



CLEAN RIVER KENT CAMPAIGN: Q&As

Last updated: 15 January 2024

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INTRODUCTION

This document is intended as a reference tool for CRKC volunteers to provide general background about the campaign, to unpick and demystify the jargon, science, and finances. It can also be used when preparing for a media interview or looking for position statements for documents/reports.

We will continue to update and re-issue this document with new, additional information. We also hope to collaborate with other river campaigners to create a larger, central resource in due course.

This is a CRKC 'working' document so if you have any comments, suggestions or additions please email: senstaveley@gmail.com.

1.0 Clean River Kent Campaign

1.1 Who are we?

The Clean River Kent Campaign (CRKC) is a coalition of communities living along the river Kent, established in Autumn 2021 by a group of individuals that love our local river.

The river Kent in Cumbria is a beautiful river, located in a world heritage site, and much loved by local people. The river Kent is designated as a Site of Special Scientific Interest (SSSI) at a national level and a Special Area of Conservation (SAC) at a European level because of the unique ecology including freshwater pearl mussels, white clawed crayfish, and bullhead.

CRKC is co-ordinated by a volunteer steering group, and we have over 150 volunteers on our mailing list.

The community engagement and level of concern about the river is heartening. Volunteers are helping our campaign in all sorts of ways, from organising crowd funders, to helping with data analysis, to donating professional photographs etc.

The campaign is underpinned by SENS – a volunteer based, constituted local group, based in Staveley.

For more information: <http://www.sustainablestaveley.org.uk/crkc/>

1.2 What are our aims?

Our aim is to make the river Kent clean for all types of water-based recreation and to protect the ecology and wildlife in the river by working with local communities to campaign for:

1. A significant reduction in the amount of effluent discharged into the river Kent. We will assess this through on-going testing of river water samples to provide robust evidence with which to challenge and hold to account United Utilities, their regulators (the Environment Agency and Ofwat) and DEFRA (the Department for Environment, Food and Rural Affairs).
2. Improvements to the wastewater treatment works on the river Kent:
 - To meet current needs and in addition

- To meet the needs of new housing and business development and
- To meet the additional pressures which will result from climate change.

3. The protection of the river's ecology and wildlife.

1.3 Who has funded us?

The campaign has received funding from a wide range of sources including District, Town and Parish Councils, local organisations (such as a Community Energy Company and a Folk Festival), grants, groups such as the Women's Institute and Rotary Club in return for guest speaker talks, as well as individual donations and a crowd funder.

1.4 What have we achieved?

Since 2022 we have:

- Built the campaign from a standing start – 2 Open Days and 2 Training Days.
- Created a website, a Facebook page, a monthly newsletter, regular updates and 3 films.
- Raised almost £20,000 through grants and a crowdfunding appeal.
- Worked with our local community – including local people, recreational groups, stakeholders, our MP and local Councils, and local Universities.
- Engaged the media – we have generated TV, radio and print coverage of the campaign.
- Recruited over 150 volunteers who have contributed to all aspects of the Campaign.
- Applied to DEFRA in October 2023 for [bathing water status for the river at Staveley](#). This was rejected on the basis that we do not have large enough numbers of people swimming in the river. We have challenged this decision and are considering reapplying in 2024.
- Published the CRKC [citizen science report](#) on the quality of the river water between Staveley and Sedgwick in December 2022. This showed, at all 6 locations where we tested, serious levels of pollution with faecal bacteria which are potentially harmful to health and to ecology, despite the river having national and international designations to protect its flora and fauna. These results have not been challenged either by United Utilities or by the Environment Agency the environmental regulator for the water industry.

1.5 Why didn't we get bathing water status at Staveley?

DEFRA gave no reason for turning down our application. Along with other groups we submitted Freedom of Information (FOI) requests to determine why we were refused.

As a result, we learned that our application did not meet the requirement of “large” numbers. DEFRA has now published new guidance, which states that applications must demonstrate a minimum of 100 swimmers within 4 hours on at least 2 days during the bathing season (15 May to 30 September), which would be extremely difficult on an upland river such as the Kent – it seems that the criteria, whilst suitable for coastal beaches and some rivers, would exclude most upland rivers.

Although we were unsuccessful, the process of completing the application provided a great opportunity to discuss the importance of the river with local people, and to raise awareness of the campaign.

CRKC will keep open the possibility of resubmission in the future, possibly as soon as 2024.

1.6 What is our current programme?

As we go into 2024 we are:

- Conducting further ‘citizen science’ projects to build our understanding of the river Kent, and use the results to underpin our campaigning:
 - We are underway with a twelve-month project to test for phosphates and nitrates at multiple points along the river Kent and its tributaries.
 - We have secured funding for a project to undertake genetic testing to further identify the source of faecal bacteria in the river – human or another animal.
 - And we have set up a “sickness survey” to identify episodes of illness associated with exposure to the water of the river Kent.
- Based on sound evidence and information, continuing our promotional and campaigning activities, in partnership with both local and national groups, including Surfers Against Sewage, the Angling Association, Wildfish and Ilkley Clean River Group.
- Challenging UU to provide significant improvements in their management of wastewater in our local area.
- And challenging the EA and Ofwat to establish and maintain effective regulation of the water industry so that rivers are clean, that wildlife is protected, and that people can enjoy water-based activities.
- Responding to the evolving context as UK water companies finally seem to recognise the need for improvement and the regulators begin to flex their muscles.

1.7 Who do we work with?

CRKC will work with any business, organisation, individual or group that shares the same aims and principles as our campaign. We do not work in partnership with those that have received

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direct or indirect financial support from a water company, to ensure there are no conflicts of interest.

2.0 What do we know about the river Kent?

2.1 What is the current status of the river?

The river Kent in Cumbria is a beautiful river, located in a world heritage site, and much loved by local people. The river Kent is designated as a Site of Special Scientific Interest (SSSI) at a national level and a Special Area of Conservation (SAC) at a European level because of the unique ecology including freshwater pearl mussels, white clawed crayfish, and bullhead (*for more information about SSSIs please see 2.7*).

SSSI rivers are the lifeblood of our ecosystems. The river Kent in Cumbria has a very fragile and unique ecosystem, located in a UNESCO world heritage site – the Lake District National Park. They are the last stronghold for many species and vital to preserving the biodiversity of our country. The river Kent therefore deserves enhanced protection and a high level of public awareness of the dangers it faces.

However, because of the citizen science monitoring, we have done, we know that there are many locations along the river where there are unacceptable levels of pollution (see 1.4).

Last year, a separate year-long monitoring programme, co-ordinated by Staveley Parish Council, observed discharges from the Staveley wastewater treatment works (WwTW), as seen from the opposite riverbank, from Feb 22 to Feb 23, during which 186 separate observations were made. The ‘so called’ storm overflow pipe, which discharges untreated or partially treated sewage into the river, either directly in storm conditions or more likely after limited settlement in the holding tanks, was recorded discharging on 53% of the visits. The survey concluded that the two contributory rivers (Kent and Gowan) only need to rise by 15cm (for the Kent) and 11cm (Gowan) for this to happen as a consistent pattern. This is a minor increase for these rivers and clearly demonstrates very little spare capacity at the site and confirms that it is operating effectively only in dry conditions.

Since then, the EA has published its latest annual report on sewage treatment nation-wide (for the year 2022). Alarmingly, this placed Staveley’s WwTW as the fourth worst discharger across the whole of the north-west with 301 discharges over 4064 hours during 2022. UU has agreed that the site has significant problems with an unacceptable discharge rate. More recently, following EA investigation, the site has been shown to be in breach of its permit. United Utilities has undertaken a limited, short-term fix to improve the efficiency of the WwTW, and plans further investment in the next 5-year plan (2025-30). The details are not yet available.

2.2 What factors are impacting the poor water quality in the river?

On 23 June 2023 in the “Your Water, Your Say” for Cumbria, UU verbally acknowledged that “it is unacceptable that there are so many releases from the storm overflow at Staveley WwTW”.

As a result of campaigning by volunteer residents, coordinated by the Parish Council, monitoring the WwTW discharges in 2022-23, and the Environment Agency publishing UU’s own figures on the numbers of discharges in 2022 (301 times over 4064 hours) the Environment Agency has now listed Staveley WwTW on the Water Industry National Environment Programme (WINEP) with a water quality driver that must be completed. Consequently, UU must reduce discharges from the WwTW to an average of no more than 10 per year by 2030. UU have confirmed that they intend to do this within their Asset Management Programme 2025-30 (AMP8).

Key point - UU has finally accepted the need for investment at the WwTW in AMP8 (after it was the 4th worst in the NW for discharging raw sewage in 2022, the first-year data were published). However, UU say “there is not a Capital Solution planned for the village” to deal with the sewage discharges on the streets of Staveley, that ultimately then also end up in the river, because “it needs to be prioritised with other hydraulic sewer issues across the northwest”. Instead, they are working with Westmorland & Furness Council (the Local Lead Flood Authority – LLFA) to identify the sources of ground and surface water that ends up in the combined sewer network. However, this is clean water, which could in theory safely enter the river directly without needing to put additional pressure on the WwTW.

Key point - No investment plan yet agreed for the inadequate combined sewerage system which leaves Staveley at continuing risk of sewage in village and further pollution of the river. Resolving this this requires action from both UU and partner agencies including LLFA. Like all water companies UU is loaded with debt and borrowing more each year to pay inflation-linked dividends to shareholders.

2.3 What information is available about the river?

There are many sets of data held by several different organisations. CRKC has developed a unique interactive map which brings the information together, and automatically updates:

<https://russ-hore.co.uk/crkc/>

There is a [1 page document](#) explaining how to use the map.

This visual representation of data at the appropriate locations along the river Kent serves several purposes:

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- To provide a geographical overview of what data exists and where.
- To assist planning, for instance, the siting of future monitoring locations
- To act as a library of information for reference
- To provide a visual representation of the data along the river for publicity purposes

To date this broadly contains information on:

- River / tributary locations
- River level gauges
- EA permits
- UU facilities
- Monitoring data collected to date along the length of the river Kent by CRKC / Uni of Cumbria
- Monitoring data being collected by other partners (with the help of CRKC volunteers)
- Pilot locations for 2023 monitoring (and monitoring results as they come in)
- Natural England data
- Kent (Westmorland) Angling Association data

The map is a live document – more monitoring/other data will be added as the project develops, and the data will be automatically updated.

2.4 Summary of key data

Below are links to some key sources of data which have been integrated into the river Kent interactive map:

[River basin management plans](#)

[Defra Data Services Platform](#)

[Live flood mapping](#)

[Open water quality archives](#)

[Catchment based approach data hub](#)

[Event Duration Monitoring – Storm overflows](#)

2.5 The Rights of the River

There is a global movement, started in New Zealand, to recognise the rights of rivers. Our volunteers [have produced a video](#) which reminds us all of these rights, illustrated with photographs and film of the river, and with an original soundtrack.

2.6 What has been done to restore the river in the community?

CRKC is continuing to campaign for action to stop the decline of our unique river.

In 2023 we are:

- Conducting further ‘citizen science’ projects to build our understanding of the river Kent, and use the results to underpin our campaigning:
 - We are underway with a project to test for phosphates and nitrates.
 - We are planning a joint project with a university partner to undertake genetic testing (to further identify the source of faecal bacteria in the river – is the source human or another animal?)
 - And we have set up a “sickness survey” to identify episodes of illness associated with exposure to the water of the river Kent.
 - The community is undertaking citizen science, many are involved with South Cumbria Rivers Trust riverfly programme, there are a lot of supporters engaged with the campaign.
 - South Cumbria Rivers Trust, Freshwater Biological Association, Environment Agency and Natural England have partnered up for a multi-million pound project on the River Kent, Special Area of Conservation (SAC). As part of the Natura 2000 network, the River Kent SAC is designated for its Ranunculion habitat, Freshwater pearl mussel, Bullhead and White-clawed crayfish. The five year EU part-funded LIFE R4ever Kent Project plans to **Restore** and **Revive** the River Kent SAC, so that species and habitats can **Recover**, thus making the designated features more **Resilient** to environmental pressures.

2.7 What is an SSSI, and why is it important?

Health warning: this section is generated by ChatGPT

SSSIs were created in legislation in 1949 - this is a quote from a [review by Natural England published in 2022](#): “The biological SSSI series is intended to form a national network of areas representing in total those parts of Great Britain in which the features of nature, and especially those of greatest value to wildlife conservation are most highly concentrated or of highest quality”.

To an extent they have worked, but success is patchy. The scale of the threats to biodiversity have exceeded anything anticipated eg changes in farming practice, and at the same time the level of public concern has grown. Monitoring needs to be effective and responsive. The climate emergency increases the importance of broadening the concept of SSSIs and thinking as much about networks as well as about individual locations.

"In terms of individual protected areas then there are four overarching management options:

Option 1 – “Do nothing”. Ecological change would be allowed to happen “naturally” irrespective of its cause, so in this case, climate induced change would be allowed to proceed without interference.

Option 2 – “Maintain the status quo”. Sites and other areas would be managed to maintain existing species, habitats, and the wider ecosystems present. Arguably this is close to current conservation practice, where considerable effort is deployed to maintain the status quo, based on the assumption that this state is desirable.

Option 3 – “Managed change”. Protected areas would be managed to create a new and more “desirable” mix of species, habitats, and ecosystems. Clearly some conservation practice already takes this approach, for example scrub clearance from heathland, with the underpinning philosophy that the new state for the protected areas is more desirable than at present.

Option 4 - “Ecological anticipation”. The scale and nature of climate change impacts on many species and habitats is uncertain, and whilst knowledge about the nature of change remains imperfect, and there will always be some risk in managing protected areas for specific outcomes, decisions will nonetheless need to be made soon to consider the creation of new protected areas (or at least buffer areas of sympathetically managed land and sea) in anticipation of colonisation by desirable species and habitats. Creation of these areas could be used to mitigate losses elsewhere in the network of protected areas.

Such ‘ecological anticipation’ is already recognised in some international legislation and in some domestic conservation practice."

SSSI: Pros and Cons

A Site of Special Scientific Interest (SSSI) is a designation used in the United Kingdom to recognize and protect areas of natural or geological importance. These sites are designated and managed by governmental conservation agencies such as Natural England in England, Natural Resources Body for Wales in Wales, Scottish Natural Heritage in Scotland, and the Department of Agriculture, Environment and Rural Affairs in Northern Ireland.

SSSIs are chosen based on their significant scientific, ecological, or geological features. These features might include rare species of plants or animals, unique geological formations, important habitats, or sites with historical or cultural significance. The designation serves to ensure that these areas are conserved and protected from activities that could harm their scientific value.

While the SSSI designation has its merits, it also has some shortcomings:

1. **Fragmentation:** SSSIs are often individual sites that can be isolated from larger ecological or geological systems. This can lead to a fragmented approach to conservation, which may not effectively address the overall health of an entire ecosystem.
2. **Lack of Connectivity:** Many ecological processes rely on connectivity between different habitats. SSSIs might not adequately address the need for corridors that allow species to move and interact between sites.
3. **Focus on Rarity:** While it's important to protect rare and unique features, focusing solely on rarity might neglect areas that are not rare but still contribute significantly to the overall biodiversity or ecological functioning of a region.
4. **Limited Legal Protection:** While SSSIs offer legal protection against certain harmful activities, they might not be able to fully prevent all forms of degradation. The designation might not provide enough regulatory power to stop development or activities that could negatively impact the site.
5. **Lack of Long-Term Funding:** SSSIs often face challenges in securing consistent and sufficient funding for management and monitoring. This can lead to neglect and inadequate protection over time.
6. **Lack of Public Awareness:** The public might not fully understand the significance of SSSIs or the importance of their conservation, leading to potential public indifference or opposition to conservation efforts.
7. **Changing Environments:** Climate change and other environmental factors can alter the conditions of SSSIs over time, potentially rendering their designated features less relevant or shifting the boundaries of what's considered ecologically important.
8. **Limited Representation:** SSSIs might not cover all types of ecosystems, habitats, or geological features equally, leading to gaps in protection for certain aspects of biodiversity or geological heritage.
9. **Bureaucratic Challenges:** The process of designating and managing SSSIs can involve bureaucratic hurdles, leading to delays in recognition and action.

To address these shortcomings, there's a growing emphasis on broader landscape-scale conservation approaches, ecosystem-based management, and public engagement in decision-making processes. These approaches aim to create more holistic and effective strategies for conserving natural and geological heritage.

River Kent and tributaries SSSI: Condition of features

Location	Date of report	Assessment	Assessment	Method
Dubbs Reservoir 101	16.09.1 1	Unfavourable	No change	
Dubbs Beck 102	24.03.2 1	Unfavourable	No change	Desk based
Borrans Reservoir 103	20.09.1 1	Unfavourable	No change	Not CSM assessment
Gowan 104	24.03.2 1	Unfavourable	No change	Desk based
River Kent in Kentmere 107	24.03.2 3	Unfavourable	No change	
Unnamed tributary 108	24.03.2 1	Unfavourable	No change	Desk based
Sprint 109	24.03.2 1	Unfavourable	No change	Desk based
Mint 110	24.03.2 1	Unfavourable	No change	Desk based
Grayrigg Beck 111	13.03.2 3	Unfavourable	No change	Desk based
Gowan-Mint confluence 112	24.03.2 1	Unfavourable	No change	Desk based
River Kent in Kendal 113	24.03.2 1	Unfavourable	No change	Desk based
Natland Mill Beck 114	24.03.2 1	Unfavourable	No change	Desk based
River Kent between Hawes Bridge and Sedgwick 115	24.03.2 1	Unfavourable	No change	Desk based
Upper Kent in Kentmere 116	27.03.2 3	Unfavourable	No change	

3.0 Water companies: what is the legal framework?

3.1 What was the position before 1989?

Before the privatization of the water industry in England, which occurred in 1989, the water sector was predominantly under public ownership and control. The water industry was managed by government agencies and local authorities, and the provision of water supply and wastewater services was seen as a public service responsibility.

3.2 What is the most significant legislation which established the privatised water companies and their regulators in England and Wales?

Legislation may be either an Act of Parliament or a Regulation agreed by Parliament. Before Brexit the UK was also bound by EU Directives.

ACTS OF PARLIAMENT

WATER ACT 1989

This was the Act of Parliament which privatised the organisations providing drinking water and dealing with sewage across England and Wales.

The privatised water companies are in effect monopoly providers for their area of the country. United Utilities supplies the North West – Cheshire, Cumbria, Greater Manchester, Lancashire, and Merseyside. They are private companies each with a Board of Directors and shareholders.

WATER RESOURCES ACT 1991

The Water Resources Act 1991 regulates water resources, water quality, pollution, and flood defences.

- It set out the functions of the National Rivers Authority which in 1996 was subsumed into the Environment Agency, an arm's length body of DEFRA. It introduced water quality classifications and objectives for the first time.
- Part II of the Act provides structure for the management of water resources. It sets out the main powers and duties of the water companies and defines the powers of the Water Services Regulation Authority (Ofwat), the financial regulator for the industry.
- Part III of the Act is entitled Control of Pollution of Water Resources with Chapter iii entitled Powers to prevent and control pollution. Much of this has been incorporated in the **Environmental Permitting (England and Wales) Regulations 2016**.
- Chapter iii also refers to the future development of a Code of Good Agricultural Practice (COGAP), agreed between DEFRA and the farming sector, to reduce ammonia emissions from manure and fertilisers; this was published in 2018.

WATER INDUSTRY ACT 1991

The Water Industry Act 1991 sets out the main powers and duties of the water and sewerage companies, as well as the regulatory powers of the Water Services Regulation Authority (Ofwat). Part IV relates to sewerage services and Chapter 4 specifically to Storm Overflows.

3.3 What has happened since then?

LEGISLATION

WATER ACT 2014

This built on the **WATER ACT 1989** and aimed to “modernise” the water sector, promote competition in the business sector, encourage innovation, and address challenges such as water scarcity, water quality, and flood risk. It attempted to improve environmental aspects of the water industry and enhanced the role of Ofwat to promote the efficient use of resources.

ENVIRONMENT ACT 2021

The Environment Act states its aim as to improve air and water quality, protect wildlife, increase recycling and reduce plastic waste. The Act is part of a new legal framework for environmental protection, given the UK no longer comes under EU law.

Environmental activists welcomed the Act, although identified key battlegrounds relating to discharges of raw sewage by water firms, air quality levels and safeguarding the independence of the Office for Environmental Protection, a new body which will police and enforce the law.

Part 5 entitled WATER has a subsection entitled Storm Overflows. Much of this section is derived from the Water Industry Act 1991. Additionally, the Environment Act refers to:

- Reporting on the elimination of discharges from storm overflows
- Reducing the adverse impacts of storm overflows
- Monitoring quality of water potentially affected by discharges.

This led to the Storm Overflows Discharge Reduction Plan published in 2022.

REGULATIONS

URBAN WASTEWATER TREATMENT (ENGLAND AND WALES) REGULATIONS 1994

These Regulations relate to the collection, treatment and discharge of urban wastewater, and the treatment and discharge of wastewater from certain industrial sectors.

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The Regulations describe appropriate treatment of urban wastewater entering collecting systems in respect of discharges to freshwaters and estuaries. These depend on the size of the “agglomeration” which is defined by a population equivalent (PE) ie <2,000; 2,000-9,999; 10,000-49,999; 50,000+. Staveley has a PE of <2,000. Kendal has a PE of 50,000+.

The Regulations also describe the requirements for collecting and analysing samples to ensure compliance with the Environmental Permit which is required for the discharge of treated sewage into either inland waterways or coastal waters (see next section).

ENVIRONMENTAL PERMITTING (ENGLAND AND WALES) REGULATIONS 2016

The Environmental Permitting Regulations provide a framework for applying for, receiving, varying, transferring and surrendering permits, along with compliance, enforcement and appeals arrangements.

The Environmental Permit regime regulates water discharge activities which are defined as discharges to freshwaters, coastal waters or relevant territorial waters of:

- Poisonous, noxious or polluting matter
- Waste matter
- Trade effluent or sewage effluent

Such a water discharge activity requires an environmental permit (see 3.3).

Under the Environmental Permitting (England and Wales) Regulations 2016 (see question 3.1), Environmental Permits are issued for water discharge activities. The permit defines the conditions that the water company have to meet for the activities.

For example, the permit relating to the Wastewater Treatment Works in Staveley and Kendal define the conditions that United Utilities has to meet for the Management, Operations, Emissions and Monitoring, and Information/Reporting for those works.

Draft Environmental Permitting (England and Wales) (Amendment) (England) Regulations 2023 was laid in Parliament in March 2023 and is due to come into force on 2 October 2023. Further details about this will follow.

EU FRAMEWORKS

WATER FRAMEWORK DIRECTIVE (2000/60/EC)

Although the UK has left the European Union, this directive (WFD) has been significant for shaping water management approaches. It aimed to achieve good ecological and chemical status of water bodies, focusing on integrated river basin management with targets for the ecological and chemical status of water bodies.

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The Directive aims for “**good status**” of all ground and surface water (rivers, lakes, transitional water and coastal waters) in the EU. All waterbodies have been assessed and are included within the local River Basin Management Plan (RBMP). The RBMP is reflected in the Catchment Area Based Approach which has been adopted across the North West, and the Kent Working Group on which CRKC has two places provides local oversight.

The “ecological” status of surface waters area assessed according to the following criteria:

- Biological quality – fish, benthic invertebrates, aquatic flora
- Hydromorphological quality e.g. river bank structure, continuity of the channel or substrate of the river bed
- Physico-chemical quality – e.g. temperature, oxygenation and nutrient conditions

All water bodies should have achieved “good” status by 2015; this deadline was extended to 2027 but the EA has confirmed that this delayed target will not be met. The EA “solution” is to make the assessments less stringent!

WFD data were collected annually until 2016. The last full assessment took place in 2019, when only 14% rivers were in “good ecological health” – but only 21% of these assessments have been published to date. The government has now determined that the next complete update won’t be until 2025.

The government has recently announced that it will be working with the EA, Natural England and others to propose an alternative water monitoring framework. This appears to be part of the move signalled at the 2023 Tory party conference to ‘double down on anti-green policies’, including a renewed emphasis on fossil fuels together with a set of car driver friendly policies. The EA denies that the WFD is going. Watch this space.

PLANS

STORM OVERFLOWS DISCHARGE REDUCTION PLAN 2022

In response to public anger about the impact of storm water overflows on the health of inland and coastal waters, in 2022 DEFRA consulted on and then published a plan to reduce these overflows -

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1101686/Storm_Overflows_Discharge_Reduction_Plan.pdf

This is the DEFRA excuse for storm overflows: “They are a result of Victorian sewer infrastructure, operating as safety valves built into the combined sewer system. They discharge excess sewage and rainwater to rivers, lakes, or the sea when the sewer system is under strain. This protects properties from flooding and prevents sewage backing up into streets and homes during heavy storm events.”

The water companies have belatedly agreed that this is unacceptable in the 21st century.

However, there has been criticism that the target dates in the Plan are much too far ahead, for example:

1 There must be no discharge close to high priority sites where there is a risk of ecological damage by 2045 and for all sites by 2050.

2 Storm overflows will not be permitted to discharge above an average of 10 rainfall events per year by 2050. Arguably this is a backward step, as the Environmental Permits already make it illegal to discharge from storm overflows unless the Flow to Full Treatment rate is exceeded,

3 There is also an implication that household bills may need to increase to achieve the targets when water companies are required by Ofwat to confirm every 5 years in their Asset Management Programme that they are meeting their statutory requirements i.e. not discharging illegally,

4 There are concerns that, because this issue has become high profile, the investment of water companies may be skewed to short term fixing of storm overflows rather than wiser longer term investment.

WATER INDUSTRY NATIONAL ENVIRONMENT PROGRAMME (WINEP) 2022

This methodology sets out in one place – for the first time – the overarching process for designing, developing, and delivering the water industry national environment programme (WINEP) for England. It has been developed jointly by the Environment Agency, DEFRA, and Ofwat.

The target audience is water industry practitioners in the Environment Agency, water companies and third parties interested in the co-design, co-delivery and or co-funding of projects to deliver environmental outcomes through WINEP actions.

The investment through the WINEP is substantial – £25 billion since 1989 – and between 2020 to 2025 it will account for approximately £5.2 billion of asset improvements, investigations, monitoring, and catchment interventions.

The primary role of the WINEP is to provide information to water companies on the actions they need to take to meet the environmental legislative requirements that apply to water companies in England.

3.4 Who are the regulators and what do they do?

There are three Regulators of the Water Industry:

DEFRA

DEFRA is the Department for Environment, Food and Rural Affairs. It is the government department that has overall responsibility for environmental protection, food production and standards, agriculture, fisheries, and rural communities in the United Kingdom.

DEFRA sets the policies and strategic framework for water companies, and oversees the regulation of the water industry.

Ofwat

Ofwat was set up in 1988 at the time of privatisation. It is responsible for the economic regulation of the privatised water and sewerage industry. Its main duties should be to protect consumers and to secure the long-term resilience of water supply and wastewater systems and to ensure that companies carry out their functions and are able to finance them.

In practice OFWAT has restricted itself to monitoring/setting the price that consumers are charged by Water Companies and ensuring that the water companies remain viable. They have not investigated the way companies are financed but this may well change in the future given recent events eg Thames Water financial problems.

On 2 October the water companies had to submit their draft business plans (PR24) to Ofwat. These will determine their Asset Management Programme between 2025 and 2030 (AMP8) ie how they invest in improving the infrastructure to deliver clean water and provide wastewater services. The business plans will be signed off in December 2024, and will shape the 5-year programme from 2025 to 2030.

ENVIRONMENT AGENCY (EA)

The EA is a “non-departmental public body” (NDPB), established in 1996 and sponsored by DEFRA. It is not a government department but operates at arm’s length from ministers. The EA advises ministers, and carries out executive and regulatory functions, including being the environmental regulator of the water industry.

It has responsibilities relating to the protection and enhancement of the environment in England. It is now the “Authority” for much of the water legislation and has the responsibility to ensure that Water Companies are operating legally and to the conditions laid down in their Permits (see section 3.3).

3.5 What are the rules about when a water company can discharge untreated sewage into a water course? When would it be illegal?

The Environmental Permit for a particular water discharge activity will define when untreated sewage can be discharged into a water course. For example, the Permit for Staveley Wastewater Treatment Works states that secondary treated (fully treated) sewage effluent, which has been treated as described in the Permit, can be discharged from a pipe known as Outlet 1. This is regarded as “clean” and “harmless” to ecology and humans, although research on the Wharfe indicates that it may still contain bacteria which are a risk to human health.

When, and only when, certain flow rates into the works are exceeded, then settled storm sewage, storm sewage and sewage in an emergency can be discharged from a pipe known as Outlet 2.

It is illegal:

- To operate a facility that includes a water discharge activity without an Environmental Permit
- To cause or knowingly permit a water discharge activity without an Environmental Permit
- To breach a condition of an Environmental Permit
- To fail to comply with a notice under the Environmental Permitting regime.
- To fail to provide information or to provide false information.

Thus, having an Environmental Permit and operating to its conditions are essential for a facility undertaking a water discharge activity i.e. a sewerage company such as UU, to be legal.

For both Staveley and Kendal Wastewater Treatment Works, their Environmental Permit defines:

- The inlet flow rate which needs to be exceeded for sewage to be diverted to the two storage tanks.
- Once they are full, because of the flow continuing to be greater than the limit, then the so called “settled storm sewage” can be discharged, via a mesh, to the river. If the inlet flow exceeds a higher limit, then sewage can be discharged, via a mesh, to the river for as long as the flow remains above the limit.

To discharge outside these limits is outside the Permit and therefore illegal.

There has been much discussion about exactly when it is legal for a water company to discharge partially or un-treated effluent. Our understanding is that:

There are 3 levels to this, and each is of the same importance:

Level 1 – Adherence to the permit. EA checks whether the water companies are adhering to their permits. It would seem that they have found so many breaches on dry days that they have so far not needed to define precisely what constitutes unusual weather conditions.

Level 2 – Ofwat has also now become involved in the adherence to permit and particularly with respect to meeting Flow to Full treatment requirements. Here they are looking at whether water companies have built, and maintained, sewerage systems that are sufficient to deal with the flow rates they regularly receive, as they are required to do so by the Urban Wastewater Treatment Regulations.

Level 3 – Adherence to the legal environmental requirements of government, Ofwat, EA and DEFRA. The Office for Environmental Protection (OEP) has stated that it believes that there may have been failures to comply with environmental law by Ofwat, EA and Secretary of State in the regulation of CSOs. The government is also being pursued by Wildfish via judicial review challenge, and others via the Public Trust doctrine.

3.6 Who determines how the water companies behave?

The water companies in England are private companies. United Utilities plc is one of three water companies listed on the London stock exchange (the other two are Severn Trent and Pennon which operates in Bristol and the South West). Listing on the London stock exchange provides an additional set of reporting requirements.

Each water company has a board of directors which is responsible for the conduct of the company.

The water companies have two regulators – the Environment Agency and Ofwat – with overall strategy and policy coming from DEFRA.

3.7 So how does this work in practice?

DEFRA (the Department for Environment, Food and Rural Affairs) provides strategic and policy direction.

The Environment Agency (EA) issues licences to water companies allowing them to collect water from reservoirs and rivers and once used, return it to the environment following treatment. They are known as the environmental regulator.

Ofwat is the economic regulator. It sets the price service and incentive package that each water company must deliver. This is set out in the Asset Management Plan, each of which runs for 5 years. AMP7 finishes in 2025; AMP8 will then run until 2030.

3.8 What are the problems with this?

The delivery of water and wastewater services are ultimately determined by political decision making in DEFRA, and therefore shaped by the overall policy of the current government towards environmental issues:

- The government sets the budget for DEFRA.
- DEFRA sets the budget for the EA which will ultimately determine the effectiveness of EA. Since 2010 it is estimated that the EA budget has been cut by over 50%, which will inevitably reduce their effectiveness as a regulator.
- DEFRA also determines the priorities for the EA – they responded to public and media outcry in 2022 with a review of storm overflows, but then set very low expectations of the water companies.

Direct regulation of the water and wastewater services is divided between two regulators – the EA and Ofwat:

- The EA website states that it works to **create better places for people and wildlife, and support sustainable development**. EA is an executive non-departmental public body, sponsored by DEFRA.
- The Ofwat website summarises its role as to **provide the very best service for customers, improve the environment and improve life through water, both now and in the future**. Ofwat can determine customer bills but has no say over dividends or interest payments on debt.

The performance of both organisations has been criticised:

- The EA eg failure to hold water companies to account for repeated pollution of rivers, lakes and coastal waters due to inadequate sewage systems, despite documentary evidence; a slow and partial response to incidents which are reported to them.
- Ofwat eg failing to require the necessary investment in wastewater services in the context of development and climate change, prioritising their duty to customers by holding bills at a low level.

3.9 Weren't there some recent announcements about all of this?

- In July 2023 the EA published its Annual Report on Water Company Environmental Performance - <https://www.gov.uk/government/news/annual-report-published-on-water-company-environmental-performance>:

United Utilities lost a star dropping from 4 stars to 3 stars, failing on the core metric of discharge permit compliance. This is despite constant reassurance to CRKC that they are “within permit”.

In launching this the Environment Agency Chair Alan Lovell said:

“While there have been some modest improvements, it is unacceptable to still be seeing this level of pollution. We have seen a distinct culture shift from the water industry in recent months and that is welcome – but that must translate to profound, long-term change.

The Environment Agency will play its part by transforming the way we regulate the sector.”

On the same day DEFRA announced that it would impose “unlimited civil sanctions” on water companies for environmental offences.

- In November 2021 the EA and Ofwat established the largest ever criminal investigation into potential widespread breaches of environmental permit conditions at wastewater treatment works by all water and sewerage companies- <https://www.gov.uk/government/collections/environment-agency-investigation-into-sewage-treatment-works>.

In June 2023 the EA provided a brief update: “Our initial assessment indicates that there may have been widespread and serious non-compliance of [environmental permit conditions](#) by all companies. We take the implications of this extremely seriously and are committed to understanding the scale and impact of any alleged offending.”

3.10 Where will this end? What are the alternatives?

- **At present water and wastewater services are fully privatised.** Private companies own and operate the entire water supply and sewage infrastructure. Water was included in the privatisation of utilities which was driven by the Thatcher government. The argument was that the water companies would be better able to access capital on the private market, rather than have to compete with other parts of the public sector, and would be able to invest to improve the ageing infrastructure and thus the service for customers.

Water is perhaps the most essential human need, and the UK is the only country to have privatised water and wastewater services.

Privatisation has resulted in reduced public control and accountability. Concerns have grown about the failure of the water companies to invest adequately in their infrastructure, resulting in inadequate water supplies during periods of drought, and repeated evidence of damage to the environment and risks to public health due to pollution of our waters. At the same time, generous bonuses have been paid to

shareholders, and executive directors have been rewarded with generous salaries, bonuses and share issues. Every water company has had to build up their debts in order to fund this, rather than improving the infrastructure.

- It is no surprise that there is an active discussion about a better model for our water and wastewater companies. These are three of the proposals being considered:
 - **Retain the private water companies but strengthen regulation** – at present this is via the EA and Ofwat. Both regulators have been criticised, as the problems with the water companies have become more evident.

A well-functioning regulatory framework could mitigate some of the current problems, although there is doubt about whether either the EA or Ofwat as currently constituted (and in the case of the EA funded) would be capable of providing this. There are also potential problems in having two regulators with roles which may pull the water companies in different directions.

- Return the water industry to **full public ownership**. Water and wastewater services would be owned and operated by government entities (national or regional) or publicly owned corporations.

This would ensure that water would be treated as a public service comparable to health and education rather than a profit-driven venture. However, there are concerns about the costs of taking the whole water industry into public ownership at the same time.

- A third option would be **special administration**. This is a legal process primarily designed for handling the failure of certain financial entities, such as banks and insurers. It aims to ensure the orderly resolution of these institutions while protecting the interests of stakeholders and the public.

The case could be made that one or more of the water companies is not acting in the public interest, and therefore government intervention is required to protect the public interest.

Rather than the big bang of full public ownership, the government intervention would be specific to one or more companies, with the aim of ensuring that the water and wastewater service is restored to a sound basis at which point alternative arrangements would be made. A similar example is the transition from Railtrack to Network Rail via special administration in 2001/02.

4.0 Water companies: how do they work?

4.1 What is the difference between an operating company and a holding company?

- United Utilities Group plc is the holding company, which owns 100% United Companies Water Limited.
- UU Group plc has a board of directors (executives and non-executives) and is listed on the London stock exchange. It publishes an annual report - <https://www.unitedutilities.com/corporate/investors/Results-and-presentations/annual-reports/> The AGM is held in late July.
- The company serves 7.3m customers in the North West.

4.2 How do water companies generate finance?

- United Utilities Group plc raises funds known as equity through shares.
- At present only 39% of UU Group plc shares are held by UK investors. The remainder are held by international investors eg Lazard Asset Management, The Vanguard Group and BlackRock. This list is not published in the annual report, available in the Financial Times.
- Funds are also raised through debt, more problematic since the recent increases in interest rates.
- The debt is required to fund dividend payments, to service the existing debt interest and to reward senior executives.

4.3 Why are there concerns about water company dividends? Who gets them?

- Public anger has focused on dividends at a time when water company performance is so poor. In the NW the main problem is wastewater management although in the SE there is also increasing criticism of the extent of continuing leaks when water shortages are becoming more common.
- Dividends are paid in two ways:
 - To shareholders – these dividends are declared in the annual report (£310m in 2022/23)
 - “Internally” – these are retained within UU Group plc and are not publicly declared. This has the effect of apparently reducing the number of dividends paid,
- The UU Group plc policy on dividends is unusual. Dividends would usually be linked to performance and operating profit. However, UU Group plc have an unusual dividend policy which is to target “an annual growth rate of inflation (the Consumer

Price Index with Housing Costs) through to 2025 dividends”. This is presumably designed to encourage investors by offering inflation-proof dividends.

4.4 How much debt does United Utilities Group plc hold? How do they make their interest payments?

- In their 2022/23 annual report the UU Group plc reported net debt of £8.2bn, an increase year on year. Around half of this is at fixed rate, half linked to inflation.
- At the same time net assets and shareholders’ equity have decreased to £2.5bn.
- This indicates that shareholders are risking less whilst the company is borrowing more. The inflation-proof dividends may be a way of reassuring shareholders.
- In total the water companies hold over £60 billion debt.

4.6 How is water company investment in services for their customers funded?

Water company investment in infrastructure depends on payments by customers.

- This totalled £676m in 2022/23.

4.7 What about our bills? Will they have to go up?

The water companies are talking as though an increase in bills between now and 2030 is a given.

- UU Group plc has quoted a potential increase from £417 to £512 (plus inflation) by 2030.

5.0 Pollution – what are the problems?

5.1 What are the main pollutants in inland waterways?

Pollution in inland waterways/ivers can be caused by many different materials. A good overview is provided in “River basin management plans, updated 2022: challenges for the water environment, EA, 22 December 2022” –

<https://www.gov.uk/government/publications/river-basin-management-plans-updated-2022-challenges-for-the-water-environment/river-basin-management-plans-updated-2022-challenges-for-the-water-environment>.

This includes the following sections, each with a series of links providing further information:

- Climate emergency
- Biodiversity crisis
- Physical modifications
- Pollution from agriculture and rural areas
- Pollution from water industry waste water
- Invasive non-native species
- Pollution from towns, cities and transport
- Changes to water levels and flows
- Chemicals in the water environment
- Pollution from abandoned mines
- Plastics pollution

The main pollutants are identified as:

- Phosphates/Phosphorous
- Nitrates/Nitrogen
- Fine sediment
- Metals
- Polycyclic aromatic hydrocarbons
- Persistent organic pollutants
- Pesticides, biocides and veterinary medicines
- Pharmaceuticals
- Endocrine disrupting compounds
- Plastics including microplastics

5.2 What is eutrophication?

Eutrophication occurs where there is too much nutrient (mainly phosphate and nitrate) in rivers, causing excessive growth of algae and plants. This in turn results in the reduction in available oxygen and the loss of native plants and animals. This can be compounded by the reduction in photosynthesis (plants making dissolved oxygen) if algae block the sunlight entering the water.

Eutrophication also increases the cost of drinking water abstraction and treatment, and adversely affects angling, water sports and other recreational activities.

The EU developed a programme called nutrient neutrality. This identifies waterways at risk of eutrophication and seeks to protect them. For example, if a development is proposed which will increase the nutrient load on the river, mitigation will have to be put in place higher up the river. The rivers Gowan and Kent are both identified for protection.

The government recently sought to abandon Nutrient Neutrality, in order to make it easier for developers to build. However, this move was opposed by the House of Lords, and it seems that nutrient neutrality has been reinstated, although further announcements are threatened.

5.3 Which pollutants are of most concern in the river Kent?

Phosphates/Phosphorus/P

Phosphates/phosphorus/P are the main cause, in freshwater, of eutrophication. P concentrations in our rivers increased significantly between 1950 and the 1980s due to the introduction of P-based detergents, population growth, and the growing use of artificial P fertilisers.

Standards for phosphorus in UK rivers and lakes were introduced under the Water Environment (Water Framework Directive) Regulations (WFDR) in 2009 and the river standards were updated in 2015. 55% of assessed river water bodies and 75% of assessed lake water bodies in England fail the current P standards for good ecological status. In fact, P is the most common cause of water quality failures under the WFDR in England - the number one reason for water bodies not achieving good ecological status.

The main sources of P in rivers and lakes are:

- Sewage effluent (60-70% total for England in 2020)
- Losses from agricultural land (25% total for England in 2020)

- Poorly maintained septic tanks and package sewage treatment plants are small sources nationally but likely to be of concern locally
- Food waste, food and drink additives
- P dosing of drinking waters – this is done to mitigate the health risks of the lead pipes still present in many old properties – since 1970 lead pipes are not permitted in new builds, but it is unknown how many remain in older buildings
- Leaking water mains are a newly identified P source entering ground and surface waters.

Nitrates/Nitrogen/N

Nitrates/Nitrogen/N contribute to freshwater eutrophication particularly in lakes. Under the Nitrate Pollution Prevention Regulations, some affected lakes in England already have control measures to reduce N pollution caused by agriculture.

The EA has estimated the national loading to rivers from diffuse sources (predominantly agriculture) to be 75%, with point sources (predominantly sewage treatment works) contributing 25%.

Wastewater treatment works discharge treated, partially treated and untreated sewage directly into rivers; sewage also enters the rivers through storm water overflows and leaks. In rural areas without mains sewage, poorly maintained septic tanks and package treatment plants may also be significant.

The nitrogen from agriculture comes from inorganic fertilisers, compost, manure, slurry and other materials spread on land. Farm animals excrete ammonia in their urine and faeces.

The main sources of emissions of nitrogen oxides (NO_x), and ammonia are power generation, refineries, chemicals/metals industry, agriculture, road transport and households.

Nitrogen in the form of ammonia is hazardous for fish and macroinvertebrates. Ammonia is a decay product of nitrogenous organic wastes and of the breakdown of animal and vegetable wastes. The “nitrification of ammonia” (the conversion of ammonia to nitrites and nitrates) in the aquatic environment contributes to reducing the dissolved oxygen (DO) in rivers which can cause stress and lethal effects on aquatic life.

Finally, high concentrations of nitrates in drinking water would be a risk to human health.

Faecal contamination

If river water is polluted with intestinal bacteria (*E. coli* and *Enterococci* spp), this poses a direct hazard to human health. The risks are increased if contaminated water or shellfish are ingested. Faecal bacteria can also pose a risk to dogs and to wildlife.

The three most important sources are agricultural diffuse pollution, sewage related pollution and urban diffuse pollution (including contamination from dogs and birds). The relative contribution from these sources will vary between sites depending on the nature of the catchment and its land use. Sites may be affected by more than one source.

The EA does not monitor for faecal bacteria unless a stretch of water has been designated a bathing water site or for shellfish. Therefore, it is difficult to know the extent of this cause of pollution. However, campaign groups have observed untreated sewage being dumped at wastewater treatment works and at storm water overflows. Monitoring data published by the EA for 2022 show the frequency with which this happens across the country. At Staveley, for example, this occurred over 200 times during the year, and around 10 times per annum sewage backs up into the village streets.

Water industry waste

In addition to the intestinal bacteria contained in wastewater, it is also a source of other pollutants including nutrients (P and N, see above), chemicals and plastics. There is growing evidence that they may be present in treated effluent as well as that which is untreated or only partially treated.

Fine sediment

Sediment is an important part of a healthy functioning aquatic environment. However, excess sediment generated by human pressures can cause problems, ranging from damage to the health of aquatic ecosystems, to poor quality water for abstraction in drinking water protected areas.

Sediment can act as both source and ‘transport’, via fine grained particles, of contaminants such as chemicals, nutrients and faecal indicator organisms. The amount of sediment delivered from the catchment to the water body, and the ability of the water body to move sediment along are crucial factors in determining how sediment is retained (bed siltation), and how much is carried in suspension and for how long. The effects of siltation can impact rivers by clogging up the spaces between gravels in riverbeds. This prevents or reduces fish spawning and egg survival especially for sensitive species such as salmon and trout. Fine sediment that is not transported during high flows may also have a significant effect on flood risk.

In England the most cited reasons for sediment from agricultural and rural land management sources were:

- Poor soil management (40%)
- Riparian/in-river activities, including bankside erosion (14%)
- Livestock (13%)

Metals

Abandoned metal mines are a significant source of metals to surface waters, and can release: cadmium, zinc, iron, lead, copper, manganese, nickel and arsenic.

Of these: zinc, cadmium, lead and copper most commonly have an impact on aquatic organisms.

Additionally, mercury is a highly toxic, naturally occurring metallic element and is a ubiquitous, persistent, bio-accumulative, toxic substance. Nowadays uses of mercury are severely restricted in favour of safer alternatives. However, historically, mercury has had many industrial and domestic uses. For example, a major use of mercury has been in mercury amalgam dental fillings, although this is now declining. Liquid mercury has been used for many years in measuring devices such as thermometers, barometers and blood pressure monitors.

Mercury and its compounds are classed as Water Framework Directive priority hazardous substances under the Environmental Quality Standards Directive because they readily bioaccumulate, are highly toxic and persistent. Mercury is found in measurable concentrations in fish and mussels at all locations that have been sampled by the EA in their biota (plants and animals at a location) monitoring programme.

Polycyclic Aromatic Hydrocarbons (PAHs)

Most PAHs are unintentional by-products from combustion. Industrial sources, including the production of steel, iron and aluminium, rubber tyre production and road paving. Controlling environmental releases of PAHs is difficult because of the very high number of diffuse sources producing them.

They persist in the environment and accumulate in the sediment as well as within biota and food chains. They have potential adverse effects on aquatic life and humans, including carcinogenic properties.

A number of the PAHs that are regulated are designated “Persistent Organic Pollutants” (POPs) also known as “forever chemicals”. Once released into the environment they remain intact for many years and become widely distributed around the globe, including in areas where POPs have never been used. They bioaccumulate through the food chain and are toxic to humans and wildlife. Polyfluorinated alkyl compounds, often referred to forever chemicals, are a category of POPs. They are usually associated with waterproofing on clothing or non-stick coatings on cooking vessels.

Pesticides, biocides and veterinary medicines

Chemicals entering the environment from rural areas arise mainly from pesticide and veterinary medicine use, diffuse pollution and from chemicals in materials spread to land. Additionally, in rural areas not served by a public sewerage network, private domestic sewage treatment systems (package treatment plants and septic tanks), can be a source of chemicals. Once in the environment, chemicals can also bind to sediment particles and enter water through soil erosion, compaction and run off.

Water bodies can be vulnerable to pesticide pollution. Withdrawing high risk chemicals from certain uses can be the most effective way of reducing their presence in the environment, provided this can be justified on environmental and economic grounds. However, environmental recovery is slower for those pesticides that persist in the environment for a number of years. Some substances also have multiple uses such as veterinary medicines and as biocides for professional or home use. The significance of these uses and pathways to the environment may mean that restricting agricultural pesticide use in isolation will not return the environment to the desired levels.

Pesticide active ingredients are reviewed by the Health and Safety Executive. This can result in the removal from the market of older more hazardous active ingredients leading to the new pesticides of lower risk to the environment. The illegal use of pesticides following a ban is rare.

Some substances can bind to sediments, remaining there for many years with a direct impact on sediment-dwelling organisms. These chemicals can be released from sediments when it is disturbed by heavy storms, coastal erosion or dredging. Even if the original source of the chemicals is controlled, there is still long-term exposure to chemicals as they are released from sediments.

Pharmaceuticals and anti-microbial resistance

Low levels of pharmaceuticals in the environment are under increasing scrutiny because of their potential role in anti-microbial resistance (AMR) and the effects of long-term exposure to pharmaceuticals on wildlife.

The water industry has previously investigated about twenty pharmaceuticals, including antibiotics, analgesics, anti-hypertensives and antidepressants. The concentrations of these substances were determined over the course of a year in wastewater treatment works' influent and effluent. This helped provide an indication of the effectiveness of treatment processes and the possible risks posed by discharges. Most substances studied are removed to a high degree in the wastewater treatment. Removal through treatment, though, was less effective for some.

Endocrine disrupting compounds

Certain natural and synthetic chemicals can interfere with the normal functioning of endocrine systems of both humans and animals. The strongest evidence for effects of such endocrine disrupting chemicals in wildlife is widespread feminisation of male fish present in lowland rivers, and some estuaries, reported in fish populations globally.

Studies in UK rivers have shown widespread feminisation of roach associated with exposures to wastewater treatment works effluents. The main chemicals associated with these effects are natural and synthetic oestrogens originating from human use. Oestrogen mimicking alkylphenols, derived from the breakdown of industrial detergents, are also associated with the effects.

The severity of feminisation appeared to depend on the relative amount of wastewater treatment works effluent in the rivers in which the fish resided, as well as the size and age of the fish. Moderately intersex fish had reduced fertility, but more recent studies have not found evidence for a reduced breeding population size in effluent contaminated stretches of a few selected English rivers.

Other Chemicals and Plastics

A vast array of substances and chemicals enter sewage systems through homes, businesses and road runoff. They enter the water environment by passing through and from wastewater treatment works and from surface water outlets. Furthermore, if chemicals are not broken down, they are likely to be present in sewage sludge.

Microplastics are also contaminating food chains.

While a range of organic chemicals consistently meet the water EQSs, there are a number of other chemicals that have failed to meet the water EQSs in a small number of water bodies in recent years. In the 2015 river basin management plan, EA reported fewer than 3% of surface water bodies failed chemical status.

6.0 What is the impact of farming and land management?

Health warning: this section is generated by ChatGPT

6.1 How does farming practice contribute to river pollution?

Chemicals such as nitrates and phosphates (known as nutrients) are a significant cause of inland waterway pollution. Whilst they are essential for the growth of plants and invertebrates, too much can destroy an ecosystem, for example by causing an overgrowth of algae which then undermines a balanced ecology.

6.2 Where do nitrates and phosphates come from in farming?

Nitrates are included in the fertilisers which farmers use to increase the yield of their crops. Nitrates also come from animal waste as do phosphates. They can enter the river accidentally if the farm does not have adequate and secure slurry stores, or after slurry spreading on crops or grassland. As fertilisers become more expensive, farmers are turning to the use of slurry rather than regarding it as a waste product. Fertiliser use is part of the intensification of farming, as farmers try to increase yield.

6.3 How can farmers reduce the risk of fertilisers and/or slurry ending up in the river?

Slurry should be stored securely in a slurry tank with a lid to prevent water entering and increasing the volume. Fertilisers and slurry should be spread only in the spring and summer when the crops and grassland can take them up.

6.4 I've heard that improving farming practice can be expensive. Can farmers get advice and support from the government?

Natural England employs advisors who work with farmers to consider how their farming practice can be improved and what financial support is available to enable them to make changes. The numbers of advisors have recently increased, although there are arguments that more are still needed.

Natural England works with the Rivers Trust nationally as well as with local rivers trusts - for the river Kent this is the South Cumbria Rivers Trust (SCRT).

The EU provided farmers with support through the CAP (Common Agricultural Programme). This was criticised as it was based on acreage rather than how a farm was managed. There

were no incentives for sustainable farming, no encouragement to farmers to farm in a way which protects the environment.

The CAP is now gradually reducing and is being replaced by new subsidies which will reward farmers for protecting water, air and soil as well as restoring habitats and promoting biodiversity.

6.5 What are the new sources of financial support?

Catchment Sensitive Farming (CSF) was introduced 15 years ago. The annual budget is now £30m and any farmer can access this.

6.6 What is Countryside Stewardship?

This is developing as a 3 Tier scheme with increasing levels of financial support – Basic, Mid-Tier and Higher Tier. Farmers receive a variety of grants including capital grants.

6.7 I've also heard of ELMS – what is this?

ELMS – the Environmental Land Management Scheme – is a new scheme which rewards environmental land management. It includes:

- Sustainable Farming Incentive
- Local Nature Recovery
- Landscape Recovery

This is still in its early stages, with pilot projects being evaluated ahead of full roll out in 2024.

6.8 Isn't this all much too complicated?

It is complicated, partly because the system of financial support is in transition. Some farmers are choosing to retire, others are finding it difficult to engage with this plethora of schemes. Others are returning to more intensive farming methods, not at all the aim of ELMS.

6.9 There seem to be new concerns about food security – what does this mean?

The war in Ukraine highlighted the dependency of the UK (and many other countries) on food imports. This has stimulated a debate about how to best balance the need for the UK to be food-secure with the crucial importance of farming sustainably.

Draft v.20 dated 15 January 2024 – to be kept under review
This is a live document and is edited as new information becomes available.
We welcome your comments – please send to sheila.adam1@gmail.com

7.0 What are our campaign messages?

7.1 Key messages

- River Kent is an SSSI, an SAC, and flows through the LDNP, a World Heritage Site.
- River Kent is the base for a range of water-based leisure pursuits including swimming, kayaking and angling.
- The Kent valley is also a place to walk and cycle, and to enjoy the natural world.
- All of this is at risk if UU continue to dump sewage (treated as well as raw) in the river.
- Water is the most basic human right.
- UU should be open about the problems they face, their priorities, and their proposals for investment, and discuss these openly with local communities.
- Investment in infrastructure must be prioritised over dividends and bonuses.
- Citizens have paid their bills for water and sewerage in good faith – they should not have to pay again because the water companies have failed to manage their money wisely in the interests of their customers.

8.0 Difficult Questions

8.1 Is it safe for my child to swim in the river Kent?

- We know from our water quality study in 2022 that the river Kent has high levels of faecal bacteria, both E. coli and Enterococcus. The levels at all 6 locations from Staveley to Sedgwick were such that, had the EA done the testing, they would have classed the water quality as Poor.
- We would advise that anyone swimming downstream from a WWTW should be careful e.g. at sites such as Beckmickle Ing Wood.
- We would also advise that water quality problems are likely to be greater after heavy or persistent rainfall when the river is full.
- And you might wish to minimise the contact between face and water, and to wash the face with clean water after swimming.
- If your child shows any symptoms after swimming, you can contact your GP or dial 111. And please complete our survey - [return this form](#) – form available on the CRKC website

8.2 Is it inevitable that my water bill will have to go up if services are to improve?

This is what the water companies are currently assuming. The UU PR24 draft business plan, recently submitted to Ofwat, anticipate an increase year on year to 2030. United Utilities is proposing an increase from £443 in 2024/25 to £553 in 2030. Similar increases are proposed by other water companies.

The recent Wildfish Judicial Review has challenged the increases. We have already paid the water companies to treat our sewage and maintain our sewage infrastructure. That's what they told Ofwat they were doing. We didn't pay our bills for UU to pollute our rivers while giving our money to rich shareholders.

8.3 What will happen to our pension funds if the water companies go broke?

In 2019 Water UK (the water companies 'national body' – so it is not disinterested) estimated that 67 UK pension funds have investments in the water companies. They used this statistic to challenge the then enthusiasm of the public for water companies to be nationalised.

The options of the status quo, nationalisation and special administration are summarised at 3.10. Any decision about the future of the water industry would need to take full account of the impact on pension funds.

8.4 What do United Utilities tell us?

The UU draft business plan: 2025-30 was published on 2 October 2023 - Ofwat will comment in mid-2024 - the final plan will be published in December 2024 to be implemented from April 2025.

UU has also published an outline long term plan to 2050.

This is a summary of the information provided at a United Utilities zoom meeting held on 10 November 2023 as part of their “Your Water, Your Say” programme.

About UU

- 7m customers (will increase to 8m by 2035)
- 200,000 business customers
- 86 water treatment works
- 43,000 km water pipes
- 86 wastewater treatment works
- 79,000 km wastewater pipes
- 2,200 storm overflows
- Listed on the London Stock Exchange
- Owned by thousands of shareholders - individuals, pension funds and employees
- Shareholders enable UU to invest now, pay back later, like a mortgage
- UU has invested £20bn since privatisation (in 1993)

- UU has to deal with:
 - The heaviest rainfall - 28% more than any other water company
 - 54% sewer system is combined ie clean water (rainfall and surface water) flows unnecessarily into the sewer system and through the wastewater treatment works
 - It will take "intensive work to replumb the NW".

`The draft business plan 2025-2030 has 5 key aims

- Provide clean drinking water
- Protect the environment
- Reduce leakage from pipes
- Support vulnerable customers
- Provide additional good jobs across the NW

Headlines from the draft plan - presented by UU as a "step change"

- £13.7bn investment - "the largest for 100 years"
- 7-fold investment in the environment - inc improving 500 km rivers
- 2m people will have more secure water supplies, less risk of hosepipe bans etc
- 60% reduction in sewage discharges between 2020 and 2030 - worked with EA to optimise impact on the environment
- 7,000 new jobs
- £525m support for an additional 330,000 vulnerable customers, aiming to provide help before customers are in debt
- £247m in rainfall management schemes in Greater Manchester and Merseyside
- Bills will increase by £22 pa + inflation to 2030

The problems as summarised by UU

- UU has worst number of sewage discharges from its 2,200 storm overflows of any water company:
 - In 2020: average 50 pa per storm overflow
 - In 2023: average 30 pa per storm overflow
 - By 2030: aiming for an average 10 pa per storm overflow

This will require major replumbing, rate limited by the need to keep systems running.

- UU has strengthened exec bonus policy to ensure that members of the exec team are remunerated on performance.
- 1.4m customers will receive "better quality water, less discoloured" with new pipes from Lake Vyrnwy in North Wales and a new aqueduct - this will also mean the water can "be moved around".
- Re retrofitting homes to use "grey water" for flushing toilets – focus on new homes, with mention of an integrated plan for retrofitting in Greater Manchester.
- Desalination is described as "very expensive", but there are plans for additional bore holes in Cheshire/Pennines - focus on Cheshire because of population growth.
- Levels of chlorine in drinking water - this is added at the final stage to destroy bacteria - "the level is monitored 24/7".
- Fluoride is present in most NW water although some added in Cumbria. Adding fluoride or not is a local authority not a UU decision.
- The storm overflow investment programme will be published by the end of the year.
- Discussion of water meters and smart water meters - UU keen to encourage, including commitment to charge no more for the first 2 years after meter installed, customer can then decide whether to continue with a meter.
- The plan is to think differently about Windermere, and UU have looked at both Lake Annecy in France and have also explored solutions in Canada. There are 200 discharge points into Lake Windermere, 43 belong to UU. One option is to develop a

67 km pipeline to collect everything, bypassing the current system, with a new WwTW at Grange. This would be "massive" and would require "a coalition of the willing". Discussions are scheduled for the new year.

- References to "waiting for legislation" were challenged - why not do the right thing now? There have been interim improvements between 2020-23, building towards a "programme for resilience". Discussion of the limitations imposed by the need to keep systems running, so can't just close things down to build better.
- UU plans the largest storm overflow programme and will soon be more transparent as it begins to publish live data on storm overflows.
- Challenge on why UU sponsors the weather - because for £250,000 pa UU can promote messages such as "Stop the Block" - and at present they spend £15-20m pa to deal with blockages.
- When challenged about the "inaccessibility" to the non-expert of a plan with 299 pages and 90 attachments, full of acronyms - this is OK because they are out and about explaining what it means.

Impressions of the session

- The plan is a step change in terms of the investment into wastewater treatment.
- There is a lot about "greener" in the plan, and we need to press UU on specific outcomes for 2030 and how they will assess these.
- There were various examples of work going on in other parts of the NW - the only specific reference to Cumbria in the NW zoom was to Windermere.
- UU might therefore be keen to work with both CRKC on the river Kent and the Staveley with Ings PC on Staveley WwTW to "improve their image" in Cumbria. Maybe good for us, but not so much for other localities.
- There was a confident defence of the business model in terms of "don't worry about all this stuff in the media about debt, dividends and bonuses, just look at what we can achieve for/with you".
- There was a sense of "You have complained, we have apologised and taken responsibility, we have come up with an ambitious set of investments which we are confident we can finance, and moreover we can't go faster because of the need to keep systems running"