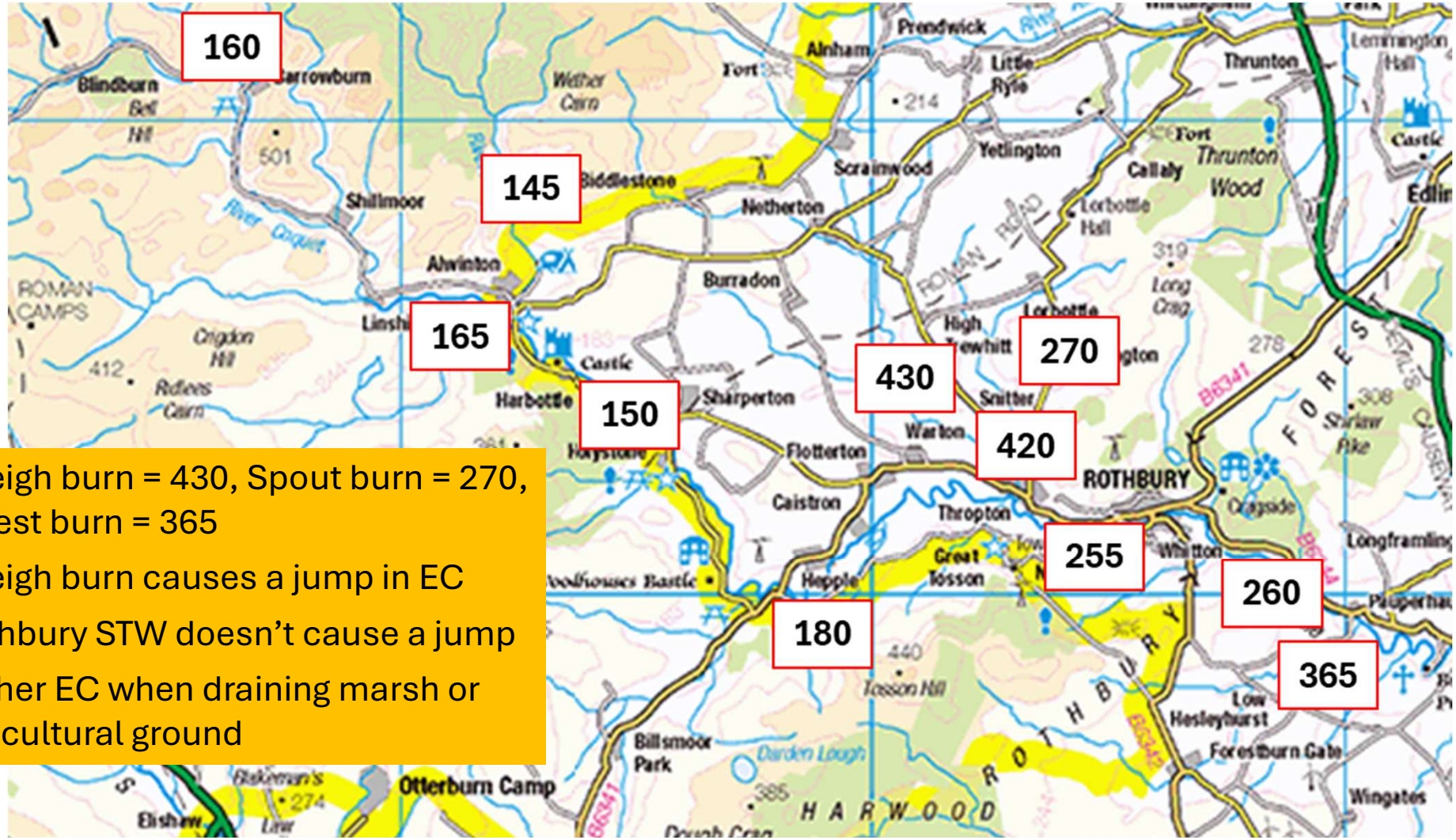
Test sites in 2025

Electroconductivity (µSiemens)

- EC is a measure of the dissolved minerals in the water
- Seasonal pattern because of the dry summer

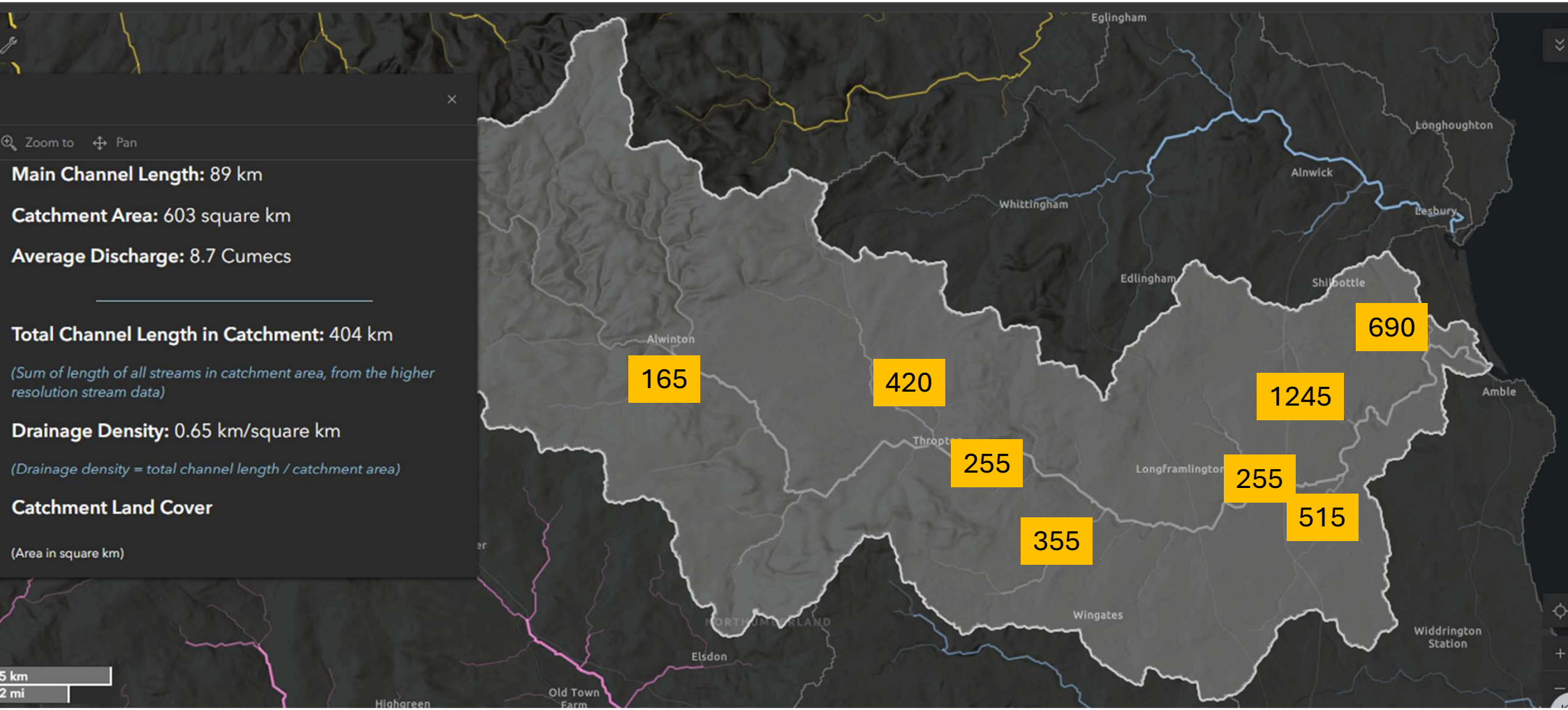


Electroconductivity (µSiemens) – CRAG and EA data

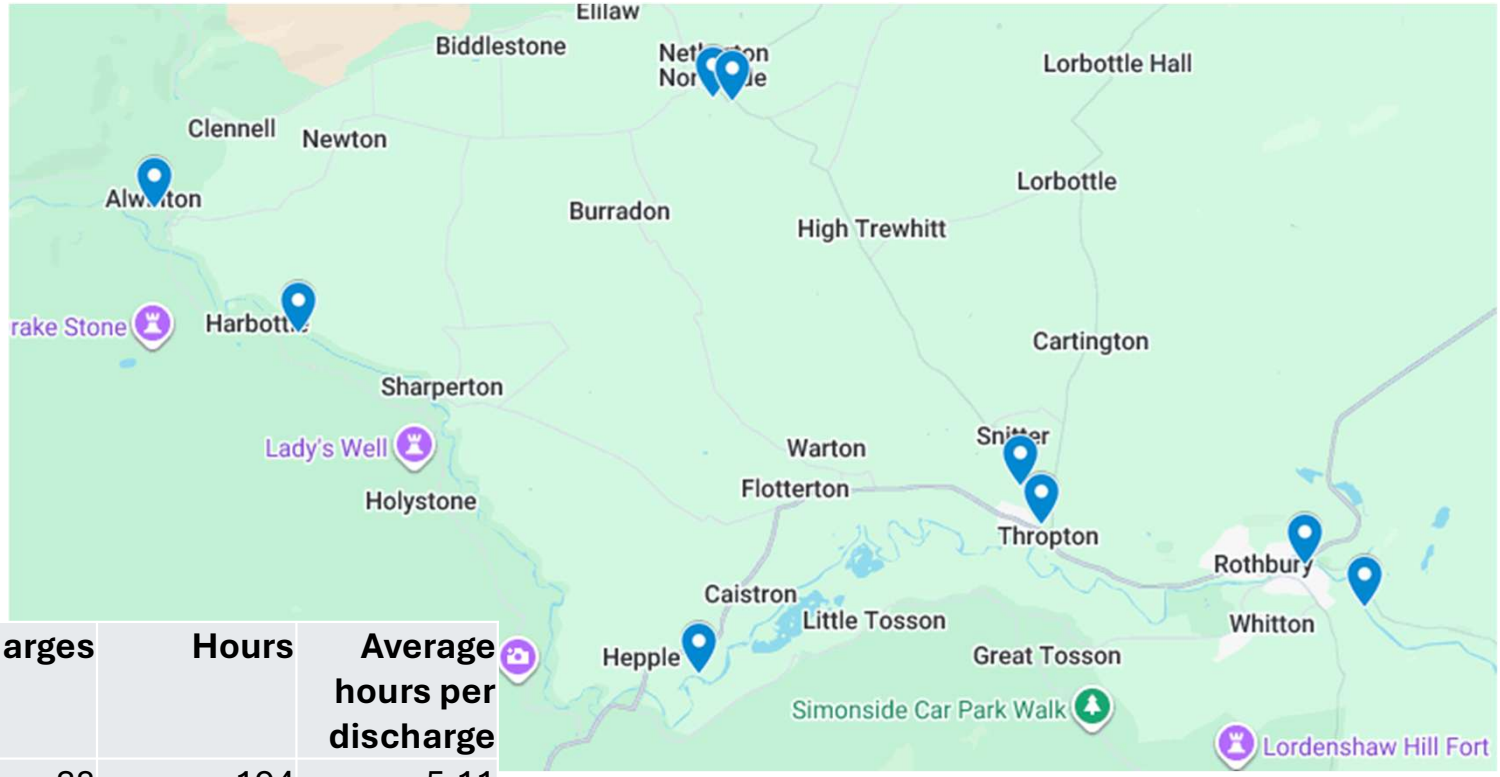


- Wreigh burn = 430, Spout burn = 270, Forest burn = 365
- Wreigh burn causes a jump in EC
- Rothbury STW doesn't cause a jump
- Higher EC when draining marsh or agricultural ground

Electroconductivity (µSiemens) – Down the Coquet



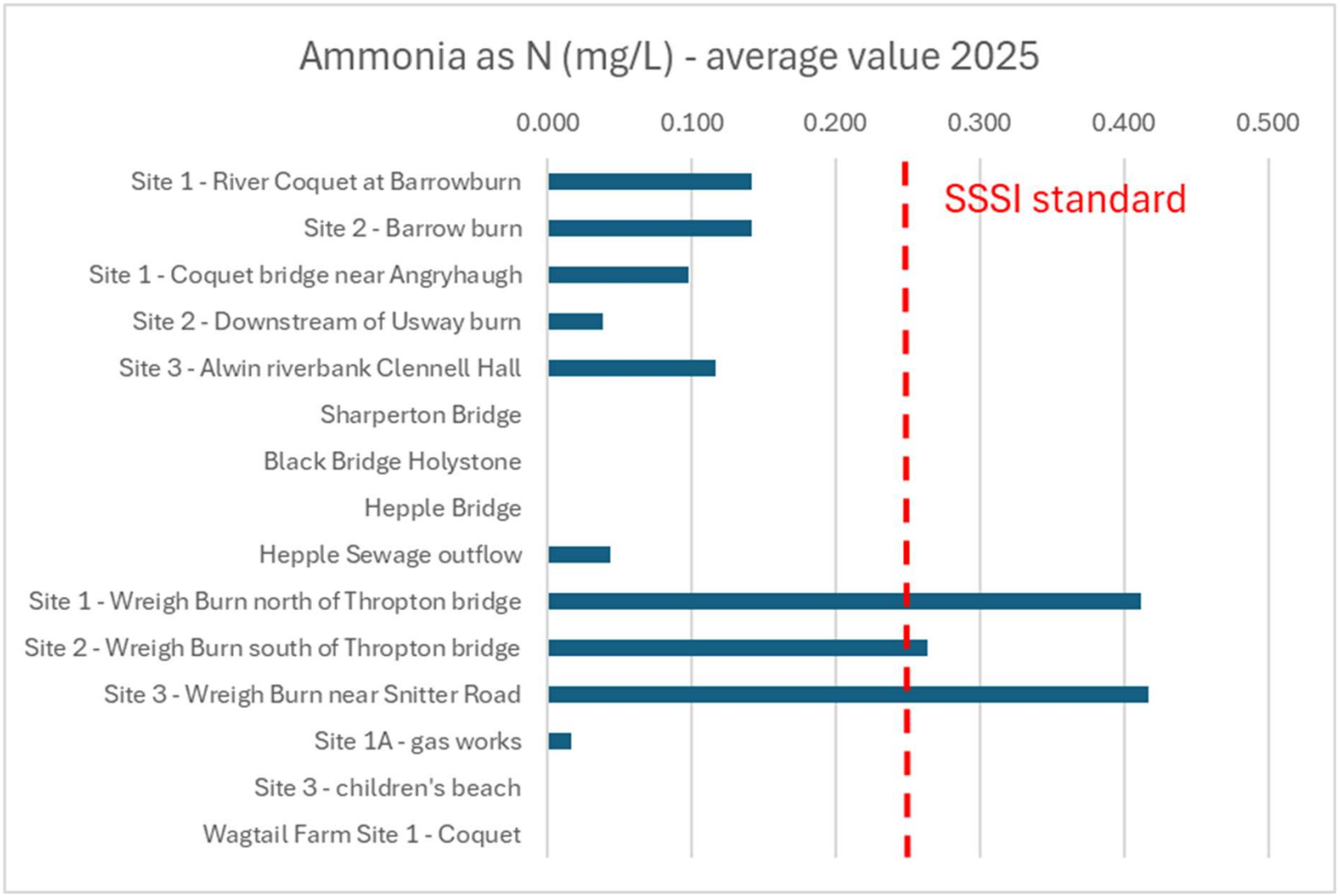
Sewage discharges 2025



Site name	Discharges	Hours	Average hours per discharge
Thropton & Snitter STW	38	194	5.11
Rothbury STW	13	56	4.31
Rothbury Stepping Stones CSO	32	51	1.59
Thropton CSO	15	28	1.87
Harbottle STW	144	26	0.18
Hepple STW	19	21	1.11
Netherton STW	7	1	0.14
Netherton CSO	15	0	0.00
Alwinton STW	0	0	0.00

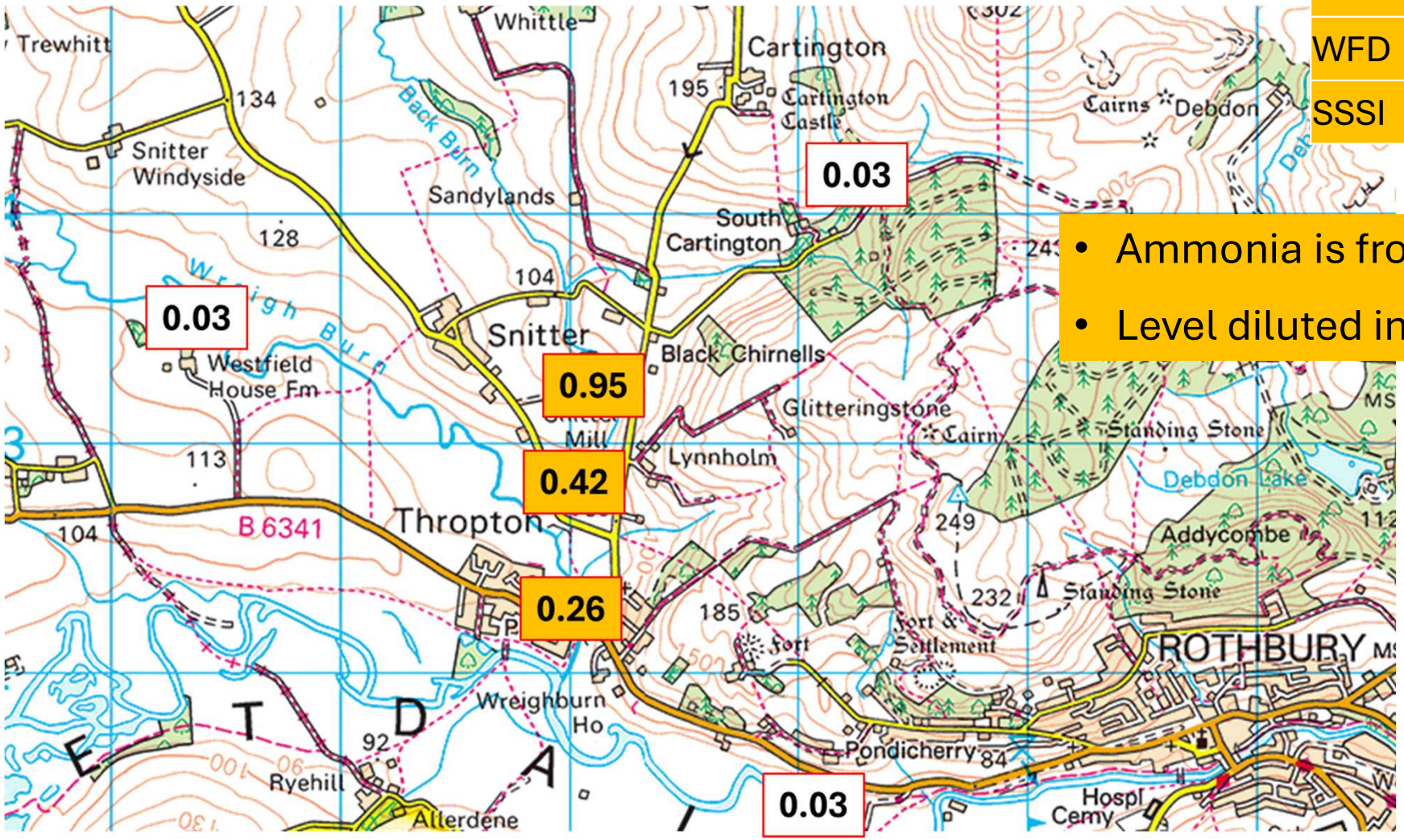
Top 5 along the Coquet	Hours
Felton STW	599
Thropton & Snitter STW	194
Shilbottle STW	169
Togston STW	168
Swarland Lanehead PS	152

Ammonia as N (mg/L)



Ammonia as N (mg/L) – CRAG and EA data

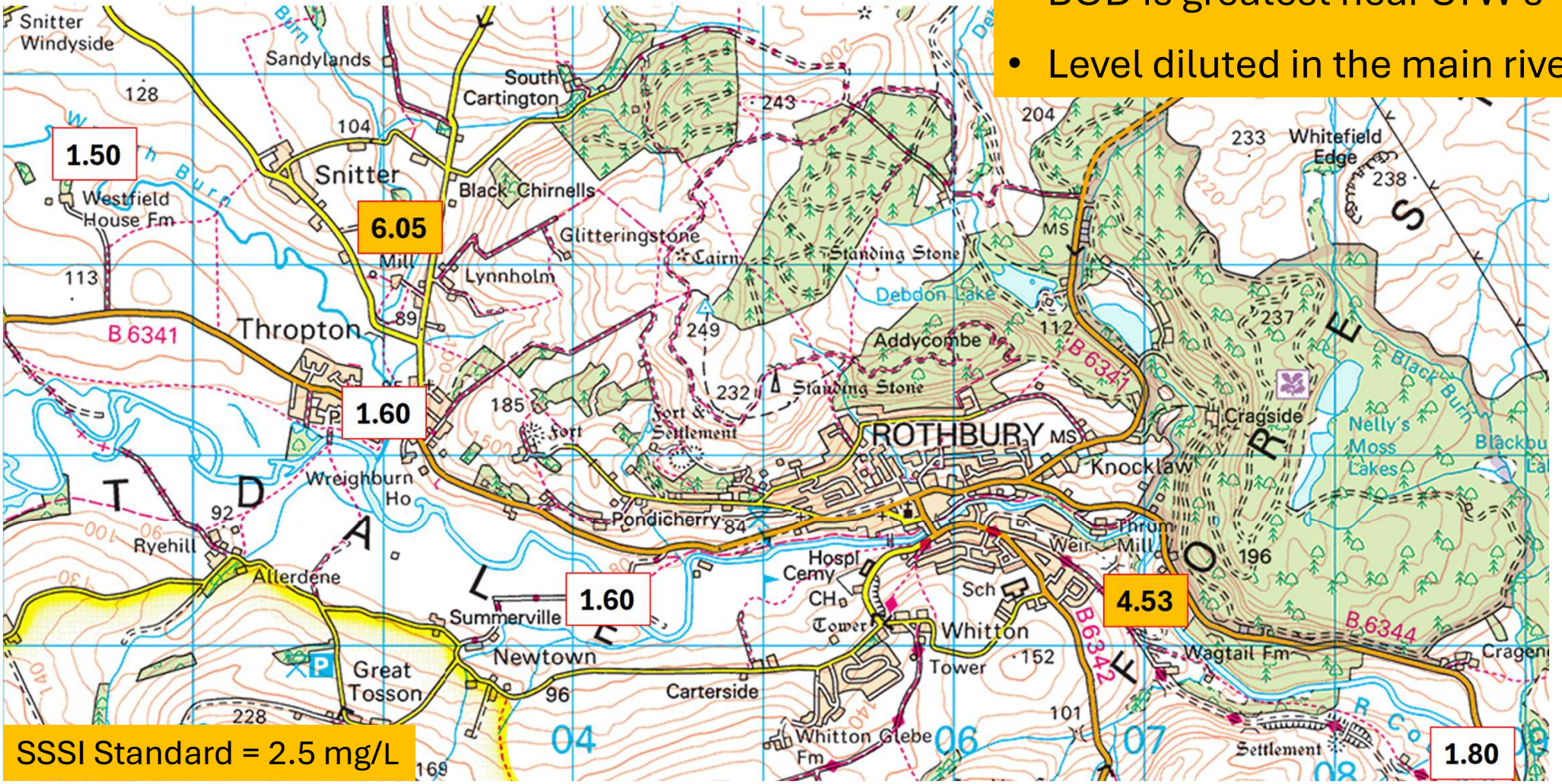
Standards	Amm as N
WFD	0.75
SSSI	0.25



- Ammonia is from the STW
- Level diluted in the main river

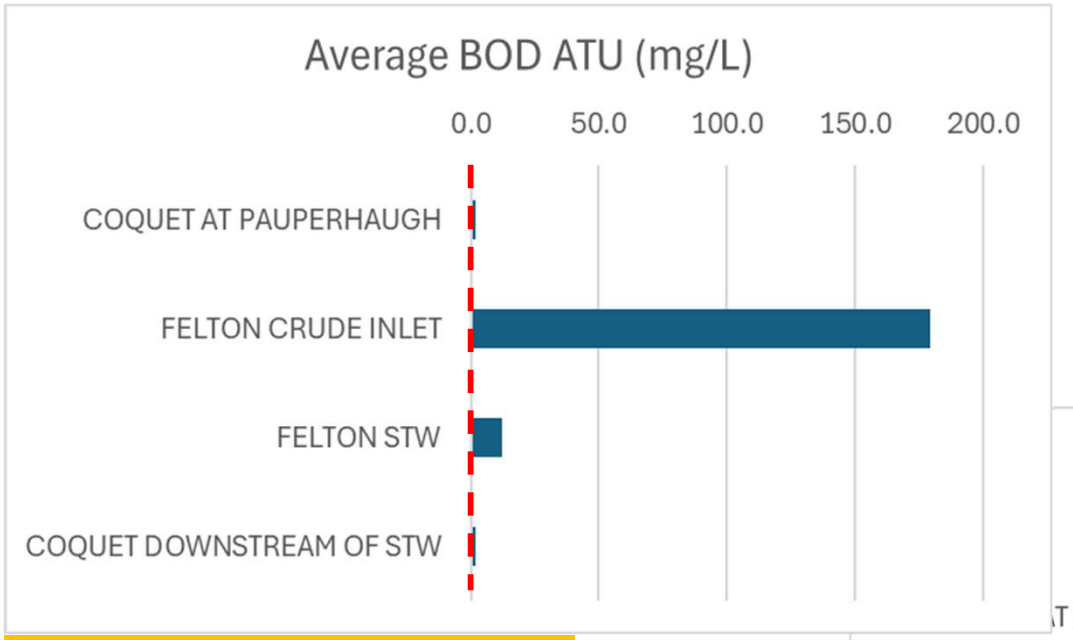
Biological Oxygen Demand (mg/L) – EA data

- BOD is greatest near STW's
- Level diluted in the main river



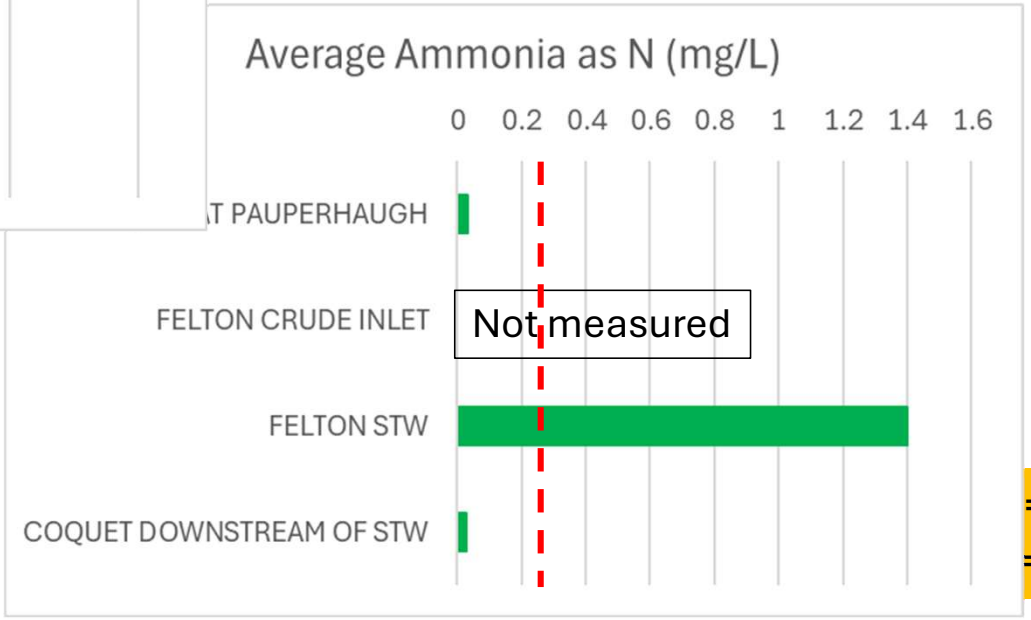
SSSI Standard = 2.5 mg/L

Treatment in an STW – BOD and Ammonia



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

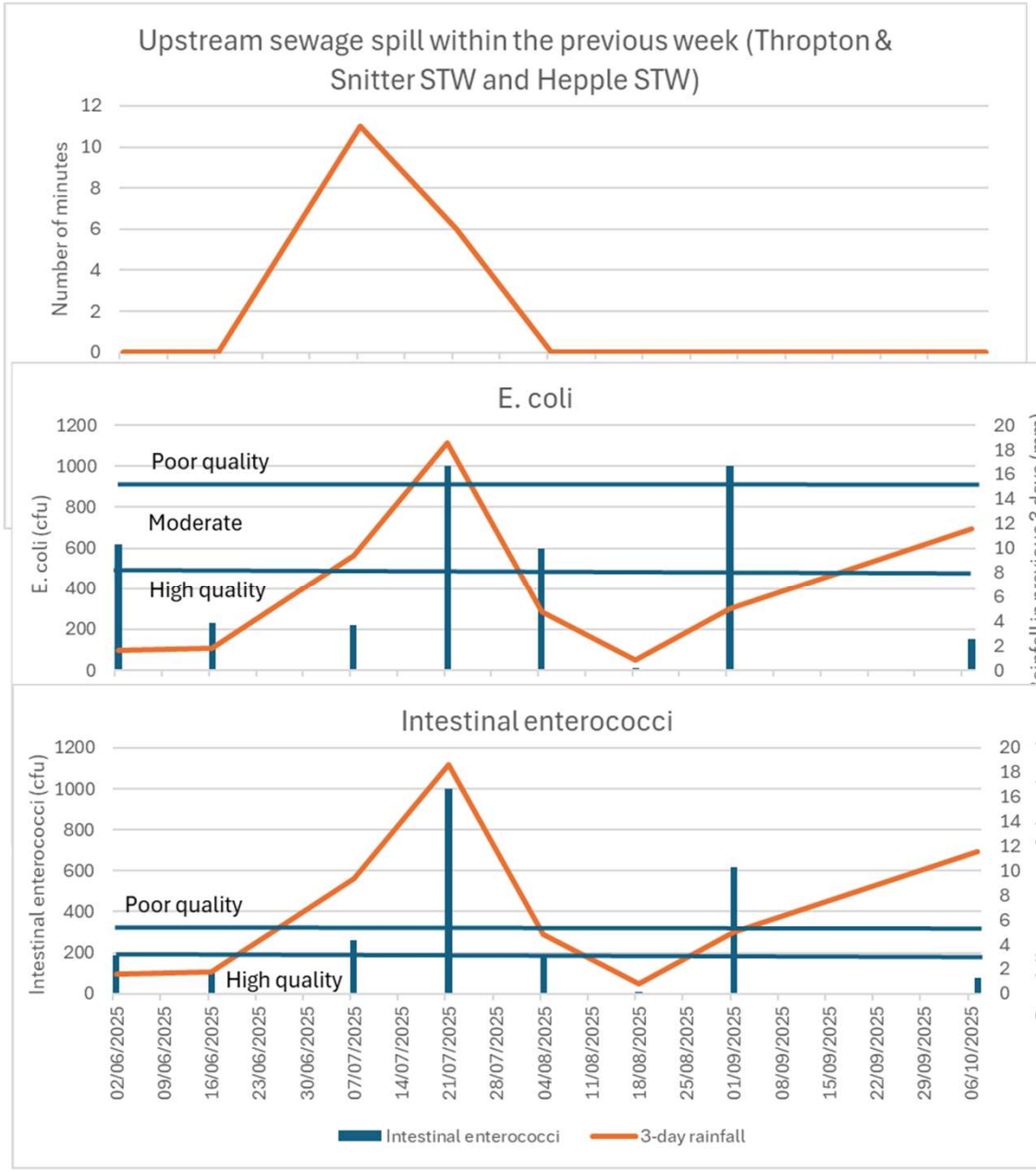
- Inlet BOD is extremely high
- STW allows solids and many chemicals to settle out
- Outlet BOD and Ammonia still higher than standards
- 200 metres downstream chemicals have diluted to levels below standard
- Dilution is much less in tributaries



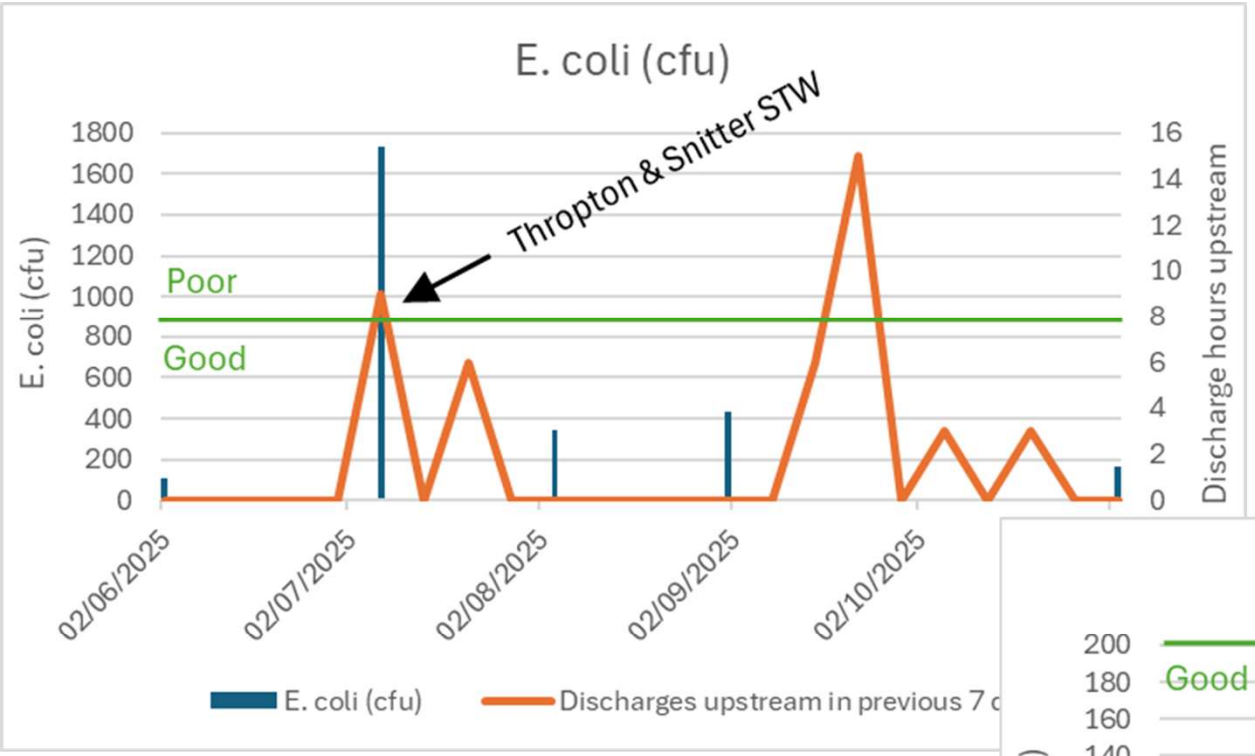
= 1.10 mg/L
= 0.25 mg/L

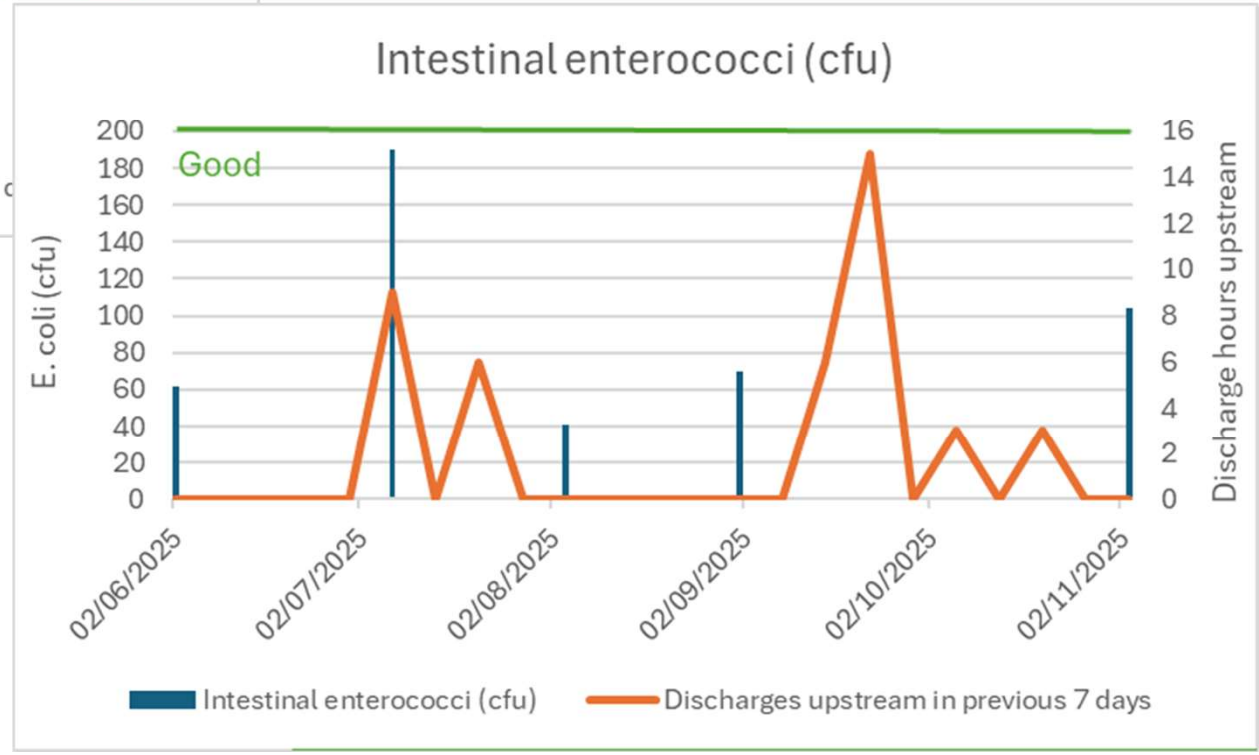
E. Coli and Intestinal enterococci (cfu) during the bathing water season (June to the beginning of October)

- Levels of E. coli and Intestinal enterococci are related to rainfall events and subsequent sewage discharges (in most cases!!)
- No high level of nutrients at Thropton or Rothbury test sites to match high E. coli measurement on 1st September or 2nd June.



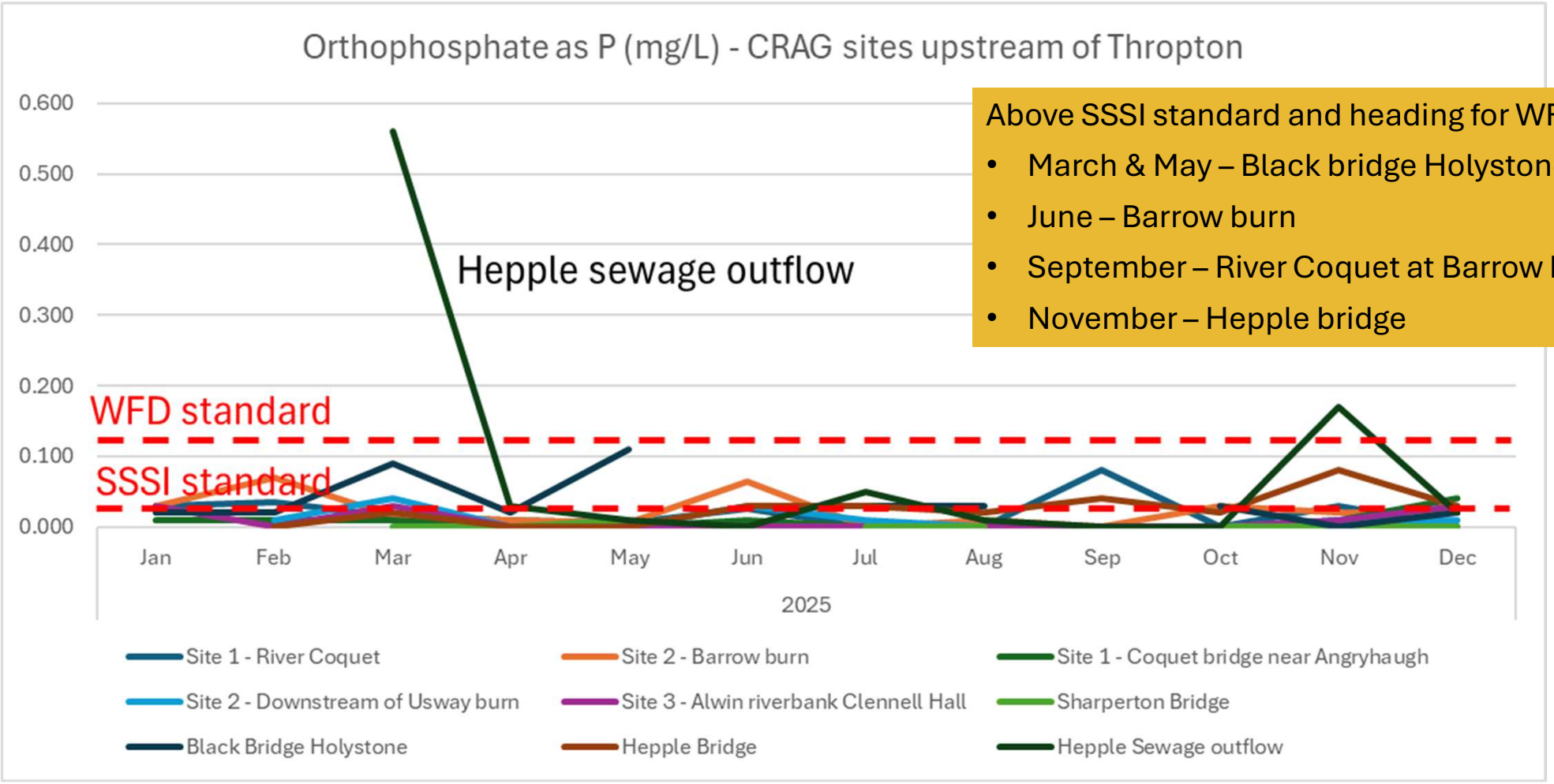
Sewage spills and E. coli Brinkburn





- 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

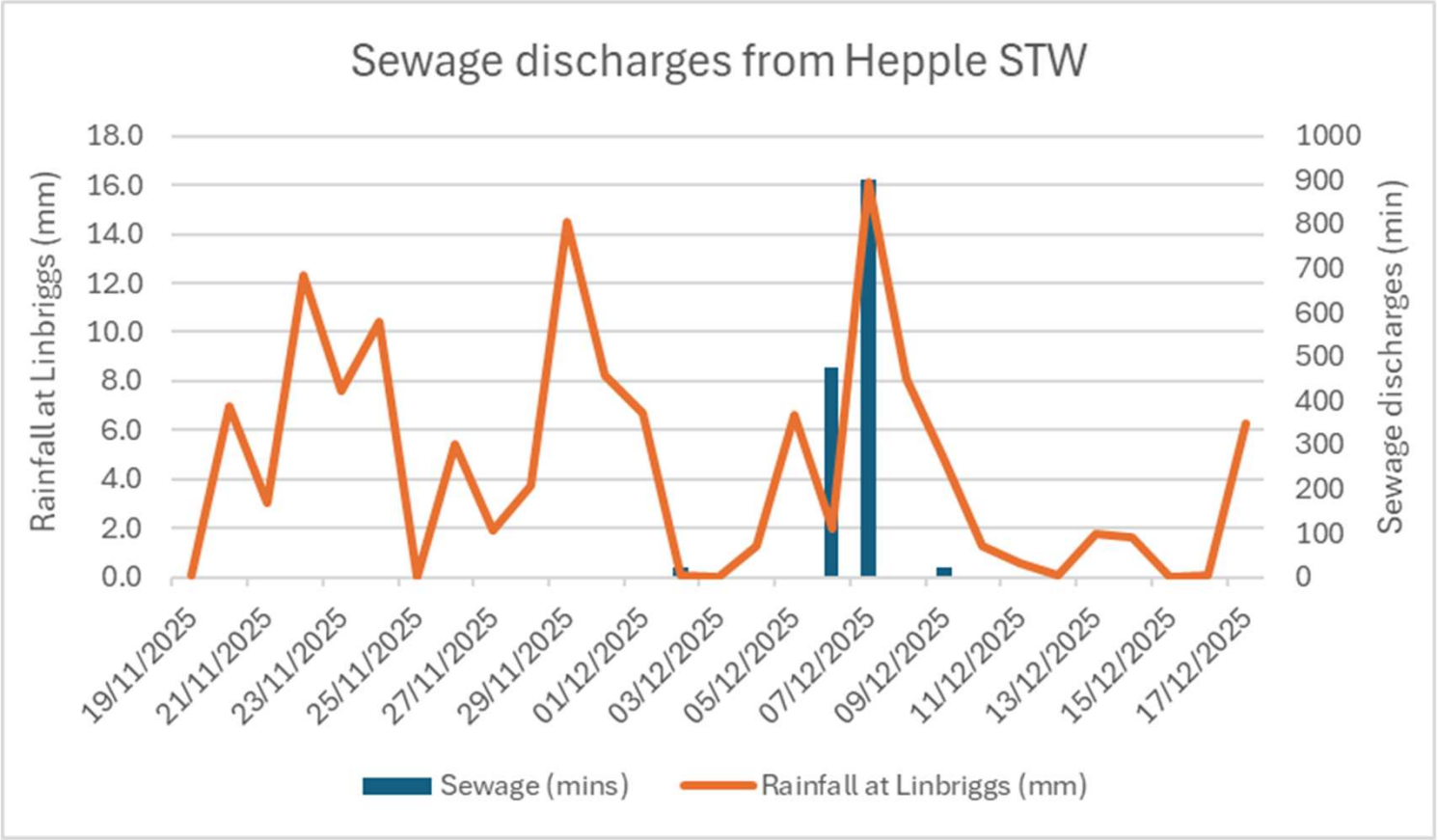
Phosphate as P (mg/L)



Above SSSI standard and heading for WFD standard:

- March & May – Black bridge Holystone
- June – Barrow burn
- September – River Coquet at Barrow burn
- November – Hepple bridge

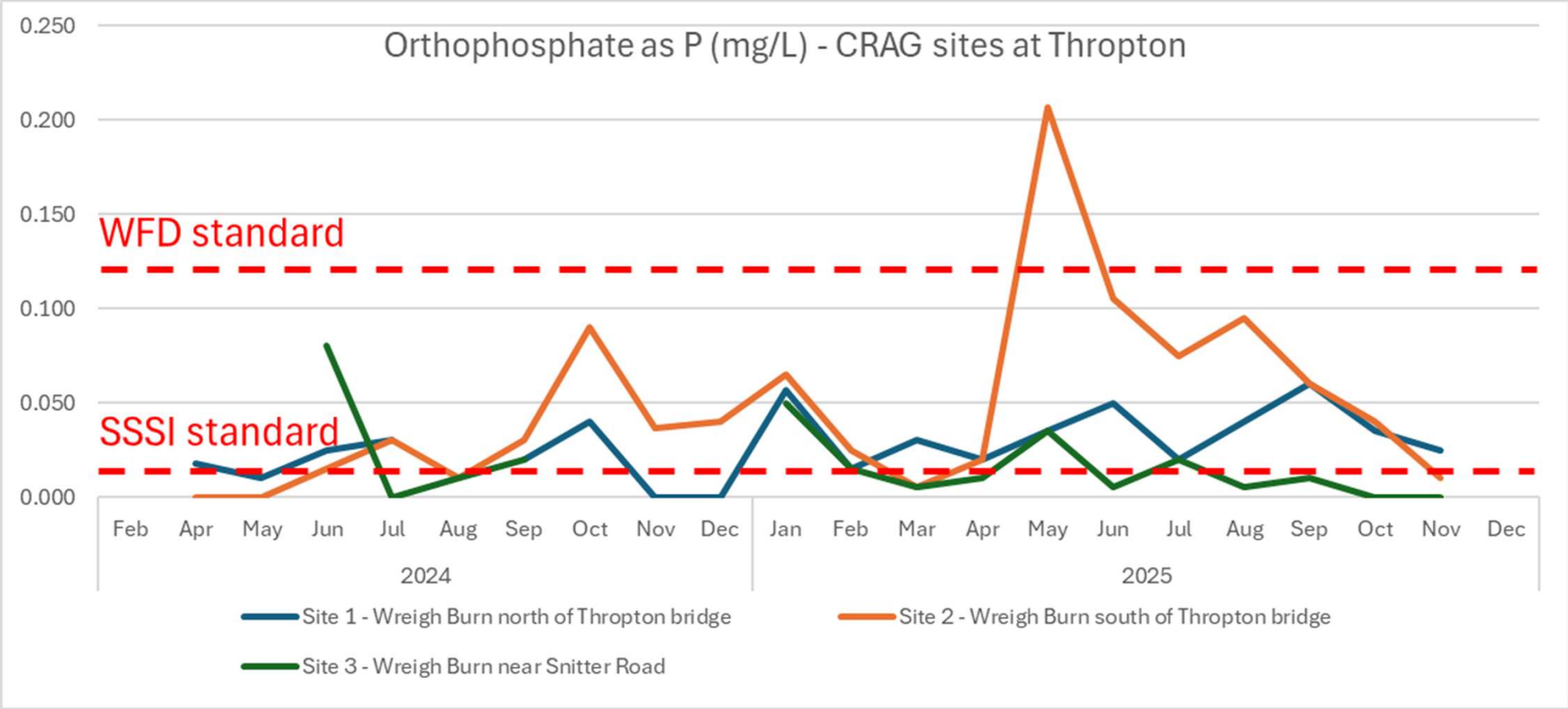
Phosphate as P (mg/L)



- No useful data before 22nd Sept (problem with monitoring equipment and/or no equipment)
- Many 2-minute discharges (still glitches in monitoring equipment or overflow mechanism)
- No sewage discharge associated with high phosphate on 11th November
- Phosphate level on 11th December (after sewage spill on 6th and 7th December) not high.

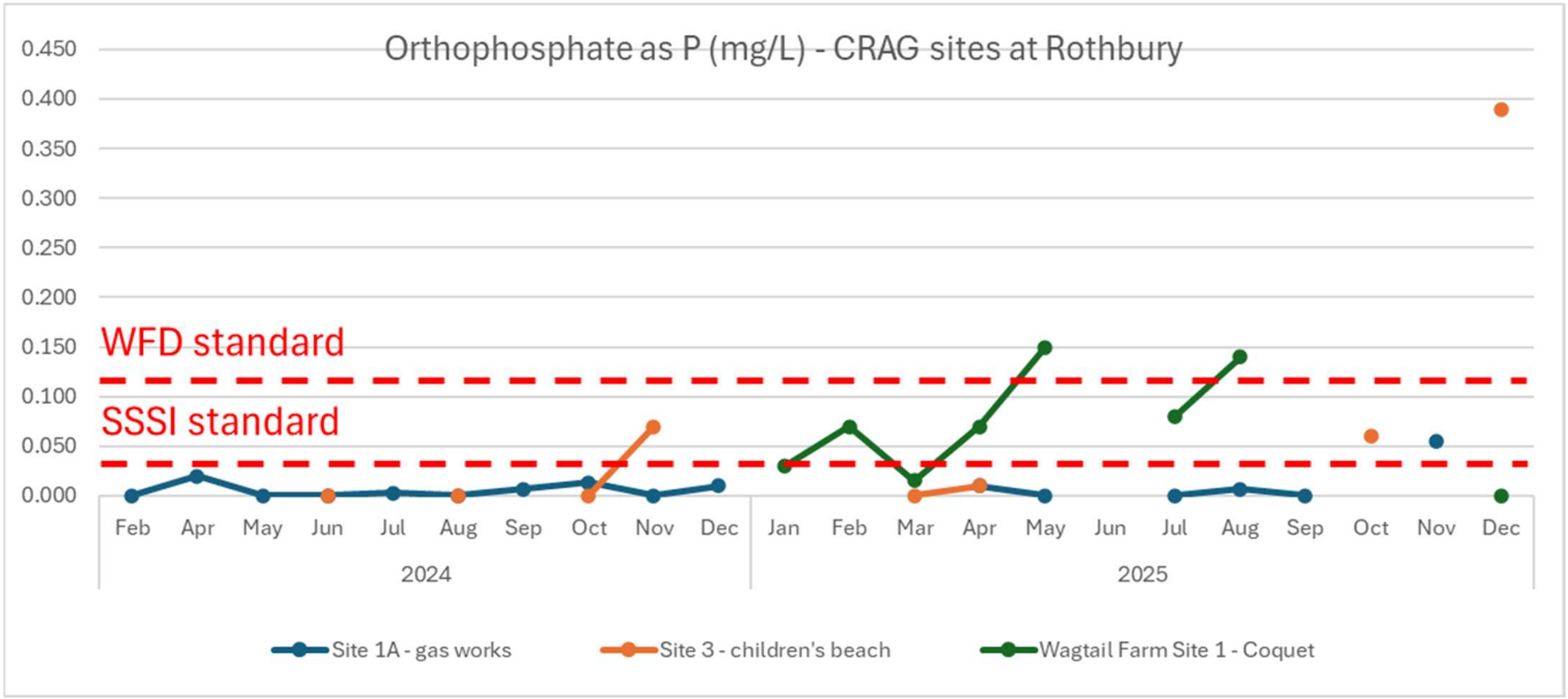
Phosphate as P (mg/L)

- Phosphate level south of Thropton Bridge is nearly always higher than north of Thropton Bridge
- What is happening between the north of Thropton Bridge and South of Thropton Bridge sites?



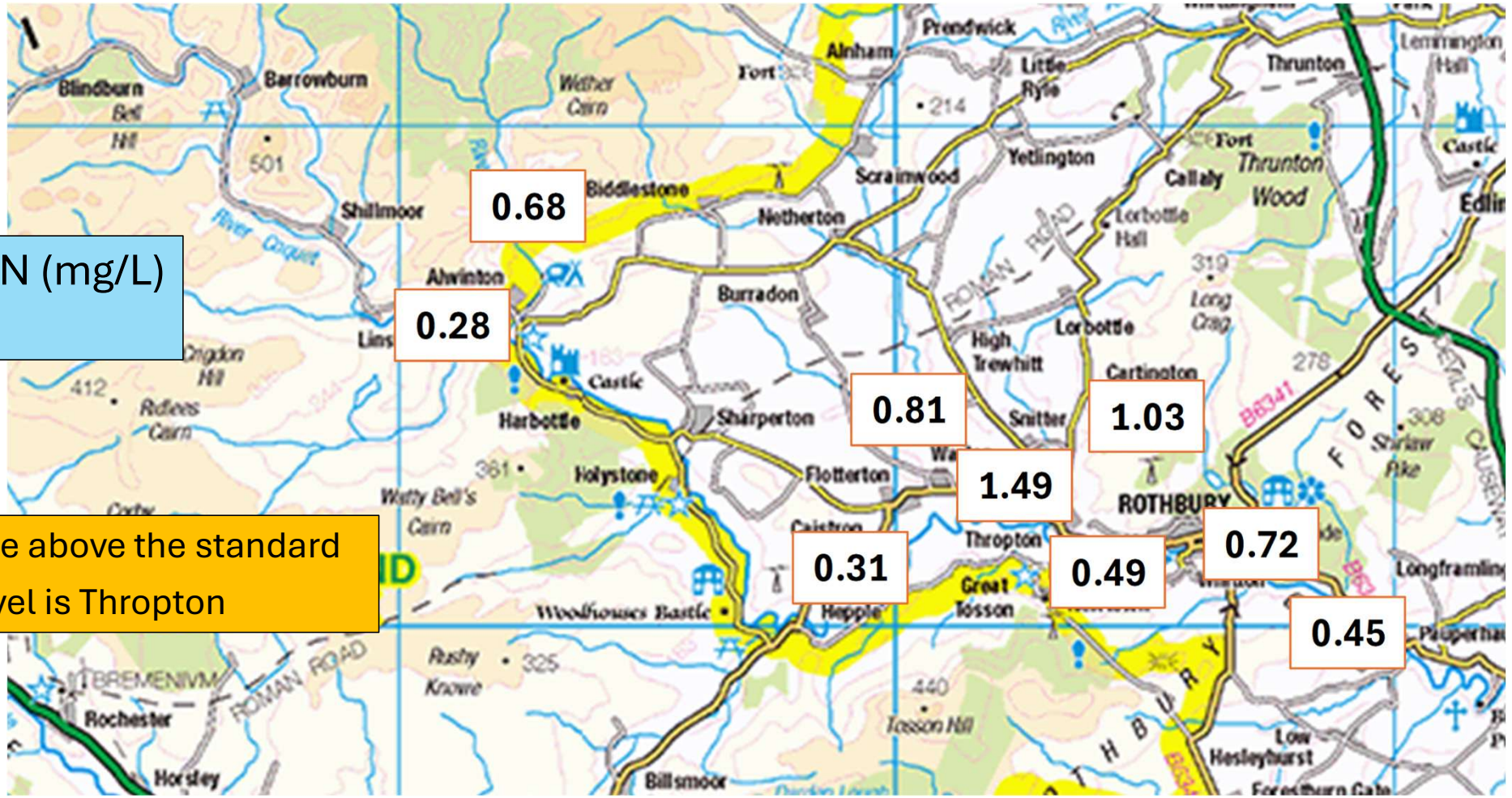
Phosphate as P (mg/L)

- Wagtail Farm nearly always above SSSI standard (downstream of Rothbury STW??)
- Children's Beach site very high in December??



Nitrate as N (mg/L) – EA data

- No sites are above the standard
- Highest level is Thropton



Standard = 1.9 mg/L

What have the tests shown us:

- We can start to separate the impacts of STWs from natural and agricultural nutrients
- We can clearly link heavy rainfall events to sewage overflow to E. coli levels
- STW overflows have a short-term but big impact on nutrient load. Perhaps worth demonstrating this impact with some E. coli tests. Worth keeping an eye on Hepple STW.
- Wreigh burn of particular interest:
  - Relatively large input to Coquet (volume and nutrients)
  - Nutrient from both STW (phosphate and ammonia) and agriculture/natural sources
  - Phosphate north and south of Thropton bridge??

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:

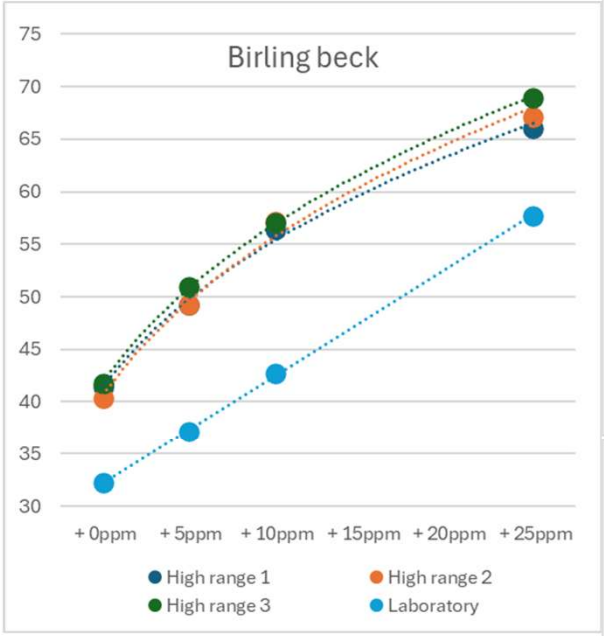
- Harbour Commissioners and councils and Swimblers and many other groups on bathing water status (party at the Puffin festival)
- EA on nitrate measurement
- Newcastle University on modelling nutrient flow in the estuary
- Durham Wildlife Trust (Stronger Shores) seagrass survey
- NWT on peat restoration (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)

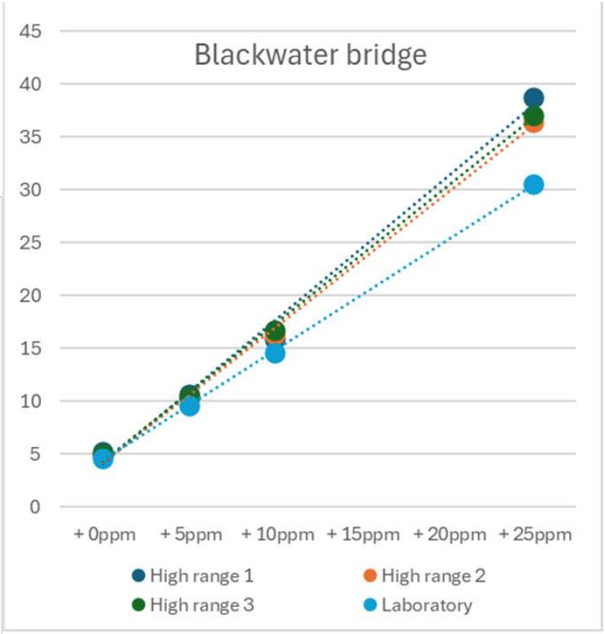
Nitrate meter testing with the Environment Agency

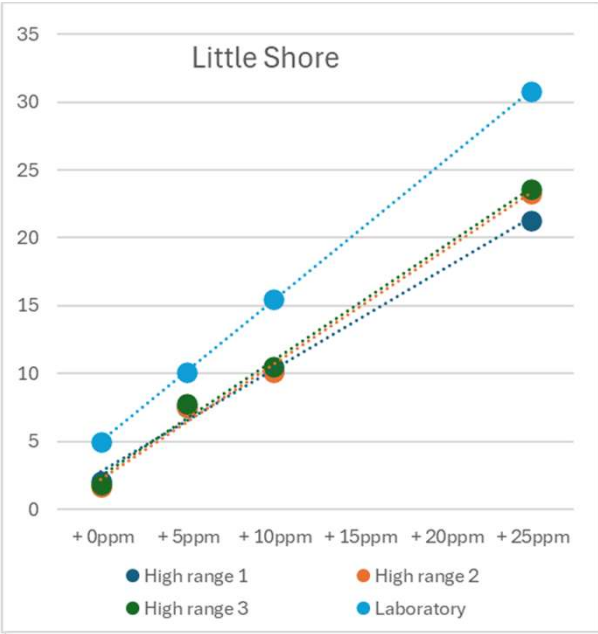
- Nitrate meters appeared to measure differently from laboratories
- 3 samples and 2 controls (saline versus freshwater), 8 different meters or tests

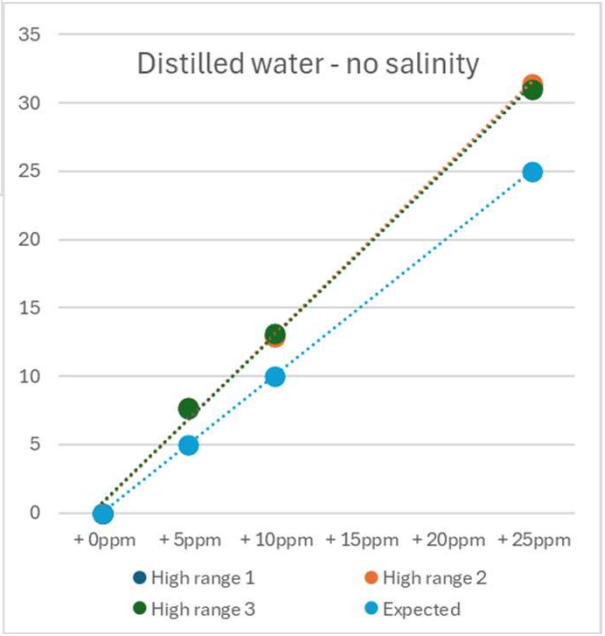
Nitrate meter testing with the Environment Agency

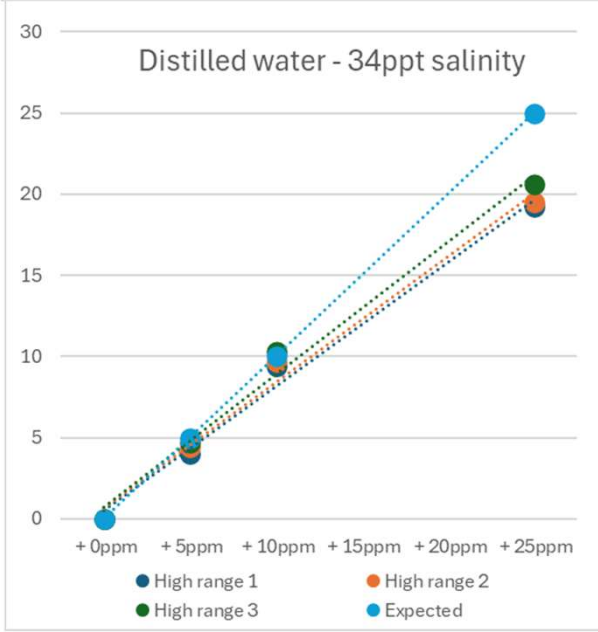
Hanna high–range meters







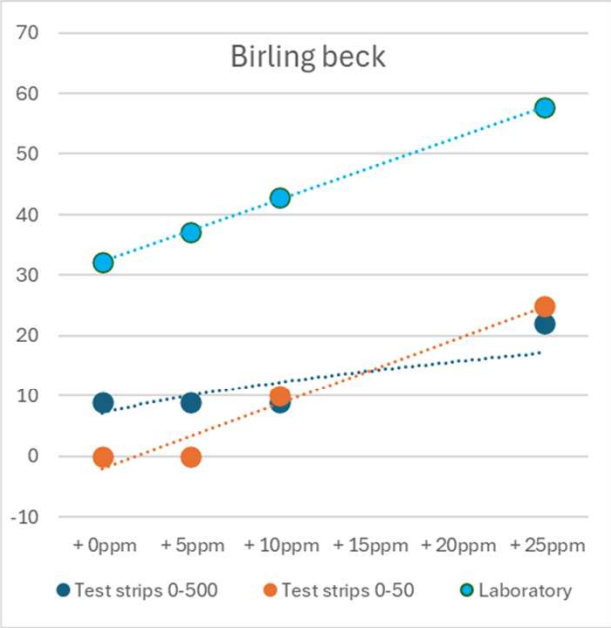


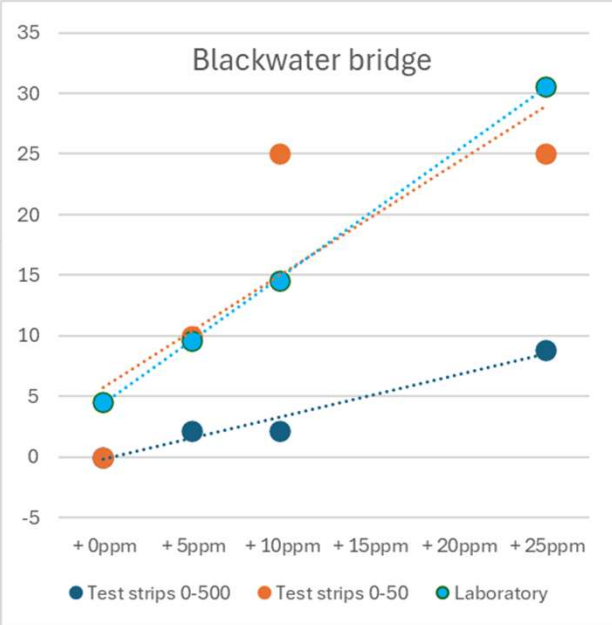


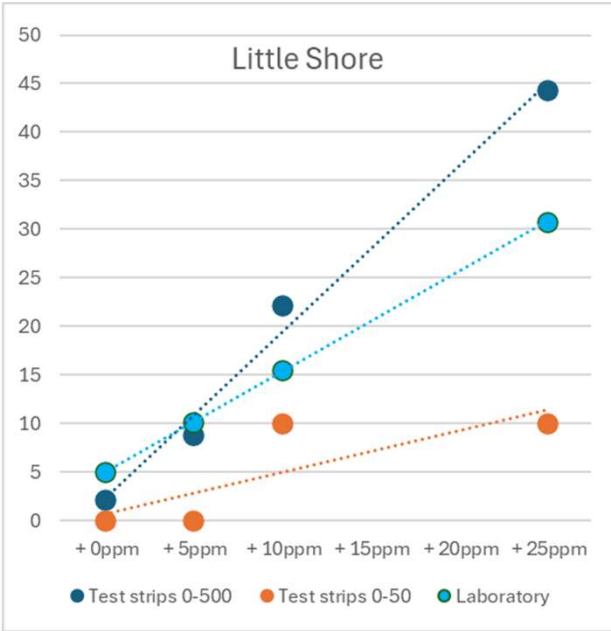
- Little Shore and saline control – meter measurement was lower than laboratory measurement (light blue)
- Birling Beck, Blackwater bridge and no salinity control – meter measurement was higher than the laboratory measurement

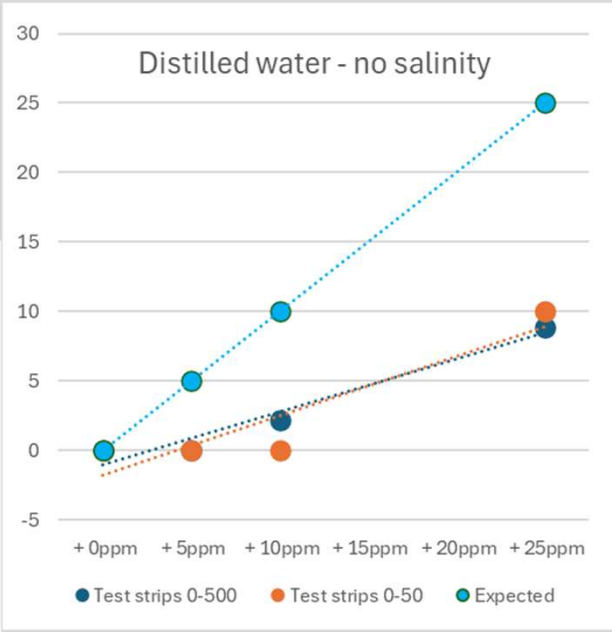
Nitrate meter testing with the Environment Agency

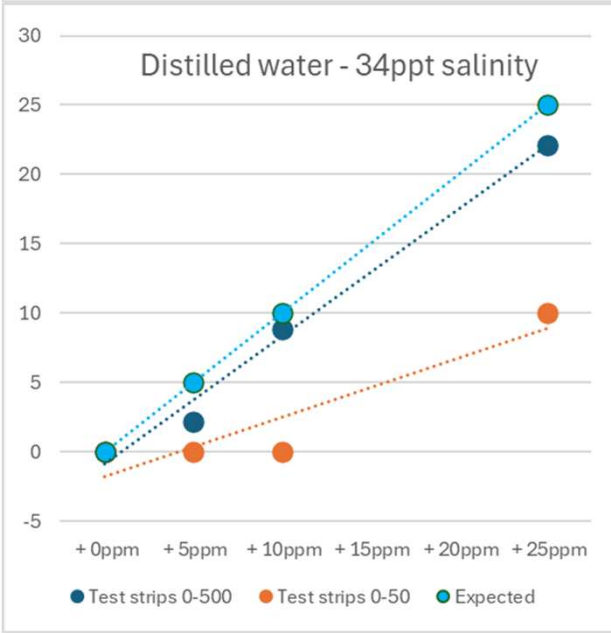
Test strips











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

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What next

Local projects:

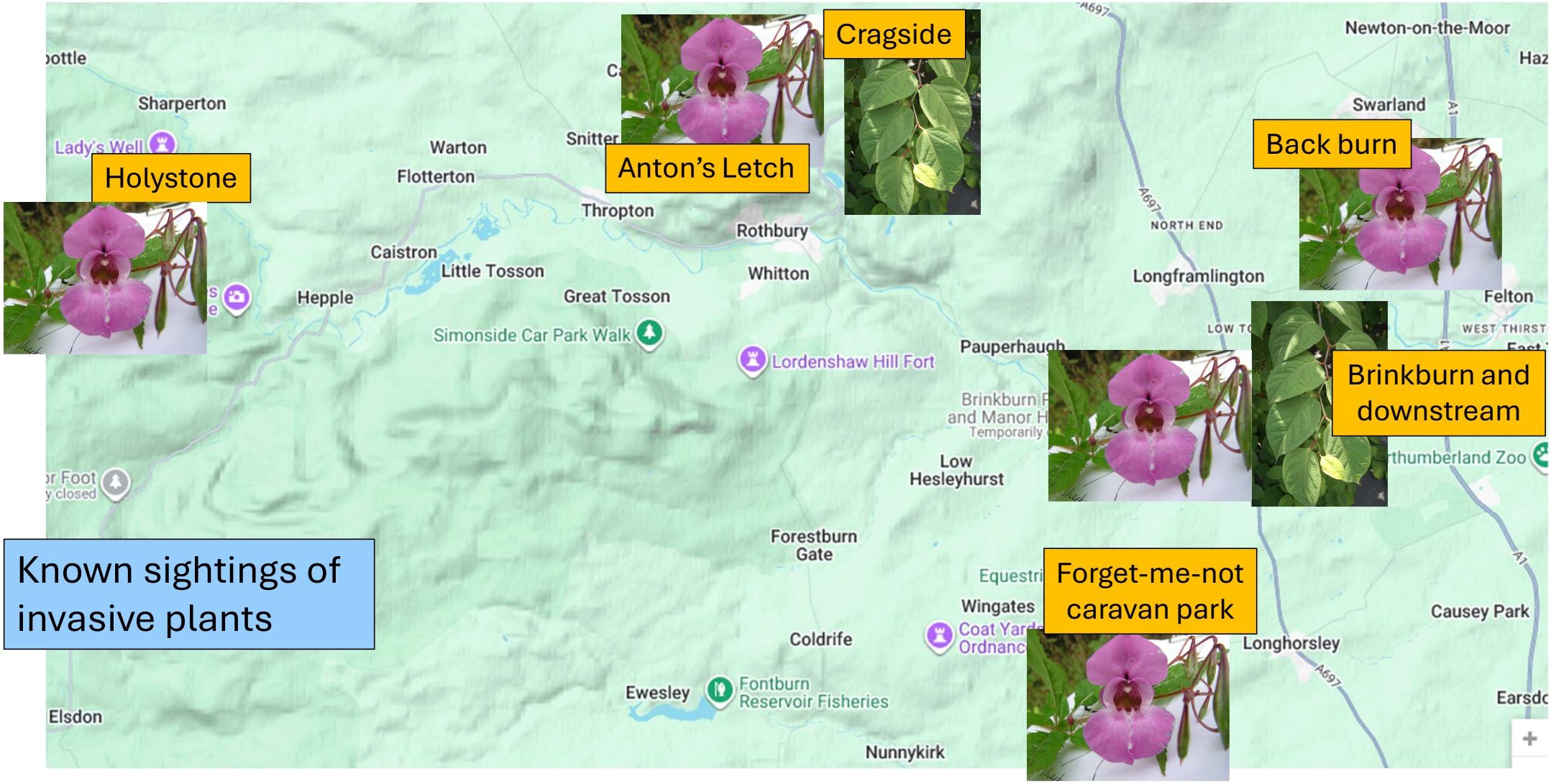
- Peat restoration work
- We will try to work closely with Natural England and the National Park on the PSS

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?)
- Plant to remove plants from these source sites this year (stem injection, working groups)


Cragside
Anton's Letch
Holystone
Back burn
Brinkburn and downstream
Forget-me-not caravan park
Known sightings of invasive plants
Sharperton
Lady's Well
Warton
Flotterton
Snitter
Thropton
Rothbury
Caistron
Little Tosson
Whitton
Hepple
Great Tosson
Simonside Car Park Walk
Lordenshaw Hill Fort
Pauperhaugh
Newton-on-the-Moor
Swarland
NORTH END
Longframlington
Felton
Low Hesleyhurst
Forestburn Gate
Wingates
Coldrife
Longhorsley
Causey Park
Ewesley
Fontburn Reservoir Fisheries
Elsdon
Nunnykirk
A697
A1