

Written evidence from Colne Valley Regional Park

Submission Summary:

This is a submission to the call for evidence 338 – Water Quality in Rivers.

It addresses the questions asked:

1. What are the best indicators for river water quality that could be used as targets being developed under the Environment Bill?
2. How adequate are the monitoring and reporting requirements around water company discharges? How can technology improve and assist with transparency and enforcement?

Introduction:

The Colne Valley Regional Park is the first large taste of countryside to the west of London. Covering parts of Herts, Bucks, Berks, Surrey and London the Park is a mosaic of farmland, woodland, villages and water including over 200km of rivers & canals and over 70 lakes.

I work for Groundwork South who act as managing agent to the Colne Valley Regional Park.

I am a riverfly monitor and volunteer coordinator for the lower stretches of the river Colne, its tributaries and distributaries on behalf of the Chilterns Hertfordshire and Middlesex riverfly hub in Colne Valley Regional Park.

Water Quality Impacts:

Water quality is an important issue today which has impacts not only aquatic habitats but terrestrial habitats and species too. Water is a vital resource on which all life depends on. Both aquatic and terrestrial habitats and species require safe water to survive and thrive, thus water quality impacts the whole ecosystem, from aquatic plants to invertebrates to wildfowl and mammals. Despite this, English waterways, especially rivers have been in decline, suffering from significant pollution problems with only 16% of English rivers meeting good ecological status and no river met good chemical status under the Water Framework Directive in 2019. This paints a dire picture of our waterways and their future. (1)

Here in Colne Valley Regional Park we are lucky to have the Grand Union Canal, the River Colne with its five main distributaries, along with many ditch systems and streams. The water courses provide a refuge for wildlife as well as a source of recreation and wellbeing for local residents. However, our waterways are under threats from pollution, abstraction and physical modification such as weirs and much more. The River Colne has never met good status under the Water Framework Directive with chemical assessment failing on over 7 out of 11 of the assessments due to the presence of priority hazardous substances in the water. This highlights the urgent need for reform and change to restore safe water quality back to our rivers here in the Colne Valley Regional Park and across the UK. (2)

Water Quality Indicators: *What are the best indicators for river water quality that could be used as targets being developed under the Environment Bill?*

The Water Framework Directive was an EU initiative to monitor and assess the quality of our rivers. The assessment is separated into three categories for assessment: biological, physico-chemical and hydro morphological. These assessment results in a designation of the watercourse into five classes: high, good, moderate, poor or bad. The objective of the directive was for all European surface water

to reach “good ecological status” by 2015 with a maximum deadline of 2027. However, in 2019 only 16% of English rivers met good ecological status and no river met good chemical status under the Water Framework Directive. (1)

Here in the Colne Valley, the River Colne and its tributaries have struggled with negative impacts driven by the arrival and spread of non-native invasive species such as floating pennywort dominating the water ways, physical modification affecting fish passage and natural river flow. In addition, impacts from water companies via abstraction rates have impacted water flow as well as pollution and sewage discharges directly affecting water quality. This is especially bad as in Colne Valley there are 6 chalk streams which are an endangered habitat, there are less of them than giant pandas worldwide. These chalk streams are naturally nutrient rich, a constant temperature all year providing vital habitat for endangered species such as the brown trout. Abstraction results in low water flows which directly impacts on which species and survive in our rivers.

The Environment Agency has stated reasons for preventing the River Colne from reaching good status under the Water Framework Directive is due to changes in natural flow and water levels, pollution from waste water due to the water industry in the area as well as pollution from towns, cities and transport. (3) This gives a clear indication where we are failing our rivers and thus where work is needed to prevent this from occurring again.

The Water Framework Directive sets out a clear framework for assessing and reporting water quality using key indicators of river health including not only the ecological assessment of the biodiversity of species present and hydromorphology of the rivers but also looking at the chemical composition of the water. This framework has been used to assess our waterways since 2009 and is understood and implemented by water companies, government bodies and charities, local groups and members of the public. The continuation of this framework into the UK law post Brexit is the key for the future effective assessment of our waterways.

Current Water Quality Reporting Issues *How adequate are the monitoring and reporting requirements around water company discharges?*

Historically the EA had an extensive routine monitoring across all catchment however with budget cuts to the EA the number of testing locations and frequency of test has fallen by nearly 50% since 2013 subsequently resulting in patchwork of data both geographically and temporally. (4) This is further exasperated by a reduction in the EA’s environmental monitoring team who respond to reports of trigger breaches (when the water quality has dropped below acceptable ecological status) from riverfly reports exacerbating the lack of monitoring. Without regular scientific data we can’t effectively and sustainably monitor and conserve our waterways.

A major factor impacting water quality is the sewage discharge from combined sewer overflows (CSOs) which are storm pipes with two open topped pipes carrying rainwater and runoff in one channel and untreated sewage another. During high rainfall and flood events these open pipes overflow allowing raw sewage to discharge into waterways. This is only meant to occur in expectational circumstances however in 2019 6,508 inland CSOs released untreated sewage into rivers 204,134 times which resulted in 1.53m hours of raw sewage discharged across the nine English water companies. (5)

To make matters worse the water companies are now required to self-report to the EA. Water companies are required to collect their own data and inform EA about incidents affecting water quality however with storm overflow assessment framework companies are able to report one pollution incident even if the pollution continues for numerous days. Such as with the River Chess

which is a chalk stream, endangered habitat worldwide, which has experienced sewage releases every day except one in February 2021. (6) This framework is an inadequate representation of impact this pollution incident has on the water quality and on the river ecosystem. Furthermore the EA's budget cuts have led to a reduction in its team responding to pollution incidents (7) and there has been a drop in recent prosecutions by the EA and that is not being accompanied by a rise in civil sanctions for pollution incidents. (8) A major change is required here to incentivise water companies to improve their infrastructure and keep discharges to 'exceptional circumstances'.

The construction of HS2 runs directly through the Colne Valley Regional Park impacting its rivers and other key habitats. The construction of this railway line requires a vast amount of water which will be extracted from an already high-water stress area impacting its chalk streams, main rivers and the overall ecosystem. The drilling into the chalk aquifer (which accounts for 60% of our drinking/tap water in the area) will have implications on the water quality in Hertfordshire and Buckinghamshire. HS2 operations and will affect river's natural flow and levels of water and this has already been experienced in the Colne Valley. In addition, the tunnelling for the HS2 tunnel through the Chilterns will be discharging waste water from the tunnel drilling process into the River Colne. The Environment Agency permit for the discharge of this waste water requires no monitoring (despite capacity to do so) before it enters the River Colne risking the health of an already impacted river especially as it has failed under chemical analysis. (See pdf attachment)

With a reduction of visits to pollution incidents to double check the situation and reduction in follow up action taken against water companies there lacks an incentive to change their behaviour. The reduction of water quality status on UK rivers coupled with reduction of EA monitoring and the current self-reporting of water companies is not adequate for the protection of our water.

Monitoring and Reporting on Rivers: *How can technology improve and assist with transparency and enforcement?*

The Riverfly Partnership is a national collaboration of organisations and individuals working together to record the health of and protect our waterways as well as understanding and conservation of riverfly populations. The partnership delivers and supports volunteers to understand citizen science surveys as part of the Anglers' Riverfly Monitoring Initiative (ARMI). Volunteers visit the same river locations each month to survey the water quality by using a standard method to identify the abundance and groups of river invertebrates.

The eight species monitored which are sensitive to pollution and have different levels of tolerance indicate the water quality of a river by their presence, absence or abundance. Pollution incidents which may be missed by the human eye will be reflected in the populations of these target invertebrate species as they literally can't escape the pollution washing downstream only leaving the habitat upon becoming an adult and turning into the riverfly.

Serve pollution events are identified by the sudden and dramatic changes in recorded abundance of river flies whereas numerous minor pollution events show a steady decline in invertebrate numbers in the early stages of the pollution. The presence of invertebrates in our rivers is one of the best indicators of water quality, plus they are essential for functional ecosystem as they provide the bottom layer of the food chain feeding fish which subsequently feeds fish and waterfowl.

This survey work is completed by volunteers trained by certified tutors of the riverfly partnership reporting this finding to the riverfly partnership and Environment Agency. This is a key point of call to identify pollution events through trigger breaches which are reported to the EA Environmental Monitoring for a follow up investigation, an important example of partnership working. As this work

is completed by volunteers it is independent of private influences and objective thus providing a regular widespread data set of water quality in UK rivers across the country currently and historically.

Riverfly monitoring is an important method to identify pollution events however other methods are also important to use in conjunction with riverfly monitoring. The more eyes on the river and waterways the more data and information we have for an accurate representation of what is occurring in our waterways.

Outfall Monitoring is citizen science method for locating, assessing the impact of, and reporting on polluted surface water outfalls (PSWOs), one of the main sources of pollution to our rivers. Surface water outfalls are the discharge point of pipes that convey rainfall runoff into rivers and can be a source of chronic pollution especially when left unchecked. The method was produced by the Zoological Society of London, Environment Agency, Thames Water and other key stakeholders and is a good way to highlight how collaborative working with water companies, local environment groups and volunteers can work to resolve water quality issues together. These surveys are completed one a year to fall inline with Thame's Water financial and reporting timetables providing them with a good timeframe to investigate and resolve these issues. (9)

However, completing a outfall safari once every 5 year does not create reliable and regular data sets to assess water quality and monitoring sources of pollution thus more is needed to be done in the meantime to monitor pollution. Colne Valley Fisheries Consultative produced a pollution reporting application which enable members of the pollution to report any sighting which they spot while out and about on their water ways. (10) CVFC have now developing this further with the Angling Trust to create a reporting system UK wide where public members are report pollution incidents on their mobile or laptop/computer device. Not all pollution incidents can be seen with the naked eye but there are many indications which will be obvious such as sewage fungus visible to the naked eye and sewage smells, these can be identified and reported. This reporting app will be a great tool to report on pollution incidents as they occur and work well in combination with other monitoring techniques.

The riverfly monitoring is providing reliable accurate and regular information on the water quality of our rivers which is freely available to the public. This in combination with other monitoring techniques are important way to assess river water quality with key being information being freely available to the public providing transparency and quick action. However not everything can be monitored and completed by citizen science project thus enhancement of water industry and environment agency monitoring, and reporting is required. The information should be publicly available and make the industry accountable for pollution incidents

Conclusion:

There are massive pressures on rivers and waterways which are often forgotten about and unloved. However, with the arrival of the pandemic more of the country is visiting its local nature reserve and blue waterways exploring, valuing and understanding how important these areas are for wildlife and our human health and wellbeing.

Environmental Audit Committee (EAC) is launching an inquiry into water quality in rivers is a welcomed opportunity to review the negative impacts affecting water quality across the UK. As highlighted in this document the Water Framework Directive sets out a clear framework for assessing and reporting water quality using key indicators of river health. This framework has identified where issues have arisen from pollution discharges which have become a regular occurrence rather than under exceptional circumstances. The concoction of sewage agricultural and

industrial chemicals entering the water system coupled with the lack of adequate monitoring from water companies and the environment agency and enforcement action is putting the public health at risk.

With all English rivers having failed to meet quality tests for pollution, urgent reform of current monitoring and reporting systems is needed, coupled with improved partnership working through activities such as riverfly monitoring. This is necessary to protect our waterways and their ecosystems which we depend on for today and future generations.

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February 2021