

Pix Piece  
#02  
May 2024

ResilienTogether is a Defra-funded project that aims to build a Smart Catchment to enhance flood resilience. Our Pix Pieces capture and share what we have learned about the Pix Brook catchment and its community.

## Pix Brook Water Quality: Ammonia

Sampling for ammonia in the Pix Brook, where does it come from and why is it important?

Figure 1 & 2. (Right) Water Quality Sampling in the Pix Brook



### ResilienTogether

ResilienTogether is creating a Smart Catchment, using innovative technologies and techniques to reduce flood risk, enhance the water environment and improve community resilience in the Pix Brook catchment.

ResilienTogether undertook water quality sampling for a nine month period, at eight sites along the Pix Brook, shown in Figure 3 (Right). Pix Piece #01 provides information on how we undertook our water quality sampling. This provided a baseline water quality for a range of parameters across a long stretch of the watercourse which allowed us to build up a picture of where different parameters may be an issue and why. This Pix Piece focuses on the ammonia level in the Pix Brook, what they mean and why ammonia levels are important.

### What is ammonia?

Ammonia is an inorganic chemical compound of nitrogen and hydrogen with the formula  $NH_3$ . Ammonia occurs naturally in rivers as it is primarily produced in animal urine and when organic matter decomposes. It is also discharged into rivers from sources such as treated sewage effluent and agricultural fertilisers. In higher quantities the presence of ammonia in river water is an indicator of pollution. Ammonia is harmful to fish as it affects hatching and growth rates and can poison fish.



Figure 3. Map of Pix Brook water sampling locations

### Ammonia in the Pix Brook

Figure 4 shows the amount of ammonia in the Pix Brook is broadly within the "high" and "good" classification in the upper Pix and at Church End. However, the Reservoir site, downstream (D/S) of the waste water treatment site and Heron Way site have a poor classification, as a result of elevated ammonia levels during the summer months. This may indicate either a source of ammonia entering the Pix between Wilbury Road and the Reservoir, or elevation of ammonia due to fish excretions within the Reservoir. The Industrial Outfall in Letchworth has ammonia levels that classify as "bad" and this could be because untreated wastewater and slurry runoff is entering the Pix at this point. Currently, this isn't increasing the concentration of ammonia in the Pix downstream.

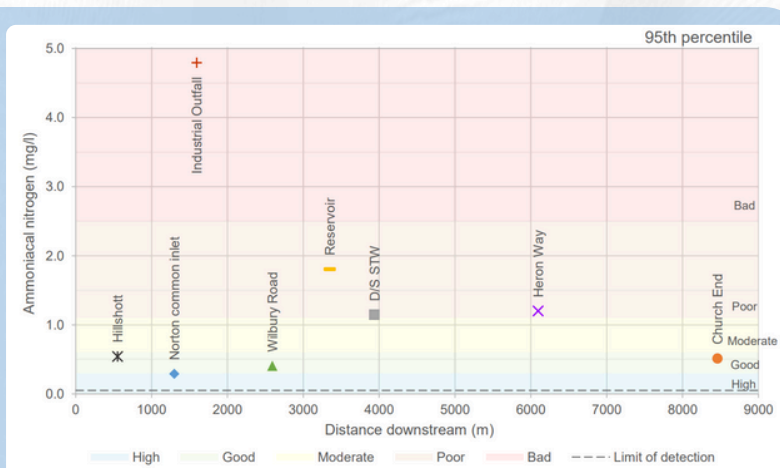


Figure 4. Ammoniacal nitrogen levels across the Pix Brook compared against Water Framework Directive acceptable levels

If you want to hear more, please contact [ResilienTogether.project@Centralbedfordshire.gov.uk](mailto:ResilienTogether.project@Centralbedfordshire.gov.uk) or visit our website <https://resilientogether.org.uk/>