



Living Waters for Wales Update Summer 2016

Welcome to the fifth Water Framework Directive (WFD) update from Natural Resources Wales (NRW), filled with examples of projects which are delivering a better water environment for the people, environment and businesses of Wales. Be inspired and tell us your story. Contact **Jill Brown**

River Basin Management Plan Update

The updated River Basin Management Plans (RBMPs) are available here:

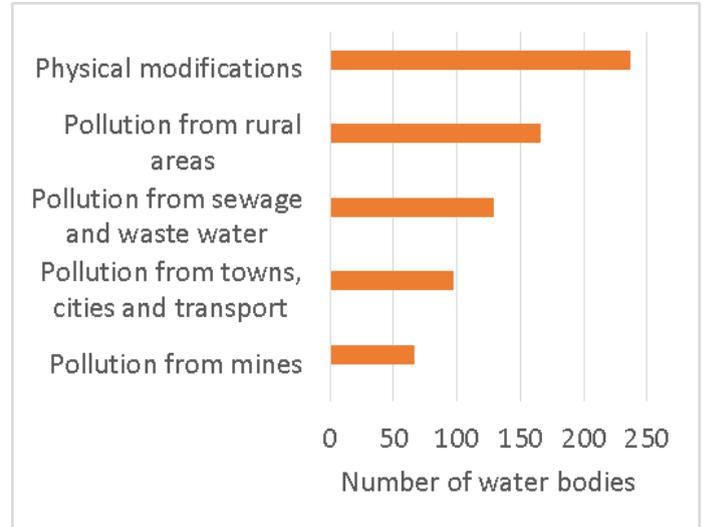
<https://naturalresources.wales/water/quality/river-basin-management-plans-published/?lang=en>

The plans describe the pressures facing the water environment for each of Wales' three river basin districts. They set objectives for our rivers, streams, lakes, estuaries, canals, coastal waters out to one mile from low water, groundwater bodies and all water dependent protected areas. Each plan outlines the actions needed to improve the water environment, the benefits that could be achieved and who is best placed to deliver them. Your views helped to develop the updated plans.

River Basin Management Plans in Wales now sit within a wider context under [the Environment Wales Act 2016](#) and the [Wellbeing & Future Generations Act 2015](#). The WFD status of Wales' waters is now an indicator for the Well-being of Future Generations Act.

What are the challenges?

In the first cycle (2009-2015), an increase of 7% of water bodies meeting good or better overall status was achieved in Wales. At the start of this second cycle, 37% of water bodies are at good or better overall status. All of this was achieved with the help of partners from all sectors carrying out work to address the issues impacting on Wales' waters. For the second cycle, we are aiming for a minimum increase to achieve 42% by 2021. The top three main reasons for not achieving good status in Wales are physical modifications, pollution from rural areas and pollution from sewage and waste water.



Reasons for not achieving good status

To ensure delivery of the plans, it is essential that we work with the Liaison Panels, partners and stakeholders as we move to the delivery phase of improvements for the second cycle. This will involve working collaboratively to develop a delivery plan sharing the data and inputting how the plans will fit in with Area Statements under the Environment (Wales) Act. By working with others, we can share resources, skills, expertise, data and networks to achieve shared objectives.

The delivery plan will track and report progress and will be used to identify any gaps and risks. We will be working with the Liaison Panels to map out actions and timescales to make as much improvement as we can. The new legislation will help to look for opportunities to join up local actions that can deliver the widest benefits to improve Wales' water environment.

For further information, contact WFDWales@cyfoethnaturiolcymru.gov.uk

Water Watch Wales

[Water Watch Wales](#) is a collection of interactive maps providing information on the classification status, objectives and measures. It also provides the reasons for not achieving good status at different spatial scales.

Additional information has now been included such as updated catchment management summaries. There are a selection of maps showing different information including a map for external partners' projects. Share your projects with delivery partners by uploading your work to the [Project Map](#) on Water Watch Wales. This work will help with the mapping exercise to align waterbodies alongside actions and timescales in the delivery plan. The facility to upload supporting information e.g. photos or documents to the project map has been simplified. Other improvements include a measuring and annotating tool as well as a print facility. For more information, contact [Lynda Bigland](#)

What's being going on

The restoration of afforested deep peat on the Welsh Government Woodland Estate (WGWE)

The policy for the restoration of afforested deep peat on the WGWE prioritises delivery of restoration where successful creation of active, functioning bog habitat is most viable, and where it can best deliver benefits for greenhouse gases, hydrological source areas and biodiversity.

An assessment of peat resources on the WGWE was undertaken and a deep peat map was developed. The sites selected for restoration are prioritised where they fall within WFD failing catchments; drain to drinking water supply areas; drain to a designated site; provide connectivity to other peatland sites; or where there is urgency due to a site degrading.

Progress to date includes:

- approximately 13% (52ha) of one peat site restored in Llandovery area .
- restoration of 34ha in Cwm Berwyn.
- removal of conifers and ditches blocked over 211 ha in Ceredigion



Carn Fflur, bog restoration site in Tywi Forest
(photo credit Helen Carris)

The planning of restoration projects is long-term and will form part of NRW's Forest Resource Plans. Sites are carefully planned so that restored areas do not constrain access to other sites.

Ultimately, we hope this work will restore the hydrology of our carbon rich wetlands and tackle water quality which is a key activity of WFD. The management and restoration of our peatlands brings multiple benefits for the environment and people of Wales. For more information contact [Rachel Chamberlain](#)

LIFE Natura 2000 Programme for Wales

March 2016, saw the culmination of the LIFE Natura 2000 Programme for Wales. The Welsh chapter of the UK Prioritised Action Framework was endorsed by the Minister for Natural Resources and formally submitted to the European Commission. The NRW-led programme delivered a major step forward to the planning process for effective management of Natura 2000 in Wales (Special Areas of Conservation and Special Protection Areas).

Prioritised Improvement Plans (PIPs) were created which complement the existing Core Management Plans. The PIPs can be accessed via NRW's actions database and as they contain sensitive information, external users must sign a data licence agreement. To request access, please email life2000@naturalresourceswales.gov.uk

A series of [Thematic Action Plans](#) were produced which describe priority strategic actions required to address issues which have been identified as having an adverse impact on Natura 2000 features across the network. The actions identified in the PIPs and Thematic Action Plans, and key priorities to 2020, have been summarised in the updated version of the Prioritised Action Framework for Natura 2000 sites in Wales. All the outputs produced as part of the project are available on [LIFE N2K Programme for Wales](#).

The programme will also help deliver WFD obligations. Relevant underway actions have been incorporated into the Programme of Measures for the RBMPs available on [Water Watch Wales](#)

New Oil Storage Regulations for Wales

Tackling diffuse pollution is a requirement under the Water Framework Directive. Diffuse pollution comes from a range of sources but the effect is cumulative. Oil is one of the most significant pollutants of water in Wales and in many cases the pollution is the result of oil lost from inadequate storage facilities. Although crude oil is a natural product, refined oil and its products can be toxic. In the water environment, it can form a film on the surface and

prevent oxygen getting in and impact on plants and wildlife.

In 2015, we published our [Diffuse Water Pollution Action Plan](#) that describes how oil and fuel pollution continue to impact on the water environment. Regulations setting minimum standards for oil storage were introduced in England during 2001, where there has been a significant reduction in the number of such incidents.

From the evidence we gathered from pollution incident reports, Welsh Government launched a consultation on the Proposals for New Regulations to protect the environment and properties as a result of spills from oil storage containers. As a result, the introduction of new Oil Storage Regulations (OSR) in Wales was approved by the Assembly and came into force on 15 March 2016. These regulations set standards for oil storage facilities which aim to prevent the escape of oil and the resulting risk of water pollution and damage to land and property. The principal requirement will be for secondary containment to prevent any leaks from an oil storage facility escaping into the wider environment.

The drafting of the OSR also involved work to incorporate agricultural fuel oil, removing previous control provisions under the Slurry, Silage and Agricultural Fuel Oil (SSAFO Regulations).

The OSR will mean that inappropriate storage systems such as those below: (photo credits Environment Agency)



will be replaced by appropriate storage systems. For more information, contact [Rob Thomas](#)

Anglesey and Llŷn Fens LIFE project

The project included Natura 2000 sites that suffered from nutrient enrichment from both diffuse and point sources. Sources include escape of inorganic fertilisers, organic manure, slurry and disposal of abattoir and other organic waste as well as sewage from both sewage treatment works and septic tanks.

The project was the largest wetland restoration project in Wales and aimed to restore 751 hectares of very rare habitats. Wetlands support birds and plants that rely on good quality water. They are also an effective natural flood control mechanism.

Creating strong partnerships was at the heart of the project to help deliver wider benefits for the community and local businesses e.g. working with Farming Connect and Agricultural Development & Advisory Service. We raised awareness of nutrient management planning and free soil sampling was organised for the local farmers.

We also worked with Bangor University to trial constructed treatment wetlands that could be installed cheaply. They were constructed “ponds” located at point source or combined diffuse entry points, filled with stone and a variety of plants. The ponds enabled microbes coating the stone (other soil in some cases) and water plants to strip out nitrates and phosphates from water entering the fenland. Early monitoring show significant reduction in nutrients.



Construction of treatment wetlands.
Copyright @ Natural Resources Wales

Another site in the project was Cors Erddreiniog which is the largest part of the catchment for Llŷn Cefni reservoir. Dŵr Cymru/Welsh Water played a key role in the project and provided match funding. A healthy fen will reduce water treatment costs for Anglesey's drinking water.



Cors Erddreiniog
Copyright @ Natural Resources Wales

The project demonstrated many sustainable, cost-effective and socially acceptable mechanisms for helping to achieve the environmental objectives of the Directive. For more information go to [Anglesey and Llŷn Fens Life Project](#) or contact [Justin Hanson](#)

Tackling diffuse pollution at Deepford Brook

Tackling diffuse pollution is a key activity under WFD. In 2005, a Welsh Government initiative identified Deepford Brook, a tributary of the Eastern Cleddau, Pembrokeshire as being a suitable area for an agri-improvement grant scheme. The initiative aimed to help farmers reduce the impact of run off pollution, and to assist them to meet Water Framework Directive requirements.

Some £250,000 was awarded for the construction / upgrade of farm infrastructure to improve farm

effluent management. Poor management of soils and farm effluent was identified as the major cause.

We undertook a comprehensive inspection programme that identified issues as well as good agricultural practices. Each farm received a report outlining what was required to meet the Silage, Slurry and Fuel Oil Regulations 1991 and/or agricultural codes of good practice. Timescales for improvements were agreed and follow up visits are still ongoing.

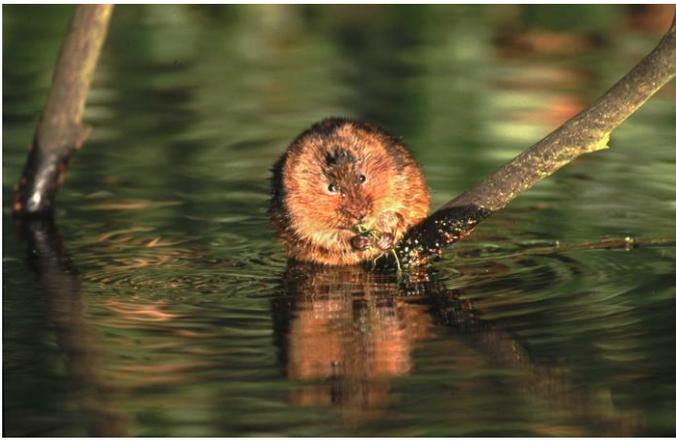
The co-operation of the farmers was crucial to this initiative and many have made investment commitments to increase the slurry and silage storage capacity.

The catchment was failing for fish populations. The fish classification for Deepford Brook has now improved from the first cycle as poor in 2009 to good in 2015. For more information, contact [Bob Phillips](#)

Clean Water for Wildlife Survey

The Freshwater Habitats Trust have launched the Clean Water for Wildlife Survey looking at nutrient pollution across England and Wales. The community survey aims to find wildlife rich, clean habitats and collects and records simple nitrate and phosphate data with a test kit that records nutrient levels. Each kit is a disposable plastic tube that contains a small amount of powder that changes colour, when a water sample is added depending on the nutrient concentration. The kits will encourage testing in waters that we wouldn't routinely sample such as small ditches and ponds. The results will be added to the Freshwater Habitat Trust's website.

Take part to find out where you can survey <http://freshwaterhabitats.org.uk/projects/clean-water/sites-to-survey/> to find out whether the ponds, streams and rivers in your neighbourhood are good enough for wildlife. The Freshwater Habitats Trust have free kits available <http://freshwaterhabitats.org.uk/projects/clean-water/> For more information contact the Freshwater Habitats Trust [Hannah Shaw](#)



Water Vole (photo credit Andrew Parkinson)

NRW supporting two Natural Environment Research Council (NERC) projects

The Welsh Local Government Association, Environment Agency and NRW is supporting two NERC funded green infrastructure innovation projects. The first will focus on the enhancement of hard coastal flood risk assets and the other on river bank erosion protection measures. The aim of both projects is to create a simple decision support framework for asset managers, engineers, conservation and biodiversity teams, as well as decision-makers and other end-users, to help identify the key success factors that will enable the selection and implementation of green engineering options on rivers, in estuaries and the coast.

It is hoped these projects will also further aid understanding of engineering performance and the ecosystem services benefits that can be delivered by the use of green engineering and ecological enhancement methods. They will also help to develop information on the costs and benefits of different approaches as well as delivering outcomes for the environment and society. An update will be provided in the next newsletter. For more information, contact Vicky Greest

Plant Tracker – your help is needed to protect your environment

Tackling invasive plants is a key requirement for WFD as invasive plants have the potential to negatively impact on biodiversity. Invasive plants like Japanese Knotweed and Himalayan balsam are spreading quickly across the UK. They are a growing concern to our terrestrial, freshwater and marine environments. They displace native species and can detrimentally affect the ecology of many vulnerable habitats. Some also pose a considerable threat to human health.

These plants also present a large financial cost to the UK economy with the annual cost of all invasive, non-native species totalling some £2 billion.

We have joined forces with the Environment Agency, Scottish Natural Heritage and the Scottish Environment Protection Agency to develop a project to help combat the spread of the UK's invasive and non-native plant species. Welsh Government funded the project.

Plant Tracker is a new app. When you are out and about, you can use the app to track where you've found invasive species. You can download Plant Tracker to your phone.



Himalayan Balsam (Non Native Invasive Species)
Copyright Natural Resources Wales

The Dee Invasive Non-Native Species (DINNS) project

The Dee INNS Project is a catchment-wide partnership project that aims to work in partnership with others to bring a sustainable approach to invasive non-native species (INNS) management. The project works closely with the local community and other non-statutory bodies to roll out a programme of control and monitoring throughout the year.



Volunteers pulling Himalayan Balsam at Bala

Himalayan Balsam, Japanese Knotweed and Giant hogweed are all present within the Dee catchment, in both England and Wales. The project is working with contractors, training volunteers in INNS management and raising awareness about the issues these species create for our WFD status.

As part of our effort to track the INNS in our catchment, we have developed a recording database, managed and developed by Cofnod, which links to the NBN and apps such as Plant Tracker and *Th@t's Invasive*. The database allows those working on the project and the general public to view and submit INNS records and also to view our progress as we manage these records.

One of the most important elements of the project is our programme of delivery and awareness raising of our biosecurity programme. Biosecurity is the best way to improve the resilience of our rivers and to prevent the spread of INNS. The projects focus in 2016 is on biosecurity at outdoor sporting events such as trail running, canoeing and competitions. For more information on the DINNS Project, INNS, recording and biosecurity visit [Dee INNS Project](#)

Afon Wen Gravel Traps

The Afon Wen is in the Mawddach catchment north of Dolgellau and is in poor WFD status for fish. It is one of the few tributaries on the Mawddach that has salmon and sea trout migration of any distance. The Afon Wen was greatly affected by the 2001 flood which scoured river banks, moved large boulders that caused gravel and woody debris to be lost at established spawning areas.

NRW worked in partnership to install gravel traps with Prince Albert Angling Association, Dolgellau Angling Association, Prysor Angling Association and the Mawddach Trust. The project was funded using mitigation money from the closure of Dolgellau Hatchery.

We can create favourable spawning sites for migrating fish by using felled trees anchored to the stream bed to trap gravel upstream. The traps were supplied by our Forestry Team and were constructed without the use of plant machinery. These structures are cheap to install with the benefit of trapping gravels that improve spawning territories for fish. Installing these gravel traps costs £5,000 but increases the annual value of salmon and sea trout currently stands at over £72,000.

The Mawddach Trust have also worked with us to improve the river habitat by constructing log weirs into active channels. This work will help to create pools to provide cover for fish and create spawning

habitat. It offers wider benefits to improve biodiversity for bats, insets, amphibians and birds.

The Mawddach and Afonydd Cymru gravel traps have worked well with fish spawning on both sets. It's a project we intend to extend to the top of the Rivers Wnion and Eden, along with in-river structures such as root balls and small boulder clusters later this year.

In addition to habitat restoration, better fish populations will drive ecological performance and make a significant contribution to our shared water framework directive targets.

For more information, contact
arfon.hughes@cyfoethnaturiolcymru.gov.uk



Salmon for Tomorrow

The free passage of migratory fish is a key activity under the WFD. It is an indicator for assessing whether water bodies are meeting Good Ecological Status. A healthy river is good for tourism and the economy.

Well-designed fish passes can help deliver objectives of the Water Framework Directive by:

- ensuring that fish can move freely between the river and coastal waters in order to access breeding, nursery or feeding grounds.
- allowing passage of other aquatic species, such as invertebrates.

Of our water bodies failing to meet good status, 40% is due to physical modifications. These include human modifications to rivers, such as weirs, bridge footings, culverts and other structures which act as barriers to migratory fish and eels.

Salmon for Tomorrow (S4T) was co-funded by Welsh Government & European Fisheries Fund

(EFF). The 5 year programme of works concluded in June 2015.

NRW has a network of monitoring sites on all river catchments. For the majority of fish pass schemes we have an effective baseline showing existing fish populations. Our continued monitoring programme will evidence a gradual improvement in juvenile fish populations within improved reaches. Where we have worked on smaller tributaries without monitoring sites, we have developed bespoke monitoring arrangements with juvenile monitoring sites. Both pre-and post-monitoring data is now available and will continue to be captured on an annual basis until we are satisfied the full benefits have been evidenced.

It is important to note that while we have delivered a great deal through this programme of works, there remains many more opportunities for fish passage improvements throughout Wales. We have a database of schemes which have been identified & prioritised on basis of cost & benefit. There is now the technical capacity within NRW to deliver fish passage improvement schemes but funding has now become the limiting factor with the conclusion of this round of funding. For more information, contact

[Dave Charlesworth](#)

Juvenile salmon migrating downstream at Green Park Weir (copyright Natural Resources Wales)



Forward Look

Western Wales Liaison Panel: 10 November 2016

Dee Liaison Panel: 16 November 2016

Severn Liaison Panel: 26 October 2016

For more information on the RBMPs: contact:

[Ceri Jones](#) River Basin Programme Manager.

Visit the Natural Resources Wales website for more information.

<http://naturalresourceswales.gov.uk/splash?orig=/>

Help your local environment by reporting pollution incidents, illegal waste tipping, poaching, fish in distress, or danger to the natural environment to Natural Resources Wales via the 24 hour free phone number **0800 80 70 60**.

We're looking to promote stories of delivering improvements to the water environment. Make us aware of any activities that you or your organisation is doing to help improve Wales' waters. If you want to contribute to or receive future newsletters - contact [Jill Brown](#)