



## **River basin planning: Challenges and Choices consultation**

24th October 2019 to 24th April 2020

We are the Environment Agency. We protect and improve the environment.

We help people and wildlife adapt to climate change and reduce its impacts, including flooding, drought, sea level rise and coastal erosion.

We improve the quality of our water, land and air by tackling pollution. We work with businesses to help them comply with environmental regulations. A healthy and diverse environment enhances people's lives and contributes to economic growth.

We can't do this alone. We work as part of the Defra group (Department for Environment, Food & Rural Affairs), with the rest of government, local councils, businesses, civil society groups and local communities to create a better place for people and wildlife.

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# Water challenges and choices

## Overview

We urgently need to protect and improve our waters and find a better balance that meets the needs of people and nature.

Water keeps us alive, drives our economy and sustains wildlife.

Our rivers, lakes, canals, coasts and groundwater, and the essential services they provide society, are worth billions of pounds to the UK economy.

However, wildlife and the benefits we get from our waters are threatened by the damage we are causing through development, industry, flood protection and agriculture. The climate crisis and a growing population are adding to these pressures and without concerted action will lead to irreparable harm to our planet, ourselves and future generations.

This consultation explains why water is such a vital resource. It describes the challenges that threaten the water environment. It explores how we can work together to manage our waters and looks at who should pay for the actions needed.

This consultation covers all the river basin districts (RBDs) that are entirely in England, and the Severn and Northumbria RBDs which lie partly in Wales and Scotland respectively. Further information on RBDs, including the management of significant water management issues across Wales, can be found on the Supporting Information page.

See the [guide to consultation](#) (Appendix 1) for more detail and options on ways you can respond.

## Why we are consulting

We are seeking your views on the challenges our waters face and the choices and changes we all need to make to help tackle those challenges.

By responding to this consultation you will be helping to shape the management of the water environment. The information gathered through this consultation will help us update the current river basin management plans, starting with the publication of draft plans in 2020.

We will also use your responses to help us consider how some of the current approaches to the management of water in England will need to change in response to a changing climate and a growing population. We are calling this work the Water Story.

## Further information

Short films are available online to support this consultation. These are available in the table below:

<b>Small Changes, Big Picture Trailer</b>	<a href="https://www.youtube.com/watch?v=-KdVoxs2SSM">https://www.youtube.com/watch?v=-KdVoxs2SSM</a>
<b>Managing Water in Our Environment</b>	<a href="https://www.youtube.com/watch?v=BA6ggonQLOQ">https://www.youtube.com/watch?v=BA6ggonQLOQ</a>
<b>Climate Crisis</b>	<a href="https://www.youtube.com/watch?v=tbs7Ci3nF_c">https://www.youtube.com/watch?v=tbs7Ci3nF_c</a>
<b>Changes to Water Levels and Flows</b>	<a href="https://www.youtube.com/watch?v=1_ktVTM4Mrw">https://www.youtube.com/watch?v=1_ktVTM4Mrw</a>
<b>Chemicals in the Water Environment</b>	<a href="https://www.youtube.com/watch?v=wP493JsiukM">https://www.youtube.com/watch?v=wP493JsiukM</a>
<b>Invasive Non-Native Species</b>	<a href="https://www.youtube.com/watch?v=Q_OiGvphEBw">https://www.youtube.com/watch?v=Q_OiGvphEBw</a>
<b>Physical Modifications</b>	<a href="https://www.youtube.com/watch?v=2c03-wJj9Jl">https://www.youtube.com/watch?v=2c03-wJj9Jl</a>
<b>Plastics Pollution</b>	<a href="https://www.youtube.com/watch?v=4cDo2gMa0-o">https://www.youtube.com/watch?v=4cDo2gMa0-o</a>
<b>Pollution from Abandoned Mines</b>	<a href="https://www.youtube.com/watch?v=Xnals6bTvX4">https://www.youtube.com/watch?v=Xnals6bTvX4</a>
<b>Pollution from Agriculture and Rural Areas</b>	<a href="https://www.youtube.com/watch?v=SFaVYsOjea4">https://www.youtube.com/watch?v=SFaVYsOjea4</a>
<b>Pollution from Towns, Cities and Transport</b>	<a href="https://www.youtube.com/watch?v=VAReJm6RKFU">https://www.youtube.com/watch?v=VAReJm6RKFU</a>
<b>Pollution from Wastewater</b>	<a href="https://www.youtube.com/watch?v=bBcPb0g2tZg">https://www.youtube.com/watch?v=bBcPb0g2tZg</a>

- A glossary of the terms used in this consultation is available on the Catchment Data Explorer online glossary: <http://environment.data.gov.uk/catchment-planning/glossary>
- A guide to this consultation is available: Guide to consultation: [https://consult.environment-agency.gov.uk/++preview++/environment-and-business/challenges-and-choices/user\\_uploads/guide-to-challenges-and-choices.pdf](https://consult.environment-agency.gov.uk/++preview++/environment-and-business/challenges-and-choices/user_uploads/guide-to-challenges-and-choices.pdf)
- For information and data about your local area, visit the catchment data explorer: <http://environment.data.gov.uk/catchment-planning/>
- For more information on the government's 25 Year Environment Plan here: <https://www.gov.uk/government/publications/25-year-environment-plan>
- Find out about the Love Water campaign here: <http://www.water.org.uk/love-water/>



## Submitting your response

We invite you to submit your views to us via the link to the consultation below:

<https://consult.environment-agency.gov.uk/environment-and-business/challenges-and-choices>

Alternatively, you can make representations via e-mail to [RBMPconsultation@environment-agency.gov.uk](mailto:RBMPconsultation@environment-agency.gov.uk) or in writing to:

Clive Phillips, Operations Catchment Services, Environment Agency, Kings Meadow House, Kings Meadow Road, Reading, RG1 8DQ.

You can request a separate Word document proforma with just the questions to assist your responses via [RBMPconsultation@environment-agency.gov.uk](mailto:RBMPconsultation@environment-agency.gov.uk)

*The closing date for receipt of your comments is 24th April 2020.*

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## The water story

Water unites all life on Earth. You, everyone you love and every bit of nature around us depends on having enough clean water to be able to survive. Billions of years ago water came out from the centre of the planet and started to shape the newly forming land. It helped create the right conditions for life to evolve and thrive. It's cycled round and around since that time, in the sky, underground, in rivers and seas day after day after day. Every drop of water you see or feel has been on an incredible journey.

But despite this incredible story, it's easy to take water for granted.



of life depends on water



the average water use per person per day

Let's take a moment to think about all the things water does for us. Of course, it quenches your thirst. It washes your body and your clothes and dishes and it's there to flush your loo. It's essential for creating the food and drink you consume, whether that's helping grow plants in a field or cooking in your kitchen. Water helps generate your light, heat and electricity too, whether at home or at work. It's needed to manufacture all the things you own, from your mobile phone to your favourite mug. Water is used in cars, buses and other transport you need to get about. And when it rains, it cleans the air we breathe. It can be a huge part of staying healthy and happy in other ways too. Perhaps you like going swimming or fishing. Maybe you're a keen gardener or enjoy walking your dog in the countryside; a landscape shaped by water. Maybe you canoe or sail or just love a day at the seaside. Few things are more beautiful than a waterfall, especially when it's surrounded by birds, bees, animals, trees and flowers. They all need water to be healthy and happy just like you do. Water is so much more than what you get out of the tap. It's our greatest natural asset.

For hundreds of years our ancestors took water for granted. They relied on water to cleanse and purify, washing away all the dirt, poisons and toxins of the Industrial Age and its booming human population. Water was everywhere, so much and so powerful, they didn't believe they could possibly damage it. They were wrong.

By the 1950s water in England was so polluted that many of our babbling brooks and singing streams fell silent. Nature couldn't survive there any longer. The fish died because they couldn't get the light, oxygen and food they needed. Waters became still as they were choked with weeds. And people engineered channels, moving water away; building over rivers, burying them or diverting them to serve our needs.



12% of land cover in the UK is freshwater habitat



£39.5 billion the monetary value of UK freshwaters

Since then, tighter environmental standards, changes in industry and massive investment in bigger sewers and better waste water treatment plants have restored the most polluted rivers. Today, the asset value of fresh water in the UK is estimated to be £39.5 billion. In England we spend about £5 billion a year to protect that asset and to protect public health and wildlife from a polluted water environment. But there's still so much to do. Only 16% of England's groundwater, rivers, lakes, estuaries and seas are close to their natural state. Our climate is changing and there's more of us than ever before. This is bringing with it some big challenges that need us to make equally big choices.

One of our biggest challenges is being able to invest the amount of time and money we think it will take to protect our water assets and get back all those benefits that we've lost. A huge gap is opening up between the outcomes we want to achieve and our ability to achieve them. At the current rate of progress it will take over 200 years to reach the government's 25 Year Environment Plan target of at least 75% of waters to be close to their natural state. We urgently need to find better, faster ways to get more investment in our water environment.



16% of England's groundwater, rivers, lakes, estuaries and seas are close to their natural state



90% of the UK's wetland habitats have been lost in the last 100 years

Today we're working together to achieve a better balance between people and nature, so that we can all have what we need for a good life, not just now, but in the future too. Striking that balance means lots of individuals uniting to manage water and writing our plan down for everyone to share in. We want your help to update the river basin management plans and find different and more ambitious ways of protecting the natural world and our precious water assets.

These plans, one for each river basin district, apply to all of us, including you. That's why it's important you tell us what you want them to say through this consultation. We'll use this evidence to tell those in power what choices you want to make to overcome our challenges. But you needn't stop there. Keep talking to your local politicians, businesses and council leaders about the changes you want to see in your environment and the legacy you want to leave. You can also make small changes at home and at work. The short films in this consultation contain simple ideas for things you can do that will really help.

Water is precious and it needs us all to show it some love. Join the growing movement of citizens taking action to protect our precious natural resources and



wonderful wildlife. If we get this right, water will continue its incredible journey into the next generation; clean and plentiful, valued and loved.

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**1. The way we treat water today will shape all our futures. What changes can you make to improve the water we rely on?**

## Climate and biodiversity crisis

Climate change is happening now. England is not known for extremes of weather but as the world's climate changes we will experience more summers that are hotter and drier and wetter and warmer winters. We are also likely to have more frequent extreme weather like floods and heat waves. The recent heat waves of 2003, 2006 and 2018, and the winter floods of 2015/16 were the most extreme ever to hit England. We should all take these as a warning.

We need immediate and ambitious actions to tackle these changes. If we do nothing the consequences for ourselves, and for wildlife will be immense.



the projected increase in population of England from 55.3 million in 2016 to 62 million in 2041



of our freshwater and wetland species are threatened with extinction and two-thirds are in decline

At the same time England's population is growing. This growth leads to more homes, workplaces, transport, energy, drinking water and drainage infrastructure and creates huge environmental challenges. We need to feed more people, so the way we farm is likely to change, putting even greater pressure on our environment.

As our population grows, the climate crisis will intensify. Things that we currently take for granted such as foods containing wheat that form an essential part of our diet might become harder to grow. The way we live will have to change otherwise the impacts could be unsustainable.

The impacts on our wetland habitats and wildlife are already happening. To provide water for ourselves, farming and industry we have dredged, dammed and polluted our rivers and groundwaters. This has put pressure on the environment, something that will worsen further as climate change increases.



we all have our part to play in helping to reduce greenhouse gas emissions to net zero by 2050

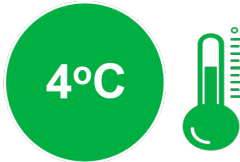


of internationally protected inter-tidal habitat and a further 500 hectares of freshwater habitat will be lost due to coastal squeeze over the next 5 to 10 years

In the UK we've already lost 90% of our wetland habitats in the last 100 years, and over 10% of our freshwater and wetland species are threatened with extinction. Wetlands make up only 3% of the UK but are home to around 10% of all our species, so they are vital for the species that remain. Other rare habitats under threat include chalk streams.

An example of how the destruction of wetland is affecting wildlife is the loss of the curlew. This bird used to be a feature of farmland, wetlands and coasts, but it has declined dramatically to 'near threatened' global status. The future of the curlew has

been called 'the most pressing bird conservation priority in the UK'. Loss of habitat by draining wet grasslands and other wetlands is likely to be one of the main cause of its decline. The conservation of the curlew will benefit from changes in land management, including restoring ditches, wet features within fields and adding more varied vegetation.



work together to plan for a range of future climate scenarios, including a 4°C rise by end of century



the government is committed to restoring or creating more wetland and water features as part of a Nature Recovery Network, with 500,000ha of new or restored wildlife rich habitat at its heart

Our watery habitat is vital for helping us adapt to an uncertain future. We need to help it become more able to withstand and adapt to climate change and extreme weather conditions. We can do this by restoring rivers, wetlands and coasts to a more natural state, creating more wetland habitat, protecting and supporting wildlife recovery and changing the way we use some land. To do this, we need a step change in how we plan and coordinate investment and action.

We also have to prevent the worst impacts of climate change by reducing greenhouse gas emissions as fast as possible, and planning for a range of possible futures, including a 4°C rise by the end of the century.

We are the last generation who can act to stop or reduce these changes. We must act now to prevent the worst impacts of climate change by reducing greenhouse gas emissions as quickly as possible, and planning for a range of possible futures, including a 4°C rise by the end of the century.

We are the last generation who can act to stop or reduce these changes. We must act now.

For further information, see the [Climate Crisis challenge document](#) and the [Biodiversity challenge document](#).

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**2. What more can we do to tackle the impacts of climate change on the water environment and what additional resources (including evidence, targets, tools and additional mechanisms/measures) do we need to do this?**

**3. What can we do to address this biodiversity crisis and meet the 25 Year Environment Plan targets for wetlands, freshwater and coastal habitats and wildlife?**

**4. Environmental targets can generate action and provide a strong signal of intent. Could additional statutory targets contribute to improving the water environment? If so, what types of targets should be considered?**

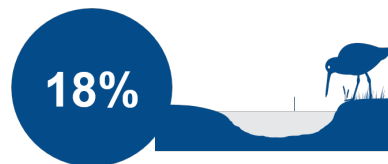
## Challenge 1: Changes to water levels and flows

There are areas where we are taking too much water from our rivers and aquifers.

Without water we cannot survive. But how water gets to our taps and the effect that has on the environment is something most of us don't think about.



9% of surface water bodies have abstraction and flow pressures preventing them from achieving good status or good ecological potential



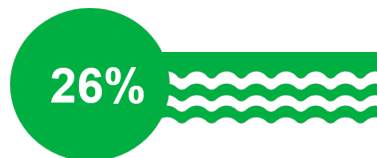
18% of chalk river water bodies are impacted by abstraction

Water taken from rivers and aquifers benefits all parts of our economy, from farmers to energy producers. Water is pumped from rivers and groundwater, cleaned at a water treatment works, and then pumped into our homes or businesses. We use this water and then flush it into the sewage system. From there it is pumped to the treatment works to be cleaned and discharged to rivers or the sea.

As the climate changes and our population grows, our demand for water will also grow. We now take more from our rivers and groundwaters than we or rainfall put back. Across England we over abstract from around 20% of rivers and 26% of groundwater bodies. This damages rivers, springs, aquifers, lakes and wetlands, because it reduces where wildlife can live. It becomes more difficult for fish to reach the places they lay their eggs (their spawning grounds) and to where they travel to feed and mate.



222,400 million cubic metres of extra water per year will be needed to meet expected population growth by the 2050s



26% of groundwater bodies are at poor status and 0.9 million cubic metres of water per day are needed to recover to good status

Lower water levels also reduce the numbers and health of other wildlife that rely on having high enough water levels to move around. As a result, many of our rivers cannot sustain a healthy environment for fish, insects and plants. This is made worse as water levels drop because the polluting chemicals washed into rivers from soils and roads do more damage because they are less diluted.



51 million cubic metres of water have been returned to the environment through amending abstraction licences



1053 million cubic metres of water have been recovered from abstraction licences to remove risk of deterioration

If we do nothing about the problem of taking too much water from our rivers and aquifers, we will continue to threaten our most precious resource. We can improve or reverse the damage that has already been done. We can reduce the amount of water we use. We can make sure the licences we agree with farmers, water companies, industry and land owners to abstract water do not damage the environment. We can remove structures from rivers which are no longer needed and which affect the natural flow of water. By doing this, we can ensure that we and our precious wildlife will thrive.

For further information on this challenge see the [Changes to water levels and flows challenge document](#).

For further information on the pressures associated with this challenge, see [Natura 2000 pressure document](#).

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## **5. What can be done to address the challenge of changing water levels and flows?**

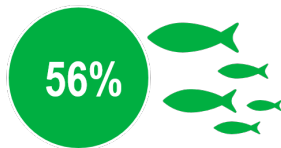
If you have read the further information about this challenge, you may also like to answer the questions below:

**6. The abstraction plan, referenced in the changes to water levels and flows narrative, explains our current and future approach for managing water abstraction. What else do we need to do to meet the challenges of climate change and growth while balancing the needs of abstractors and the environment?**

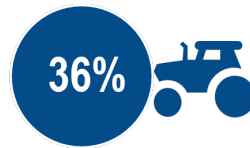
**7. What kind of a water flow environment do we want? Should we maintain statutory minimum water flow and level standards universally across England as we do now, or go further in some places based on environmental risk?**

## Challenge 2: Chemicals in the water environment

All living and non-living things on Earth are made of chemicals. Naturally occurring chemicals form the building blocks of life. Manufactured chemicals are found in everyday things such as drugs, paints, textiles, plastics, toys, carpets, pesticides and fertilisers. They are an essential part of modern life and have brought us huge benefits. But chemicals find their way into the water, air and soil and can also be damaging to ourselves and our environment because of the way we produce and use them. Some build up in animals and may represent risks to top predators, including us, if not properly controlled.



of sampled sites exceeded two or more biota Environmental Quality Standards in freshwater fish between 2014 and 2018



of the pesticides monitored for, that are in current usage, have been detected in Catchment Sensitive Farming rivers above a threshold value of 0.1 ug/l on at least one occasion since 2014

Although the majority of chemicals regulated under the Water Framework Directive are usually below levels of concern, we need to continue to reduce levels of metals released from abandoned mines and some pesticides in drinking water protected areas, and there are some new issues. For example, we now know that some persistent organic pollutants are occurring at elevated levels in fish. These pollutants are already recognised as international priorities and are highly regulated. In many cases, emissions have declined significantly and the levels we observe today are strongly influenced by the legacy of past chemical use. Achieving further reductions will be neither easy nor straightforward.



separate chemical measures in the 2020 to 2025 water company plans, with an anticipated cost of £200m



pesticides used on oilseed rape have decreased in frequency of detection and concentration in water as a result of voluntary initiatives

The worldwide market for chemicals is predicted to double by 2030. Managing chemicals so their production and use is sustainable and provide the benefits we expect without adverse impacts will be increasingly challenging as more new chemicals are used in our homes, in industry and on land.

Climate change is also having an effect. As the climate changes, heavier rainfall will wash more chemicals into our rivers and streams from sewers, roads and the land. In drier spells, less dilution will be available in rivers meaning concentrations of some chemicals will increase.



decline in levels of certain brominated flame retardants discharged from wastewater treatment works between 2013 and 2016



number of Safeguard Zones in place protecting our drinking water resources from chemicals

Looking forward, local solutions to local problems will continue to be vital. We take nationally co-ordinated actions to reduce levels of the most widespread chemicals. We work internationally to support sustainable chemicals management and reduce the risks of importing pollution. We identify emerging issues and determine how best to address these. The 25 Year Environment Plan sets out an ambition to develop a new UK chemical strategy. This presents an opportunity to consider societal challenges for the future use of chemicals. This might include how to promote sustainable design of products, efficient use of resources and encouraging recycling and safe use and disposal so we can continue to reap their benefits whilst ensuring a healthy environment for future generations.

For further information on this challenge see the [Chemicals in the Water Environment challenge document](#).

For further information on the pressures associated with this challenge see the [Cypermethrin](#), [Perfluorooctane sulfonate \(PFOS\) and related substances](#), [Polybrominated diphenyl ethers \(PBDEs\)](#), [Polycyclic aromatic hydrocarbons \(PAHs\)](#), [Mercury](#) and [Drinking Water Protected Areas](#) pressure documents.

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## **8. What can be done to address the challenge of chemicals in the water environment?**

If you have read the further information about this challenge, you may also like to answer the question below:

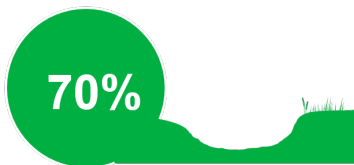
**9. Do you support the Environment Agency's proposed strategic approach to managing chemicals as referenced in the Chemicals in the Water Environment challenge document? If not, what changes would you make?**

**10. What balance do you think is needed between current chemical use, investing in end-of-pipe wastewater treatment options and modifying consumer use and behaviour?**

## Challenge 3: Invasive non-native species

The damage that invasive non-native species (INNS) cause can have major and permanent results. They can erode and undermine river banks, introduce new diseases, and can make native wildlife extinct.

An invasive non-native species is an animal or plant introduced, either deliberately or accidentally, into a place where it does not belong. They can 'hitch hike' a ride on goods or other animals or even travel in the ballast of ships. Not all non-native species are damaging; for instance non-native food crops can have huge benefits. A species only becomes 'invasive' if it has negative effects on the environment, such as outcompeting native species. Global trade, tourism and transport increase the problem world-wide, and the problem is increasing every year.



70% of surface waters in England are at risk of deterioration because of invasive non-native species



£1.3 billion is the amount INNS cost every year – includes control and eradication, structural damage to infrastructure or loss of production due to presence of INNS

Japanese knotweed was introduced by horticulturists over a century ago. Growing in thick dense clusters it increases riverbank erosion and may reduce the capacity of river channels, possibly leading to increased flooding. The Chinese mitten crab came to the UK in the ballast of ships and were first recorded in the 1930s. They weaken riverbanks by burrowing into them.

It is estimated that the UK has over 2000 established non-native species. The cost to society that they pose can be enormous: in 2010 the costs in England were estimated at £1.3 billion.



£1.5 million is the amount local action groups received in grants from 2011-2015 to help tackle non-native species



50% Defra's 25 year plan has enhancing biosecurity to reduce the spread and impacts of INNS as a key component of it

But the effects are not just economic. Invasive non-native species can also damage animal and human health and the way we live. They put even more pressure on animal and plant habitats that are already damaged, fragmented and weakened by pollution and habitat destruction.

We need to do more to understand where invasive non-native species are stopping the water environment from improving in the way we expect and want. We also need to do more to prevent their arrival and spread, since they are almost impossible to



get rid of once they are established. We can only do this by working in partnership with others, both in catchments and nationally.



non-native species are held on the Non-native Invasive Species Portal, the portal contains information on these species and links to their distribution



we have commissioned research to better understand the links between INNS, their ecological impacts and how those impacts are picked up in our assessments of ecological status

For further information on this challenge, see the [Invasive Non-Native Species Challenge](#) document.

For further information on the pressures associated with this challenge see the [Phosphorus and Freshwater Eutrophication](#), [Nitrates](#), [Natura 2000](#) and [Fine Sediment](#) pressure documents.

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### **11. What can be done to address invasive non-native species?**

If you have read the further information about this challenge, you may also like to answer the questions below:

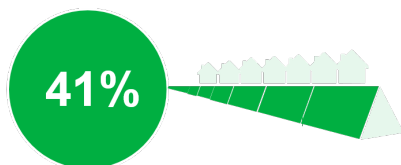
### **12. How would you promote Check, Clean, Dry to all recreational users of water, including those who are not in clubs or attend events?**

### **13. Are there any barriers stopping you adopting good biosecurity when you are in or near water?**

## Challenge 4: Physical modifications

Rivers, estuaries, lakes and the coastline make our country unique. But for thousands of years we have modified them physically to support farming, industry, transport, including shipping, and by building places to live.

Some of those physical changes are still essential. They help to protect us from flooding and support the supply of drinking water and the production of the food we eat. Other changes have helped create the iconic landscapes and architecture we value, such as the Norfolk Broads, the Avoncliff Aqueduct near Bath, and the Royal Albert Docks in Liverpool.



of water bodies are not meeting their ecological targets due to impacts from physical modifications



We have altered and modified our waters and landscapes for over 6000 years – we continue to do so today.

But as we divert rivers, cover them and straighten them, we have also damaged the environment. The legacy of structures and other changes means 41% of rivers and waterways do not provide healthy habitats for wildlife.

Despite our efforts and investment over the last ten years, this damage continues and is increasing. Building much needed homes and developing industry leads to more damaging changes to habitats. We are still building flood defences and creating barriers which make it difficult for fish and other wildlife to move along rivers to breed and feed. Climate change will increase these effects as rainfall patterns change and rivers become more difficult to manage.



of government funding was spent between 2009 and 2015 on measures to remove and improve some of the physical modifications



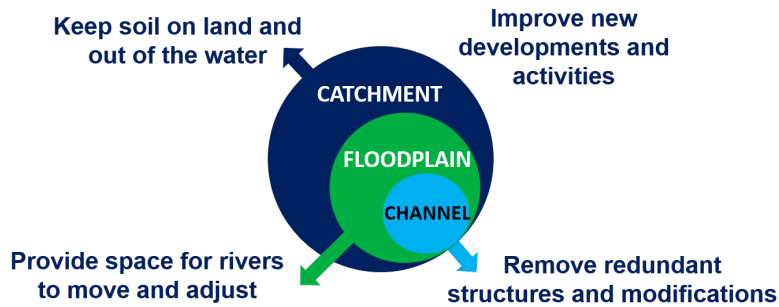
of our water environment has been enhanced since January 2016. However, despite significant efforts the overall impact from physical modifications appears unchanged

We do not have to continue to degrade coastlines, lakes and rivers. We can reverse much of the damage we have done and help bring them back to full health. One way is to remove structures such as weirs and dams that are no longer needed. We can return rivers to their natural form and still support important activities and businesses. By doing this we can also help manage and reduce the effects of climate change, reduce flooding and ensure a clean and plentiful water supply.

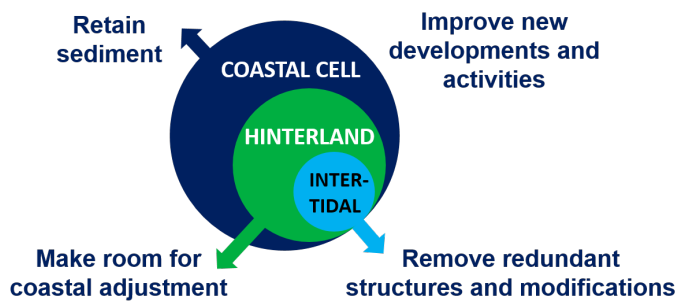
Of course, we need to balance these changes with other priorities as well as the growing pressures of population and climate change. But the environmental and social benefits are huge. With vision, skill and funding, we can transform our water environment into healthy and productive waters, full of life and vibrancy.

Priority actions in our catchments and coasts will reduce pressures from physical modifications and help manage climate change

### Inland waters



### Coastal and estuarine



For further information on this challenge see the [Physical Modifications challenge](#) document.

For further information on the pressures associated with this challenge see the [Natura 2000](#) and [Fine Sediment](#) pressure documents.

v5.4.2

### 14. What can be done to address the physical modification of our rivers and coasts?

If you have read the further information about this challenge, you may also like to answer the question below:

### 15. Giving more space for rivers and coasts to move and adjust naturally will regenerate habitat, improve wildlife and help us adapt to climate change. What can you and others do to support these changes?

## Challenge 5: Plastics pollution

David Attenborough's Blue Planet II and other campaigns revealed the horror that our lack of thought about plastics is causing. Dolphins played with plastic bags and beaches were littered with plastic debris. Many people are more aware than ever that plastic has an impact on our seas and wildlife. It's not just the plastic pollution we can see on beaches. Because of the way plastics are produced, used and disposed of, these plastics can also pollute our lakes, rivers and streams, soil and air.



metric tonnes of plastic enters the world's oceans every year



of plastic on Britain's beaches comes from the public

Micro-plastics are a growing concern but one which needs more research. Micro-plastics come from tyres and synthetic textiles. Each time you use a washing machine thousands of particles of micro-plastics are released. These tiny particles are entering our environment in large quantities and we don't yet understand the potential consequences of this on our health, food chain and wildlife.



is the amount of plastic packaging the members of the UK Plastics pact (that represent 85% of plastic packaging sold through supermarkets) are aiming to be re-usable, recyclable or compostable by 2025



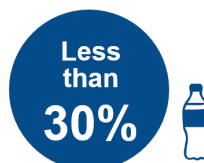
was the year when the UK government banned the sale and production of personal care products containing micro-beads

50%

You as members of the public want to deal with the problem of plastics. Plastics are being used much more as living standards rise and the world population grows. We need to change how we use plastic and how it is produced. We need to think more fully about using less plastic and re-using and recycling the plastic we do need. The government's 25 Year Environment Plan takes a strategic approach in reducing plastic waste and preventing micro-plastics reaching the seas. If we are going to fully understand how to reduce the plastics we use, we also have to understand the impact of our use. We also need initiatives that will help to reduce how much we produce and use.



is the year when new regulation on the use of plastic drinking straws, stirrers and cotton buds will come into force



Government recommends a tax on plastic packaging containing less than 30% recycled plastic

For further information on this challenge of see the [Plastics Pollution](#) challenge document.

v5.4.2

**16. What can be done to address plastics pollution in the water environment?**

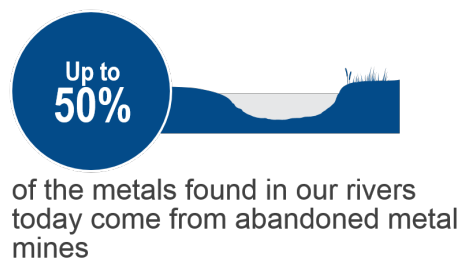
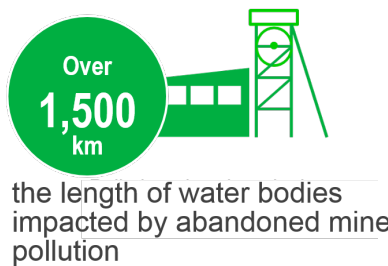
If you have read the further information about this challenge, you may also like to answer the question below:

**17. What actions should the Environment Agency take to reduce plastic pollution?**

## Challenge 6: Pollution from abandoned mines

We have been mining for coal, metal and other minerals since the Bronze Age. Mining also helped start the industrial revolution, reaching its peak in the 19th and early 20th centuries. As a result there are thousands of former mines across our landscape today.

Almost all the metal mines closed over 100 years ago but they still pollute our rivers and harm fish, river insects and habitats. Discharges from abandoned mines continue to pollute over 1,500km (3%) of rivers in England. They can also have an adverse impact on economic activity.



Pollution from coal mines is easy to see, because the iron-rich water that flows into rivers turns them orange as the iron forms “ochre” (iron hydroxide). This smothers river beds and harms the local habitat. In some areas, groundwater used for drinking water supply is threatened due to the coalfield pollution.

Pollution from former metal mines may not be visible and we can only tell that there are metals in rivers by testing its water quality. Up to half of the metals such as cadmium, zinc, lead and copper found in our rivers come from these mines, as much as from all other industrial sources combined.



In 2000, mine operators became liable for the long-term impact of their activities on the environment, even after their mines closed. However, nobody is legally responsible for the ongoing pollution from mines which closed before the year 2000. This is why the government is involved in managing this type of pollution.

Former mines and waste heaps can provide benefits to society when they are made into parks and recreation areas. Many former mines have heritage and environmental value. For example, parts of the Cornwall and West Devon mining landscape are now a World Heritage Site and the North Pennines Area of Outstanding Natural Beauty is a UNESCO Global GeoPark. In some cases, the high metal levels in some mining wastes and river sediments have allowed rare plants and lichens to flourish. Many of these are protected as Sites of Special Scientific Interest and are now an important part of Britain’s habitats.



of rivers polluted by mines are targeted to improve by 2027



of planned environmental and economic benefits to be delivered by 2027

We would like to clean up more of the rivers polluted by former mines, but the costs of building and operating treatment schemes are rising. Government funding has to be shared with other important work areas. We need to explore new ways to create cleaner rivers for people and wildlife without losing this important legacy.

For further information on this challenge, see the [Pollution from Abandoned Mines](#) challenge document.

For further information on the pressures associated with this challenge see the Chemicals page in this consultation and the [Invasive Non-Native Species](#), [Drinking Water Protected Areas](#) and [Fine Sediment](#) pressure documents.

v5.4.2

## 18. What can be done to address pollution from abandoned mines?

## Challenge 7: Pollution from agriculture and rural areas

Rivers, streams and groundwater are an essential part of rural life and the rural economy. But can we make farming and land management truly sustainable? Can we leave our soils, air and the water healthier than they are now and still grow enough nutritious food for us all?



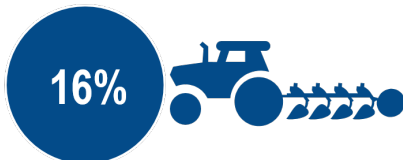
of water bodies impacted by pollution from rural areas



of top soil are lost every year due to erosion in England and Wales. In 2010, soil degradation in England and Wales was estimated to cost £1.2bn year

Currently, the way we manage land and use fertilisers and pesticides is a major reason why 40% of our rivers and groundwaters are polluted. If we are serious about supporting wildlife and enhancing our soils and water, we need to understand what is stopping us from making improvements.

Farming and rural land use is ever changing. The farming industry faces big challenges as it adapts to future political reality and to climate change. We need to think carefully about how fertilisers and pesticides are used in the future if we are going to improve the health of soil and water. We also need to look at how the management of livestock affects the land and water.



percentage of serious pollution incidents in England attributed to the agriculture sector

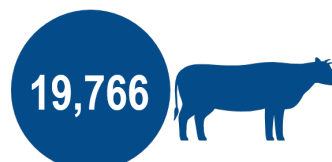


contribution from agriculture to the total phosphorus load to freshwaters

We must all protect water and soils, and comply with environmental legislation. To do this, the way some land is used might have to change. Some changes might be radical. So it's important that farmers have enough funding to help them produce the food we need and protect the environment from harmful activities. New policies will have to be created to support these changes.



decrease in pollution incidents in Catchment Sensitive Farming target areas since 2006



farms have engaged with Catchment Sensitive Farming since 2006

Making farming more sustainable will be difficult. But it is time to think about our own needs for food and make farming the heart of protecting the environment. How



should we continue to support farming in its role of managing a healthy environment?

For further information on this challenge, see the [Pollution from Agriculture and Rural Areas](#) challenge document.

For further information on the pressures associated with this challenge see the Chemicals page in this consultation and the [Pollution from Water Industry Wastewater](#), [Nitrates](#), [Faecal Contamination](#), [Phosphorus and Freshwater Eutrophication](#), [Natura 2000](#), [Drinking Water Protected Areas](#) and [Fine Sediment](#) pressure documents.

v5.4.2

### **19. What can be done to address pollution from agriculture and rural areas?**

If you have read the further information about this challenge, you may also like to answer the question below:

### **20. How can we support the farming sector to excel at innovative solutions which benefit both productivity and the environment? What should these solutions look like?**

## Challenge 8: Pollution from towns, cities and transport

More than half the people in the world now live in cities. In England that number is far greater, with 83% of us now living in urban areas.

The environment faces some of its greatest challenges from urbanisation and transport. Pollution from towns and cities is damaging 18% of our rivers. That's most of the waters in England's urban areas.

Pollution comes from our waste, drainage, roads, transport, industries and housing. Historic pollution from factories and heavy industry has also left a legacy contaminating land, soils and water.



of water bodies impacted by pollution from towns cities and transport

The climate crisis is intensifying the problems densely populated areas create. The impact of pollution from urban areas is particularly acute during heavy rainfall events following periods of prolonged dry weather. In dry weather pollutants build up on hard surfaces such as roads, and in drains. Heavy rainfall flushes all these pollutants into rivers and streams in one go which can damage wildlife. This type of weather pattern is likely to be more common due to climate change.

We need to ensure urban areas use sustainable drainage systems to reduce pollution and the risk of flooding. But which drain should we use? Houses are connected to two drainage systems: the foul (wastewater) drain for sinks, toilets and washing machines. The other is the surface water system which takes rainwater from roofs and pavements. Many people do not know that they should not connect sinks, washing machines and toilets to the surface water drains that lead directly to our rivers.



miles driven by all motor vehicle traffic in Great Britain for year ending March 2019, an increase of 6.5% from 10 years ago and 15% from 20 years ago

Most of us have seen the grim pictures of 'fatbergs'. Fatbergs clog sewers and result in flooding and pollution. Fatbergs result from putting oil, fats and wet wipes down toilets and sinks. These should be cooled and poured into a sealed container. Some councils have fat collection services, otherwise dispose of them in non-recyclable rubbish.

With good stewardship, governance, and planning, we can improve our towns and cities and the environment. We can unleash those benefits by building sustainable

and well planned housing and infrastructure, and offering better and more efficient transport.

For further information on this challenge, see the [Pollution from Towns, Cities and Transport](#) challenge document.

For further information on the pressures associated with this challenge see the Chemicals page in this consultation and the [Pollution from Water Industry Wastewater](#), [Nitrates](#), [Faecal Contamination](#), [Phosphorus and Freshwater Eutrophication](#), [Drinking Water Protected Areas](#) and [Fine Sediment](#) pressure documents.

v5.4.2

**21. What can be done to address pollution from towns, cities and transport?**

**22. How can sustainable drainage systems and green infrastructure be most effectively used to tackle pollution from urban areas? What challenges are there to using them?**

## Challenge 9: Pollution from water industry wastewater

The water industry plays a vital role in making sure that waste water from homes and businesses is safely treated and returned to the environment. This helps to protect our health and the health of our waters.

Waste water pollution has in the past damaged rivers, streams and coastal waters very badly. But the situation has improved a lot in the last 30 years. This is because water companies, funded by their customers, have invested in better collection and treatment systems, and improved how they work with local people. Regulation is also better now. As a result, waste water treatment works put 60% less phosphates and 70% less ammonia into the water environment than they did in 1995. The water industry also causes fewer pollution incidents than it used to.



serious pollution incidents per year due to water companies



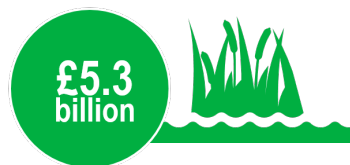
combined sewer overflows, out of a total of 15,000, have been improved since 1990

Despite these improvements, water industry activities are still one of the main reasons why our waters are not in a good enough state. Work is underway to address these problems but more is needed. Water companies need to further improve their treatment systems and reduce incidents of untreated waste water being discharged to rivers and coastal waters.

Water companies must also make sure that their services and assets can cope with the impacts of climate change. More extreme weather, more people moving into towns and cities and growing populations will make it harder to protect and improve the environment.



of rivers and estuaries predicted to be protected and improved through water company plans from 2020-2025



is the amount of water company investment and projected investment towards WFD objectives from 2009 to 2025

We can all play a part in helping reduce the effects of waste water by using less water in our homes and by thinking more carefully about what we pour down the sink and flush down the toilet.

For further information on this challenge, see the [Pollution from Water Industry Wastewater](#) challenge document.

For further information on the pressures associated with this challenge see the Chemicals page in this consultation and the [Nitrates](#), [Faecal Contamination](#), [Phosphorus and Freshwater Eutrophication](#), [Natura 2000](#), [Drinking Water Protected Areas](#) and [Fine Sediment](#) pressure documents.

**23. What can be done to address pollution from water industry wastewater?**

If you have read the further information about this challenge, you may also like to answer the question below:

**24. What opportunities exist for water companies to collaborate with other sectors and organisations on measures to improve the water environment?**

## Catchment partnership working

### Working together

Traditional approaches to water management have resulted in some major improvements in the water environment. For instance the substantial improvement in the quality of urban rivers and bathing waters over the last 30 years.

However, many of the big challenges we now face (e.g. tackling climate change) are complex and cannot be solved by one organisation alone but require a step change in approach.

Defra's [Catchment Based Approach](#) requires a strategic, catchment wide approach and local partners working collaboratively.

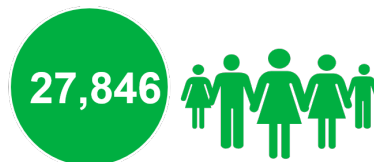


The first Loddon Rivers Week - volunteers and partners building a fish and wildlife bypass channel

A catchment wide approach is essential because activity in the upstream parts of a catchment can have impacts downstream. Water, and the land that drains to it, needs to be managed as a whole catchment system from 'source to sea'. However, local partnership working does not necessarily have to be based on these catchment boundaries, as long as the planning and management of water and those activities that can affect it adopt the 'source to sea' approach.



100+ catchment partnerships bring local knowledge and expertise and are active in each of the 100+ catchments across England



27,846 primary stakeholders engaged in 2017/18

You can find out more about the Catchment Based Approach and your local catchment partnership at <https://catchmentbasedapproach.org/get-involved/>

We want to work with partners across multiple scales (national, regional, county, area, landscape, catchment and parish) in a cohesive, joined up approach. This more inclusive approach, considering all parts of the catchment system including

environmental, social and economic issues, is one of the transformational changes needed to deliver the government's 25 Year Environment Plan aspirations.

Feedback from our Working Together consultation indicates some of our partnership working is not always inclusive enough to deliver this collaborative, wider systems approach.

Partnerships need to be inclusive, building and extending the great work already begun by many catchment partnerships. We want to work with partnerships to help widen the range of stakeholders involved and improve the link to other place based partnerships (e.g. local nature partnerships, nature improvement areas, local enterprise partnerships, coastal partnerships and the proposed nature recovery networks highlighted in the government's 25 Year Environment Plan). This will secure support from wider parts of society that benefit from a healthy water environment (e.g. local businesses and local government).



partnership projects took place in 2017/18. These tackled a range of pressures and challenges.



of habitat created in 2017/18 improving the resilience of catchments

Water management needs to be both nationally strategic (operating within the legal and government's policy framework) and locally owned (through local place partnerships). The river basin management plans are a crucial part of the strategy. This consultation, and the consultation on the draft update to those plans, provide the opportunity to secure greater participation and local ownership. We call upon all partners to engage and participate in this consultation, and development and delivery of updated river basin management plans in 2021.

One of the objectives of Defra's Catchment Based Approach is that catchment partnerships should aim to be self-sufficient, as partners should obtain collaborative advantage from the partnerships and therefore be willing to contribute to partnership hosting and management. However, some partnerships have identified funding as a key constraint to progress.

v5.4.2

**25. How can local partnerships become more inclusive and representative of all of the stakeholders within their catchments?**

**26. How can local partnerships achieve a better balance of public and private funding to support and sustain their environmental work?**

## Who pays?

Healthy and plentiful water is essential for us all and protecting and improving it requires investment. The benefits we receive from water are priceless but the government estimates England's waters to be worth £39.5 billion.

We spend £5 billion a year protecting public health and the environment by tackling pollution and maintaining the benefits and services water gives us. Deciding who pays this is difficult. We don't share the benefits of the environment equally and quite often the costs of protecting the environment aren't shared fairly either. As a result it is often the government who pays using taxpayer money to maintain our natural environment. Other major contributors are water companies and their customers, farming and industry.

The reality is, to achieve our target of bringing 75% of waters back to near natural condition we have to greatly increase the level of investment in river catchments. If we don't our environment is likely to suffer further damage and we will all bear the cost of losing the benefits that nature provides.

To find out more about this subject, read the more detailed information in [the economics of managing water](#) document.

v5.4.2

**27. How should the step change in protecting and improving the water environment be funded and who should pay? Are there any barriers to doing this?**



## Supporting information

### River basin management plans

Over the next two years the Environment Agency is updating the river basin management plans. These plans contain objectives for every water body in England and a summary of the actions needed to achieve those objectives.

The updated plans will be published in 2021. They may be supported by new legal requirements or new actions.

The Challenges and Choices consultation is an important step in the process of updating the plans, seeking your views on what needs to be done to tackle the significant issues affecting the water environment. For a timeline see Appendix 2.

### River basin districts

A river basin management plan is produced for each river basin district (RBD). As part of this Challenges and Choices consultation you will be asked to identify which river basin district(s) your response applies to, or if your response applies to the whole of England.

To find your river basin district use this [map](#) or visit the [Catchment Data Explorer](#).

The Environment Agency is responsible for the review and update of the river basin management plans for the six river basin districts that fall entirely within England: Anglian, Humber, North West, South East, South West, and Thames.

The Environment Agency also leads on the review and update of the plans for the Severn and Northumbria RBDs which lie partly in Wales and Scotland respectively.

River basin management plans for the other two cross-border river basin districts, the Solway Tweed and the Dee, are led by the Scottish Environment Protection Agency and Natural Resources Wales respectively. However, for information on how significant water management issues are managed in the English parts of those two river basin districts please refer to this Environment Agency consultation.

### Severn river basin district

You can respond with respect to how the significant water management issues are managed for the Severn RBD through this consultation.

However an additional document for the Severn RBD on the management of significant water management issues across Wales is available [here](#). This document is available in Welsh [here](#) and to answer the questions for the Severn RBD in Welsh then please use the following form [here](#).

A table summarising the significant water management issues across the whole Severn RBD is available [here](#).

## **Solway Tweed river basin district**

The [Scottish Environment Protection Agency](#) (SEPA) leads on the review and update of the river basin management plan for the Solway Tweed River Basin District.

SEPA are planning to launch their equivalent Challenge and Choices consultation later this year and you will be able to respond to that consultation with respect to the English part of the RBD. Once available you will be able to find SEPA's Challenges and Choices consultation for the Solway Tweed RBD [here](#).

You can find detailed information about English water bodies in the Solway Tweed RBD via the [Catchment Data Explorer](#).

## **Dee river basin district**

[Natural Resources Wales](#) (NRW) leads on the review and update of the river basin management plan for the Dee River Basin District.

The Challenges and Choices consultation for the Dee RBD is overseen by NRW and runs from June 2019 to December 2019. You can respond to that consultation with respect to the English part of the RBD.

You can find NRW's Challenges and Choices consultation for the Dee RBD [here](#).

You can find detailed information about English water bodies in the Dee RBD via the [Catchment Data Explorer](#).

## **Evidence**

### **Sharing information**

The Environment Agency has developed the [Catchment Data Explorer](#) to help you explore and understand the water environment in England. It supports and builds upon the data available in the river basin management plans. You can find catchments and water bodies of interest using a map or searching by name. You can also view summary information about catchments, and follow links to other useful sites.

The Catchment Data Explorer contains an overview page for each river basin district and a summary of the significant issues affecting the water environment in each RBD.

You do not need to refer to the detailed information in the Catchment Data Explorer in order to respond to this challenges and choices consultation.

Detailed information about water bodies in the Welsh parts of the Dee and Severn RBDs can be found on [Water Watch Wales](#).

## **Strategic Environmental Assessments**

Statutory Strategic Environmental Assessments (SEAs) have been undertaken on the 2009 river basin management plans (RBMPs), and the 2016 updates to the RBMPs. The Environment Agency, as the responsible authority, must make a

screening determination under the SEA regulations for the 2021 update to the RBMPs. The Environment Agency's current view is that the 2021 update could be considered a minor modification, however, there is some uncertainty at this early stage whether the plan or modifications are likely to have significant environmental effects. The Environment Agency will be consulting separately on SEAs in the near future.

### **Flood risk management plans**

Flood risk management plans (FRMPs) set out how organisations, stakeholders and communities will work together to manage flood risk.

The plans explain the risk of flooding from rivers, the sea, surface water, groundwater and reservoirs and describe how [risk management authorities](#) will work with communities to manage that flood risk.

A flood risk management plan exists for each river basin district in England and updated FRMPs will be published in December 2021.

River basin management plans and flood risk management plans provide a joint and integrated approach to catchment planning for water. Working together to achieve the objectives and measures in the plans will help achieve benefits to human health and wellbeing, economic prosperity and the natural environment.

You can find out more about flood risk management plans [here](#).

### **Natura 2000 protected areas**

Natura 2000 protected areas are designated for their international conservation importance. They represent the UK's most important wildlife sites and as such are given special consideration within river basin planning.

You can find out more about more about how the challenges described in this consultation impact these sites and how Natura 2000 protected areas are included in river basin management plans in the [Natura 2000](#) further information document.

## Complete and submit consultation

Please tell us some information about you before you submit your response. This will allow us to ensure your response gets to the right people and let us contact you when our response document is published.

### How we will use your information

The Environment Agency will look to make all responses publicly available during and after the consultation, unless you have specifically requested that we keep your response confidential.

We will not publish names of individuals who respond.

We will also publish a summary of responses on our website in which we will publish the name of the organisation for those responses made on behalf of organisations.

In accordance with the Freedom of Information Act 2000 and the Environmental Information Regulations 2004, we may be required to publish your response to this consultation, but will not include any personal information. If you have requested your response to be kept confidential, we may still be required to provide a summary of it.

For more information see our [Personal Information Charter](#).

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### **28. When we come to analyse the results of this consultation, it would help us to know if you are responding as an individual or on behalf of an organisation or group. Please select from the following options:**

Responding as an individual

Responding on behalf of an organisation (Please specify which organisation or group and include what type it is, e.g. business, environmental group, etc.)

Other

Name of organisation or group, if you don't want to leave the organisation name, please tell us what type it is.

### **29. What is your email address?**

If you provide us with your email address you will receive an acknowledgement email after you've submitted your response.

We can also use it to let you know when we have published the **Summary of consultation responses** document.

### **30. What is your name?**

If you are happy for us to contact you about your response please leave your name below. We will not publish your name and will only contact you for clarifications about your response or to follow up on any suggestions you have made.

**31. Please select which river basin district your response to this consultation applies to (you can select more than one or submit a national response by selecting 'England').**

(Required)

- England (all river basin districts)
- Anglian
- Humber
- North West
- Northumbria
- Severn
- South East
- South West
- Thames

To find out more about river basin districts visit the [river basin planning page](#). You can identify what river basin district you are in by using the [interactive map](#) (opens in new window).

**32. Are you happy for us to publish your response? We will not publish any personal information or parts of your response that will reveal your identity.**

(Required)   Yes  No

**33. Finally, it would really help us if you let us know where you found out about this consultation.**

## Submit consultation

We invite you to submit your views to us via the link to the consultation below:

<https://consult.environment-agency.gov.uk/environment-and-business/challenges-and-choices>

Alternatively, representations can be made via e-mail to [RBMPconsultation@environment-agency.gov.uk](mailto:RBMPconsultation@environment-agency.gov.uk) or in writing to:

Clive Phillips, Operations Catchment Services, Environment Agency, Kings Meadow House, Kings Meadow Road, Reading, RG1 8DQ.

You can request a separate Word document proforma with just the questions to assist your responses via [RBMPconsultation@environment-agency.gov.uk](mailto:RBMPconsultation@environment-agency.gov.uk)

*The closing date for receipt of your comments is 24th April 2020.*

# Appendices

## Appendix 1

### 1. Navigating the consultation

This consultation is best viewed and responded to online. Responding online allows us to handle your response more quickly and efficiently.

It is separated into 'challenge' pages that describe the significant issues covered in this consultation.

Each 'challenge' page has a short film, a brief summary of the challenge and links to further detailed information on the challenge and the pressures responsible for causing it.

You can navigate through this consultation via the contents page. Each time you click 'continue' you are returned to the contents page. The questions in this consultation appear at the bottom of each page.

You do not have to visit all the pages or respond to every question in the consultation. If you have a specific area of interest you can navigate straight to that page and just respond to those questions.

If you have a general response to this consultation, or one that does not fall under the challenges, you can respond to the question on The Water Story page.

Once you have answered all of the questions relevant to you, click on 'Complete and submit consultation' which takes you through the steps to finalise your response.

You can download a pdf of the consultation on the Overview page. However the films and links are not available offline.

Alternatively, submissions can be made via e-mail to:

[RBMPconsultation@environment-agency.gov.uk](mailto:RBMPconsultation@environment-agency.gov.uk)

You can also request a separate Word document proforma with just the questions to assist your responses via [RBMPconsultation@environment-agency.gov.uk](mailto:RBMPconsultation@environment-agency.gov.uk)

Or in writing to:

Clive Phillips, Operations Catchment Services, Environment Agency, Kings Meadow House, Kings Meadow Road, Reading, RG1 8DQ.

To help you with any unfamiliar terms or phrases in the consultation, there is a link on each page to a [glossary of the terms](#). The link is located in the further information box above the questions.

If you require further help, contact us on:

National Customer Contact Centre: 03708 506 506

[RBMPConsultation@environment-agency.gov.uk](mailto:RBMPConsultation@environment-agency.gov.uk)

## 2. The challenges

The challenges are the main issues that limit the uses and potential benefits of managing the water environment in a sustainable way. They have been identified based on the results of public consultation and assessments of the pressures caused by people now, in the past, and predicted in the future.

The guide below will help you understand which challenges are most relevant for you:

- Water for use at home: changes to water levels and flow, water industry wastewater, chemicals in the water environment, climate and environment crisis
- Water for use in my business: changes to water levels and flow, water industry wastewater, chemicals in the water environment, climate and environment crisis, pollution from agriculture and rural areas
- Water for nature – invasive non-native species, physical modification, plastics pollution, climate and environment crisis
- Water for play and healthy lives – changes to water levels and flow, pollution from towns, cities and transport, water industry wastewater, chemicals in the water environment, pollution from abandoned mines, climate and environment crisis, pollution from agriculture and rural areas
- Water for our future – climate and environment crisis, changes to water levels and flow

Each challenge page in the consultation links to more detailed information as well as documents detailing the pressures related to that challenge. These links are available just above the questions boxes on the challenge pages (see table 1).

Many of these challenges arise from activities that also provide a wide range of benefits. It may therefore not be possible or desirable to fully resolve the issues.

Different challenges are relevant to particular sectors depending on whether the sector's activities contribute to the issue, the benefits the sector gets from the water environment are limited due to the issue or whether the sector can help with the solutions to the issue. This increases the benefits they and others can get from the water environment. The list below outlines which of the challenges are most relevant to some of the main sectors.

Agriculture and rural land management

- Challenges: chemicals in the water environment, physical modification
- Pressures: FIO (Faecal contamination), fine sediment, nitrate, phosphorus

Government (including Defra, Environment Agency, Natural England)

- Challenges: changes to water levels and flows, chemicals in the water environment, Invasive Non-native Species, physical modification
- Pressures: FIO (Faecal contamination), fine sediment, nitrate, phosphorus

Construction

- Challenges: chemicals in the water environment, Invasive Non-native Species
- Pressures: faecal contamination, fine sediment

#### Energy production

- Challenges: changes to water levels and flows, chemicals in the water environment
- Pressures: drinking water protected areas

#### Food and drink

- Challenges: changes to water levels and flows, chemicals in the water environment
- Pressures: phosphorous

#### Forestry

- Challenges: changes to water levels and flows
- Pressures: fine sediment, nitrate, phosphorus

#### Local authorities/Public Sector

- Challenges: changes to water levels and flows, Invasive non-native Species, physical modification
- Pressures: faecal contamination, fine sediment

#### Manufacturing and retail

- Challenges: changes to water levels and flows, chemicals in the water environment

#### Mining

- Challenges: chemicals in the water environment
- Pressures: fine sediment

#### Ports

- Challenges: chemicals in the water environment physical modification
- Pressures: fine sediment

#### Water industry

- Challenges: changes to water levels and flows, chemicals in the water environment, Invasive Non-native Species, physical modification
- Pressures: faecal contamination, nitrate, phosphorus



### **3. Other areas of interest**

#### **Flood risk management plans**

Flood risk management plans (FRMPs) set out how organisations, stakeholders and communities will work together to manage flood risk. A flood risk management plan exists for each river basin district in England and updated FRMPs will be published in December 2021.

River basin management plans and flood risk management plans provide a joint and integrated approach to catchment planning for water. Working together to achieve the objectives and measures in the plans will help achieve benefits to human health and wellbeing, economic prosperity and the natural environment.

You can find out more on the [flood risk management plans](#) pages.

#### **Catchment Data Explorer**

The Environment Agency has developed the [Catchment Data Explorer](#) to help you explore and understand the water environment in England. You can find catchments and water bodies of interest using a map or searching by name. You can also view summary information about catchments, and follow links to other useful sites.

The Catchment Data Explorer contains an overview page for each river basin district (RBD) and a summary of the significant issues affecting the water environment in each RBD.

You do not need to refer to the detailed information in the Catchment Data Explorer in order to respond to this challenges and choices consultation.

Detailed information about water bodies in the Welsh parts of the Severn RBD can be found on [Water Watch Wales](#).

### **4. Challenges and Choices in England, Scotland and Wales**

The Environment Agency also leads on the review and update of the plans for the Severn and Northumbria river basin districts (RBDs) which lie partly in Wales and Scotland respectively.

The river basin management plans for the Dee and Solway Tweed cross-border river basin districts, are led by Natural Resources Wales (NRW) and the [Scottish Environment Protection Agency](#) (SEPA) respectively. However, for information on how significant water management issues are managed in the English part of the Dee and Solway Tweed river basin districts please refer to this Environment Agency consultation.

Further detail of the Severn, Solway Tweed and Dee RBDs are below.

#### **Severn RBD**

You can respond with respect to how the significant water management issues are managed for the Severn RBD through this consultation.

However, an additional document for the Severn RBD on the management of significant water management issues across Wales is available [here]. This document is available in Welsh [here](#) and to answer the questions for the Severn

RBD in Welsh then please use the following form [here](#). Detailed information about water bodies in the Welsh parts of the Severn RBD can be found on [Water Watch Wales](#).

### **Solway Tweed RBD**

The Scottish Environment Protection Agency (SEPA) leads on the review and update of the river basin management plan for the Solway Tweed River Basin District.

SEPA are planning to launch their equivalent Challenge and Choices consultation later this year and you will be able to respond to that consultation with respect to the English part of the RBD. Once available you will be able to find SEPA's Challenges and Choices consultation for the Solway Tweed RBD [here](#).

You can find detailed information about English water bodies in the Solway Tweed RBD via the [Catchment Data Explorer](#).

### **Dee RBD**

The Challenges and Choices consultation for the Dee RBD runs from June 2019 to December 2019. You can respond to that consultation with respect to the English part of the RBD through the NRW consultation until the 22nd December 2019.

You can find the Natural Resources Wales Challenges and Choices consultation for the Dee RBD [here](#).

You can find detailed information about English water bodies in the Dee RBD via the [Catchment Data Explorer](#).

Table 1: Table showing how the challenges relate to pressures

		Challenges in the consultation							
		Changes to water level and flows	Invasive non-native species	Physical modification	Pollution from abandoned mines	Pollution from agriculture and rural areas	Pollution from towns, cities and transport	Pollution from water industry wastewater	Chemicals in the water environment
Pressures	Chemicals (there are 5 different chemicals pressure documents) *				X	X	X	X	X
	Fine sediment		X	X	X	X	X	X	
	Nitrates		X			X	X	X	
	Phosphorus and freshwater eutrophication		X			X	X	X	
	FIO (Faecal contamination)					X	X	X	
	Drinking water protected areas				X	X	X	X	X
	Natura 2000	X	X	X		X		X	

\*The specific chemical pressure narratives are: Cypermethrin, Perfluorooctane sulfonate (PFOS) and related substances, Polybrominated diphenyl ethers (PBDEs), Polycyclic aromatic hydrocarbons (PAHs) and Mercury.

## Appendix 2

Stage	Date	Purpose
<b>Challenges and Choices consultation</b>	October 2019 6 months	<p><b>Have the significant issues and the challenges in tackling them been fairly summarised? What can be done about them?</b></p> <ul style="list-style-type: none"> <li>Summarises the significant water management issues and share the latest evidence</li> <li>seeks views on prioritising action</li> <li>agreeing what additional approaches are needed</li> </ul>
<b>Engagement</b>	October 2019 to September 2020 11 months	The Environment Agency will consider the responses to the Challenges and Choices consultation. Where there are areas which need to be resolved or clarified we will facilitate further engagement with relevant stakeholders
<b>Draft update to the river basin management plans consultation</b>	October 2020 6 months	<p><b>Does the draft plan set the right level of ambition for the water environment and a strong commitment to deliver?</b></p> <ul style="list-style-type: none"> <li>proposes changes to water body objectives</li> <li>estimates the likely state of the environment by 2027</li> <li>outlines who will be involved to achieve these outcomes, how much it will cost and the benefits</li> </ul>
<b>Engagement</b>	October 2020 to August 2021 10 months	The Environment Agency will consider the responses to the consultation and where necessary further develop the content of the plans with delivery partners to ensure the updated plans are the best possible and fully supported
<b>Updated river basin management plans published</b>	September 2021 to December 2021	<p><b>This is the plan to address the issues</b></p> <p>Publish proposed plans in September and submitting to government for approval. The approved plans will be published in December. These plans will be used as a framework to direct planning and action and to track progress in each river basin district</p>

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