

Environmental Audit Committee Inquiry: Water Quality in Rivers

Written evidence submitted by Wildlife and Countryside Link: February 2021

Wildlife and Countryside Link is a coalition of 58 organisations working for the protection of nature. Together we have the support of over eight million people in the UK and directly protect over 750,000 hectares of land and 800 miles of coastline.

Blueprint for Water, part of Wildlife and Countryside Link, is a unique coalition of environmental, water efficiency, fisheries and recreational organisations that come together to form a powerful joint voice across a range of water-based issues. We have previously raised our concerns for water quality, and outlined the ambition and action required to protect and enhance our freshwater environment, in [our previous](#) EAC Inquiry response on nitrates and most recently in [our briefing](#) for the Sewage (Inland Waters) Bill.

This response is supported by the following Link members:

- Amphibian and Reptile Conservation Trust
- Angling Trust
- British Canoeing
- Buglife
- CHEM Trust
- Freshwater Habitats Trust
- Institute of Fisheries Management
- Marine Conservation Society
- National Trust
- Pesticide Action Network UK
- River Restoration Centre
- RSPB
- Surfers Against Sewage
- The Rivers Trust
- The Wildlife Trusts
- Wildlife Gardening Forum
- Zoological Society of London

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INTRODUCTION

Our freshwater environment is suffering. 0% of rivers, lakes and streams in England are in good health, with none meeting good chemical standards and just 16% meeting good ecological standards.¹ For rivers, this is just 14%. In 2019 alone, raw sewage was discharged into rivers across England and Wales over 200,000 times, for over 1.5 million hours.² English river water quality is the worst in Europe.³

This poor water quality in our rivers and waterways is detrimental to both people and nature, threatening the well-being and economic vitality of our communities, and the health and persistence of habitats and wildlife. Already 13% of freshwater and wetland species are threatened with extinction.

Yet progress on tackling water quality is extremely poor. The percentage of waterways meeting good ecological status is unchanged since 2016. In 2019, the total number of pollution incidents across the 9 Water and Sewage Companies was at the worst level in 5 years.⁴ Both direction and incentive for change is lacking; water is the only priority area in the Environment Bill for which Defra is not considering a long-term, outcome-based target. Funding and resources for vital monitoring and enforcement by the Environment Agency are seriously inadequate. From 2009-2019, Environment Agency funding fell 63%.⁵ From 2013-2019 the number of water quality samples taken fell 45%, and the number of sampling points by nearly 40%.⁶ The total budget for Environment Agency prosecutions and enforcement has significantly fallen, from £120m to just £50m.⁷

We need strong, ambitious, and binding targets, underpinned with sufficient funding, monitoring and enforcement, to address the water quality crisis in our rivers and waterways.

Urgent action is needed to improve freshwater quality if the government hopes to achieve its goal of halting the decline of habitats and species by 2030. Better drainage and sewerage management planning will help, but the measures in the Environment Bill are unlikely to deliver anywhere near the scale and pace of change needed to improve our water quality in time for the 2027 target of good condition for surface water.

We recommend the Government should:

- Set strong new legally-binding outcome targets for water quality under the Environment Bill framework, setting a goal for clean water status by 2038 that goes well beyond the existing 2027 target under the Water Framework Directive.
- Ensure that the polluter pays principle operates effectively, funding and directing the Environment Agency to increase its enforcement action. At the moment, the scale of enforcement action (four prosecutions and £1,297,000 in fines) is not enough to ensure urgent action in a sector as enormous as the water sector.

¹ <https://environment.data.gov.uk/catchment-planning/>

² <https://www.endsreport.com/article/1688425/raw-sewage-dumped-rivers-seas-at-least-200000-times-2019>

³ <https://www.endsreport.com/article/1685709/woeful-uk-bathing-waters-among-worst-europe>

⁴ <https://www.gov.uk/government/publications/water-and-sewerage-companies-in-england-environmental-performance-report-2019/water-and-sewerage-companies-in-england-environmental-performance-report-for-2019>

⁵ <https://www.unchecked.uk/wp-content/uploads/2020/11/The-UKs-Enforcement-Gap-2020.pdf>

⁶ <https://www.unchecked.uk/wp-content/uploads/2020/11/The-UKs-Enforcement-Gap-2020.pdf>

⁷ <https://www.endsreport.com/article/1705037/ea-heads-blame-budget-cuts-decline-enforcement-monitoring>

- Be more prescriptive about the duties and actions required of water companies by bringing forward the measures proposed in the delayed Sewage (Inland Waters) Bill in the Environment Bill. This should include clear duties for full and comprehensive CSO overflow monitoring by 2023 (including biosolids), an obligation on companies to end the discharge of untreated sewage, and a duty on government to put in place the cross-sector measures needed to support rapid change.
- Mandate SuDS standards, and ensure these are enforced to effectively reduce urban diffuse pollution.
- Ban plastic wet wipes, with Extended Producer Responsibility (EPR) applied to all other types of wipes.
- Undertake a full investigation into the environmental risks posed by new potentially hazardous chemicals, such as narcotics, pharmaceuticals, pesticides and other chemicals.
- Control pollutants at source by regulating the presence of hazardous chemicals in products, including microplastics.

RESPONSES TO COMMITTEE QUESTIONS

1. What are the best indicators for river water quality that could be used as targets being developed under the Environment Bill?

1.1. We previously set out our recommendations for water quality targets under the Environment Bill in [our response](#) to Defra's Environment Bill Targets Policy Paper. These are summarised below.

1.2. A **general pressure reduction target**. This would have wider applicability than targets for nitrates or phosphorus for defined water bodies, and would drive action for all waters, not just WFD water bodies.

1.3. A **percentage target for the area of all surface waters meeting clean water standards**, equivalent to WFD high status. This should supplement, but not replace, ongoing outcome targets for waters in line with WFD good status.

1.4. An **increasing score approach** to drive ongoing improvements in all catchments, based on specific sub-metrics, for example, percentage of all waters with natural water quality.

1.5. A **target on the number of (preferably groups of) chemicals for which a threshold value has been defined**. This could inform development and operation of an early warning system, as proposed by the Environment Agency. Monitoring should instantly 'trigger the alarm' when thresholds for individual or mixed substances are approached, leading to prompt action including practical management measures, and consideration of regulatory control.

2. How could drainage and sewage management plans, introduced by the Environment Bill, play a role in reduced sewer discharges?

2.1. Drainage and sewage management plans could play a significant role in reducing sewer discharges. However, alongside the plans, the Government should introduce clearer duties to ensure untreated sewage is no longer discharged into England's inland waters. Provisions for reducing sewer discharges currently proposed in the Sewage (Inland Waters) Private Member's Bill should be legislated in the now delayed Environment Bill.

2.2. These provisions include:

- A duty for water companies to set out plans to **reduce reliance on combined sewer overflows (CSOs)**.
- A duty for water companies to **report publicly** not just on the frequency and extent of sewage discharges from CSOs and any other sewer catchment assets, **but also on the impact on water quality**. We welcome the recent commitment by Defra⁸ to make real-time storm overflow data available all year round; this should be extended to include data on environmental impact.
- A duty for Government to **investigate further steps** that stakeholders, such as the Environment Agency, could take to improve water quality. This could include designating a minimum of two inland bathing waters every year, and setting legal targets to increase the number of bathing waters classified as 'good' or 'excellent'.
- Proposed measures to **upgrade drainage infrastructure** to separate household sewage from surface water drainage, helping reduce the risk of overflows, including measures to reduce harmful products such as non-biodegradable wet wipes, and commercial fats and oils from being disposed of down the drains.

2.3. Drainage and sewage management plans (DSMPs) should result in a better understanding of a water company's capacity to cope with increasing population and climate change. Tools, such as the Storm Overflow Assessment Framework, have been created to help prioritise investment and to map sewerage capacity. Water company plans should invest in the identified need. However, opportunities to incentivise water companies to invest will be required.

2.4. The Drainage and Wastewater Management Plan Framework identifies the value of cross sector working and public sector engagement. In recent years, there have been increased efforts to address sewer blockages, including engaging with the public on what should and shouldn't be flushed and poured down drains.

2.5. We understand that DSMPs should encourage identification of nature-based solutions such as Sustainable Drainage Systems (SuDS) and opportunities to reduce surface water flooding. Reduced surface water entering the sewerage system will mean sewers reach capacity less often, resulting in fewer discharges. Defra should require blue and green infrastructure within their PR24 policy statement to water companies, to ensure it is given adequate priority.

2.6. To further reduce surface water volumes entering the sewerage system, reducing sewer discharges, water companies should be obliged to charge business rates for surface water drainage by area. If split into realistic charging boundaries, and with adequate advice and guidance to businesses, this should encourage businesses to install SuDS and reduce their surface water drainage charges.

⁸ <https://www.gov.uk/government/news/taskforce-sets-goal-to-end-pollution-from-storm-overflows>

3. How adequate are the monitoring and reporting requirements around water company discharges? How can technology improve and assist with transparency and enforcement?

3.1. Current monitoring and reporting requirements do not go far enough to protect and enhance our freshwater environment, and to manage threats posed by water company discharges. The aforementioned provisions in the Sewage (Inland waters) Bill should be legislated in the Environment Bill, to become regulatory requirements. Comprehensive monitoring must be accompanied by equally comprehensive enforcement, employing the 'polluter pays principle' in charging for overflows.

3.2. The Environment Agency currently relies on water companies to self-monitor discharges from combined sewer overflows (CSOs). Whilst the frequency or duration of overflow events is recorded, the environmental impact of this is not. This lack of high-quality environmental data significantly reduces our ability not only to understand the state of our freshwater systems, but also to effectively manage them and to enforce regulation. WFD data showing that 100% rivers failed due to chemical contaminant levels shows that monitoring has previously been inadequate to fully assess the contaminant load in rivers.⁹ We recognise that progress has been made to install Electronic Data Monitoring systems on CSOs. There must be a regulatory requirement for Electronic Data Monitoring systems to be fitted on all CSO outlets by 2023. Data must be published on a quarterly basis to ensure transparency in performance of CSO assets. This must include number, frequency, volume, flow for all coastal and river wastewater discharges.

3.3. Charges for storm overflows are not significant enough to act as a deterrent. Comprehensive monitoring of overflow events and environmental impact should be accompanied by charges employing the 'polluter pays' principle to incentivise the water industry to reduce waste water. For example, this could comprise occurrence or volume-based charging for sewer overflows.

3.4. Monitoring of contaminants and microplastics in waterways is vital to assess the health of the environment. Government needs to instruct legislation that covers a wider range of contaminants than currently monitored in wastewater discharges, treated sewage sludge, and the environment. Appropriate funding must be provided to allow regulators to effectively monitor for these contaminants.

3.5. Monitoring programmes should be extended to include a wide range of emerging contaminants and microplastics, both for influent and effluent and treated sewage sludge, to provide an accurate picture of environmental status. A full investigation into the environmental risks posed by new potentially hazardous chemicals, such as narcotics, pharmaceuticals, pesticides and other chemicals, should also be conducted. This should then inform suitable monitoring and methods of removal.^{10 11}

¹² Our concerns for chemicals in water are further discussed in Annex 1.

⁹ <https://chemtrust.org/chemical-pollution-in-rivers/#:~:text=October%2012%2C%202020%20By%20Julie%20Schneider.%20The%20news,surface%20water%20bodies%3A%200%25%20received%20good%20chemical%20status>

¹⁰ <https://lfcc.org.uk/downloads/category/2-other-lfcc-documents?download=210:flea-tick-treatments-reasearch-paper>

¹¹ <https://www.oecd-ilibrary.org/sites/6a617955-en/index.html?itemId=/content/component/6a617955-en>

¹² <https://www.sciencedirect.com/science/article/abs/pii/S0048969717324439?via%3Dihub>

3.6. There is currently no requirement for water companies to monitor microplastics. Better monitoring would act as an early warning system for contaminants, before they cause bigger environmental problems.

3.7. Not all of these failures can be linked to water company discharges. However, water companies should ensure their own operations are not contributing to an increase in contaminants (e.g. persistent organic pollutants and microplastics) in the environment. Water company practices and their procurement should meet Best Available Techniques and Best Environmental Practice rather than limited to legal minimum requirement.

3.8. Monitoring of water company discharges should not be limited to waste water discharges. There should be increased monitoring of treated sewage sludge (also known as biosolids). Recent studies show that waste water treatment works are efficient in removing microplastics and some chemicals from the final treated effluent - between 80 – 99% of microplastics.¹³ However, to do so, they are captured within the sludge in high quantities.^{14 15} A review of current treatment practice, and a road map towards zero contaminants by 2030, is urgently needed. This should include annual reduction targets, and address concerns around antimicrobial resistant bacteria. A proactive approach is required to reduce contaminants entering the system, by working together to fund projects which identify and implement interventions to stop pollutants at source.

3.9. The environment and wildlife are not exposed to chemicals in isolation. Monitoring individual contaminants is an over simplified approach that does not represent real world exposure.¹⁶ Our concern is that synergistic effects may be missed by just monitoring the concentrations of individual contaminants. Increased ecological monitoring at different trophic levels is required, to determine what effect real world cocktails of contaminants are having on the freshwater ecosystem.

3.10. Storm overflows cause significant harm to both human health and the environment, and the public consciousness of these issues is ever increasing. Information on Companies performance in relation to storm overflows must be included in the Annual Water Company Environmental Performance Report published by the Environment Agency.

3.11. Improvements in transparency and enforcement cannot be achieved through technology alone. From 2013-2019, the number of water quality samples taken by the Environment Agency fell by 45%, with the number of sampling points falling nearly 40%.¹⁷ Between 2009-2019, Environment Agency funding fell 63%.¹⁸ The total budget for Environment Agency prosecutions and enforcement has significantly fallen, from £120m to just £50m.¹⁹ It is vital that the Environment Agency are sufficiently funded and resourced for an effective, credible monitoring and enforcement regime.

¹³ Fate of microplastics and other small anthropogenic litter (SAL) in wastewater treatment plants depends on unit processes employed - Environmental Science: Water Research & Technology (RSC Publishing).

¹⁴ Alice A. Horton et. al., 2020, Semi-automated analysis of microplastics in complex wastewater samples, Environmental Pollution Volume 268, Part A, 1.

¹⁵ Vollertsen, Jes and Hansen, Aviaja, 2017. Microplastic in Danish wastewater Sources, occurrences and fate. Environmental Project No. 1906.

¹⁶ Desforges, J. P. et al, Effects of Polar Bear and Killer Whale Derived Contaminant Cocktails on Marine Mammal Immunity <https://pubs.acs.org/doi/abs/10.1021/acs.est.7b03532>.

¹⁷ <https://www.unchecked.uk/wp-content/uploads/2020/11/The-UKs-Enforcement-Gap-2020.pdf>

¹⁸ <https://www.unchecked.uk/wp-content/uploads/2020/11/The-UKs-Enforcement-Gap-2020.pdf>

¹⁹ <https://www.endsreport.com/article/1705037/ea-heads-blame-budget-cuts-decline-enforcement-monitoring>

4. What is the impact of plastic pollution and other materials on drainage and water quality in rivers and what should be done to mitigate it?

4.1. Plastics are a significant pollutant and threat to the water environment, yet understanding is limited, and action to tackle the problem has been inadequate. Holistic management, from 'source to sea', is required, underpinned by strong regulation and a comprehensive and adequately-resourced monitoring regime. This should be supported with further research to understand the full extent of the impact.

4.2. Microplastics are found in worrying quantities in all rivers and lakes. Research led by Bangor University and Friends of the Earth found that microplastics were present in all UK inland waters tested, highlighting the need for widespread monitoring of inland water systems in the UK.²⁰ Microplastics should be added to the list of pollutants regularly monitored in inland waters, requiring agreement of an accurate, repeatable, reportable method for microplastic quantification.

4.3. The full consequences of microplastics for organisms, ecosystems and human health are not yet known, but we should not wait until any harmful effects are determined to act. In alignment with the Precautionary Principle (Rio Principle 15), a lack of scientific understanding should elicit policy responses that would accommodate for a worst-case scenario.²¹ There is an urgent need for routine monitoring of the physical and chemical impacts to assess this. Sampling programmes under the Marine Strategy and Water Framework Directives must be fully aligned to be effective.

4.4. In addition to the concerning ecotoxicological impacts of microplastics on aquatic organisms further research is needed around the impacts on ecosystem functions in freshwater ecosystems, for example nitrogen cycling.²²

4.5. Plastic is a significant pollutant and threat to the water environment, endangering species and causing economic damage. With production of plastic packaging forecast to quadruple by 2050, the need for 'gold standard' legislation on plastic pollution is essential.²³ Government should support actions and targets that reduce pollution at source, raise public awareness, and clean up existing pollution where possible.

4.6. Plastics can cause wildlife injury or death through entanglement, suffocation, and choking.²⁴ If ingested, plastics can build up in organisms' tissues, and pass up the food web to predators such as birds and fish.²⁵ Microplastics can also accumulate and leach chemicals and pollutants, harming water quality. This also threatens our coastal waters, with 80% of oceanic plastic pollution originating from inland waterways.²⁶ Rivers are a pathway of microplastics to the ocean, which

²⁰ <https://friendsoftheearth.uk/sustainable-living/microplastics-found-every-british-river-we-tested>

²¹ Please refer also to our more detailed response with regards to consequences and mitigation for reducing plastics in our '[Challenges and Choices 2020](#)' consultation.

²² <https://www.sciencedirect.com/science/article/abs/pii/S004896972035662X>

²³ http://www3.weforum.org/docs/WEF_The_New_Plastics_Economy.pdf

²⁴ Emmerik and Schawrz 2019 - <https://onlinelibrary.wiley.com/doi/full/10.1002/wat2.1398>

²⁵ Emmerik and Schawrz 2019 - <https://onlinelibrary.wiley.com/doi/full/10.1002/wat2.1398>

²⁶ Greenpeace Microplastics in Rivers Report 2019 - https://www.greenpeace.org.uk/wp-content/uploads/2019/06/plastics_v08.pdf

several Defra funded projects highlight as a growing area of concern.²⁷ Plastics and microplastics persist in the environment, and may be irretrievable.²⁸

4.7. Plastic pollution clogs urban drainage infrastructure, increasing flooding risk.²⁹ Plastic pollution also brings economic threats, through increased urban flood risk, tourism losses, and damage to river vessels and infrastructure.³⁰

4.8. Blockages from misflushed items such as wet wipes have significant impacts on water quality and plastic pollution in rivers. Plastic wet wipes should be banned, with Extended Producer Responsibility (EPR) applied to all other types of wipes. Banning plastic wipes alone will not remove the issue of incorrect disposal of wipes into the sewer system. Semi-synthetic wipes are not by default suitable for flushing and can contribute to blockages and pollution. The impact of these entering the food chain is currently unknown.³¹ ³² Water Companies also regularly report issues due to incorrectly flushed wipes. For example, Welsh Water reported that 25% of flooding was caused by wet wipes in August 2020.

4.9. In January 2019, the water industry launched the Fine to Flush specification (WIS 4-02-06) in response to products being labelled as flushable, but which still potentially blocked the sewer systems.³³ Legislation should be introduced requiring that terms “flushable”, “dispersible” or similar can only be used if the wipe has been proven to pass the “Fine to Flush” specification. Products should otherwise be clearly labelled with “Do Not Flush”, which should be statutory, standardised and have a minimum size.

4.10. Holistic, catchment-based approaches to prevent or remediate plastic pollution, “from source to seas”, are essential.³⁴ Regulators must work at source with sectors producing and distributing plastics, and to increase consumer and public awareness to influence behavioural change. To accompany a regulation, monitoring and compliance programme, a large community education campaign should be established on impacts and behaviour change.³⁵ There should also be a complementary programme of works to remove larger plastics and litter from the water environment, working with industry and local councils to ensure robust and integrated recycling processes are in place locally, making recycling more convenient and comprehensive.

4.11. The impact upon receptor sites such as coastal habitats (including seagrass beds) should consider the full range of impacts. This includes upon species using these habitats for key parts of their life cycles (e.g. fish nurseries), and upon the carbon uptake potential of what is a key part of our ‘blue carbon’ sequestration infrastructure.

²⁷ For example: <https://www.gov.uk/government/news/government-launches-microplasticsresearch-to-protect-oceans>.

²⁸ Greenpeace Microplastics in Rivers Report 2019 - https://www.greenpeace.org.uk/wp-content/uploads/2019/06/plastics_v08.pdf

²⁹ Emmerik and Schawrz 2019 - <https://onlinelibrary.wiley.com/doi/full/10.1002/wat2.1398>

³⁰ Emmerik and Schawrz 2019 - <https://onlinelibrary.wiley.com/doi/full/10.1002/wat2.1398>

³¹ <https://advances.sciencemag.org/content/6/23/eaay8493.full>

³² Jamieson, A.J., Brooks, L.S.R., Reid, W.D.K., Piertney, S.B., Narayanaswamy, B.E., and Linley, T.D. (2019) Microplastics and synthetic particles ingested by deep-sea amphipods in six of the deepest marine into the food chain of such organisms with unknown effects.

³³ <https://www.water.org.uk/wp-content/uploads/2019/11/Fine-to-Flush-Issue-1.2-November-2019.pdf>

³⁴ For example: <https://wrt.org.uk/project/preventing-plastic-pollution-ppp/>

³⁵ For example: <https://earthwatch.org.uk/get-involved/plastic-rivers>.

4.12. There remains a lack of research into the impact of plastic pollution on the drainage and freshwater systems.³⁶ Further research is required to fully understand the extent of the problem, and therefore how best to manage and mitigate these threats.

5. How can consumers be persuaded to change their behaviour to minimise pollution?

5.1. Greater quality, quantity and transparency of environmental data is required to increase consumer awareness of pollution and to encourage behavioural change. This should complement strong regulation, and a comprehensive and adequately resourced monitoring and enforcement regime.

5.2. Consumer awareness is critical to persuading behaviour change. For example, research has shown that increasing consumer awareness through water labelling and smart meters led to behaviour change and reduction in water consumption.³⁷

5.3. Currently, consumer awareness of pollution is low. Data from 2017 shows that 50% consumers were not aware that raw sewage could be released into rivers, and 35% had flushed or put something down the drain that they shouldn't within the past month. However, once informed, 80% thought it was never acceptable to release raw sewage into rivers, and 87% thought the public must be informed when this happens.³⁸

5.4. Greater quality, quantity, and transparency of environmental data is vital to increasing customer awareness. Data on water quality, and events such as CSO discharges, should be public and easy to interpret. Water companies should develop ways to communicate to the public about sewage pollution and prevention, and should make information about pollution and overflows more publicly available. Consumer awareness of other sources of pollution, such as agriculture, should also be increased.

5.5. Whilst consumer behaviour is important for minimising pollution, this ultimately remains the responsibility of Government. Consumer awareness and behaviour change cannot- and must not- replace strong regulation supported with adequate resourcing, monitoring, reporting, and enforcement.

6. What is the required investment level needed to minimise storm overflows vs the scope for sustainable drainage and nature-based solutions?

6.1. Currently, there is not enough capacity to store and treat wastewater. Greater investment is required to make our wastewater systems fit for purpose. This should include both improving existing infrastructure, and reducing the quantity of water in the system. Sustainable Drainage Systems (SuDS) and nature-based solutions should be utilised for this wherever possible.

³⁶ Emmerik and Schawrz 2019 - <https://onlinelibrary.wiley.com/doi/full/10.1002/wat2.1398>

³⁷ For example: <https://www.waterrating.gov.au/about/review-evaluation/consumers>

³⁸ https://www.wwf.org.uk/sites/default/files/2017-12/Flushed%20Away_Nov2017.pdf

6.2. CSOs are emergency infrastructure assets within this system, intended only for periods of ‘unusually heavy rainfall’ in order to stop sewage from backing up into homes during extreme events. However, CSOs are used far too often. Raw sewage is discharged from 8-14% of overflows at least once a week, and between a third and a half at least once a month. In 2019 alone, raw sewage was discharged into rivers across England and Wales over 200,000 times, for over 1.5 million hours.³⁹ Climate change and population growth will only increase pressure on these already failing systems. Greater investment is required to make our sewage system fit for purpose, to increase capacity to store and treat wastewater.

6.3. Nature-based solutions are actions to enhance ecosystems that also bring economic or social benefits. In the water environment, nature-based solutions can reduce flood risk and pollution whilst also safeguarding water supplies from drought, securing valuable habitats for wildlife, and providing for community health and wellbeing.⁴⁰ Sustainable Drainage Systems (SuDS) are water management practices that align drainage systems with natural water processes.

6.4 Current use of SuDS schemes to limit pressure upon the sewerage network from new developments / redevelopment of sites has been limited by insufficiently strong design & construction guidelines, which hinder subsequent adoption of SuDS features.⁴¹ Sheffield City Council have adopted a SuDS scheme in Manor Fields Park, which channels surface drainage from a 300-home development into a local green space, securing additional benefits including regeneration of neglected open space, improved landscape and amenity value, and enhanced wetland ecosystems.⁴² In this case, site constraints made this solution the most affordable option, and the ‘commuted sum’ funding route to provide for future management gave the Council confidence to adopt. However, there are many more cases where SuDS features are not progressed due to a policy vacuum, including through the failure to bring Schedule 3 of the Flood & Water Management Act into effect. Current planning consultations offer the opportunity to replace the current non-statutory SuDS standards to drive uptake incorporating the delivery of multiple benefits, and to ensure that enhanced Building Regulations deliver more effective management of wastewater and more efficient water use.

6.5. The suggestion that investment to minimise storm overflows, and the scope for sustainable drainage and nature-based solutions, are an ‘either/or’ is a false dichotomy. SuDS and nature-based solutions such as treatment wetlands are a critical part of the toolkit for mitigating pollution and preventing flood risk. They should be used to reduce peak flows in the sewerage system and help to filter out pollutants, therefore minimising storm overflows and impact on the freshwater environment whilst also delivering wider economic, social, and environmental benefits.⁴³

³⁹ <https://www.endsreport.com/article/1688425/raw-sewage-dumped-rivers-seas-at-least-200000-times-2019>

⁴⁰ https://www.wcl.org.uk/docs/Changing_Course_Blueprint_25YEP.pdf

⁴¹ <https://www.ciwem.org/assets/pdf/Policy/Reports/A%20Place%20for%20SuDS%20Online.pdf>

⁴² https://www.susdrain.org/case-studies/case_studies/manor_ponds_sheffield.html

⁴³ https://www.wcl.org.uk/assets/uploads/img/assets/uploads/Blueprint_for_PR19_Environmenta_Manifesto_April_2017.pdf

7. How effective are the planning policy and standards around sustainable drainage systems to reduce urban diffuse pollution in England?

7.1. Planning policy and standards around sustainable drainage systems (SuDS) are not mandatory, and are therefore ineffective at reducing urban diffuse pollution. Additionally, there are no policies around retrofitting SuDS. SuDS standards should be mandatory, and must be enforced in order to effectively reduce urban diffuse pollution.

7.2. The level of runoff in urban areas is causing detrimental impacts across catchments, spreading chemicals, waste products and litter, including plastics and microplastics into our water systems. This pollution travels throughout the catchments and enters coastal waters where it can accumulate with marine debris and fishing waste, directly impacting seabirds and seagrass meadows. The management, clean up and treatment of this pollution is costly, damaging the national economy through loss of natural capital and impact on harbour operations. Improvement and implementation of the National Planning Policy Framework to reduce water run-off in urban areas and transport corridors is crucial.

7.3. Policy should oblige local authorities and other highways agencies to seek opportunities in maintaining, upgrading, or building new infrastructure to prevent untreated runoff from roads and other urban surfaces being discharged into watercourses.

7.4. Currently, the right for developers to connect to the public sewer is automatic, increasing pressure on the sewer network and threatening the water environment through increased overflow events and discharges. The right for developers to connect to public sewerage systems should be made conditional on meeting the requirements set out by the Design Construction Guide for the Codes of Adoption.⁴⁴

7.5. The use of green infrastructure and SuDS should be mandatory in any greenfield (and retrofitting in brownfield) developments. This would recognise the role that these measures play in filtration and the multi-benefits for biodiversity, increasing greenspace, linking to health and well-being outcomes, and improving water and air quality. For example, the RSPB is currently working with developers such as Barratt Developments on biodiversity net gain, which can have multiple benefits for management of pollutants.

7.6. These measures should be embedded as best practice by all developers. This would help reduce current pollution levels found in the Thames Basin and in the Solent, in the South East, where urban pollution in combination with agricultural run-off has hit levels preventing any further developments. Nitrate neutrality can be supported through the creation of wetland treatment areas, which under effective management can support a number of priority wetland species.

⁴⁴ <https://www.ciwem.org/news/combined-sewer-overflows-its-time-we-cut-the-crap>

8. Should local authorities and highways agencies be given a duty to prevent pollution to watercourses without prior treatment?

8.1. Yes. However, the ability of Local Planning Authorities to deliver this through development control may be curtailed by the Government's universally-unpopular changes to the planning system.

8.2. Local authorities and other highways agencies should be obliged to seek opportunities, in maintaining, upgrading or building new infrastructure, to prevent untreated runoff from roads and other urban surfaces being discharged into watercourses.

8.3. Highway authorities and local authorities should employ SuDS to improve the performance of roadside drainage to trap pollutants at source. The 'polluter pays' principle must apply to drive behaviour change in local areas and along highways. Local and highway authorities can lead by phasing out pesticides and fertilisers in urban green space and ensuring appropriate maintenance for SuDS or green infrastructure installed in public areas, with appropriate budget allocations. Roadside SuDS should be used to replace gully pots, as a nature-based solution to pollutant control.

9. How effective is Ofwat's remit and regulation of water companies? Does it facilitate sufficient investment in improvements to water quality, including sustainable drainage systems and nature-based solutions such as constructed wetlands?

9.1. Although PR19 saw greater environmental ambition for the water sector, there are still significant shortcomings in both performance and opportunity.

9.2. The Environment Agency's 2019 Environmental Performance Assessment shows significant problems across the sector, with the total number of pollution incidents (across the 9 Water and Sewage Companies) at the worst level in 5 years. The number of serious incidents continued to plateau, (remaining at over 50, despite EA aspirations for a reduction to zero by 2020), and only 2 companies achieved the highest 4-star rating.⁴⁵

9.3. Despite such failings, dividends of over £13bn were paid to shareholders in the last 10 years, drawing criticism that penalties for poor performance are too weak a disincentive, and that companies prioritise satisfying shareholders over investing in infrastructure and the environment.

9.4. An overarching environmental duty for Ofwat (proposed as a new Clause in the Environment Bill) would facilitate greater company investment in the environment, to underpin the sustainability of water services. This could, for example, expand the range of environmental outcomes for which schemes could be allocated funding through the Price Review process, or ensure that greater weight was given to customer preferences for environmental investment.

9.5. There is welcome growth in the sector's use of nature-based solutions, but a lack of clarity on whether the remaining barriers are regulatory, cultural or otherwise. We welcome the recent

⁴⁵ <https://www.gov.uk/government/publications/water-and-sewerage-companies-in-england-environmental-performance-report-2019/water-and-sewerage-companies-in-england-environmental-performance-report-for-2019>

establishment of a sector task force seeking to further mainstream the use of nature-based solutions.

9.6. Our joint project with the water sector, '[Naturally Resilient](#)', explored the interplays between a resilient water environment and water sector. It found that barriers to investing in the environment included a lack of agreed definitions and metrics, and difficulties in valuing natural capital. The benefits of a move towards more formal adoption of natural capital accounting methods for PR24, and potentially a common methodology across the sector, should be considered.

10. Is adequate investment being made in adapting water treatment systems to future climate change?

10.1. Our water treatment systems are already struggling to cope with increasing pressure from extreme weather events and increased demand, threatening the freshwater environment. Significant investment in capacity is required to ensure water treatment systems can adapt to future climate change, and additional pressures such as population growth, building resilience in both the water industry and the natural environment.

10.2. The resilience of our natural environment and the water sector are fundamentally connected. Our freshwater habitats and species are in significant decline, with 13% of species threatened with extinction. Simultaneously, parts of England are projected to run out of water in the next 20 years, with the UK's total water supply forecast to drop 7% by 2045 due to climate change and sustainable abstraction limits.⁴⁶

10.3. Resilience is 'the extent to which a system can withstand stressors and continue to provide benefits in the long term'. Our '[Naturally Resilient](#)' report highlights that resilience in the water sector and natural environment is co-dependent. This means that proper consideration of resilience is vital to achieve industry obligations and aspirations, including compliance with environmental legislation, the commitment to achieve net zero, and wider contributions towards green recovery. Resilience must be at the heart of decision making in Government and the water industry, to protect our freshwater environment and to safeguard clean and plentiful water for people and businesses. Steps must also be taken to define and develop metrics to measure resilience across sectors.

10.4. We welcome the commitment made by the water companies to deliver a net zero water supply for customers by 2030.⁴⁷ However, population increase must be considered as well as climate change. Projected population figures suggest a 44% increase in sewage load in England and Wales since 1961 to 2039. This is equivalent to an extra 3 billion litres per day.⁴⁸ Without significant investment in our sewerage infrastructure, our rivers and waterways will suffer from increased pollution.

⁴⁶ <https://www.nao.org.uk/press-release/water-supply-and-demand-management/>

⁴⁷ <https://www.water.org.uk/routemap2030/>

⁴⁸ <https://www.sas.org.uk/water-quality/facts-figures/>

10.5. The cumulative impact of septic tanks in rural catchments is significant, with potentially greater impact than a small wastewater treatment works.⁴⁹ Private sewage systems must not be neglected. This issue must be investigated, and addressed.

11. How could the designation of inland bathing waters by water companies affect the costs of achieving the associated water quality standards?

11.1. The UK compares poorly to other European countries in terms of the number and type of designated bathing waters.⁵⁰ More inland waters should be designated with bathing water status, to protect and enhance water quality for people. This should complement increased investment to bring more water bodies to WFD high status, protecting and enhancing water quality for nature.

11.2. Bathing water designation is important for human and ecosystem health, requiring monitoring and the provision of information about water quality. Designation also puts pressure on water companies and others in the sector to reduce pollution. Bathing water designation will also incentivise achieving water quality standards, bringing cost benefits through community health and wellbeing, enhanced quality of life, and tourism.⁵¹

11.3. The public wants clean rivers that are safe to use, and think companies and regulators should do more to tackle pollution. When water quality data was released in September, the poor condition of England's waterways was met with outrage. The #EndSewagePollution petition achieved over 40,500 signatures⁵², and local groups have since been campaigning for rivers in their area to be given bathing water status to tackle pollution.⁵³ The Environment Agency has welcomed this increased public interest, citing this as a 'game changer' in boosting efforts to improve water quality.⁵⁴

11.4. However, designation of inland bathing waters will not deliver the required protection and enhancement of our freshwater environment unless supported with adequate funding and resources for an effective monitoring and enforcement regime.

⁴⁹ Richards et al. (2016)- https://www.hutton.ac.uk/sites/default/files/files/SR_STE-1-s2_0-S0048969715309761-main.pdf

⁵⁰ <https://www.outdoorswimmingsociety.com/designated-bathing-waters-explained/>

⁵¹ https://www.wwf.org.uk/sites/default/files/2018-04/WWF_Saving_The_Earth_Report_HiRes_DPS_0.pdf

⁵² <https://www.sas.org.uk/endsewagepollution/>

⁵³ For example: <https://www.theguardian.com/environment/2020/oct/09/oxford-stop-thames-water-firm-dumping-sewage-river>

⁵⁴ <https://www.theguardian.com/environment/2020/feb/06/push-for-bathing-water-quality-hailed-game-changer-uk-rivers>

ANNEX 1

12. Chemicals in water

12.1. 0% of the 4,679 rivers, lakes, estuaries and other surface water bodies in England received good chemical status in the latest assessment. Since 2016, new substances have been added to the assessment list, such as PFOS, a chemical from the PFAS family, and new standards have been developed for contaminants in aquatic wildlife.⁵⁵ Put simply, the 2019 assessment was more sensitive than in 2016, revealing what was previously under the radar.

12.2. However, even with the updated criteria, the current assessment still only considers a very limited number of chemical contaminants, in particular when it comes to emerging chemicals of concern. For instance, many PFAS chemicals⁵⁶ are not monitored, and tend to be either very persistent or degrading into very persistent chemicals, hence their nickname of 'forever chemicals'. There are currently over 4,500 PFAS chemicals on the market.⁵⁷ This raises questions over the true chemical status of English waters.

12.3. Many mitigation measures already widely used by water companies and government are limited. For instance, chemical filtration systems are not only expensive, but are also ineffective at filtering many persistent and mobile chemicals.⁵⁸ Hundreds of chemicals exist in everyday items, which limits the possibility of consumer behaviour change. We propose the following as the most effective means of reducing the worst of chemical pollution in water:

- **Ban the most hazardous chemicals in all non-essential use.** Prohibiting the most hazardous chemicals in all uses which are not essential for society is the most effective way of mitigating damage.
- **Identify contaminated sites and remediate them.** A recent investigation listed over a thousand old landfills containing hazardous waste and hundreds more sites with the waste categorised as 'unknown' by the EA.⁵⁹ An estimated "746 toxic dumps are located close (around 500m) to water bodies". Legacy chemicals can also leak from former industrial sites⁶⁰ or areas where they've been used. Identifying the sites contaminated with legacy pollutants and remediating them should be a priority to prevent further build-up of these hazardous chemicals in the UK's wildlife and environment and minimise the risk of chemical contamination in our water, as set out in Government's 25-Year Environment Plan.
- **Address regulatory gaps** - UK REACH must incorporate criteria to identify 'persistent, mobile and toxic' chemicals which are particularly relevant for the water environment.

⁵⁵ https://ec.europa.eu/environment/water/water-dangersub/pri_substances.htm

⁵⁶ Chemicals used in a range of household products e.g. takeaway containers, outdoor clothing, hair products etc.

⁵⁷ [http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ENV-JM-MONO\(2018\)7&doclanguage=en](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ENV-JM-MONO(2018)7&doclanguage=en)

⁵⁸ <https://www.eureau.org/resources/briefing-notes/3934-briefing-note-on-moving-forward-on-pmt-and-vpvm-substances/file>

⁵⁹ <https://www.endsreport.com/article/1704599/exclusive-locations-hundreds-buried-toxic-landfills-revealed>

⁶⁰ <https://www.endsreport.com/article/1698166/poisonous-legacy-pcbs-killer-whale-apocalypse>

12.4. As part of the EU exit, we have also now left REACH which is currently consulting on restricting the use of intentionally added microplastics as well as other chemical restrictions including some PFAS. Any product which contains intentionally added microplastics is by definition single-use plastic, because the plastic is too small to be recovered. ECHA's committee for Risk Assessment (RAC) supports the proposal to restrict the use of microplastics that are intentionally added to products on the EU/EEA market, in concentrations of more than 0.01% weight by weight. Microbeads that are currently restricted under devolved legislation only comprise a small proportion of microplastics. Analysis by ECHA cites (across the EU) emissions of microbeads, i.e., from rinse-off cosmetics containing microbeads, comprise only 107 tonnes per year, whereas cosmetics in total emit 9300 tonnes/year. In addition, other sources of emissions include detergents (9700tonnes/year), agriculture (23500 tonnes/year), paints (5,200 tonnes/year) and medicinal (2,300 tonnes/year). Therefore, the restrictions implemented by REACH should be invoked as a minimum.

13. Abstraction

13.1. Over-abstraction is a significant threat to our freshwater environment, causing unnaturally low flow rates which harm wildlife directly and concentrate pollutants in water, increasing their potency and damaging water quality. The removal of the requirement for the Environment Agency to pay compensation to holders of damaging abstraction licences (being enabled through the Environment Bill) should be brought forward to allow action tackling abstraction sooner, thus benefiting water quality. Water efficiency standards must also be increased, to reduce abstraction demand.

13.2. Water quality is intrinsically connected to flow rates. Flow rates control the fundamental properties of water systems, including the distribution and concentration of various substances, and the distribution of habitats and wildlife.⁶¹ Unnaturally low flows mean pollutants are concentrated, and thus more potent, and that rivers become choked with sediment.⁶² This is harmful to freshwater ecosystems, and damaging to water quality.

13.3. Nearly a fifth of surface waters, and over a quarter of groundwaters, do not have enough water to protect the environment and to meet the needs of fish and other aquatic life. 5% of surface water bodies and 15% of groundwater bodies are at risk from increasing water use by current licence holders that could damage the environment. This government's own analysis indicates there are 100 surface water bodies where the pressures of unsustainable abstraction cannot be addressed with existing regulatory approaches.⁶³ ⁶⁴ This problem will only worsen with climate change. Parts of England are projected to run out of water in the next 20 years, with the UK's total water supply forecast to drop 7% by 2045 due to climate change and sustainable abstraction limits.⁶⁵ To achieve 'clean and plentiful water' as set out in the 25 Year Environment Plan, abstraction must be reduced.

⁶¹ <https://www.waterontheweb.org/under/waterquality/flow.html>

⁶² https://www.wwf.org.uk/sites/default/files/2017-07/Water%20For%20Wildlife_Abstraction%20Report_July%202017.pdf

⁶³ <https://www.gov.uk/government/publications/water-abstraction-plan-2017/water-abstraction-plan>

⁶⁴ https://www.wwf.org.uk/sites/default/files/2017-07/Water%20For%20Wildlife_Abstraction%20Report_July%202017.pdf

⁶⁵ <https://www.nao.org.uk/press-release/water-supply-and-demand-management/>

13.4. The Environment Agency has promised to make full use of its existing powers to amend abstraction licences to protect the environment, and will prioritise changes to licences having the greatest impact. However, the need to pay compensation to holders of damaging licences prevents them taking the action that is needed to protect our water environment. It is welcome that this requirement will be removed through the Environment Bill.

13.5. Action must also be taken to reduce abstraction demand, through increasing water efficiency standards. This requires a holistic approach. Focusing on domestic consumption alone will overlook opportunities to make improvements across the system, wherever they are most effective. This might include reducing treatment losses, leakage, domestic use, or business consumption. Targets to drive down both household and non-household water use should be included in PR24.

13.6. Consumer awareness and valuing of water is key to reducing consumption.⁶⁶ Surveys commissioned by Waterwise and Water UK in summer 2020 showed that 46% of people think their entire household uses less than 20 litres of water a day. The real figure is around 143 litres per person.⁶⁷ Research shows that customers paying for their water use by meter use 12-22% less than those that pay by rateable value.⁶⁸ In England and Wales, from April 2019 - March 2020, customers with a water meter used 129 litres per person per day. Customers without meters used 171 litres per person per day.⁶⁹

13.7. The current rate of meter penetration is inadequate, and approaches have been piecemeal. This is extremely cost-inefficient, and has failed to deliver water security and efficiency. Meter roll out should be more ambitious, with full, universal metering across England. Government should remove the current restriction which prevents water companies from progressing compulsory metering programmes in areas not designated as 'seriously water stressed'. Ideally, meters should be smart meters, which offer greater resolution of data and help customers to engage with their water use. Smart meters also save more water, and are more effective at identifying internal plumbing losses.⁷⁰ Universal metering should be accompanied by water labelling and more stringent water efficiency standards.

13.8. The ambition shown by the water sector in response to Ofwat's target of 50% leakage reduction by 2050 has been positive, indicating that a similarly ambitious longer-term target for domestic consumption needs to be set to drive action. Blueprint for Water has called for a 2050 target of 100 l/p/d to be set for domestic consumption.

⁶⁶ For example: <https://www.waterrating.gov.au/about/review-evaluation/consumers>

⁶⁷ <https://www.water.org.uk/news-item/vast-majority-of-brits-have-no-idea-how-much-water-they-use-each-day/>

⁶⁸ https://waterwise.org.uk/wp-content/uploads/2019/09/The-Effect-of-Metering-on-Water-Consumption_June2017.pdf

⁶⁹ <https://discoverwater.co.uk/amount-we-use>

⁷⁰ <https://www.water.org.uk/wp-content/uploads/2019/12/Water-UK-Research-on-reducing-water-use.pdf>