Sampling the Ure and its tributaries – Update October 2024

What did we do and what did we find

Following the first round of sampling on the River Ure in dry conditions in August, a follow-up sampling event was held on 9th October 2024. Ten teams of citizen scientists took water samples from 45 sites along the full length of the river and some of its major tributaries at approximately the same time on the same day. The samples were analysed by ALS Ltd for the faecal bacteria E. coli as well as nutrient and chemical analysis.

The activity was organised by Yorkshire Dales Rivers Trust with support from Stop Ure Pollution. We would like to thank the many volunteers who assisted with the sampling

Conditions

The sampling took place after a period of wet weather. Heavy rain had fallen the day and night before. Event Duration Monitoring (EDM) data showed that some Combined Sewage Overflows had been discharging prior to the testing including Leyburn Sewage works which had discharging for 14 hours between 7pm on 8th October and 9am on 9th October. The river flow gauges showed a pulse of water travelling down the river on the day.

The results showed for:

Faecal Indicator Organisms (FIO)

- Almost all (41 out of 45) of the sites had E.coli concentrations above the levels deemed sufficient for inland bathing water.
- E.coli concentrations were high (over 2000 cfu/100ml) right from the top of the catchment at Lunds, peaking at Aysgarth footbridge (8900 cfu/100ml) and remaining high until West Tanfield.
- Increased E.coli concentrations then rose again at Bridge Hewick (3500 cfu/100ml), dropping slightly at Boroughbridge before rising dramatically at Aldborough (9500 cfu/100ml)
- Potential designated bathing sites at Aysgarth Falls had E.coli concentrations 8 times above the levels deemed sufficient for inland bathing water (7500cfu/100ml v 900 cfu/100ml)
- None of the tributaries would meet the sufficient level for inland bathing water. The highest E-coli concentration was recorded on the River Tutt at Boroughbridge (18,900 cfu/100ml)
- The levels of E.coli measured in October are higher than those seen in August. This does reflect patterns seen on the Wharfe although the levels in the Ure are far lower.

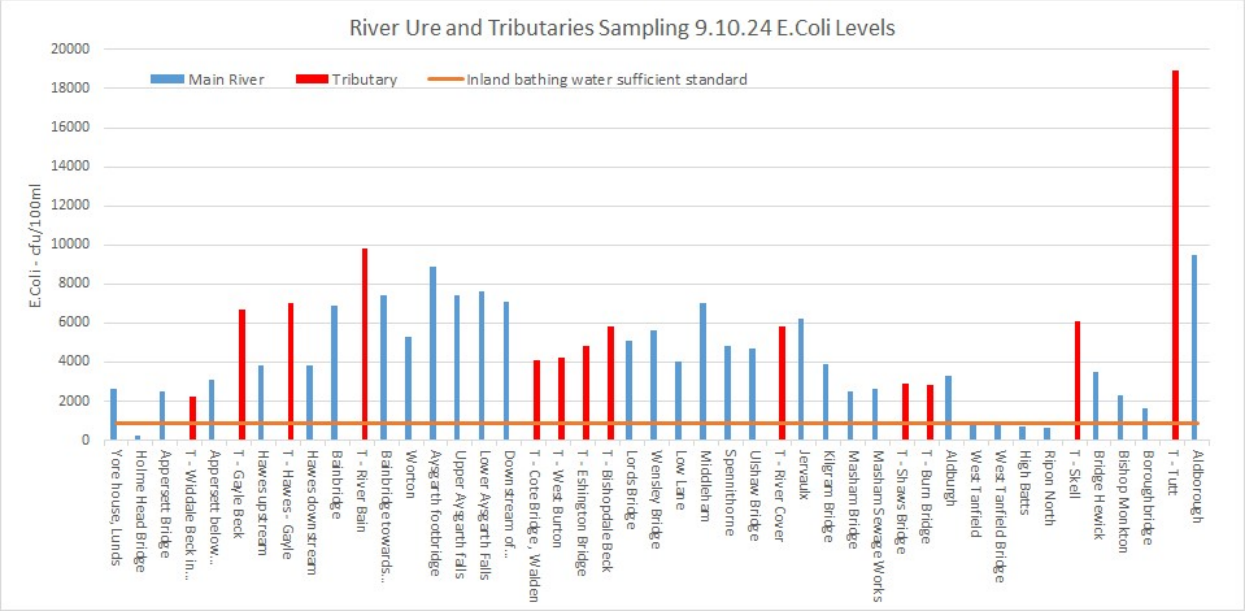
Physico-chemical Parameters

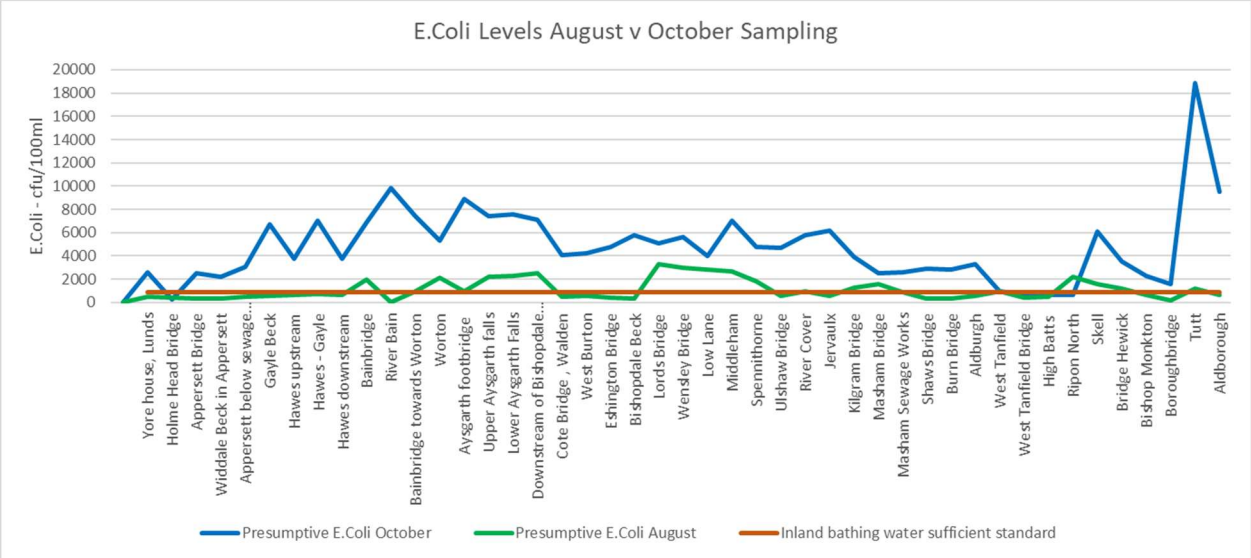
- Total Oxidised Nitrogen levels were below 2.5 mg/l at all but one site – the Tutt
- Conductivity readings were below 500µS at all but one site – the Tutt.
- pH readings were consistent between 7.2 and 8.8 along the whole stretch of the Ure.
- Phosphates, ammonia and nitrite levels were consistently low along the length of the Ure until the lower end of the catchment. Areas for concern are the Skell, Bishop Monkton, the Tutt and Aldborough.
- Suspended solids are the fine particles of sediment in the water and their level usually increases with the rate of water flow due to increased turbulence. There is a general increase in suspended solids from Bainbridge down to Burn Bridge, with small peaks in the Aysgarth area, Eshington Bridge and a larger peak on the Tutt. Further analysis is needed to interpret the peaks at Aysgarth and further investigation is needed on the Tutt.

Next steps

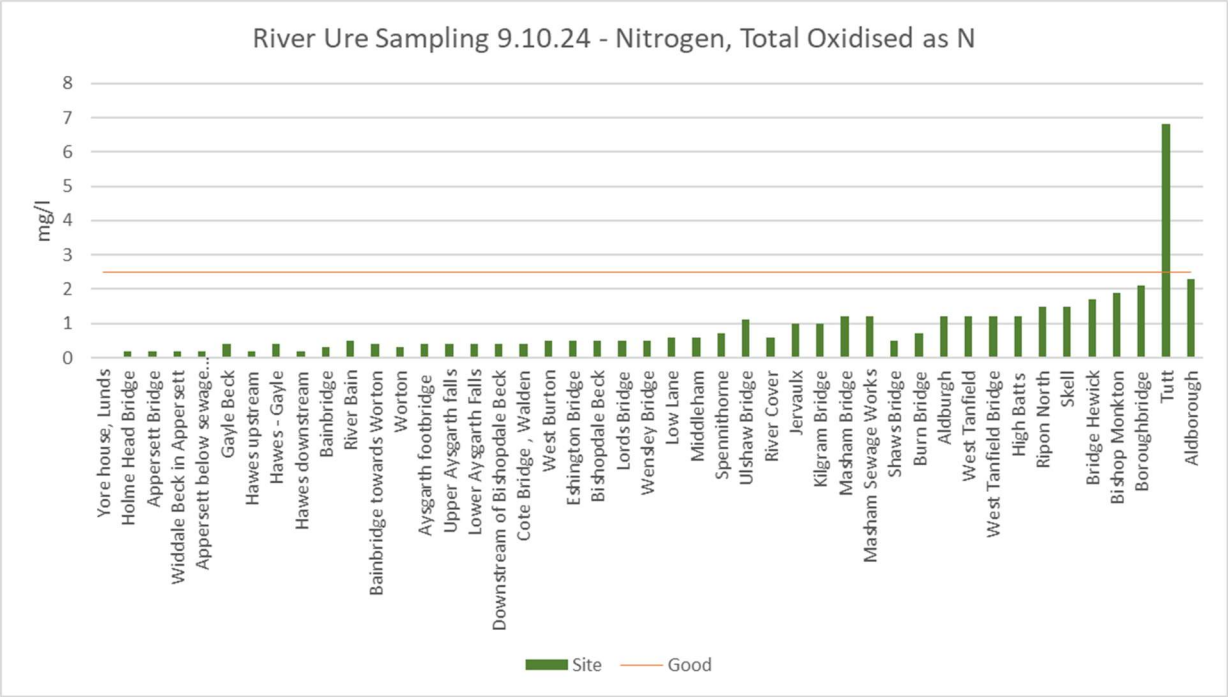
- Further analysis of the results and compilation of a full report using data from both sampling days, river levels, Event Duration Monitoring and other sources.
- Work with the EA and others to increase our understanding of E.Coli concentrations in the Ure Catchment
- Further E.coli testing on the stretch of river between Bainbridge and Jervaulx
- Further analysis on the Skell and Tutt tributaries as the results on the Tutt are of concern in more than one parameter

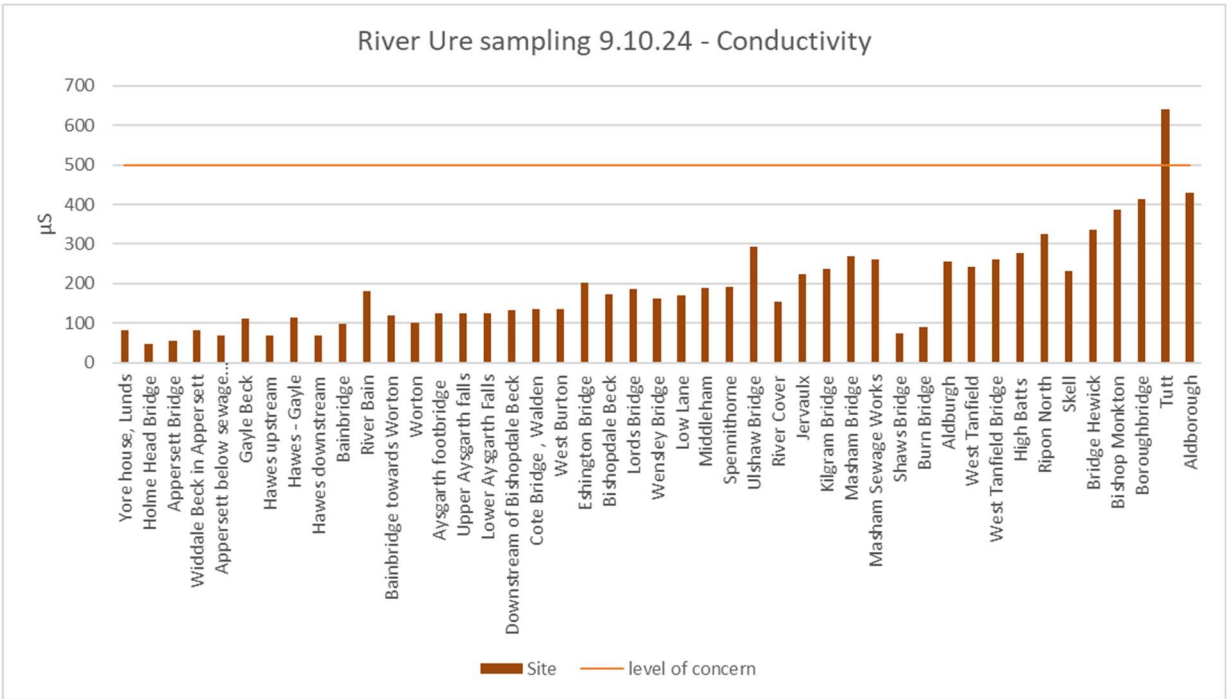
Graph of E.coli results

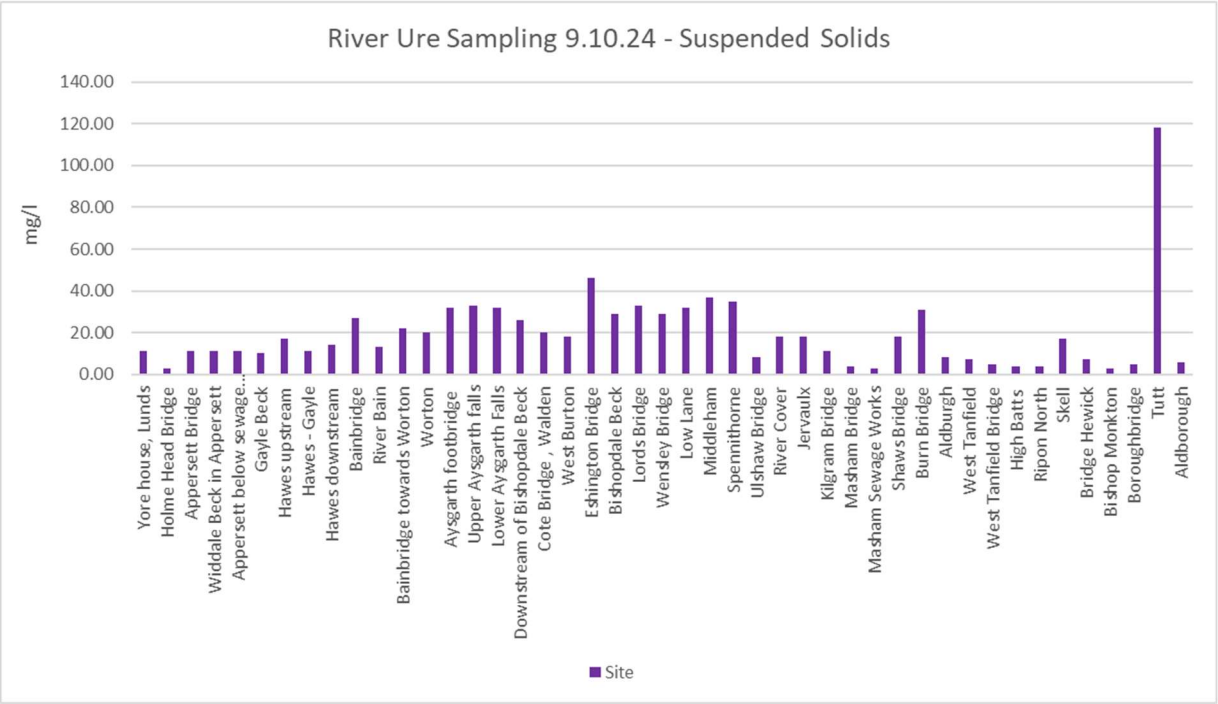


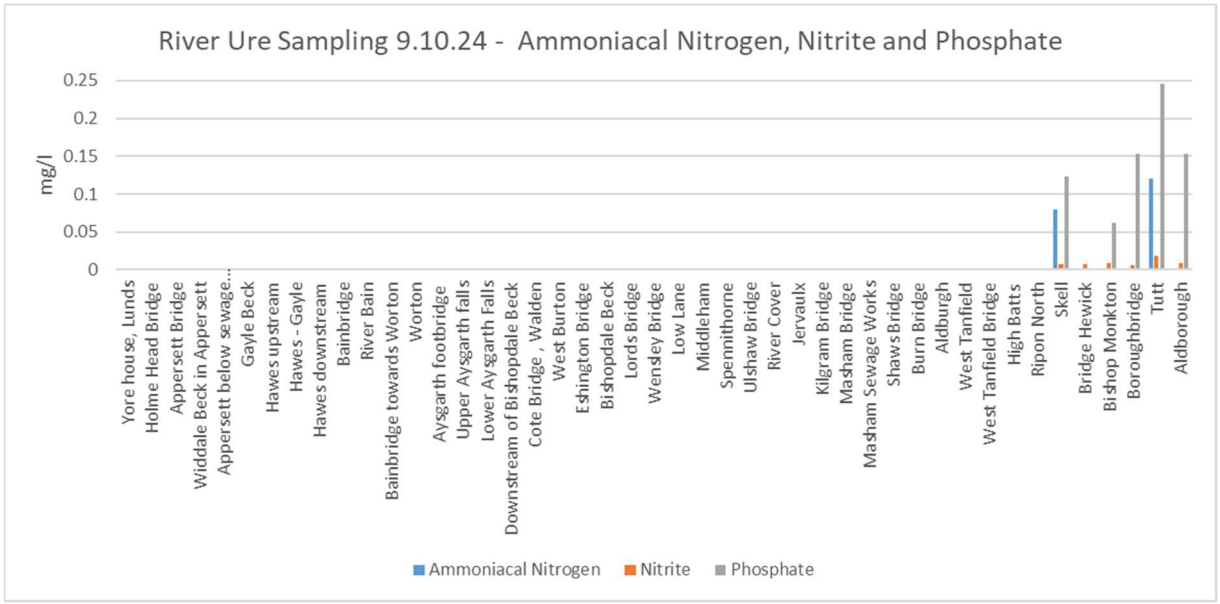


Graphs of Physico-Chemical results






River Ure Sampling 9.10.24 - Suspended Solids
mg/l
140.00
120.00
100.00
80.00
60.00
40.00
20.00
0.00
Yore house, Lunds
Holme Head Bridge
Appersett Bridge
Widdale Beck in Appersett
Appersett below sewage...
Gayle Beck
Hawes upstream
Hawes - Gayle
Hawes downstream
Bainbridge
River Bain
Bainbridge towards Worton
Worton
Aysgarth footbridge
Upper Aysgarth falls
Lower Aysgarth Falls
Downstream of Bishopdale Beck
Cote Bridge , Walden
West Burton
Eshington Bridge
Bishopdale Beck
Lords Bridge
Wensley Bridge
Low Lane
Middleham
Spennithorne
Ulshaw Bridge
River Cover
Jervaulx
Kilgram Bridge
Masham Bridge
Masham Sewage Works
Shaws Bridge
Burn Bridge
Aldburgh
West Tanfield
West Tanfield Bridge
High Batts
Ripon North
Skell
Bridge Hewick
Bishop Monkton
Boroughbridge
Tutt
Aldborough
Site


River Ure Sampling 9.10.24 - Ammoniacal Nitrogen, Nitrite and Phosphate
mg/l
0.25
0.2
0.15
0.1
0.05
0
Yore house, Lunds
Holme Head Bridge
Appersett Bridge
Widdale Beck in Appersett
Appersett below sewage...
Gayle Beck
Hawes upstream
Hawes - Gayle
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River Bain
Bainbridge towards Worton
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Ripon North
Skell
Bridge Hewick
Bishop Monkton
Boroughbridge
Tutt
Aldborough
Ammoniacal Nitrogen
Nitrite
Phosphate