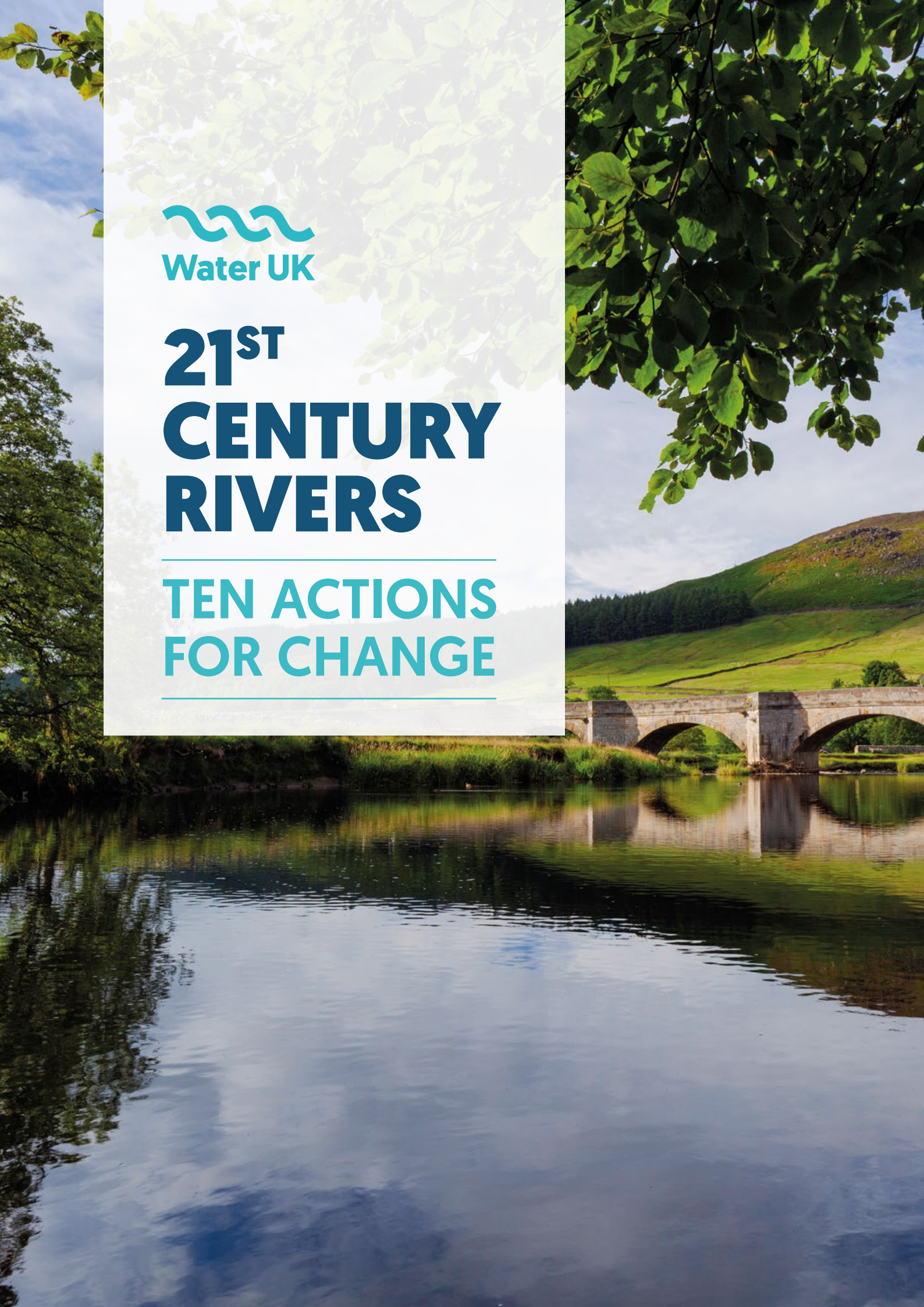




21ST CENTURY RIVERS

TEN ACTIONS
FOR CHANGE





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21st Century Rivers: From Recovery to Renewal

Over much of the last 100 years, our rivers have been in a state of crisis. As recently as the early 1990s, over a fifth of sewage was not being treated properly, killing huge swathes of life in oxygen ‘dead zones’. Many rivers became rich in toxic metals, agricultural slurry and industrial chemicals. Particularly from the 1950s, the numbers of invertebrates, fish and mammals in or around rivers started to plummet catastrophically.

The water industry is proud to have played a leading part in the fightback. Over the last 30 years we have invested £30 billion in the environment, cutting the number of beaches that fail legal standards from over a third to just one half of one percent; cutting ammonia emissions by 70 per cent, phosphates by 60 per cent, toxic metals like cadmium and mercury by 50 per cent; and reducing serious pollution incidents by 90 per cent to reach the lowest levels ever recorded. We have seen habitats and species recover, including those sensitive to water quality, like the return in the early 2000s of seal colonies in the Thames Estuary, and the recovery in recent decades of England’s otter population.

The truth, though, is that this is not enough.

The most serious problems of the past have been put right, but there are three urgent new challenges that demand we transform our approach:

1. Climate change will change river flows, increase the concentration of pollutants, and increase the growth of algae. This is an urgent threat to water quality¹.
2. Huge investment has failed to increase the 14 per cent of rivers rated good since 2009, despite Government aiming to get three-quarters of them to that standard by 2027.
3. The public’s expectations for their rivers — and what they wish to do in them — has been completely transformed as water quality improved, the popularity of activities like angling, water sports and open swimming has increased massively over the last 20 years². A majority now identify river health as one of their ‘top three’ environmental concerns³.

Percentage of survey sites where presence of otters was recorded

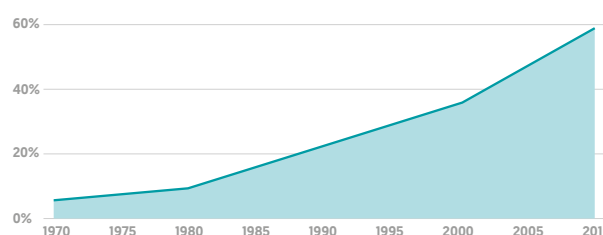


Figure 1: Recovery of otters as an example of species restoration⁴.

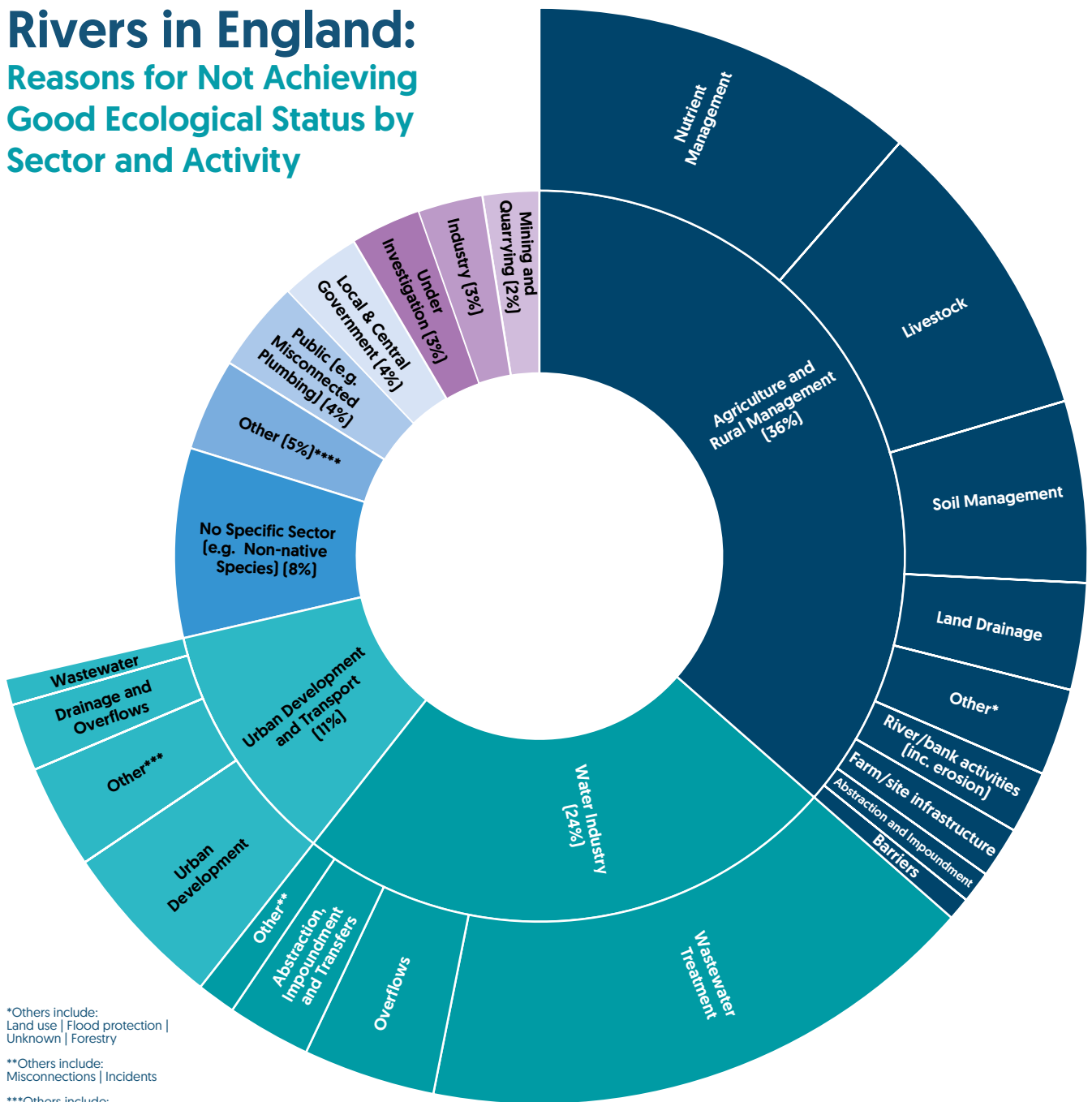
This document calls for a new deal for rivers in England. We are asking everyone — from river users and customer groups, to environmental NGOs, to work with us on a new approach that responds to these challenges. Crucially, with other industries responsible for three-quarters of the reasons for harm in rivers, this needs a new, combined, national endeavour that does things differently.

The recommendations in this document are intended to bring a more effective, evidence-based way of tackling all sources of pollution, as described in the diagram on page 8. More than that, they will together restore the health and resilience of rivers as sources of habitat, life and joy.

1. Source: UK Climate Risk Independent Assessment (CCRA3)
2. Sources: Watersports Participation Survey, Environment Agency Rod License sales
3. Source: Water UK polling of 2096 respondents, England and Wales, May 2021
4. Source: Defra, UK Biodiversity Indicators



Rivers in England: Reasons for Not Achieving Good Ecological Status by Sector and Activity



*Others include:
Land use | Flood protection |
Unknown | Forestry

**Others include:
Misconnections | Incidents

***Others include:
Transport | Flood protection |
Contaminated Land/River bed | Barriers | Unknown

****Others include:
Navigation | Recreation | Waste

5. Source: The Environment Agency
Catchment Data Explorer, September 2021



Actions

The water industry has confirmed investment plans to reduce most of the reasons for not achieving good ecological status as laid out in the diagram opposite. For example, over the next five years the water industry will spend £1.1 billion tackling overflows, while wastewater treatment will also shrink due to a major expansion of programmes that remove phosphorus and other nutrients. But, particularly in other sectors, there are few similar, credible plans to reduce many of the pressures listed here. It is unclear how or when we will see those start to change; equally, we need to increase the impact and speed of those plans that do exist.

The ten recommendations in this document are intended to change that. We want to see a new, jointly-owned National Plan for Rivers that also includes new mechanisms for accountability, legal protection and local empowerment. This should be supported by new tools to help people, improve monitoring and prioritise nature. We want to see early changes on abstraction, storm overflows and a new approach to ‘bathing rivers’. Collectively, this will lead to the shift we need: from ad hoc changes to individual problems towards a systematic plan that deals with all the areas described in the diagram opposite.

Ten Actions for Change

A New Approach	1. A National Plan for Rivers		
	2. Protection in Law	3. Local Empowerment	4. Accountability
Supported by New Tools	5. Next-Generation Monitoring	6. Support for People	7. Prioritising Nature
Delivering Early Changes	8. Abstraction	9. Storm Overflows	10. Bathing Rivers

We want to see early changes on abstraction, storm overflows and a new approach to ‘bathing rivers’.

Ten Actions for Change: A Summary

1

A National Plan for Rivers: Create a clear, single, evidence-based, long-term plan for rivers between Government, regulators, water companies, agriculture, highways and other sectors. This will help guide and prioritise investment and policy change, demonstrate how we will achieve good ecological status nationally, and establish an approach for going further, faster.



2



Protection in Law: The National Plan Steering Group should prioritise the design of a new legal basis that fixes the loopholes in legislation that create unintended consequences. This should be brought together in a new single 'Rivers Act' that focuses on outcomes, with the flexibility to ensure that innovation, particularly in nature-based solutions, can be delivered.

3

Local Empowerment: The National Plan Steering Group should help build on the success of the Catchment Based Approach by agreeing three areas of support. First, by setting more consistent expectations. Second, by ensuring more sustainable, long-term funding. And third, by integrating priorities at the local, catchment level into the plans that make the most difference on the ground - including local development plans, and the work of businesses, water companies and others.



4



Accountability: The National Plan Steering Group should adopt a data-driven approach that looks at all sources of harm within rivers. This should challenge and support each sector to find opportunities to build and sustain river health, and maximise the benefits to people and nature.

5

Next-Generation Monitoring: We need a next-generation national monitoring system for rivers. Building on emerging plans by water companies and environmental groups to introduce new platforms, we need to work towards a single sustainable national platform that sees all rivers subject to timely, accurate, multi-source data on ecology, chemistry, public health and aesthetics.



6



Support People: Building on the early success of the 'Water's Worth Saving' campaign, the water industry is ready to work with Government, manufacturers, retailers, local groups and others to transform the public's understanding of water and the water environment, with a particular focus on education, information and support for changing behaviours on wet wipes, 'unflushables' and water efficiency.

7

Prioritise Nature: Restoration of natural habitats and catchment resilience should be embedded across all legislation, frameworks and funding priorities to remove barriers to water companies, local authorities, NGOs, community groups, farmers and landowners working together to deliver solutions.



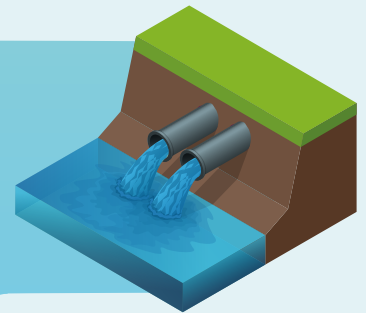
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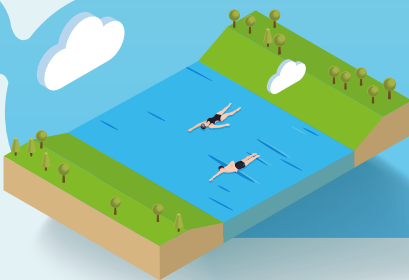
Abstraction: Government should introduce a target under the Environment Bill to reduce the amount of water abstracted for the purpose of public water supply, in order to incentivise action and investment in the most impactful changes. The water industry's next investment period, 2025-30, needs to enable a significant acceleration of efforts to all three components of resilience: demand, leakage reduction, and developing new sources of supply, consistent with working towards a one-in-500-year drought resilience target.

9

Storm Overflows: Government should work with the water industry, NGOs and others to agree a plan in 2022 to progressively eliminate the four per cent of harm caused by storm overflows to English rivers, starting with the most sensitive catchments. The plan should propose new measures to reduce and divert surface water away from drains, including a national commitment by Government on measures to increase demand for — and reduce the cost of — natural, sustainable drainage schemes, deployable at large scale, that help capture and divert surface water and bring beauty and recreation to communities.



10



Bathing Rivers: Government, open swimming and river recreation groups, representatives of agriculture and landowners, the water industry, and local authorities (responsible for safety and access) should jointly develop a new 'Bathing Rivers' framework for supporting the safe recreational use of inland waters, and deployment in every region of England. This will help communities gain even more from their rivers, with benefits for physical and mental health.

1. A National Plan for Rivers

The Problem:

The lack of any clear, single, national plan to restore England's rivers to good status, or single forum for taking decisions, means there is a lack of leadership. Each organisation — whether Government, regulator, water company, or catchment partnership — makes improvements using frameworks and policies that are often outdated, designed for the twentieth-century aim of restoring rivers to 'adequate' rather than genuinely building their health. Not every sector has an incentive to collaborate or improve; actions sometimes prioritise short-term convenience over long-term impact; and the focus tends to be on single areas of concern as explained in the diagram on page 8.

The Solution:

Create a clear, single, evidence-based, long-term plan for rivers between Government, regulators, water companies, agriculture, highways and other sectors. This will help guide and prioritise investment and policy change, demonstrate how we will achieve good ecological status nationally, and establish an approach for going further, faster.

With the right support and leadership from decision-makers across all organisations, this could be established in time to help shape the next phase of the single largest source of water environment funding, the Water Industry National Environment Programme 2025-30.

A new National Plan should:

- Set out clearly the consequences of inaction.
- Be evidence-based, consider all sectors, and include changes owned by Government like regulations, targets and legislation.
- Be overseen by a new, senior, collaborative Steering Group, operating transparently and modelled on the National Framework for Water Resources, which takes a long-term strategic approach to balancing the supply of water. This should agree recommendations for achieving the biggest impact as quickly as possible.
- Identify more detailed outcomes, trajectories and milestones for achieving Environment Bill targets related to water, including less obvious targets, such as how the Government's 2030 ambition for species abundance should translate into activity in waterbodies.
- Identify where fast action is possible and desirable, securing some changes quickly rather than running pilot schemes that may not materialise into wider projects or waiting for the water industry price reviews every five years.
- Consider what comes beyond 2027, when the current framework for achieving good river status expires.
- Lead the introduction of new ways of working, from the use of markets and nutrient trading where that could improve the impact of properly funded catchment management approaches that support working between sectors like the water industry and farmers.
- Make it the norm for different organisations and industries to work together. Building on examples of close cooperation (for example, water industry programmes to collaborate with farmers), all leaders with responsibility for river health should explicitly commit to approaching solutions positively and collaboratively, as objectives will rarely be achievable by one party acting in isolation.
- Support and prioritise work on innovation — both technologies and new ways of working with nature and communities — to ensure we can implement and accelerate later stages of the plan.
- Support the implementation of the other nine recommendations in this document, including through commissioning additional evidence, by drawing up milestones and by prioritising changes.



CASE STUDY

A National Plan for Rivers

Strategic Partnership with the Rivers Trust – United Utilities

In July 2021, United Utilities and The Rivers Trust entered into a strategic partnership to tackle the big challenges facing rivers in North West England. The partnership aims to design a framework to bring together everyone with an interest in the health of rivers from source to sea.

Over the coming years, it will push for coordinated, collaborative action on key issues in the water environment, including pollution, flooding and water abstraction and help deliver adaptations and resilience to combat the extremes of climate change. It is hoped that the strategic partnership will show how collaboration with other landowners, businesses, regulators, NGOs and volunteers can target issues at source and maximise benefits and value for society

The partnership builds on United Utilities' Catchment Systems Thinking (CaST) approach, which has seen over 11,000 hectares of peatland restored over the last 15 years, extending it to land beyond the catchments in the company's remit. It also increases knowledge-sharing between the

organisations, including through secondments. The new partnership aims to facilitate longer-term planning of investment in joint priorities, beyond the current five-year regulatory cycle for the water industry. This will allow for the faster adoption of nature-based solutions and other collaborative ventures, which will increase resilience to the impacts of climate change.

“For too long our rivers have suffered from a fragmented management approach. Our water environment is at a turning point and by working with the Rivers Trust we can help set the agenda to deliver real change for the better. We bring to the partnership more than 15 years of experience in treating water catchments as a single complex system and leveraging skills, resources and funding to make a difference”.

Steve Mogford, CEO, United Utilities

2. Protection in Law

The Problem:

The Water Industry Act 1991 underpins all activities carried out by water companies, but the Act's provisions on sewage are outdated and focus on protecting public health rather than the environment. Subsequent legislation is sometimes prescriptive, preventing water companies from using better, modern and natural approaches to improving the environment, like creating wetlands. A lack of legal efficiency standards also means we needlessly waste water using appliances like dishwashers or washing machines, while non-degradable 'flushable' wet wipes cause overflow-triggering fatbergs and manufactured materials that cause harm, like microplastics, affect our rivers' good ecological status.

The Solution:

The National Plan Steering Group should prioritise the design of a new legal basis that fixes the loopholes in legislation that create unintended consequences. This should be brought together in a new single 'Rivers Act' that focuses on outcomes, with the flexibility to ensure that innovation, particularly in nature-based solutions, can be delivered.

This will also allow us to tackle the serious, long-running problem of products designed without regard to their consequence for the water environment, and with ever-greater efforts being spent on 'clean up' rather than stopping problems at source.

A new Rivers Act should:

- Modernise drainage and sewage legislation to remove current legal blocks to radically increased use of nature-based solutions. This will promote innovation and look at treating river catchments as a whole.
- Ensure developers consider sustainable drainage solutions in the first instance and refuse to grant automatic rights to connect new homes to sewage pipes if doing so would cause pollution.
- Place a duty on Government to consider the impact on water quality when implementing legislation, guidance, codes and other actions. This should include the framework for regulating chemicals, which are often chosen

without thought to their impact on marine life. For example, the process to approve new pesticides does not place enough weight on how easy it is to remove them from the water environment once sprayed, risking their long-term persistence in rivers.

- Introduce a duty on local and central Government, including highways agencies, to prevent discharge to watercourses without prior treatment.
- Create a new category of 'bathing river', modernising the Bathing Water Regulations to better fit inland bathing (explained further in action 10).
- For wet wipes, sanitary products and other frequently flushed items, create an extended producer responsibility scheme to ensure manufacturers meet the full costs of labelling, monitoring, awareness-raising and cleaning up blockages and pollution. This, alongside a requirement to remove plastic from products, should be set out in law with clear timings.
- Require the manufacturers of products claiming to be 'flushable' to achieve accreditation against the water industry's 'Fine to Flush' standard, which tests against the creation of fatbergs. Frequently flushed products not achieving that accreditation should be compelled to carry a clear 'do not flush' label on the front of packaging. There should also be an automatic trigger to ban non-tested products altogether if the Government does not see an improvement in this area.
- Consider new incentives and penalties to encourage producers to avoid harmful formulations in other products (such as tyres and clothes), and to take responsibility for preventing pollution and cleaning up the environment.
- Set minimum standards for water-using products and fixtures, reducing abstraction from rivers and excess load on sewers.
- Protect homeowners against misconnected plumbing by enabling new standards for plumbers, easier identification of pipework, and checks when homes are sold.



CASE STUDY

Protection in Law

Chalk Streams Commitment — Wessex Water

Over the past 20 years, Wessex Water has worked with the Wiltshire Wildlife Trust, Natural England, the Environment Agency, and the Wiltshire Fisheries Association on more than 111 projects to restore over 60km of the Hampshire Avon. This is now supported by Wessex Water's Chalk Stream commitment, which helps reduce pressures on the sensitive environment, safeguarding the rare biodiversity, while protecting the public water supply and providing a flourishing environment for river users.

Wessex Water has sought to balance the need to supply water to their customers without compromising healthy flows of chalk streams, and they have taken steps to minimise the impact of their abstractions. In the last decade alone, the company has invested more than £230 million to reduce the amount of water taken by 23.5 million litres per day, in order to preserve the unique ecology of these rivers.

The company also seeks to ensure that customers' sewage is conveyed and treated at their water recycling centres before being safely returned

to the rivers. In order to remove the level of increasing levels of nutrients from the sewage, and their impacts on chalk streams, Wessex Water has invested £30 million on phosphorus removal at water treatment centres to improve river water quality along the Hampshire Avon. In the longer term, Wessex Water is aiming to eliminate all harm from storm overflows and are working with other companies, regulators and Government to understand the environmental impacts and to make improvements.

“Chalk streams are a remarkable types of river that are unique to this country, with a constant flow of clear, alkaline water coming from groundwater sources which encourage a wonderful diversity of species. Chalk streams are a key strand in our biodiversity work and Partners Programme, and we're really proud to have supported so many important environmental projects since 1998.”

Dave Jones, Senior Regulatory Scientist, Wessex Water

3. Local Empowerment

The Problem:

There are 35 local plans and strategies dealing with the environment at a local level⁶, treating the environment in silos rather than as connected systems with complementary outcomes like soil health, flood alleviation, and habitats. There are complex, overlapping decision and funding processes with different timescales that often struggle to influence other things that matter, like local plans for housing. We need more support and a clearer, stronger, better-supported role for the local partnerships that know their rivers best. The Catchment Based Approach is a successful community-led partnership approach to improving river catchments to build upon, but sometimes has little influence on top-down priorities set for an area, or the approach taken to meeting them.

The Solution:

The National Plan Steering Group should help build on the success of the Catchment Based Approach by agreeing three areas of support. First, by setting more consistent expectations. Second, by ensuring more sustainable, long-term funding. And third, by integrating priorities at the local, catchment level into the plans that make the most difference on the ground - including local development plans, and the work of businesses, water companies and others.

The National Plan Steering Group should secure agreement on:

- The simplification and consolidation of overlapping plans and approaches at a local level, including the joining of funding streams intended to achieve different kinds of goal. This should include tackling the many constraints that make it hard to combine different funding streams, such as differing timescales, guidance and rules.
- Setting clearer national expectations for catchment partnerships and the role they should play. This should be matched by multi-year funding mechanisms to allow them to meet those expectations, including by investing in

people and building momentum. This needs to be underpinned by an active approach to building and sustaining their capacity.

- Strengthening the influence of catchment plans in decision making — including by local authorities. This will need to include further work at national level to raise the profile of successful catchment partnerships and the importance of their contribution.
- Strengthening the legitimacy of catchment partnerships within local communities.
- Further integration of catchment-based partnerships with England's wider water management framework for example, by clarifying their role in work on long-term water resource planning.
- How partnerships should evolve over time. This will need to consider the possible roles of local communities, landowners, democratic representatives, regulators, water companies and others in convening people together and agreeing priorities for action - and which models could best fit different kinds of places.

⁶ Source: The Broadway Initiative, 'Towards a framework for environmental spatial planning.'



CASE STUDY

Local Empowerment

CamEO Partnership — Anglian Water

Anglian Water co-hosts the CamEO Partnership alongside the Rivers Trust. It is a partnership of many organisations who are working together to improve the rivers, chalk streams, and surrounding land across parts of Cambridgeshire, Norfolk and Suffolk — the Cam and Ely Ouse catchment.

The inclusive partnership operates at both the catchment and sub-catchment scales, providing strategic direction while supporting local delivery. By working collaboratively in this way, they aim to align the interests and resources of public, private and third sector organisations to maximise the delivery of sustainable environmental improvements for the catchment.

Overall, the vision of the CamEO partnership is to improve the quality and resilience of the water environment in the Cam and Ely Ouse catchment and, in doing so, protect and enhance the benefits it provides to communities and businesses. This is being done by developing a shared understanding of what is happening in the catchments, and engaging and empowering communities and interested parties to deliver positive action in partnership.

“It’s not just people who need water — it is also the lifeblood of our region’s river environment, supporting thousands of species of invertebrates, fish, wildflowers, birds and mammals in the river and surrounding habitats. Helping to protect and restore these habitats is part of our promise to the environment and the communities we serve. Through our work with organisations in the CamEO catchment, we’ll continue to support projects that help protect and enhance watercourses for people and wildlife.”

Sam Westwood,
Catchment Engagement Manager, Anglian Water

4. Accountability

The Problem:

All sectors that have an impact on rivers have their own regulatory obligations, investment drivers and sources of funding. That has created an incomplete patchwork approach to improving our river health, and a missed opportunity for all sectors — regardless of their priorities — to work together. This lack of coordination can lead to regulators pursuing single environmental objectives at the expense of wider improvements in the waterway. It can also create a situation where the impact of one sector's investment in river health improvement — sometimes in the realms of tens of millions of pounds — can be diminished by another sector's actions nearby. For example, removing the harm from an overflow can improve a river however, this could be undone by something as simple as a large poultry farm opening further upstream.

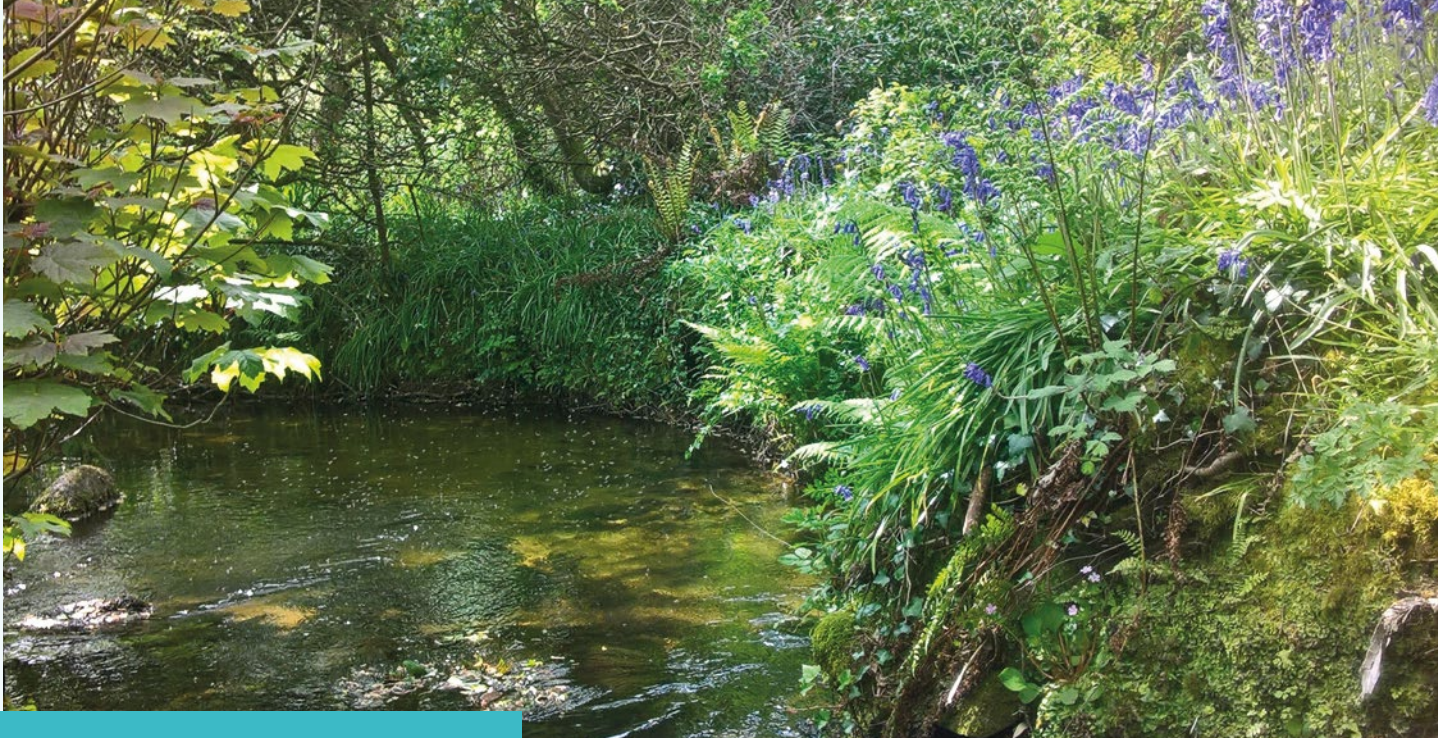
The Solution:

The National Plan Steering Group should adopt a data-driven approach that looks at all sources of harm within rivers. This should challenge and support each sector to find opportunities to build and sustain river health, and maximise the benefits to people and nature.

This should include:

- Identifying the most important gaps in regulatory enforcement or compliance across all sectors. This should result in the creation of plans for dealing with each significant reason for harm, as set out in the diagram on page 8, with meaningful incentives (including regulatory requirements) on each sector to deliver them. This assessment should, of course, include the water sector, as well as priorities for getting future land management subsidies right for maximising environmental outcomes.
- An investment framework that allows farmers to enter into private and public funding agreements alongside each other to 'stack' benefits on the same area of land, and a flexible regulatory landscape allowing water companies to help farmers, landowners and others to meet their fair share.

- Supporting the creation of action plans for pressures that are currently neglected, such as reducing and managing run-off from roads that emit toxic organic compounds into rivers.
- Horizon-scanning for emerging and exotic contaminants, and proposing measures to deal with them, including research to improve understanding.
- Measures to improve cross-sector plans to deal with common issues — for example, by establishing a national register of all assets discharging materials into waterways (including local authorities and private individuals) and for ensuring local authorities understand and can avoid the cumulative environmental harm from individual planning decisions.
- Identifying objectives that deliver multiple benefits but aren't captured by any individual sector's regulatory framework, such as increasing soil health, and proposing ways of supporting their achievement.



CASE STUDY

Accountability

Upstream Thinking Programme — South West Water

South West Water's award-winning Upstream Thinking Programme was established in 2006 and pioneered full catchment management. It has led to thousands of meetings with farmers with direct improvements to farms and a reduction in pesticides to improve river quality.

It now delivers catchment management work in 80 per cent of their drinking region, working with many local landowners to improve the natural environment. To complement this, they are developing inland bathing water pilots on two key rivers, The Dart and the Tavy. This will include extensive monitoring upstream, downstream and along the river to gather new data to better understand the whole river quality dynamic and impacts. This data will support further discussions with relevant key stakeholders around the impacts of the river water quality and will support a full cost and benefit analysis of achieving bathing water designation.

“We are committed to enhancing our rivers for generations to come. Our award winning ‘Upstream Thinking’ programme has been running for over 15 years now, increasing the region’s biodiversity, improving both water quality and natural capital in our region. We’re continuing to work closely in partnership with wildlife charities, national parks and farmers to deliver continued environmental benefits. We are serious about looking after the land to protect our rivers and have experience of improving bathing waters on our lengthy South West coastline. Our success will help us with our pilots to learn more about whole river quality, on the River Dart and River Tavy so that our customers and communities can enjoy the wonderful natural environment.”

Susan Davy, Chief Executive Officer, Pennon

5. Next-Generation Monitoring

The Problem:

There are large gaps in our understanding of the health of rivers and causes of harm. Monitoring tends to be narrowly focused, and on select, specific sites rather than on understanding the full picture. For example, we know how often an overflow spills, but not necessarily its impact — nor how that compares to livestock grazing upstream. Information is not always up to date and it can be hard to use it in a way that supports the planning, prioritisation and delivery of catchment improvements. Across the data that is available, there can be a lack of confidence in its precision and origin.

The Solution:

We need a next-generation national monitoring system for rivers. Building on emerging plans by water companies and environmental groups to introduce new platforms, we need to work towards a single sustainable national platform that sees all rivers subject to timely, accurate, multi-source data on ecology, chemistry, public health and aesthetics.

This should include:

- Agreement, via the National Plan Steering Group, of a long-term sustainable strategy to support monitoring. This would start from the point of identifying the biggest data needs across the entire river, prioritising focus and effort to address those. This should also outline how we can make maximum use of new data (including that generated by recent changes to the Environment Bill), ensuring public bodies, industries, local partnerships and communities would be able to draw meaningful insights that could be acted upon.
- Proper funding for the Environment Agency to monitor the full health and characteristics of each river in a way that is timely and accessible, with regularly-updated information on the causes of any harm. The Environment Bill should be amended to give this statutory underpinning.

- Support for innovation in AI sensor technology and how it is deployed, to allow the greater use of more kinds of automated monitoring.
- An exploration, as part of our proposals on 'bathing rivers', of metrics that go beyond ecological health to reflect the interests and concerns of river users in wider issues like public health.
- An approach to progressively extending the monitoring of river catchments to smaller tributaries, lakes and ponds that are not monitored under the Water Framework Directive but can have a disproportionate impact on ecology.
- New, standardised methods for integrating different kinds of data and ensuring integrity and robustness – particularly where there are issues like telemetry from remote locations.
- Training and support for citizen science to encourage involvement while also ensuring consistency. This should build on the range of existing support, and enable data to be provided in a way that can easily be integrated into data platforms.
- Measures to reduce uncertainty and increase the confidence and integrity of data, whether collected by regulators, individuals or industry, including the water industry.



CASE STUDY

Next-Generation Monitoring

Oxford Rivers Project — Thames Water

The Oxford Rivers Project is a joint initiative between Thames Water, Thames21, The Rivers Trust and Oxford City Council. It aims to reduce the impact of sewage pollution and make the city's popular recreational river sites safe for leisure use, while enabling wildlife to thrive. The evidence collected will also support an application for a designated bathing water in the area.

As part of this, Thames Water has committed to investing £26 million upgrading the capacity of the nearby sewage works to ensure rainwater does not increase the likelihood of the use of storm overflows. The company has also introduced a system of live alerts for when sewage discharges from six locations in the river. The alerts are live tweeted via @oxfordthamessewage, and there are plans for a public subscription service at a later date. Samples have also been collected from the river to monitor bacteria levels that can be linked to sewage discharges.

The Oxford Rivers Project will help improve the river health through increased transparency and collaboration, and evidence-based, collaborative working towards a shared goal.

“Discharges of untreated sewage are unacceptable to us, our customers and the environment, and we will work with the government, Ofwat, the Environment Agency and others to accelerate work to stop them being necessary.”

Richard Aylard, Sustainability Director, Thames Water

6. Support for People

The Problem:

People are often unaware that their actions can have a big impact on local rivers, coasts and lakes. We want to increase awareness and support for doing the right thing. For example, 7 million wet wipes are flushed each day, making up about 93 per cent of the material in fatbergs, which can cause pollution and blockages. At the same time, the impact of Covid 19 has increased home water use, increasing the volume of water abstracted from rivers.

The Solution:

Building on the early success of the 'Water's Worth Saving' campaign, the water industry is ready to work with Government, manufacturers, retailers, local groups and others to transform the public's understanding of water and the water environment, with a particular focus on education, information and support for changing behaviours on wet wipes, 'unflushables' and water efficiency.

This should include:

- Encouragement and support from public bodies, local groups, catchment partnerships and industries for the role that rivers play in communities. That means including measures in plans that help people get the most out of rivers, recognising the role and value of citizen science, and acknowledging the importance of hyper-local interests as legitimate aims to work towards.
- A framework for catchment partners, the water industry and others to integrate and fund the expanded use of community and public outreach as part of their planning and prioritisation, building on existing approaches like water companies' customer engagement on business plans. This needs to ensure all parties are listening to everyone with an interest in rivers, and are genuinely responsive by incorporating local views on how best to improve river health at the early stages of planning, rather than as an afterthought.
- Overarching messages on river health tied to individual locations to allow people to understand that different actions will have an impact on local natural features.
- New approaches for working with the hospitality sector to promote grease management equipment and support local oil recycling schemes. This should also identify specific research on the problem of fat, oil and grease (which cause pollution-triggering fatbergs) and how to support businesses in dealing with those responsibly.
- Increasing awareness of the hundreds of thousands of cases of misconnected plumbing which result in chemicals and human waste being sent into the wrong drains and straight into rivers. This should outline ways of building on the existing platforms like www.connectright.org.uk and set out new ways of working with customers, plumbers and others.
- New national approaches to promoting plastic-free, non-blocking flushable products, complementing the legal measures outlined in action 2 (see page 14). This should include a step-change in communications from all parties, including retailers and manufacturers. This is particularly important because blockages and fatbergs cause the worst kinds of overflows that are undiluted by rainwater.
- Work to support the impact and spread of smart metering, which helps customers understand their usage and allows internal leaks to be spotted and fixed, as well as programmes that support customers to use less water.



CASE STUDY

Support for People

River Rangers — Severn Trent Water

Severn Trent's Green Recovery programme is an Ofwat-approved programme of work that aims to improve the health of rivers across their region. It aims to help the company introduce wild swimming on parts of the River Leam and the River Teme by creating bathing quality rivers stretches, as well as improving 500 kilometres of rivers across the region five years earlier than planned. The programme will also look to roll out nature-based approaches to reduce the risk of flooding in Mansfield while creating a green environment, something never previously seen on this scale in the UK. The project will minimise the amount of surface water from entering the sewer network that ultimately reaches the river.

The company also launched a new River Rangers initiative – a dedicated team that will protect and improve the health of rivers in their region. The team of ten will be embedded within communities to talk to customers, farmers and anyone with a role to play when it comes to protecting rivers and the environment. They will also play a key role in delivering the company's ambitious Great Nature Boost Campaign.

“We don't own rivers, but we want to play a leading role in looking after them. The creation of new initiatives like our River Rangers, our Great Big Nature Boost and the Green Recovery programme reinforce our industry-leading position and demonstrate that we're totally committed to doing everything we can to ensure that our rivers are healthy and thriving, and can be fully enjoyed by our customers and communities for generations to come.”

Liv Garfield, CEO, Severn Trent Water

7. Prioritising Nature

The Problem:

Forty-one per cent of UK wildlife is in decline, with 15 per cent threatened by extinction, while 133 species have been lost completely since 1950⁷. The water environment is central to much of that biodiversity but most funding mechanisms are heavily focused on water quality rather than habitat protection and restoration.

The Solution:

Restoration of natural habitats and catchment resilience should be embedded across all legislation, frameworks and funding priorities to remove barriers to water companies, local authorities, NGOs, community groups, farmers and landowners working together to deliver solutions.

This should include:

- A clear view from Government on the contribution it expects the water environment to make by 2030 toward the new State of Nature species abundance target to be set under the Environment Bill.
- A more holistic approach to targets set under the Environment Bill and the Water Industry National Environment Programme, to ensure sufficient weight on the full breadth of environmental ambitions from carbon to climate adaptation to biodiversity. The risk is that billions of pounds of investment is otherwise narrowly targeted at removing nutrients from the ends of pipes, while causing other kinds of environmental harm and ignoring goals like habitat and species restoration.
- Options for further expanding and accelerating recent tentative proposals to improve the water industry's environment programme through more partnerships and catchment-based approaches.
- Agreement of a shared, high-level intention for the number, quality and scope of capture-based schemes that Government, regulators, the water industry, landowners and others want to see delivered. This would accelerate progress and give the supply chain enough confidence to invest in preparing for wider-scale roll-out of schemes, bringing down their cost. Work should be undertaken by the National Plan Steering Group to ensure we move as swiftly as possible to achieve this by assessing and prioritising the barriers that stand in the way, and by ensuring that all plans reach for nature-based schemes by default.
- Recognising the importance of the water industry to the nature recovery network, with rivers as a natural wildlife corridor linking dispersed habitats together. We need an easier way of identifying and agreeing the benefits of those corridors, and of investing in schemes to grow them.
- Use of Government's new powers under Clause 101 of the Environment Bill to ensure Local Nature Recovery Strategies take full account of the needs of aquatic and wetland habitats and species within each strategy area.

7. Source: The State of Nature 2019 by The State of Nature Partnership



CASE STUDY

Prioritising Nature

Collaborating with Farmers — South East Water

As part of their catchment management programme, South East Water have been funding trials with farmers in Hailsham, Haywards Heath and Heathfield in Sussex on maize fields to help improve soil structure and rainwater infiltration. The trials seek to understand how growing rows of grass in-between maize crops can prevent soil and nutrients reaching nearby rivers.

Known as inter-row sowing, this keeps the soil and valuable nutrients on the farm and away from the rivers, which are the sources of drinking water for parts of East and West Sussex.

Improving the quality of the river water at source makes it quicker and easier to turn into top-quality drinking water, lowering the carbon footprint of the water treatment process.

“We have a long history of working in partnership with farmers and landowners to improve water quality at the source and make their land easier to manage.

The results of the trials so far have shown that inter-row sowing greatly improves soil structure and water infiltration without affecting the yield.”

Anne Blokhus, Catchment Advisor, South East Water



8. Abstraction

The Problem:

Significant effort has been made in recent years to reduce the volume of water abstracted from rivers by the water industry. However, internationally-important chalk streams still experience periods of low flow, while most attention on reducing demand is focused on residential customers, leaving other customers, like businesses, with few options for support or real incentives to act. There is a window over the next year or two for accelerating efforts across demand, leakage and the supply of water that could make a big difference to abstraction while leaving enough water in rivers for nature.

The Solution:

Government should introduce a target under the Environment Bill to reduce the amount of water abstracted for the purpose of public water supply, in order to incentivise action and investment in the most impactful changes. The water industry's next investment period, 2025-30, needs to enable a significant acceleration of efforts to all three components of resilience: demand, leakage reduction, and developing new sources of supply, consistent with working towards a one-in-500-year drought resilience target.

This should include:

- A 'distribution-input' based approach to setting targets under the Environment Bill. This method reflects all the action that is needed, from reducing demand across all customers to leakage and the provision of new supplies.
- Recognition of work by the five regional water resource groups, comprising water companies and major water users, to plan for the future, with funding made available to achieve agreed outcomes.
- Implementation of the Catchment Based Approach Chalk Stream Restoration Strategy⁸ to protect river flow levels even at times of stress.

- Clear environmental expectations from Government on the implementation of sustainability measures, in order to allow schemes to be brought forward. This applies not only to sensitive catchments like chalk streams but also for other waterbodies, where additional water is almost always ecologically beneficial.
- Delivery of actions identified in the water industry's forthcoming Leakage Routemap. This will set out clearly the actions needed from water companies and others to further accelerate reductions in leakage levels, allowing more water to be left in the environment.

⁸. Source: <https://catchmentbasedapproach.org/wp-content/uploads/2021/05/CaBA-Strategy-Doc-Lay-Out-2-20.5.21-Lo-Res-copy-compressed.pdf>



Photo Credit: Penny Bird

CASE STUDY

Abstraction

Save Our Streams — Affinity Water

Affinity Water's region — across the Home Counties — has some of the highest housing and population growth rates in the country, as well as many unique water environments, including many chalk streams. It is also an area of high water use, with their customers using nine per cent more water per person, per day than the national average. In order to reduce the pressures on the unique local environments, and the wildlife within, Affinity launched the Save Our Streams (SOS) campaign.

SOS seeks to prevent 21 million litres of water from being wasted every day (less than 10 litres per person, per day), the equivalent of 8.4 Olympic-sized swimming pools. The campaign pairs water company action, such as leakage reduction, environmental restoration projects and reductions in water abstraction from rivers, like the Chess, with customer communication activities to encourage them to reduce water use.

For example, a giant working bath, 125 times the size of a regular bath, has even been touring towns and cities in their region, as part of the campaign, to highlight unsustainable water wastage. To date, over 145,000 people have signed up and pledged to reduce the amount of water they use on a daily basis.

“The current demand for water is unsustainable and it must take a collective effort to address water-wasting behaviours. Affinity Water is committed to ending unsustainable abstraction from local chalk streams, but it has to be a community effort. Every single person who has signed up to the campaign so far will be making a difference.”

Ed Barnes, Head of Demand Management, Affinity Water

9. Storm Overflows

The Problem:

Despite progress over the last decade in dealing with the most damaging storm overflows, public expectations have overtaken this pace. In addition, while their direct environmental impact is small, overflows can make it much harder for people to enjoy and get close to rivers. However, their complete removal would cost hundreds of billions of pounds, while diverting funding from issues that we know cause more ecological harm.

Unless we change our approach to surface water management, our drainage infrastructure will not be able to meet the demands of a growing population and be resilient to the impacts of climate change. To meet the scale of the challenge, as a society, we must reduce the amount of surface water entering our sewers and use natural options. This includes increasing the use of sustainable drainage systems in new developments such as swales, wetlands and balancing ponds. These will help capture and divert surface water, lower flood risk and provide green spaces for communities and wildlife.

The Solution:

Government should work with the water industry, NGOs and others to agree a plan in 2022 to progressively eliminate the four per cent of harm caused by storm overflows to English rivers, starting with the most sensitive catchments. The plan should propose new measures to reduce and divert surface water away from drains, including a national commitment by Government on measures to increase demand for — and reduce the cost of — natural, sustainable drainage schemes, deployable at large scale, that help capture and divert surface water and bring beauty and recreation to communities.

This plan should include:

- Prioritising the elimination of harm from overflows rather than the raw numbers of spills, which may have virtually no environmental (or, in some cases, public health) impact.

- Agreement that the proposed Rivers Act should embed two fundamental principles: 1) new sources of rainwater should not be mixed with foul water and 2) rainwater should be returned to the environment as close to where it lands as possible. This is much better than the alternative for dealing with overflows, which involves the creation of lots of concrete storage followed by the pumping and treatment of rainwater.
- Clear expectations and timelines for industry and regulators on the most urgent priorities for investment by setting out a long-term trajectory.
- The implementation of Schedule 3 of the Flood and Water Management Act by the end of 2022 at the latest. This measure, which Government has said it is considering, would promote the use of alternatives to adding sewage into already-overloaded networks, including using sustainable drainage where possible.
- An impact assessment that sets out how the plan will affect bills, carbon and other objectives, and options for minimising any counterproductive impacts.
- Extra support for plans and investments that make use of natural schemes for purifying the water from overflows — for example by creating wetlands that also create new habitat and attractive natural spaces.
- Locally targeted support from Government for an ambitious large-scale programme to retrofit sustainable drainage solutions in priority areas of the country. Coupled with the recommendations on biodiversity, this should allow easier access for local authorities, landowners, Government, water companies and others to higher-quality, cheaper and more impactful schemes to reduce the flow of rainfall into sewers.



CASE STUDY

Storm Overflows

Bin the Wipe — Northumbrian Water

In January 2020, Northumbrian Water launched their Bin the Wipe campaign to urge people to dispose of their wet wipes containing plastic responsibly in order to avoid sewer blockages, flooding in homes, and pollution. This came after research found that 64 per cent of the 16,500 blockages they cleared in the North East contained wet wipes.

The company analyses and pinpoints areas in their sewer network to identify where there maybe a high prevalence of misflushed plastic wipes. They then send in sewer workers to be a dedicated presence, monitoring sewers, removing blockages and tracing back to the homes from which wipes have been flushed. They also distribute educational letters in an effort to raise awareness of the issue and encourage behaviour change.

Wet wipes cause blockages that reduce sewer capacity and increase the likelihood of storm overflows being used in 'normal' circumstances, when they are intended for use in exceptional periods of rainfall. Therefore, the best way to reduce wipe-induced storm overflow use is to keep them out of the sewer in the first instance, unless the wipes meet the Fine to Flush standard.



“When a sewer gets blocked, all the waste people flush away is stopped in its tracks and can only go either back to where it came from or out into the environment. That is the worst thing that can happen to a customer in relation to our network, so we want to stop such unnecessary problems at their root cause.”

**Simon Cyhanko, Head of Wastewater Networks,
Northumbrian Water**

10. Bathing Rivers

The Problem:

Legislation on rivers was not designed with swimming in mind. This has led to a very slow adoption of measures to improve conditions for river swimming, as no one — including the water industry — has objectives to monitor micro-organisms in rivers as a normal part of their activities. However, we know that interest in open swimming has increased hugely recently. Enabling swimming also requires collaboration between landowners, farmers, local authorities, water companies and others to make practical changes.

The Solution:

Government, open swimming and river recreation groups, representatives of agriculture and landowners, the water industry, and local authorities (responsible for safety and access) should jointly develop and deploy a new 'Bathing Rivers' framework for supporting the safe recreational use of inland waters in every region of England. This will help communities gain even more from their rivers, with benefits for physical and mental health.

This framework should include:

- The criteria by which sites should be selected, as well as how best to consider questions such as length of bathing area.
- A new way of applying for bathing river areas, moving away from the current clunky model. We should agree the evidence needed, including an approach to evaluating impacts on other environmental objectives and cost, with a 'pre-application' process to allow plans and sites to be tested and sampled, and engagement to be carried out. The process should be clear about the triggers for moving to each subsequent phase, including the automatic expectation that an identified funding arrangement will automatically follow, subject to criteria being met.
- Options for enabling faster, cheaper and healthier approaches to open swimming — for example, by advising use of the river during certain times or periods of the year, or being supported by more real-time information.
- Consideration of a Rivers Act 'duty to cooperate' on local authorities, the Environment Agency and those discharging into bathing rivers. Each of these parties will be essential for making plans work in practice.
- A national approach to education, information and awareness-raising. This needs to help people understand all the risks associated with entering the water, that no part of nature will ever be completely devoid of microbiology, and provide advice on hazards like cold water shock and strong currents. It should also reflect and enable access to new sources of data as they become available either due to the Environment Bill or the other recommendations in this document.
- Learning from pilot schemes currently being delivered on the River Wharfe, Teme and Avon. For example, we need to understand the best models for agreeing plans to enable bathing rivers, given different organisations' varying interests and objectives across issues like public health, safety and access.
- The innovation needed to scale up pilot approaches, including research through the industry-funded Chemicals Investigation Programme.
- The links between habitat restoration and the natural removal of pathogens through natural processes.
- The importance and approach of dealing with issues like nanoparticles, microplastics, trace pharmaceuticals and antibiotic resistance.
- An approach to balancing the different environmental and recreational needs of a particular stretch of river, for example, objectives on aesthetic and amenity value versus chemistry and biology, or recreational uses like swimming versus navigation or species protection.
- Making it easier for communities not immediately adjoining rivers to become involved in the creation of bathing rivers and obtaining benefit from them.



CASE STUDY

Bathing Rivers

River Wharfe, Ilkley — Yorkshire Water

In December 2020, the Government designated a stretch of the River Wharfe in Ilkley, West Yorkshire as England's first designated inland bathing water. This led to the creation of a new partnership between Yorkshire Water, the Dales to Vales Rivers Network catchment partnership, the Environment Agency and other partners. The new group is undertaking coordinated work to improve the health of the river.

The partnership will work to help manage the bathing water but, crucially it will also look more widely at the overall health of the river to ensure that improvements are made for the natural environment, as well across the wider catchment.

As part of this, Yorkshire Water is working with the Environment Agency and Bradford Council to remove surface water infiltration into the sewer network from the nearby moorlands, in order to reduce spills from storm overflows into the river by up to 20 per cent. This will also help shape the new partnership's plans to improve water quality in the area.

Yorkshire Water is also introducing a 'smart networks' pilot for the sewer system in Ilkley, which would see them installing advanced monitoring technology in the sewer network to measure flows and water quality to help manage the network. This will be instrumental in improving the understanding of water quality issues in the area and marks the first steps towards coordinated collaborative improvements.

"The health of our rivers is an issue that has really captured the attention of the public recently. This, combined with the impacts of climate change mean we need to look at what we want our rivers to be like in future. Bathing water status puts the focus on the public health aspects of river quality but we also need to look at the bigger picture to ensure the wider environmental health of the river is addressed. We hope this partnership on the Wharfe will play an important part in helping to improve the health of the river for both people and wildlife."

Ben Roche, Director of Wastewater, Yorkshire Water



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