

# Friends of the Dart Water Quality Testing

Overview at 28/10/24

## Purpose of Testing

Friends of the Dart is carrying out bacterial water quality testing along the length of the River Dart, to inform communities on water quality and pursue evidence-based advocacy. The data collected is freely available to anyone interested.

## Where and how testing is happening

Currently, weekly testing is carried out at 7 sites (Figure 1) along the length of the Dart. This testing mirrors the Environment Agencies bathing water testing programme following the guidance in the Bathing Water Regulations (2013). Samples are analysed by an accredited lab for E.coli and Enterococci as they indicate faecal pollution within the river. Testing is done by our technician adhering to a strict peer reviewed protocol.

Currently, Friends of the Dart monitor 3 sites regularly used by the community and the Dart's 4 designated bathing sites. Friends of the Dart will be testing year-round at the community use sites. The Environment Agency tests the designated bathing sites weekly throughout the bathing season (15th May - 30th September). Therefore Friends of the Dart will carry out weekly monitoring outside of this period so that water quality data is available year-round.



Figure 1. The location of the sites where Friends of the Dart are monitoring water quality. Holne Weir is located approximately 6 miles upstream of the marked location. In addition to the bacterial monitoring, a week of intensive sampling was carried out between 28th July - 3rd of August at the 4 designated bathing sites. These samples have been sent off to be analysed for nutrients, pharmaceuticals, heavy metals, PFA's, antimicrobial resistance genes and microbial source tracking (I.E what organism is the source of bacteria). This sampling was organised and funded by Surfers Against Sewage, University of York and Watershed investigations. We anticipate receiving these results shortly.

### What we have found

The overall picture of water quality in the dart (Figures 2 and 3) is that the furthest upstream site, Holne Weir, has low concentrations of bacteria. Then moving downstream around Totnes bacterial concentrations increase, Dartington Beach, Dartington Pontoon and Steamer Quay all have consistently high levels of bacteria. All three sites have "Poor" water quality when calculating a bathing status using all the data available (Friends of the Dart and Environment Agency). This calculation uses year-round data as opposed to focusing on the bathing season. Then moving downstream further into the tidal reaches of the Dart, bacterial concentrations decrease. Stoke Gabriel, Dittisham and Warfleet Creek all have much lower concentrations of bacteria than found around Totnes. However, across the whole length of the bacterial concentrations can fluctuate as a result of pollution inputs into the river.

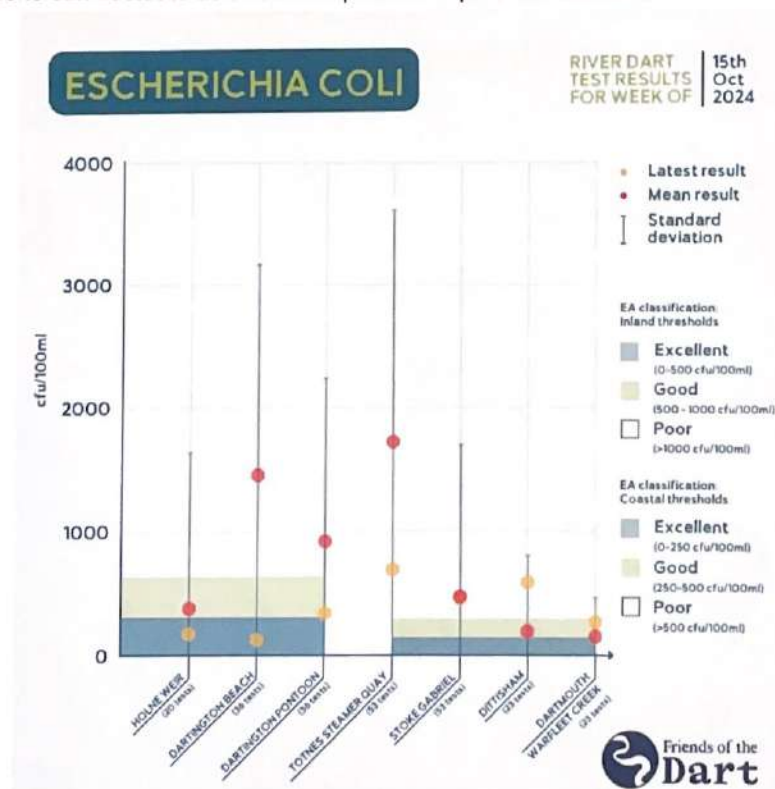


Figure 2. A summary of E Coli levels found at the sites monitored on the Dart.

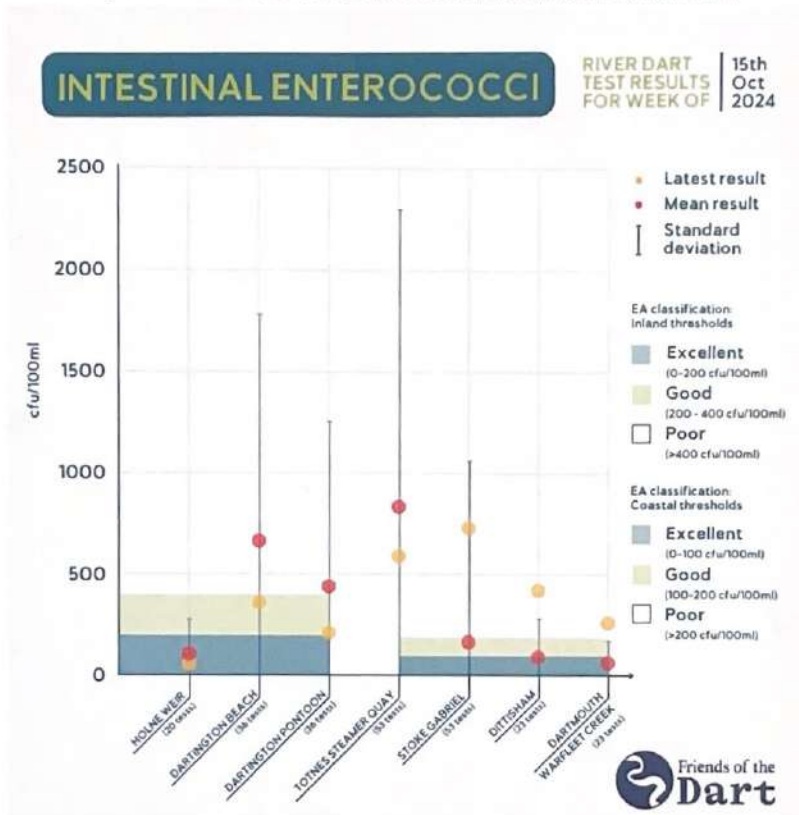


Figure 3. A summary of Enterococci levels found at the sites monitored on the Dart.

### Dry spill analysis

High bacterial concentrations were consistently measured at Dartington Beach and Dartington Pontoon during extended dry periods. To investigate the cause of this, a preliminary first-look analysis into whether wastewater assets were discharging into the Dart outside of rainfall events took place. Through analysing event duration monitor activation data provided by the Environment Agency and looking at the total rainfall recorded across the Dart catchment, it was established that there are discharges from storm overflows when there has been no rainfall in the preceding 4 days. However due to the location of the assets that were 'dry spilling' it was decided that this was likely not the sole cause of poor water quality found in the Totnes area. However, what the analysis has highlighted is the poor performance of certain wastewater assets within the Dart catchment.

Of interest is the Sewage Treatment works at Rattery which spilt in total 140 times in 2022 and 149 times in 2023. Out of these spills, some occurred when there had been no rainfall in the preceding 4 days. In 2022 there were 12 occurrences of dry spills with a total duration of 45 hours and in 2023 there were 5 occurrences with a total duration of 48 hours. What this shows

is that alongside the total spill patterns, the asset is struggling to cope with the demand placed on it.

As well as rattery there were other occurrences of dry spills however they often occurred as singular events. This included a spill at Princetown lasting 8 hours in 2023, Scorriton and Warfleet Creek had a number of dry spills in 2021 and 2022 but not in 2023.

Moving forward Friends of the Dart will continue to monitor patterns of spilling from CSOs across the Dart catchment and the South West to gain a more comprehensive understanding of the impact they are having on water quality.

### **What next**

The year-round weekly testing of the Dart will continue into 2025 due to funds raised by the current crowdfunding campaign. Alongside this Friends of the Dart will start to investigate sources of pollution affecting water quality within the Dart to work constructively with stakeholders and the community to improve the state of the River and its catchment.

One of the investigations currently taking place is looking at the release of bacteria within the treated effluent from Kilbury sewage treatment works. It was identified by Stantec (2023) that Kilbury sewage treatment works can affect water quality as far downstream as Dartington pontoon in low flows. Friends of the Dart are in the process of establishing what the impact of Treated effluent is on sites downstream of Kilbury and if this also occurs outside in a wider range of environmental conditions.

So far it has been confirmed:

- That treated effluent from Kilbury has high levels of bacteria, with the highest recorded E.coli count coming in at >10,000 cfu/100ml. This has been established by testing above and below the asset when it has not split for 24 hrs as per Waterfit live.
- This bacterial signal is detectable until, Dartington pontoon.

The next steps are:

- To continue to monitor the impact of treated effluent from Kilbury to better quantify its impact.
- To establish if pollution from Kilbury only impacts water quality in low flows.

### **Further Questions**

If you would like further information on water quality testing please contact Hannah [hannah.pearson@friendsofthedart.org](mailto:hannah.pearson@friendsofthedart.org)

Or you can contact our Water Technician Kit [kit.cregan@friendsofthedart.org](mailto:kit.cregan@friendsofthedart.org)

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