



RESTORE AND REGENERATE: Our Environment Strategy to 2050

**NORTHUMBRIAN
WATER** *living water*

**ESSEX & SUFFOLK
WATER** *living water*

Summary

The global environment is under considerable pressure, with climate inaction, extreme weather, and biodiversity loss posing significant threats to our future. We all have a role to play in protecting our planet. As business leaders, we have a responsibility to work towards addressing these challenges. By doing so, we can help to ensure that we leave the environment in a better state for current and future generations.

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 have also identified three guiding principles to help ensure our decisions are in line with our Environmental Ambition.

Systems thinking – We take a big picture view through an integrated catchment management approach. **Natural solutions first** – We consider natural, sustainable solutions before engineered ones. This may result in the use of nature-based solutions either on their own, or in combination with engineering projects. **Partnership mindset** – Collaboration is key. We work hand-in-hand with our customers, suppliers, and stakeholders to co-create mutually beneficial solutions.

How all of this comes together is illustrated on the next page, followed by a full list of our headline commitments – which are a combination of quantitative and qualitative measures.

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.

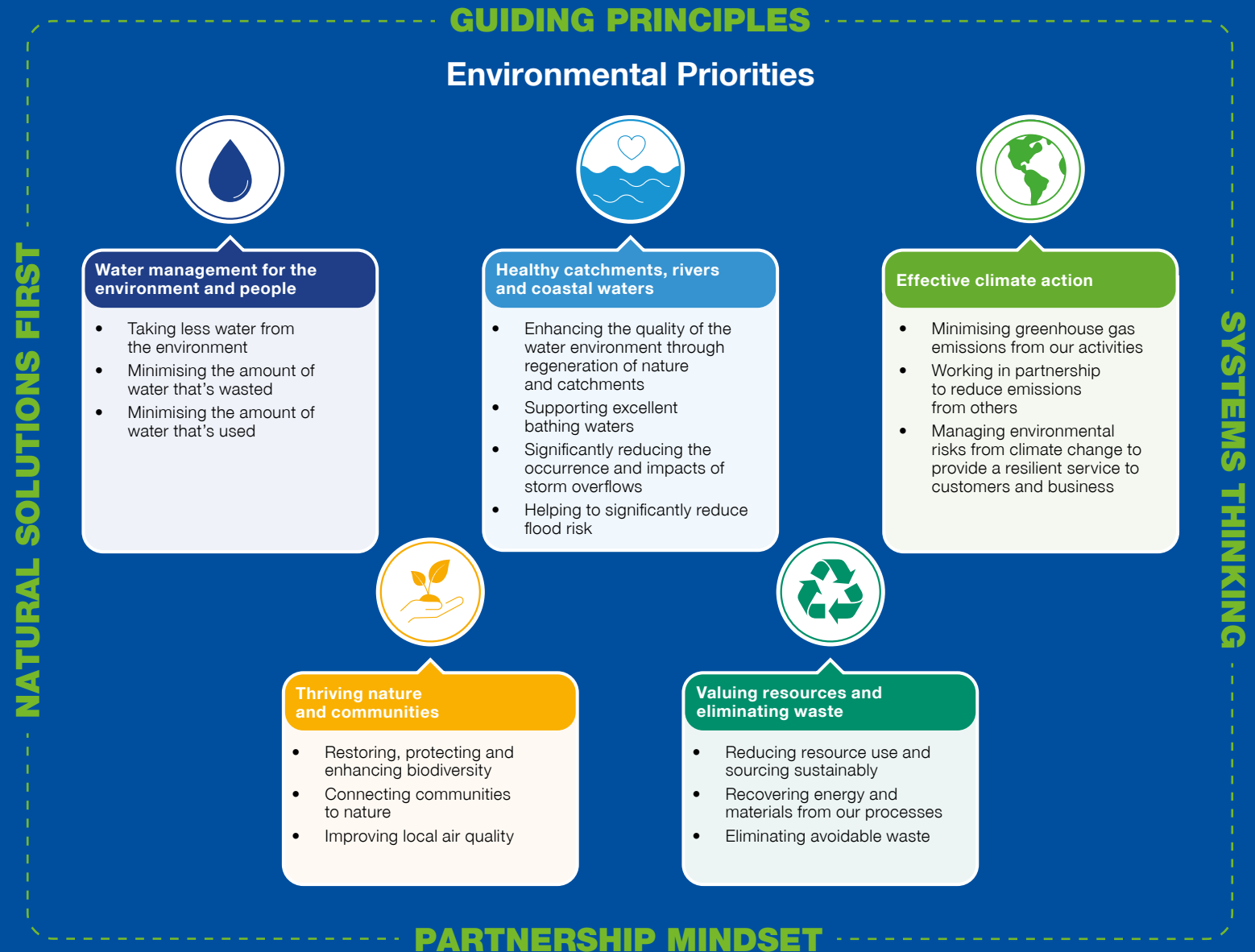


Letah Burn






Summary (cont'd)

ENVIRONMENTAL AMBITION

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



Summary (cont'd)

Priority	Focus Area	Headline Commitments
 Water management for the environment and people	Taking less water from the environment	Actively manage our resources and licences to minimise environment impacts at all times.
	Minimising the amount of water that's wasted	Meet national targets to reduce leakage by 50% by 2050. This means reducing leakage in the North East by 55% and in Essex and Suffolk, where we are already leading in this, by 40%.
	Minimising the amount of water that's used	Reduce household water consumption to an average of 122 litres per person per day by 2038 and 110 litres by 2050. Reduce non-household water demand by 9% by 2038 and 15% by 2050 (from 2019/20).
 Healthy catchments, rivers and coastal waters	Enhancing the quality of the water environment through regeneration of nature and catchments	Lead and support collaborative catchment stewardship, developing and implementing integrated plans for our 10 major catchments by 2030. Eliminate the detrimental impacts of our operations and assets on waterbodies as soon as is practical. Work with partners so that, where possible, waterbodies in our regions can achieve good ecological status. Zero serious pollution now and always and reduce the number of category 1 – 3 pollutions by 50% by 2040 (from a 2022 baseline).
	Supporting excellent bathing waters	All bathing waters at good or excellent status by 2030. Champion the growing movement for wild swimming and help establish at least two recreational inland bathing sites.
	Significantly reducing the occurrence and impacts of storm overflows	Year on year reductions in storm overflows operating more than ten times a year on average, and none doing so by 2050.
	Helping to significantly reduce flood risk	Work in partnership across catchments to reduce the risk of flooding from all sources. Reduce external sewer flooding by 60% (from our 2024/25 performance levels) by 2050.
 Effective climate action	Overarching commitment	Achieving Net Zero Scope 1, 2 and 3 emissions by 2050.
	Minimising greenhouse gas emissions from our activities	Reduce process emissions of methane and nitrous oxide in the most efficient and affordable way. Accelerate the timeline for phasing out fossil fuel vehicles. Aim for no new fossil fuel HGVs by 2035 and other vehicles by 2030. 100% of our electricity will come from additional renewable generation by 2040.
	Working in partnership to reduce greenhouse gas emissions from others	Reduce embodied carbon by 50% for new assets by 2040 (from a 2025/26 baseline).
	Managing environmental risks from climate change to provide a resilient service to customers	Have plans in place to adapt to a world that is 2°C warmer in 2050 and prepare for 4°C by the end of the century.
 Valuing resources and eliminating waste	Reducing resource use and sourcing sustainably	Prioritise nature-based, resource efficient and circular solutions within design and procurement standards by 2025. Reduce chemical and energy use by 20% for all new assets by 2035 (from a 2020 baseline).
	Recovering energy and materials from our processes	Every year we generate and utilise a minimum of 165GWh biogas. By increasing our operations we will raise this to 175GWh by 2035.
	Eliminating avoidable waste	Achieve zero avoidable waste by 2025.
		Actively work with our supply chain to eliminate avoidable single use plastics and packaging by 2030. Develop end of life strategies for all new and existing assets and consumables.
 Thriving nature and communities	Protecting and enhancing biodiversity	By 2050 all our construction activities, including those that do not require planning permission, result in a net gain in biodiversity of 10% (or the local requirement where higher). Enhance or restore 500 ha of priority habitat every five years via partnership working. Significantly reduce the risk of land and water based invasive non-native species (INNS) through proactive management and education activities.
	Connecting communities to nature	Co-design integrated catchment plans with the community to enhance social value opportunities. Improve 250km blue spaces by 2025 and 500km by 2050.
	Improving air quality	Actively seek sustainable opportunities to minimise negative impacts on air quality, implementing schemes that improve air quality and deliver wider benefits.

Foreword

Our purpose is caring for the essential needs of our communities and environment, now and for generations to come.

In our regions, we enjoy some of the most beautiful rivers, coasts and wildlife habitats in the country. We know how important they are for our communities, and looking after them is a huge part of what motivates our people to do the essential jobs they do each day.

Almost all of our people and their families live in the communities we serve, and enjoy our local environment too. Our teams have a huge amount of pride in the roles they play to care for it, both through our operations today and the plans and decisions we make about the future.

The water environment is at the heart of everything we do as a business. We take water from the environment and, after treating it to a high standard, we deliver it to our customers for them to use. We then have responsibility for taking their wastewater away and returning it to the environment after a careful treatment process.

The quality of water in our rivers and coasts, and the role of the water industry in this, has been at the forefront of recent political debates and the national media. We take full responsibility for any impact caused by our assets and are committed to playing our part in making sure that we are not causing harm to our rivers and seas.

We work constantly to protect and enhance coasts, rivers and watercourses in all areas of our operations and are recognised by our partners, stakeholders and regulators to be leaders in this area.

The last two decades have seen dramatic improvements in Bathing Waters in the North East, with 32 out of the 34 meeting Defra's top two standards of Good or Excellent. We have also overseen dramatic reductions in pollution across our regions. We were also the first and remain the only water company to use 100% of our sewage sludge to produce clean energy through advanced anaerobic digestion at our green power stations at Howdon on Tyneside and Bran Sands on Teesside. This is not only a significant factor in meeting our commitments to be Net Zero, but also demonstrates how we are getting the most out of our resources.

During this year we have published a series of long-term documents, including Shaping our future - our Long-term strategy for 2025-2050, our Water Resource Management Plan and Drainage and Wastewater Management Plan. These all demonstrate how we are caring for the long-term needs of the environment. This Environment Strategy pulls these and other existing commitments together into one place. It sets out our ambition above.

This is our strategy to achieve this.

We cannot deliver on this alone and I would invite anyone with ideas on how we could collaborate to meet these challenges to get in touch – we always welcome the opportunity for a conversation.

Heidi

Heidi Mottram
CEO, Northumbrian
Water Group

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

River Wear



Introduction

Who we are

Northumbrian Water Limited (NWL) provides:

- **Water and wastewater services to 2.7 million people in the North East of England, trading as Northumbrian Water (NW).**
- **Water services to 1.8 million people in Essex and 0.3 million people in Suffolk, trading as Essex & Suffolk Water (ESW).**

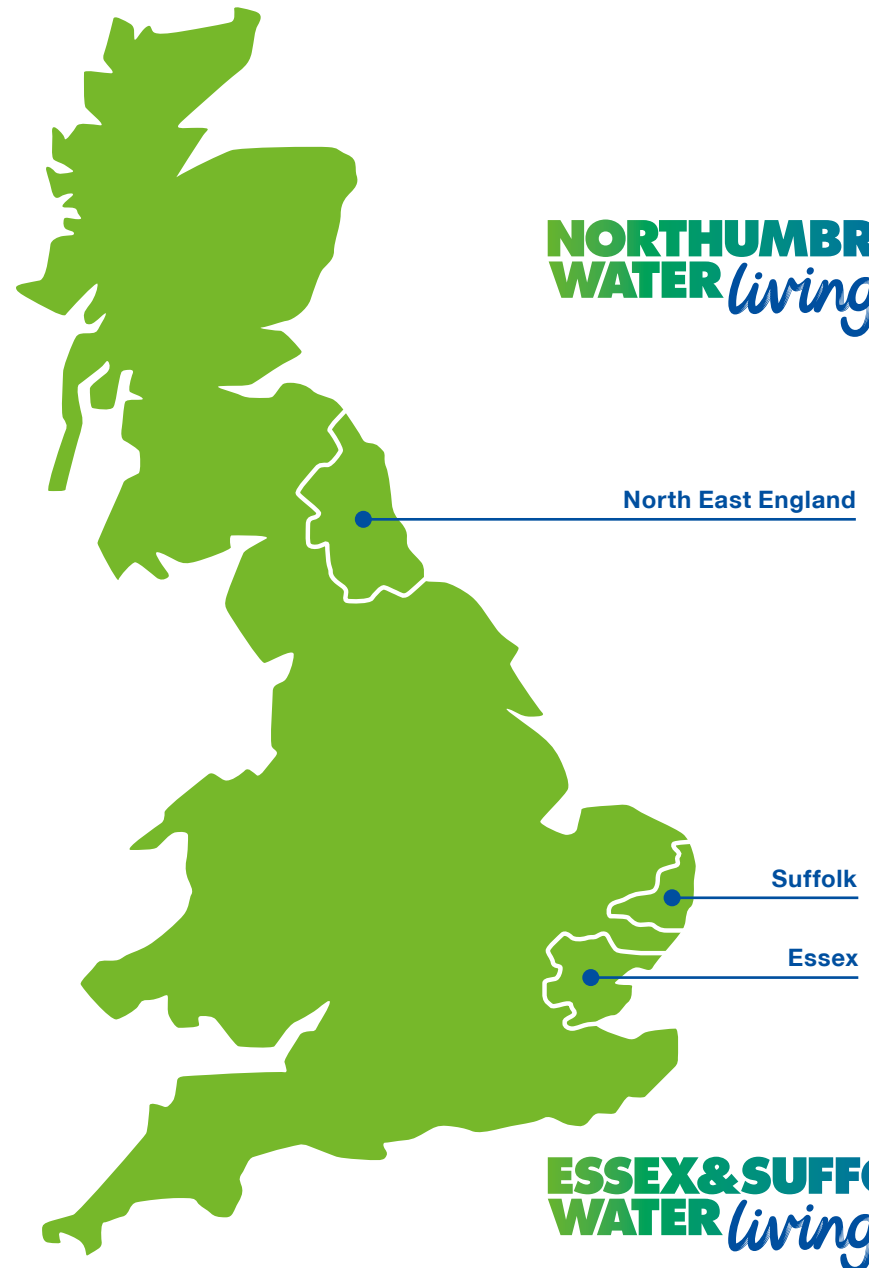
NW is a water and wastewater company, while ESW is a water only company.

Every day we supply 1.1 billion litres of water to our customers. This water is drawn from reservoirs, rivers and groundwater sources. It is treated at our water treatment works before it is delivered by a network of pipes to homes and businesses.

In the North East of England, where we also provide sewerage services, wastewater is then collected from these properties via the sewerage network and treated at our sewage treatment works before it is returned to the environment as either clean water or sludge, which can be recycled as fertiliser or used to generate energy.

To provide this service we operate and maintain:

- **50 water treatment works**
- **388 water pumping stations**
- **304 water service reservoirs**
- **26,451km of water mains**
- **413 sewage treatment works**
- **966 sewage pumping stations; and**
- **30,237km of sewers.**



Introduction (cont'd)

Our Purpose

Our Purpose is caring for the essential needs of our communities and environment, now and for generations to come. We do this by providing reliable and affordable water services for our customers. We make a positive difference by operating efficiently and investing prudently, to maintain a sustainable and resilient business.

Our Purpose is the reason we exist, and it guides our strategy.

Our Vision sits alongside our Purpose and clearly sets out what we want to achieve, to be the national leader in the provision of sustainable water and wastewater services.

We aim to deliver Our Vision through our five Strategic Themes of Customer, Environment, Competitiveness, People and Communities.

This document sets our Environment Strategy, outlining our ambition and the key commitments we are making for the environment to 2050.



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Introduction (cont'd)

Our Environmental Ambition

To build on Our Purpose and Our Vision, we have defined Our Environmental Ambition, which forms the focal point for our Environment Strategy.

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

Together: We recognise that we cannot achieve our ambition alone, we all have a part to play in the future of our environment - we can only do this by working together.

Restoring and regenerating our natural environment: Our natural environment has become damaged through a variety of human activities, and we recognise our role in restoring and regenerating this to create a resilient environment for the future.

Our actions: We know that actions speak louder than words and that's why we are committed to delivering real change.

Our Environment

As a business, we are inextricably linked to the environment. We rely on natural systems to help us provide resilient and sustainable water and wastewater services for our customers. The natural environment purifies and supplies the raw water that we use to supply drinking quality water to communities. Trees, shrubs, wetlands, and grasslands naturally slow down water and help soil to absorb rainfall, reducing the risks of soil erosion and flooding. In turn our activities play a vital role in creating and protecting natural landscapes and resources.

The environment is under pressure globally. The World Economic Forum (Global Risks Perception Survey 2021-2022) identified climate action failure, extreme weather,

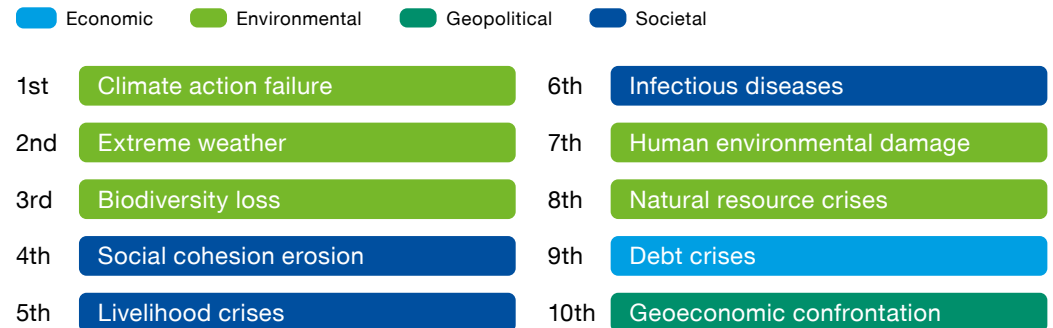
and biodiversity loss as the top three most severe global risks over the next 10 years.

As business leaders we play a pivotal role in navigating such challenging times. By leading the way to address these challenges we can demonstrate to our communities that they can rely on us - demonstrating resilience, resourcefulness and adaptability. As leaders we need to ensure we are leaving the environment in a better place for this, and future generations.

Creating our Environment Strategy

This Environment Strategy sets out commitments across several priorities in response to the environmental risks we face, addressing water quantity and quality

Identifying the most severe risks on a global scale over the next 10 years



Source: World Economic Forum Global Risks Perception Survey 2021-2022

Introduction (cont'd)

in the environment, climate action, waste, and thriving nature and communities. In doing so we align to global, national, and sector-wide goals covering these areas (details on the alignment can be found in [Appendix A](#)).

United Nations Sustainable Development Goals: These are a collection of 17 interlinked goals adopted by all United Nation Member States in 2015. The goals, which aim to be achieved by 2030, were designed to be a “shared blueprint for peace and prosperity for people and the planet, now and into the future”. This strategy aligns with nine of these goals ([Appendix A](#)).

Environmental Improvement Plan (EIP): This plan, published by the Department for Environment, Food & Rural Affairs (Defra), sets out how Defra’s 25 Year Environment Plan goals, UK Environment Act 2021 targets, and other UK Government commitments will combine to drive specific improvements in the natural environment. The EIP sets out nine goals that focus on improvements in environmental quality, resource use, climate change mitigation, biosecurity, and engagement with the natural environment, to achieve an overarching goal of thriving plants and wildlife. Our Environment Strategy aligns closely to these goals and support the UK’s commitment to leave the environment in a better state than we found it ([Appendix A](#)).

Water UK Commitments: Representing the water companies of the United Kingdom, Water UK has set out five public

interest commitments which the water industry will work together to achieve. These five challenging goals include leakage, affordability, achieving Net Zero, single-use plastics, and a social mobility pledge. Not all these commitments relate to our natural environment, but those that do are incorporated within our strategy.

We have ensured that our Environment Strategy not only includes our statutory or legal requirements, but wider commitments to ensure we maximise the environmental benefit through the actions we take. As leaders, this is something we want and should be doing, but is also something our stakeholders expect of us.

In creating this strategy, we have built in the views of our customers, and what they would like us to do. This incorporates views we have obtained through our regional [People Panels](#), our on-going research programme, and research for other long-term plans.

We have tested our strategy with key experts, both within our own business and externally, and with stakeholders representing environmental groups. This has helped shape the direction and determine the common language our business will use to talk about these topics.

Links to other strategies and plans

This Environment Strategy links and builds on other strategies and plans within our business.

It supports our long-term delivery strategy ‘[Shaping Our Future - our Long-term strategy for 2025-2050](#)’. This set out six long term goals, and two of these goals are incorporated within this Environment Strategy ‘Caring for the long-term needs of the environment’ and ‘Sustainability and Resilience’.



The Environment Strategy also aligns to our long-term plans, including [Our Water Resource Management Plan \(WRMP\)](#) and [Drainage and Wastewater Management Plan \(DWMP\)](#). These plans set out how we can deliver our services on the long term while addressing challenges such as climate change, population growth and environmental protection.

The Environment Strategy also incorporates the pledges made in ‘[A Vision for our Coasts and Rivers](#)’, which sets out how we will play our part in protecting and bringing about improvements for our rivers, and the ambitious goals from our [Business Plan 2020 - 2025](#).

Monitoring and evaluation

As part of this Environment Strategy, we have set out our commitments to achieve our environmental ambition. We will monitor our progress against these commitments and measure and report our success in delivering positive outcomes. This will be done on an annual basis and build on our [Annual Performance Reports](#) and our [Environmental Performance Assessment](#).

As part of this activity, we will also assess if progress is being hampered by external factors, and work with others to overcome these.

We will continue to drive best practice into our long-term planning. 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 those of our stakeholders, customers and for the environment. We will also set up an External Stakeholder Group to make sure our ambitions and performance are meeting expectations.

Our Environmental Priorities and Guiding Principles

Our Environmental Ambition sets the destination we aim to reach by 2050. To help illustrate our journey we have broken this down into five Environmental Priorities that work together to contribute to the overarching ambition.

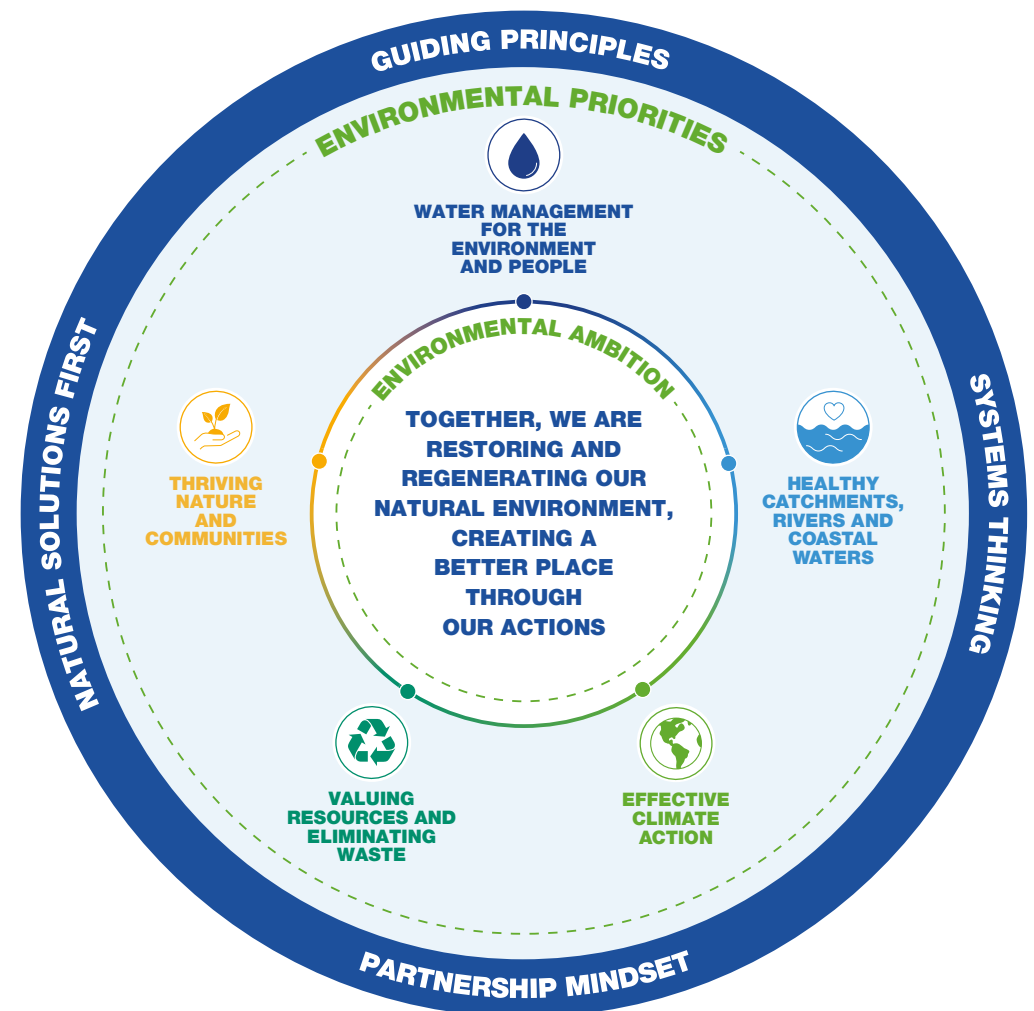
For example, achieving healthy catchments can enable nature to thrive, and the prudent use of resources can reduce the amount of carbon associated with our activities, which helps to mitigate climate change.

The following sections outline these five Environment Priorities. Each priority has been broken down into focus areas and sets out the commitments we are making. An overview of these commitments can be seen in the summary section. There are case studies throughout these sections to highlight some of our activities in these areas. Each of these case studies is linked to several Environmental Priorities – demonstrating the interlinkage between them.

While our environmental ambition and priorities set out what we want to achieve, our guiding principles outline how we will do this and build on our company values.

We have identified three guiding principles to help ensure our decisions are in line with our environmental ambition. **Systems thinking** – We take a big picture view to create the optimal balance of actions within a catchment to maximise long-term benefits for all. **Natural solutions first** – Our default is to look to nature for inspiration when making decisions. We consider natural, sustainable solutions before engineered ones. **Partnership mindset** – Collaboration is key. We work hand-in-hand with our customers, suppliers, and stakeholders to co-create mutually beneficial solutions.

Each of these guiding principles can be linked to our company values: Customer focused, Results-driven, Ethical, Innovative and One team.



Our Environmental Priorities and Guiding Principles (cont'd)

Our Values are:



Customer Focused

We aim to exceed the expectations of our external and internal customers.



One Team

We work together consistently, promoting co-operation and mutual support, to achieve our corporate objectives.



Results Driven

We take personal responsibility for achieving excellent business results.



Ethical

We are open and honest and meet our commitments with a responsible approach to the environment and our communities.



Innovative

We continuously strive for innovative and better ways to deliver our business.

Systems thinking



When we think in terms of systems it lets us see the big picture, as we look at how individual parts work together to make up the whole. Systems thinking can help us to build a more resilient and adaptable system and can lead to more creative solutions.

Our system is a whole river catchment - an area of land that is drained by a river and its tributaries - and includes the activities and interests of a range of stakeholders including land holders, customers, businesses, and visitors. Systems thinking enables us to find the optimal solutions so that the activities are supporting or balancing rather than conflicting with each other. We will work within our own organisation and with others to identify and implement the most effective blend of measures in the right locations.

Natural solutions first



Nature-based solutions use nature to solve a problem. These can include things like restoring wetlands, planting trees, and using landscaping and vegetation to manage flood risk. They can provide a range of other benefits, such as carbon storage, improved air quality, biodiversity, and recreation, and can avoid the use of intensive resources often needed for more traditional solutions.

Where a solution is needed, we will consider nature-based solutions first, in every decision that we make. This may result in the use of nature-based solutions either on their own, or in combination with engineering projects to provide adaptive solutions with multiple benefits. The final type of solution may depend on the timescale for the required outcomes – as nature-based solutions often take time to become established.

Partnership mindset



Working in partnership is key to achieving our environmental ambition and finding solutions to wider global challenges We can't and don't want to do this alone. It is only by working together will we see the real benefits, helping to restore and regenerate our environment.

We already know that we get better results by working in partnership with others and we have both long-established and new award-winning partnerships in place.

“We need to think at a landscape scale to deliver natural capital initiatives that deliver multiple benefits”.

- Heidi Mottram, CEO, Northumbrian Water Group

Our Environmental Priorities and Guiding Principles (cont'd)



Case Study 1 | North East Catchment Hub

The North East Catchment Hub is an example of how we are applying our guiding principles.

In partnership with The Rivers Trust, we've created the North East Catchments Hub to bring together the best local, regional and national expertise to benefit our region.

The Hub is a first for the industry and creates a number of full time roles covering the entire Tyne, Wear and Tees river catchments. Those roles will help us and our partners to invest effectively in improvements to watercourses and the wider environment.

By working in partnership, with the Catchments Hub as the co-ordinating presence, we can do more than any individual organisation can do alone, by combining expertise and best practice, and considering alternative, sustainable ways to invest for environmental benefit.

The Catchments Hub was formed in 2022, and in the first 12 months we identified eight catchment and nature-based schemes which have been put forward for inclusion in our 2025-30 business plan.

These catchment and nature-based solutions have multiple benefits.

By focusing on cross-catchment partnership and catchment based community working, rather than end-of-pipe schemes at sewage treatment works, we can save an estimated £51.7m, helping keep customer bills down, minimise natural resource use and our carbon and climate impacts, while delivering substantial water quality benefits. Schemes like this mark an important step in restoring and regenerating our natural environment.

“We believe the scale of Northumbrian Water’s ambition, and its collaborative catchment & nature-based solution programme for 2025-2030, will have far reaching impacts for the water industry and beyond.”

- Mark Lloyd CEO The Rivers Trust



River Tyne



River Blyth



Water management for the environment and people

Why is this a priority?

Fresh water is a precious resource that we mustn't take for granted. We want to achieve the right balance between environmental outcomes and delivery of our core service – reliable and resilient supplies for customers and business, now and in the future. This is particularly important as the population grows and as the climate changes, reducing the amount of water that is available.

But we also need to maintain affordable bills for customers. Our **Water Resource Management Plan (WRMP)** sets out how we make sure we can continue to deliver clean, clear drinking water in the future, even in the most severe drought. The main aim of a WRMP is to estimate how much water our customers will need in the future (demand) and consider this against the water that will be available (supply), and then look to find the best solutions to meet any future challenges.

Focus Areas

Taking less water from the environment

Minimising the amount of water that's wasted

Minimising the amount of water that's used by customers

Headline Commitments

Actively manage our resources and licenses to minimise environmental impacts at all times.

Meet national targets to reduce leakage by 50% by 2050. This means reducing leakage in the North East by 55% and in Essex and Suffolk, where we are already leading in this, by 40%.

Reduce household water consumption to an average of 122 litres per person per day by 2038 and 110 litres by 2050, saving enough water to fill 61 Olympic swimming pools every day.

Reduce water demand from businesses by 9% by 2038 and 15% by 2050 (from 2019/20), saving enough water to fill 13 Olympic swimming pools every day.



Water management for the environment and people

Taking less water from the environment

Through careful planning and stewardship, we make sure water is delivered where and when it is needed most, and we will make sure the natural environment is not damaged or degraded by our activities.

We are already helping to maintain water levels and flows in the natural environment by meeting or going beyond our environmental licence requirements. We will continue to seek out further opportunities where we can, particularly in environmentally sensitive locations. We are also working with other water companies and stakeholders to identify and develop regional and local water supply solutions to meet our challenges.

We will continue to use innovative ways to increase the amount of water available. For example, we will work with the Environment Agency to identify the possible role of seasonal and catchment-based licensing, ensuring we only abstract water in locations and at times when there is sufficient flow to avoid any negative environmental impacts. We will also consider the potential for recycling water.

In line with our guiding principles, we are also committed to continue working in partnerships across catchments. This work will deliver multiple benefits, including

helping to protect raw water sources so that more (and better quality) water is available to support the environment and deliver wider environmental benefits.

Minimising the amount of water that's wasted

For many years, we have been a top performing company for managing and reducing leakage. In water stressed Essex and Suffolk, we already have one of the lowest levels of leakage in the country (a third lower than average). We have set a target to reduce this by 40% by 2050, with a reduction from 76 litres per property per day in 2021/22 to 62 by 2030.

In the North East, where we have sufficient water supplies already, our leakage performance is 5% better than the national average. We have set a target to reduce this by 55% by 2050, with a reduction from 108 litres per property per day in 2021/22 to 84.5 by 2030.

Our work to achieve these commitments includes leak detection, pressure management, rapid response teams, proactively replacing pipes and using smart meters and sensors.

Innovation is key and we will continue to use the latest technology to make our network smart and to address all relevant components in the life of a leak (through



River Wansbeck



Water management for the environment and people

PALM – Prevent, Aware, Locate and Mend). An example is our industry leading innovation of ‘no dig’ techniques, which is now being rolled out across the business. We have also used satellite imagery to help us identify leaks more quickly, so that our dedicated leakage teams can target areas where interventions are needed.

Minimising the amount of water that’s used by customers

For many years, we have had an active, industry-leading programme to work with customers to manage demand in our regions. We have an existing commitment to reduce consumption through metering and water efficiency programmes to an average of 143 litres per person per day (l/p/d) by 2025 and to 135 l/p/d by 2030. The impact of Covid-19 on household consumption has been significant and we have adapted our water efficiency strategy to mitigate this impact whilst also driving reductions through behaviour change initiatives. We are also delivering a programme of activity to reduce business demand.

We have several ongoing initiatives to meet our goals, including **Water’s Worth Saving** and our smart metering programme (all household customers and businesses in the Essex and Suffolk region will have smart meters by 2035 at the latest, and all existing and new meters in the Northumbrian Water

region will be smart by 2035). We also have an ongoing programme of work to help customers identify and fix leaks from toilets, taps and overflows. One of the ways we will achieve our challenging commitment is through our award-winning Leaky Loos campaign (see Case Study 2: Leaky Loos).

We have recently received funding for our Water Literacy programme, through Ofwat’s innovation fund. This multi-partner project will help raise awareness of the value of water, providing advice to our customers on how to reduce their water use and protect the local environment.

By 2050, we aim to reduce household consumption to an average of 110 litres per person per day and overall business demand by 15% (from a 2019/20 baseline). These targets are ambitious and will be challenging to achieve, which is why we support the government’s ten-point ‘Roadmap to Water Efficiency’ in its **Plan for Water**. This includes several proposed changes we would like to see, to ensure water efficient housing (new build and retrofit) becomes the norm, including changes to Building Regulations, mandatory water efficiency labelling and water recycling in new developments. We are also working to support Waterwise on the delivery of its **UK Water Efficiency Strategy**.



Case Study 2 | Leaky Loos

Leaking toilets are the single biggest waste of water in the home, equivalent to an extra two people’s water use and occur in 5-8% of homes. For our customers this would mean between 110,000 and 176,000 homes with a leaking toilet right now - wasting around 23 million litres of water every day - which far outweighs the water saving benefit of the dual flush toilet. Because of this, tackling leaky loos has formed a key component of our water efficiency strategy.

The programme is also great news for customers. In addition to the provision of an essential plumbing repair service free of charge, we are also supporting customers to reduce their bills. The repair of a single leaking toilet in a metered home could save the occupants hundreds of pounds each year.

The main culprit for leaky loos is a leaky drop value system (button flush) that can trickle for years before becoming obvious. To help raise awareness of this we have developed a range of marketing and communications activities – including free leak detection packs, Facebook advertising and door-to-door customer engagement. In just 12 months (1st April 2022 – 31st March 2023) we repaired over 3,700 leaking toilets, saving 215 litres per repair per day. This totalled a saving of over 806,000 litres a day.

IS YOUR LOO COSTING YOU?

A leaking toilet can increase your water bill by up to £200 but they are not always easy to see.



We’ll fix yours for free!
Visit: nwl.co.uk/leakyloo

NORTHUMBRIAN
WATER *living water*

WATER’S
WORTH SAVING



Healthy catchments, rivers and coastal waters

Why is this a priority?

To safeguard our water systems, we must adopt a holistic perspective – from the top of a river catchment to the coastal outlet. By promoting the recovery of nature and sustainability across entire catchment areas, we can protect the quality of our drinking water at its origin, reducing treatment needs. Healthier ecosystems with fewer pollutants will nurture conditions for regenerating thriving communities of people, plants, and animals alike.

The quality of water in our rivers and coasts, and the role of the water industry in this, has been at the forefront of recent political debates and the national media. We recognise that this is an area that our stakeholders, customers, and the wider public care deeply about. We share their passion for a healthy water environment, and we have been working hard to meet these expectations and will continue to do so in the future.

In 2022, we produced '**A Vision for our Coasts and Rivers**' which set out how we will play our part in protecting and bringing about improvements for our rivers and coasts. This outlined nine ambitious pledges we are committed to, and we are on track to meet all of these pledges.

Our **Drainage and Wastewater Management Plan** (DWMP) looks more than 25 years in the future and sets out some big changes to the way in which the sewerage system operates. This will allow us to better cope with challenges such as climate change and population growth, and to better protect the environment.

Focus Areas

Enhancing the quality of the water environment through regeneration of nature and catchments

Lead and support collaborative catchment stewardship, developing and implementing integrated plans for our 10 major catchments by 2030.

Eliminate the detrimental impacts of our operations and assets on waterbodies as soon as is practical. Work with partners so that, where possible, waterbodies in our regions can achieve good ecological status.

Zero serious pollutions now and always and reduce the number of category 1 – 3 pollutions by 50% by 2040 (from a 2022 baseline).

Supporting excellent bathing waters

All bathing waters at good or excellent status by 2030.

Champion the growing movement for wild swimming and help establish at least two recreational inland bathing sites.

Significantly reducing the occurrence and impacts of storm overflows

Year on year reductions in the number of storm overflows operating more than ten times a year on average, and none doing so by 2050.

Helping to significantly reduce flood risk

Work in partnership across catchments to reduce the risk of flooding from all sources.

Reduce external sewer flooding by 60% (from our 2024/25 performance levels) by 2050.



Healthy catchments, rivers and coastal waters

Enhancing the quality of the water environment through regeneration of nature and catchments

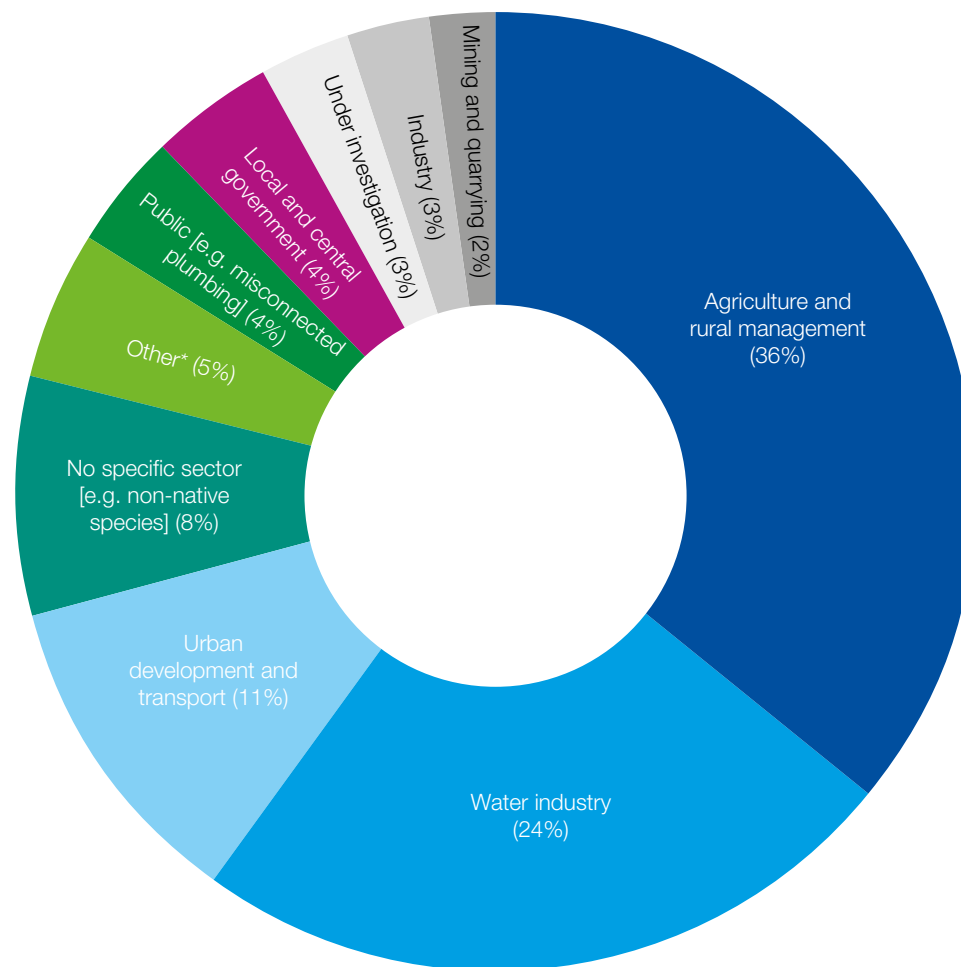
We are committed to restoring and regenerating the water environment, and this means considering whole catchments - from where rain falls on the ground and drains to the rivers and lakes, to the flows down to estuaries and the sea. It is this catchment approach that has informed our strategy, and which shapes the way we work. We will develop integrated catchment plans for all 10 of our major catchments by 2030.

We have a well-established team of catchment advisors who work closely with local farmers to increase the awareness of drinking water sources and highlight how some farming practices can impact the quality of the water we abstract. We offer grants to support changes to the farm to remove the risk of pollutants such as pesticide and nitrates reaching the water environment (see [Case Study 3: Catchment Advisors](#)).

In addition to this, we have been engaging with local Farm Clusters. These Clusters represent groups of farmers who work together to generate greater environmental benefit. For example, alongside Essex County Council, Anglian Water, the Environment Agency and RSPB, we have agreed to fund the co-ordination of a Farm Cluster in North Essex.

Over the past few years, we have worked with the Rivers Trust to establish the North East Catchments Hub (NECH). Through the NECH we have developed a series of catchment and nature-based solutions to help reduce phosphorus and nitrate in rivers and estuaries (see [Case Study 1: North East Catchment Hub](#)). We are already delivering some of these solutions and we have plans to do more. This will provide water quality improvements for rivers, while working more closely with communities, catalysing more investment, and providing a range of other benefits including flood resilience, biodiversity net gain and carbon sequestration. These wide range of benefits contribute towards regenerating our natural environment.

In line with the Water Framework Directive, we are working to eliminate the detrimental impacts of our operations and assets on water bodies, helping them to achieve good ecological status. We know that there are many barriers to healthy catchments, and that a key part of regenerating catchments and enhancing the quality of the water environment is reducing negative impacts from different sources. This graph shows that, at a national scale, the water industry is responsible for less than one quarter of the reasons why rivers are currently not achieving the desired quality status.



Rivers in England: Reasons for not achieving good ecological status by sector and activity



Healthy catchments, rivers and coastal waters

This is why working in partnership, such as through the NECH or through [Local Nature Recovery Strategies](#), is so important, so we can address these problems collectively.

As part of this, we will deliver improvements through the Water Industry National Environment Programme (WINEP). This programme is developed by the Environment Agency every five years, and our role is in developing and delivering solutions for catchments that protect and restore water bodies and blue spaces. This includes schemes across our regions to reduce phosphorus loading from treated wastewater. We have a target to reduce this by 56% by 2038 (from a 2020 baseline). This work will contribute to the wider UK target of at least 75% of rivers in the UK achieving good status.

The Environment Agency publishes an Environmental Performance Assessment (EPA) each year, showing how all water companies are performing in a variety of areas, including pollution. We are proud to have been one of the leading companies in the EPA, being one of the best performing companies in the sector on pollution incidents. However, we are not complacent and recognise that there is more to do, particularly given the challenges of growth and climate change.

We believe that pollution events represent a failure, and in our long-term delivery strategy 'Shaping our future' we set out our target of zero serious pollution now and always and reduce the number of category 1 - 3 pollutions by 50% by 2040 (from 2022 baseline).

We are using and developing new technologies to help achieve these goals, for example:

- Using PULSE sonar to detect blockages more efficiently than CCTV investigations currently do.
- We have developed an algorithm to interpret our sewerage monitoring data to predict where pollution incidents may occur and intervene to stop them from happening.
- Our misconnections team help identify where customer drains are connected to the wrong pipes, which can result in sewage being discharged to water courses instead of into our sewers.
- Our nationally recognised 'Bin the wipe' campaign, aimed at changing customer behaviour to avoid blockages that can cause pollution.

Good information is critically important to support good decision making and make sure the actions we take are appropriate, timely and efficient.



Case Study 3 | Catchment Advisors

We recognise that as a water company alone, we cannot solve all of the issues that impact our rivers and coasts, but can support partners and stakeholders in their activities to have a real impact on water quality.

A vital part of this approach is our Catchment Advisors. We were one of the first water companies to employ Catchment Advisors back in 2004, and as we have seen the benefits of this approach to our river and ground water quality, so the team has grown.

Our advisors engage with the agricultural community to increase the awareness that agricultural practices can impact the quality of water in our environment. To date, we have engaged over 8,000 farmers, with over 700 farm visits (as of June 2023).

We work collaboratively with those who are responsible for managing the land and water within our catchment areas, providing grants to help make vital changes to protect water quality.

Our Catchment Advisors also work in partnership with others to achieve common goals, including local partnerships formed under Defra's Catchment Based Approach, Rivers Trusts, Wildlife Trusts, and Catchment Sensitive Farming.





Healthy catchments, rivers and coastal waters

This is why we will significantly increase our water quality monitoring around our wastewater treatment works (final effluent, in-river upstream and downstream) to get a greater understanding of the environmental impacts of treated water by 2030.

Another challenge we face, is new substances or emerging pollutants, which are not routinely monitored by the Environment Agency. We are committed to understanding emerging pollutants as they arise and tackling them through cooperation with other national stakeholders and regulators. For example, we are part of the UK Water Industry Research Chemicals Investigation Programme, working across the sector to identify and seek ways to treat or reduce the impact of new substances on the water environment.

Supporting excellent bathing waters

We have invested around £350m over the last 20 years in schemes at or impacting on the coast, and as a result 32 of 34 Bathing Waters in the North East meet the excellent or good standard under the revised Bathing Water Directive. As a result, over 95% of the population in our Northumbrian Water operating region lives within an hour's drive from a beach with excellent or good bathing waters.

Work is ongoing to improve the standards at the two bathing waters that are not rated Good or Excellent. We are playing a full part in this, even though there is no evidence that our assets have an impact.

We champion the growing movement to establish recreational inland bathing sites. Working hand-in-hand with local communities, we provide advice and support for pursuing official bathing water designations. We take pride in enabling communities to unlock the recreational and economic potential of their natural assets, as we work to uphold the highest benchmarks of cleanliness, safety, and accessibility at these locations.

Significantly reducing the occurrence and impacts of storm overflows

Many of our sewers carry a combination of wastewater from homes and businesses, and rainwater. At times of heavy rainfall, this can mean that the pipes can reach full capacity. The risk from this is that this combination of rainwater, wastewater and other items flushed into the network can be forced back into customers' homes.

Storm overflows (SOs) act as a relief valve, releasing this heavily diluted mix – mostly rainwater – to the environment and protecting homes from sewer flooding. The Environment Agency permits how and when we can use SOs.

The frequency of discharges from SOs has tended to increase over time because of climate change, population growth and changes in behaviours – in particular, increased use of plastics such as wet wipes being put into the system and causing blockages.

Click [here](#) to view a short animation that explains how storm overflows work.

There are 1,564 SOs in our region permitted by the Environment Agency. Nearly all of these are monitored, and we are working to make sure near real time data for 100% of them by the end of 2023. We will also install water quality monitoring at the highest priority SO locations by 2025.

To help achieve our 2050 goal of zero SOs operating more than ten times a year, we have developed a targeted action plan and are already investing more than £80 million towards reducing our reliance on and use of SOs between 2020 and 2025, with a further £1 billion to be invested by 2030. In addition to new investment, this includes surveying our sewer pipes around storm overflows to identify any blockages (such as tree roots) and fixing them where problems are found. It also involves a proactive programme of maintenance and recalibration of flow monitors, to make sure the right levels of flow are going through our network.

Helping to significantly reduce flood risk

Flooding can arise from multiple different sources and can have damaging impacts on the natural environment and our customers as well as on society and the economy. Because of the different risk sources and responsibilities, actions to reduce flood risk always needs to be planned and delivered in partnership. This is the key driver for establishing the Northumbria Integrated Drainage Partnership.

External sewer flooding occurs when sewage or foul water leaks from the sewerage system and floods into an outside space, such as a garden, amenity area, or road. External sewer flooding can also cause damage to the environment if it enters a watercourse, and we have a tactical plan in place to replicate our internal flooding success. Since 2020, we have reduced the number of external sewer flooding incidents by 36% and we want to reduce this by a further 60% by 2050. Further details can be found in our [DWMP](#).



Effective climate action

Why is this a priority?

Climate change poses the single greatest threat to our natural environment and the sustainability of our company. Playing our part in mitigating and adapting to climate change is important to us, helping to protect the environment and society today and in the future. Effective climate action aligns with the UN Sustainable Development Goals (see **Appendix A**) and the UK government's EIP.

Our **Emission Possible** plan sets out our ambition and our progress in achieving Net Zero – helping to mitigate the impacts of climate change. Our **Climate Adaptation Report**, along with our long-term strategies and plans, outline how we will adapt our operations and infrastructure to make sure we can continue to provide a reliable and sustainable water and wastewater service to our customers.

Focus Areas

Headline Commitments

Overarching commitment

Achieving Net Zero Scope 1, 2 and 3 emissions by 2050.

Minimising greenhouse gas emissions from our activities

Reduce process emissions of methane and nitrous oxide in the most efficient and affordable way.

Accelerate the timeline for phasing out fossil fuel vehicles. Aim for no new fossil fuel HGVs by 2035 and other vehicles by 2030.

100% of our electricity will come from additional renewable generation by 2040¹.

Working in partnership to reduce emissions from others

Reduce embodied carbon by 50% for new assets by 2040 (from a 2025/26 baseline).

Managing environmental risks from climate change to provide a resilient service to customers and business

Have plans in place to adapt to a world that is 2°C warmer in 2050 and prepare for 4°C by the end of the century.

¹ Additional = renewable generation that would not exist if we were not buying the power.



Effective climate action

The first two focus areas within this Environmental Priority set out our commitment to achieve Net Zero. The first relates to greenhouse gas (GHG) emissions from our own activities and the second looks at working in partnership to reduce GHG emissions across our supply chain. Although there are specific commitments for each of these focus areas, there is one overarching commitment:

Achieving Net Zero Scope 1, 2 and 3 emissions by 2050

The water industry was among the first sectors in the country to develop a route map in support of Net Zero, seeking to limit the rise of global temperatures to 1.5°C in line with the Paris Agreement. Through Water UK, water companies pledged in 2019 to reach Net Zero operational GHG emissions by 2030. This covers direct emissions as well as indirect emissions from purchased energy (scope 1 and 2 as shown in the figure across).

Our operational emissions have dropped from over 250,000 tonnes CO₂e in 2010 to just 23,000 tonnes CO₂e in 2022. We have achieved these reductions through intense and sustained efforts across many areas, including being the first water company to use 100% of our sewage sludge to create energy (see [Case Study 4: Creating](#)

[Green Energy](#)), and obtaining 100% of our purchased energy from renewable supplies since 2018.

Currently, our wider emissions (Scope 1, 2 and 3) are in the region of 200,000 tonnes CO₂e per year, which makes achieving the 2050 target extremely challenging. This is especially so, given the type of service we provide (GHG emissions are a natural by-product of wastewater treatment) and the additional regulatory requirements we must meet, which will increase the need for carbon intensive treatment processes, and expected growth in our regions.

Minimising greenhouse gas emissions from our activities

To reach Net Zero, we must reduce emissions in the most efficient and affordable way for our customers. As part of this journey, we will sign up to deliver the Science Based Target initiative (SBTi) for GHG emissions.

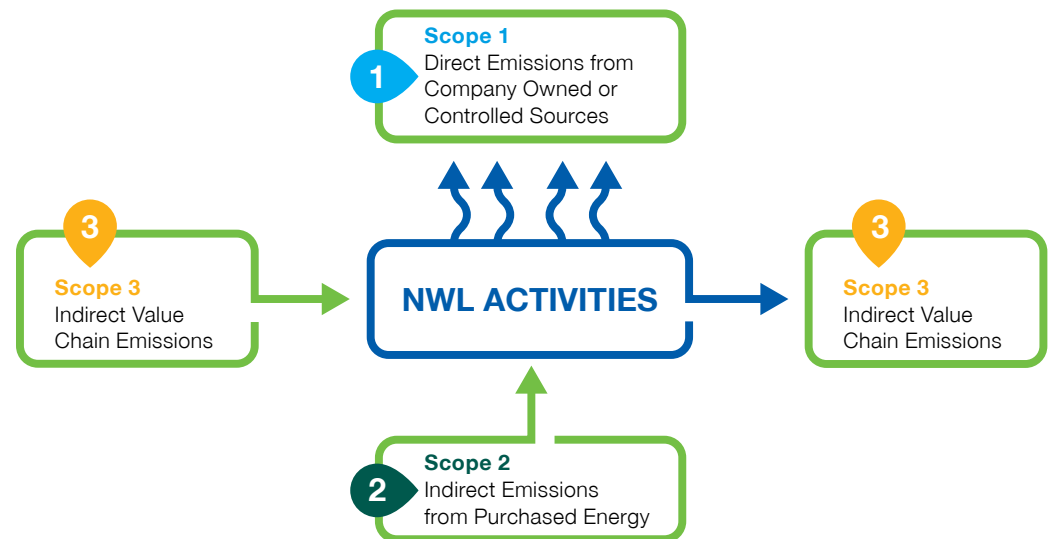
As the National Grid decarbonises and emissions from electricity use fall, process emissions of nitrous oxide and methane from water and wastewater treatment make up a larger proportion of our total emissions. These emissions present a great challenge, as at present there are limited feasible or affordable alternatives to our current treatment methods, and capturing these emissions is expensive.

We will focus our innovation efforts to identify the best approaches to reduce our process emissions, working closely with others as we do.

As part of our journey to Net Zero we will decarbonise our fleet of vehicles. In 2020,

we began this transformation by adding Nissan EV200s to our fleet and will continue adding more electric vehicles in place of conventional vehicles. After 2030, as part of the Government's plan to reduce emissions, no new fossil fuel vehicles will be sold in the UK.

The GHG protocol categorises the entirety of an organisation's emissions into three high level scopes:



The three scopes of greenhouse gas emissions



Effective climate action

The technology to support the transformation of HGVs is more complex, but we are aiming for all new HGVs to be fossil fuel free by 2035.

We are proud to be an industry leader in the generation of renewable energy. Our investment in offshore wind since 2018 enables us to power all of our 1,886 sites, and around 30% of our total electricity demand, using this source of renewable energy. We will maintain a focus on this area as we work towards our 2040 renewable generation goal, having committed to add 30MW of new renewable generation to our asset base by 2027.

We also aim to achieve ISO50001 accreditation to sustain improvements in energy efficiency and reductions in GHG emissions (our emissions reporting has already achieved ISO14064-1 accreditation – demonstrating accurate and transparent reporting). Our commitment to continual improvement is real and we want to have systems in place to support our path to achieving Net Zero and ensure we are accountable to our commitments. For this reason, we also plan to adopt the PAS2080 standard for managing carbon in building and infrastructure by 2025. This looks at the whole value chain and aims to reduce carbon and cost through intelligent design, construction, and use.

Working in partnership to reduce emissions from others

To continue to provide world class water and wastewater services, while also protecting and regenerating the natural environment, we must plan and deliver a large investment programme. This new investment will result in embodied carbon – the GHG emissions associated with materials, manufacturing, construction, transportation and installation. We are constantly looking for innovative opportunities to ensure our investment programme minimises the amount of both embodied and operational emissions (for example from ongoing energy requirements). Through partnerships with contractors, suppliers and others, we will work towards reducing embodied carbon associated with new assets by 50%.

We will also actively seek opportunities to sequester and lock-in carbon by using catchment and nature-based solutions where possible. We will continue to work with others, such as our contribution to the Peatscapes partnership, to enhance carbon storage. As peatlands store carbon indefinitely, restoring upland and lowland peatlands to a natural condition is vital, particularly as healthy functioning peatlands also deliver many wider benefits for society.



Case Study 4 | Creating Green Energy

We are industry leaders in using our customers' waste to create green energy.

We were the first, and remain the only, water company to use 100% of the sludge from our wastewater treatment to create energy by Advanced Anaerobic Digestion (AAD). This is a significant part of how we are already well on our way to Net Zero.

Our AAD plants on Tyneside and Teesside process around 2 million cubic metres of

sludge to generate 165GWh of green gas (biogas) that we inject into the grid every year, which is enough to heat 8,000 homes.

The residual inert "cake" is then transported to be used as fertiliser. The switch from moving liquid sludge to transporting solids has also meant 90,000 tankers per annum have been replaced by 10,000 trailers, reducing our carbon emissions even further.





Effective climate action

Understanding and reporting carbon is fundamental to managing and reducing emissions, and we are committed to transparency in emissions reporting as we work towards our Net Zero goal. We aim to have 95% of our scope 3 emissions reported by 2026. Addressing Scope 3 emissions requires considerable supply chain engagement and full life cycle analysis. The greater the scope of reporting, the more elements of a company's value chain are engaged with emissions awareness and by extension, reduction.

Managing environmental risks from climate change to provide a resilient service to customers and business

Although we are aiming to reduce our emissions in line with the Paris Agreement goals, this will not be enough to mitigate the impacts of climate change. The 2023 IPCC report on climate change warns with high confidence that it is likely that heating will exceed 1.5°C, and that current global commitments may be insufficient to limit heating below 2°C.

The impacts from extreme weather in the UK over recent years highlight the urgency of adapting to climate change. Rising temperatures, changing rainfall patterns, and more frequent extreme weather events are all putting pressure on

our water resources and on our wastewater systems. For example, Storm Arwen in December 2021 was one of the most powerful storms our northern operating region has ever seen and was classed as a civil emergency. The summer of 2022 saw Europe's worst drought in 500 years.

As a result, managing risk in the face of climate change involves planning for the worst-case scenario. So, we are adapting to a world that is 2°C warmer in 2050 and preparing for 4°C by the end of the century.

We use the latest climate information and scenarios (UKCP18) to understand and plan for the effects of increased drought, flood risk and other climate impacts on our assets and services.

As set out in our [WRMP](#), we are committed to ensuring all household customers continue to have a sufficient and secure supply of water by reducing demand in the North East and a taking a twin track approach in Essex and Suffolk to increase supply and reduce demand. Adequate water supply in an uncertain climate is non-negotiable and we will ensure all household customers continue to have a sufficient and secure supply of water (resilient to 1 in 500 year drought). You can read more in our WRMP for NW [here](#) and for ESW [here](#).

On the wastewater side, our [DWMP](#) models the effects of increased flood risk and other climate impacts on our assets and services. Effective planning will ensure that our region's drainage and wastewater system remains reliable and resilient for

the years ahead. This work is embedded into our planning and considered in the commitments set out in this strategy, including those related to storm overflows, bathing waters and flooding.





Valuing resources and eliminating waste

Why is this a priority?

A circular economy aims to minimise waste and pollution, by keeping products and materials in use for as long as possible and regenerating natural systems. These principles are embedded within the strategic ambitions of the **UK Government's Resources and Waste Strategy (2018)** and **Environmental Improvement Plan (2023)**, which highlight the need to preserve material resources by minimising waste and promoting resource efficiency.

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. We are on a continual journey to increase efficiency in our activities, maximise the value we create and reduce our consumption of raw materials. Working in this way reduces our environmental footprint.

Focus Areas

Reducing resource use and sourcing sustainably

Recovering energy and materials from our processes

Eliminating avoidable waste

Headline Commitments

Prioritise nature-based, resource efficient and circular solutions within design and procurement standards by 2025.

Reduce chemical and energy use by 20% for all new assets by 2035 (from a 2019/20 baseline).

Every year we generate and utilise a minimum of 165GWh biogas. By increasing our operations we will raise this to 175GWh by 2035.

Achieve zero avoidable waste by 2025.

Actively work with our supply chain to eliminate avoidable single use plastics and packaging by 2030.

Develop end of life strategies for all new and existing assets and consumables.



Valuing resources and eliminating waste

Reducing resource use and sourcing sustainably

We understand that the most effective way to reduce our resource impacts is to avoid or reduce consumption. In line with our guiding principles, we will prioritise nature-based solutions to reduce our reliance on resource intense engineering projects and processes. We are also reducing resource use through driving efficiencies across our activities, and balancing the environmental benefits of introducing new, better performing systems against keeping existing assets in use for as long as possible.

The water industry relies on a variety of treatment chemicals to meet strict water quality regulations. We are committed to reducing our chemical use over the long term and will be working towards a 20% reduction in chemical and energy consumption for all new assets by 2035. For existing assets, our chemical reduction approaches include installing advanced control dosing systems and treating water using nature-based solutions. We will also work with our supply chain to maximise the use of recycled materials wherever possible in all chemical production.

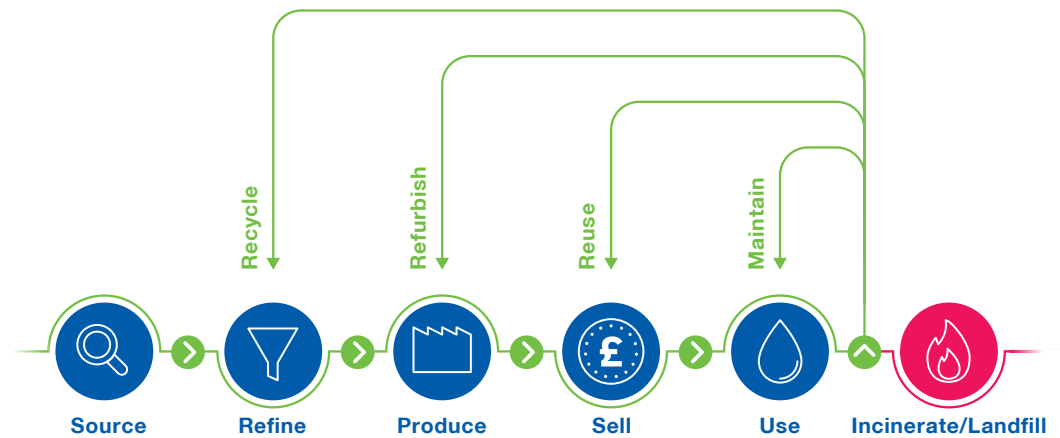
The service we provide relies on goods and services from our supply chain. We recognise the need to ensure that the way we procure these items is impactful.

Our [Responsible Procurement Strategy and Supplier Charter](#) outlines how our procurement decisions address environmental and social risks and opportunities. Focusing our efforts where we can have greatest influence will allow us to instil responsible procurement in everything that we do. This will maximise value not only to our organisation, but also to society and the economy whilst enhancing the environment.

Our next step is to carry out more detailed risk-based environmental and social assessments across product lifecycles. Combined with market engagement, this will enable us to set ambitious yet realistic improvements for the products we buy and the supply chain that provides it. We will also look to incorporate standardised metrics, third party certifications and Environmental Product Declarations (EPDs) and set up effective systems to track and measure the environmental impact of the goods we buy.

Recovering energy and materials from our processes

Our advanced anaerobic digestion facilities take 100% of our sewage sludge from over 400 sewage treatment facilities to generate energy (through biogas production and utilisation). Every year we generate and utilise a minimum of 165GWh biogas. By increasing our operations we will raise



Source: Circle Economy, <https://www.circle-economy.com/circular-economy/what-is-the-circular-economy>

this to 175GWh by 2035. The biosolids produced through this process are reused on agricultural land as a nutrient rich alternative to a carbon intensive synthetic fertiliser. In 2022, we provided over 27,000 tonnes of biosolids to land - replacing around 180 tonnes of chemical fertiliser and resulting in significant resource and cost savings.

As well as recycling all our own sludge, our facilities also accept bioresources from other sources and from neighbouring companies when needed. This can provide benefits in terms of increased biogas production and utilisation.

We will continue to expand these opportunities and identify the best use of energy and resources, including the use within local communities and businesses.

While we are industry leaders in sludge recycling, we are aware that we need to be proactive in addressing technical advances, customer expectations, and future changes to regulations which might change the way we approach our current circular economy strategy.

We are investing in identifying new and innovative solutions to reuse key ingredients from our bioresources, such as recovering



Valuing resources and eliminating waste

ammonia for fertiliser and hydrogen production (see Case Study 5: Ammonia Resource Recovery Trials). In consultation with our stakeholders and regulators we are also considering alternative recovery and disposal options.

We recover value from other areas of our service as well. For example, together with Northumbria University, the University of Newcastle, and Welsh Water we are trialling the use of an innovative loofah to remove and recover phosphorous from wastewater. This prevents it from causing damaging algal blooms which can suffocate local ecosystems. This innovative 'SuPR Loofah' treatment system places micro-algae on a loofah material and uses this to capture phosphorous from wastewater, which can then be used as fertiliser. We are also harnessing a unique form of micro-algae to improve our sewage treatment process. Working with Newcastle University the initial trials have demonstrated excellent results for the treatment of ammonia, solids, and chemical oxygen demand. These world-leading circular approaches provide a more affordable and sustainable process to wastewater treatment.

In collaboration with the wider water sector, we are also working to address ongoing challenges to the environment such as microplastics, persistent chemicals and risks of microbial resistance.

Eliminating avoidable waste

Reducing waste and increasing the amount we reuse or recycle is central to good stewardship of our environment. The UK government aims to eliminate avoidable plastic waste by 2042 and eliminate avoidable waste of all kinds by 2050. We have already set ourselves the ambitious target of eliminating all avoidable waste by 2025.

As a company we currently generate around 200,000 tonnes of waste each year, of which 97% is recycled or repurposed. Most of this waste is biosolids and water sludge, which is recycled to land. We currently repurpose all of our grit, recovered from wastewater treatment, which is used for land reclamation. Around 5,200 tonnes of waste is sent to landfill, which includes difficult to recycle products such as oils, mixed office waste and screening from treatment works.

We will continue our work to eliminate the use of single-use plastics by 2030, through critically reviewing our activities and procurement practices, and by working closely with our supply chain.

The **Refill campaign** is part of this journey. This aims to reduce single-use-plastics by offering refills of tap water at over 1,000 Refill stations across our area.



Case Study 5 | Ammonia Recovery

A ground-breaking project to capture ammonia from wastewater and turn it into green fuel for vehicles is underway at a North Tyneside Sewage Treatment Works. This will be the first time in the world that a water company has ever recovered ammonia from wastewater using this technique.

Installed in March 2023, the purpose-built facility uses a specialist piece of equipment, developed by Organics Group in partnership with Northumbrian Water, to strip ammonia from wastewater. The ammonia will then be used in the production of fertiliser, pharmaceuticals or the development of green fuels.

Not only is the process extracting something useful from wastewater, but it's also making the treatment works more efficient and reducing energy demand - which helps keep customer costs down.

The Organics Ammonia Recovery project is the latest green innovation at the Howdon site, which is one of the sites where, through Advanced Anaerobic Digestion and Gas to Grid technology, we convert 100% of our sewage sludge into green energy.

It's also proving the concept for others, and so will contribute to the wider UK green gas and renewable agenda, as a pilot which has the potential to be rolled out across the industry.



Howdon STW



Valuing resources and eliminating waste

We are proud to be supporting the campaign towards our industry target to prevent the equivalent of 4 billion plastic bottles ending up as waste by 2030.

Another part of the journey to eliminating avoidable waste is by developing end of life strategies for all new and existing assets and consumables.

We will seek opportunities to unlock the value from others' waste and incorporate these into our resource cycle.

For example, through a partnership with Durham University we are investigating the use of waste material recovered from mine water as a replacement for chemicals used in water treatment.

To support a shift towards a circular economy we will continue to seek and leverage industry partnerships, and where needed, work with our regulators to remove barriers to unlocking value from waste.

Plastic waste is termed 'avoidable' when the plastic could have been reused or recycled; when a reusable or recyclable alternative could have been used instead; or when it could have been composted or biodegraded in the open environment (Defra, 2018)





Thriving nature and communities

Why is this a priority?

Healthy habitats, and the animals, plants and microorganisms living within these are critical to supporting life on Earth. As well as being important in themselves, they provide essential benefits to humans – including crop pollination, materials, shelter and medicines.

Access to blue-green infrastructure and nature has also been shown to develop a stronger sense of belonging to our surroundings and brings considerable health benefits.

The UK's natural systems have shown a long-term decline since the industrial revolution, and biodiversity has halved since 1970. We are committed to playing our part in the recovery of nature - restoring and regenerating our natural systems and wildlife in the face of growing pressures from introduced diseases, invasive non-native species (INNS) and climate change.

Focus Areas

Restoring, protecting and enhancing biodiversity

Connecting communities to nature

Improving local air quality

Headline Commitments

By 2050 all our construction activities, including those that do not require planning permission, result in a net gain in biodiversity of 10% (or the local requirement where higher).

Enhance or restore 500 ha of priority habitat every five years via partnership working.

Significantly reduce the risk of land and water based INNS through proactive management and education activities.

Co-design integrated catchment plans with the community to enhance social value opportunities.

Improve 250 km blue spaces by 2025 and 500 km by 2050.

Actively seek sustainable opportunities to minimise negative impacts on air quality, implementing schemes that improve air quality and deliver wider benefits.



Thriving nature and communities

Restoring, protecting and enhancing biodiversity

At the 2022 United Nations Biodiversity Conference (COP15), the UK signed a landmark agreement to halt and reverse biodiversity loss by 2030. This agreement, called the Kunming-Montreal Global Biodiversity Framework (GBF), includes commitments to put 30% of the planet's land and oceans and 30% of degraded ecosystems under protection by 2030 (the "30 by 30" target).

We are a relatively small landowner in the water industry, owning an area of approximately 8,000 ha, half of which is open water. Around 40% of the land we own is under conservation management, either by ourselves, with a conservation partner such as The Wildlife Trust, or in an environmental stewardship scheme. This means we are already making a positive contribution to the 30 by 30 target.

Our work aims to link existing wildlife areas together, supporting landscape scale connectivity. We also work towards achieving a net increase in biodiversity richness, with a particular focus on priority species and habitats. We do this on our own land, and support others to do so elsewhere.

Biodiversity Net Gain (BNG) is a new requirement from the Government to help

tackle losses in biodiversity. It means that any development requiring planning permission must leave the natural environment in a measurably better state than it was before. Our commitment expands on this legal requirement by including all our construction activities. In line with our systems thinking approach, we will look for the best opportunities to do this, which could include achieving this within our priority catchments, by providing habitat connectivity or aligning with the [Local Nature Recovery Strategies](#).

Our land and assets are used for a variety of business and recreational activities, which create the potential for INNS to be transferred around our catchments and regions. We implement biosecurity controls on our land, such as providing washdown facilities, undertake regular surveillance and engage with our tenants, contractors and staff on good biosecurity practice. We also tackle INNS at the catchment level through our [Branch Out](#) funding scheme, our environmental fund that supports projects which bring benefits to water, wildlife and communities.

To help reverse biodiversity decline, we promote programmes to support and re-introduce endangered and critically endangered species into the wild, including the red squirrel, water vole, eel and native black bee.



Japanese Knotweed

An invasive non-native species is a plant or animal that is newly introduced to our environment and then spreads and multiplies, often having a negative impact for native plants and animals. A common example is Japanese knotweed – one of the top ten most aggressive, destructive and invasive plants in the world.



Thriving nature and communities

We have a long-term goal to maintain or restore the condition of our areas within Sites of Specific Scientific Interest (SSSIs) to a favourable condition. We will continue to take a joint approach with farmers, communities, wildlife organisations and local landowners to preserve important SSSI features.

In 2019, we developed Corporate Natural Capital Accounts for both our NW and ESW areas. This helps us to better understand the value that our natural areas provide both to our business and for wider society – from removing carbon and improving air and water quality, to offering fishing and leisure activities. We will regularly update our Natural Capital Accounts, which provide a baseline from which we can measure change and feed into our decision making, in line with good practice.

Connecting communities to nature

We encourage public enjoyment of our land, recognising the benefits to physical and emotional wellbeing through contact with nature. As part of our integrated catchment plans (outlined in the 'Healthy catchments, rivers and coastal waters' section), we will work with the local community to enhance opportunities for people to enjoy nature.

Our Waterside Parks already offer a variety of recreational activities such as sailing,

fishing, dog walking, family days out, charity events, fun runs and more. We also provide on-site accommodation at Kielder reservoir.

We have over 3,800 km of blue spaces (accessible water environment) in the North East, and over 3,700 km of blue spaces in our southern region. These include streams and rivers, lakes and reservoirs, wetlands, canals, coasts, and beaches which are open to the public to enjoy. With support from our partners, we have developed an approach to go 'above and beyond' our business-as-usual activities and work with others to deliver blue spaces improvements. To date we have provided more than £180,000 funding to projects through the Bluespaces programme (see Case Study 6: Bluespaces). We have an ambition to improve 250 km by 2025 and are aiming to double that by 2050.

Through our sites and activities, we also support environmental education and behaviour. We are committed to engaging with the public via education and volunteering opportunities to increase our impact and reach our common goals to protect our environment.

Our online educational resource aims to change water use behaviours of future generations at a large scale. Known as **The Ripple Effect**, this work will be adapted for Early Years, Key Stages 1, 2 and 3 as well as colleges and universities.



Case Study 6 | Bluespaces

Our customers have told us they want us to work with partners to improve the areas of rivers and beaches that they use. That goes beyond water quality to include helping improve things like access, facilities and biodiversity across the water environments in our operating areas.

We call the water environments our customers can access blue spaces. Our business plan 2020-25 includes a commitment to improve 250km of these blue spaces, and we are currently on track to deliver this. By focusing on the water environments the public can get to - whether they're streams, rivers, lakes, reservoirs, wetlands, beaches or coastline - we can make a difference to individuals and communities in the areas where we work.

One of the projects being supported by **Bluespaces** is 'Catch my Drift'. This is a three year project being delivered on the East Chevington Nature Reserve on the Northumberland Coast.

Through the work of Catch My Drift a 12-hectare wildflower meadow has been created, along with an innovative 'reed island', bluebell and wild garlic bulbs have been planted, and new woodland shrub species established. It has also made improvements to bird hides and access routes across the area.



Druridge Bay



Thriving nature and communities



River Tees

The Ripple Effect isn't just focused on schools as the tool can be used by parents and community groups too – such as fun activities for after-school clubs as well as in Scout and Brownie groups. We also offer talks and site tours for an up-close experience of our activities.

Our volunteers are incredibly valuable to support us in safeguarding our environment. In 2022, we had 4,925 volunteer days on our sites through our partnerships with the Wildlife Trusts and the Land Trust. In addition, our long-standing Water Rangers (trained customer volunteers who act as our 'eyes and ears' on the ground) carry out more than 2,000 patrols each year covering 73 km of waterways to raise awareness of any issues such as littering, fly tipping or signs of pollution.

In turn, we encourage our employees to support community and charitable organisations through our employee volunteering scheme 'Just an Hour'. This scheme allows employees to give a minimum of 15 hours every year to support causes close to their hearts.

Our **Together for Inclusion, Diversity and Equity (TIDE)** strategy outlines our commitment to a workforce which represents the different cultures, backgrounds, and viewpoints of the communities we serve.

Expanding on this, we want to make sure our public spaces and outreach activities reflect the diversity of our community and maximise opportunities to promote social value. We will engage communities in the development of our catchment and other plans to incorporate accessible and inclusive outcomes that appeal to an array of interests, abilities, and cultures.

Improving local air quality

Good air quality is important to maintain our health, and to enjoy our outdoors free from nuisance such as air pollutants, odours, and dust.

Our role in relation to supporting air quality objectives extends to many areas including roadworks, odour from water treatment processes, transport, construction, chemicals, and the application of sludge to land. Wastewater and bioresources treatment are also potential sources of air pollution, and we will continue our efforts to quantify and mitigate emissions of nitrous oxide and methane at our sites. We will continually seek opportunities to minimise our negative impacts on air quality and implement schemes that improve air quality and deliver wider benefits.

Next steps

Our Environment Strategy sets out what we want to achieve over the next 25 years – together, we are restoring and regenerating our natural environment, creating a better place through our actions.

Delivering the wide range of commitments set out in this strategy is essential to our journey to regeneration. Our business plan for 2025-2030 takes a significant step towards this, and further delivery will be incorporated in future business plans.

To make sure our actions help us achieve our ambition we will review and adapt the Environment Strategy. This will be timed to enable the strategy to inform future business plans, every five years. Although, this review may occur sooner if a significant environmental change occurs, or if there is a step change in our policies or technology.

We will continue to seek more opportunities to work in partnership with others. We can't achieve our ambition alone. We all have a part to play in the future of our environment - we can only do this by working together. Please join us on our journey.



Appendix A – Links between the focus areas and the Sustainable Development Goals (SDG) and goals within the Environmental Improvement Plan (EIP)

Priority	Focus Area	UN SDG	EIP GOALS
 Water Management for the environment and People	Taking less water from the environment	 	Goal 3: Clean and plentiful water
	Minimising the amount of water that's wasted	 	Goal 3: Clean and plentiful water
	Minimising the amount of water that's used	 	Goal 3: Clean and plentiful water
 Healthy catchments, rivers and coastal waters	Enhancing the quality of the water environment through regeneration of nature and catchments	 	Goal 1: Thriving plants and wildlife Goal 3: Clean and plentiful water
	Supporting excellent bathing waters	 	Goal 3: Clean and plentiful water
	Significantly reducing the occurrence and impacts of storm overflows	 	Goal 3: Clean and plentiful water
	Helping to significantly reduce flood risk	  	Goal 3: Clean and plentiful water
 Effective climate action	Minimising greenhouse gas emissions from our activities		Goal 7: Mitigating and adapting to climate change
	Working in partnership to reduce emissions from others	 	Goal 7: Mitigating and adapting to climate change
	Managing environmental risks from climate change to provide a resilient service to customers and business		Goal 7: Mitigating and adapting to climate change
 Valuing resources and eliminating waste	Reducing resource use and sourcing sustainably	 	Goal 5: Maximise our resources, minimise our waste Goal 6: Using resources from nature sustainably
	Recovering energy and materials from our processes	 	Goal 5: Maximise our resources, minimise our waste
	Eliminating avoidable waste		Goal 5: Maximise our resources, minimise our waste
 Thriving nature and communities	Restoring, protecting and enhancing biodiversity	 	Goal 1: Thriving plants and wildlife Goal 9: Enhancing biosecurity
	Connecting communities to nature	  	Goal 1: Thriving plants and wildlife Goal 10: Enhancing beauty, heritage and engagement with the natural environment
	Improving local air quality	 	Goal 2: Clean air

Information on the United Nations Sustainable Development goals can be found [here](#), and information on the UK Government's Environmental Improvement Plan [here](#).

NORTHUMBRIAN
WATER *living water*