

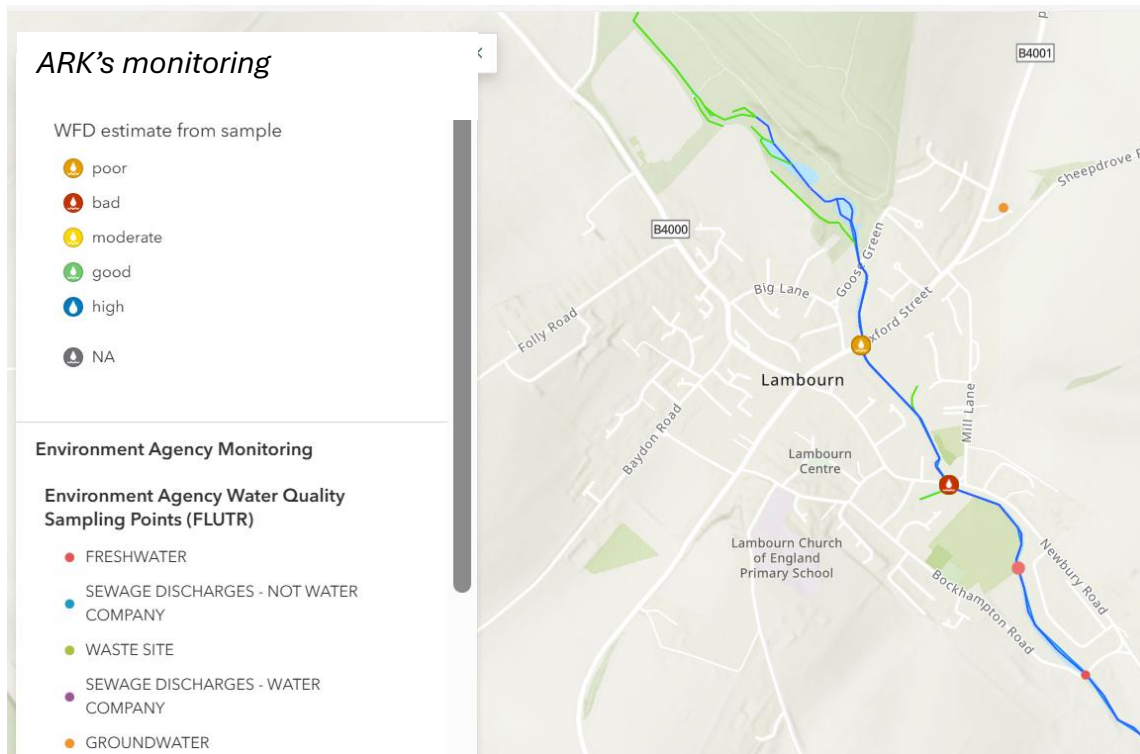
## Lambourn Water Quality Monitoring:

### Action for the River Kennet's headline findings - to August 2024

For details on our methodology, please refer to our [Testing the Water StoryMap](#). All our data is available shortly after collection on our live map under 'ARK's Data and Findings'.

To date, the picture of the upper reaches of the Lambourn shows concerning pollution incidents occurring even over very short distances. **Our sampling has already identified 3 separate pollution events** across 7 sampling occasions, suggesting a high frequency of pollution incidents within the village of Lambourn.

Our testing sites were chosen to follow up on reports of sewage spills from residents. The sewerage system has been overwhelmed by rainfall and high groundwater resulting in months of frequent spills into the village, posing both a health hazard to the public and risking ecological damage where stormwater drains take these spills directly from roads to the river.



ARK and the EA's water quality monitoring in Lambourn. See our [StoryMap](#) for more information.



*The downstream sampling site from the bridge on Newbury Street, Lambourn. Screened effluent from an ATAK tower and untreated effluent from a storm drain flow into the river.*

#### **Approach:**

Emeritus Professor of Microbiology Michael Wilson MRSC, MSc, PhD, FRCPath, DSc has volunteered for ARK to monitor at two sites on the Lambourn chalk stream 350 metres apart. This paired approach to testing allows us to compare results and identify where pollutants are entering the river.

The testing was in response to observations from residents and ARK staff that showed clear signs of untreated sewage discharge directly to the river. We found *E.coli* concentrations at 10x the Bathing Water Standards. There is no requirement to meet bathing water standards on the Lambourn, but the reading illustrates the poor water quality and associated risks to health from this pollution.

Our independent monitoring identified two clear pollution incidents between our upstream site at Oxford Street, and downstream at Newbury Street on the 31<sup>st</sup> of March, and 24<sup>th</sup> of August. The Environment Agency have been informed.

#### **Pollution Incidents:**

##### **31<sup>st</sup> March 2024**

- Total Colony Forming Units (CFU) 100x higher downstream
- Total coliforms 10x higher downstream
- Phosphate 4x higher downstream (with a WFD equivalence of 'Poor')
- A drop in dissolved oxygen of 1.9mg/l (from 10.4mg/l to a still healthy but lower 8.5mg/l)
- Ammonia 20x higher downstream.
- Calculated **un-ionised ammonia at a concentration that would be unsustainable for salmonid fish if it occurred upwards of 1 day per month.** (See UKTAG, Updated

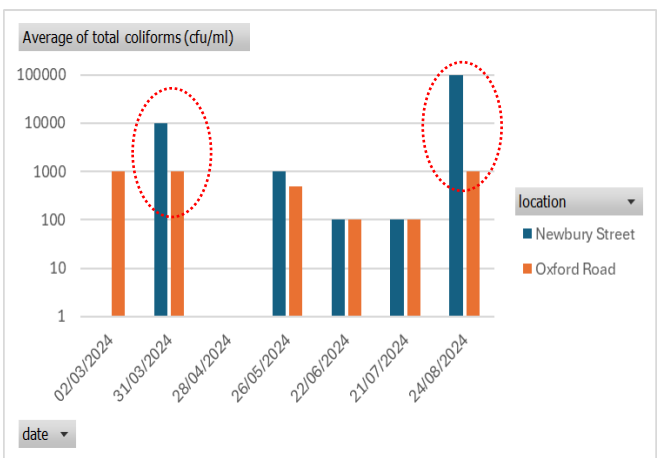
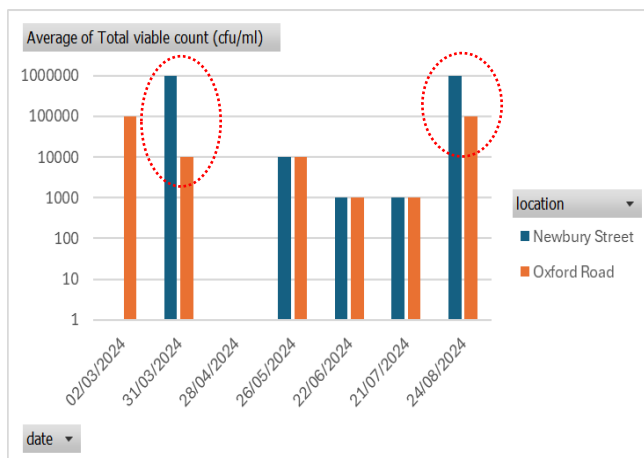
Recommendations on Environmental Standards River Basin Management (2015-21),  
Table 20: Fundamental intermittent standards for Un-ionised Ammonia)

24<sup>th</sup> August 2024

- Total Colony Forming Units (CFU) 10x higher downstream
- Total coliforms 100x higher downstream
- Phosphate 60% higher downstream (u/s site WFD equivalence of 'Poor', d/s site of 'Bad')
- Nitrite reading of 70ppb downstream, compared to 1ppb upstream.

There was one surprising finding on 28<sup>th</sup> April, with spikes in pollutants at the upstream sites relative to the downstream. The calculated concentration of **un-ionised ammonia was of moderate ecological hazard, capable of causing ecological harm to salmonid fish if maintained only for 1 day per year**, while phosphate relative to WFD standards were an estimated 'Poor'.

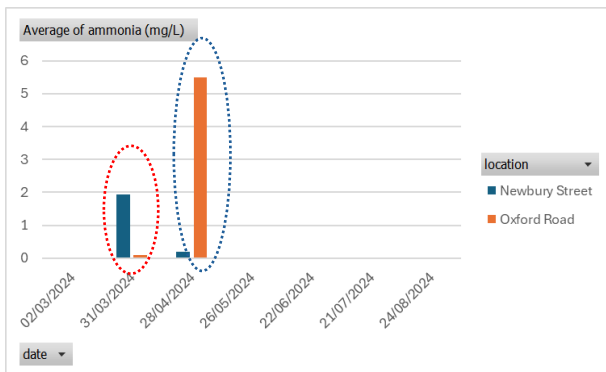
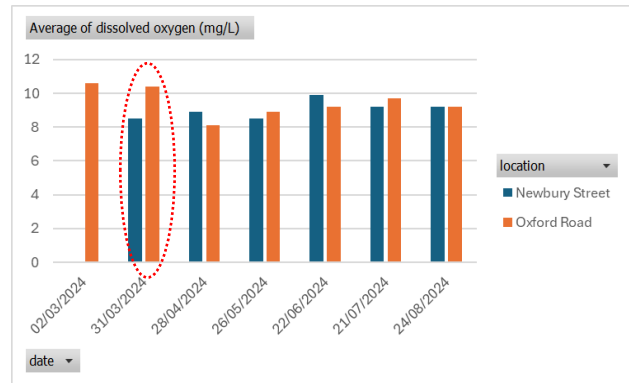
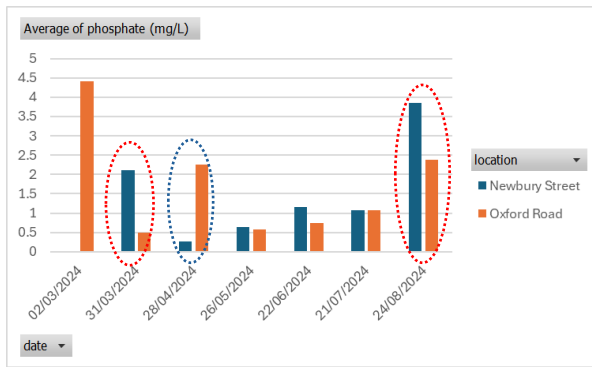
Bacteriology was not performed that day due to capacity constraints, and the incident may have been caused by localised discharge at this site, or a short pulse of pollution passing through the river. The 25 minutes between sampling upstream then downstream sites would have given long enough for pollutants to move from one site to the next, so this was likely a very short but concentrated pulse, capable of causing ecological damage but easy to overlook.



*Elevated bacterial concentrations were found at the downstream sampling site on these two occasions, up by between 10x and 100x*



Action for the River Kennet



*A spike in ammonia and phosphate accompanied by a drop in dissolved oxygen show pollution entering the Lambourn on the 31<sup>st</sup> March between the upstream and downstream sites*

Testing is continuing every month, and in November 2024 another volunteer has begun testing for Ammonia and Phosphate further downstream at Westbrook - by continuing to test for chemical and bacterial parameters side by side hope to localise pollution sources in the area. If you would like to help we are fundraising to purchase more equipment. We are also looking for volunteers to help with data analysis.

To donate please use this QR code or visit our website [www.riverkennet.org](http://www.riverkennet.org)

*Action for the River Kennet is a registered charity protecting the rivers in the Kennet and Pang catchments - if you would like to support our work please consider donating, or get in touch with [james@riverkennet.org](mailto:james@riverkennet.org) if you have any questions.*

