
A vision for our coasts and rivers

An update for 2024

NORTHUMBRIAN
WATER *living water*

ESSEX & SUFFOLK
WATER *living water*

Foreword

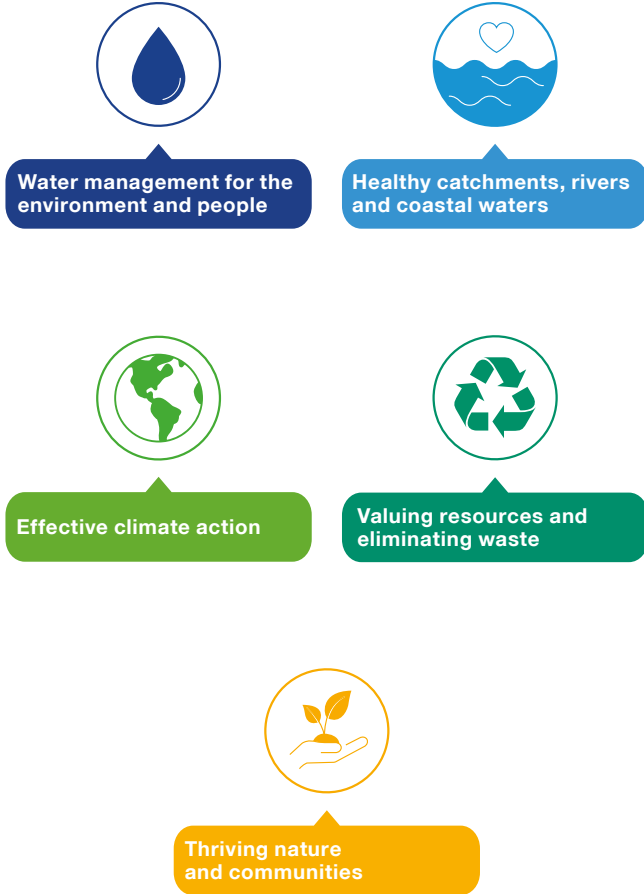
It's evident that environmental stewardship is deeply ingrained in our business ethos, forming an integral part of our company's purpose.

In our regions, we're fortunate to have some of the most stunning rivers, coasts, and wildlife habitats in the country. Recognising their significance to our communities and safeguarding these natural assets serves as a major source of motivation for our employees in carrying out their vital duties each day.

Our Environment Strategy, unveiled in September 2023, builds upon our past achievements and outlines our path forward. This strategy not only underscores our commitment to preserving these coasts and rivers but also articulates our environmental aspirations for the future.

The strategy is made up of five Environmental Priorities that work together to contribute to our ambition:

“ Together, we are restoring and regenerating our natural environment, creating a better place through our actions.



Our vision for coasts and rivers is an essential part to us achieving the commitments we have made in the [Environment Strategy](#) and in our wider [Business Plan for 2025-30](#).

I am proud to see the progress we've made since the launch of our nine pledges in 2022, outlining our commitment to the preservation of our coasts and rivers. This report provides an overview of the steps we've taken since then, building upon the updates provided in 2023. Importantly, many of these efforts have been undertaken in collaboration with other organisations that share our dedication to safeguarding our water environment.

I'm pleased to present this report, which highlights our advancements in caring for our water environment, ensuring its vitality for current and future generations.



Heidi

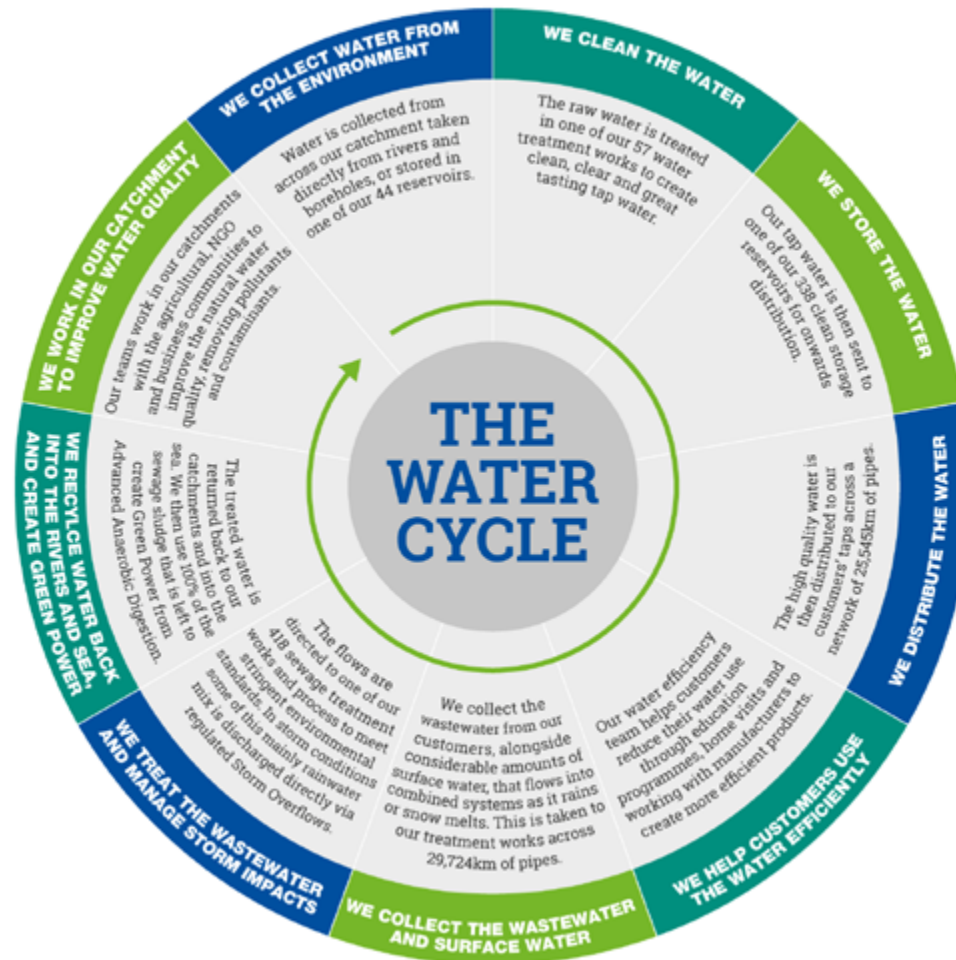
Heidi Mottram

CEO, Northumbrian Water Group



Welcome from Richard

Our rivers play a crucial role in the water cycle and are fundamental to our ability to provide water and wastewater services to our customers. By sourcing water from the natural environment, treating it to the highest standards, and delivering it to households and businesses, we ensure the provision of clean and safe water.



Our original report, where we set out Nine Pledges, and our 2023 update can be found [here](#) and this report provides a further overview of the work we have been doing to meet these pledges.


In 2022, we committed to a series of ambitious pledges aimed at enhancing our water environment. These pledges are designed to ensure that we continue to improve our processes and services, responding to the expectations of our customers and building on our long history of environmental stewardship. Over the past decade, we have significantly reduced pollution incidents by two-thirds, increased the number of beaches rated as Good or Excellent from 8 in 2000 to 32 today, and cut our greenhouse gas emissions by 90% since 2008. These achievements have been made possible through substantial investments amounting to millions of pounds each year.

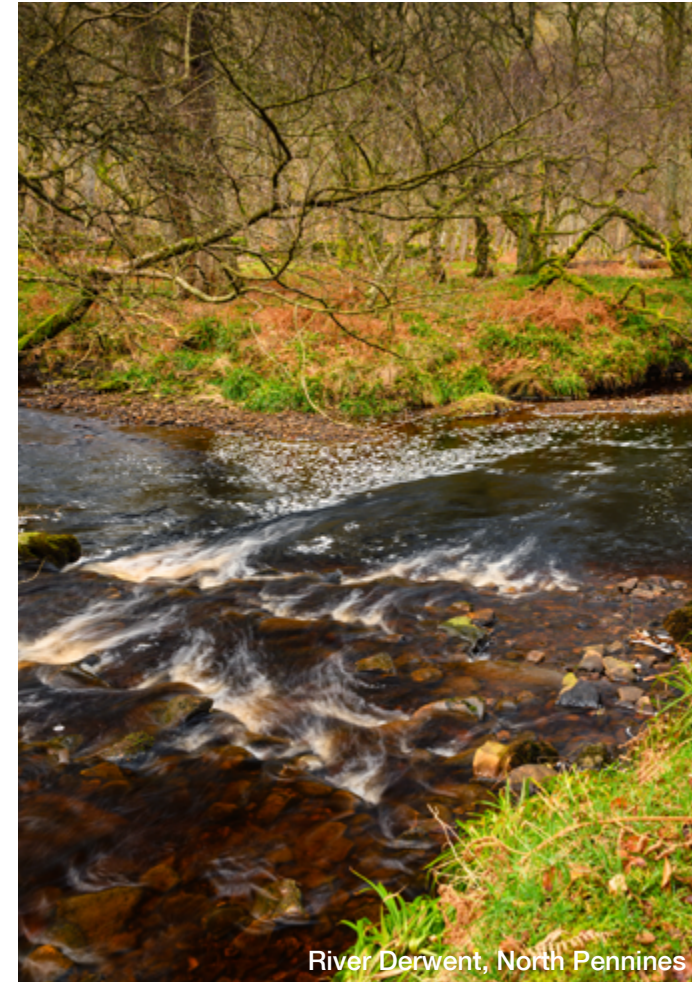
Our pledges are a testament to our dedication to maintaining and improving the positive trajectory we have established across our regions. While we recognize that many factors influencing the water environment are beyond our direct control, we are committed to leading by example.

We take our responsibility seriously and often collaborate with partner organisations to leverage our assets and expertise, even in areas where our operations may not be directly responsible for environmental impacts. Our leadership and support are critical to driving the improvements necessary for a sustainable water environment.

This update provides you with an overview of the work our team have been doing this past year to meet these pledges we have committed to.

We are pleased to announce the completion of Pledge 2, which involves monitoring all storm overflows and making real-time data available through our live storm overflow map. This map allows anyone to check real-time data on flows from all our storm overflows in the region.

 [Click here to view our live storm overflow map](#)



River Derwent, North Pennines

However, our work doesn't stop here. We will continue to monitor the system closely and seek feedback from our customers about the information provided. Based on this feedback, we will make any necessary improvements to ensure the system meets their needs. Our commitment to transparency remains strong, and we are dedicated to being open about the work we do and our operational activities.

We were hugely disappointed to see the number of spills to the environment increasing over the past year, whilst this is largely a function of the weather which has been substantially wetter with many more named storm weather events for example, we know that people want to see the number and duration of spills to the environment decreasing.

That is why we are investing more than ever in this space and also exploring new innovations through the introduction of smart sewers that will help us to use the capacity in the wastewater network better and avoid spills to the environment in the future.



A handwritten signature in black ink that reads "Richard".

Richard Warneford

Wastewater Director, Northumbrian Water Group



River Tees, Barnard Castle



River Wear, Witton-le-Wear

Our responsibilities and plans

Long term Delivery Strategy

We published our long-term strategy for the 2025-50 period in September 2023. The strategy sets out a series of ambitious goals for the improvements that we want to see for our rivers and coasts over that time, including in relation to reducing spills to the environment, increasing biodiversity and achieving carbon net zero. It also sets out the new investment we need to make to deliver these improvements, as well as the impact this could have on bills and how we would seek to make them affordable for all our customers. It examines how things might change under different future scenarios, taking into account uncertainties like climate change, growth and other factors. Finally, it highlights the key choices we must make in the future to make sure that we deliver the long-term improvements customers and stakeholders want to see in the most efficient and effective way.

 [Click here to view our Long-term Delivery Strategy](#)

Environment Strategy

This document presents our Environment Strategy out to 2050. The environment is at the heart of everything we do as a business, so our role in protecting the environment is not new for us and forms part of our company's purpose. This strategy builds on what we have already achieved and sets our direction for the future – to achieve our environmental ambition of:

Together, we are restoring and regenerating our natural environment, creating a better place through our actions.

We have broken down this journey into five Environmental Priorities that work together to contribute to our ambition:

- Water management for the environment and people;
- Healthy catchments, rivers and coastal waters;
- Effective climate action;
- Valuing resources and eliminating waste; and
- Thriving nature and communities.

Each Environmental Priority consists of several focus areas, and our strategy outlines the commitments we are making across these.

We will monitor our progress against these commitments and measure and report our success in delivering positive outcomes. We will also set up an External Stakeholder Group to make sure our ambitions and performance are meeting expectations.

We will review this strategy every five years - or sooner if triggered by a significant policy, technological or environmental change - to make sure our priorities are up to date with our stakeholders' and wider environmental priorities.

 [Click here to view our Environment Strategy](#)

Drainage and Wastewater Management Plan

Our Drainage and Wastewater Management Plan (DWMP) helps us to prepare for changes to the environment in our region. Our plan looks more than 25 years into the future and sets out what we will need to do to keep our wastewater systems fit for today and the future.

In May 2023 we published our final DWMP. The plan identifies how we will extend, improve, and maintain a robust and resilient drainage and wastewater system considering the pressures of climate change, population growth and growing customer expectations. The DWMP sits within the wider context of our long-term delivery strategy (LTDS) as well as a number of statutory or legal requirements such as the Storm Overflows Discharge Reduction Plan (SODRP) and the government's 25 Year Environment Plan (25YEP).

Through our DWMP we have developed a preferred plan that incorporates all of the significant investments to meet new statutory requirements and additional investments to improve performance where required.

 [Click here to view our draft Drainage and Wastewater Management Plan.](#)

Water Resources Management Plan

Our draft Water Resources Management Plans (WRMPs), covering both our Northumbrian and Essex & Suffolk operating areas, were published in 2022. These set out how we intend to maintain the balance between supply and demand for water between 2025-2050. Our plans need to make sure we maintain a secure and sustainable supply of water, focus on efficiently delivering the outcomes that our customers want, while reflecting the value that society places on the environment.

We have always monitored the impacts of taking water from rivers and groundwater and taken timely action to make sure the environment is not damaged as a result. In preparation for these plans, we completed a comprehensive series of abstraction sustainability investigations. We have agreed with the Environment Agency that where the amount of water our abstraction licences permits us to abstract each year is not sustainable, we will reduce our licences and our plans are made on this basis.

Following the consultation, we reviewed the feedback we received and published our 'Statement of Response' on Monday 31 July 2023 and also our 'Further information in support of our Statement of Response' on 29 March 2024. This advises how we have taken account of each response in our draft final WRMP, which is available to view below.

We will publish our Final plans once approved by Defra.

 [Click here to view our draft Water Resources Management Plans.](#)

Business Plan

Every five years, Ofwat carries out a price review for all water and wastewater companies. We are required to produce a Business Plan that sets out all the things we want to deliver for our customers, such as reductions in flooding, or improvements in customer service.

We submitted our Business Plan in October 2023 and received Ofwat's draft determination in July 2024 and outlines Ofwat's views on how much revenue we can collect from customer bills, and what level of service we need to provide to our customers in return. We will feedback to Ofwat in August 2024 and expect to receive Ofwat's final determination in December 2024. This will determine the revenue we can collect from customer bills, and the levels of service we need to provide, for 2025-30.

We plan to invest £4.5 billion in the region, which is the largest in the last 30 years. This investment is aimed at improving the water and wastewater infrastructure, environmental sustainability, and customer service. Approximately £1 billion of this investment will focus on reducing the use of storm overflows and improving bathing water quality.



[Click here to for more information about our Business Plan.](#)

Case study: Enhancing customer service efficiency

In early 2023, we identified a significant issue: nearly 30% of field jobs dispatched for blockage and flooding incidents were unnecessary, often stemming from private property issues beyond our responsibility. This inefficiency not only incurred avoidable costs but also strained customer relations because even when we dispatched teams to support our customers' they could not take action where the assets were not our own.

To address this challenge, we redefined our approach to customer conversations, focusing on value-driven interactions. Despite the potential for customer disappointment, we set an ambitious goal of reducing unnecessary jobs by 30% while maintaining our exceptional customer satisfaction (C-MeX) scores.

We adopted new practices, including daily huddles, learning teams, coaching, and resolver practices. Through group coaching sessions and ongoing support, advisors gained knowledge and confidence in navigating such conversations. This approach was embedded into our training process, ensuring all new hires were equipped with the necessary skills.

To measure progress, a Power BI dashboard was implemented, providing real-time performance insights. The results were outstanding: over £100,000 saved to date, surpassing the original target with a reduction of almost 16% for blockages and 14% for external flooding. These savings have helped to either improve our efficiency and lower bills for customers or can be reinvested to further improve service levels.

Simon Cyhanko, Head of Wastewater Networks, praised the initiative for its significant cost savings and collaborative approach. The implementation of 'better validation' principles not only reduced unnecessary costs but also exemplified our commitment to learning and teamwork.



Case study: Green energy expansion

A high-tech test facility that uses heat to capture ammonia from sewage, ready to turn into green fuels, is now up and running in the North East. The idea to develop an ammonia recovery plant won a £225,000 funding bid from the Ofwat Innovation Fund in 2021.

The project, in partnership with environmental technology company, Organics Group, will see thermal energy strip and recover the ammonia from wastewater, the first time in the world that a water company has ever recovered ammonia using a thermal technique in this way. The recovered ammonia product can then be used to generate fertiliser products and green fuels that may be used in the emerging hydrogen economy.

We have taken delivery of a purpose-built advanced ammonia stripper and recovery system, a small-scale treatment plant, which is being trialled at our existing Howdon Sewage Treatment Works in North Tyneside.

A testing programme is now in full swing, with the facility already recovering 95% of a high strength ammonia product.

Ammonia is present in wastewater through the natural breakdown of proteins and is a building-block used widely in the production of valuable chemicals, such as pharmaceuticals, fertiliser products and green fuels.

Removing ammonia will also have a number of benefits for our wastewater treatment process, making it more efficient by reducing overall energy demand, reducing greenhouse gas emissions and ultimately helping to keep customer bills as low as possible. By minimising emissions from the biological treatment process, it will also help to accelerate our ambitious net zero goals.

Angela MacOscar, Head of Innovation, said:



To be the first, not just in the water industry, but in the world, to use this bespoke technology is incredible and testament to our commitment to improve the environment and drive us even further on the road towards net zero.

“As a business we have been supporting a circular economy for many years by generating renewable energy, recycling sludge to land and maintaining a healthy water cycle. This is the next stage of our continual journey to maximise our resource efficiency.”

Case study: Building Futures Graduate scheme

As we prepare for a period of unprecedented growth and investment, the launch of our new graduate programme signalled our commitment to cultivating talent and driving sustainable development. With exciting new positions available within the Assets Directorate, the programme offers graduates a unique opportunity to kick-start their careers and contribute to meaningful projects that impact millions of lives.

Designed to provide a comprehensive learning experience, the programme offers structured training and mentorship from seasoned professionals within our diverse teams. Graduates will have the opportunity to work on a wide range of projects, gaining exposure to various aspects of asset management and infrastructure development.

Monisha Gower, our Assets Director, emphasised the importance of the graduate programme in shaping the company's future workforce. This programme is not just about recruiting talent," she explains.



It's about investing in the future leaders of our industry and empowering them to drive positive change. By providing graduates with the skills and knowledge they need to succeed, we're building a more resilient, sustainable future for our communities."

More than 200 individuals applied for the programme, with 87 candidates being invited to attend assessment centres across our northern and southern operating areas. The diversity of applicants was pleasing, with 72% being female and people coming from a multitude of disciplines, from environmental science to civil engineering to biomedical science.

Originally, eight positions were available in the scheme, however, we expanded this to 11 roles reflecting the talent available. Additionally, we unearthed a pool of talent whose skills and qualities align with other areas of the business and we are exploring the potential to link those candidates with our wider workforce.



Case study: Introducing the Living Water Enterprise... Our largest ever package of framework agreements

The Living Water Enterprise (LWE) marks a significant milestone in our journey towards transformative investment and sustainable development. With the addition of seven new partners, LWE has expanded its network of collaborators, forming an industry-leading collaborative partnership that lies at the heart of our plan for transformational investment and change.

Embodying our commitment to local communities, the LWE is founded on the principles of economic sustainability and community engagement. By partnering with local businesses such as Esh-Stantec and Avoxe Limited, we not only stimulate regional economies but also foster a sense of ownership and pride within the communities we serve.

Environmental stewardship lies at the core of the LWE's mission. Through innovative approaches to infrastructure design and construction, including nature-based solutions championed by partners like Farrans Construction and Mott MacDonald Bentley, we aim to minimise our environmental impact while delivering resilient, future-proof solutions.

Central to the success of the LWE, which will play a key role in the delivery of our PR24 Business Plan, is a culture of efficiency and innovation. Leveraging the collective expertise of our partners, we are trialling new approaches to asset management and delivery that will consider the complete lifecycle of assets, ensuring that projects are completed on time and within budget.

Alongside this total expenditure (TOTEX) approach, the group will challenge existing methods and investment choices, allowing for a greater focus on alternative options, including the potential to reduce carbon through nature-based solutions to water and wastewater treatment.

Monisha Gower, our Asset Management Director, underscores the significance of the LWE in shaping our future trajectory.

“These partnerships aren't just about building infrastructure,” she explains.

“They're about building legacies, both for our communities and for future generations. By working together, we can create a brighter, more sustainable future for all.”

Case study: Bin the Wipe hits an impressive milestone

Our award-winning 'Bin The Wipe' team have now pulled one tonne of wipes out the North East sewer network which equates to over 200,000 unflushable wipes!

The milestone comes three years after the project was launched in 2020 when it was found that 64% of the 15,600 sewer blockages cleared in the North East were caused by wet wipes.

At the time of the launch, an ambitious target of reducing blockages by 40% was set. The results show this target is being exceeded year on year in the 'hot spot' areas. Most recently, teams working in North Tyneside saw a 79% reduction in wipes in the hotspot areas and in Washington a 77% reduction was achieved when intervention work was carried out.

Since the launch, the teams have reached over 433,000 households, and following a visit, the number of wipes in the network have reduced in the 'hot spot' areas by up to 91%. This reduces the chance, and cost of flooding into customers' homes, as well as having positive impacts on the local environment.

Simon Cyhanko, Head of Wastewater Networks said:

“ It shows the dedication and professionalism of our Sewerage Maintenance Operatives who are working tirelessly day in and day out to clear our network. By helping people to understand the problems caused by flushing wipes, and the potentially awful consequences, it really opens people's eyes and inspires change.”

The success of the project and the support it has generated from customers, regulators, and stakeholders, including members of parliament, has led to it being adopted by the water and wastewater industry, and the industry body, WaterUK. This has resulted in a national 'Bin the Wipe campaign' which was launched in 2023.



Key data

Storm overflows		2021	2022	2023	2025 target
Permitted Storm Overflows	Overall number of SOs operating under permit in our network	1,567	1,564	1,565	
Storm overflows with EDM	SOs with event duration monitoring fitted	1,542 (98.4%)	1,542 (98.6%)	100%	100%
Average number of spills	Number of times each SO spilled, on average	25.3	20.3	30.1	20
Average duration per spill event	Length of time each SO spill lasted for, on average	6.0 hours	3.6 hours	6.0 hours	
Total number of spill events	Overall number of times one of our SOs has spilled	36,483	29,697	46,492	
Average percentage of time operating (spilling)	How much time a SO was spilling for on average	1.7%	0.8%	2.1%	

[Click here to see how we are reducing spills from Storm Overflows](#)

Environmental Performance Assessment		2021	2022	2023	2025 target
EPA	An overall assessment of environmental performance by the Environment Agency, graded from one to four stars	Four star	Three star	Three star	Four star

[Click here to find out more about our environmental performance](#)

Pollution		2020	2021	2022	2023	2025 target
Serious pollutions	Pollutions classed as Category 1 (major, serious, persistent and/or extensive impact) or Category 2 (significant impact) by the Environment Agency	1	1	0	0	0
Less serious pollutions	Pollutions classed as Category 3 (minor or minimal impact) by the Environment Agency	42	68	60	99	58
Pollution incidents	Incidents per 10,000km of sewer	14	23	20	32	20
Misconnections			2021	2022	2023	2025 target
Polluted surface water outfall (PWSO) initial investigations completed	Investigations of polluted surface water outfalls where there is a suspected misconnection		66	83	64	
Property surveys completed	Number of individual properties surveyed as part of investigations into possible misconnections		1646	1785	1,138	
Properties with misconnections identified	Properties where a misconnection is found where we work with the property owner to find a resolution		173	199	172	
Water Industry National Environment Plan (WINEP)			2021/22	2022/23	2023/24	2025 target
WINEP deliverables completed (cumulative)	Number of environmental improvement schemes agreed under the Water Industry National Environment Plan for 2020-25 that have been completed		328	439	549	657

Our pledges

Pledge 1:

We will work with the Environment Agency, Natural England, The Rivers Trust and Catchment Partnerships to identify, and have plans in place to eliminate, all impediments to our rivers achieving good ecological status caused by our operations.

What does this mean?

We will develop and implement a long-term plan to remove negative environmental impacts of our assets.

This will include delivering what is asked of us under the Storm Overflows Discharge Reduction Plan, Water Framework Directive and Habitats Directive.

We recognise the importance of working with partners to achieve our shared aims.

What have we done so far?

We've worked with the Environment Agency to identify the key issues that we need to address to include in our WINEP schemes for the PR24 business plan and long term planning.

Some of these relate to wastewater discharges from sewage treatment works, where we need to remove phosphate. We have agreed a long-term plan for addressing phosphate loadings into rivers, and by the end of AMP8 (2030) we will have invested at 54 STWs to deliver schemes for phosphorus removal. We will investigate a further 20 STWs in AMP8, some of which may lead to P removal schemes in AMP9 (an 'Asset Management Plan' is the five-year period covered by a water company's business plan that sets short and long-term objectives for the upcoming period.). Over 50 of our STWs are being included in our Catchment Nutrient Balancing work, to see if there are better solutions to managing phosphates in the catchments impacted by these STWs.

We've also included a series of investigations for phosphate and river flows which impact many other water bodies in the region and will

inform our investment plans for PR29 ('Price Review' for water companies in England and Wales is a process led by Ofwat to determine prices for the period 2025-2030.). We're also going beyond, and developing catchment solutions which will drive other sectors to invest in improvements to help rivers meet good status.

What will happen next?

We will be delivering AMP8 WINEP improvement and investigation schemes, and through the new Thriving Catchments initiative, we'll be working with the Rivers Trust, local trusts and other stakeholders including farmers and land managers to improve ecological status and achieve other wider environmental outcomes for the North East region.

We published our [Drainage and Wastewater Management Plan](#) in May 2023, which sets out how we plan to address environmental impacts over the next 40 years. This fed into our [2025-30 Business Plan](#), which we submitted to our regulator Ofwat in October 2023, identifying the steps we will take in AMP8 to deliver this.



High Force, Teesdale

**Pledge 2:
We will invest in monitoring to
provide 100% near real time data
on storm overflows by 2023.**

What does this mean?

All of our Storm Overflows will be fitted with monitoring to detect any spills to the environment. Data from these monitors, showing when spills take place, will be made available in near real time – within about an hour of a spill occurring. We published our live storm overflow map on our website and is available for customers to [view here](#).

What have we done so far?

We have installed monitors at all our storm overflows which will inform us when a spill occurs. We have developed a storm overflow map which displays the status of storm overflows in real time, for example, if they are currently spilling, have had a recent spill within the previous 24 hours, or are not currently spilling.

We discussed the storm overflow map with stakeholders and a sample of customers as it was being developed and incorporated their feedback into the final map.

What will happen next?

We will review any further feedback we receive about our storm overflow map and look to improve on the current system where possible.

Case study: New interactive map to show Storm Overflows in real time

Our interactive digital map to show customer up to date information on Storm Overflow operation across the North East, went live on 30 April 2024. The launch of this new digital map marks a significant step forward in the sharing of data and information with customers and the community which has never been available before.

Here's Steve from our Wastewater Team to explain how it works

Fed by data from sensor monitors which are attached to each overflow, means the information is as near to real time as possible, ensuring that people have the most up-to-date information about their local area.

The Storm Overflows map has been built and developed with the help of environmental partners from across the region including the Tyne Rivers Trust, Tees Valley Nature Partnership and Wear Rivers Trust.

Customer feedback was also important to how the map would be used, a customer survey was conducted and by working together to improve how the data is displayed, ensured the map is as user friendly as possible.

Richard Warneford, Wastewater Director at Northumbrian Water, said:

“Being transparent and open about how our storm overflows operate is something we have done for our coastal waters for many years. As part of the Cleaner Seas Forum, we have been taking part in a voluntary trial to notify Surfers Against Sewage and Beach Controllers when we discharge to a beach. This began with Saltburn Bathing Water in 2011.

“What we've built will allow our customers to see what is happening where, and with 100% of our storm overflows monitored, it gives people a transparent view. That means people can see and fully understand where Storm Overflows are operating, so they can make informed choices about how and when they use their local rivers and coastal waters.

“We are committed to working harder and faster to reduce our reliance on Storm Overflows and their impact on our environment and that's why behind this map is an ambitious investment programme, which will see us investing more than £1.7bn to improve the environment.

“

This completes one of our nine pledges that we've committed to delivering for our rivers and coasts. Our ultimate aim is to use the planning system, innovative technology and our investment programmes including nature based solutions to reduce the impact of heavy rainfall on our sewer system, so that these 'pressure release valves' are needed far less.

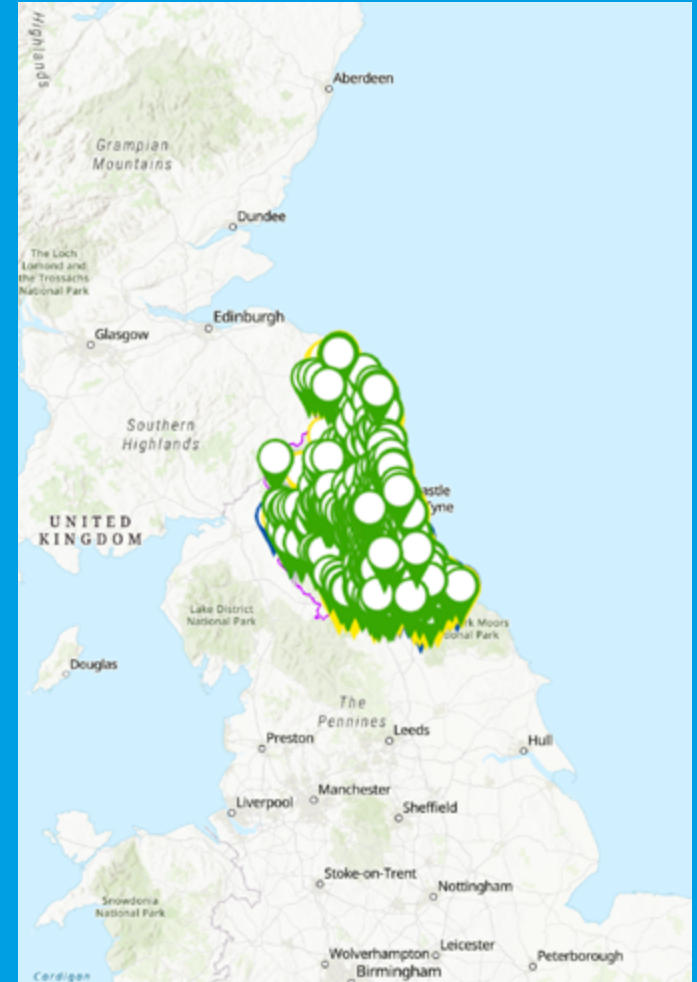
"We're working towards that end as quickly as possible and the Storm Overflow map is an extremely positive step in the right direction in helping us all to understand and manage this complex issue."

Rachel Murtagh, Tees Valley Nature Partnership, commented:

“

It's great to see Northumbrian Water are being proactive by creating a resource for anyone to use to help them monitor their local water quality whether it be for recreation or concern for the environment."

"The map is easy to use and gives a fascinating glimpse of the network of pipes and storm outlets into rivers and streams across our region. Hopefully the planned investment to the network will result in significantly reduced pollution helping the work of partners to in the much-needed recovery of our precious nature."



**Pledge 3:
We will introduce final effluent,
in-river upstream and downstream
monitoring to get a greater
understanding of environmental
impacts of treated water by 2030**

What does this mean?

We will install real time continuous water quality monitors at our larger wastewater treatment works (our larger treatment works) monitoring their environmental impact upon the receiving water body.

What have we done so far?

Our current business plan submission for the PR24 period under the WINEP programme has seen a regional requirement for the installation of 390 continuous water quality monitors across some of our larger sewage treatment works and storm overflow assets.

What will happen next?

We expect to deliver these 390 monitors over the course of our next business period, between 2025-30. In advance, we will gain key learnings from our River Pledge 4 delivery which has started to install continuous water quality monitors at our highest priority storm overflows. This will allow us to understand potential challenges such as access, security, communication issues and maintenance of these monitors, in order that we can develop the most robust plan to meet this pledge from 2025 onwards.

We are now waiting for the Environment Agency to respond to our plan to confirm we will deliver these quantities between the 2025-30 period.

**Pledge 4:
We will implement Water Quality
monitoring at the highest priority
Storm Overflow locations by 2025.**

What does this mean?

We will implement continuous water quality monitors at our highest priority storm overflow locations. We have identified these locations by assessing a combination of data – including where rivers have ‘Poor’ or ‘Bad’ status under the Water Framework Directive, where our storm overflows are spilling more than 10 times, and where there are other factors, such as an environmental impact under the Storm Overflow Assessment Framework, where our assets are a reason for not achieving good status (RNAG), or where there is low dilution.

What have we done so far?

We have identified 22 high priority storm overflow sites which will require a deployment of 27 monitors to be installed based upon allowances as outlined in the WINEP guidance.

We have now confirmed our preferred suppliers who will install monitors based upon a combination of Kiosk and smaller suitcase installations in these prioritised locations. We have forecast in total that this will require up to £1.6m of investment which is part of our [2025-30 Business Plan](#).

What will happen next?

We have completed inspections at all of these sites and are now moving forward with the steps to gain access to the land. The first installations started in June 2024 and we expect these to be complete in October 2024.

Case study: Eyes to the skies

In a world-first for the utilities industry, we are exploring the use of drone technology to help improve the quality of the North East's rivers and coastal waters. In partnership with cloud data experts, Makutu, and Skypoints Drone Services, we are aiming to carry out real-time water quality assessments at scale.

Our maiden test flight took place in January 2024 after months of ground-breaking research into how the uncrewed aerial vehicles (UAVs), or pilotless drones, will use sensors, AI and data analytics to carry out a huge water quality monitoring programme of key coastal and inland locations.

Affectionately named Project Kingfisher by the partner organisations, for the way the drones will hover and dip in and out of water, the project has explored how and what data the drones will collect, to help us respond quickly to any potential issues.

Currently, we can only survey water quality by sending our people to manually take water samples from sites, which can prove difficult when they're a long distance away, in very rural areas, or during bad weather. By using drones and clever technology, we expect to see improved access to hard-to-reach areas, a reduced carbon footprint, more data over a larger area with faster results.

The Kingfisher tests will involve launching the drone from key locations and it will automatically visit several pre-programmed water sampling sites. When it is at the sampling site, the drone will hover while a number of key water quality tests are performed, before moving onto its next sample site. Meanwhile, the data it has collected will be fed back for analysis in near real-time.

Once phase one is successfully completed, the second phase of the trial will begin which will see the demonstration of the service to scale - operating robotically beyond visual line of sight over a period of three months, without ground observers.

Richard Warneford, Wastewater Director, said:

“There's a lot of hard work gone into understanding how UAV technology can be used to collect data efficiently, and these successful test flights have proven the validity of it as part of our huge water quality monitoring programme. We're proud to be making history with this project and we can't wait to begin rolling it out officially across the North East – it's just another step towards having the cleanest rivers and beaches in the country.”



Pledge 5: We will reduce spills from storm overflows to an average of 20 per year by 2025.

What does this mean?

We will reduce the average number of spills from each of our Storm Overflows, from a baseline of 25.3 in 2021.

This is calculated from our annual Event Duration Monitoring report to the Environment Agency and is as summarised in their report. Our interim targets are to have below 23 spills in 2023 and below 21.5 in 2024.

What have we done so far?

In 2023, our average spills increased to 30.1 per overflow. This was significantly impacted by the amount of rainfall and increase in named storms being classified as 'exceptionally high' by the Environment Agency – equivalent to once every 20 years. This is in comparison to 2022 with an average of 20.3 per overflow with 35% less rainfall than in 2023.

With these changes in weather patterns we recognised there is further work to do to hit this target sustainably.

We are implementing our targeted action plan to tackle spills, and this is on top of existing investment to deliver improvements, such as through our Water Industry National Environment Plan (WINEP) programme and schemes to accommodate population growth.

Improvements we are seeing are a reduction in spills, this is due to the work we are carrying out in the sewer network with CCTV identifying the issues, and any restrictions area cleared, this

includes removal of siltation, cutting tree roots out and identifying structural issues. A more permanent solution is then programmed in with sewer pipes being lined to stop tree roots clogging up the sewer again, fixing structural issues (disjointed or cracked sewers) and putting in place improved maintenance plans to revisit and make sure the siltation hasn't returned/remove it again. We are making sure the capacity in network is not restricted in any way and we only spill when absolutely necessary due to rainfall and infiltration.

Our teams and contractor partners have surveyed over 160 overflows to remove any restrictions in our sewer pipes (such as tree roots) and fixing any problems that are found. This also includes a proactive programme of maintenance and rehabilitation of flow devices to make sure the right amount of flow is going through our network.

What will happen next?

We will continue to implement our targeted plan and monitor the reduction in spills in delivering against this pledge.

We also continue to reduce spills through our innovative smart network management technology across our wastewater service. This uses advanced machine language learning, together with hyperlocal rainfall forecasting, to accurately predict the normal performance of our assets and provide alerts of issues occurring so we can fix them before a spill happens.

We are working with a leading US company to deliver the UK's first Real-Time Decisions Support System for our largest wastewater system on Tyneside involving installation of new devices and development of a digital twin. This increases our capability to detect issues, manage flows effectively and reduce spills.



Tynemouth Harbour, Tyne and Wear

Pledge 6:

We will work closely with The Rivers Trust through our strategic partnership and North East Catchments Hub to focus on river needs for investment through catchment and nature-based solutions, and to identify at least 2 inland bathing water sites where applications for designation can be made at the earliest opportunity. We are proud that already 95% of the NE population lives within an hour's drive from a beach with Good or Excellent bathing waters.

What does this mean?

We have developed a strategic partnership with The Rivers Trust, to help us work effectively on catchment challenges, including identifying opportunities to deliver catchment and nature-based solutions. This partnership has a particular focus on delivering collaborative improvements to rivers, but there are also opportunities for working together on coastal waters and beaches.

The initial phase of our work under the strategic partnership to support PR24 planning was referred to as the North East Catchments Hub. This has now developed through the second phase into a long term working commitment through the Thriving Catchments initiative.

What have we done so far?

We have developed a close working relationship with The Rivers Trust since 2022. The Thriving Catchments programme was initiated in September 2023 following submission of catchment schemes in our PR24 business plan.

This brings together Northumbrian Water, the Rivers Trust, and 6 local delivery partners (Tees Rivers Trust, Wear Rivers Trust, Northumberland Rivers Trust, River Catchment Services through Tyne Rivers Trust, and Durham Wildlife Trust) to develop catchment scale solutions to improve river water quality in 50 water bodies across Northumberland, Wear and Tees.

The focus of this phase of work is to identify opportunities to achieve equivalent or better improvements than end of pipe nutrient removal alone. By taking an integrated approach to catchment planning will create wider environmental benefits for better customer value.

The programme brings together around 30 experts, and the equivalent of over 15 full time roles working together at national, regional and local scale on integrated catchment management and planning, agricultural engagement, monitoring, data and evidence, ecosystem services and environmental markets.

For phase one, our current focus is in improving river ecological status and wider catchment improvement opportunities and maintaining the water quality of our good and excellent coastal bathing waters.

We supported an application from the Clean Tyne Group for an inland bathing water at Wylam, Northumberland, but this was not approved by Defra. We also supported the application to designate the South Tyneside estuary / coastal site at Littlehaven.

What will happen next?

The Strategic Partnership will move into phase 3 from April 2025. This will develop the Thriving Catchments programme further to incorporate additional catchment projects and schemes (including widespread water quality investigations across an additional 20 waterbodies, and planning for PR29) which are included in our 2025-30 WINEP plans, we will continue to work with partners to look for further opportunities.



River Tees, Stockton-on-Tees

**Pledge 7:
We will work with partners to achieve
100% of coastal bathing waters
at Good or Excellent by 2030.**

What does this mean?

We will target our operational work, additional investment and partnership work to achieve Good or Excellent bathing water quality, as assessed by the Environment Agency, at all coastal bathing water sites in the North East.

At present 32 out of 34 are rated Good or Excellent, with one of them – Cullercoats – not thought to be due to our assets or operations.

What have we done so far?

We have completed all 12 investigations we agreed to carry out between 2020-25, and are continuing to work with the Environment Agency and local authorities to investigate how quality can be improved at Cullercoats and Seaham Hall. At Cullercoats, contaminated groundwater is likely to be that primary cause. We have diverted water from a local authority culvert into our network which was completed in December 2022.

At Seaham Hall, the classification dropped from Good to Sufficient in 2023 and we are actively investigating the cause which is believed to be linked to contaminated water in a local stream.

Our planning for investment to improve bathing water quality to 2030 includes the completion of investigations, such as at Littlehaven where we also supported the application to designate the South Tyneside estuary / coastal site. Bathing water storm overflows will also be improved as a significant part of our £1bn plan to meet the Government's Storm Overflows Discharge Reduction Plan, such as at Berwick-upon-Tweed, Seaton Carew, Redcar and Marske. We are going further at Berwick sewage treatment works where we plan to install ultraviolet disinfection.

With agreement from Ofwat, we have already started work early on an investment of about £50m to reduce spills from storm overflows at Berwick-upon-Tweed and Spittal beach by 2030.

What will happen next?

We will continue partnership working, particularly at Cullercoats and Seaham Hall to improve bathing water quality.

We will conclude our early start work on investment to reduce spills from storm overflows at Berwick and move into the next stage of our programme to 2030.

Investment plans will be agreed following Ofwat's Final Determination of our [2025-30 Business Plan](#), which we expect to be in December 2024.



Spittal beach, Northumberland

Pledge 8:
We will work in partnership to improve 500km of bluespaces (such as river banks and accessible water environments) for the public to enjoy in our regions by 2030.

What does this mean?

We have developed a new approach towards improving the water environment and a new investment scheme for 2020-25. This is allowing us to go 'above and beyond' our business-as-usual activities to work with others to deliver improvements to 'bluespaces' – areas of the water environment that are accessible for our customers. We have an ambition to improve 250km by 2025 and are aiming to double that by 2030.

What have we done so far?

We have delivered 50 Bluespaces projects in partnership across our ESW and NW regions, which are captured in our Water Environment Improvements performance commitment. These projects are all evidenced on our website and recorded on the Bluespaces Mapping Portal.

What will happen next?

We have 101.7 km of improvements currently in delivery for 2024/25, with some new projects still to develop. We have a new approach to delivering Bluespaces projects through WINEP included in our PR24 plan.

This is in development for 2025-30 to deliver the rest of the improvements in our pledge commitment for the benefit of our customers and the environment.

Case study: Bluespaces in action

Angles Way

Bluespaces funding has supported delivery of a multi-partner project to improve 2.2km of water environment along the Angles Way, impacting a stretch of the River Waveney from Brockdish to Needham.

This project is part of the larger 'River Access for All' scheme and is a follow-on from the Year 2 Bluespaces project River Waveney Access and Biodiversity Project which improved 6.8km of other water environment, and identified several specific improvements to be delivered in this area (the 2.2km improved in this project were not claimed in the previous project). Project partners include the River Waveney Trust, Anglian Water, Norfolk County Council, Canoe Foundation, Paul Bassam Trust, Geoffrey Burton Trust, Needham Parish Council, and Pathmakers.

The Angles Way project has enhanced access along and next to the river (including providing an additional 0.8 km of temporary access), and improved habitats through strong working relationships driving activity across project partners, landowners, the Environment Agency and volunteers from the local community. As part of this project a number of key water environment improvements along this stretch have been delivered, and further actions have also been identified for 2024.

Caring for Crimdon Dene

The SeaScapes Landscape Partnership, Heritage Coast Partnership and NWG have improved 3.3 km of bluespaces through Caring for Crimdon Dene. This is the fourth project to be delivered linked to the SeaScapes programme, in which NWG is a partner investing £370K in the Beach Care and Aware project and the Beach Care Officer role to support coastal environment activities across the Tyne-Tees area from 2021-2025.

Crimdon Dene is located between Blackhall Rocks and Hartlepool on the A1086 Durham coast road. Crimdon Beck runs through Crimdon Dene and discharges into the sea near Crimdon.

The stream flows directly on to Crimdon beach, an important breeding ground for the Little Tern, one of Britain's rarest sea birds, as well as providing coastal habitat for other birds including Ringed Plover and Oyster Catchers. The Dene comprises steep sided woodland and is a designated local nature reserve. This project forms part of a wider SeaScapes/Heritage Coast partnership scheme to improve access and interpretation along Crimdon promenade and from the Dunes café.

Through this Bluespaces project, community awareness of the local water environment, and access and habitats around Crimdon Dene have all been improved. Installation of new seating and work to clear and protect pathways has made the site more accessible, and the removal of litter has made the Dene much more appealing to visit. Public events have engaged the local community and visitors.



**Pledge 9:
We will double the number of our Water Rangers – our citizen scientist volunteers who are trained to help us monitor environmental conditions around rivers and take action to address wider river issues such as littering, fly tipping or signs of pollution**

What does this mean?

Our long-standing Water Rangers initiative consists of trained customer volunteers who act as our ‘eyes and ears’ on the ground in the community to raise awareness of any issues spotted on regular patrols along our waterways. Our Water Rangers carry out more than 2,000 patrols each year along 55 routes, covering 73km of waterways. We are aiming to have 134 Water Rangers in place by 2025.

What have we done so far?

We have identified new routes to prioritise as we expand the scheme. Our operational team is currently assessing these routes from a health and safety perspective.

We have also conducted sessions with current Water Rangers to review the functionality of the existing scheme, the challenges they face, and the effectiveness of the monitoring process. These sessions also explored the feedback mechanisms within the company and discussed potential project developments.

Additionally, we addressed the non-operational pollution issues such as litter, overgrown vegetation and more, that they encounter and the reporting process for these findings.

The Water Rangers expressed interest in how monitoring apps could assist them in reporting multiple issues. They were also keen to understand the actions taken based on their reports and how their volunteering efforts contribute to our overall performance.

What will happen next?

We invited current Water Rangers to attend a pre-IF24 event to explore collaborative approaches to some of our shared challenges. We brought these ideas to our Innovation Festival in July 2024 developing them in order to help expand the initiative further.

Additionally, we will continue prototyping and piloting the sensors that are being developed, along with training Water Rangers on their use.

New Water Rangers will also commence, with a roll-out programme focused on key areas.



Teesdale

NORTHUMBRIAN
WATER *living water*

ESSEX&SUFFOLK
WATER *living water*

Cover image: Dunbar Burn, Druridge Bay

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