

Challenges and choices – a consultation on Wales’s significant water management issues

Water is a vital natural resource for the environment and people. Water creates and sustains the ecosystems upon which all life depends. It is vital to the economy and for health and is used to generate power, run industries and grow food. Physical modifications are severely reducing the diversity and resilience of our waters. Rural areas, wastewater, towns, transport and abandoned mines are sources of pollution such as chemicals, metals, nutrients and bacteria, in addition to this, plastics and microplastics can be harmful to people and nature. The presence of invasive non-native species can have significant ecological and economic impacts. Climate change is anticipated to cause increasing temperatures, more intense rainfall and extended periods of dry weather.

The combined effect of these issues and competing demands for water means that our water ecosystems are under pressure. Widespread species, including Salmon and Sea Trout, are undergoing catastrophic declines; Salmon is predicted to be locally extinct in some Welsh rivers by 2030.

Our investigations and research through the River Basin Management Plans (RBMPs) tell us what the challenges are, and we want to share this with you. We need to continue to work together to take urgent, collaborative action to address these issues. By sharing what the main challenges facing our water environment are, we want to hear from you about how our waters can be improved.

Have Your Say on the Future of Water in Wales

We are seeking your views on the key issues affecting our water environment and the actions needed to address them. Your input will help shape the future of water management in Wales.

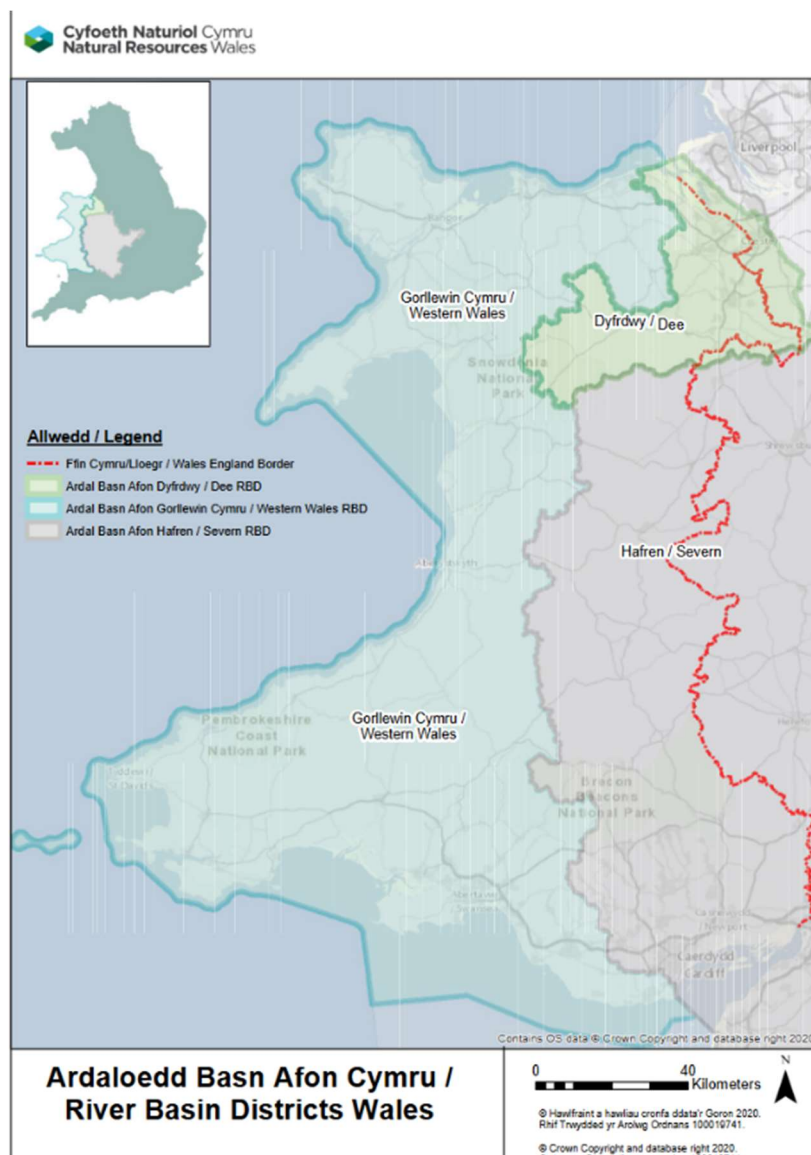
This is the second in a series of three consultations which will help to inform updating RBMPs for 2027 to 2033. These RBMPs will outline the measures required to protect and restore water from source to sea. Draft versions of the updated plans are expected to be released for consultation in 2026. We will also publish an overview through our “We Asked, You Said, We Did” page - https://ymgynggori.cyfoethnaturiol.cymru/we_asked_you_said/ following the closure of this consultation.

The Independent Water Commission (IWC) review of the water sector was published on 21 July 2025. This recommended a review of the Water Framework Directive (WFD) Regulations for England and Wales. The Welsh Government will decide how they want to implement the IWC recommendations. This may change how NRW delivers the Cycle 4 River Basin Management Plans covering 2027 to 2033 which this consultation will inform.

The IWC findings do not change this consultation which is about our significant water management issues and what it means, but will affect how and when action occurs. NRW will work with the Welsh Government, as well as Defra and the Environment Agency for water bodies that cross into England, to ensure our future RBMPs achieve what is required for our water environment.

This consultation is best looked at in conjunction with our StoryMap
<https://gisportal.cyfoethnaturiolcymru.gov.uk/portal/apps/storymaps/stories/985fa4645af843869032eccbaca4dde3>

River Basin Districts in Wales



This is the statutory consultation for the Dee River Basin District (RBD) (including English water bodies) and Western Wales RBD.

The Severn RBD includes the Welsh areas of the Wye and Severn catchments as well as the Usk, Taff and Ely, we have shared data for this area with you. The Environment

Agency manage the statutory consultation for the Severn RBD including Welsh water bodies through their parallel consultation which will be open later in 2025. More information on significant water management issues in England can be found here - [Significant water management issues - Environment Agency - Citizen Space](#). However, if you live or work in the Welsh part of the Severn RBD and would prefer to respond to NRW's consultation questions then please continue to complete this consultation.

Which River Basin District are your answers relevant to?

All Wales

Dee (including water bodies in England)

Severn (Wales only)

Western Wales

Significant water management issues – the challenges

Our Water Framework Directive Regulations investigations have identified some of the significant issues affecting our water bodies. These are;

- Physical modifications
- Pollution from rural areas
- Pollution from wastewater
- Pollution from towns, cities and transport
- Pollution from abandoned mines
- Changes to the natural flow and levels of water

For the issues listed above we have provided some figures showing where they are identified as a reason for not achieving good overall status. For this and other detailed information, including interactive maps and graphs, please see our associated resources at

<https://gisportal.cyfoethnaturiolcymru.gov.uk/portal/apps/storymaps/stories/985fa4645af843869032eccbaca4dde3> . We have previously published similar information as part of previous RBMPs, this data is not directly comparable due to changes in methodology.

A water body may have one, or more reasons for not achieving good overall status. We present figures for the Western Wales RBD and Dee RBD, which are the focus of this consultation, as well as summary figures for all of Wales. The Dee is a cross-border RBD, water bodies located in England are included in the totals for the Dee. Summary figures for Wales include all water bodies in the Western Wales RBD along with the Welsh water bodies within the Dee and Severn RBDs.

In addition to these there are other significant issues, these tend to be more widespread. They build on our WFD Regulations dataset or are known through wider global issues and broader research, which are;

- Chemicals and emerging contaminants
- Plastics and microplastics
- Invasive non-native species
- Nutrients
- Bacteria
- Climate emergency
- Nature emergency

Working together to resolve these challenges

The current RBMPs (2021-2027) set out a planned Programme of Measures which collectively aim to tackle these challenges. These measures are needed to get our waters to good status/potential, prevent deterioration and/or contribute to achieving objectives for protected areas including bathing waters, shellfish waters, drinking waters and water dependent special areas of conservation (SAC). We take on responsibility for some of these measures and produce RBMPs, but some are also led by other organisations such as the Welsh Government, water companies, and the Mining Remediation Authority. Many are also delivered through partnerships, we all have a contribution to make.

A summary of the current measures are included under each issue, full detail is available on Water Watch Wales

<https://cyfoethnaturiolcymru.sharefile.eu/share/view/sc0c2a20ae9c2429394326eb75e0eda5d>. Progress on these measures has recently been reviewed, more details can be found in Interim Programme of Measure Progress Review Report

<https://eur01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fcyfoethnaturiol.cymru%2Fevidence-and-data%2Fresearch-and-reports%2Fwater-reports%2Friver-basin-management-plans%2Fcycle-3-river-basin-management-plans-2021-2027-interim-programme-of-measures-progress-review%2F%3Flang%3Den&data=05%7C02%7CJulia.Mansbridge%40cyfoethnaturiolcymru.gov.uk%7C1d76139a90264ee34ade08de0804f31b%7C8865ef0facde487cbf175cb50375d757%7C0%7C0%7C638957014498990709%7CUnknown%7CTWFPbGZsb3d8eyJFbXB0eU1hcGkiOnRydWUsIiYiOilwLjAuMDAwMCIsIiAiOiJXaW4zMilslkFOljoITWFPbClslldUj0yfQ%3D%3D%7C0%7C%7C%7C&sdata=eBtk62GX1lvsIJMkaOM8nkzQKEAR%2FiaqRA05xDylW%2Fc%3D&reserved=0>. The Programme of Measures is being reviewed, your responses to this consultation will help to inform what could be included in the 2027-2033 RBMPs.

To better support how we deliver the RBMPs how would you like to see measures tracked and evaluated? How should we report progress? And what could you contribute to this?

Physical modifications

Physical modification refers to changes made to natural forms and processes of rivers, lakes, estuaries and coastal waters. Species in all waters depend on natural processes because they provide and sustain habitat, physical modifications have impacts on freshwater ecosystem resilience. Natural processes can typically self-sustain, requiring little if any management intervention.

At the all-Wales scale, physical modifications of surface waters (barriers to fish migration, water resources management, flood and coast protection, urbanisation, land drainage, navigation, ports harbours and recreation) are a key pressure and the main reason for not achieving good status under the WFD Regulations. Restoration work is underway but needs to increase in scale and pace in order to keep up with ongoing physical degradation.

Physical modifications impact on 23% (212) water bodies across Wales. This can be broken down into the three Welsh RBDs as follows: Dee RBD – 26 % (24) water bodies, Western Wales RBD – 16 % (93) water bodies, Welsh area of the Severn RBD – 35% (100) water bodies.

Summary of current actions

Key programmes and activities include: Flood Risk Management activities; Shoreline Management Plan policies for coastal defence management; the National Habitat Creation Programme; Sustainable Fisheries Programme; Salmon for Tomorrow; Inland Fisheries Habitat Restoration programmes; Implementation of the Eels Regulations; the removal of barriers to fish passage associated with water company assets; The River Restoration Programme.

These measures are:

- Where possible removing harmful legacy structures or modifications.
- Mitigating harmful impacts of modifications that have essential human uses such as for public water supply or coastal defences, whilst protecting the use.
- Restoring natural river processes, and increasing the extent of buffer zones and river side corridors alongside inland waters to make them more resilient
- Ensuring that future modifications do not cause deterioration.

Pollution from rural areas

Poor land management practices can result in nutrients, chemicals and sediment affecting the water environment. This is due to runoff from fields, farm infrastructure, sheep dipping and trampling of land (known as poaching) as well as forestry activities.

Pollution from rural areas affects a wide variety of the protected areas across Wales from source to sea. Drinking water protected areas, water dependent SACs, including rivers,

lakes, estuaries and peatbogs are all under pressure from diffuse pollution. In addition, much of the Welsh coastline is designated as bathing waters, shellfish water protected areas or marine protected areas, sometimes all three, and receive the runoff from the land. Our groundwater drinking water protected areas, underneath all of Wales, are also under pressure from rural pollution, particularly from nutrients and chemicals.

Pollution from rural areas impacts on 21% (197) water bodies across Wales. This can be broken down into the three Welsh RBDs as follows: Dee RBD – 28% (26) water bodies, Western Wales RBD - 19% (107) water bodies, Welsh area of the Severn RBD - 26% (73) water bodies. Out of these the majority, over 85%, are attributed to agriculture.

Summary of current actions

Key programmes and activities include: influencing the sustainable land management themes in the Sustainable Farming Scheme; SAC Rivers Project; Regulation including the Control of Agricultural Pollution Regulations; Sheep Scab Eradication Programme, the Welsh Government's Woodlands for Wales strategy; awareness and implementation of the UK Forestry Standard Guidelines (including "Forests and Water" Guidelines), and Practice Guides

These measures are:

- Strengthening regulatory, financial and operational mechanisms to support a sustainable agricultural sector that protects the water environment.
- Delivering the NRW's SAC Nutrient Programme, continuing to identify opportunities and deliver interventions to improve water quality through nutrient management boards and catchment partnerships.
- For groundwater dependent ecosystems that are at risk from nutrient rich groundwater inputs we will continue to look at opportunities to reduce nutrient inputs.
- Reducing future need of veterinary medicine use and improving agricultural waste management by taking spent dip away to a treatment facility instead of spreading it to land.
- Managing the Welsh Government Woodland Estate to meet the UK Forest Standard Forest & Water Guidelines as a minimum.

Pollution from wastewater

Wastewater includes treated water from wastewater treatment works, untreated intermittent discharges from storm overflows, sewage from houses misconnected to surface water drains rather than sewers, and septic tanks. It can contain large amounts of nutrients (such as phosphorus and nitrogen), ammonia, metals and other damaging substances including viruses and bacteria. These can have a detrimental effect on habitats and a significant impact on our use of water, particularly the recreational use of bathing waters and shellfish waters. Unregulated discharges to ground and leaking subsurface sewers can cause point source and diffuse pollution of groundwater.

Improving effluent treatment and regulating unlawful discharges from privately owned septic tanks will have a significant positive effect on the water environment. This will ensure our drinking water supply is protected from the harmful effects of pollution, also benefit habitats and many protected areas including bathing waters, shellfish waters, European sites and sensitive areas under the Urban Waste Water Treatment Regulations.

Pollution from wastewater impact on 17% (154) water bodies across Wales. This can be broken down into the three Welsh RBDs as follows: Dee RBD - 13 % (12) water bodies, Western Wales RBD - 16% (91) water bodies, Welsh area of the Severn RBD - 18% (51) water bodies. The majority of these issues are discharges from wastewater treatment works and storm overflows.

Summary of current actions

Key programmes and activities include: water company investment programmes including investment to meet phosphate standards for SAC rivers; Drainage and Wastewater Management Plans; regulation of the water industry; Storm Overflow Action Plan; SAC Rivers Programme; tackling misconnections; sustainable drainage systems (SuDS).

These measures are:

- Ensuring that sewerage systems, including storm overflows, are maintained or improved so they operate effectively and their impacts on the water environment, from source to sea are minimised.
- Ensuring water companies investigate the operation and environmental impact of all storm overflows in Wales, and implement a significant investment programme prioritising ecological impact.
- Increasing public awareness of the impacts of misconnections and disposal of harmful substances into sewerage systems.
- Working collaboratively with water companies to support the delivery of sustainable improvements to the water environment.

Pollution from towns, cities and transport

Towns, cities and transport are sources of combustion by-products such as road transport and domestic fires such as wood burners. Emissions of hydrocarbons to the air from road transport have reduced since the 1990s, however in recent years increasing popularity of domestic wood fires have slowed this decline. These are released to the air and reach our waters via atmospheric deposition and runoff from hard surfaces such as roads and roofs. Historically air pollution from urban areas in Wales and abroad has also contributed to acidification of our uplands, the effects of this continues to be felt. Industrial discharges releasing chemicals, metals and nutrients, contaminates sediment and harms fish and invertebrates.

Some of these contaminants adhere to sediment in our rivers, estuaries and coastal water bodies these are either gradually released in larger quantities when there is a disturbance such as high flows or dredging. This includes some of our marine protected areas.

Pollution from towns, cities and transport impact on 10% (91) water bodies across Wales. This can be broken down into the three Welsh RBDs as follows Dee RBD – 7% (7) water bodies, Western Wales RBD – 11% (61) water bodies, Welsh area of the Severn RBD 10% (27) water bodies.

Summary of current actions

Key programmes and activities include: pollution prevention through advice and guidance; SuDS and the management of surface water run-off; working to tackle misconnections and addressing contamination from historic industrial and waste sites.

These measures are:

- Minimising the negative impact of development on the water environment through engaging with planning process or, by providing advice and assistance to local authorities with their contaminated land inspection strategy.
- Putting Sustainable Management of Natural Resources at the centre of urban design and planning for example using SuDS.
- Continuing to regulate air emissions of acidifying pollutants to allow the water environment to recover.

Pollution from abandoned mines

Water draining from historic coal and metal mines is often contaminated with dissolved metals such as iron, lead, copper, zinc and cadmium. Affecting groundwater, rivers and subsequently discharging to estuarine and coastal waters. This can harm the river ecology; reducing fish populations and the diversity of invertebrate life.

Some historic mines in Wales are also protected areas for their unique habitats known as Calaminarian Grassland which is dependent upon the metals from the sites / spoil heaps. Remediation of such sites needs careful planning and mitigation measures to avoid impacts on rare plants and invertebrates

Abandoned mines affect 7% (64) water bodies in Wales. This can be broken down into the three Welsh RBDs as follows Dee RBD – 5% (5) water bodies, Western Wales RBD – 7% (42) water bodies, Welsh area of the Severn RBD 6% (17) water bodies.

Summary of current actions

Key programmes and activities include: Metal Mine Strategy for Wales; Mine Remediation Authority programme of work.

These measures are:

- Mitigating the impacts of abandoned mines on the water environment through NRW's Metal Mine Programme for Wales and work with the Mining Remediation Authority. It will take decades to address all the issues and we will continue to prioritise actions that deliver the best ecological, social and economic outcomes.

Changes to the natural flow and levels of water

Water is essential for drinking, agriculture, industry, recreation, hydropower and nature. These uses for water mean the flow and levels of water in rivers, lakes and groundwater have changed from natural. Rivers have been impounded to create reservoirs for water supply and weirs have been built to raise water levels to aid abstractions for a variety of purposes. When too much water is taken from our rivers, lakes and groundwater this can be harmful to nature and reduces the water available for people to use.

Changes to the natural flow and levels of water affect 4% (38) water bodies in Wales. This can be broken down into the three Welsh RBDs as follows Dee RBD – 5% (5) water bodies, Western Wales RBD – 4% (20) water bodies, Welsh area of the Severn RBD 5% (13) water bodies.

Summary of current actions

Key programmes and activities include: the Welsh Government's National Peatland Restoration programme; Flood Risk Management activities; Restoring Sustainable Abstraction programme, including Heavily Modified Water Body Mitigation Measure Review; Multi-Sector demands project for water saving measures; Waterwise work on reducing water consumption

These measures are:

- Delivering the National Peatland Action Programme which is co-ordinating peatland restoration across Wales aiming to capture and store carbon, regulating greenhouse gases and water and restoring and maintaining biodiversity. In Wales many peatlands are also protected areas and / or groundwater dependent ecosystems.
- Delivering interventions such as in-channel habitat improvement that mitigate the impacts of abstraction on the water environment through the National Environment Programme.
- Improving water use efficiency to reduce the need for additional abstraction in the future.

Do you have any other suggestions for how we should address these issues in RBMPs?

Please tick which issue(s) your answer relates to

- **physical modifications**
- **pollution from rural areas**
- **pollution from towns**
- **cities and transport**

- **pollution from abandoned mines**

Chemicals

Harmful chemicals from human activity can enter the environment by sources such as road runoff, wastewater, deposition from polluted air and agricultural activities. RBMPs include chemical quality parameters based on a comprehensive system that account for over 150 substances with well-established knowledge of possible risk to the environment.

Emerging contaminants

Anthropogenic pollution from chemicals is constantly changing as new substances are produced, used and discharged into the environment following the constant evolution of human society. As a result, in addition to the well-established list of substances in existing legislation, there is a need to assess a wider range of chemicals in the environment. These include, for example, pharmaceuticals, cosmetics, plasticisers, recreational drugs, biocides.

Summary of current actions

The majority of harmful chemicals have been subject to a control measure that reduced their pollution potential over the years. Nevertheless, there are still WFD Regulations failures for 14 different substances in Wales, including metals from abandoned mines and legacy substances with controls but a slow pace of recovery not yet achieving good status.

NRW have developed a state-of-the-art method which is able to detect over 2500 emerging contaminants at the sub parts per trillion (nanogram per litre) level. Substances are then risk assessed based on distribution and hazard from found levels, and shortlisted substances becomes potential candidates to integrate with the existing water management framework. Nevertheless, further investigations and considerations for remedial action may start as soon as early evidence of risk emerges. An example of that includes discussions with relevant organisations for the control of veterinary medicines used for the control of pet fleas.

Plastics and microplastics

Plastics and microplastics are recognised as a widespread problem and they are having a harmful effect on nature and humans. Plastics are slow to break down in the environment and living organisms can be harmed as they become entangled in, or eat, plastic objects. Microplastics, are released into the environment as small particles or created as larger plastic objects break down. Microplastics are found in the rivers, lakes and seas of Wales as well as in wildlife. Chemicals found in microplastics as well as toxic contaminants accumulated onto them can impact organisms that live in our waters.

Further breakdown of particles leads to the even smaller nano-plastics which are able to break into the cell wall in any organisms and lead to further impact. Currently NRW does

not monitor for microplastics as is it not a legislative requirement, other research has identified microplastics present in Welsh aquatic habitats and the wildlife that live there.

Summary of current actions

The Environmental Protection (Single-use Plastic Products) (Wales) Act was brought in during 2023. Improving recycling rates and the fly tipping action Wales project will also help to reduce plastic levels in the environment.

Nutrients

Phosphorus and Nitrogen are essential nutrients for plants and animals. In natural conditions, they are released slowly and at low levels. In groundwaters excess nutrients can put drinking water protected areas at risk of requiring additional treatment and have negative effects on sensitive groundwater dependent terrestrial ecosystems. In freshwater and marine water bodies excess nutrients can lead to an accelerated growth of algae and undesirable disturbance to the ecosystem in a process termed eutrophication. This means we may see evidence of algal mats and changes to ecosystem structure.

Human activity is responsible for the release of nutrients into the environment above natural levels. These nutrients can enter our water bodies through the way we manage land, such as the use of fertilisers, animal feed and manures as well as sewage and wastewater discharges.

In Wales there are 7 protected areas designated as sensitive areas eutrophic under the Urban Wastewater Treatment Regulations. Additional permit limits for nutrient treatment are added to large sewage discharges to these waters.

Many of our sensitive protected areas can be affected by elevated nutrients. In 2024, the SAC river compliance assessments showed 50 % of water bodies exceeded phosphorus targets. Marine Protected Area Condition Assessments published in 2025 include various nutrient failures for dissolved inorganic nitrogen.

Summary of current actions

Many of the actions listed under pollution from rural areas and wastewater will also address nutrient issues. Some specific actions for nutrients are listed below:

- Delivering the NRW SAC Nutrient programme, continuing to identify opportunities and deliver interventions to improve water quality through the Nutrient Management Boards and catchment partnerships.
- Nutrients and algae can affect the raw water quality of some drinking water protected areas (DWPA). Where water companies have identified nutrients / algae as contributing to the “at risk” status of the DWPA non-statutory safeguard zones are established in the catchment. Each safeguard zone for “at risk” DWPAs have action plans outlining the measures that the water company and partners within the catchment will take to reduce the risks of additional treatment.

- NRW and partners have been undertaking catchment measures including creating riparian buffer strips with planting and fencing. This is funded through EU funded LIFE projects, Opportunity Catchments and the Welsh Government Nature and Capital Emergency fund.

Bacteria

Waters designated as bathing water protected areas and shellfish water protected areas are monitored and protected. Certain bacteria, such as E. Coli and intestinal enterococci, present in waters can affect recreational users such as swimmers. It can also affect the quality of shellfish causing illness when consumed by people and increase risk levels to our drinking water sources. We must reduce the amount of bacteria entering these waters where there is too much and maintain or improve levels where we are meeting relevant standards. Bathing waters are monitored and classified under the Bathing Water Regulations 2013, which cover England and Wales.

The bacteria typically comes from faeces, either animal or human. Sources include wastewater discharges from the water industry and private sewage treatment works and agriculture. In 2024, from the 110 bathing waters sampled in Wales, 108 bathing waters achieved the sufficient standard or higher, and two were classified as poor. There is one additional bathing water within the English part of the Dee RBD, this also achieved the sufficient standard.

There are 15 designated shellfish waters in the Western Wales RBD, two in the Dee RBD. In 2023, 2 shellfish waters achieved the bacterial standard required while there were 10 failures; 5 did not have enough monitoring for an assessment.

Summary of current actions

Many measures addressing pollution from rural areas and wastewater will also help to reduce levels of bacteria in our waters. In addition to this:

- We are working with water companies to reduce the number of spills from storm overflows. We are also undertaking investigations and implementing local measures, such as fencing to keep cattle out of water courses.
- At some bathing waters water quality models are used to inform the public when there is a higher risk of poor water quality, to allow them to decide whether they feel it is safe to swim. All information, including the Bathing Water profiles can be found on our website - <https://environment.data.gov.uk/wales/bathing-waters/profiles/>.
- Bacteria can affect the raw water quality of some drinking water protected areas. Where water companies have identified bacteria as contributing to the “at risk” status of the DWPA non-statutory safeguard zones are established in the catchment. Each safeguard zone for “at risk” DWPA's have action plans outlining the measures that the water company and partners within the catchment will take to reduce the risks.

Invasive non-native species

The presence of invasive non-native plants and animals in our waters can have significant ecological and economic impacts. Once they are established, control is often prohibitively expensive or technically infeasible and often unsuccessful. Climate change may affect the distribution of these species, resulting in increasing their frequency and variety in the future. Many of our protected areas are vulnerable to the introduction and spread of invasive species. From Zebra Mussels blocking pipes in drinking water protected areas to the presence of Japanese Knotweed affecting the condition of River SACs and carpets of sea squirt in marine protected areas.

Summary of current actions

Key programmes and activities include: Implementing the GB invasive non-native species strategy; Working with partners and supporting the development of new and innovative solutions, Promoting the Check, Clean Dry and Be Plantwise campaigns and improving local information on invasive non-native species (INNS) distribution through the use of online iRecord and smart phone recording systems like INNS mapper all help to tackle INNS management.

These measures are:

- Prioritising actions to slow down or prevent the spread of existing invasive species and eradicate these or new introductions where possible to do so
- Minimising the risk posed by INNS generally through improved biosecurity and improved local information on INNS distribution and impact

For the purposes of this consultation we have highlighted chemicals, plastics and microplastics, nutrients and bacteria as significant issues in addition to pollution from rural areas, wastewater, towns cities and transport and abandoned mines that we used in previous RBMPs.

Do you find this a useful way of presenting the issues that we should use in future RBMPs? Yes/No

Please provide any further comments below:

Do you have any other suggestions for how we should address invasive non-native species in RBMPs?

Climate emergency

A climate emergency was declared in Wales by the Welsh Government in 2019. We are beginning to see some of the effects of a changing climate, including higher annual temperatures, increases in rainfall and more sunshine hours. The impacts of climate change are expected to increase in the future, with predictions of higher temperatures, and more extreme weather events.

More frequent and intense rainfall is anticipated in future, with an associated increased risk of flooding. Heavy rainfall can lead to an increase in runoff from land into surface waters bringing sediment and associated pollutants.

More frequent storms and rising sea levels may lead to damage and loss of some intertidal marine habitats. Decreases in summer rainfall will lead to longer periods of water scarcity. Low flows may increase concentrations of pollutants.

Higher than normal temperatures and low flows can have an impact on our ecosystems, such as affecting migration, spawning success and mortality of fish. Higher temperatures could also lead to higher incidences of algal blooms. In marine ecosystems increasing temperatures have been shown to change ecosystems including plankton and rates of fish growth and maturation. Warmer temperatures could lead to marine heatwaves and exposure to high temperatures during low tide periods. Increasing levels of carbon dioxide in the atmosphere lead to increased levels of carbon dioxide in sea water making it more acidic.

We also need to recognise that the impacts of climate change will exacerbate other pressures.

Summary of current actions

We need to have measures in the RBMP that are resilient to change, anticipate future stresses and take into account the impacts of carbon emissions. All measures proposed in RBMPs will need to consider climate change adaptation.

Key areas of work include:

- Delivering water efficiency measures to ensure security of drinking water supply.
- Welsh Government Climate Change Adaptation Strategies and target to decarbonise the public sector by 2030.
- Welsh Government climate change adaptation strategies.
- Marine protected area measures to protect important blue carbon storage habitats and identify opportunities to expand key habitats such as saltmarsh and seagrass.
- Delivering the National Peatland Action Programme which is co-ordinating peatland restoration across Wales aiming to capture and store carbon, regulating greenhouse gases and water and restoring and maintaining biodiversity. In Wales many peatlands are also protected areas and / or groundwater dependent ecosystems.
- Increasing riparian tree cover and shading, improving in-river and riparian habitat and connecting rivers to the flood plain. Measures that improve soil water retention on agricultural land will also be beneficial.

Nature emergency

Wales is rich in nature and home to valuable and unique wildlife. However there has been a significant loss of biodiversity and ecosystem resilience over the last 50 years. In response to this the Welsh Government declared a nature emergency in Wales in 2021. Species such as Atlantic Salmon and Curlew have suffered critical declines and 18% of our species are at risk of extinction from Wales including Fen Orchid and Water Vole. Improving and protecting the water environment from source to sea provides a significant contribution to achieving the Welsh Government's nature conservation and biodiversity obligations and ambitious goal of the Global Biodiversity Framework, protecting 30% of our land, freshwater, and seas by 2030.

Summary of current actions

The RBMPs support the delivery of Welsh Government, UK and global biodiversity commitments by contributing to improving habitat quality, habitat creation and restoration outcomes for water dependent habitats and species including groundwater dependant terrestrial ecosystems and the marine environment. RBMPs include specific measures to meet conservation objectives for water dependent European sites (SACs, Special Protection Areas and Ramsar sites as protected areas under the WFD Regulations).

There are actions across Wales that are delivering on the ground habitat improvements and protecting important habitats and species to help tackle the nature emergency. For example: The National Peatland Action Programme, Four Rivers for LIFE, NRW's River Restoration Programme, SAC Rivers Programme, Salmon for tomorrow, Welsh Government Nature and Climate Emergency funded projects and Natur am Byth.

Do you have any other suggestions for how we should address the climate and nature emergencies in RBMPs?

How should climate change adaptation be factored into RBMPs?

Strategic Environmental Assessment, Health Impact Assessment and Habitats Regulation Assessment

NRW has scoped the Strategic Environmental Assessment (SEA), incorporating our suggested approach for the Health Impact Assessment (HIA), for the Dee and Western Wales RBMPs. The Scoping Reports form part of this consultation process (add link). The scope will inform how we undertake the SEA of the draft RBMPs.

The HIA will explore how the RBMPs might affect people's health, such as through water quality and access to clean water and green spaces, paying special attention to how these

might differ for different groups of people, especially those who may be more vulnerable or at risk.

A Habitats Regulations Assessment of the RBMPs will be undertaken as we develop the draft RBMPs.

Strategic Environmental Assessment

Do you agree with the assessment criteria set out in the SEA scoping reports?

Yes/No

Is there any other information that we should be considering as part of the assessments?

Health Impact Assessment

Are there any vulnerable population groups (e.g., older adults, children, or people with existing health conditions etc) who you think might be affected by the Plans in Wales?

Yes/no

If yes, please provide details:

Are there any health and well-being related matters we should think about?

Yes/no

If yes, please provide details:

The Significant Water Management Issues – our challenges

In this consultation we have set out the main significant water management issues we have identified in Wales.

- Physical modifications
- Pollution from rural areas
- Pollution from wastewater
- Pollution from towns, cities and transport
- Pollution from abandoned mines
- Changes to the natural flow and levels of water
- Chemicals and emerging contaminants
- Plastics and microplastics

- Nutrients
- Bacteria
- Invasive non-native species
- Climate emergency
- Nature emergency

Question Do you agree with these challenges?

yes/no

If not, what is missing or what would you change?

Digital elements

We provided additional information and maps in an associated story map <https://gisportal.cyfoethnaturiolcymru.gov.uk/portal/apps/storymaps/stories/985fa4645af843869032eccbaca4dde3> to help you understand more about the data we collect and where these issues are seen.

Did you use the story map?

Yes/No

Did you find it useful?

Yes/No

What could be done to improve it?

General

Where did you hear about this consultation?

Newspaper advert, social media, word of mouth, email etc.

If you are responding on behalf of an organisation, please provide the name of your organisation.