Climate Change Adaptation Report

2024

South West Water

Bournemouth Water

Isles of Scilly Water

Bristol Water

ses WATER

Climate Change Adaptation Report
2024

Contents

Notes

- This report has been prepared ahead of the Ofwat PR24 Final Determination. As such any outcomes from the determination have not been assessed or incorporated in this report.
- Whilst SES Water are now part of the Pennon Group, this report does not include the SES Water company area.

Foreword

In March 2023 according to the Intergovernmental Panel on Climate Change (IPCC) we are already experiencing climate change today, with the likelihood that at current rates the world could face a 1.5°C temperature rise above pre-industrial levels by 2030.

The impact of increases in global temperatures are projected to lead to a risk of more intense and frequent periods of drought, more severe periods of intense rainfall and an increase in projected sea level rise, all of which pose a varying degree of risk to the services provided to our customers.

This change is evident as we have experienced recent periods of hotter, drier summers and warmer wetter winters coupled with the number of extreme weather events which are becoming more frequent and severe.

Given this, assessing climate change risks, and the potential impacts and possible mitigations on our various operations, assets and networks, is an ongoing and reiterative process.

This report is therefore an update on the progress made in adapting to the risks from climate change by building on our previous submission, and forms part of the fourth round of climate change adaptation reporting. It highlights the range of actions we have already taken to adapt to the threat of climate change and the risks this presents.

This adaptation sites alongside our 'Promise to the Planet', which details our Net Zero plans in reducing atmospheric greenhouse gas emissions, with three pillars centred around sustainable operations, championing renewables and reversing carbon emissions.

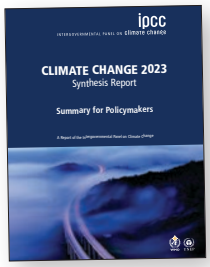
In addition, we continue to seek solutions to a number of the most pressing global environmental challenges we face through our work alongside Exeter University in the Centre for Resilience in Environment, Water and Waste (CREWW). This partnership is conducting world leading research into how we can manage our precious natural resources in ways which are sustainable and resilient in the face of climate change and population growth.

One thing is clear from our work, without careful planning and a step change in investment there could be serious implications for the services customers care about most.

Our plans therefore involve developing strategies to mitigate climate change risk in all parts of our operations and demonstrate how we are addressing the issues of adapting to climate change through working collaboratively with other stakeholders and our customers to help make the step change we need.

Working together, we can all help make the changes we need and want to see for generations to come.

Sarah Williams
Pennon Group Director of Regulation, Strategy, and Net Zero



Find out more **here**

Centre for Resilience in Environment, Water and Waste

University of Exeter | South West Water

Introduction

We have a vital role today and every day, to provide our customers with safe and clean drinking water, protect our region's rivers and coastal waters, and recycle wastewater to the highest standard.

The South West is particularly vulnerable to climate change, given its long coastline, reliance on surface water sources, remoteness of some rural communities and exposure to a full range of hazards, including sea level rise, coastal erosion, floods, droughts and heatwaves. It's clear that the impact of climate change is here now, and we all need to play our part in protecting precious resources.

Our operations include providing water and wastewater services in the South West, which now includes the Isles of Scilly, alongside water services in Bournemouth Water and Bristol Water. Similar climate risks are evident across these operations, with individual sites having specific vulnerabilities due to their location and historical development. In this Summary Report we draw on evidence from all our operations and signpost to additional information in statutory plans.

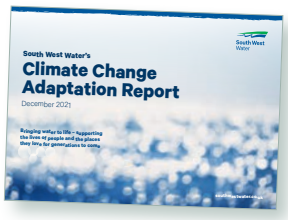
This is our submission to the Department for the Environment, Food and Rural Affairs (Defra) under the fourth Adaptation Reporting Power (ARP4) of the UK Climate Change Act (2008). Its purpose is to:

1. Outline progress we have made in adapting to our climate change risks
2. Contribute to the Government's understanding of our level of preparedness to climate change
3. Inform other ongoing Government work on climate adaptation, including National Climate Change Risk Assessment and National Adaptation Programmes.

We previously completed a comprehensive climate change risk assessment as part of our ARP3 submission to Defra at the end of 2021. This risk assessment is still considered to be valid with no material changes to risk and therefore we do not intend to resubmit this risk assessment at ARP4.

This report presents our progress on climate adaptation against five risk themes: water availability, water treatment, sewer flooding, extreme events and rising sea levels. Understanding the impacts of multiple hazards, compound and cascading risks is also assessed as adapting to these risks is essential if we are to maintain services to our customers and meet our environmental objectives.

The South West is
particularly vulnerable
to climate change



The areas we serve

Our brands

1989 — South West Water

- water & wastewater services
- **c.1.8m** population served
- **490m litres** of drinking water per day

2015 — Bournemouth Water

- water services
- **c.500,000** population served
- **160m litres** of drinking water per day

2020 — Isles of Scilly Water

- water & wastewater services
- **c.2,000** population served
- **0.7m litres** of drinking water per day

2021 — Bristol Water

- water services
- **c.1.2m** population served
- **280m litres** of drinking water per day

Our purpose

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

Population grows up to
10 million
in the summer

36%
of all the designated Bathing Waters in England

30
designated Shellfish Waters

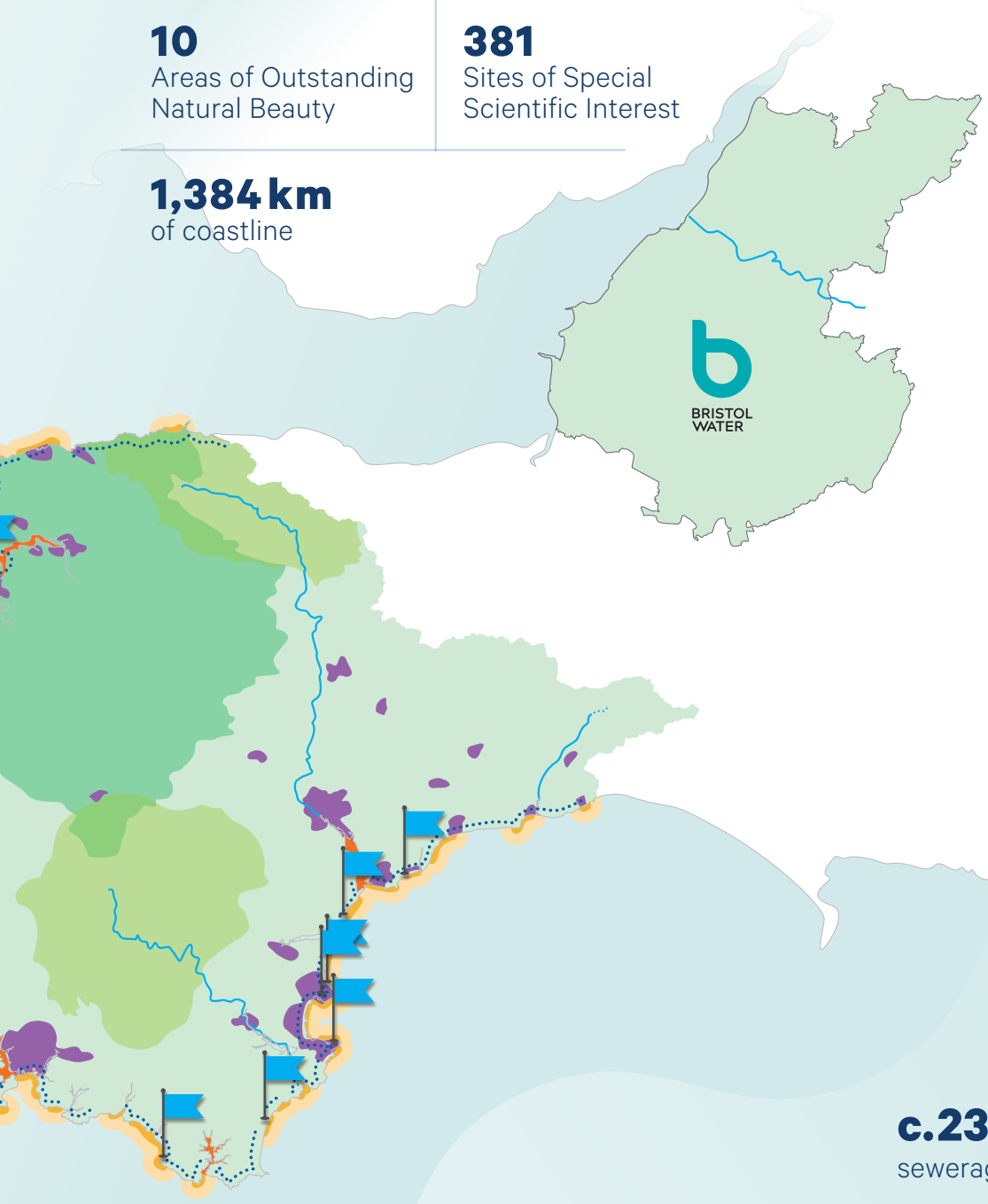
10
Areas of Outstanding Natural Beauty

381
Sites of Special Scientific Interest

2,447
local wildlife sites

1,384 km
of coastline

4,890 km
of rivers



c.23,000km
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

Climate Change in the South West

Recent trends

2024 is expected to be the warmest year on record, now almost certain to exceed 1.5°C above pre-industrial levels for the first time. This follows on from the record-breaking 1.45°C in 2023, the previous warmest year on record.

2023 had the highest annual mean sea levels ever recorded at Newlyn, Cornwall since records began in 1916; sea level is now rising by 4.6mm/year

With 12 named storms to date, 2023-2024, had the **most active start to the storm season** since naming was introduced in 2015

Winter 2024 was up to 50% wetter in the South West than the 1991-2020 average, and was the fifth wettest winter and third wettest Spring in the region (based on a series from 1873)

2023 was the warmest year on record in the South West of England (based on series from 1884)

In 2022, record July temperatures were observed across the UK with a new **record maximum temperature for the South West of 36°C** recorded in Bude, Cornwall

Future trends

Climate change shows the region will be hotter

By 2050...

Average daily temperatures could increase

up to 18°C

– a 2.2°C increase

Summer daily temperatures could increase to an average of

23°C

a +3°C increase

By 2080...

Average daily temperatures could increase

up to 20°C

– a 4.6°C increase

Summer daily temperatures could increase to an average of

25°C

– a 5°C increase

We can expect more days **about 25°C** in the summer and even days above **35°C**

Sea levels are predicted to rise

By the end of the century we can expect sea levels to be **0.5 to 0.8m higher** than they are today

Rainfall in the region will become

much more variable

Heavy rainfall events are likely to increase

fivefold

with twice as much rain in short periods

We can expect much

drier summers

Extremely low temperatures in the winter will become

much less likely

Sources: Met Office 2025 outlook: https://www.metoffice.gov.uk/about-us/news-and-media/media-centre/weather-and-climate-news/2024/2025-global-temperature-outlook; UKCP18 Climate Projections: https://ukclimateprojections-ui.metoffice.gov.uk/ui/home; State of the UK Climate 2023: https://doi.org/10.1002/joc.8553, Met Office UK storm season 2023/24: UK storm season 2023/24; Met Office Seasonal Assessment for Winter 2024: Seasonal Assessment for Winter 2024

Our regional 'climate stripes' for the South West show that the last decade has warmed by around 1.4°C above 'pre-industrial' with individual years 1.9°C warmer than at the turn of the 20th century.

Climate stripes 1884-2022 for annual mean temperature in the SW compared to 1981-2010

Source: UKCP18 historical data for the South West Region

Future changes in climate will have a wide range of impacts on our assets and services.

Rising sea levels

e.g. Increased saline incursion impacting our sources

Wetter winters

e.g. Increased catchment erosion impacting raw water quality

Heavy rainfall events

e.g. Increased risk of sewer flooding and use of storm overflows

Drought

e.g. Lower river levels impacting availability of water supply

Increased maximum temperatures

e.g. Impacts on raw water quality, due to algal blooms

Exposure to a wide range of climate hazards

Our climate risk assessment

We have made **good progress** against our plans, **exceeding targets**

Our comprehensive climate risk register covers 60 physical climate risks to our assets, services and the resources we depend on. We ensure that these are integrated into our corporate risk register, business planning processes and, most recently, our Task Force on Climate-related Financial Disclosures (TCFD).

We undertook a full **climate change risk assessment for our previous submission to Defra in December 2021. To support this interim update, in line with Defra's guidance, we have primarily focussed on adaptation progress**. For each of our climate change risks we have reviewed our progress against our adaptation plans, using evidence from business plans, our performance metrics that we report to regulators (See Appendix B) and engagement across the business.

Our risk landscape is constantly changing (as shown overleaf). Assessing the risk and impacts of climate change, and the best way to manage and adapt our operations, assets and networks is an ongoing and iterative process. Our good adaptation progress means that the risks are moving in the right direction but, with such a short reporting window (just three years since our last report), we only observe changes in our risk profile, where:

1. We have made good progress against our plans, exceeding targets;
2. New evidence has emerged on our understanding of risks, for example due to learning from recent extreme events or
3. Changes to policy or customer priorities have had a material impact on risks.

Our review has determined that our climate change risk assessment is current and valid however our risks related to sewer flooding have increased due to heightened customer and regulatory focus. Although we have made good adaptation progress and are industry leaders for internal flooding performance rainfall intensities are increasing due to climate change. As a consequence, this remains a key area of focus for us, our customers and other stakeholders.

Whilst we have over 60 individual risks around climate change, we have aggregated these into key headline risks and themes.

These headline risks capture our most significant risks, which need to be reflected in our longer-term investment plans. This report outlines our progress against these headline risks.

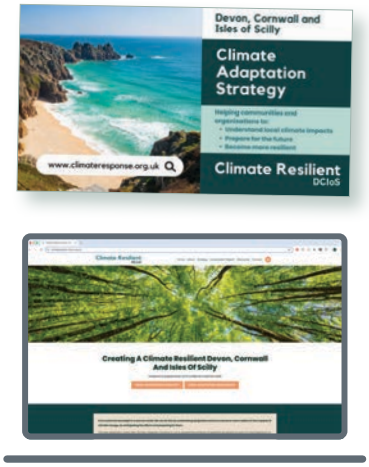
Across these headline risks, we observe cross cutting risks which reflect our responsibility for **environmental stewardship**, to have a **positive impact on communities and our customers** alongside managing a number of **interdependencies** with other external stakeholders

Understanding the impacts of **multiple hazards, compound, and cascading risks** are all essential to maintaining services to our customers and to meet our environmental objectives.

We will continue to work with stakeholders, recognising that many parties have important roles to play in adapting to climate change. We aim to influence policy and collaborate on strategies to protect the most vulnerable communities and assets from flooding and other hazards.

For example, our work with the Devon, Cornwall and Isles of Scilly Climate Impacts Group (DCIoS CIG) – a partnership of strategic organisations, including local authorities and the Environment Agency is developing a **Climate Adaptation Strategy** to both mitigate the impacts of climate change and adapt for the future effects on the region.

The role of cross-sector solutions is likely to be significant in areas such as flood prevention, coastal protection and improved water quality in the environment. We have already made good progress collaborating on initiatives such as **Upstream Thinking** to improve water quality at source and our **Natural Catchment Management** approach to flood risk. We remain committed to joint working to develop shared solutions, manage climate risks and keep the costs affordable for our customers.



Upstream Thinking

Headline messages

Our changing risk landscape
since we set out to deliver our adaptation plans from 2021:

Climate Risks
Immediate challenges related to weather and climate risks with record-breaking weather events over the past three years – including heatwaves, a cold snap, windstorms, an extended period of drought in 2022.

These extreme weather patterns have tested our operational resilience and influenced our long-term plans.

Growth
The expansion of our operations to the Isles of Scilly and through the latest merger with Bristol Water completed in February 2023.

This provides changing risk landscapes but also adaptation opportunities for a more integrated regional approach.

Risk governance and policy
Changes to regulatory landscape include a requirement to report on our financial risks from climate change through the Companies Act, to work with other companies in our region and develop a strategic Regional Water Resources Plan alongside a Drainage and Wastewater Management Plan.

We integrate our Long-term Delivery Strategy with our water and wastewater strategic planning frameworks to inform efficient investment decisions accommodating future uncertainties such as climate change.

Our responsibility to the environment
Across the water sector, with better monitoring and understanding of our environmental impact together with our own growth in environmental ambition we have, rightly, been challenged to improve our performance.

Our headline risks
capture our most significant risks which need to be reflected in our adaptive and long-term investment plans. Risk profiles and adaptation progress are summarised here:

1 Risks to security of public water supply

Good progress

Accelerated investment linked to 2022 drought event.

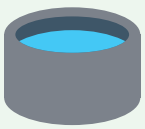
Lessons learned informed planned investments.

2 Risks to water treatment from reduced water quality

Very good progress

No significant change to risk profile and significant adaptation progress.

Need to maintain good progress to keep pace with climate change.



3 Risks to sewer flooding from extreme rainfall

Additional progress required

We have made good adaptation progress and are industry leaders for internal flooding performance.

However, rainfall intensities are rising and increasing reputational risk means this is a higher priority and an area for increased adaptation action.

4 Risks of service interruptions from extreme weather events

Good progress

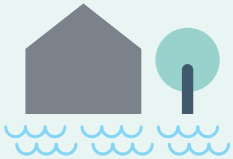
No significant change in risk profile, our adaptation progress is keeping pace with increasing climate risks.

5 Risks from sea level rise

Some progress

Sea levels continue to rise causing saline intrusion and increasing coastal flood risk.

Our adaptation progress is keeping pace with increasing climate risks.



Cross cutting risks

are observed across our headline risks impacting all parts of our business, and require innovation, collaboration and partnership work to resolve.

Customers

Climate change affects our vulnerable communities the most and we aim to influence policy and collaborate on strategies to prioritise protection for these communities and assets from flooding and other hazards, while keeping the costs affordable for our customers.

Interdependent and cascading risks

Our assets and services are reliant on external infrastructure and stakeholders including other utilities, local authorities, environmental organisations and government.

Understanding of our systems, their interdependencies, and the risks that our systems face is embedded within the way we work to build resilience and is central to regulatory policies, our strategic plans and investment.

Environmental protection

Our operations play a vital part in maintaining the quantity and quality of water in the environment and its ecological health.

We apply a ‘Green First’ and ‘Nature First’ approach to planned investment to ensure we prioritise nature-based solutions that have wider environmental and social benefits.

In partnership with other stakeholders in the region we work to ensure that the environment and wildlife is not only protected but can thrive and that we have a positive impact on the environment in which we operate.

Our adaptation progress at a glance

This page highlights the key climate risks we face and summarises our adaptation activities and progress:

1 Risks to security of public water supply

- Contributed to the first draft of the Regional Water Plan for the West Country
- Green Recovery Plan with accelerated smart meter rollout
- Further development of options for desalination schemes in both the IoS and Cornwall
- Leakage reduction programme
- Repurposed quarries
- Water reuse plant in Poole
- 'Water is Precious', 'Every Drop Counts' campaign e.g. innovative tariff trials.

2 Risks to water treatment from reduced water quality

- Upgraded one third of our works including state of the art treatment technology
- Catchment management and nature-based solutions
- Established comprehensive monitoring programme and installing new treatment processes on Isles of Scilly
- Continually exceeded our Upstream Thinking targets
- Automated trunk main flushing.

5 Risks from sea level rise

- Risk assessment of all our coastal sites to inform investment decisions
- Securing alterative supplies to replace those impacted by salinity
- Operational Response Recovery plans
- Drainage management plans
- Catchment management and sustainable urban drainage

Adaptation activities and progress

Innovation

- **First purpose-built, transdisciplinary research centre in the water sector**
- **Working with Plymouth City Council to quantify flood risk benefits of roof water butts and rain gardens**
- **Water Net Gain incentivising farmers to create small scale storage solutions**
- **Leak detection trial using trained dogs to access hard to navigate rural areas.**

Interdependent risks

- **Cross-sector collaboration on Water UK power resilience tool**
- **Renewable energy generation at our sites**
- **Supply chain resilience review**
- **Water UK cross-sector collaboration to develop mutual aid agreements for national risks.**

3 Risks to sewer flooding from extreme rainfall

- Published our first long-term Drainage and Wastewater Management Plan
- 100% storm overflow monitoring
- WaterFit Live launched providing customers with transparent information about bathing waters quality
- Community engagement to achieve region's first bathing quality river
- Innovative groundwater infiltration risk mapping.

4 Risks of service interruptions from extreme weather events

- Severe weather protocol response to weather alerts
- Award-winning incident response teams and 24/7 central control room
- Alternative Water Team
- Mains duplication
- Diversified energy supply with renewable energy embedded at some of our sites.

Change in risk

- No change
- Increased

Adaptation progress

- Very good
- Good
- Some progress
- Additional progress required

Natural environment and biodiversity

- **Restored 1,000 hectares of carbon-absorbing peatland**
- **Planted 220,000 trees**
- **Over 110,000 hectares of biodiversity enhancement and protection**
- **Developed 15 natural catchment management plans using digital twin technology**
- **More AQUA biosecurity accredited sites then any other water company and the only company with gold awards.**

Vulnerable customers

- **Incident response plans that prioritise support for vulnerable customers during extreme weather events**
- **WaterShare+ Customer Advisory Panel**
- **Community outreach and educational programmes to explain the need for investment in climate action**
- **Exploring innovative tariffs to ensure fair bills**
- **Innovative 'Stop the Drop' initiative – our largest ever customer campaign, incentivising customers to reduce their usage during the 2022 drought event.**

What we've done and what we plan to do

What we've done...

Water supply

- Updated our long-term water resource management plans and our drought plan
- Boosted resources and resilience in Cornwall and Devon by delivering a pump refill scheme for Roadford Reservoir, repurposing disused quarries
- Progressing the development and feasibility of building new desalination plants to improve water supply and resilience across Cornwall and Isle of Scilly to ensure a secure water supply for the St. Mary's and St. Martin's islands
- Upgraded a third of our treatment works including rolling out new state of the art treatment technology that is more resilient to the future
- Established a comprehensive monitoring programme on Isles of Scilly installing new water treatment processes.
- Exceeded our Upstream Thinking catchment management targets every year since we last reported with benefits for water quality, wildlife, water resources and peatland restoration
- Embedded our 'Green first' approach to all decision-making promoting the use of nature-based solutions where possible.

Wastewater

- New drainage and wastewater management plan to reduce risk of flooding
- Delivered our most comprehensive climate change risk assessment to date (from all sources) for all our sites and ensured that Flood Emergency Response Plans are in place
- Achieved 100% bathing water quality across all beaches for the past 2 years
- Supported the Lower Otter Restoration Project by adapting our assets to allow the river to be reconnected to the floodplain and restore natural processes promoting natural catchment adaptation
- Working together with local stakeholders to tackle flood risk such as the Plymouth City Council on a Pioneer Street Project and our Natural Catchment Management programme e.g. Trevaunce Cove catchment in St Agnes in Cornwall.

What we plan to do...

Water supply

- Invest in new large reservoirs in the region, starting with Cheddar 2 in Bristol and a water re-use plant in Poole
- Continue to modernise our treatment infrastructure including rebuilding two strategically important treatment works responsible for supplying 85% of Bournemouth Water customers by 2030
- By 2030 complete the Isles of Scilly desalination scheme
- Reduce water taken from rivers by 12 million litres per day
- Eliminate the risk of severe water restrictions in a 1:500 drought for all our customers by 2040
- Accelerate smart metering and reduce household water use to 110 litres per person per day by 2050
- Reduce leakage by 50% by 2050 (baselined against 2017/18).

Wastewater

- By 2030, we pledge to have tackled the use of storm overflows at our bathing and shellfish waters, 5 years ahead of target
- For the first time ever, put in place additional sewerage networks and treatment facilities on the Isles of Scilly
- Target the lowest absolute wastewater pollutions in the industry matching our sector leading internal flooding performance
- Increase the volumes of wastewater treated from 97% to 98% by 2030
- Establish a new independent environmental advisory panel to ensure we are focused on putting the environment first.

What our customers and stakeholders have said

We have gathered the views of

of over 250,000 customers

It is vital our plans meet the needs of our customers and stakeholders, so we strive to understand their priorities and make sure our plans deliver against them.

Our priorities, risks and climate change adaptation plans reflect our continual engagement, research and feedback to understand customer priorities including households, visitors and residents, water retailers and housing developers. Over the last three years we have gathered the views of over 250,000 customers living in urban and rural communities, those living near beaches and those living inland. Customers tell us that:

Water quality and resilience	**Continuing to provide clean, resilient drinking water remains your number one priority and we plan to invest £2.8 billion in water quality and resilience over the next five years – our largest investment since privatisation.**
Stormoverflows and pollutions	**Reducing pollution and protecting our bathing waters is vital so our investment over the next 5 years will aim to tackle 100% of storm overflows at bathing waters.**
Net zero and environmental gains	**You agree with us, that as a socially responsible business, it is the right thing to ensure we are protecting the environment, enhancing nature and working to deliver net zero.**
Addressing affordability and delivering for customers	**We must balance the need and speed of change with keeping bills affordable for everyone, supporting those customers who need additional help.**

We are already focussed on these four priorities and this report showcases the progress we have already made in each of these areas. But more still, these remain core to our next business plan for the next five years of investment and, given that climate change is a multi-generational challenge, **is part of our Strategic Direction to 2050.**

Our Strategic Direction to 2050

> **Climate change is such a severe threat to humankind.**
>
> South West Water customer, 2021

> **Future generations will see the benefit of action now.**
>
> South West Water customer, 2021

> **The cost of bills... I think that's the one that has the most immediate impact on the customers.**
> Future customer, Bournemouth

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**

> **I think they'll have to increase prices because demand will go up if the population growth is going up, and there is a need to protect the environment.**
> Bournemouth customer, Aged 46+

> **Our environment is our biggest asset and I think that needs to be protected, so I think that's the biggest challenge.**
> Future customer, Bristol

> **Storm overflows that are specifically effective in places like beaches need priority rather than something across all of the overflows.**
> South West Water customer, 2021

> **I am concerned about climate change. This was such as dry summer and the rivers and reservoirs were drying out."**
> South West Water customer, 2023

Our climate risk governance, management and strategy

Our Pennon Board is responsible for all climate-related processes in the company including the overall ownership and responsibility for risk management. The Pennon Executive and Board regularly review emerging and current risks, while the Audit Committee assesses the Group's risk management framework and its integration into reporting

The **South West Bournemouth and Bristol Executive Board (SWBB)** is responsible for overseeing and informing Board Committees about operational performance and risks across the regulated water businesses. **This includes monitoring the impacts of climate-related risks on operations and ensuring proper management of operational risks.**

The ESG Committee provides the platform for discussion of the Group's ESG agenda and related climate and nature risks and opportunities, as well as setting and reviewing key metrics including our ESG targets and goals. Our approach to ESG confirms our commitment to provide environmental stewardship and to support our customers and local communities.

An integrated risk management framework, that is part of our overall governance process, helps in the identification, management and monitoring of risks. Principal risks are reviewed as part of our audit processes and these principal and emerging risks include those risks at the Group level that could potentially have a substantial effect on our South West, Bournemouth and Bristol Water regions.

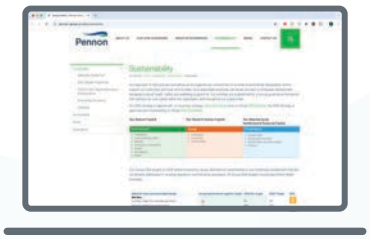
We maintain a central corporate risk register documenting key risks, controls, and mitigations, which is periodically reviewed. Annually, we report our principal risks in our Annual Report, Annual Performance Report and Regulatory Reporting. These reports outline the principal risks, their management, and actions to reduce the risks in accordance with the Board's risk appetite.

Task Force on Nature-related Financial Disclosures (TFND)

This is our third year of voluntarily reporting against the TFND framework. This year we are taking the opportunity to integrate TFND into our Task Force on Climate-related Financial Disclosures (TCFD), recognising the substantial overlap and synergies for our business between action on climate change and the nature emergency. At the same time, we also recognise some trade-offs in meeting our goals around resilience, Net Zero, and nature. We acknowledge there is further work to do on the recommended TFND disclosures, and we are continuing to monitor the inclusion on nature-risks in the UK sustainability disclosure requirements.

Task Force on Climate-related Financial Disclosures

More details and the latest sustainability reports can be found on our **website**.



Our risk management framework is managed through a 'three line of defence' consisting of Operational Management, Executive Committee and Internal Audit (see diagram below).

Oversight

Pennon Board

Risk Management Responsibilities

- Sets the Group's strategic objectives.
- Establishes the Group's risk appetite.
- Determines the Group's principal risks.
- Ensures an effective internal control framework.

Key Assurance Activities

- Quarterly review of the Group's principal risks against the determined risk appetite.
- Quarterly review of emerging risks and horizon scanning.

Audit Committee

Risk Management Responsibilities

- Reviews the effectiveness of the Group's risk management and internal control frameworks.

Key Assurance Activities

- Performs regular deep-dive reviews on principal risks.
- Ensures an appropriate level of assurance coverage over the Group's principal risks.
- Approves the risk-based Group Internal Audit Plan.
- Receives reports on the outcomes of key assurance activities.

Second line

Pennon Executive Committee

Risk Management Responsibilities

- Ensuring the operation of the Group's risk management and internal control frameworks.
- Quarterly review of the Group's principal risks and mitigation strategies.
- Review of significant bottom-up tactical risks.
- Provides challenge to individual functional areas over the management of their risks.
- Horizon scanning to identify emerging risks and opportunities.

Operational Risk and Assurance Steering Group

Risk Management Responsibilities

- Review of highest priority tactical risks within the Water related activities.
- Perform horizon scanning of emerging tactical risks.
- Share innovation and encourage collaboration in the management of common risk themes.
- Operate as a conduit for the escalation of risks.

Key Assurance Activities

- Ensuring the completion of actions to mitigate risks identified.

Third line

Group Internal Audit

Risk Management Responsibilities

- Provides independent, risk-based assurance on the effectiveness of the internal control framework.
- Coordination of independent assurance activities.

Key Assurance Activities

- Quarterly reporting to Audit Committee and Pennon Executive on the effectiveness of internal controls and the outcomes of key assurance activities.

First line

Operational Risk Management

Risk Management Responsibilities

- Identification, evaluation and monitoring of strategic and tactical risks.
- Maintaining robust internal controls to mitigate key risks.
- Monitoring compliance with internal control framework.

Key Assurance Activities

- Ensure robust first line assurance across key business processes
- Annual self-assessment and certification of compliance.

1 Risks to security of public water supply

Good progress

Ensuring a secure and sufficient supply of raw water is critical to maintaining supplies to customers and businesses, long into the future to support tourism, farming and our region's economic health.

Our operations play a vital part in maintaining the level of river flows and their ecological health, in partnership with other stakeholders in the region we work to ensure that the environment and wildlife is not only protected but can thrive.

But we have serious challenges ahead. Over 90% of our water resources are derived from rivers and impounding reservoirs which are vulnerable to low rainfall levels and drought. Our region, with its 860 miles of coastline, is particularly vulnerable to the impact of sea level rise but this also provides an opportunity for us – following the successful use of desalination on the Isles of Scilly it is now an important component of our future water resource strategy for elsewhere in our region. Water availability is also influenced by water quality, and we have already experienced a reduction in water availability at some locations, due to poor water quality.

See our **'Risks to water treatment from reduced water quality'** on page 22 for more detail

Since we last reported we experienced **the drought of 2022** which brought the driest conditions for 60 years and extreme heat impacting our rivers and water-dependent wildlife. Reservoir levels were at a record all-time low putting our water supplies under significant pressure. The combined impacts of low river flows and very high demand led to a temporary use ban for the first time since 1996.

But the drought also **improved our adaptation progress** as we worked rapidly to respond, accelerating our investment to **repurpose disused quarries** increasing water storage, **reduce leakage** and roll-out innovative **'Stop the Drop'** behavioural change campaigns with communities to **incentivise water efficiency**. It also provided us with valuable lessons that have shaped our investment plans. See our case study for further information.

Building on these lessons and our recent climate change modelling undertaken for our strategic water resource planning, we know that we must secure a **more diversified portfolio of water resources** – shifting our dependency on freshwater sources to alternative sources such as **desalination and water reuse**, combined with increased efforts to improve **water efficiency** of both our own operations/assets and our customers to ensure sustainability of supply.

Coupled with this, we are one of Britain's most treasured tourist regions, our population swells with visitors in the summer months, which can mean some parts of our region experience 50% more demand for water.

With an expected further 530,000 people living and working in the region by 2050 needing 275,000 new homes, we will need to serve a growing population in a future with less water available. **Without additional planning and investment this will result in a forecast deficit of over 200 megalitres per day by 2050.**

Our adaptation progress

Best value and adaptive planning

The long-standing statutory water resources management plans and drought plans for England and Wales provide a **comprehensive framework for assessing uncertainties, including climate change,** enabling the long-term planning of future water supplies. The need to balance the future demand for water with how much water is sustainably available from sources to provide reliable services for customers, continues to drive investment in our business plans and supporting strategies.

We consider the risk of future deviation from our **best value plan** through alternative scenarios to define adaptive solutions, monitoring and decision points. Since our last adaptation report we have implemented the supply and demand actions set out in our 2019 Water Resource Management Plan and have published our next draft plan.

Extreme drought response

During the 2022 drought **we increased our leakage reduction activity and accelerated our smart water metering and water efficiency programmes**.

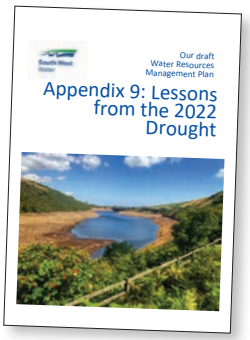
Alongside this **we invested in additional network connectivity** to provide resilience to the Roadford and Colliford areas and began delivering a **desalination treatment plant to the Isles of Scilly**.

West Country Regional Group

We are a core member of the West Country Water Resources Group (WCWRG). As part of this group, we are **working collaboratively** with other partners like Wessex Water and the Environment Agency to develop plans and strategies with **cross sector benefits** and address the environmental impacts of water abstraction.

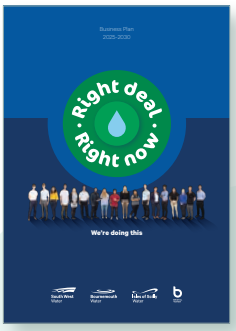
The first Regional Plan has identified large regional and inter-regional schemes which have the potential to provide benefits to multiple water companies and create future **opportunities for water sharing across the region**.

Our Business Plan 2025-2030, Draft Water Management Plan 2025-2050 and Region Plan 2025-2070 set out our planned actions to ensure a safe and secure water resource into the future. **Our plans include our biggest investment in decades to increase the resilience of our water supplies, to diversify sources whilst building on our tariff trials and smart-meter programmes to reduce demand and encourage customer participation.**



Find out more **here**

West Country Water Resources



Business Plan 2025-2030

2 Risks to water treatment from reduced water quality

Very good progress

The supply of clean and safe drinking water was and remains our **customers' top priority**

The supply of clean and safe drinking water was our customers' top priority when we reported in 2021 and remains their top priority now. 90% of our water comes from the region's rivers meaning our reliance on surface water is three times greater than the industry average.

This makes us uniquely vulnerable to freshwater quality and means our treatment works need to be resilient to the impacts of variable weather, such as storms, which can lead to rapid changes in raw water quality in rivers and reservoirs more immediately than groundwater.

We are already experiencing the impacts of increasing concentrations of unsafe contaminants in freshwater supplies, due to increased catchment erosion and algal blooms – worsened by climate change. As freshwater temperatures continue to increase there is a greater risk of algal blooms causing blockages in filters and pipes at our treatment sites, waterborne diseases and a larger need to remove pathogens from drinking water.

The UK benefits from strong independent regulation and water quality performance is currently world leading with overall compliance with water quality standards consistently exceeding 99.95%. Without adaptation actions our treatment costs, energy-use, and carbon emissions will increase to maintain these high drinking water standards.

We are proud of the strong progress we have made over the last three years to adapt and reduce our risk through:

- A range of **'Green First' natural catchment management approaches** to improve the quality of water at source.
- **Improvements to our treatment infrastructure and implementing innovating new processes and technology**.

Not only have we implemented actions that benefit our own operations, but we have worked hard to have a positive impact on the environment in which we operate. For example, we recently won **Gold in the 2024 Global Good Awards** for our work to restore peatlands across the region. We have carried out over 10,000 interventions, to protect and restore peatlands right across the South West, leaving a lasting positive impact on the environment, wildlife and water quality.

Although we have made very good progress, we recognise that as high temperatures and rainfall intensity continue to increase, we need to do more to improve the appearance and taste of our water supplies. **Over the next five years, we will deliver our most ambitious water resources and water quality plan in decades** with our planned investment reducing risk further. We will need to keep reviewing our progress to keep pace with the increasing risk over the longer-term.

Risks to water treatment from reduced water quality continued **2**

Our adaptation progress

Exceeded our targets to improve water quality in the environment

We have continued working with partners, farmers and landowners to deliver the **innovative and multi award-winning land restoration programmes (Upstream Thinking and Catchment Management)** to improve catchment storage and water quality. In our last adaptation report we committed to expanding our Upstream Thinking to four further catchments which contribute to 80% of drinking water supply.

See our **Case study** on page 39 for more detail

Innovation in our treatment technology

Alongside the work to improve water quality in the environment we are continually innovating and investing in water treatment technology, processes and assets to ensure both the quality and quantity of water is safe, secure and sufficient to meet the needs of the region. We have:

- **Installed new water treatment processes and invested in six treatment works across our region including new ceramic treatment at Alderney and Knapp Mill** as well as 4 upgrades in Devon and Cornwall.
- Following the success of the **state-of-the-art ceramic treatment technology** at Mayflower works that we reported on in our last adaptation report – first of its kind in the country, we are currently rolling out **similar technology to two new treatment works in Bournemouth**.
- **Plans underway to upgrade a third of our water treatment works across Devon and Cornwall** – 10 water treatment works supplying East Devon, Exeter and Tiverton, seven further works supplying mid Devon and East Cornwall. Completing major upgrades to two major works supplying the wider Bristol area.

Investment in Research and Development

We know that we must continually learn and adapt to the increasing pressures, including climate change, that threaten our ability to maintain a secure and safe supply of water for our customers. Together with the University of Exeter, we have set up the Centre for Resilience in Environment, Water and Waste (CREWW) and in 2023 we opened our **purpose-built research centre** on the University campus. The centre will bring together regulators, utilities, the supply chain and academia **to support the most challenging issues we face in both clean and wastewater**.

Leading the way in tacking invasive animals and plants

Invasive Non-Native Species (INNS) are an increasingly prominent and expensive issue for the water industry damaging infrastructure and endangering native species. Warming climates with more extreme flooding events may increase their spread and reduce the resilience of the natural environment. **Our sector-leading approach has raised the profile of INNS at a national scale**. Since we last reported we have:

- **Raised awareness** and exceeded our targets by over 100% and installing 237 signs at 108 sites such as Colliford Lake, Cornwall.
- **Controlled invasive species** – American Signal Crayfish are recognised as one of the most destructive for our native Crayfish and invertebrate species. We are piloting new ways to trap and control them at Burrator reservoir and have seen a reduction each year with the angling community reporting an increase in invertebrate life.
- **AQUA biosecurity accreditation scheme** – Two South West Water sites in the scheme have been raised from bronze to silver level with the most sites of any water company entered and the only gold awards. Currently we have 31 awards in total (20 bronze, nine silver and two gold).

Over the next five years, we will deliver our most ambitious water resources and water quality plan in decades. Where possible, we will work with stakeholders and partner organisations to deliver nature-based solutions that have wider benefits for the environment and communities in the region.

Our Business Plan 2025-2030 and Long-Term Drinking Water Quality Strategy 2025 - 2050 set out our planned actions into the future on raw water quality and water treatment.

Long-Term Drinking Water Quality Strategy 2025 - 2050

Centre for Resilience in Environment, Water and Waste

University of Exeter | South West Water

3 Risks of service interruptions from extreme weather events

Additional progress required

We have achieved
100% storm overflow monitoring

Environment Agency

Ofwat

Large parts of our drainage network are a legacy of the Victorian era with c.23,000km of combined sewage systems that carry both rainfall runoff and household wastewater to our 653 wastewater treatment works where it is treated to a high standard before returning it back to the environment.

Like others in the sector, we acknowledge that we have lost the trust of our customers due to our use of storm overflows to prevent sewer flooding, their impact on the environment and pollution incidents. It's our job to fix that and we will, recognising that this is a multigenerational challenge.

Climate change is expected to increase the intensity of rainfall placing increasing pressures on the combined sewer networks and wastewater assets. Our modelling shows that without investment, 10% of our customers are vulnerable to sewer flooding from a 1 in 50-year storm event by 2050. This is further compounded by increasing urbanisation and population growth.

Since we last reported we have made good progress **achieving 100% storm overflow monitoring**, targeting pollution interventions through our **Pollution Incident Reduction Plan (PIRP), delivering partnership community schemes** tackling local resilience and **innovating through our collaboration with CREWW**.

We have listened to our customers concerns and in recognition of this and our commitment to environmental enhancement, **a significant level of planned investment over the next five years, and beyond, is focussed on reducing storm overflow discharges. Our 'Green First' framework prioritises nature-based solutions** to slow or stop the transfer of water to sewers. Our ambitious programme was developed in close collaboration with the Environment Agency and aims to:

- Reduce the amount of rainwater and groundwater entering our system
- Slow the flow of water through the environment
- Increase our network's capacity to store and treat flows.

Underpinning our investment plans is a robust analytical framework where we consider future climate change amongst other uncertain future pressures to develop our long-term adaptive Drainage and Wastewater Management Plan.

Our adaptation progress

Investing in our assets to ensure asset resilience and efficiency, maximising capacity for future increasing pressures:

- Proactive approach to investigating, cleaning and repairing the sewers to resolve issues before they arise and cause flooding or damage
- Network improvements through rising main replacements installing 9,000 sewer depth monitors and continuing our investment in technology and innovation
- Constantly reviewing and monitoring data from our sewer level, storm overflow, river water quality and pressure monitors to identify areas for improvement
- Completed sustainable solutions such as our surface water separation and phosphorous schemes in Plymouth removing surface water from the sewerage network

- Working with Ofwat on an innovation funded project to optimise the use of a storage tank at Ilsham Valley Pumping Station using Artificial Intelligence and machine learning to respond to environmental signals and minimise storm overflows.

We are developing collaborative catchment scale solutions, for example, we are working with Plymouth City Council to support projects (e.g. their Pioneer Street Project) that are quantifying the benefits of roof water butts and rain gardens in key areas across the city. We are also working with others to take a 'Green First' approach, removing flows from the systems using nature-based solutions e.g. reed beds and smart ponds.

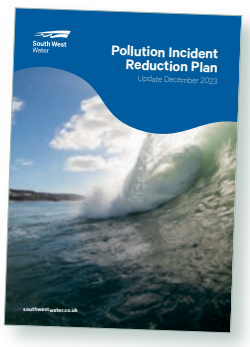
We are one of the first companies to install monitors at 100% of our storm overflows. We are using this data, alongside engagement with our customers and stakeholders, to help inform our **WaterFit** plans and target interventions at those overflows that are operating more than expected, in and around our bathing beaches.

We are targeting improvements to storm overflows at 49 beaches in the South West by 2025 and are proud of our success with **100% of designated bathing waters in the South West Water area achieving Excellent or Good status for the second year running – up from 28% in 1991**.

We are delivering on our commitments from our previous adaptation report to achieve **the region's first designated inland bathing waters on the River Dart** – a river that we know is popular for recreation. This will inform our approach to inland bathing water designation across the region.

Delivering a reduction in pollutions across the South West region via our Pollution Incident Reduction Plan, including working with communities to reduce wet wipes entering our sewer network and pollutions caused by blockages.

We are delivering a
reduction in pollutions
across the South West via our Pollution Incident Reduction Plan



Contributed to the National Storm Overflows Plan for England

This project collated all water company investment plans for England and Wales to produce a dashboard and interactive map of forecast impacts and planned investments.

Collaborative research and development into adaptive solutions

We are working with the Catchment Systems Thinking Cooperative (CaSTCo) and CREWW on an Ofwat Innovation Funded project to tackle wastewater challenges. This assesses the optimal use of catchment-based solutions to reduce rural surface runoff inputs to the combined sewer network using nature-based solutions.

Developing a CREWW **Groundwater Infiltration Risk Map** so that we can target interventions to re-route groundwater or prevent infiltration. Future climate change scenarios will be included within the risk assessment.

Launched in 2022, WaterFit is our strategic and long-term programme to protect rivers and seas. Fifty (out of 84) initiatives have already been delivered, tackling high spilling overflows – reducing these to 28.5 spills per year on average – a 30% reduction in 2022 with half of this progress attributed to our adaptation efforts.

WaterFit Live launched in March 2023, gives live quality updates on all our bathing beaches. We provide our customers with live information on storm overflow operations and investments we are making.

4 Risks of service interruptions from extreme weather events

Good progress

As extreme weather events become more frequent, we need to manage our systems and maintain services, despite both direct weather impacts to our assets and indirect impacts when energy systems fail and when transport and supply chains are disrupted.

We invest to ensure that our assets are protected to meet our levels of service but many of our operations are also reliant on infrastructure that we do not own but that we depend on to ensure staff and materials (such as treatment chemicals) can get to our sites. These **interdependent risks** can result in **cascading impacts** and secondary failure for example, where delivery of supplies, maintenance or repair is hindered preventing the continuity of operations or where impacts to the power network can impact the ability to run our sites and lead to multiple failures across our networks.

We have achieved **100% storm overflow monitoring**

Since our last adaptation report we have made **good progress** truly **embedding improved operational and incidence response actions** throughout South West Water and Bournemouth regions. We are working to enhance our supply chain resilience and have invested in our energy resilience developing a **power resilience tool** to understand our vulnerability to national energy outages and the risk to our customers. Recently we have faced some power resilience challenges in our Bristol Water region and therefore, over the next few years we will work to improve resilience across the whole company

South West Water are **the first Water and Wastewater Services company in England to gain 'Licence to Control' accreditation, Bronze Award**. This recognises our investment in developing the skills and knowledge required in a water control room operations environment.

ENERGY & UTILITY SKILLS

South West Water was successful in gaining Licence to Control accreditation in August 2023 following an audit by Energy & Utility Skills. The scheme requires the business to have robust training policies, procedures, and systems in place to demonstrate the competence and ongoing competence of employees in their respective roles within the Service Support Centre.

We will continue to work towards achieving Silver and Gold levels.

Our adaptation progress

Our 'Bronze' award winning 24/7 control centre, alternative water supply teams and improved incidence response is now business as usual. We have embedded our improved operational and incidence response actions within our daily operations throughout South West Water and Bristol regions. For example, we have appointed a new incident management team, invested in our data capture and analysis to enhance deployment of alternative water supplies.

Risks of service interruptions from extreme weather events continued 4

Severe weather protocol reduces the risk of any disruption and protects our network

Our system features weather forecast triggers which lead to a co-ordinated response by our teams and tailored preparations to ensure that drinking water and wastewater systems are can still operate during extreme events. For example, if storms and high winds are forecast, we mobilise staff to ensure effective manpower and enlist the help of third parties, such as tree surgeons, ensuring sites are kept safe. For heavy rainfall forecasts, especially following dry periods, we focus on optimising our wastewater systems including emptying storm overflow tanks, additional cleaning and maintenance of the network, and checking that all systems are operating at peak performance to manage the extra demand.

Asset resilience to flooding

Many of our wastewater assets are close to rivers or the coast so we have been **working with the Environment Agency** for several years to manage this risk. As part of our **Drainage and Wastewater Management Plan (2025-2050)** we modelled our asset resilience to a range of events that may impact our services such as fluvial and coastal flooding and outages to power and remote communications. The findings inform our programme of investment to adapt to future risks, including climate change.

Drainage and Wastewater Management Plan

Find out more **here**

We have developed over 200 Operational Response Recovery Plans for our wastewater treatment works with a specific metric that can be used by our regulator to monitor our progress over the current regulatory planning cycle. We continually learn from every storm or incident to improve our processes.

See our **'Risks from sea level rise'** on page [28] for more detail

Our Business Plan 2025-2030 sets out our planned actions into the future to manage our systems and improve our resilience to extreme weather events to maintain services. Our planned actions and investments include plans for an interconnector grid that will enable us to move water flexibly around our network to minimise interruptions to supply.

We will continue to engage with other infrastructure owners and multi-sector collaboration groups to work together to improve national resilience to extreme weather events and cascade failures.

Supply chain resilience

We are working **to enhance our supply chain resilience** such as the development of a new commercial framework that has expanded our supply chain diversity for items such as treatment chemicals.

Investing in our energy resilience

We have made good progress on the plans laid out in our previous adaptation report and **invested to improve the energy resilience of our sites** and reduce interruptions to service for our customers. We have:

- Switched fuel supply for our standby generators from diesel fossil-fuel to lower carbon, Hydrotreated Vegetable Oil (HVO) made from waste oil. We are adapting our procurement routes to diversify our supply chain ensuring a reliable supply of HVO. We have plans to switch all our water treatment sites.
- **Diversified energy supply with renewable energy embedded at some of our sites** providing additional energy resilience. Our investment programme includes **a range of technologies (solar, hydro, wind, sludge to biogas)** to ensure we are resilient to a range of weather conditions and reduce volatility of supply.
- **We use 28% of our sludge (a by-product of our operations)** to power our own operations diversifying our energy sources further and reducing our reliance on the national energy grid.
- We are working with **Water UK** and other water companies to develop a **visualisation tool** that will support **business continuity and operational decisions** around power outages and reduce customer impacts, including to the most vulnerable people. Further detail is provided in our case studies.

5 Risks from sea level rise

Some progress

With most of our customers located in coastal or estuarine areas these risks could have a major impact and threaten some of our largest cities like Exeter and Plymouth.

Find out more **here**

South West Regional Flood & Coastal Committee

SOUTH WEST Flood & Coastal

As a coastal region with 860 miles of coast, making up over 30% of the UK's total coastline, and with many of our assets situated in coastal locations our services and operations are particularly vulnerable to rising sea level, coastal flooding, saline incursion and erosion.

With most of our customers located in coastal or estuarine areas these risks could have a major impact and threaten some of our largest cities like Exeter and Plymouth.

Coastal erosion and flooding pose a direct threat to our assets and can lead to damage or temporarily disrupt our operations causing interruptions to our service. Rising sea levels also increase the extent of the saline intrusion zone, causing increased salinity at river intakes which can make them unusable, reduce process performance or cause accelerated asset deterioration.

Since our last adaptation report we have **undertaken comprehensive coastal flood inundation and erosion modelling** encompassing risks to 2050 on our whole asset base across South West Water, Bournemouth Water and Bristol Water regions. **This has informed our Drainage and Wastewater Management Plan 2025-2050** which modelled the future impact of climate change on our asset resilience. From this we then work with local Risk Management Authorities as part of the development of Shoreline Management Plans, focusing our efforts on areas facing the highest risk.

We will continue to anticipate and use our population forecast data to inform our region's adaptation plans. By closely monitoring these forecasts and adjusting our actions accordingly, we can ensure that we address the evolving needs of our growing population and customer base to address impacts from sea level rise and coastal flooding/erosion.

Over the next few years, we will work to maintain the current level of risk and **continue our engagement with external stakeholders and other Risk Management Authorities** including the Regional Flood and Coastal Committee (SWRFCC) and the South West Coastal Group (SWCG).

The Lower Otter Restoration Project

This major project within the Lower Otter Estuary to realign the estuary where the River Otter meets the sea near Budleigh Salterton in East Devon. The project is being delivered because the existing 200-year-old sea defences are now starting to fail and are becoming increasingly hard to maintain.

The project is working with local people and partner organisations to adapt and improve the downstream part of the River Otter, its estuary and its immediate surroundings for future generations by working with nature, rather than against it, in the face of continuing climate change.

The Shoreline Management Policy option of Managed Realignment involves an acceptance that we can't stop climate change but seeks to **work with nature and pre-empt inevitable change**. With managed realignment the shoreline and associated habitats are allowed to move naturally, but the process is managed to secure the best possible benefits for people and wildlife.

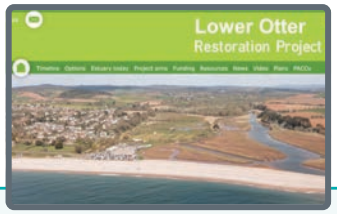
Our adaptation progress

Committed to ongoing partnership and multi-agency coastal risk management and adaptation, we continue to engage with stakeholders, such as the Environment Agency, Local Authorities, and other water and wastewater companies, to collectively develop and implement adaptation actions that safeguard our infrastructure and maintain service reliability, for example:

- Torbay Council to install flood defences in Paignton and Preston using funding from the Environment Agency and the Government's Future High Streets Fund.
- Coastal Advisory Groups to develop Coastal Resilience Strategies and Shoreline Management Plans such as the South Devon and Dorset Coastal Authorities Group, Cornwall County Council in the development of the Mounts Bay strategy and the Isles of Scilly Climate Impacts Group.

Delivering our comprehensive coastal flood inundation and erosion modelling to identify our highest risk assets – Our comprehensive climate change risk modelling covers our whole asset base across South West Water, Bournemouth Water and Bristol Water regions. It has identified coastal locations in need of investment over the next 25 years outlined in our **Drainage and Wastewater Management Plan (2025-2050)**. **A coastal flood inundation risk assessment** was completed based on the latest UK Climate Projections (UKCP18). We also completed a **hazard assessment of coastal erosion susceptibility** to better understand the risk posed to our assets. This combined geological data and the National Coastal Erosion Mapping (NCERM) data from the Environment Agency (2018) to assess vulnerability to erosion out to 2050.

We have identified 35 sites at high risk of coastal flooding and erosion to 2050 which will be supported under our Operational Response Recovery Plans. We will continue to collaborate with other Local Risk Management Authorities, including the Environment Agency, to develop Shoreline Management Plans to work together and manage the risks at these sites.



The Lower Otter Restoration Project

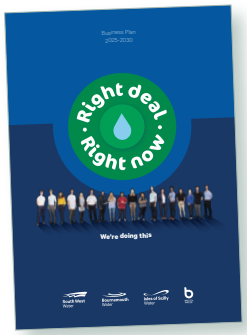
When we last reported we outlined the challenges faced by the Lower Otter Valley from sea level rise and coastal erosion. We have continued to support the Environment Agency, partner organisations, local communities and stakeholders working together to tackle these challenges.

The Environment Agency has recently completed a managed realignment project to reconnect the river to the floodplain and restore natural processes and promote natural catchment adaptation to sea level rise whilst providing a better place for wildlife and people. Existing river embankments have been removed to allow inundation creating approximately 55 hectares of inter-tidal environment but also impacting several of our assets including a combined sewer overflow pipeline, rising main and three groundwater boreholes.

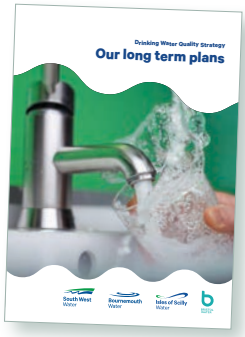
We have been working closely with the Environment Agency to develop solutions to ensure the protection of our existing assets to increase resilience, reduce the risk of an environmental incident and maintain essential groundwater resources for our region.

Our commitment to adaptation

Business Plan 2025-2030



Find out more **here**



Long-Term Drinking Water Quality Strategy 2025 - 2050

Find out more **here**

Climate change adaptation is a continual, evolving and iterative process, we regularly review our adaptation progress, and like we did during the 2022 drought, we learn from the challenges we've faced to inform our future adaptation actions.

Our Business Plan 2025-2030 outlines our most ambitious water resources and water quality plans for the Greater South West in decades. This is accompanied by our pledge to fix storm overflows at beaches and eradicate pollutions, whilst delivering on our Net Zero 2030 Promise to The Planet. Our robust balance sheet underpins our ambition.

This plan will create over 2,000 jobs in our communities, alongside our plan for 1,000 apprenticeships and graduates. At the same time, we will do more with less, as we drive efficiency and innovation, with a nature first principle, keeping unwelcome bill increases as low as possible.

We have tested our plan with thousands of customers, and they are confident this is the right deal for right now. These immediate investment plans align with our **Long-Term Delivery Strategy** which set outs our priorities to continue to deliver adaptation and resilience to climate change, amongst our other future pressures.

Central to our plans is our commitment to work together with customers, partners, regulators, government, and major stakeholders to support our region to adapt to climate change and improve resilience to future uncertainties and pressures.

What we will deliver and how much it will cost

Below we set out a schematic summary of what our strategy will deliver by 2050.

2030			2050
All water quality samples meeting all stringent tests **Customers enjoy the way water looks and tastes**	• Zero supply interruptions longer than 12 hours	• All treatment works upgraded and able to address impacts of climate change in source waters	• Remove and replace all lead pipes
Resource availability increased **Leakage 9% on our network, 4% on customer pipes**	• New strategic reservoir at Cheddar in operation • 100% properties smart metered	• 2039 Risk of severe restrictions in a drought reduced to 1 in 500 year risk • New strategic resources – Mendip quarry and Poole Harbour	• 50% leakage reduction and 25% water consumption reduction
Storm overflows at beaches addressed	• Zero ecological harm from overflow discharges	• 2040 Programme of tackling all storm overflows complete – decade ahead of target	• Sustainable drainage in all new properties and retrofitting existing homes underway • Screens fitted on all overflows
125,000 hectares of habitat created or restored **Net zero target for our operational carbon emissions**	• Reduced nutrients in wastewater discharges by 80% • Convert all wastewater emissions to biogas • Renewable energy • 1,000 smart ponds to attenuate flood	• 2045 Race to Zero commitment to reduce greenhouse gas emissions (GHG) across our entire value chain	• 375,000 hectares of habitat created or restored • Seagrass restoration along our 860 miles of coastline
Zero water poverty **Sector leading customer service** **100% customer issues solved first time**	• Seamless, connected experiences • Across all channels • AI and machine learning to tailor customer services		• Maintain zero customers in water poverty • 100% customer and community satisfaction with our services

Appendix A: Case studies

1.
Challenges of the 2022 drought and lessons learned

We are proud of our response during the challenges we faced in 2022 to ensure that supplies were continuous to our communities and our improved resilience – but we didn't do this alone, our customers and visitors all played their part, working with us, to help our region through the challenge. Our lessons learned from recent extreme weather events like the 2022 drought have shaped our strategic adaptation and investment plans.

The challenge

2022 saw some of the hottest, driest weather on record for our region with the 4th driest summer in 130 years, heatwaves and low levels of soil moisture, driving a record demand for water. The environment suffered and we worked hard to release water from our reservoirs to support river health whilst continuing to meet an 8% higher than expected increase in demand from our customers.

This put our water resources under intense pressure with one of our five strategic reservoirs at Colliford dropping to 15% by October 2022, triggering our drought plan with hosepipe restrictions for the first time in over 25 years.

This drought shows what could be commonplace in the future – as the likelihood of hotter, drier summers and more heatwaves increases with climate change, impacting on the availability of water resources and our access to ample clean drinking water.

Our climate change adaptation

We responded rapidly coordinating our response across our operations to improve both water resilience and water efficiency enabling us to keep the taps running for our customers and protect the environment.

We rapidly adapted and invested to improve water resilience by:

- Working quickly to re-route and manage the resources situation across our regions.
- Bringing new water sources on-line such as the proactive acquisition of Hawks Tor in March 2022, coming online a few months later to provide additional storage, River Lyd pumping scheme and a new water treatment works at Porth Rialton.
- Accelerating investment in construction of our Blackpool Pit scheme and a new South Cornwall desalination plant.
- Since the drought event in 2022 additional investment has delivered an increase in water resources by circa 34% in Cornwall and 30% in Devon.
- Our teams worked around the clock to ensure customers received a continuous supply of clean, safe drinking water. Both South West Water and Bristol Water met the Unplanned Outage performance commitment level in 2023-24. This performance commitment incentivises companies to maintain and improve their above-ground treatment works assets to ensure supply for customers. Unplanned outages are temporary losses of water production from unforeseen or unavoidable events that are reported as a percentage of a company's peak week capacity.

In Bristol the exceptional pressure placed on our treatment works resulted in an unplanned outage towards the end of the year, so we are investing in significant improvements. We are managing to deliver these improvements without any further impacts on customers.

We also delivered innovative water efficiency measures working together with our customers:

- Meeting a commitment to reduce our own water use as a company we reduced the use of potable water in our wastewater treatment processes. We also made a step change in investment to tackle leakage, fixing on average, over 2,000 leaks per month in Cornwall and Devon combined.
- We led the way with our first in the sector incentive-based 'Stop the Drop' water efficiency scheme (see details overleaf).
- We drove water efficiency messaging to our household customers, businesses, tourists and visitors in our region under our 'Save Every Drop' customer engagement campaign. Messages were supported with free water efficiency devices including shower heads and water butts, free home water audits and free customer supply pipe leakage repairs (to date we have given away over 240,000 free water efficiency devices).

Our next steps...

We are confident that the lessons we learned from the 2022 drought have improved the robustness of our investment plans, for the next five years and beyond. We saw the need to secure a more diversified portfolio of water resources and increase our efforts on the demand side and with water efficiency initiatives.

- We are increasing supply side investments with our programme to reinvest c. £125 million to diversify water resources across the region including repurposing more disused quarries to store more water, new pipelines to move 60% more water between our supply zones, and developing first of their kind desalination and water reuse schemes.
- Our merger with Bristol Water, driven by synergies and strategic water resources benefits, and our active progression of the need for the new Cheddar 2 reservoir, will bring benefits to the wider South West region, including Wessex.
- By 2050 94% of households and 98% of non-households will be metered. Our comprehensive smart metering programme will enable us to pinpoint water wastage. We are currently targeting increasing metering levels across our regions to over 90% in Devon, Cornwall and Bournemouth and over 80% in Bristol. This is a first step understanding of usage drivers as well as supporting customers to actively manage their water budgets.
- We need to do all we can to save water. We have reduced leakage levels from our networks, and we are challenging ourselves to reduce leakage further by 18% in Devon, Cornwall and Bournemouth and 14% in Bristol by 2030.

Our adaptation progress: Stop the Drop

In November 2022 South West Water launched a first of its kind incentive scheme asking customers to minimise demand and support the recharge of their local reservoir over the winter period.

If customers helped Colliford Reservoir to reach 30% capacity (from 15%) by 31st December 2022, each household would be eligible for a bill credit of £30, equating to a total payment of c.£7.6m across 252,000 household customers.

Social media, radio and even a door knocking campaign were used to engage communities with positive coverage through local TV, radio and online radio. **The extensive campaign resulted in over 7 million digital impressions. Radio reached an additional 5 million customers and a further 6 million were reached through out of home advertising ensuring coverage to non-digital users.**

The call for action was clear – **small changes in behaviour can have a large-scale community impact.**

- Complemented by our **'Save Every Drop'** campaign offering **free water-saving devices and free leakage repairs**, the campaign helped us to restore water storage levels in Colliford Reservoir and provide resilience for the following year.
- Customers responded positively and our data shows sustained behavioural change in the Colliford area with the lowest weekly household water use since before Covid 2019.
- We gained key learnings and information around the benefit of targeting and tailoring our approach. Campaign, incentive, customer and tariff level data and learnings will help to inform **progressive charging design, trials and innovation.**

We also launched a longer campaign **working with businesses** offering free water audits, water saving devices and leak repair with a £30 incentive to business customers who take up any interventions. Our innovation fund was also launched to support water saving initiatives e.g. rainwater harvesting. **In 2023/24 alone we have funded 32 projects delivering an estimated saving of 449,098 litres per day.**

2.
Water is Precious: working together to save water

Building on the lessons of our 'Stop the Drop' campaign during the challenging 2022 drought we have been trialling tariffs and working with our customers and communities to promote water efficiency and behavioural change.

The challenge

Water is a finite resource and is both costly and energy-intensive to collect, treat and distribute, especially in a hilly and dispersed region such as ours. In recent years, high summer temperatures, high rates of tourism and increased working from home following the Covid-19 pandemic have led to increased household demand for water.

Under all climate change scenarios summers are predicted to get hotter and as population in our region grows and our tourism economy thrives, we are faced with an increasing challenge.

By 2050 England and Wales will need more than 4 billion extra litres of water available per day through the public water supply.

Our climate change adaptation

The less water we use in our region, the more we can keep taps running, rivers and streams flowing and nature thriving. We are committed to reducing our own water use as a company and are driving down leakage but making our communities as water efficient as possible is important too.

The combined efforts of our communities during the 2022 Drought and our incentive-based behavioural campaign 'Stop the Drop' showed us that customers' ordinary steps to save every drop of water can make a significant difference to how much water remains available in the South West.

We are now arming our customers with more knowledge so that we can work together to manage water pressures in our region such as our '**Latest Situation**' dashboard that gives real-time live updates of reservoir levels:

Our engagement with customers and stakeholders has told us that they feel that customers who use less should pay less for their water. **We have listened and in response have run a tariff trial in Cornwall to explore fairer charging structures.**

The trial ran from February to April this year purposefully ending before the summer period to allow us to understand the impact of a water efficiency incentive, versus a seasonal tariff which would have different charges for winter and summer use.

The trial was successful and the Cornish community reduced water usage by 5% so as a reward they will receive a £10 credit on their next available bill.

Customers also tell us that they feel they are paying a premium for the high peak summer demand we experience when visitors come into the area so we are currently running a seasonal tariff trial.

We also continue to invest in our successful and long-running programmes such as the **'Water-saving community fund' which this year has funded 47 projects with a total investment from us of over £73,000 and saving 14 million litres of water.**

3.
Our power resilience

Our clean and wastewater systems must be resilient to power outages, and we work all year round to ensure we're ready for all kinds of severe weather impacts.

We are working closely with Defra, Water UK and other water companies to understand how national and regional power outages will impact our services, putting clear deliverable plans in place to minimise disruption to customers and protect vulnerable customers.

The challenge

As extreme weather events become more frequent, we need to manage our systems and maintain services to be resilient to both direct impacts to our operations, and indirect impacts. While we can ensure that our assets are protected to meet our levels of service, we are also reliant on external infrastructure to deliver our services. These **interdependent risks can result in cascading impacts** which create further failures – such as when power outages disrupt pumping stations leading to multiple failures across networks.

Our climate change adaptation

Our clean and wastewater systems must be resilient to power outages, and we work all year round to ensure we're ready for all kinds of severe weather impacts. This includes:

- Collaborating with industry groups and other stakeholders such as Local Resilience Forums (LRFs), the National Energy System Operator (NESO) and local Distribution Network Operators (DNOs), to understand our collective resilience and anything we may need to manage together to mitigate the impact of cascading risks.

This includes the creation of continuity and incident management plans which have been tested and exercised.

- Regular sector wide calls to discuss preparedness via **WaterUK Platinum Incident Management (PIM) and National Incident Management (NIM)** forums.
- Reviewing plans to make sure we can respond to power outages quickly and safely in the event of a power cut.
- Ahead of the main storm season we evaluate our operational assets and undertake winter preparedness activities to make the network more resilient.
- Daily review of weather forecasts based on multiple weather prediction models (short and medium term) and initiate preparations if necessary, such as putting temporary generators and flood defences on standby and reviewing workforce plans to ensure effective staffing, both in the field and in our control rooms.
- We use a range of self-generated renewable energy at our sites and 28% of our sludge (a by-product of our operations) to power our own operations reducing our reliance on the national energy grid.

In the event of a major power outage or incident:

- We ensure we have additional colleagues on standby across all parts of our business, whether that's operational and engineering staff to respond to operational issues, contact centre staff to help customers with enquiries, or colleagues ready to provide IT or other functional support.
- We divert teams and resources away from planned non-essential work in case they're needed to assist.

Our next steps...

To improve our resilience in the longer-term we are investing in a range of self-generated renewable energy technologies (solar, hydro, wind, sludge to biogas) to ensure we are resilient to a range of weather conditions and reduce volatility of supply.

3.
Our power resilience continued

We are working closely with Defra, Water UK and other and other stakeholders such as Local Resilience Forums (LRFs), the National Energy System Operator (NESO) and local Distribution Network Operators (DNOs) to understand how national and regional power outages will impact our services, putting clear deliverable plans in place to minimise disruption to customers and protect vulnerable customers.

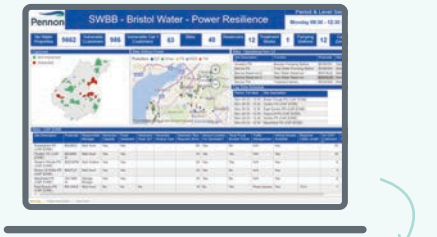
Climate change has already altered the risk of certain types of extreme weather in the UK, with evidence suggesting that the frequency and intensity of storms is likely to increase in the future. The UK has experienced several severe storms over the last few years, including Storm Eunice in 2022, which brought gusts in excess of 100mph. The impacts of the storm across the UK included 3 fatalities, school closures, power cuts and nationwide cancellations of transport services.

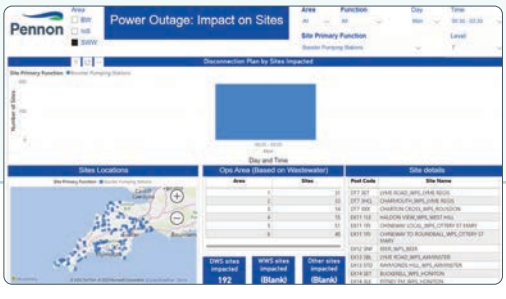
This is noted with the **UK Governments National Risk Register (2023)** which identifies the risks associated with a National Electricity Transmission System (NETS) or local regional event would result in secondary impacts across critical utilities networks including water and sewerage.

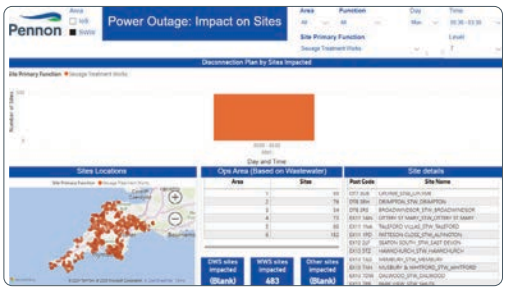
Our Power Resilience Dashboard

Power outages, both rolling and national, have been a top risk for Defra for some years, heightened in early 2022 due to the Ukraine war and dwindling energy reserves. We've been working in collaboration with Defra, Water UK and other water companies to develop a power resilience visualisation tool. Defra expected every water company to have power outage visualisation tools ready to use and embedded in their planning in advance of winter 2024.

The tool maps the impact of national grid power cut scenarios on our clean and wastewater sites. It considers our operational response plan to help us understand the impact for customers and how to prioritise our response based on risk.







4.
Working with nature to tackle climate change

We understand the importance of working with nature to help us tackle our most challenging climate change risks and have been working with partner organisations, farmers and landowners since 2006 to deliver our innovative and multi award-winning land restoration programme, improving the quality of water at source.

We are now going further and working to deliver nature-based solutions to flood risk and water availability, helping our catchments adapt to our other priority climate change risks that pressure our operations and services. These all deliver wider benefits for the environment and communities in our region.

The challenge

Siloed solutions to water management are important but we know that an integrated systems approach is needed to build resilience through nature-based solutions while slowing further warming, supporting biodiversity and providing benefits to biodiversity and our customers.

We've also found that collaborative working with partner organisations has provided a diverse pool of expertise and experience to draw on and more can be achieved when we work together.

This drought shows what could be commonplace in the future – as the likelihood of hotter, drier summers and more heatwaves increases with climate change, impacting on the availability of water resources and our access to ample clean drinking water.

Our climate change adaptation

1. Tacking water quality risks

Farmyard manure, artificial fertilisers, herbicides and pesticides used on the land can end up in rivers, wreaking havoc on habitats and the quality of the water. Poor raw water quality means more intensive and expensive treatment is required to get it to drinking water standards.

Our multi-award-winning catchment-management scheme, Upstream Thinking, applies natural solutions to reduce this agricultural impact on biodiversity and water quality. A similar programme at Bristol Water also engages farmers and landowners to offer free advice and support to access capital grants for on-farm interventions aimed at improving water quality.

We have continued to support farmers to undertake activities such as installing waterside fencing, building ponds, improving farm tracks, increasing slurry storage and planting trees and buffer strips to catch and filter water. We have:

- **Exceeded our 120,000 hectares target delivering close to 130,000 hectares of catchment management.**
- Accelerated our efforts further with our **Green Recovery programme initiated in 2022 delivering over 10,500 hectares of further catchment management**.
- Worked with over **1,100 farms since 2020 planting circa 250,000 trees** across the South West.
- Farmers have seen many benefits including more nutrients left in the soil due to less run-off, healthier pastures to graze their animals in, and sponsored upgrades to their farms like fencing and silage storage.

We've already seen multiple wider benefits including flood alleviation and carbon sequestration. It has also formed a key part of the approach to protecting and enhancing the region's natural capital, by providing restored habitats for wildlife and preserving the quality of existing ecosystems.

2. Tackling flood risk

Natural Catchment Management Plans

South West Water is leading a pilot programme to develop shared understanding and action plans with local partners and communities to tackle challenges in 15 natural catchments. Layers of local evidence on biodiversity, wastewater, topography and residential development are gathered to diagnose local issues and determine solutions in partnership with the local community and landowners.

For the Trevaunance Cove catchment in St Agnes in Cornwall we have fed this information into an innovative digital twin which is providing a successful tool to engage local communities and residents.

Taking a 'Green First' approach we are working with the community to identify local opportunities to use natural processes and nature-based solutions.

4.
Working with nature to tackle climate change continued

Restoring peatland

Our teams have also undertaken extensive work on Exmoor National Park in restoring the natural peatland. This allows the land to hold water, so less runs off into the rivers (which has a negative impact on water quality and flood risk). Managed well peat also sequestrates huge amounts of carbon from the atmosphere which benefits the Net Zero challenge.

Slowing the flow of water

With the help of Devon Wildlife Trust, we supported work with the National Trust on the Arlington Estate and surrounding farmland. Together, we constructed over 30 leaky dams and other natural flood management measures on one of the in-house farms, using timber sourced from surrounding woodland. This slows the flow of water through the environment and helps prevent flooding and can reduce the amount of run-off discolouring and polluting the rivers.

Tackling water scarcity risks – Water Net Gain

Water Net Gain is an Ofwat funded project led by South West Water and Westcountry Rivers Trust. We are working with multiple stakeholders and partners to implement a catchment-scale approach whereby farmers are paid to store water on their land.

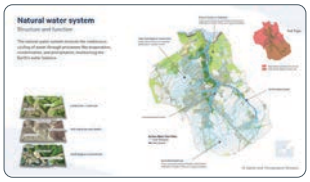
Restoring natural sponges, like healthy soils, woodlands and wetlands, can passively contribute water to summer base flows, but the creation of additional, remotely monitored, smart ponds and lakes, can be used to actively release flows during droughts. These ecologically connected network of smart ponds offer deployable and tradable flow to build drought resilience, dilute summer pollution and provide a net gain for river water.

Task Force on Nature-related Financial Disclosures (TFND)

This is our **third year of voluntarily reporting against the TNFD framework**. This year we are taking the opportunity to **integrate TNFD into our Task Force on Climate-related Financial Disclosures (TCFD)**, recognising the substantial overlap and synergies for our business between action on climate change and the nature emergency. At the same time, we also recognise some trade-offs in meeting our goals around resilience, Net Zero, and nature. We acknowledge there is further work to do on the recommended TNFD disclosures, and we are continuing to monitor the inclusion on nature-risks in the UK sustainability disclosure requirements.

For more information, please see our **TCFD** report.

4.
Working with nature to tackle climate change continued



Workshops in Devon and Cornwall

Appendix B. Progress on performance commitments

Here we present a summary of the progress made on our climate adaptation related performance commitments for the years 2021, 2022 and 2023/2024.

Strategic priority and risk theme	Performance metric	Company	2021/22 Actual	2022/23 Actual	2023/24 Actual
Water quality and resilience **Risk theme** • Risks to security of public water supply • Risks to water treatment from reduced water quality • Risks of service interruptions from extreme rainfall • Risks from sea level rise	**Leakage** (Megalitres per day (Ml/d))	SWB	116.6	112.9	107.1
		BRL	36	36.9	38.2
	Per Capita Consumption (PCC) (Litres/person/day (l/p/d))	SWB	142.1	144.9	147.9
		BRL	154.1	154.8	148.8
	Taste, smell and colour contacts (Number of contacts per 1,000 population)	SWB	1.55	1.51	1.66
	Customer contacts about water quality – appearance (Number of contacts per 1,000 population)	BRL	1.11	0.94	0.59
	Water quality compliance (Compliance Risk Index (CRI) score)	SWB	3.86	2.4	3.02
		BRL	4.19	4.6	7.05
	Water supply interruptions ((HH:MM:SS) per property per year)	SWB	00:13:40	00:08:42	00:09:16
		BRL	00:02:31	00:08:03	00:09:24
	Mains repairs (Number per 1,000km)	SWB	111.4	141.1	134.6
		BRL	106.4	170.8	124.8
	Unplanned outages (% – peak week production capacity)	SWB	0.96	0.7	1.15
		BRL	1.74	6.21	2.06
	Pollution incidents – water (Category 1-3, number)	SWB	8	28	29
Flood risk, storm overflows and pollutions **Risk theme** • Risks to sewer flooding from extreme rainfall • Risks of service interruptions from extreme rainfall • Risks from sea level rise	**Storm overflows** (Average number of spills per storm overflow)	SWB	38.9	28.5	43.4
	Bathing water quality (% of beaches meeting bathing water classification)	SWB	100	100	100
	Total pollution incidents (Category 1-3, per 10,000km of sewer network)	SWB	86.58	61.93	111.24
	Internal sewer flooding (Number per 10,000 sewer connections)	SWB	0.76	0.63	0.74
	External sewer flooding (Number per 10,000 sewer connections)	SWB	1407	1816	1578
	Sewer collapses (Number per 1,000km of sewer network)	SWB	6.75	9.93	13.67
	Biodiversity enhancement (hectares)	SWB	95 453	111 515	126 733
	Biodiversity index	BRL	17 678	17 693	17 707

Note: Leakage and PCC figures are based on a three-year rolling average

South West Water

Bournemouth Water

Isles of Scilly Water

Bristol Water

ses WATER