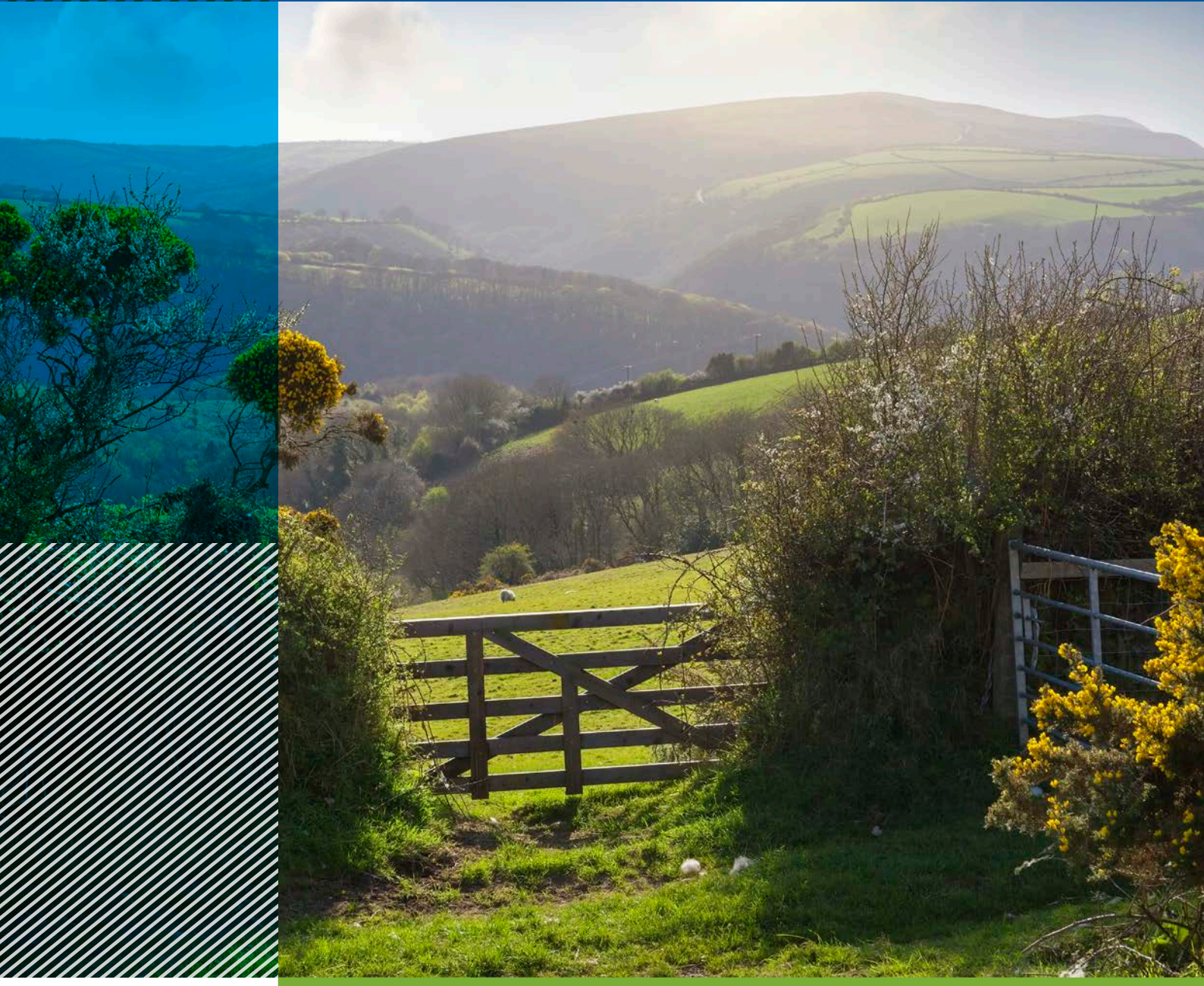


# Environment Plan to 2050



## Contents

Defra 25 Year Environment Plan	4
Clean and plentiful water	5
Thriving plants and wildlife	8
Reducing the risks of harm from environmental hazards	11
Using resources from nature more sustainably and efficiently	14
Enhancing beauty, heritage and engagement with the natural environment	17
Mitigating and adapting to climate change	20
Minimising waste	23
Managing exposure to chemicals	26
Enhancing biosecurity	29
Clean air	32
Next Steps	34

For more information click here to access our website







# Environment Plan to 2050

## **A healthy environment is vital for the long-term sustainability of the services we provide to customers.**

From the water we use to supply customers with drinking water to the watercourses that receive the treated wastewater from customers, the condition of the environment underpins everything we do.

We recognise the inherent importance of a healthy environment and recognising our stewardship responsibilities **our long-term aim is to leave the environment in a better state than we found it.**

This document sets out how the activities in our company business plan deliver this, and in doing so deliver a more resilient and better quality service to our customers.

This plan details how we will work with communities and businesses and sets out key targets within our plan that will lead to a better environment. We also refer to our work on natural capital and catchment-based planning for both water and wastewater services which we see as pivotal if the sector is to move away from traditional end-of-pipe solutions to ones that deliver multiple benefits to customers and the environment.

2019 is planned to be the Year of Green Action. Drawing on our experience supporting the 2018 World's Ocean Day in Bude we are already preparing our programme of engagement activities with other organisations in our region to bring environmental improvements to life. In turn, this programme will be the foundation for bringing the Government's 25 Year Environment Plan into action in the South West.

Whilst improvements to the environment are embedded throughout our company business plan, we have structured this document in line with the targets in the 25 Year Environment Plan.



For more information, see

**[A Green Future: Our 25 Year Plan to Improve the Environment](#)**

# Defra 25 Year Environment Plan

**In January 2018 the government published its 25 Year Environment Plan. In doing so it set a clear direction of travel for the UK to deliver a better environment for future generations.**

The Plan set out 10 environmental goals covering all aspects of the environment – from land, sea, air and water – but also the indirect impacts from areas such as waste management. The Plan then set out the six supporting policies which will help deliver the goals.

From reducing carbon emissions and building resilience against the extreme weather associated with climate change, to leading international action to protect endangered species, the Plan set out the need for the UK as an international champion for the protection of our planet.

Our work on the environment is wide ranging and touches each part of the 25 Year Environment Plan. Whilst our interaction with the water environment is well understood, the work we do in other areas of environmental improvement is often not as visible.

The remainder of this report sets out our environmental ambitions and the activity we are doing in the next five years to deliver against the 25 Year Environment Plan. This is presented under each of the 25 Year Environment goals to help give transparency on where and how the activities we undertake as a business day in day out deliver not only what our customers want but also the overall government objectives.

## Defra 25-year goals

### We will achieve:

- Clean air
- Clean and plentiful water
- Thriving plants and wildlife
- Reduced risk of harm from environmental hazards such as flooding and drought
- Using resources from nature more sustainably and efficiently
- Enhanced beauty, heritage and engagement with the natural environment

### We will manage pressures on the environment by:

- Mitigating and adapting to climate change
- Minimising waste
- Managing exposure to chemicals
- Enhancing biosecurity



## Defra policies will focus on

- Using and managing land sustainably
- Recovering nature and enhancing the beauty of landscapes
- Connecting people with the environment to improve health and wellbeing
- Increasing resource efficiency, and reducing pollution and waste
- Securing clean, productive and biologically diverse seas and oceans
- Protecting and improving the global environment

# Clean and plentiful water

## Our customers place a safe and reliable water supply as their number one priority.

As might be expected our plan focuses heavily on achieving this aim through a twin-track approach of both reducing the demand for water from the environment and improving the quality of the water in the environment.

Our plan has an ambitious programme for leakage reduction and water efficiency. The outcome is reduced stress on the environment despite increased demand for water from population growth and the impacts of climate change.

Since 2003 we have invested heavily in catchment-based solutions. We continue this trend in our 2020-25 plan with increased emphasis on catchment-based solutions to improve raw water quality by reducing pollution and sediment loads from land use runoff and soil degradation. Our catchment based interventions are also multi-benefit, helping slow the flow of water from upland areas – in-turn reducing flood risk and increasing water availability.

Our plans go further and follow the full water cycle. During 2020-2025 will also be using catchment schemes to benefit our wastewater services and the environmental outcomes by targeting nutrient reductions. We have also set ourselves the aim of zero harmful pollution events as well as industry leading performance on the number of minor pollution events by 2025. This will ensure we protect the environment when we collect, treat and return customers' wastewater back to the environment. We have also set a target of 100% bathing water compliance in terms of the risk from our assets.

Key features of our plan are:

- A 15% reduction in leakage by 2025, increasing to 25% by 2045
- Extending the use of community-based water efficiency schemes and supporting water efficiency in social housing. This gives a combined benefit of not just a lower water footprint on the environment, but also lower bills to customers, some of whom will be the most vulnerable in the region

- By 2025 we will have increased meter penetration to 85% and reduced per capita consumption by 11l/h/d to give leading industry performance, including increased smart meter coverage with low flow alarms and automated reading to assist in demand management, fair and accurate billing and better customer-side leakage detection. We continue this trend long term with greater than 90% meter penetration and per capita consumption below at least 120l/h/d by 2045
- Catchment management for over 80% of the catchments within which we operate, to improve raw water quality and restore landscapes
- A new operating regime in the Otter Valley to reduce abstraction during times of dry weather to further protect the environment through an Abstraction Incentive Mechanism pilot study working closely with the EA and our catchment partners
- Catchment management for wastewater through our Downstream Thinking programme and use of solutions such as Sustainable Urban Drainage (SUDS) to reduce wastewater flows into the environment. There are also health and wellbeing benefits to improved urban landscapes where softer, green drainage solutions can be used
- Stretching targets for zero serious pollution events, dramatic reductions in minor pollution events and 100% compliance for our wastewater discharges
- Our largest environmental improvement plan for 15 years with key investments to protect bathing and shellfish waters for our customers and visitors, deliver better quality rivers and better management of flows within our wastewater systems. This investment programme will also bring benefits for the regional economy
- Delivery of Drainage and Wastewater Management Plans for integrated and holistic long term planning for both sewerage and wastewater treatment.

The outcome from our plan, is that the range of activities we undertake will reduce the water we abstract from the environment by nearly 5% by 2025 alone compared to what would otherwise occur. Our stretching performance improvements on wastewater will see a step change in our contribution to clean and plentiful water for the South West and will help support the economy as a whole.

## Clean and plentiful water cont'd

Summary of activities: Clean and plentiful water												
Government targets	Water						Environment		Wastewater			Other
	15% leakage reduction by 2025	25% leakage reduction by 2045	85% meter penetration by 2025	>90% meter penetration by 2045	Water efficiency programme	Otter Valley AIM	Upstream Thinking	Peatland restoration	Zero serious pollution incidents / reduction in minor incidents / 100% compliance	Downstream Thinking (SUDS) and DWMP Plans	Coastal and river improvements	
Reducing the damaging abstraction of water from rivers and groundwater	●	●	○	○	●	●	○					
Reaching or exceeding objectives for rivers, lakes, coastal and ground waters that are specially protected	○	○	○	○			●	●	●	○	●	
Supporting OFWAT's ambitions on leakage with water companies expected to reduce leakage by at least an average of 15% by 2025	●	●	●	●								
Minimising by 2030 the harmful bacteria in our designated bathing waters and continuing to improve the cleanliness of our waters and shellfish							●		●	●	●	

○ Contributes to Government target

● Directly delivers Government target



## Case Study

### Behavioural Economics

**Using behavioural economics to help us connect with our customers and motivate them to save water, money and time.**

#### **Influencing customers to save money and water through behavioural economics**

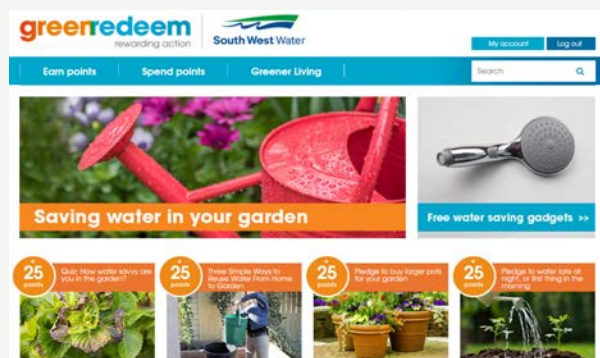
There are many areas where customers could be helped to save water – this may be purely by providing them with the information about how much they consume, or by providing incentives for customers to actually use less. We have been working with two partner agencies, Green Redeem and Advizzo, to conduct pilots across our region with our customers.



#### **Green Redeem**

Green Redeem is an incentive scheme, through which people can earn points for pledging to undertake activities that will reduce their water usage.

Customers can access the scheme online and via a mobile phone, where they can see the points earned, the money they have saved or compare their consumption to others in their area. The variety of information and the incentives are designed to engage a wide range of customers. The reward points can be redeemed with partner companies, donated to the overall community score or used to enter a prize draw. In effect, water consumption will be reduced through incentives and information provision including volume/cost and comparative data.



#### **Advizzo**

Advizzo uses company data to help guide customers towards a more efficient use of water through personalised engagement via a number of routes (e-mail, apps etc.).

The company specialises in using big data and behavioural science, and has reported reductions in usage of between 4% and 7%. The system works by taking information, tailoring it to individual customers and then providing it to them in a digestible format, with easy navigation hints and tips for water saving.

Customers can view their usage and, crucially, see how they compare with other people in their area or with similar profiles. This use of descriptive and injunctive norms has been proven to incentivise customers to change behaviours to bring them back to the peer group average.

If the customer decides they would like to reduce their consumption there are tools and tips they can access on the Advizzo platforms.

There is an additional benefit for more vulnerable customers, as the information provided to South West Water can be used to ensure that customers eligible for a special tariff have been placed on it.



# Thriving plants and wildlife

## We want to achieve an increasing and resilient network of land, water and sea that is richer in plants and wildlife.

Our customers place a high value on the environment and support improvements in biodiversity. The regional economy in our area is dominated by tourism with people coming to the area because of the fact the environment is high quality. Agriculture is also an important regional activity along with food and food processing industries for export. A biodiverse landscape leads to improved outcomes for all of the key parts of the economy in our operating region.

We have two National Parks all or partly in our area and a large number of AONBs. The peatland in these areas is important not only for slowing the flow of water in catchments, but also for developing habitats for plants and wildlife to thrive. We own and manage nearly 400,000 hectares of land and water bodies in the South West. Nearly 2 million visitors a year visit our sites and it is important that we ensure they remain rich habitats now and in the future if we are to meet our long term aim.

There is potential for Plymouth Sound to be designated England's first marine national park, which enhances the marine cluster effect in the local area – boosting environmental outcomes and associated enterprises – driving synergistic economic and environmental benefits. We play a vital role in helping ensure there is a healthy marine environment and support greater protection of the seas around our coastline.

On land and in freshwater our plan:

- Restores nearly 2,000ha of upland peat areas in Exmoor, Dartmoor and Bodmin moor that delivers multiple benefits to the water environment, plants and wildlife
- Achieves favourable status in all our Sites of Special Scientific Interest (SSSIs) areas
- Delivers catchment management in a further 50,000ha of land in our region; delivering more biodiverse and resilient landscapes compared to today
- Continues to proactively manage over 400,000ha of woodland on our sites for environmental and public benefit

- Sets out biodiversity net gain improvements at our operational sites with an annual performance scorecard to track performance
- Seeks to protect the native Shad in the River Tamar through river improvement programmes
- Sets a performance commitment of zero pollution events in biodiversity rich landscapes
- Extends our Downstream Thinking (SUDS) programme to develop non-end of pipe solutions for sewer flooding management, and in doing so increases opportunities for biodiversity net gain
- Works with wildlife and land management organisations (The National Trust, Areas of Outstanding Natural Beauty (AONB's), Woodland Trust, etc.) to help deliver match funding and environmental outcomes at a local and regional scale
- Improves and protects rivers for the Water Framework Directive and Habitats Directive with benefits for ecosystems through better water quality
- Delivers environmental investigations for rivers under the WFD and for SSSI's to inform future improvement and protection needs
- Delivery of an eight year plan for improving the environment on the River Tamar to support salmon stocks and continuing our support for the St Neot hatchery.
- Appointing the industry's first Invasive Non-Native Species ecologist specialising in biohazard risk transport

At sea, our plan:

- Protects shellfish waters and bathing waters and in turn helps reverse the loss of marine biodiversity
- Will deliver significant improvements for bathing water and shellfish water including through catchment solutions that will have both land and sea based benefits
- Investigates into shellfish waters and bathing waters to inform future needs and opportunities
- Investigates Marine Conservation Zones to inform future needs and opportunities.
- Supports the "Plastics free Plymouth" campaign seeking to eradicate single use plastics for the larger benefit of Plymouth Sound



## Thriving plants and wildlife cont'd

Through looking more broadly at how we deliver services and focusing on using more sustainable, non-engineering solutions our plan will deliver wider benefits than a more traditional asset driven plan would be able to achieve.

With the support of Exeter University and the team in the Natural Capital Committee we have been able to value these wider benefits for the first time.

In our catchment management work we see a natural capital benefit of over £40m and a 3:1 cost-benefit ratio for the investment made. This natural capital approach to delivering our service to customers means we see multiple benefits and deliver more widely against policy objectives and targets.

### Summary of activities: Thriving plants and wildlife

Government targets	Water							Wastewater			Other
	Environment										
	Upstream Thinking	Peatland restoration	Biodiversity performance commitment	Biodiversity Scorecard	Site management plans and SSSIs	Biosecurity installation	INNS control (Zebra Mussels, Crassulla)	Zero pollution incidents / reduction in minor incidents / 100% compliance	Downstream Thinking (SUDS)	SSSI, MCZ and Habitats Directive investigations and improvements	
Restoring 75% of our one million hectares of terrestrial and freshwater protected sites to favourable condition	○	●			●					●	
Creating or restoring 500,000 hectares of wildlife-rich habitat outside the protected site network	●	●		●	●			○	●	○	
Taking action to recover threatened, iconic or economically important species of animals, plants and fungi,			●			●	●	●		●	
Increasing woodland in England in line with our aspiration of 12% cover by 2060: this would involve planting 180,000 hectares by end of 2042	●			○	○				○		

○ Contributes to Government target

● Directly delivers Government target

## Thriving plants and wildlife cont'd

### Case Study

#### Ilfracombe and East Looe catchment projects

**Within the drainage catchment upstream of the bathing water there are multiple diffuse sources of pollution, in addition to the discharges from South West Water point sources.**

It is widely recognised that interventions at our assets alone will not deliver sufficient reduction in polluting load to achieve or maintain the targets. It may be possible to achieve the required reductions, or to deliver pollution load reduction more cost efficiently, by investing in measures that mitigate diffuse pollution sources.

Within the drainage catchment upstream of the bathing water there are multiple diffuse sources of pollution, in addition to the discharges from South West Water point sources. It is widely recognised that interventions at our assets alone will not deliver sufficient reduction in polluting load to achieve or maintain the targets. It may be possible to achieve the required reductions, or to deliver pollution load reduction more cost efficiently, by investing in measures that mitigate diffuse pollution sources. This can reduce or remove the need for more costly improvements at our assets and therefore save customers money.

Overseen by our independently chaired regional liaison group, our award winning “Upstream Thinking” strategy will be implementing catchment management measures in drainage catchments in order to deliver water quality or quantity/flow benefits at critical downstream locations. We will seek opportunities to include faecal bacteria reduction in catchment management measures. Examples of the type of work that could be delivered are providing new fencing to prevent cattle from accessing and fouling watercourses, or improving yard drainage in stock holding areas. Such measures provide multiple environmental benefits not just bacterial reductions and can reduce the scale of, or be more cost effective than, wastewater asset work.

The use of catchment measures provides less certainty about the scale and timing of the outcome, but there is growing support, including from the Environment Agency for this type of approach and the multiple benefits available. Where this type of measure can be proposed we will seek to promote and /or facilitate them in lieu of more traditional less sustainable hard engineering solutions, respecting the polluter pays principle, and only where that is in the best interests of our customers.



# Reducing the risks of harm from environmental hazards

## Our customers place a high priority on protecting homes from flooding and avoiding water demand restrictions during times of drought.

However, forecasts show that the population is set to grow by at least 15% in our region by 2045, at the same time as seeing wetter winters and drier summers from the impact of climate change. The combined effect of these two factors alone mean that without proper planning our region could face increased risk of harm to people, the environment and the economy from natural hazards, including flooding and drought.

Our aim is to reduce the risk of harm from these environmental hazards.

We plan to do this by:

- Reducing the demand for water through leakage reduction and water efficiency and a new operating regime in the River Otter catchment. This will mean our existing supplies will last longer during prolonged droughts
- Extending our work on drought analysis working with the Met Office and others to stress test the resilience of our system to future droughts so we can mitigate accordingly
- Working with the West Country Water Resources Group to develop regional water resource plans across different sectors

- Development of a possible water transfer from Bournemouth Water to Southern Water to reduce overall water stress in the South East
- Continuation of catchment management to slow the flow of water in upland areas and expanding this approach into the Bournemouth Water area
- Delivery of a new Drainage and Wastewater Management Plans setting out our strategy to manage future environmental risks
- Reducing the risk of sewer flooding in homes and the on ground outside by over 40% and 25% respectively\*
- Using of downstream thinking (SUDS) programme to work with developers to help reduce the flow of water into sewers and reduce risks of flooding
- Working with our long-term Local Resilience Forum partners, we are protecting of our water and wastewater assets from flooding to ensure continuity of service and/ or rapid recovery when there are extreme events
- Improving our information to customers and stakeholders on the long term risks in our region related to environmental hazards, in partnership with environmental and other organisations in our region (for example, through our SIM4NEXUS programme)
- Developing response recovery and protection plans for key wastewater and water assets including those at risk from fluvial flooding and coastal erosion
- Launching an operational improvement project for resilience.

\* Internal flooding properties reduced from 1955 to 1123 by 2025 (43%); external flooding reduced from 1.89/10,000 props to 1.37 (28%)



Photographs from left to right:

Flooding in Longbrook Street, Blanford Road and Lipson Vale, Plymouth



## Reducing the risks of harm from environmental hazards cont'd

Summary of activities: Reduction in risk from environmental hazards														
Government targets	Water						Environment		Wastewater			Other		
	15% leakage reduction by 2025	25% leakage reduction by 2045	85% meter penetration by 2025	>90% meter penetration by 2045	Water efficiency programme	Otter Valley AIM	West Country Water Resources Group	Bournemouth Water to Southern Water transfer	Upstream Thinking	Peatland restoration	DWMP plans		Downstream Thinking (SUDS)	Reduced internal and external sewer flooding
Making sure everyone is able to access the information they need to assess any risks to their lives and livelihoods, health and prosperity posed by flooding and coastal erosion							○		○		○			
Bringing the public, private and third sectors together to work with communities and individuals to reduce the risk of harm			○	○			●				○		●	
Making sure that decisions on land use, including development, reflect the level of current and future flood risk									●	●	●		○	
Ensuring interruptions to water supplies are minimised during prolonged dry weather and drought	●	●	●	●	●	●		●		●	●	●		●
Boosting the long-term resilience of our homes, businesses and infrastructure					●						●		●	

○ Contributes to Government target

● Directly delivers Government target

## Case Study

### Downstream Thinking Pilots: Exmouth

**Using the IUDM we developed in 2010-2015, we have worked collaboratively with Devon County Council, as the lead flooding Authority, to resolve surface water flooding, sewer flooding and pollution in the catchment.**

There has also been close liaison with East Devon District Council and the Environment Agency around the Tidal Defence Improvements work to ensure that any synergies and overlaps are identified.

Around 30 houses in Phillipps Avenue, Orchard Close, Green Close and Bassetts Gardens have had special water butts or underground tanks installed at their homes.

The project is now working with St Joseph's Catholic Primary School in Regents Gate, to install rainwater harvesting and other sustainable drainage solutions. This will allow the scheme to be progressed through to Delivery by 2019/20, subject to Planning Permission.



Photographs from top to bottom:

An underground rain water harvesting tank being installed in Exmouth

Local resident, Kirsty Jones washing clothes in rainwater

Local resident, Nathan Weston watering his plants with the rain water

# Using resources from nature more sustainably and efficiently

## Dealing with waste and pollution is a cost to the overall economy and, when there are problems, can lead to environmental and wildlife damage.

Over the next 25 years the UK will need to significantly reduce all forms of waste and use resources more sustainably and efficiently. This can also support sustainable growth through the smarter use of resources.

This thread of sustainable resource use flows through our plan. It focuses on both direct and indirect reductions in resource use. Our overall approach is to:

- Manage waste products responsibly (e.g. sludge, plastics)
- Reduce our carbon footprint
- Reduce actual and embedded water use
- Find ecologically sensitive ways of working (in areas such as catchment management) which can contribute to UK strategic goals around sustainable agriculture and food production
- Work alongside other agencies and organisations towards the shared goal of sustainable resource use including work with Local Nature Partnerships
- Collect, treat and return good quality wastewater to the environment

We plan to do this by:

- Recycling 100% of sludge to land as treated biosolids products
- Phasing out single use plastics and adopting circular resource use through recycling schemes
- Reducing GHG emissions by a further 15% by 2025 to 140ktCO<sub>2</sub>e and continuing on track to reduce to 80% of 2009 levels by 2050, in line with the Government Climate Change Act
- Reducing the overall water we abstract from the environment by nearly 5% by 2025 and 10% by 2045 through leakage and water efficiency
- Reducing the potable water we use at our Wastewater Treatment Works and increasing the use of treated wastewater for washing screens etc.

- Understanding, measuring and reducing embedded water use from our supply chain
- Proactive management of our woodlands
- Extending our catchment management programme by more than 40% and adopting non-engineering solutions to future challenges. This directly reduces the demand for resources such as concrete and metal and indirectly can reduce consumption of fertilizers and pesticide resources and leads to better soil management
- Working with organisations such as The Plastics Pact and Plastics Free Plymouth to jointly lead and deliver better resource use and environmental improvement.

We are already testing how our plans perform on reducing resource use through assessing the natural capital impacts.

The actions in our Water Resource Management plan show an overall reduction in water use, energy/carbon and materials valued at between £9m and £36m. A similar natural capital analysis on our catchment management activity shows a carbon sequestration benefit of over £5m.

We aim to produce a natural capital assessment of our activities each year and include this in our annual reporting.



Combined Heat and Power facility, Countess Wear



## Using resources from nature more sustainably and efficiently cont'd

### Summary of activities: Using resources from nature more sustainably and efficiently

Government targets	Water					Environment		Wastewater	Other				
	15% leakage reduction by 2025	25% leakage reduction by 2045	Reducing STW water use	8 year Tamar plan	St Neot hatchery	Upstream Thinking	Peatland restoration	100% sludge recycling	80% reduction in GHG by 2050	Woodland management at our sites	Partnership working (e.g. plastics pact)	Phase out single use plastics	Reducing supply-chain embedded carbon
Maximising the value and benefits we get from our resources, doubling resource productivity by 2050	●	●	●			○			●	○	●	●	●
Improving our approach to soil management: by 2030 we want all of England's soils to be managed sustainably, and we will use natural capital thinking to develop appropriate soil metrics and management approaches						●	●	●			○		
Increasing timber supplies						○							
Ensuring that all fish stocks are recovered to and maintained at levels that can produce their maximum sustainable yield				●	●	○							
Ensuring that food is produced sustainably and profitably						○		●					

○ Contributes to Government target

● Directly delivers Government target

# Using resources from nature more sustainably and efficiently cont'd

## Case Study

### Sludge treatment efficiency work

**We have completed a targeted review of energy recovery from our Anaerobic Digestion sites in terms of biogas production and energy generation. A number of schemes have successfully improved performance in this area over the past five years.**

South West Water Athena Business Intelligence (BI) programme has been in operation for almost two years since 2016. The programme has developed packages of work that include schemes to enable the upload of site data to a corporate data warehouse (cloud based).

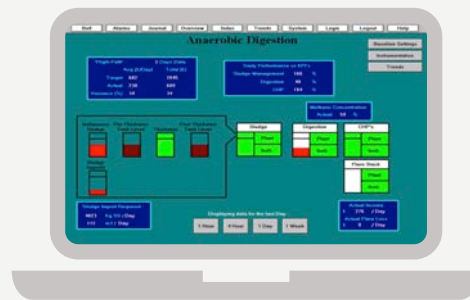
As part of an AD Optimisation Strategy a gap analysis of data sets, instrumentation and infrastructure was procured in late 2016 and commissioned in March 2017. The captured data includes sludge processing data, digestion performance and biogas yields as well as CHP engine outputs that are aligned to industry standards.

This work has allowed us to develop a cloud-based software tool. The software is fed data from process instrumentation on STCs and compiles it into an easy to read graphical format. The dashboard has been designed to allow users with and without specialist process knowledge to make informed decisions about which areas to target in order to improve digester performance. The end result of these improvements is increased renewable electricity production that is already starting to provide benefit to the business and our customers. Greater process insight has enabled better management leading to a 100% uplift on historical CHP generation at Countess Wear (>4 GWh), for example, which is the benchmark for roll-out across the entire STC AD asset base.

The approach to gaining better process insight using cloud systems will be an area of continued focus into 2020-25. The addition of the sludge boundary monitoring will provide data sets to feed into improved management of compliance monitoring, headroom assessments as well as consideration for optimisation of sludge transport between locations. Improved sludge management data will contribute to how we use the emerging bioresources market.

The full results of this optimisation at the six largest AD sites- Countess Wear, Hayle, Marsh Mills, Totnes, Nanstallon and Kilmington has increased the resilience of the digester plants leading to improved performance and increased CHP production from 4.5GWh in Year 1 to 8.62GWh predicted by Year 5.

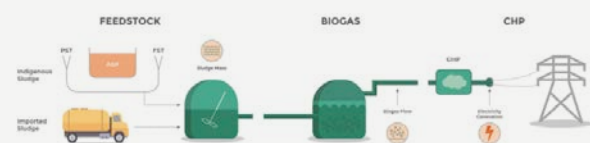
### SCADA mimic of a new site-level Anaerobic Digestion STC monitoring



### AD Optimisation cloud based STC monitoring application



### Visualisation process



# Enhancing beauty, heritage and engagement with the natural environment

**We own and manage 400,000ha\* of land, reservoirs and lakes across Devon, Cornwall, Somerset and Dorset in order to deliver our service to customers. This land and water environment has important beauty and heritage value to our region. Nearly two million people each year visit those of our sites that are open to the public. This includes a range of people from regular dog walkers through to arranged visits for low-income households.**

We will conserve and enhance the beauty of the natural environment for which we are stewards, and make sure it can be enjoyed, used by and cared for by everyone. We plan to do this by:

- Ensuring our land holdings have active land management plans that deliver a net environmental gain
- Keeping our SSSI sites in favourable condition
- Providing safe access to our recreational sites making sure there are high quality, natural spaces that people can spend time to benefit their health and well-being
- Using our sites to promote the value of the environment through information and events
- Using our sites to promote sport and recreational activities
- Working with Dartmoor and Exmoor National Parks to deliver a joined up experience that enhances the beauty and engagement with the natural environment.
- Supporting the National Parks in their development of Natural Capital Accounts

Studies suggested a strong relationship between access to nature and levels of physical health and mental wellbeing. Our partnership working and focus on looking more broadly at how we can deliver value to customers gives multiple benefits for natural beauty, heritage protection and societal engagement with the environment. Our approach to promote closer engagement between the natural environment and our customers and visitors to the region will also help instil a greater understanding of how the environment effects the services customers receive from us and vice versa.

\* Reservoirs land holdings are 400,000ha and 2,500 sites are 16,000 ha



Recreational activities at our reservoirs



## Enhancing beauty, heritage and engagement with the natural environment cont'd

Summary of activities: Enhancing beauty, heritage and engagement with the natural environment										
Government targets	Water	Environment				Wastewater	Other			
		Upstream Thinking	Peatland restoration	Active land management plans	SSSI in favourable condition		Energy programme	Recreation sites	Information and events at recreational sites	Promotion of sports
Safeguarding and enhancing the beauty of our natural scenery and improving its environmental value while being sensitive to considerations of its heritage		○		●						●
Making sure that there are high quality, accessible, natural spaces close to where people live and work, particularly in urban areas, and encouraging more people to spend time in them to benefit their health and wellbeing			●		●			●	●	
Focusing on increasing action to improve the environment from all sectors of society		○					●		●	

○ Contributes to Government target

● Directly delivers Government target

### Case Study

#### Peatland Restoration



**Mires are internationally important peat producing habitats such as bogs and fens. On Exmoor and Dartmoor, blanket bog occurs at the South West limit of its European extent. Centuries of moorland drainage and peat-cutting have dried-out much of this peatland which is now vulnerable to future climate changes.**

Blanket peat is dependent on cool climates and high rainfall throughout the year to retain saturated conditions. These habitats are sensitive to changes in temperature and rainfall patterns, and damaged peatlands are at greater risk. They can be made more resilient by blocking drainage ditches to maintain a higher water table.

Peatlands retain water within their mass (over 50% of peat is water). Damaged peatlands have less water holding potential, but re-wetted peatlands have an increased potential to absorb and retain water following precipitation and to release it more slowly into upland streams. Locally this helps maintain stream-flow during dry periods and locally reduce downstream erosion and flooding risks.

As our climate changes with predicted drier summers and wetter winters, healthy peatlands will become increasingly important for the management of water supplies, due to their regulating effect on water resources.

Peatlands accumulate plant materials and act as a carbon store, preventing carbon entering the atmosphere. Drainage halts peat accumulation and allows oxygen to enter peat stores turning them into Carbon dioxide, which escapes into the atmosphere.

Most peatland in the South West have been drained or modified to some extent and climate change may increase oxidation, as prolonged dry periods make the peat more vulnerable.

Mire restoration has been undertaken on Exmoor since 2006 through a public-private partnership. South West Water has secured funding for a further five year programme of work on Exmoor and Dartmoor under its Mires on the Moors Project. Other partners include Natural England, Environment Agency, Exmoor and Dartmoor National Park Authorities, English Heritage, Duchy of Cornwall, and the MoD.

The project used historic aerial photography and LIDAR techniques to identify damaged sites and target restoration activity, focusing on parts of the moorland significantly affected by drainage and agricultural improvement.

#### **How is the risk being addressed?**

The Mire Restoration project is re-wetting and restoring damaged peatlands by blocking drainage ditches, and allowing the bogs to recover. This will encourage wildlife such as bog plants and bird species to return.

On Exmoor 50 km of ditch has now been blocked. As a result over 350 hectares of damaged mire has now been re-wetted.

An independent and peer reviewed programme of monitoring and research is being undertaken by Bristol and Exeter Universities and the Environment Agency to look at the impact of this type of mire restoration on water resources and flood risk management.

# Mitigating and adapting to climate change

## Our understanding of the impacts of climate change is mature, and we have a strong culture of embedding mitigation actions into our plans.

Our 25-year WaterFuture vision outlines our long term objectives for services for the period 2015-2040. In it we established four guiding principles for our activities, one of these being resilience: making sure our business and assets can cope with extreme conditions (e.g. flooding or drought).

Our region faces a particular challenge from climate change compared to other regions. Our catchments are exposed to the full force of Atlantic weather systems and are also small and flashy meaning that more frequent intense winter or summer rainfall events will lead to more potential flooding. The water supply for our region is predominantly from rivers and single season reservoirs. This means it may be more susceptible than other areas to extended dry summer periods as evidenced during the prolonged, extreme hot and dry spell in 2018.

We understand these risks and our plans seek to mitigate these risks.

We will do this by:

- Reducing GHG emissions by a further 15% by 2025 to 140ktCO<sub>2</sub>e and continue on track to reduce to 80% of 2009 levels by 2050 in line with the Government Climate Change Act
- Continued restoration of peatland to sequestor carbon and slow the flow of water
- Continue to implement the National Adaptation Programme
- Ensuring policies and investment decisions take into account the impacts of climate change
- Working with national and regional groups such as WaterUK and West Country Water Resources to understand and promote the actions to mitigate for climate change
- Completing the Drainage Strategy Framework studies in AMP6 and translating these into Drainage and Wastewater Management Plans (DWMP Plans).

- DWMP Plans are key to cost-effective, sustainable performance improvements and resilience and will bring a range of benefits, including:
  - Delivering integrated and holistic long term planning for both sewerage and wastewater treatment
  - Enabling planning for economic growth, resilience, protection and enhancement of the environment
  - Facilitating partnership working and co-creation of solutions for multiple benefits to achieve best value to the economy, society and the environment over the long term
- Using Downstream Thinking solutions to meet environmental and customer service needs – these solutions focus on removing storm and surface water from sewers and help make our wastewater systems more resilient, sustainable and offer greater potential for habitat creation in urban areas through green infrastructure
- Developing response recovery and protection plans for key wastewater and water assets including those at risk from fluvial flooding and coastal erosion risks
- Launching an operational improvement project for resilience.

Our holistic approach to planning means many of the actions we are taking to deliver, for example clean and plentiful water, have a direct benefit to adapting and mitigating the effects of climate change.

This integrated approach means our actions deliver multiple benefits over different objectives contained in the 25 Year Environment Plan.



For more information, see our report on **Resilience**

## Mitigating and adapting to climate change cont'd

### Summary of activities: Mitigating and adapting to climate change

Government targets	Water		Environment				Wastewater	Other	
	15% leakage reduction by 2025	25% leakage reduction by 2045	Upstream Thinking	Peatland restoration	Biodiversity	INNS	Downstream Thinking (SUDS) and DWMP Plans	80% reduction in GHG by 2050	Partnership working (West Country Water Resources Group)
Continuing to cut greenhouse gas emissions including from land use, land use change, the agriculture and waste sectors and the use of fluorinated gases	●		●	●			●	●	●
Making sure that all policies, programmes and investment decisions take into account the possible extent of climate change this century	●	●	●	●	○	○			●
Implementing a sustainable and effective second National Adaptation Programme	●	●	○					●	

○ Contributes to Government target

● Directly delivers Government target



## Mitigating and adapting to climate change cont'd

### Case Study

#### Taw and Torridge Natural Capital Investment Project

##### Working with Devon Wildlife Trust to trial Natural Capital Investment approaches.

The UNESCO North Devon Biosphere Reserve is one of the most wildlife-rich areas in Europe.

This rich natural heritage lies within a highly contested landscape, where unsustainable land use is severely eroding the natural capital on which local communities depend.

We have been working with Devon Wildlife Trust to deliver landscape-scale habitat enhancements in the upper Torridge catchment. Other partner organisations have also been carrying out their own grant-funded projects within the wider Biosphere Reserve. Much has been achieved, but sustained, long term investment is essential in order to consolidate the gains already made, and to make the North Devon Biosphere Reserve resilient to the wider threats impacting it.

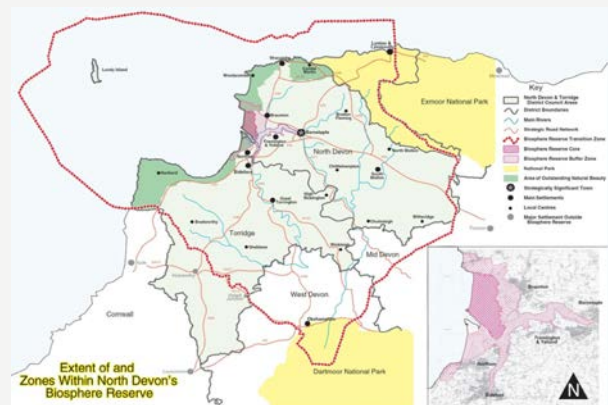
The development phase will see South West Water working with Devon Wildlife Trust and local partner and stakeholders to establish a fully costed 25 year delivery plan, supported by comprehensive feasibility studies. The 25 year delivery plan will be designed to achieve the following outcomes:

- 10,000 hectare Nature Recovery Network in the Torridge headwaters. The core of the network will be 2,000 hectares of land where Devon Wildlife Trust will work alongside farming communities to allow space for natural processes to drive land management decisions. This core semi-wild zone, together with 8,000 hectares, will ensure that wildlife abundance is maximized, flourishing at levels not seen since the early 1900s. Crucially this will provide resilient supplies of clean freshwater, improving the ecological status of the entire catchment right down to the estuary, as well as contributing to cleaner bathing waters

- 800 hectares of interconnected inter-tidal and floodplain habitats will be created in the Taw-Torridge estuary, restoring the rivers' natural processes, boosting biodiversity, and reducing reliance on hard flood defences, providing greater resilience to coastal and riverine flooding as well as unrivaled green infrastructure and recreation provision.

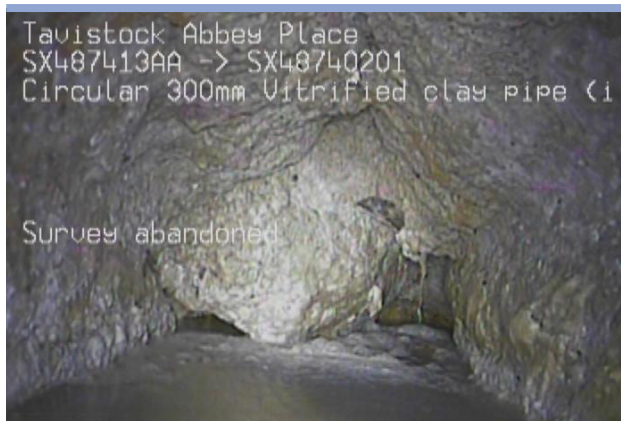
The plan is to identify, develop, test and implement a portfolio of natural capital investment approaches. These will be designed to provide sustainable long term funding to increase the catchment's resilience to the wide ranging threats. Investment concepts will include the cost savings and economic and social benefits associated with improved environmental management. The wider outcomes of the 25 year delivery programme will include:

- A fully integrated network of re-naturalised wildlife habitats demonstrating the value of the ecosystems approach
- A real life example, backed up with scientific evidence, to illustrate the workings of a functioning ecosystem, with the benefits clarified, costed and quantified;
- A Biosphere Reserve managed in an exemplary fashion will demonstrate the value of natural capital investment, providing a model for others to follow.



# Minimising waste

**Minimising waste goes hand in hand with our programme to improve resource use. We will minimise waste, reuse materials as much as we can and manage materials at the end of their life to minimise the impact on the environment. This all helps promote a circular economy.**



Photographs from left to right:

Award winning 'Love Your Loo' campaign; CCTV survey showing fat build up in a sewer; Beach Clean in Polzeath, Cornwall.

We plan to reduce our waste through a range of measures and targets.

We will do this by:

- Working towards our ambition of zero avoidable waste by 2050
- Recycling 100% of sludge to land as treated biosolids products
- Working to a target of eliminating avoidable plastic waste by the end of 2042
- Meeting all existing waste targets – including those on landfill, reuse and recycling – and developing ambitious new future targets and milestones
- Operating our wastewater assets to reduce and where possible, prevent plastics entering the marine environment
- Continuing and expanding our award winning 'Love Your Loo' campaign to help change customer behaviours and prevent plastic and other inappropriate material reaching our wastewater systems
- Continuing to inform and influence product development so as to avoid and reduce products causing problems for the delivery of sustainable water and wastewater services
- Promoting with our Tidy Britain partners our community programmes for beach and river collections for marine/coastal plastic waste.

Minimising waste has benefits beyond the immediate environment in our operating areas. Through using less we reduce our overall embedded carbon, water and fossil fuel footprint. Through minimising unavoidable waste we should be able to reduce the long term cost of our service to customers, since we expect waste disposal to be an increasing cost. Through minimising waste we should minimise the associated cost.

## Minimising waste cont'd

Summary of activities: Minimising Waste	Water		Environment				Other			
			Wastewater							
Government targets			100% sludge recycling	Prevent where possible plastics entering the environment	Community beach litter programmes	Love your Loo campaign	Energy programme	Partnership working (e.g. plastics pact and water re-fill project)	Phase out single use plastics	Reducing supply-chain embedded carbon
Working towards our ambition of zero avoidable waste by 2050			●					●	●	
Working to a target of eliminating avoidable plastic waste by end of 2042								●	●	
Meeting all existing waste targets – including those on landfill, reuse and recycling – and developing ambitious new future targets and milestones				●		●	○			●
Meeting all existing waste targets – including those on landfill, reuse and recycling – and developing ambitious new future targets and milestones										
Seeking to eliminate waste crime and illegal waste sites over the lifetime of this Plan, prioritising those of highest risk. Delivering a substantial reduction in litter and littering behaviour										
Significantly reducing and where possible preventing all kinds of marine plastic pollution – in particular material that came originally from land				●	●	●				

○ Contributes to Government target

● Directly delivers Government target

### Case Study

#### Love Your Loo

**A campaign urging customers to think before they flush has been crowned the winner of the Institute of Water National Innovation Award in 2018.**

After winning the Institute of Water's Regional Innovation Award earlier this year, South West Water's Love Your Loo campaign went on to represent the South West at the Institute of Water National Innovation Awards in Glasgow.

The campaign, which encourages customers to flush only the 3Ps – pee, paper and poo beat five other regional finalists to clinch the coveted national title.

The judges were particularly impressed by the evidence that demonstrated the Love Your Loo campaign has successfully reduced the number of blockages and floodings on the sewer network.

Sir Brian Bender, Chairman of Water UK and Head of the judging panel, said: "The panel were particularly impressed with the strength of the submissions and it was so encouraging to see the breadth of innovations that are taking place across the water sector.

"The panel were unanimous in their view that the innovation from South West Water tackled a very current and complex issue but did so through simplifying the responsibility of the customer.

"Innovation often doesn't need huge financial investment but can be about the use of different ways of delivering and tactics to encourage massive change."



Anna Hopwood, South West Water's Head of Waste Water – Customer Service and Networks, said: "Our innovative Love Your Loo campaign goes from strength to strength, thanks to support from our customers.

"It costs us and our customers £4.5million each year to clear around 8,500 blockages on the sewerage network. About 65% of these blockages are caused by baby wipes, hygiene wipes, moist toilet tissue, cleaning wipes, cleansing pads and sanitary products being flushed down the toilet.

"The campaign is simple – encouraging customers to flush only pee, paper and poo – but effective. Customers are playing their part and have helped us achieve our lowest ever level of sewer flooding which is fantastic. To win a prestigious national industry award is the icing on the cake."

The Love Your Loo campaign, which launched in 2015, also won three Chartered Institute of Public Relations Pride Awards in 2016 and was also shortlisted for the Community Project of the Year at the Water Industry Achievement Awards 2017.

Learn more about the Love Your Loo campaign at [www.southwestwater.co.uk/loveyourloo](http://www.southwestwater.co.uk/loveyourloo)





# Managing exposure to chemicals

**We already have strong controls on the chemicals we need and use to treat water and wastewater for our customers. This is embedded within the culture of the company.**

We also have a strong track record in supporting responsible chemical disposal in agriculture through our pesticide amnesty as part of our catchment management programme.

We plan to both continue our safe management of chemicals but also further help reduce more widespread use of chemicals, in the environment through our work.

We will do this by:

- Policy and controls on chemical usage at sites
- Use of catchment management to promote lower use of fertiliser, pesticide and herbicide applications
- Use of catchment management to promote pesticide amnesties
- Setting stretching pollution reduction and wastewater treatment compliance targets
- Working with non-household customers and retailers to reduce trade effluent and manage non-compliance

- Continuing and expanding our award winning Love Your Loo campaign to help change customer behaviours and prevent plastic and other inappropriate material reaching our wastewater systems
- Delivering our part of the National Chemicals Investigation programme, being undertaken by the Water Industry as part of the Water Industry National Environment Programme
- Extending our drinking water refill project to aid wellbeing and reduce plastic use and waste
- Partnering with the ambitious Plymouth Ocean City Plastics Task Force project.

The combined benefit of focusing on our own policies and compliance together with supporting other organisations and our customers means the collective outcome is reduced risk of harmful chemicals entering the environment.



*Upstream Thinking farm advice*

## Managing exposure to chemicals cont'd

### Summary of activities: Managing exposure to chemicals

Government targets	Water	Environment			Wastewater	Other	
	Site controls and policies	Upstream Thinking	Biodiversity	INNS	Pollution incidents reduction and wastewater compliance targets	Trade effluent consents	Waste management policy
We will make sure that chemicals are safely used and managed	●	●	○	○		●	
Seeking in particular to eliminate the use of Polychlorinated Biphenyls by 2025, in line with our commitments under the Stockholm Convention							●
Reducing land-based emissions of mercury to air and water by 50% by 2030							●
Substantially increasing the amount of Persistent Organic Pollutants material being destroyed or irreversibly transformed by 2030, to make sure there are negligible emissions to the environment		●			○	○	
Fulfilling our commitments under the Stockholm Convention as outlined in the UK's most recent National Implementation Plan							

○ Contributes to Government target

● Directly delivers Government target

## Managing exposure to chemicals cont'd

### Case Study

#### A phosphate holiday in Drift

**Stephen Wherry Farms is located next to Drift Reservoir and has recently chosen to take a 'phosphate holiday', cutting the amount he spreads by 700kg each year.**

Dairy farms rely on a decent grass yield, which means getting the right ratio of nutrients in the soil. Sometimes more nutrients have been put on the soil than the grass needs, which is an unnecessary cost and can lead to nutrients entering the water when it rains.

Jan works on South West Water's Upstream Thinking initiative and has spent almost 8 years getting to know Stephen and his business. One area where Jan has given support is in getting his soil analysed in the lab. The results clearly showed excess phosphate in every field.

"I was really pleased to have the free soil tests. We didn't know we were so much over on the phosphate on our home fields next to Drift dam. We always used to use 10% phosphate fertiliser but have done away with that for a while. We've agreed to have some more soil tests in a couple of years to make sure we don't run low on anything. Ours is a small dairy farm and we can't be short of grass."

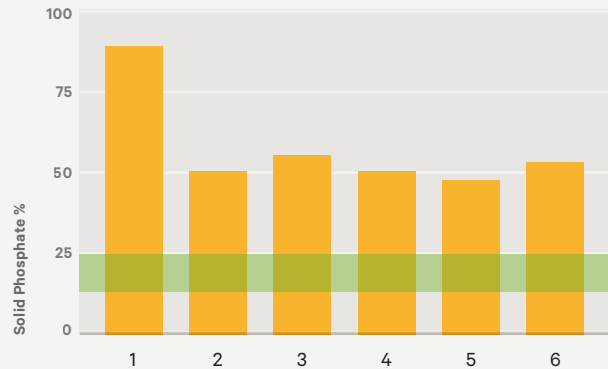
Jan showed that the surplus was not benefiting the grass yield, so Stephen could buy fertiliser with only 2% phosphate. The decision to change was not taken lightly by Stephen; this is the way his family had worked for years. But he took the leap and now applies 700kg less phosphate each year.

This means less phosphate getting into Drift Reservoir, where it feeds algae and creates difficulties for drinking water treatment.

Phosphorous is mined in the north sea and is a finite resource, so this result is more sustainable all round.

Jan will spread the word about Stephen's decision and hopes this will give other farmers confidence to follow suit.

Our partners





# Enhancing biosecurity

**Biosecurity is very important for the water sector. Water companies are highly vulnerable to Invasive Non-Native Species (INNS). South West Water are large landowners, and also significant landowners of wetland habitats – 40% of INNS are aquatic and these are the most problematic species.**

Although INNS are not a new problem they are increasing in number and range, due to increased travel and trade. The Great Britain Non-Native Species Secretariat state that NNS were arriving in Britain at the rate of 1 every 100 years. However this rate of introduction is estimated to have increased to up to 100 species arriving every year; at least 10% of which could become established here.



Giant hogweed

INNS can thrive in Britain as they may have no natural predators, competitors or diseases. They can also take advantage of climate change conditions such as drought and floods. They have a wide range of detrimental impacts on the environment, economy and health.

The freshwater environment is critical to our business, and INNS pose a key risk to operations and services to our customers and the environment. Freshwater systems are particularly vulnerable to INNS due to the wide range of potential transmission pathways.

## Water Supply

- Filters, tanks and structures – Japanese knotweed grows through structures
- Pipelines and service reservoirs – Zebra mussels block pipes

## Wastewater and sewage

- Collection – Japanese knotweed affecting pumping stations
- Treatment – Crassula clogging trickling filter
- Recycling – Rhododendron adjacent to sludge lagoons and damaging structures

## Conservation

- Water quality – Himalayan balsam creates erosion, increasing sedimentation, decreasing oxygen levels with negative impacts for spawning fish, freshwater pearl mussels and other wildlife, with cleaning costs for water companies
- Designated site compliance – Himalayan balsam can negatively impact on protected statutory sites like SSSIs and nature reserves
- Archaeological damage – Montbretia can damage archaeology and historic features.

It is estimated that costs to the water industry from INNS is currently about £75 million p.a. Our aim is to enhance biosecurity to protect the water and land we manage and operate to ensure we have a healthy, safe and productive environment now and in the future.



## Enhancing biosecurity cont'd

We will do this by:

- Delivery of £1.5m of schemes to prevent deterioration by reducing the risks of spread of INNS and reducing impacts from INNS
- Delivery of 19 investigations into the pathways of INNS to enable a long-term reduction in the risk in our operating area
- Funding of partnership working on INNS to increase the reach and understanding of the issues and access broader delivery networks

- Inclusion of a specific performance commitment to set targets for biosecurity in the same vein as other services we deliver
- Site management plans to improve biodiversity
- Implementation of a biodiversity scorecard to track and monitor our performance.

We have already played a leading role in the sector on INNS and biosecurity and our plan continues this trend and contains significant investment to ensure we continue to have a vibrant and healthy environment for current and future generations.

### Summary of activities: Enhancing biosecurity

Government targets	Water	Environment						Wastewater	Other
	Upstream Thinking	Site management plans	£1.5m prevent deterioration schemes	19 investigation schemes into pathways	INNS performance commitment	Partnership working			
<b>Managing and reducing the impact of existing plant and animal diseases; lowering the risk of new ones and tackling invasive non-native species</b>		●	●	●	●				
<b>Reaching the detailed goals to be set out in the Tree Health Resilience Plan of 2018</b>									
<b>Ensuring strong biosecurity protection at our borders, drawing on the opportunities leaving the EU provides</b>			●						
<b>Working with industry to reduce the impact of endemic disease</b>	○			●		●			

○ Contributes to Government target

● Directly delivers Government target

### Case Study

#### Tackling Invasive Non-Native Species

##### **South West Water was the first water company in the UK to appoint a dedicated Invasive Non-Native Species Ecologist.**

Invasive species such as Japanese knotweed and New Zealand pigmy weed are of interest to water companies because they have the potential to cause structural damage to water infrastructure including weirs and treatment works, choke waterways and disrupt native ecosystems. They also create health and safety issues for maintenance and recreation, particularly at reservoirs.

South West Water created the new post in response to growing threats from invasive species arriving from outside the UK.

Kate said: "Animals and plants from all over the world have been introduced to Britain by people. Most are harmless, but 10-15% become invasive harming the environment and our wildlife, impacting on the economy, or even posing a risk to our health and the way we live.

"Biosecurity is a huge challenge for the water industry. Here in the South West, Japanese knotweed, Himalayan balsam, giant hogweed, America signal crayfish and zebra mussels among others have the potential to damage our environment or us if we don't act to minimise their spread and impact.

"At the moment we believe other species such as the killer shrimp are not present in the region, but it is important that we stay ahead of the game and remain vigilant."

Kate and South West Water's Managing Director, Dr Stephen Bird, met Biosecurity Minister Lord Gardiner at a reception at the House of Lords last month to celebrate the work of the Check Clean Dry campaign, which aims to stop the spread of invasive species such as floating pennywort and water primrose. South West Water was the first of eight water companies to support this national initiative.

Lord Gardiner said: "Invasive species threaten the survival of our country's native plants and animals and cost the economy at least £1.8 billion a year. The Check, Clean, Dry campaign plays a key role in raising awareness of these threats; preventing new arrivals and stopping the spread of these species. It is great to see water companies supporting this programme to protect the future of our native species."

Kate represents all water companies on the GB Non-Native Species Secretariat England Working Group. She also helped set up two new groups last year to try to tackle the problem of invasive species on a county scale, Cornwall Invasive Species Forum and Devon Invasive Species Initiative (DISI). Both groups originated at the first South West Invasive Species Forum, organised by South West Water in June 2016. A second conference took place in March 2017.

Kate added: "Promoting awareness and partnership working is the only way to tackle invasive non-native species. These species are a national problem but the South West is taking strong regional action and I'm proud to play my part."



South West Water MD Dr Stephen Bird; Biosecurity Minister Lord Gardiner; Kate Hills, South West Water INNS Ecologist and Dr Niall Moore, GB Non-Native Species Secretariat

# Clean air

**Our aim is to leave the environment in a better state than we found it. While most of the activities we undertake to deliver service to customer relate to the water and land environments, we are also committed to improving and protecting the air.**

Emissions to the air can have both local and global impacts. Our plan includes a range of activities that directly and indirectly contribute to a cleaner air environment. Many of these activities have broader benefits to other parts of the 25 Year Environment Plan goals ensuring that we deliver multiple benefits to society from the activity we undertake.

We plan to deliver:

- Reducing GHG emissions by a further 15% by 2025 to 140ktCO<sub>2</sub>e and continue on track to reduce to 80% of 2009 levels by 2050 in line with the Government Climate Change Act
- Continued restoration of peatland to sequestor carbon
- Continued compliance with air pollution control regulations, including future Medium Combustion Plant Directive requirements
- Increase our move to electric cars and vans for our fleet.

In addition our activities such as catchment management, leakage reduction, water efficiency and wastewater driven catchment phosphate reduction projects all have indirect benefits to the air environment. These activities deliver lower resource and chemical use across our region. In doing so they deliver wider embedded benefits to air quality through reduced emissions.

As we move through the next five years our work will start to measure the embedded benefits of these benefits so we can relate to stakeholders and customers the broader benefits of the activities we undertake.

## Case Study

### Energy Storage



**South West Water are actively engaged in pursuing this technology and have planned a pilot scheme to test the deployment of containerised inverters utilising battery technology.**

The UK Government acknowledges that energy storage projects provide an opportunity to diversify the way we use available power and deliver it when it is needed.

Wind and solar energy are used to generate over 8% of the UK's electricity. The proportion of electricity from these sources, combined with electricity from new wave and tidal sources, is set to increase to 24% by 2020 to meet EU renewable energy targets (Source: Parliamentary POST note 464 May 2014 Intermittent Electricity Generation).

As a nation, we're moving away from coal and gas burning power plants and replacing these traditional technologies with renewable technologies. However, most forms of renewable electricity generation are deemed as disruptive due to their intermittency. The national challenge is to maintain the constant supply with a backdrop of intermittent supply and irregular consumption.

Energy Storage is fast becoming an essential ingredient to securing a future of being able to deliver a constant supply; providing a balanced delivery of energy onto the grid. Such developments are therefore crucial to local residents and businesses; ensuring that they may maintain usage of the energy needed to maintain day-to-day life/business.

Energy storage installations will make a valuable contribution towards achieving each of these objectives

South West Water are actively engaged in pursuing this technology and have planned a pilot scheme to test the deployment of containerised inverters utilising battery technology that will enable the storage of up to 0.09MW/0.096MWh of electricity that can offer grid balancing services and resilience against grid supply outages.

South West Water also operates extensive hydropower and solar powered renewable assets, as well as CHP engines and wind turbines to replace traditional energy sources.

Summary of activities: **Clean air**

Government targets	Water	Environment				Wastewater	Other	
	25% reduction in leakage by 2045	Upstream Thinking	Peatland restoration	Biodiversity	INNS	80% reduction in GHG by 2050	Electric fleet	Medium Combustion Plant Directive compliance
Meeting legally binding targets to reduce emissions of five damaging air pollutants; this should halve the effects of air pollution on health by 2030		○						
Ending the sale of new conventional petrol and diesel cars and vans by 2040							●	
Maintaining the continuous improvement in industrial emissions by building on existing good practice and the successful regulatory framework	○	○	●				●	●

○ Contributes to Government target

● Directly delivers Government target



## Next steps

### **Our plan sets a clear direction of travel for the delivery of a better, healthier and more resilient environment.**

Despite being a water and wastewater company our focus is not just on delivering a clean and plentiful water environment. We are undertaking work to benefit all areas of the environment from biosecurity through to waste management and cleaner air.

We have a sound track record of innovation and delivery and we will be continuing with this to deliver on behalf of customers and the environment – both as it relates directly to our operations and wider.

We are already preparing for 2019 and playing our part in ensuring this will be a ‘year of action’ on delivering the goals. From working with a range of organisations in the south west we already have a strong environmental network to help raise awareness of the importance of the environment, but also to help deliver tangible benefits.

By linking the goals of the 25 Year Plan with what we need to deliver in terms of services to our customers and the environment, our plan delivers multiple benefits and helps secure a resilient service for the future. This approach enables our plan to maximise our contribution to the Government’s 25 Year Environment Plan and goals.

---

A special thank you to our partners who help us deliver environmental improvements.

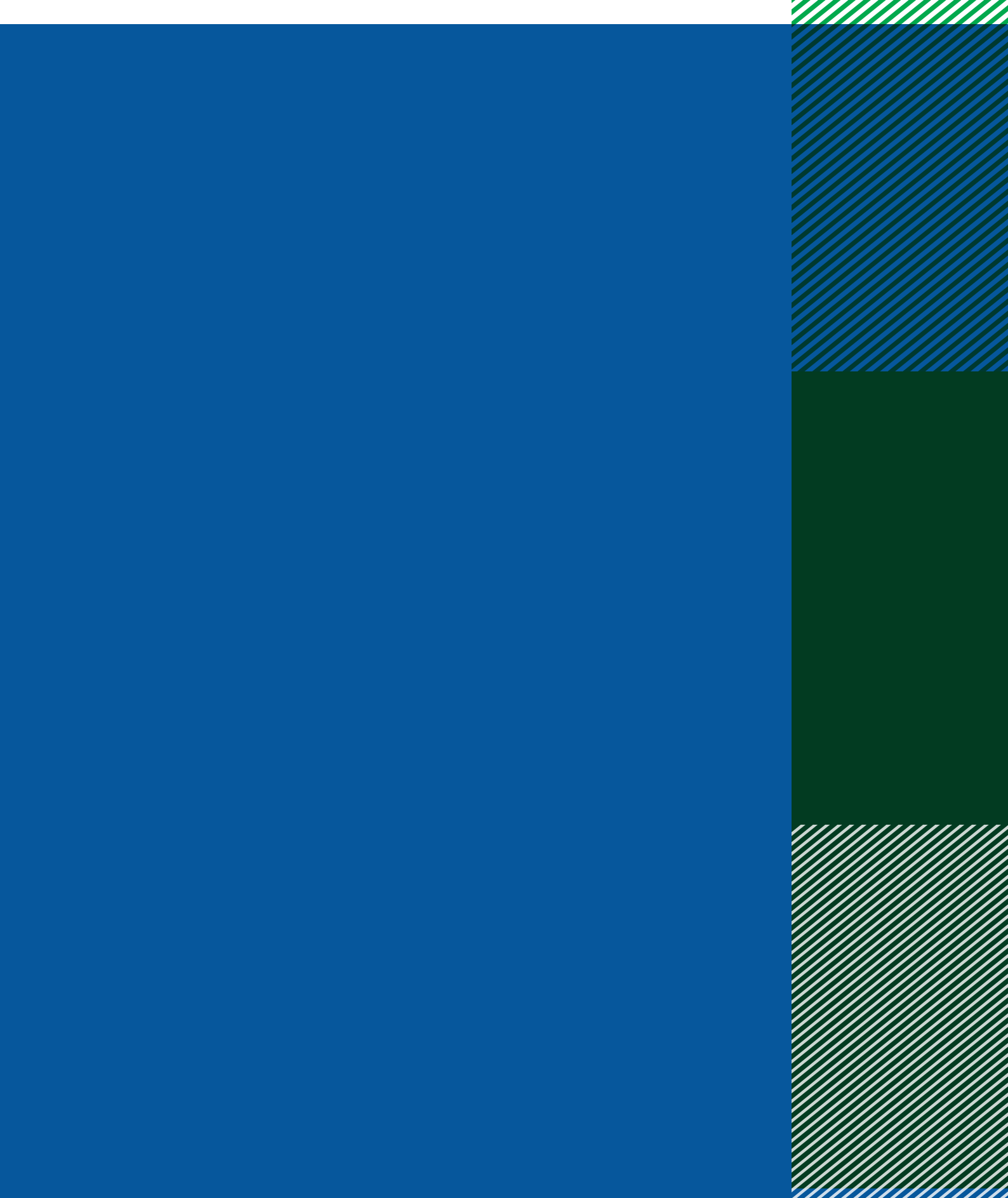


Photo opposite:  
Restored mires on Exmoor









**South West**  
Water