Our strategic priorities

Net zero and environmental gains

South West Water

Bournemouth Water

Isles of Scilly Water

BRISTOL WATER

Contents

ON OUR FRONT COVER...

Chandhu Sujatha
Graduate Quantity Surveyor

Chandhu is a Graduate Quantity Surveyor with a passion for making a difference.

Chandu is delighted to be part of a team at South West Water, that shares his values where he can use his professional expertise working with others to create a better future.

Executive summary

The climate crisis in the South West

We all recognise that we are facing a climate crisis. Climate change is radically changing our environment across the Greater South West. Drought, rising temperatures, flooding, rising sea levels, storm surges and coastal erosion are now too frequently becoming part of everyday lives.

Last year, the South West experienced its hottest, driest summer since records began, a 1 in 200-year event and over 12 months later we are still one of two regions in the UK to remain officially in drought. With summers up to 6°C hotter and 60% drier, and a 20% increase in rainfall intensity in the last 30 years, climate change is destroying infrastructure and nature. Rising sea levels and coastal erosion now presents one of the biggest unique risks to our region. Not only are our biggest cities Exeter and Plymouth, vulnerable, but so too are the homes and livelihoods of people right across the South West.

The climate crisis also presents an economic risk to the region. The region supports an economy that is equivalent the size of Greater Manchester, with business hubs in the cities of Bristol, Exeter and Plymouth, and over 100,000 businesses. With 151 bathing beaches and 860 miles of coastline, four national parks, and ten Areas of Outstanding Natural Beauty, tourism is a highly prized industry. Agriculture also accounts for over 70% of land use in the region with over 13,000 farms, and farming has a far wider influence on life in the region too. The wider food and farming sector are critical to supporting an important visitor economy, and associated food, farming and aquaculture industries.

It is also a region with ambition, and in wanting the region to be clean, smart and connected, there are plans to become the first net zero carbon region in England, to become a net exporter of clean energy, creating 175,000 jobs by 2030, and where cities such as Bristol are leading the way in its commitment to the UN Sustainable Development goals. And with one in six species recognised as at risk of extinction, it is critically important that we continue to support the wildlife and habitats of our region too.

As a responsible business, with a social purpose to support people and places they love for generations to come, we have a responsibility to act. And our customers want that too, with nine out of ten customers considering it important that we are an environmental leader in the region.

Our Board pledges to 2025

We will deliver environmental leadership

"An environmental leader is kind of paving the way, starting to make change and affecting the environment in a positive way."

SWW, SEG C2DE, Aged 18-30

Up to 6°C hotter and 60%
drier summers
than 30 years ago

2022 saw a
severe drought
only expected once
in every 200 years

July 2022 –
UK temperatures
exceed 40°C
for the first time

34%
customers think that hotter, drier summers is the biggest issue we face in the future

Our plan

As we look to double investment overall across the region, we will invest £431m over the next five years with three key areas of focus: building on plans to achieve net zero by 2030, enhancing the environment and climate adaptation. This plan will create c.360 jobs directly and across our supply chain.

Net zero by 2030

Lowering the carbon emissions from our operational activities and throughout our supply chain is the responsible thing to do and aligns with efforts being taken by businesses, institutions and customers across the region to tackle the climate crisis and increase our resilience to climate change. We are innovating at an unprecedented speed to meet our net zero targets, trialling new materials and processes, and developing new tools and techniques to help us embrace the net zero challenge.

We will:

- **Continue to decarbonise our operations by reducing our emissions of Nitrous Oxide and repurposing Methane**
- **Innovate and trial new techniques to recover energy from bioresources and to use that energy to fuel our own operations**
- **Support our supply chain to adopt low carbon materials and processes.**

Enhancing the environment

The climate crisis is inextricably linked with the biodiversity crisis, a crisis for our habitats and wildlife which rely on water for survival just as we do. As a responsible, environmental leader we have worked with the environmental regulators to build a programme of environmental compliance for our operational activities and, in addition, we are investing over and above to align our resources and prioritise actions which add value to nature recovery and measurable biodiversity enhancement across the region.

We will:

- **Expand our nature recovery programme by extending Upstream Thinking into new drinking water catchments, plant 300,000 trees, re-naturalise our waterways for wildlife, control invasive non-native species, launch a new nature recovery fund and our 1,000 ponds initiative**
- **Upgrade treatment works across the region to remove harmful contaminants and nutrients from treated discharges to improve river health**
- **Enhance access and educational opportunities for our 40 lakes and reservoirs and open up access to special sites.**

Climate adaptation

We are innovating and adapting our culture and ways of working to meet the new challenges which climate change presents. The expected change to weather patterns with periods of more intense rain and hotter drier summers means that we are thinking differently about how we secure supplies of drinking water for customers and communities – which we abstract from rivers – whilst at the same time making sure wildlife and habitats have the water they need. We are also thinking through the impact of sea level rise on our operational infrastructure, some of which is based on the coast, at sea level.

We will:

- **Explore with farmers and landowners how we can work with natural processes and nature-based solutions to store more water in landscape, learning lessons from our Ofwat Innovation Water Net Gain project.**
- **Explore climate independent sources of water for our region, such as desalination and former industrial quarries**
- **Continue to support customers and communities to reduce the amount of water they use.**

9 out of 10 customers

consider it important that we are an environmental leader in the region

7 in 10 customers

believe the water in their local environment is good

Our region

As the most southern part of the UK, with plenty of countryside and coasts, uplands and picturesque seaside towns, it is no surprise that we welcome 10 million visitors each year to the region.
We know the importance of the scenic coastline and landscapes in supporting our economy and way of life. We take our role, responsibilities and relationship with the natural environment seriously.

The region is an ocean peninsula surrounded by the Atlantic ocean. The region sits atop a large mass of granite rock which can be seen across the region, at Exmoor, Dartmoor, Bodmin Moor, St Austell and the Isles of Scilly.

Our geology and climate provide important wildlife habitats across four National Parks, ten Areas of Outstanding Natural Beauty, over 4,000km of rivers and multiple marine designated sites.

Our geology and climate have also shaped the culture and economy of the area – fishing, mining, tourism, and recreation are all closely linked to the health of the natural resources of our maritime region.

With over one third of England's bathing beaches, 23 Blue Flag beaches, and 30 shellfish waters, the south west is a popular tourist destination. In the summer months the population of 3.5 million swells to accommodate visitors, and by 2050 these numbers will grow, as it is predicted a further 530,000 people will live in the region.

Our infrastructure and operational capability needs to flex to serve the needs of a population that swells by up to 40% during the summer months as visitors flock to our region.

And as a region shaped by water, villages, towns and cities tend to be based near the coastline and estuaries – meaning our infrastructure is also located near estuaries or the sea making it vulnerable to the impacts of climate change.

"With all the coastline and all the Moors and everything, it's an area that's perhaps more fragile than others."

SWW customer, Male, ABC1, Aged 46+

Population grows up to
10 million
in the summer

36%
of all the designated Bathing Waters in England

30
designated Shellfish Waters

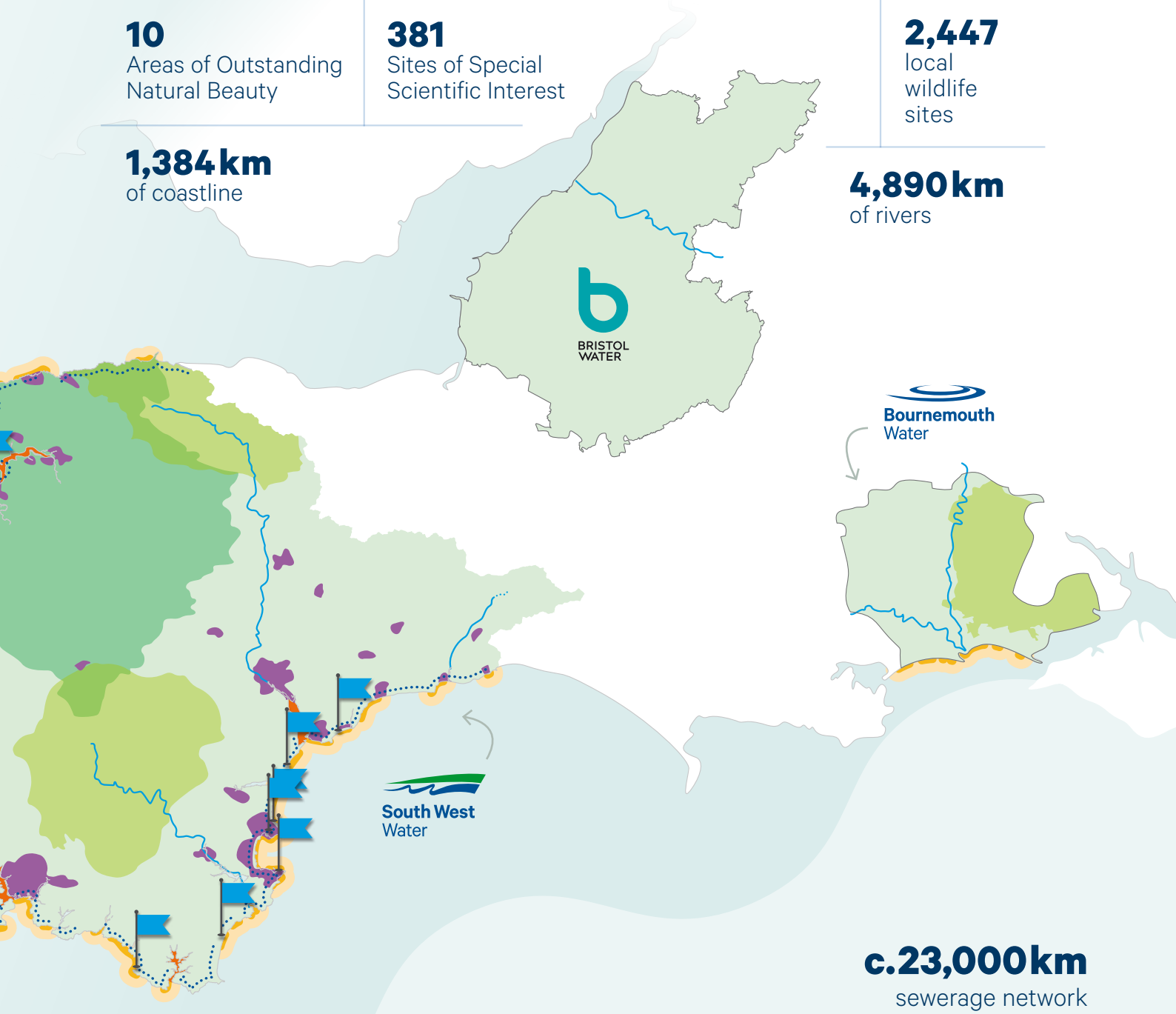
10
Areas of Outstanding Natural Beauty

381
Sites of Special Scientific Interest

2,447
local wildlife sites

1,384 km
of coastline

4,890 km
of rivers



c.23,000 km
sewerage network

1,223 wastewater pumping stations
– to move wastewater through our network and on to treatment works

655 wastewater treatment works
– using a diverse range of processes and technologies

Provision of ultra violet disinfection or membrane filtration at
more than 65 wastewater sites
to protect Bathing and Shellfish Waters to the highest standards

100%
of bathing waters meets all stringent tests

Over the last
20 years
harmful pollutents and toxic metal in discharges has fallen by at least half

8 in 10 visitors
say they visit the region to enjoy the beaches and coastline

Across the region, we work with the natural water cycle

Every day we operate a great water recycling system for the region. We take in rainfall that falls from the skies, store it, treat it and provide it to homes and businesses as safe clean drinking water.

When used, we collect it, and make it safe for all, and release it back into the environment, where it travels to the sea and then the cycle starts all over again. And, as it makes its way through the landscape, our networks, and rivers we work hard to ensure that water continues to provide healthy habitats for wildlife and recreational spaces.

Climate change presents new challenges and stresses on the water cycle on which this relies.

As we experience different weather patterns, more unpredictable rainfall, rising sea levels, storms, cold snaps, floods and droughts – many of the impacts of climate change will affect the water cycle and we need to ensure there is enough water both for society and also in the natural environment for our habitats and wildlife.

Extracting energy and nutrients from wastewater

Our wastewater treatment process results in a by-product – sewage sludge – which we can convert to energy and use to fuel our treatment processes, lowering our carbon footprint and increasing our use of renewable energy.

Wastewater contains nutrients such as phosphorous which can be harmful to both habitats and humans if not effectively treated before it is returned to the environment. The legal standards for treatment are increasingly tightening as technology improves our ability to monitor and remove more nutrients than previous processes were able to.

Traditionally, the nutrient rich product has been used to support agriculture across the region, but with new treatment processes and tightening legal controls governing the use of sludge, there may be other ways in which the nutrients can be used. New technologies and treatment processes also enable us to trial new uses for treated sludge.

If we are to ensure high quality, reliable and resilient services for future generations we need to adapt our infrastructure to address the challenges of climate change and population growth; decarbonise our operations; and protect and enhance the environment and natural resources.

90% of the water

we use to provide clean safe drinking water is from rivers that are being impacted by climate change and population growth

Working with the water cycle

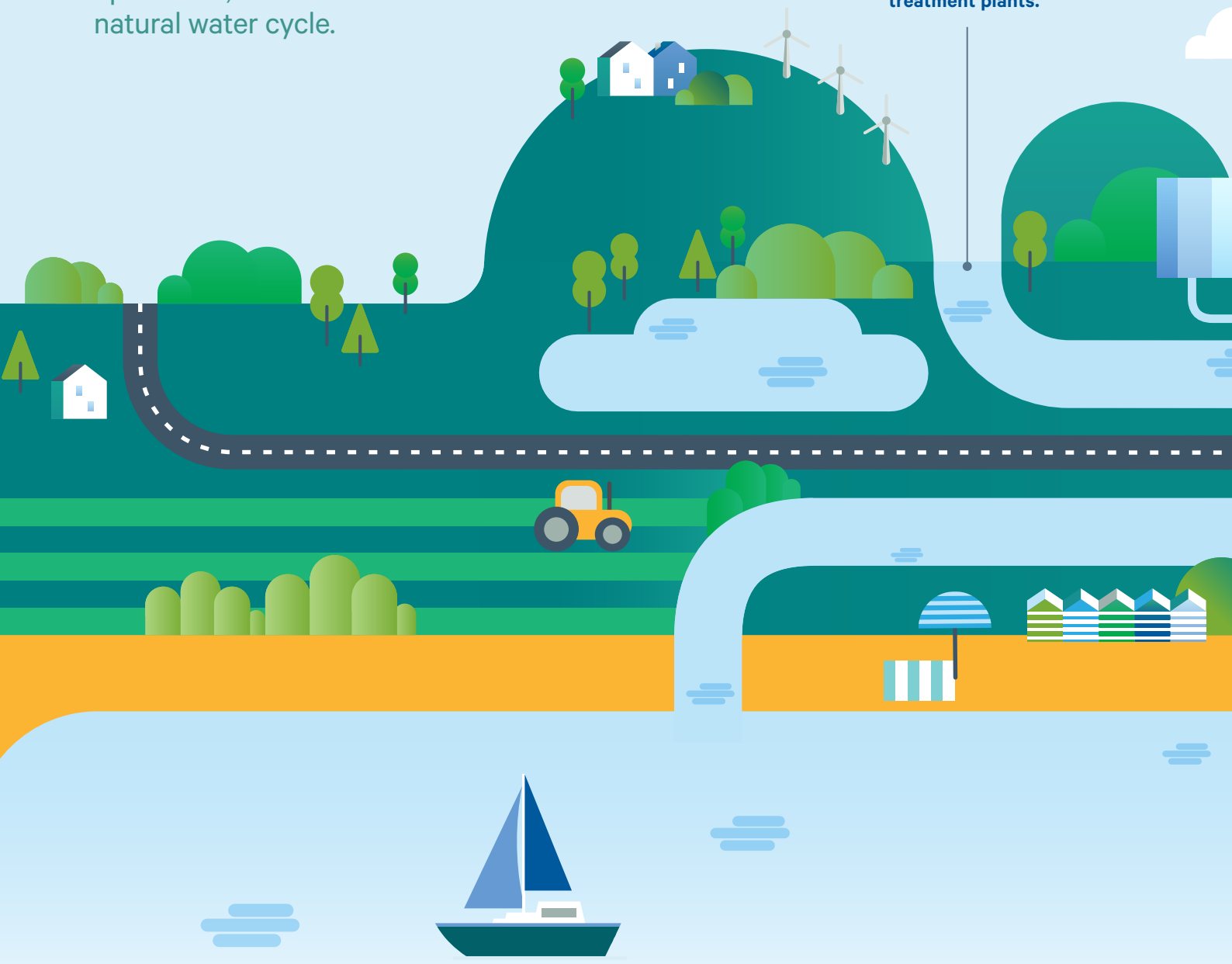
We are a large regionally-focused business – our operations are integral to delivering services and benefits to our customers, stakeholders, the environment and the wider economy.
We are dependent on the natural environment at all stages of operations, which mirror the natural water cycle.

1

In our catchments we take water from rivers and groundwater sources which we store in 32 reservoirs. We also use desalination to supply customers in the Isles of Scilly.

2

Our operations play a vital part in maintaining the level of river flows – from the level of water we release from our reservoirs into rivers, to the level we abstract and take to our treatment plants.



3

Water is treated at one of our 58 treatment works across the region. Every day we treat around 1 billion litres of water, that's enough to fill 400 olympic size swimming pools every day.

4

Once the water is safe to drink, we transport this to customers' homes and businesses through our 25,000km of water pipes.

5

We collect wastewater from homes and businesses in our South West region using our 23,000km of sewers.

6

We treat wastewater to a high standard at one of our 655 wastewater treatment works.

7

We release treated wastewater back into the water environment through rivers and directly into the sea.

8

Water evaporates from the sea and falls onto our catchments as rainfall and the cycle repeats.

What matters to customers and communities

Customer's
number one priority
is clean, safe water

"There definitely needs to be more investment in the South West."

SWW customer, Female, Age 31-55, SEG C1

"We all want a greener world"

Female, SEG B, Aged 56+, SWW

The top 3 priorities
are unchanged from five years ago protecting drinking water, beaches and pollution

Nature and the environment is growing as a priority for customers and working with nature will provide sustainable solutions for many of the challenges we face. Putting the journey to net zero and nature recovery at the heart of what we do, working with partners, means we can create climate resilient places and infrastructure.

A healthy environment is important for our region, and in the face of climate change, ecological decline and greater recreational use of rivers and seas, customers and stakeholders rightly tell us that they expect environmental leadership from us as a priority.

We have seen a change in the focus on the environment from customers and stakeholders alongside the government, regulators, and the media. Our regulations are changing with the introduction of the Environment Act 2021, the new Environment Improvement Plan, the Defra Plan for Water and Storm Overflow Reduction Plan and boosting nature and wildlife is our customers fifth most important area for us to prioritise.

Our customers tell us...

Customers rank climate change as the greatest challenge we face and they recognise that this is connected to other challenges such as population growth, urban development and changing legislation.

Our customers tell us that they support our work to reduce our contribution to greenhouse gas emissions and increase our resilience to climate change. They support additional environmental benefits at a slightly increase cost, recognising that delaying investment will cost more in the long term.

Alongside our investment choices, customers tell us that they want us to be an environmental leader including having the right environmental behaviours and culture in place across our business and delivering stretching performance on environmental measures.

Preventing pollution to rivers and coastal waters is a very high priority for our customers and stakeholders.

Awareness about the quality of bathing waters has increased over the last five years. We know our customers want bathing waters to be maintained year-round, not just in the bathing season. Our Youth Board tell us that bathing water quality is a real 'touchpoint' and that it's important we communicate about bathing water quality and our plans to address issues.

Whilst customers want rivers to be clear and free from pollution, they were less aware of the importance of managing the presence of Invasive Non-Native Species along with broader biodiversity concerns.

Affordability is important to our customers, reinforcing the importance of our plan delivering value for money for all customers. We will continue to put support in place for those who need it.

Our customers recognise the challenges we face and climate change is seen as the greatest threat to the environment. They recognise that the difficulties we face are multifaceted, referring to the complexity of the mix of rural and urban environments, the pressure of tourism and second homes on urban development, and the contribution of business and agriculture in the region.

Considering these challenges, customers consider it unacceptable for us to do nothing. Our customers have told us that meeting legal compliance for environmental standards is the minimum they would expect.

Customers would like our investment choices to be balanced, addressing a range of environmental aspects.

More generally our customers have requested that alongside our investment programmes, that we help them to better understand the work that we're carrying out and its impacts.

Customers consider the Environment Agency's Environmental Performance Assessment (EPA) to be a useful representation of how we are performing and want to see our star rating improve.

> "Traditional engineered solutions should be used for high impact/ urgent solutions, but nature-based solutions should be prioritised for all others, where feasible."
>
> **Stakeholder at DWMP workshop**

1. **Clean, safe water supply**

2. **Prevent pollution**

3. **Protect bathing waters**

4. **Prevent sewer flooding**
5. **Boost nature & wildlife**
6. **Reduce leakage**
7. **Resilience to extreme weather**
8. **Protect rivers**
9. **Less reliance on storm overflows**
10. **Excellent customer service & responsiveness**

"If it doesn't impact on the environment or public health I don't see it as a priority"

Male, ABC 1, age 18 – 45, SWW

"I think removing pollution from rivers is important to protect rivers and wildlife"

Devon, age 51 – 75

"I feel there is a real appetite for change in the South West"

Bristol, age 46 – 70

Our stakeholders tell us...

The environment is their highest priority, followed by resilience and affordability. They see our 'Green First' approach, using nature-based solutions to deliver improvements as a key strand to our programme. Customers and stakeholders are broadly aligned with our plans to maintain current regulatory targets, and they recognise the need to maintain investment in our networks to ensure compliance levels and resilience.

Our WaterFit Live website is a useful tool and has potential to go further. It is key to our stakeholders that the information we share is up to date and accurate to build trust.

Customers and stakeholders recognise that we can't solve these issues alone. Agriculture is the largest contributor to river pollution, and we need to work with our stakeholders across the region to reduce Rivers Not Achieving Good ecological status (RNAGs) and improve water quality. Our stakeholders want to work in partnership to co-create and develop solutions and strongly support our community engagement initiatives.

A number of stakeholders told us that they want our future plans to align with or recognise the priorities of the range of other strategic and local delivery plans – for example Local Nature Recovery Strategies, River Basin Management Plans, Climate Change Risks Assessments – which they perceive to be relevant to the development of our plans and the pressures created by climate change, population growth, tourism, and development. This will ensure that joint plans provide the greatest benefits and synergies.

Stakeholders have also suggested that data and analysis produced as part of the development of other such plans should be shared across different organisations as it may be useful to inform our future plans.

Stakeholders confirmed their willingness to be involved as delivery partners in any new land-based catchment interventions building on the success of the Upstream Thinking approach, which also has the potential for attracting public and private funds to create jobs and deliver national and local nature recovery objectives.

Delivery partners, including our academic partners across the region and beyond, are also keen to learn together on a series of tests and trials to explore how nature-based solutions can be used on their own or to complement traditional engineered solutions.

In our stakeholder engagement we have reflected on lessons learnt over the past 15 years of delivering Upstream Thinking and Peatland Restoration. A key lesson is that our local environmental delivery partners can access co-funding to broaden the impact and benefits delivered by projects supported by South West Water. Environmental delivery partners and local landowners are able to access a wider range of philanthropic funding and green finance initiatives which can be used to co-fund delivery of nature-based solutions at landscape scale.

Diversifying our supply chain and doing things differently

South West Water has well established relationships with key delivery partners for our award winning Upstream Thinking catchment management programme. The delivery partners include Cornwall Wildlife Trust, Devon Wildlife Trust, Farming and Wildlife Advisory Group, South West Lakes Trust and Westcountry Rivers Trust. Those partners have confirmed that they would be willing to supply new services to South West Water and were invited to put forward their proposals for delivering collaborative and nature-based solutions to meet the challenges set out in the PR24 plan.

To ensure wide awareness and engagement of stakeholders in the development of our strategic plans, we established a periodic Stakeholder Engagement Forum which brings together colleagues and groups with an interest in how water is managed and the impact on the environment. As well as receiving regular updates on the development and progress of the PR 24 Business Plan, all Forum members were invited to specific events on the Drainage and Wastewater Management Plan and the Water Resources Management Plan.

We have also discussed our plans and ambitions with the many external forums and partnerships that we are engaged with. These include Local Flood Risk Management Committees, Local Nature Partnerships, Catchment Partnerships and many other groups and events that we are invited to attend.

An annual cycle of one-to-one meetings with key stakeholders, including local authorities, Chambers of Commerce, tourism representatives and environmental interest groups was also undertaken.

Our supply chain have also been challenged to bring forward a range of collaborative and nature-based solutions, and to set out their relevant skills and expertise, as they consider and respond to our call for framework contacts.

> "We need to ensure solutions are whole system, nexus-focused & institutionally integrated, as well as co-developed with communities where possible."
>
> **Stakeholder at Regional Water Resources Workshop**

Making progress with our current plans

We have **reduced our carbon emissions** by c.40% since 2021

Data included in our Annual Return and the Carbon accounting Workbook.

The need to decarbonise, improve water quality and support nature recovery creates opportunities to innovate, build resilience to external pressures and attract and grow talent.

Lower carbon

In 2021 we launched our Promise to the Planet which aims to achieve net zero with operational emissions by 2030, and for all our other carbon emissions, including from our suppliers and construction activities, by 2045. Since then, through meaningful action to reduce emissions and our carbon footprint, we are reducing and decarbonising how we manage and move water throughout our operations, switching to renewable energy sources, and investing in carbon sequestration through native habitat creation and restoration.

So how are we doing across our measures?

We are on target, with our current performance at 40,000 total carbon tonnes. Our commitment to delivering our net zero 2030 pledge remains as important as ever, and we are making good progress across three areas of focus:

1. **Ensuring sustainable living** using our carbon footprint and emissions, process emissions, with carbon capture and storage trials underway and monitoring in place, we have reduced our carbon emissions by c. 40% since 2021.

2. **Championing renewables** on our estate and across the group we are investing in renewables as we look to build a portfolio of renewable schemes that increase our energy security and resilience. We benefit from being part of a larger group of companies, that has invested £160 million in renewable energy generation, at no extra cost to our customers. 100% of South West Water's energy comes from renewable sources and by early 2024 our Bristol Water region will also be using 100% renewable energy.

3. **Reversing emissions** working in partnership to deliver nature based sequestration solutions such as tree planting and peatland restoration, but also provide wider wildlife and biodiversity benefits. We are making good progress towards our target of restoring over 2,000 hectares of peatland. We've already planted 220,000 trees and by 2025 we'll have planted 250,000.

2020
112,499 Total Carbon Tonnes (tCO_2e)

2021
98,800 Total Carbon Tonnes (tCO_2e)

2023
40,495 Total Carbon Tonnes (tCO_2e)

Delivered a range of activities within the 3 pillars

2025
On target for minimal Total Carbon Tonnes (tCO_2e)

Our progress to date

Reversing carbon emissions

The reality of achieving net zero is that things never remain constant; the challenge grows, businesses evolve, customer's priorities develop and sector knowledge / measurement models develop. **So what has changed for us?** There are a few things:

- We have acquired the Bristol Water business
- There have been changes to the science behind the latest (Version 17) of the Carbon Accounting Work Book. Which means we know a lot more about the impact of our activities
- There has been a different view of how to approach 'Green Renewables'
- Process and Fugitive Emissions have become a critical factor.

So, whilst these changes do not change our commitment to become net zero, we want to make sure there is clarity on the challenges we are addressing.

Nutrient reduction and river water quality

In the last 30 years some of the worst pollutants in rivers have been reduced with phosphorus levels down 60% and ammonia levels down 70% across the sector. Our ambitious plans for more phosphorus reduction are well on the way to delivering environmental protection and improved performance sewage treatment works across the areas we serve. These protections will reduce the impact of nutrient pollution, and contribute to reducing the risk of eutrophication in some of our most sensitive rivers.

These schemes are an important part of our approach to responsible community partnership, demonstrating our commitment to invest in the landscape. These improvements include traditional technologies to reduce nutrients, as well as trialling some new, novel techniques to assess their potential for future development. Many of these include nature-based solutions, such as reactive Media Reed beds, a valuable contribution to habitat creation and enhancement.

We are on track to deliver 47 improvement measures by March 2025 across six drivers targeting water quality improvements at 37 wastewater treatment works. These measures will improve water quality and ecology in 33 identified waterbodies resulting in over 300km of river improved.

The improvements reduce the concentrations of Biochemical Oxygen Demand, Ammonia and Phosphorus in the treated final effluent discharged from wastewater treatment works.

These improvement measures vary including introducing chemical dosing with tertiary solids removal, to reactive media reed beds. The choice of appropriate type of improvement option is largely driven by the target permit parameter limit as agreed with the Environment Agency (EA).

The Environment Agency undertook analyses at PR19 to understand the relative impacts of wastewater discharges on waterbody water quality. This work resulted in varying obligations on the water industry, with some more sensitive waterbodies requiring very low limits to be set at particular wastewater treatment works and others where water industry impacts were low and consequently less stringent permit limits were set. Where the requirements are less stringent, greater options are available for meeting the permit limit, including lower carbon alternatives.

We are continually looking at new technologies to reduce nutrients in our discharges. At Wilmington Wastewater Treatment Works in East Devon, we have adopted the ARMPhos system to meet a new Phosphorus permit limit of 3mg/l which was achieved by installing a 20m x 20m reactive media bed downstream of the existing treatment works. Since commissioning this process has comfortably met the permit limit, with very low operational intervention and costs.

Another site at Kenn and Kennford WWTW, we have a low phosphorus permit limit imposed at this site of 1mg/l. The solution options to meet this are more limited and as a result a more conventional chemical dosing solution and tertiary solids removal was implemented.

South West Water are also supporting a national programme of trials on emerging technologies to remove phosphorus from treated final effluent. We have supported a trial of a process called i-Phyc, using algae to absorb nutrients and carbon dioxide in a natural growth cycle. The results of this trial will further the development of alternative options available to reduce nutrient loading to waterbodies whilst doing so with a lower carbon footprint.

Bioresources

Sludge is full of useful elements – energy, metals and nutrients that are suitable for fertilisers.

Sludge is a by-product of the treatment of waste water. Sludge can be used to produce energy or compost, sludge is no longer seen as a waste product but as a bioresource and it is.

At present we recycle all of our sludge using anaerobic digestion and lime stabilisation techniques to create a biosolid product for agricultural use.

We have also invested in creating energy from waste and currently have seven operational Combined Heat and Power (CHP) plants creating a biogas that is then turned into green electricity used to provide the power to operate our sewage treatment works. The renewable energy benefits of sludge treatment are helping us keep costs down for customers.

We've been awarded accreditation from the Biosolids Assurance Scheme. This certifies that our treatment and recycling activities meet regulatory requirements and best practice. We are audited every year by an independent Certification Body to ensure that we conform to the scheme standards.

Given the valued waste, the regulatory approach for bioresources (sludge) is changing. The opening of the bioresources market in 2020 offers opportunities for efficiencies in the transport, treatment, and recycling of sludge to deliver benefits for our customers and the environment.

Isles of Scilly

In April 2020, South West Water's license to operate was varied to include operations on the Isles of Scilly. At the same time we embarked on the first phase of a ten year programme of improvements to improve resilience and align standards to those on the mainland.

The importance of the marine environment found on the Isles is recognised through the designation of the Isles of Scilly Special Area of Conservation (SAC) and the Isles of Scilly Marine Conservation Zones (MCZs) complement this existing SAC designation by offering protection to species and habitats that are not protected by the SAC.

Maintaining this beautiful natural environment is an essential part of the wastewater programme and increasing the effectiveness of existing wastewater treatment and provision of new treatment is a key output. Through the use of technology, the potential to use nature-based solutions and the relatively small population, production of exemplar treated wastewater is our ambition.

Wastewater services on the Isles of Scilly prior to April 2020 were managed by Tresco Estate on Tresco and the Council of the Isles of Scilly on St Marys. The other islands, Bryher, St Martins and St Agnes, do not have a public sewerage network or treatment systems. As the performance of the assets, when adopted in 2020, did not meet current regulatory requirements or align with modern standards. We are working to improve these assets with our regulators.

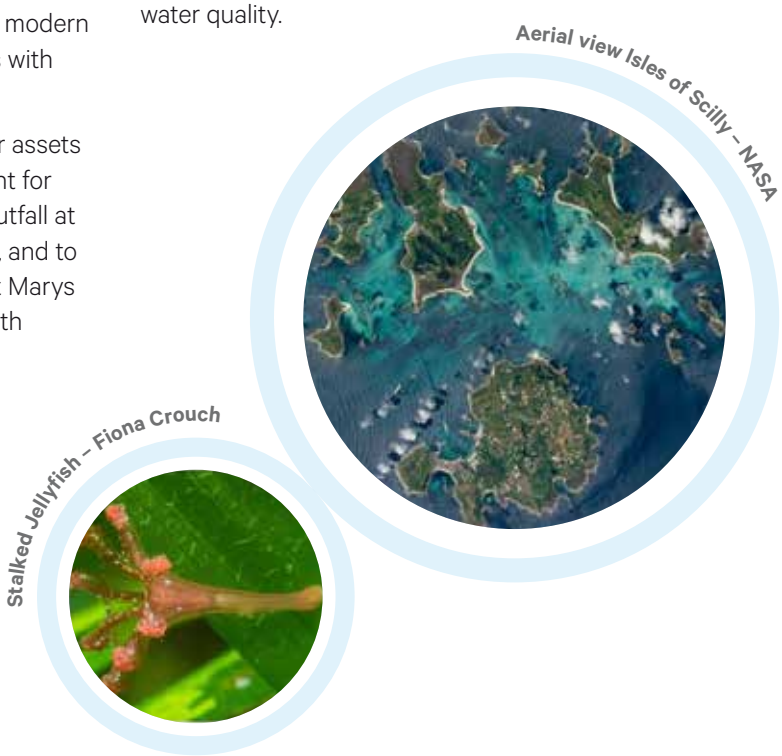
The focus for our current investment in wastewater assets on St Marys has been to deliver improved treatment for Hugh Town and Old Town, to repair the long sea outfall at Morning Point which has been broken for decades, and to improve Telegraph Sewage Treatment Works on St Marys such that the discharge can be permitted in line with Environmental Permitting Regulations (EPR).

We have completed an investigation into the special features of the Marine Special Area of Conservation (SAC) including *Zostera Marina*[1] (Sea grass) beds off shore near Porthcressa Beach, to understand the impact that existing discharges may be having on the condition of the sea grass. Findings indicate that the sea grass is in good condition and that the low nutrient loading in the discharges is not detrimental to this special feature.

Plans also include major refurbishments of sewage pumping stations, such as Bishop and Wolfe Sewage Pumping Station, and maintenance of the sewerage network.

On Tresco our investment programme is delivering replacement screens at Old Grimsby Screening plant to align with existing EPR permitting, installing a large underground storage tank to reduce storm spills at New Grimsby Sewage Pumping Station and improving the resilience of the network through improved maintenance and monitoring.

The wastewater investment programme will cost £19.97 million to deliver with an ongoing operational cost of c.£2 million per annum. The delivery programme will ensure that our asset base on St Marys and Tresco will be fit for purpose by 2025 to protect the marine environment, aligning with mainland standards of treatment and water quality.

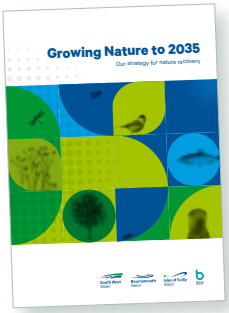


Aerial view Isles of Scilly – NASA

Stalked Jellyfish – Fiona Crouch

1 Seagrass | Isles of Scilly Wildlife Trust (ios-wildlifetrust.org.uk)

Find out more here



Biodiversity Strategy

Nature Recovery

Growing Nature – publishing our biodiversity strategy

In 2022 we published Growing Nature, a strategy to protect our wildlife-rich and designated sites, to restore and enhance biodiversity across our operational estate and to collaborate with others, taking a catchment-based approach at a landscape scale, for nature recovery.

The Strategy has three guiding principles:

1. **Protect the best** – take action to protect the valuable biodiversity that we have on our landholdings

2. **Restore and enhance the rest** – take action across our landholdings and assets to enhance biodiversity in the everyday management of our sites

3. **Collaborate beyond our land** work in partnership with others across the region, taking a catchment approach, to deliver biodiversity enhancement and nature recovery

Our experience of delivering nature recovery

Our sites include reservoirs, moorlands, major operational sites, former clay pits, estuaries, farmland and forests, and small urban sites with pumping stations and pipework. Many of our sites are already well-established havens for wildlife, with some designated as Special Areas of Conservation (SAC) and County Wildlife Sites (CWS).

We own and manage 1251 hectares of Sites of Special Scientific Interest (SSSIs), of which 88.5% is in favourable condition and all but 9.5 hectares of the remainder is classed as in recovery.

We have proven experience of habitat restoration, including land adjacent to two former industrial mining quarries in Cornwall, Park Pit and Stannon. South West Water bought Park Pit and the surrounding industrial land on Bodmin Moor in 2007. At the time, ecologists described the area around Park Pit as a "moonscape of waste sand and mica". The before and after pictures of habitat restoration at Park Pit in Cornwall demonstrate how South West Water has transformed the site from an industrial wasteland to a nature-rich heathland and reservoir.

Park Pit, Cornwall

Since the initial reseeding, vegetation has continued to develop naturally and ecologists surveying the land have recently found two species which are very rare in Cornwall – marsh clubmoss (*Lycopodiella inundata*) and stagshorn clubmoss (*Lycopodium clavatum*).

Marsh clubmoss is a nationally-threatened species and although stagshorn clubmoss is common in northern parts of the British Isles, it was thought to be extinct in Cornwall.

Catchment management through our Upstream Thinking programme

Since 2010, we have been working with local farmers and landowners to deliver our award-winning Upstream Thinking programme. We are well on track to deliver over 120,000 hectares of catchment management by 2025 bringing benefits for water quality, wildlife, water resources and peatland restoration.

The range of pollutants which the programme helps to remove from the water course includes farming-derived nutrients, pesticides, faecal coliforms, sediment, veterinary medicines and antibiotics. The benefits of this investment are reliable clean water supplies, better wastewater dilution and natural flood management.

We expanded the programme through the Green Recovery initiative which enabled us to expand our influence to benefit the rivers and headwaters of Dartmoor and the surrounding landscapes.

In the last year we delivered 15,696 hectares, meaning that since 2015 we have engaged with farmers managing 107,735 hectares.

To deliver the programme, we commission trusted, local organisations to employ Farm Advisors to engage with farmers and landowners, providing advice, support and confidence to manage their land differently in ways which are better for water quality, water supply, flood resilience and wildlife.

Peatland restoration

The Upstream Thinking programme has enabled us to further develop partnerships to deliver catchment and nature-based solutions, widening the benefits of the initiative beyond providing resilient water supplies. A good example is the South West Peatland Partnership, which South West Water leads, involving a range of partners.

Peatlands are critical in preventing floods, ensuring safe drinking water and reducing climate change. Peatlands are the largest natural terrestrial carbon store and store more carbon than all other types of vegetation in the world combined.

Our peatland restoration on Exmoor, Dartmoor, Bodmin moor and Penwith, has made a significant difference to the quality of water in rivers, with over 300 hectares restored to date since 2020 year – and we remain on track to target 1,000 hectares by 2025.

South West Water have also improved our peatland SSSI sites at Stannon and Crowdy reservoir, alongside scrub clearance at Phillack SSSI, and removed Himalayan Balsam and scrub at Countess Wear SSSI.

DID YOU KNOW?

Upstream Thinking catchment management activity in Releath Stream in AMP7 potentially reduced the cost of water treatment abstracted from Stithians reservoir by £72,500. In addition, the presence of water shrew and brown trout shows that water quality is improving in the Releath Stream.

Upstream Thinking

By 2025 we will have planted over 250,000 trees across the region

Managing biosecurity

Invasive non-native invasive species (INNS) create havoc in the environment – and we work hard to contain the spread and reduce the numbers of these.

We have deployed sniffer dogs to understand the presence and distribution of non-native American Signal Crayfish and launched a regional pathway action plan for watercraft with Wessex Water, reducing the spread and impact of invasive non-native species through the water sports community.

We have mounted non-native invasive species control exercises to remove and prevent Ruffe – a type of predatory fish invasive to Cornwall and Devon – from getting into the River Fowey and to remove American Signal crayfish from Burrator to protect the historic Devonport Leat and raw water transfer which links to rivers Meavy and Dart.

We have worked in partnership to raise awareness of invasive non-native species, including installing signage and building biosecurity wash-down facilities, to ensure that those people using the sites for recreation know what to do to limit their spread.

Overall, we have 31 sites in the aqua biosecurity accreditation scheme standards (a range of measures to prevent the spread of invasive non-native species). Across this, we have 22 bronze, 7 silver and 2 gold schemes – and we are the only water company with a gold accreditation and the organisation with the most schemes – at 31.


Drought presented opportunities for Pennon to further expand our control of invasive non-native species (INNs)

Nature on our doorstep

Low carbon and nature recovery solutions are a part of every part of our operations – playing an integral part of our investment and activity – and providing wider benefits to customers, communities and the planet. We have a long history of providing access and recreational opportunities across our 40 rivers and lakes, working closely with the South West Lakes Trust.

We are doing our bit to provide more opportunities for visitors and customers to access high quality water, whilst recognising the popularity of rivers and inland waters as places for recreation. We have started our three-year Rivers Dart and Tavy Inland Bathing Waters Pilot. The pilot aims to increase our understanding of the water quality of these two iconic rivers and build stronger relationships and collaborations with river users, local communities and stakeholders.

We have worked collaboratively with local stakeholder and community groups to identify where permitted access to the river is already occurring, and where local landowners and groups are planning to apply for inland bathing water designations. Our role in this community-led designation process is to commission and deliver the detailed investigations to assess where and when our assets and activities may influence the water quality around these candidate locations.

In Wistlandpound catchment, we have been monitoring river fly species on the river Yeo working with citizen scientists from the local community and the Riverfly partnership to monitor the increase in biodiversity arising from our Upstream Thinking investments.

Delivering nature recovery through our operations

We have surveyed our land and have prepared biodiversity enhancement plans to boost nature and to monitor and control the invasive non-native species present at our sites as we prepare for the new common Biodiversity Performance Commitment.

We have undertaken other surveys and investigations to support future biodiversity enhancement and investment, including:

- Surveys to understand the nature and distribution of our wild beaver populations on the Rivers Wolf and Upper Tamar
- River restoration investigation on the river Camel SAC upstream of our Delank abstraction to inform a plan to deliver biodiversity enhancements
- Habitat surveys covering 6310ha of land and 289km linear habitat we own, sharing our findings with the local environmental records centres, including habitat surveys and active ecological management at ten County Wildlife Sites informing active management plans delivering biodiversity improvements
- Investigation to naturalise the Bourne Stream which is a designated SSSI and SAC which is historically impacted by water company operations.

We have boosted nature in line with our strategy and our legal duty to protect and enhance biodiversity, including installation of more than 150 bat and bird boxes on our key sites. Many of our sites are important havens for birds and provide access to water, warmth and sustenance in the winter. A key project with Butterfly Conservation has been also to review our management of a site with the opportunity for a rare butterfly the Grizzled Skipper on Dartmoor.

The South West is an important region for fisheries, being home to 20 principal salmon rivers, three of which are designated as Special Areas of Conservation (Rivers Camel, Axe and Hampshire Avon). Our rivers are home to populations of brown trout, endangered European eel and lesser-known species including lamprey and bullhead, – it's critical that we understand the part we play and take action to protect the environment.

We have continued to investigate and implement projects to re-naturalise waterways impacted by our operations, working with leading environmental consultancies to assess the impact of our reservoirs downstream, including assessment of flow requirements to support sustainable fish and eel populations in downstream river catchments and fish passage assessments at barriers to migration. We have completed several investigations assessing the sustainability of our abstraction licenses in terms of river flow, at locations including the river Camel catchment and river Otter.

We have also delivered fisheries work for our three strategic reservoirs in the South West Water supply area, including chairing the group of catchment fisheries interests, the RFLC (Roadford Fisheries Liaison Committee), fund a hatchery at Colliford which produces 40,000 salmon fry per annum to restock the St Neot River downstream of the reservoir and deliver habitat enhancement and gravel augmentation through West Country Rivers Trust intending to improve productivity for juvenile salmonid fish and replace sediment trapped by Wimbleball dam.

The trends and challenges we are responding to

The environment we operate in is changing rapidly and there is a lot we need to do to meet future challenges. The task ahead is daunting, but we are excited about the opportunity to deliver improvements that the whole region will benefit from, and are determined to play our part and respond quickly.

Nature and biodiversity are in decline, under threat from a range of factors which include climate change and population growth. To achieve a low carbon future where the environment is protected, we need to maximise the wider value of our water and wastewater resources at every stage of our operations, continue to meet the treatment standards to protect our rivers and seas and work in partnership with nature to deliver sustainable solutions.

Climate change

Our climate is changing at an alarming rate. In the space of 30 years overall temperatures are up 1°C, with summers up to 6°C hotter and 60% drier and rainfall intensity up 20%. Reflecting that, the drought of 2022 saw the hottest, driest summer on record.

In March 2023 the Intergovernmental Panel on Climate Change predicted that at current rates, the world could face 1.5°C temperature rise by the beginning of the 2030s – making extreme weather events such as drought, storms and cold snaps increase in frequency and strength much sooner than we ever expected.

Our region is particularly vulnerable to climate change, given our 860 miles of coastline, and closeness to the western approaches of the Atlantic ocean.

The risks from climate change in the South West are:

- Extreme heat and droughts – increasing the demand for, and reducing the availability of, high quality fresh water
- Changes in rainfall patterns
- More frequent extreme weather events such as storms, floods and prolonged cold snaps
- Coastal flooding, sea level rises and erosion
- Harm to the natural environment and biodiversity.

As the climate changes, we can expect more threat to nature and biodiversity.

Coastal areas are particularly vulnerable – with parts of the region due to be lost to the sea by 2050. Areas such as Westward Ho!, Braunton, Exeter, Newton Abbot, Plymouth and parts of Bristol are all at risk.

Coastal risks

Coastal areas are particularly vulnerable – parts of Devon and Cornwall, as well as Bristol, are all due to be lost to the sea by 2050.

Areas such as Westward Ho!, Braunton, Exeter, Newton Abbot, Plymouth and parts of Bristol are all at risk.

Managed retreat may be necessary in some parts of our plans.

Source: coastalclimatecentral.org

Less predictable weather combined with rising sea levels from storm surges means our coastal assets are at risk of flooding. Due to our large coastal population, our assets are typically closer to water than across the sector, with a fifth of our treatment works and many of our pipes at risk.

Longer droughts and heatwaves will increase the demand for water, and how much water we need to take from the environment, whilst reducing the amount of water resources available. Lower rainfall will reduce water flows in rivers, reducing natural aeration processes that are essential for native species to survive, and increasing the concentration of harmful contaminants polluting rivers, making it more difficult to treat to the required standards.

And as temperatures and moistures levels in the ground change, we will experience more ground movements that cause underground pipes to fracture and burst, causing leakage and interruptions to supply.

Growing population and changing demographics

As the population and demographic of the world changes – so too do they in the South West.

Official forecasts suggests an additional 530,000 extra people will be living and working in the region by 2050, adding to the 3.5 million who currently live in the regions we serve.

This means that more new homes need to be built, all requiring connection to our network for water and wastewater services. At the same time, expectations on our delivery for customers and the environment continue to grow.

As a beautiful coastal region, our resident population swells to 10 million during the summer as visitors come to enjoy the environment in the South West. During the pandemic, due to the increase in home working and an increase in 'staycations', we saw much of the anticipated 2050 growth in population due across the region, concentrated in the tourism areas of Devon and Cornwall.

A bigger population means...

- More homes built across the South West – which need to be connected to our infrastructure without harming the environment
- More demand for water to serve the growing population
- Increased water for farmers who need to produce food for a bigger population, along with shifts in the crops that farmers grow (more hardy) and a trend to less meat
- Population movements as communities shift location in response to coastal erosion and rising sea levels.

> "With climate change things like protecting water sources will become a very, very important issue."
>
> **Male, Aged 31-55, SEG C1, SWW**

> "Climate change is such as severe threat to humankind."
>
> **Male,Aged 56+, SEG C2, SWW**

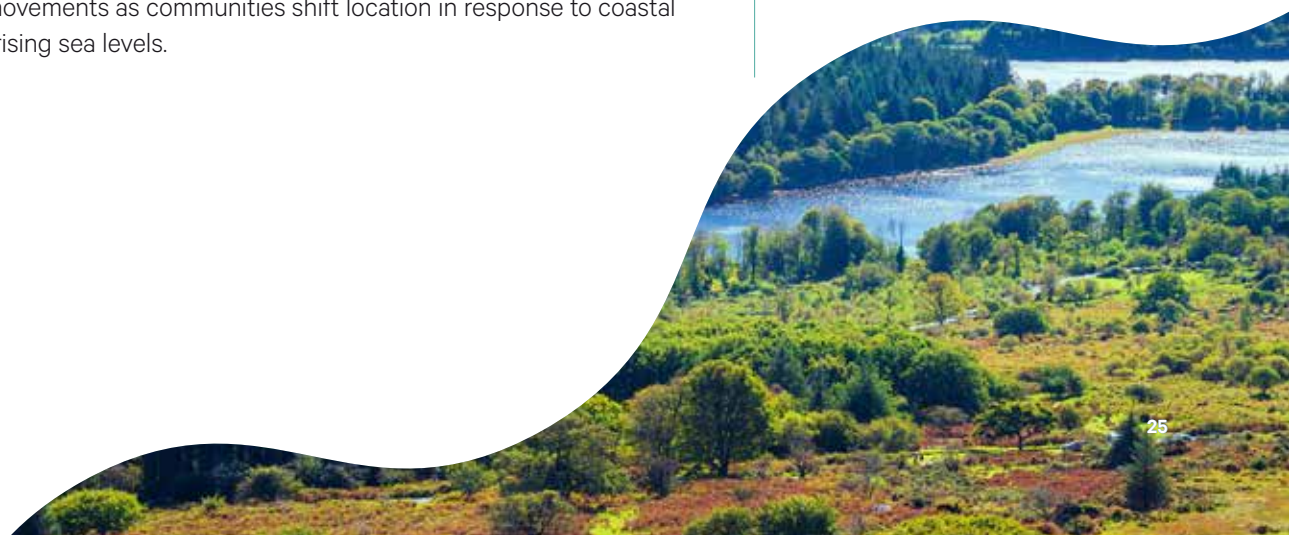
Global average rainfall

increases by 1% to 3%

for each degree of warming

9 in 10 customers

consider climate change to be a significant environmental risk that needs actions



Biodiversity decline

The UK is in the midst of a nature crisis, under threat from climate change but also development, pollution and intensive agriculture and fishing practices.

As well as supporting our wellbeing, nature brings wider benefits such as clean air, clean water, water and carbon storage and cooling temperatures. This can help protect rivers and reduce the risk of water shortages, flooding or overheating, all of which helps to provide resilience to our changing climate.

Yet, one in six species is at risk of extinction and the UK is considered to be amongst the most nature-depleted countries in Europe and the Western World.

The biggest threats to biodiversity in the UK are loss of habitat, intensive agriculture, climate change, pollution, hydrological change such as drought, urbanisation, woodland management and invasive non-native species.

It is well documented that climate change is having a negative impact on biodiversity. As the weather in the South West becomes wetter and warmer, habitats are changing and becoming fragmented. Species can no longer move freely to adapt to the changing climate and for some species this could lead to extinction.

The resilience of wildlife to climate change is vital to our survival. Protecting our fragile ecosystems is key and this can be achieved through good habitat management, rewilding, rewetting and improving connectivity at a landscape or catchment scale.

This needs to be achieved while also protecting South West Water's assets from the direct impact of climate change such as sea level rises that might cause flooding. We will ensure delivery is achieved through the Environment Agency's "Working with Natural Processes" guidance, where possible.

Agricultural run-off, industrial effluent, sewage, flooding and littering are all causes of pollution in our rivers and streams. Our landholding is affected by some of these such as possible agricultural impacts where the land is farmed, or litter from public access to sites. Alongside this our staff and asset operation on the land holding or in our service area may potentially have a pollution impact.

As set out in our Biodiversity Strategy, we are taking action to protect the best species and habitats that we have on our landholdings, and we will take action to enhance biodiversity across the rest of our estate and beyond in partnership with others.

Dealing with the challenges we face

The challenges that we are facing today are already bigger and more uncertain than anything before.

Some of the challenges are uniquely severe and will present us with risks that we need to respond and adapt to through all stages of the water cycle. There are also opportunities for us to grab, including providing excellent customer experiences and outcomes to rebuild trust and legitimacy through rapidly evolving technology and ways of working.

By working with nature and building resilience to climate change, we can address the environmental risks we face.

We have improved
80% of the drinking water catchments
we work in, through activities such as peatland restoration and tree planting

We have also
reduced our carbon emissions
by c.40% since 2021

84% of customers
believe manufacturing and farming cause too much pollution to rivers and coastal waters

Customers see nature based solutions as
low cost and high impact

The climate and environmental challenges and trends we see

Water resources

Threat

Risks to public supply from drought and population growth

Our activities

- Climate independent sources
- Strategic storage schemes
- Local storage
- Interconnections
- Generation standby
- Deploy renewables
- Leakage reduction plan
- Customer water use advice

Water quality

Threat

Risks of poor raw water quality in rivers due to low river levels

Our activities

- Leading edge treatment technology
- Catchment management
- Habitat creation and restoration
- Peatland restoration
- Tree planting

Water networks

Threat

Risks of bursts and interruptions due to ground movements

Our activities

- Smart systems and monitoring
- Mains replacement
- Smart metering

Bringing water to life –
supporting the lives of people and the places they love for generations to come

Sludge treatment and disposal

Threat

Risks to rivers from sludge in heavy rain

Our activities

- Renewable energy generation from sludge
- Upgrade treatment technology

Wastewater treatment

Threat

Risks to rivers and seas from nutrients in sewage due to population growth

Our activities

- Upgrade treatment technology to reduce nutrients in treated discharges
- Upsize treatment works
- Renewable energy generation from sludge

Wastewater networks

Threat

Risks of sewer flooding and pollution due to rainfall

Our activities

- Build storm storage
- Sewer separation and upgrades
- Blockage clearance and reduce sewer misuse
- Smart ponds, wetland creation and sustainable drainage

Our own sites and protected areas management

Threat

Risk of failure to meet duties to protect biodiversity on our land

Our activities

- Habitat management and restoration
- Catchment management
- Peatland restoration
- Tree planting
- Biosecurity measures to prevent spread of INNS

Threat

Risk of coastal and flash flooding or coastal erosion

Our activities

- Flood protection and drainage at sites
- Site rationalisation or relocation

Our investment 2025-2030

We are committed to ensuring that our operational activities – where we take water from the natural water cycle and return when it is safe to do so – support the natural environment helping our wildlife and habitats to survive and thrive and reduce our operational carbon emissions, all of which helps to provide resilience to our changing climate.

We have worked with our regulators to build a programme of environmental compliance and because of the importance of the environment in the south west, we are going over and above to support the Government target to reverse the decline in biodiversity.

We are increasing our actions to improve river health across the region and most of our investment will focus on reducing the levels of phosphorous that are emitted to rivers. Our investment will reduce the risk of eutrophication that can occur when levels of nutrients are elevated in our rivers, causing algal blooms and leading to poor river health and reduce the number of rivers which do not achieve a minimum of 'Good' ecological or chemical status.

Our carbon investment

We have updated our Promise to the Planet and set out our priorities until 2030 that will deliver lower operational carbon emissions. We have responded to customer feedback and know they don't think they should necessarily pay much for us to achieve net zero ahead of other industries – so we have used the power of our group to fund some of these changes.

Driving a net zero culture

We continue to drive a net zero culture empowering each person to play their part in our net zero journey. We are continually educating our employees, informing them and empowering them to live low carbon lives (at work and at home).

We are innovating at an unprecedented speed to meet our net zero targets. We are trialling new materials and processes to reduce our emissions, and testing new, low carbon technologies.

Our robust approach to leadership, culture, talent, and skills development ensures that we will bridge current and future net zero skills.

Our team has fully embraced the net zero challenge and we are excited about this becoming part of our DNA; not only by the actions that everyone including our customers see, but in the everyday decisions that are being made. From the conversations and improvements we make to our offices and working practices of our employees but more importantly to how our assets and infrastructure operate.

We want to be **net zero and nature positive** across all our operations and contribute fully to the positive impact to the climate and environment.

Our plan has three pillars:

SUSTAINABLE LIVING

CHAMPIONING RENEWABLES

REVERSING CARBON EMISSIONS

We'll need a combination of new investment and improvements in our business as usual activities to deliver our Promise to the Planet.

Key areas of focus for the next five years of investment are:

Process and fugitive emissions

Process and fugitive emissions are a top contributor to carbon emissions particularly as they include Methane and Nitrous Oxide which are harmful greenhouse gases. The way to reduce these emissions and positively impact net zero is to (1) reduce Nitrous Oxide (N_2O) and (2) repurpose Methane (CH_4).

Without investment these emissions could constitute 28% of our total operational emissions footprint by 2030, rising to 42% by 2050. We will investigate and develop a plan to help understand the scale of our unique emissions challenge. We are piloting advanced control technologies ("RTC"), which are shown to reduce emissions and mitigate risks whilst realising complimentary benefits through energy use reduction.

Renewable energy

We will continue to focus on transitioning to renewable energy by shifting from fossil fuels to renewable energy sources to power water treatment works and other facilities, including utilisation of the renewable power generation from Pennon Power – part of the group that South West Water is in.

Investing and managing our assets

We are developing an assessment tool and methodology to determine unique net zero pathways for these different functions, and the investment required to achieve net zero for each pathway.

Working with our supply chain

We are constantly refining our embodied emissions methodology and have worked with over 150 suppliers to ensure that they continue to provide us with accurate carbon data for the Carbon Capture Tool. This will encourage our suppliers to adopt low carbon materials and processes, driving our embodied emissions down. It will also improve the accuracy of embodied emissions data and targets.

Our 'future perfect' bioresources

The way that sludge is treated and disposed of has implications for our carbon footprint. As part of our commitment to net zero, and broader environmental responsibilities, we are investigating sludge treatment options with the view to an entirely new process that will mitigate our process and fugitive carbon footprint and offer maximum environmental protection. We are currently engaging in extensive and advanced modelling to achieve this goal and ensure that our net zero commitment is reached.

Our phosphorus reduction plans will see the waste from over **100,000 people treated to a higher standard**

Our river water quality investment

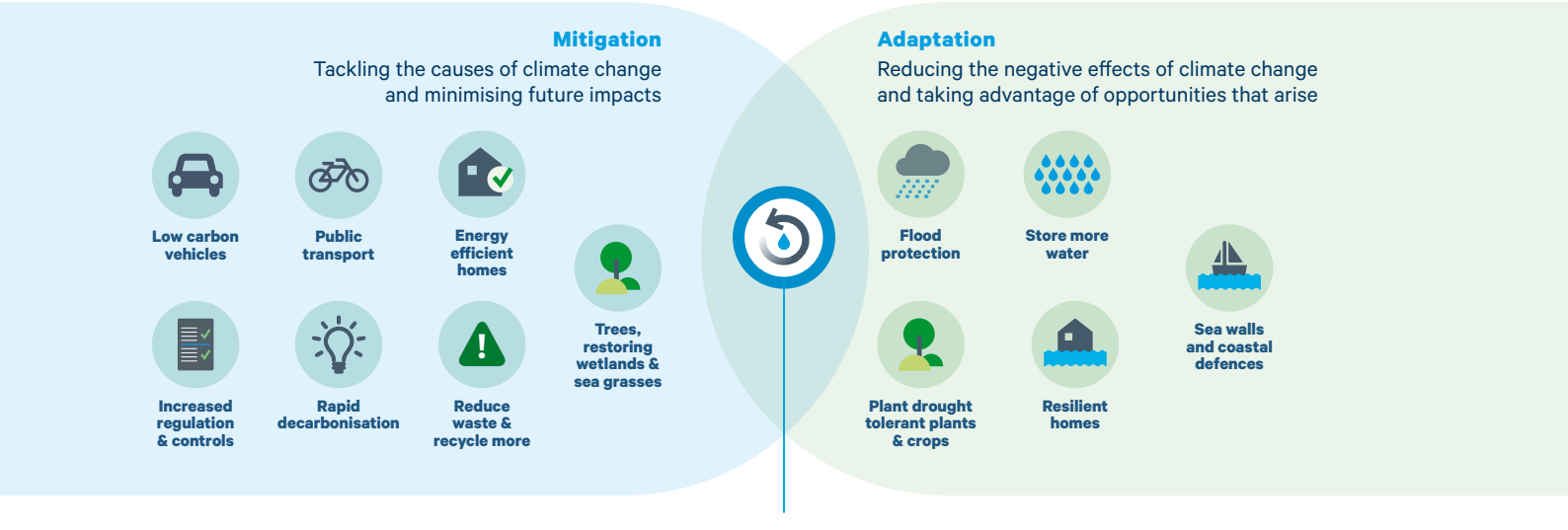
River water quality is becoming an increasingly important issue, and we will invest to reduce the amount of phosphorous which is discharged into our rivers.

This important mineral is vital for life, however in excess, this can lead to algal blooms, which can dominate in some river areas, using up the oxygen available for other aquatic life, and shading other plants from the sunlight needed for growth. We will invest at 34 wastewater treatment works to reduce the levels of phosphorus which are discharged to our rivers. At many of these sites, we will be driving discharge levels down to the Technically Achievable Limit (TAL).

In the most sensitive catchments within our region, we are investing over £40 million at seven key sites to tackle phosphorus levels. This will help to contribute to unlocking development potential within these catchments which is currently blocked by Nutrient Neutrality restrictions.

The River Camel in Cornwall and the River Axe in Devon catchments, as Special Areas of Conservation and classed as at risk of eutrophication from algae, are some of the most sensitive and precious areas within our region. In these catchments we are also investing £23 million in smaller treatment facilities to further support the work that we are doing in these areas. This forms part of our over £140 million investment in improving the removal of phosphorus across the South West water area.

We have been tasked with contributing towards the national reduction target of 80% of the total phosphorus which is discharged to rivers each year from sewage treatment works, and this represents a significant step on our journey to achieve this by 2038. More work is planned for 2030 and beyond to contribute to this target. We will have reduced our phosphorus loading to rivers by almost 30% by 2030, compared to our performance in 2020. We will need to double this achievement between 2030 and 2038 in order to achieve our contribution to the national target.



Conserving water mitigates climate changes as we save energy and therefore emissions. It is also an adaptation strategy, so provides dual benefits.

We have worked with the Environment Agency and Natural England to identify and to prioritise those sites where investment will provide the best ecological improvements, targeting the rivers with highest risk of impact from phosphorus.

Our wastewater treatment plans also include upgrades to 44 of our smaller treatment plants in some of our most rural locations, to help to improve and update the technology used and to reduce our impact, often in the headwaters of some of our most precious rivers. We are also planning investigations into nutrient levels in 13 different catchments, to assess the impact of our activity in these areas, to help us plan for future need for improvement. This, alongside our participation in National level programmes to assess emerging contaminants, microplastics and 'forever' chemicals in the environment.

Our ambitious plans are a continuation of the work that we have been doing since privatisation to upgrade our asset base, some of which date back to the 1940's, and which is now struggling to cope with the different pressures of population growth, tourism and climate change. Having concentrated on our coastal works through Clean Sweep, we are addressing more of our inland sewage treatment works and helping to address the decline in state of our freshwater ecosystems.

Completion of this investment is further promoted to industry's contribution to reducing the 'Reasons for Not Achieving Good' (RNAG) Ecological status. It is our ambition to reduce our proportional impact on these reasons by a half, from 12% to 10% of these impacts.

Our phosphorus reduction plans will see the waste from over 100,000 people treated to a higher standard.

Several of our proposed improvements include the installation of Nature Based Solutions – using reedbeds and wetlands to clean up treated sewage and protect the rivers from nutrients in the final effluent. These crucial investments will help to create habitat and areas to promote biodiversity. Several of our existing sites are home to threatened species of birds and harvest mice, and we expect our new wetland habitats to become just as vital in helping to stem the decline in local biodiversity.

Our Isles of Scilly investment

For 2025-2030 we plan to invest a further £31 million to better protect the natural environment of the Isles of Scilly. While our focus for investment in this regulatory period were the islands of Tresco and St Marys, we now plan to ensure similar standards are met on the off-islands of Bryher, St Agnes and St Martins which do not have public wastewater networks, instead relying on local private systems and septic tanks.

The impact of the discharges from current septic tanks are localised, but the groundwater supplies in the Isles of Scilly are vulnerable and limited, and there is an acknowledged need to invest to improve resilience and environmental protection.

To protect groundwaters it will be necessary to remove the discharges to ground and replace them with discharges to the ocean therefore, First Time Sewerage schemes will be required at Bryher, St Martins, St Agnes and, if required, the northern part of St Marys. There is considerable demand to connect to a public sewerage system and an acknowledged need for wastewater treatment on these islands. The Duchy of Cornwall, supported by the Council of the Isles of Scilly has already made an application for first time sewerage on Bryher, St Agnes and St Martins.

Our proposals will look to provide a sewerage network for properties to connect to, with pumping stations to convey the wastewater to a single treatment facility per island, where flows will undergo appropriate treatment under the Urban Waste Water Treatment Directive before being discharged via sea outfall. Locations for treatment and outfalls will be subject to discussions and agreement with the Duchy of Cornwall and other stakeholders.

Although there are two wastewater treatment facilities on St Marys and properties in the south of St Marys are connected to the existing public network, much of the northern section of the island is not connected to the public network, except for around 12 properties connected to Telegraph wastewater treatment works.

Marine Management Organisation

Council of the Isles of Scilly

Environment Agency

Historic England

Natural England

Duchy of Cornwall

Isles of Scilly Wildlife Trust

As there are a significant number of properties on St Marys not currently connected to the wastewater network, we expect this will result in requests to connect to our network. The Council of the Isles of Scilly have indicated that they are supportive of this approach and, with the Duchy of Cornwall, may facilitate another first-time wastewater application. Additional infrastructure in the form of gravity sewers, pumping stations, rising mains as well as potential further upgrades to treatment facilities and/or disposal will be required to manage this additional demand.

We accept the need for the public sewerage system extension, and it is supported by the local Environment Agency.

Our plans have been evolved to meet what customers needs – recognising that some aspects of service we are legally required to deliver, but we can do this in the way that best helps our customers.

Sewerage undertakers have a duty under the Water Industry Act Section 101A to provide a public sewer for domestic sewerage purposes in its area if the drains or sewers for domestic sewerage do not, either directly or indirectly, connect with a public sewer; and that the drainage is giving, or is likely to give rise to adverse effects to the environment or amenity.

The Isles of Scilly is a unique place to live and work. Recognising this we will carry out formal and informal consultation with various stakeholders including, the Council of the Isles of Scilly, Duchy of Cornwall, MMO, EA, Natural England, IoS Wildlife Trust, Historic England, Inshore Fisheries and Conservation Authority. We also recognise the need to understand any possible environmental impact from our delivery programme. The Isles of Scilly is an Area of Outstanding Natural Beauty and has several designations such as:

- Marine Conservation Zone
- Special Area of Conservation
- RAMSAR site
- SSSIs with biological or geological classifications.

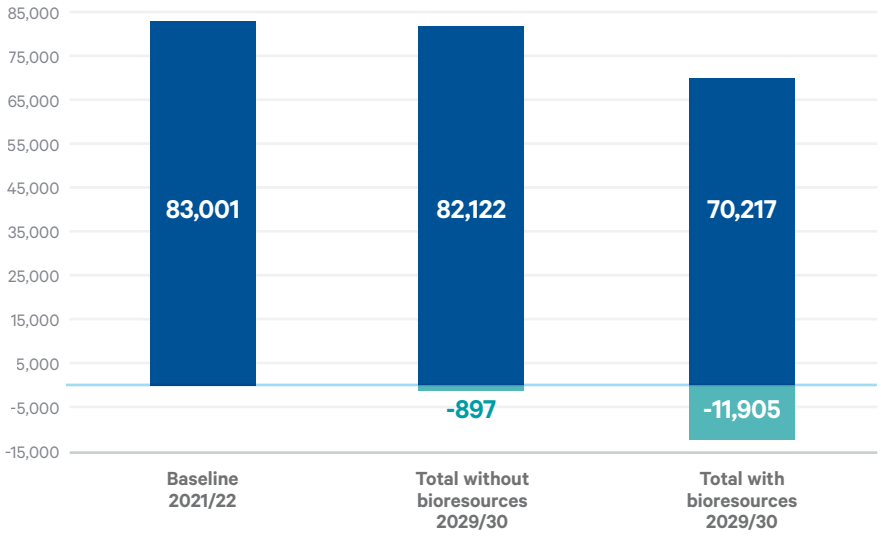
3 The Isles of Scilly (Application of Water Legislation) Order 2019

4 Water Industry Act 1991 (legislation.gov.uk)

Our bioresources investment

Currently, the majority of bioresources produced by water and sewerage companies is recycled to agricultural land, a process regulated under the Farming Rules for Water and the Biosolids Assurance Scheme (BAS). This ensures that only appropriately treated bioresource can be applied to land and that the application of bioresources to agricultural land doesn't present a pollution risk to land, watercourse or air.

Reduction in carbon emissions through transition to AAD (total net emissions – tCO_2e)



A significant benefit of bioresources is the opportunity for energy recovery from this organic material. We already extract energy from around 20% of our bioresources through anaerobic digestion. The biomethane produced in this process is used to generate green energy – electricity – that we use on our operational sites.

Our plan for 2025-2030 is to build on this by moving to a new treatment process Advance Anaerobic Digestion (AAD). We will utilise this new process for 100% of our bioresources, maximising the potential energy recovery, see the figure above that illustrates the reduction in carbon emissions (11,905 tCO_2e) that could be achieved by our transition to AAD with its greater biomethane yields.

Furthermore, the pre-treatment stage of AAD breaks down volatile matter in the bioresources which generates more biomethane and halves the volume of bioresources product left at the end of the process, which in turn reduces the transportation needed to recycle to agriculture. The new process changes the nature of bioresources making a higher quality, more manageable, more consistent, stackable product that can be used for a wider range of crops than our existing treatment processes.

We anticipate that, in the future, tightening regulations on recycling bioresources to land and farmer acceptability may lead to further restrictions to the volumes of bioresources that we can recycle to agricultural land. The reduction in volume and higher quality product will help us maintain this beneficial use for bioresources into the future, in line with the Environment Agency's Strategy for Safe and Sustainable sludge use[5] where they state that 'the most sustainable option is to recycle it to agricultural land´ and that they 'want sludge to continue to be used as a beneficial resource'.

Recycling bioresources to land provides a source of organic material providing a nutrient benefit to farmland, without the need for expensive manufactured fertilisers. Nutrient levels in soils receiving bioresources are carefully monitored to maintain the nutrient balance of the soils and prevent nutrient run off into watercourses after rainfall.

We are aware of the presence of micropollutants such as microplastics and Per- and Polyfluoroalkyl substances (PFAS) in bioresources and are working in collaboration with regulators and other water companies to better understand the impacts of these chemicals and how that can be mitigated.

In the longer-term public perception and farmer acceptability of bioresources may bring further restrictions to recycling to agricultural land. This would be a seismic shift for the entire industry and would result in a shift to very different bioresources destruction technologies. We propose to investigate two Advanced Thermal Combustion (ATC) technologies in the period between 2025-2030 to better understand future the technology, costs and the potential beneficial uses for the products of ATC i.e., biochar or ash.

We also retain the option to recover useful nutrients and minerals from bioresources prior to ATC treatment in the future, if the economic case for nutrient recovery from bioresources becomes more favourable.

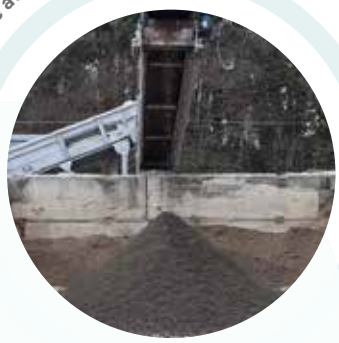
We plan to invest up to £244 million in this new bioresources strategy which will enable us to manage bioresources effectively for 25 years, and manage a changing regulatory environment.

Our nature recovery investment

Our nature recovery programme has been developed in line with the principles set out in our Biodiversity strategy.

The Biodiversity strategy called “Growing Nature” was first published in 2022 and has been updated to reflect changes introduced since 2022 because of the Environment Act 2021, the Defra Plan for Water and the acquisition of Bristol Water.

Bioresources cake at Maer Lane, Exmouth



5 Environment Agency strategy for safe and sustainable sludge use – GOV.UK (www.gov.uk)

Key changes include the introduction of a Biodiversity Performance Commitment for all water companies and the Biodiversity Net Gain requirement included within the planning system, which will be required for all developments requiring planning consent.

Our nature recovery programme includes:

Delivering a programme of nature recovery: planting 300,000 trees, creating ponds and restoring natural habitats

Expanding our Upstream Thinking catchment management programme, delivering an additional 12,500 hectares, to improve water quality and boost nature

Maintaining our wildlife-rich sites and delivering a measurable biodiversity gain from our operations, our land and beyond

Re-naturalising our waterways to enable fish, eels and beavers to move without obstruction

Collaborating with partners across the region, aligning resources and launching a new Nature Recovery Fund

Raising awareness and controlling the presence and spread of invasive non-native species

Enhancing access and educational opportunities for our 40 lakes and reservoirs and opening access to special sites.

How we'll deliver these improvements

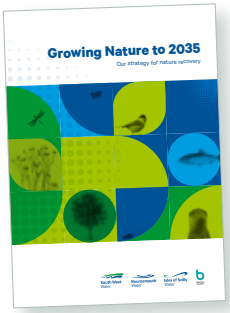
Measurable biodiversity net gains

We will deliver measurable biodiversity gains by creating and restoring habitats aligned to the new Biodiversity Performance Commitment.

From 2025, all water companies will set out their plans for delivering measurable biodiversity enhancement units as part of the new common Biodiversity Performance Commitment. The units are measured using the Defra Natural England biodiversity metric and will be achieved as a result of the actions that we will deliver under each of the sections of this strategy across the areas we serve.

To understand the habitat condition of our land, we have surveyed our landholdings and operational sites which has enabled us to understand the potential for delivering biodiversity enhancement.

Find out more here



Biodiversity Strategy

For Devon, Cornwall, Bournemouth and the Isles of Scilly area, we have reviewed the habitat types that we manage and made some estimates as to the likely biodiversity units that we could create and the timing of when the units would be available. We have also looked at the impact of our Upstream Thinking catchment management programme and estimated how many biodiversity units that is likely to create. For the Bristol area we have considered thirteen sites and estimated how many units of biodiversity enhancements those sites are likely to create, based on our experience in delivery biodiversity improvements.

Initially, partly because the Biodiversity Performance Commitment is new, we have been cautious in our modelling assumptions. However, as we gain experience, we are likely to appoint more land and raise our ambitions in terms of our contribution to biodiversity enhancement and ultimately, reversing the decline of nature.

We continue to work with partners to identify collaboration opportunities to deliver biodiversity enhancement on other people's land across the region.

As we proceed with other infrastructure development and maintenance projects which require planning permission, South West Water will, in line with the Biodiversity Net Gain requirements in planning law, demonstrate how we will deliver at least a 10% Biodiversity Net Gain from each project. We aim to deliver the net gain on site.

Catchment management through our Upstream Thinking programme

We will continue to work with our established delivery partners to expand our Upstream Thinking catchment management programme to cover an additional 12,500 hectares across new Drinking Water Protected schemes areas at risk from catchment inputs with a total value of over £13 million (see map on the next page). This will increase our cumulative target to 146,500 hectares by 2030.

The expansion of the programme will mean that the majority of the catchments which are abstracted from in the South West and Bournemouth region are within the programme. We will also work with our partners to deliver catchment management for a greater range of outcomes, including the potential to deliver flood risk and water quality improvements alongside wider environmental benefits.

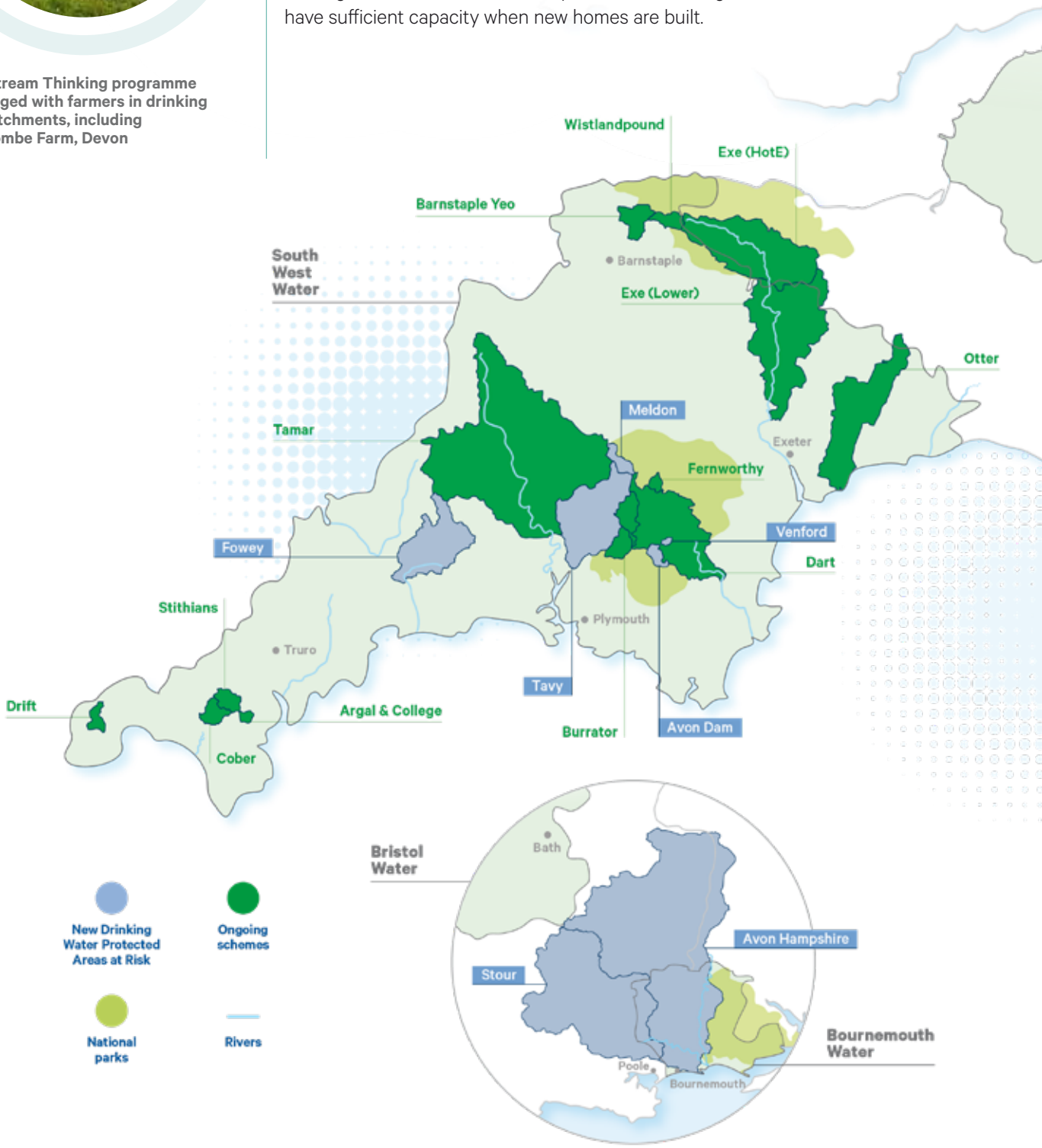
The schemes are designed to mitigate risks, at source using nature-based solutions, associated with Geosmin, MIB and Manganese for Fowey / Colliford, Geosmin and MIB for Avon Dam Reservoir, TOC, DOC and Manganese for Meldon Reservoir, Geosmin, MIB and DOC for Lower River Tavy, Geosmin and MIB for Venford Reservoir and colour and turbidity for Stour and Avon (Hampshire). Catchment management in the Bristol area will also provide solutions to nutrient and water quality issues in the catchment, as well as nutrient management advice plus on-farm interventions to farmers and landowners.

We will also undertake a new set of investigations that include and look beyond the catchments we operate in, to the estuaries and inland waters that are influenced by them to understand the impact of these investments on shellfish, bathing waters and marine habitats such as seagrass beds.

The Upstream Thinking programme has engaged with farmers in drinking water catchments, including Grinnacombe Farm, Devon

The Upstream Thinking catchment management programme will be maintained in the 11 catchments we currently work in which will enable us to launch our 1,000 ponds initiative, as well as providing a mechanism to deliver the planting of 300,000 trees and restoring peatland. The programme will primarily deliver water quality outcomes, with the added benefit of reducing carbon emissions from damaged habitat and increasing carbon sequestration from new planting and habitat restoration.

Through Upstream Thinking, we will initiate discussions with landowners to understand where opportunities exist to promote nature-based sustainable drainage solutions for new developments and making sure that local networks have sufficient capacity when new homes are built.



Managing biosecurity

Invasive non-native species continue to present risks to our operational activity and to the habitats and species of the region. As a responsible business and landowner we are legally required to take ongoing action to control their presence, investment which is encouraged and prioritised by our environmental regulars and stakeholder groups. We will continue to work closely with the South West Lakes Trust and other partners as we take a leading role in surveying, monitoring and controlling the presence of invasive non-native species (INNS) across the region and sharing our experience and best practice.

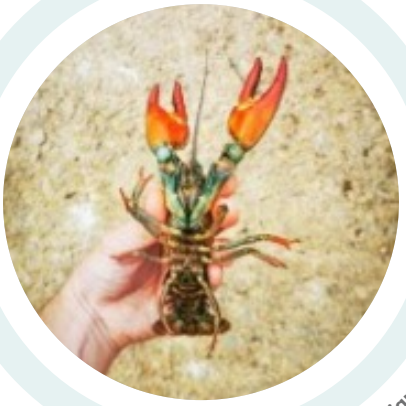
We will trial a range of methods to control INNS, including Biosecurity Action Plans assessing risk pathways and exploring novel measures for raising public awareness and removal. Our investment will support four schemes at Roadford, Burrator, Ibsley Lake and Wimbleball to manage American Signal Crayfish.

We will continue to support discussions on INNS at a national, regional and local level, sharing knowledge, best practice and facilitating learning across the sector. We are the first water company to be developing the Regional Invasive Management Plan and implementing the first boating and angling pathway action plans.

Overall, we will invest over £12 million to deliver 32 schemes and investigations to reduce the risk of introducing or spreading INNS. The programme covers a diverse number of plants, including invasive red algae (a seaweed) and animal species including invasive fish (Ruffe & Sunbleak), crayfish (American, Noble and Turkish), shellfish (Zebra mussel, Asian clam, marine Pacific oyster); and includes invertebrates such as shrimps (Northern River Crangonyctid, Caspian mud shrimp) and snails (Jenkins' spire snail) and also a national alert for Asian hornets.

Public engagement is key to stopping the spread on INNS and we will work with a range of water users to raise awareness and change behaviours. This includes liaising with anglers to use washdowns and follow biosecurity protocols at our sites and schemes to deliver on site solutions such as washdown facilities.

A popular swimming area on the River Dart



Invasive non-native American Signal Crayfish

Naturalising river channels

We will investigate and carry out restoration schemes across our catchments to boost habitats and naturalise river channels, such as removing weirs and bank reinforcements, adding fish passages and eel screens, replanting vegetation and trees, and restoring natural flows.

Our investment programme includes weir removals and work with natural processes to enable greater fish passage and protection, including at important sites such as SSSIs and Special Areas of Conservation.

Overall, we invest over £11 million to install eel screens and improve passage to increase opportunity to reach habitats upstream of our water abstraction points.

We will also undertake eel investigations and schemes in the Bournemouth in preparation for eel and fish passage regulations compliance of assets in future delivery programmes.

Our 'Green First' framework for nature-based solutions

We will consider nature-based solutions to water management challenges across investment and operational needs first – following our 'Green First' framework published in June 2023 alongside our Drainage and Wastewater Management Plan.

This approach will look for the opportunities to work with nature, our stakeholders and communities to reduce the amount of water entering our drainage network by slowing the flow in our catchments. At least 10% of our activities will be nature-based (such as rain gardens, swales and creating habitats which store more water in the landscape) by 2030 and we'll develop our skills, understanding and capacity to deliver more nature-based solutions in the future.

We have identified an initial 25 sites for nature-based solutions, where we are putting in some form of a reed bed, some to reduce nutrients and others to enhance treatment at some of our smaller works. We will also continue to work closely with other partners, including Cornwall Council and the Westcountry Rivers Trust to install nature-based solutions to further treat our effluent releases into the Rivers Camel and Axe.

Nature on our doorstep

We will continue to collaborate with the South West Lakes Trust to enhance access and biodiversity across our 40 lakes, reservoirs and surrounding habitats. We are also considering how provide safe access to some of our special sites – our protected habitats – in a responsible way for residents and visitors.

We will learn from our involvement in the Dart and Tavy Inland Bathing Water Pilot to consider our role in increasing the numbers of designated inland bathing waters and support the applications of community groups who want to apply for inland bathing water designation.

Working in partnership

We will continue to lead the **South West Peatland Partnership** and the **Regional Invasive Species Forum**, and we also collaborate with Catchment Partnerships, Local Nature Partnership and other local community groups and forums.

We will continue to ensure that we have effective working relationships across the environmental community, including with our key delivery partners. In 2022 we established a new Stakeholder Forum where we invited environmental partners to engage with us on our PR24 plans and strategies, as well as updating the group on the key actions we are taking to support nature recovery, and importantly, to tackle drought and storm overflows.

We will create an independent **Environmental Advice Panel** comprised of environmental experts which, amongst other functions, will help to provide independent assurance of our overall environmental performance, including progress with the Biodiversity Performance commitment.

We will ensure that our nature recovery programme is aligned with the priorities set detailed in Local Authority led Local Nature Recovery Strategies and we will launch a new **Nature Recovery Fund** to boost partnership efforts to reverse the decline of nature.

Innovative approaches

We will continue our partnership in the national Ofwat Innovation Funded CaSTCo project exploring the role of citizen science in catchment management, as well as implementing our Water Net Gain Ofwat Innovation Funded project with Westcountry Rivers Trust, as the lead delivery partner.

We are committed to taking action to deliver nature recovery and reduce carbon across our operations and to working in partnership to achieve the greatest possible impact.

£431m investment

Net zero

Continue to decarbonise our operations by reducing our emissions of Nitrous Oxide and repurposing Methane

Innovate and trial new techniques to recover energy from bioresources and to use that energy to fuel our own operations

Support our supply chain to adopt low carbon materials and processes.

Climate adaption

Explore climate independent sources of water for our region, such as desalination and former industrial quarries

Continue to support customers and communities to reduce the amount of water they use

Explore with farmers and landowners how we can work with natural processes and nature-based solutions to store more water in landscape, learning lessons from our Ofwat Innovation Water Net Gain project.

Enhancing the environment

Expand our nature recovery programme by extending Upstream Thinking into new drinking water catchments, plant 300,000 trees, re-naturalise our waterways for wildlife, control invasive non-native species, launch a new nature recovery fund and our 1,000 ponds initiative

Upgrade treatment works across the region to remove harmful contaminants and nutrients from treated discharges to improve river health

Enhance access and educational opportunities for our 40 lakes and reservoirs and open up access to special sites.

We're doing this

South West Water Limited
Peninsula House, Rydon Lane, Exeter EX2 7HR
Registered in England No 02366665

This document is available in different formats.

South West Water
Bournemouth Water
Isles of Scilly Water
Bristol Water