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Catchments Newsletter

Integrated Catchment Management: sharing science and stories

Have your say on Ireland's River Basin Management Plan for 2022-2027

Inside this issue

Main photo: River Derry. Top, L-R: Alan McCabe, Blackwater Officer with CatchmentCARE (p.6), The Story of the Mountain Water (p.5), Killteevan TidyTowns enjoy moments by the water (p.11).

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Editorial, Winter 2021

Past

As Ireland marks 100 years since the signing of the Treaty you might be interested to know that Ireland has had a national river monitoring programme for exactly half that time. This monitoring programme is called the Quality Rating system (Q-value) and it has been running since 1971. It assesses the biological quality of Irish rivers using insects (called aquatic invertebrates) that rely on water for at least part of their life cycle This is one of the longest-term environmental datasets of its kind available and provides useful information about the health of our freshwater river ecosystems. You can read more about the Q Value system and what it can tell us on page 25.

Present

Ireland's water quality is declining, and this is impacting negatively on the health of our ecosystems and biodiversity as well as posing a risk to our health, recreation and economic activities. The main threat is high nutrient levels, such as phosphorus and nitrogen which come from human and animal activities. Nitrogen levels in rivers, groundwater, and estuaries in the south, southeast and east of Ireland are too high and increasing. This is primarily due to agricultural activities. The EPA has recently published an assessment of the scale of nitrogen reductions that are needed to achieve our water quality outcomes. You can read more about this, about water quality in Ireland generally, and about how to access an assessment of your local catchment on pages 18-22.

Ireland's current, 2nd cycle River Basin Management Plan runs from 2018 to 2021. This Plan launched a new approach to protecting and improving Ireland's waters. This has included the creation of the Local Authority Waters Programme and the establishment of new national and regional governance structures which are based on an important principle of collaborating and working together. You can read more about the different elements of the governance structures and how they work together on page 31.

A key focus of the current Plan is much greater involvement of local communities. This issue includes seven fantastic stories about what communities are doing to protect and enhance their local waterways on pages 4-15. You can also read about some new short videos the IFA Smart Farming programme has launched that highlight some practical steps farmers can take to improve water quality in their catchments on page 33.

A national Water Forum has also been established to strengthen stakeholder input into our decision-making on water. The Water Forum advises on national water policy and works with stakeholders on achieving a shared vision of clean and healthy waters – see page 36 to learn more.

Future

There is a growing recognition about the merits of using nature-based solutions to improve water quality as they often bring multiple other environmental benefits. The potential use of nature-based solutions for catchment management in Ireland has been examined by a working group co-chaired by the EPA and OPW. You can read about this work and its potential to help develop measures with multiple benefits for climate, water and biodiversity on page 34.

Every six years, Ireland prepares a River Basin Management Plan. The draft Plan for 2022-2027 is currently open for public consultation (see pages 16 and 23). You can make a submission on the Plan and have your say on the future of Ireland's waters between now and 31 March 2022. The Local Authority Waters Programme shows how you can make a submission on the Plan (page 26) and highlights the resources available on their website (page 29). Finally, a factsheet on the Plan from An Fóram Uisce is on page 38.

We would encourage every reader of this Newsletter to make a submission on the draft Plan before **31 March 2022**.

Jenny Deakin and Paddy Morris, EPA Water Programme

One thing you can do: have your say on the Plan for Ireland's waters for 2022-2027

Ireland is currently preparing the next River Basin Management Plan (RBMP) for Ireland. A public consultation is currently open to gather your views on what should be in the final plan. By responding, you will be helping the management of Ireland's water environment. The consultation closes on 31 March 2022.

This issue of the Catchments Newsletter has information on Ireland's water quality and where you can find out more about your local catchment, which may help you to make a submission.

There are two main ways to make a submission on the plan:

Read the plan and complete a survey for the Department of Housing, Planning and Local Government (DHPLG)

You can read the draft RBMP and make a submission directly to the DHPLG using an online survey, or by post or email: www.gov.ie/draftRBMP

Visit the LA Waters Programme Virtual Consultation Room or attend a virtual consultation event

The Local Authority Waters Programme has set up a virtual consultation room highlighting water quality information nationally and in your county. There is an easy-to-use online submission form to submit your views and comments: https://drbmp-vcr.ie/

LAWPRO have also scheduled virtual public meetings around the country to facilitate local discussions about water quality. You can find a full list of these meetings at www.lawaters.ie/rbmp-public-meetings-2022/

Tuam TidyTowns tell the story of the River Nanny

Tuam TidyTowns have told the story of The River Nanny, showing what makes a river ecosystem health and vibrant and beautiful, with signs and a colouring book competition involving 21 local schools celebrating the role of freshwater invertebrates and insects in supporting life on the river.

Tuam TidyTowns, led by their very creative and knowledgeable chair Michael Waldron, has shown us what makes a river ecosystem healthy and vibrant, in their Story of the River signage project and colouring book competition.

Over the years the group have carried out multiple enhancement and awareness projects on their local River Nanny. The role of insects and in this case freshwater invertebrates play in supporting life on the river is something the group wanted to celebrate, and this was the genesis of a signage project which applied for support from the 2020 Community Water Development Fund.

For this project, TidyTown group members including Oliver Burke and Michael's sister Brigid Dermody also assisted Michael. In the search of a graphic designer, the group found a creative foil by the way of Garry Kendellen from Galway Atlantaquaria, and the team began bringing the concept to life. The design and illustration phase of the project took a considerable effort by all involved; the group met once a week via online Zoom meetings facilitated by Conor Ruane, the Community Water Officer. Over the course of three months the group learned a great deal about freshwater species, insect life cycles and bird life which may use the river.

It was also during the process the group devised the colouring book competition. Garry Kendellen creatively stitched the book together, using the material from the sign. Ecologist, author, and illustrator Gordon D'Arcy then launched the colouring book competition on the 22 May 2021. The launch coincided with the International Day of Biological Diversity as part of National Biodiversity Week. You can view a recording of the launch and on the Tuam TidyTowns Facebook page.

Tuam TidyTowns, working with the local schools, supplied each class of twenty-one national schools in the Tuam area with a hard copy of the colouring book and A1 poster printed by Oliver Bourke of Typestyle Tuam. The response to the competition was exceptional with over 430 entries received. The winner of the colouring book competition was announced during National Heritage Week.

Tuam TidyTowns remains committed to preserving the river life in the town and is hoping others will learn from this project.

Learn more:

Those who wish to download the poster and colouring book can do so via the catchments.ie website at: https://www.catchments.ie/tuam-tidy-towns-tells-the-story-of-the-river-nanny/

Tuam TidyTowns wonderful illustration of the life in and around The River Nanny.

Pupils from a local national school partaking in some freshwater detective work, using the macro-invertebrates from the Mountain Water to tell a story about water quality in the river.

The Story of the Mountain Water – Part 2

Part 1 of The Mountain Water's story If rivers could talk, which was written from the river's perspective, appeared in the Spring 2017 Catchments Newsletter.

This river's story described the typical human impacts and pollution sources that are all too common across the country but ended on a positive note as communities and agencies began to focus on the Mountain Water and possible solutions to the catchment's problems.

Today, there is a lot going on in the Mountain Water catchment - there are now boots on the ground and people round the table - all pulling in the same direction and looking to deliver improvements for the protection and restoration of water quality, habitats and wildlife.

Over many years, the river was not valued as a resource and saw a steady and sad decline in water and habitat quality. The river's wildlife has been impacted: wildlife left homeless (by habitat degradation and drainage), starved (of oxygen and food) and poisoned by chemicals. Even human health was at risk as a drinking water source and bathing area were impacted by algal blooms. The river reached its lowest point around 2007 when the waters of the upper reaches were no longer classed as pristine.

Thanks to the work of Monaghan County Council, IFI and the local community the pristine Blue Dot water body has recovered in the upper reaches of the river.

The catchment has:

- An active River Trust, Group Water Scheme, Angling group, Citizen Science group and TidyTowns groups
- A Blue Dot waterbody which is now part of the Blue Dot Programme
- A Priority Area for Action, located between Emyvale and Glaslough that is in need of restoration and where LAWPRO catchment assessment team and Teagasc ASSAP are commencing their work
- The Catchment Care Project, with significant funding for community and restoration initiatives
- The local authority, various researchers and agencies involved with water quality, peatlands, river enhancement, urban pressures, education and farming initiatives
- Cross Border INTERREG funding through CANN and Catchment Care, Department of Agriculture Food and the Marine funding for Source Protection, Local Authority for drain survey and ongoing support from LAWPRO

The Mountain Water

Ben Malone, Community Water Officer, with the Local Authority Waters Programme has initiated the Mountain Water Round Table to bring together interested groups & agencies to facilitate knowledge sharing and to improve potential for further collaborations.

While improvement in water quality status is a long game, the Mountain Water Story will continue to build on gains to date. In the meantime, the agency cooperation and community involvement will continue.

Another interesting factor is the impact of the Covid-19 pandemic. Covid has resulted in many changes; one positive change is that local communities are more interested in outdoor spaces. Current catchment work alongside the local development plans can make this area more natural, more attractive, support local tourism and benefit those who wish to be more connected to and active in nature.

Watch this catchment - for many reasons, the Mountain Water is unique, representing a real-life example of Integrated Catchment Management in progress. Over the next two to three years further key projects and works will be completed and we will return to this river's story.

Bernie O'Flaherty, Local Authority Waters Programme

Learn more:

For further information on what is happening the Blackwater catchment and Mountain Water subcatchment please contact Ben Malone, Community Water Officer, bmalone@lawaters.ie

www.lawaters.ie/blue-dot-programme
www.catchmentcare.eu
www.thecannproject.org
www.facebook.com/blackwatercatchmenttrust
www.nfgws.ie
www.facebook.com/Emy-and-District-Anglers-174526482630035
www.glasloughtidytowns.com/sustainability---doing-more-with-less.html

Alan McCabe, Blackwater Officer with CatchmentCARE demonstrating the use macroinvertebrates as indicators of water quality in the Sliabh Beagh where the headwaters of the Mountain Water River can be found. Also in the picture camera crew from DCU working on a short documentary on Sliabh Beagh, the upland catchment area and watershed for the Mountain Water and other Blackwater River tributaries.

Cloughaneely Angling Association's critical source identification project

In 2019, Cloughaneely Angling Association's (CAA) Catchment Management Group prepared a 5-year plan for the Ray and Tullaghobegley catchments in Donegal.

Catchment studies in 2019 and 2020 identified peat erosion as a significant pressure causing impact on water quality and stream bed condition in the study areas. CAA are now working to identify critical source areas of sediment and select potential areas for mitigation and remediation. Sediment can cause issues by changing the flow and habitat of rivers, transporting excess nutrients and covering important gravel areas where fish spawn.

The Cloughaneely Angling Association in Donegal are working on a turbidity monitoring project in order to identify critical source areas of sediment erosion and select potential areas for mitigation and remediation in the Ray and Tullaghobegley catchments, supported by LAWPRO's Community Water Fund.

Turbidity will be used as a proxy for suspended solids in tracing critical source areas of sediment erosion. Turbidity will be monitored regularly and during high water events at selected nodes where rivers and streams meet in the mid to lower catchments.

As indicated by the turbidity data, monitoring will progress upwards to lower order streams to identify critical source areas of diffuse sediment loss. Areas of suitable size and characteristics will be identified for possible mitigation and remediation measures. Measures will be appropriate to the sites chosen and based on discussions with other stakeholders.

These measures could include revegetation of eroded bare surfaces, damming of drainage ditches, introduction of buffers at drain ends and along high sediment export drains, staged settlement ponds along steep and eroding bog roads, introduction of leaky dams, minor in-stream works such as replacement of removed mid-channel boulders to increase the hydro-stochasticity (randomness and variety) of the flows in the stream channels.

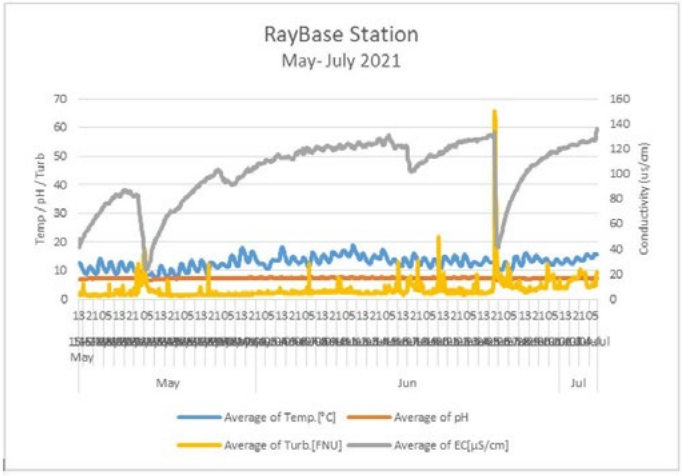
Turbidity measurements will also be used in responding to ad-hoc events that might identify point sources of suspended solids. This would complement the approach above of identifying diffuse critical source areas for mitigation.

To complete the initial turbidity survey and identify suitable critical source areas the group needed to buy enough instruments to allow sufficient coverage of catchment areas, particularly during relatively short-term high flow events.

Members of the local community in the Cloughaneely have been trained in the use of the equipment and are assisting in taking samples around the catchments.

Installation of a permanent continuous turbidity sensor downstream in the catchment is providing important baseline information and will allow effectiveness of future mitigation and remediation works to be assessed.

Members of the Cloughaneely Angling Association monitor a local river.



Some preliminary data from the Ray River Base Station.

Cloughaneely Catchment Management Group is also involved in providing financial, technical and logistical assistance to the CAA. Members of this group include Donegal County Council, Inland Fisheries Ireland, National Parks and Wildlife Service, local TidyTowns, local businesses and LAWPRO.

Learn more:

www.cloughaneelyanglingassociation.com

Aille Engaged: a citizen science project monitoring rainfall and a river at work

The Aille Engaged project is working with the local community on monitoring the rain in the Aille catchment in Clare, and how this relates to levels and flows of water in their area. The role of local citizen scientists in gathering, analysing and sharing their data has increased their understanding of their catchment.

Sitting on the far western end of Europe, facing the north Atlantic, Ireland gets almost all its weather from somewhere else: lows rolling in from the Atlantic bringing rain, highs dragging Siberian air across the entire continent, and everything in between. It's no wonder we talk about the weather all the time. The *Aille Engaged* project came out a series of these talks over the years between Dr Eamon Doyle from the Burren and Cliffs of Moher UNESCO Geopark which is managed by Clare County Council and Dr Tiernan Henry (from Earth and Ocean Science at NUIG). Conversations about how fieldwork would start in the sun and end in the rain; or more likely how the work would start in the rain and then continue in the rain (or hail!). These conversations revolved around the relationships between rainfall and the land: how the shape of the land would affect what could happen the rain, how the rainfall pattern could affect what rivers would look like and how they would respond, how geology, soils, land use and host of other factors were part of these relationships.

At roughly the same time, Lisdoonvarna Fáilte and the Lisdoonvarna Historical Society were engaging in a project to restore the Spa Well in Lisdoonvarna and to tell the story of the baths and the springs. Since the late 18th century the sulphur and iron rich waters that flow from springs in Lisdoonvarna have attracted visitors for their curative properties, and in 1875 the first bathhouse was built. By 1895, over 20,000 visitors were coming annually, but numbers declined in the following decades and the bathhouse fell into disrepair. The group were not only interested in telling the past story about the Spa, but also they were keen to make the connection between the water, the location, the

Aille Engaged team members Tina and Pat checking rain gauges.

landscape and the history. They proved to be ideal partners for the *Aille Engaged* project.

Eamon secured funding from Geological Survey Ireland (GSI) in 2019 to buy some rain gauges, staff gauges and to get an *Aille Engaged* webpage added to the Burren and Cliffs of Moher UNESCO Geopark site. The idea could not have been simpler: members of the Historical Society who live in and around Lisdoonvarna were each given a simple rain gauge, which they put in their garden, and each agreed to read the rainfall depth daily and make a note of the reading. The Burren and Cliffs of Moher UNESCO Global Geopark created an *Aille Engaged* page on their website where each participant could log on and upload the data they collected.

The data are immediately presented on time-series graphs, showing rainfall depths at different locations in the Aille catchment. A staff gauge was installed (by Lisdoonvarna Fáilte) on the bank of the Aille as it flows through the Spa Well where river depth could be read, and these data were added to the website too. If you log on to *Aille Engaged* you'll see what the rainfall patterns have been like at seven different locations around the catchment, and you can see how the rainfall affects the water level in the Aille river.

The *Aille Engaged* project is citizen science at work. Real data are collected by the citizen scientists, and these data are uploaded to the project website. The data are instantly visible to all (and especially to those who collected it), and all the data are presented as reported.

A cursory examination of the graphs shows how rainfall events associated with particular dates are not necessarily uniform: while it might be raining all over an area, in some places more rain might fall than in other places. On March 28, 2021, 28mm of rain was recorded at the rain gauge at Lisdoonvarna Castle (close to Slieve Elva), while on the same day in Coogyulla the total rainfall was 13mm. These data demonstrate how rainfall amounts can change even over short distances and how these differing amounts might have different impacts on river flows and river water levels. The staff gauge data recovered at the Spa Wells shows how flashy the Aille river is – the river responds really quickly to rainfall events, with levels rising really quickly following rainfall, and with levels dropping back as soon as rainfall has passed.

The Aille drains an area east of Lisdoonvarna largely underlain by resistant sandstones and shales. The catchment area is rural, with an undulating topography and relatively thin soils. Rain here tends to run off the hills quickly getting into the river rapidly – again, looking at March 28, 2021: the water depth was recorded at 100cm, an increase of 55cm on the previous day. A day later the water level dropped by a quarter and by the start of April the water levels was back to 40cm.

This type of project provides real, reliable and useable data on rainfall depths across an area and on the response of water levels in a river to that rainfall. These kinds of data are of huge importance in understanding how a system operates, how quickly or slowly it responds, and in helping to develop management plans that are appropriate for particular locations. This is important, useful and critical, but a much bigger impact is on those who live within the

Aille Engaged team member John at the Spa Well Stream Gauge.

catchment. These citizen scientists are collecting these data sets, but the data is not going to some remote research location, it is instantly accessible to anyone who wants to go to website; the data is collected by people who live in the catchment of the river, and their data is instantly available for all to see. One impact of this project has been that the team feel an ownership of the data and feel invested in their catchment and in making sense of their environment.

A further, unforeseen, outcome of the project has been our new research into the source and flow pathways of the water entering the Aille system in the northern part of the catchment. This arose directly from the need to answer questions related to assessing possible flows in the Aille River related to future climate change models.

Aille Engaged is a simple idea that has big impacts. It is easy to replicate and just requires some engaged and interested people to kick start the work.

Tiernan Henry, Earth and Ocean Science, NUIG

Learn more:

www.burrengeopark.ie/learn-engage/rainfall-river-level-data

Source to Sea – educational videos and resources for primary schools created by Scoil na Mara in Cork

Source to Sea is a series of primary school educational videos and class room activities about water quality and biodiversity. Scoil na Mara led the initiative, supported by Cork County Council and the Local Authority Waters Programme (LAWPRO).

Learning about caddisflies in one of the wonderful videos from Scoil na Mara.

Over three episodes of their new Source to Sea video series, Scoil na Mara bring viewers on an exploration of different river, estuarine and coastal ecosystems. Highlighting the links between water quality, biodiversity, health, and well-being. The videos are proving popular with teachers and students alike as valuable and engaging educational resources.

Scoil na Mara launched the series of videos during National Biodiversity Week, to celebrate Ireland's biodiversity and highlight the value of good water quality. The last episode in the series is about the seashore and ocean ecosystem and its release date coincided with World Oceans Day on 8 June. The videos were filmed in the Clonakilty Estuary Catchment by Séan Casey. The series was written and presented by Mairéad O'Donovan. The series was promoted locally with an art competition for the nine primary schools of the catchment. A tremendous number of super entries were received, making the judges job very difficult!

The Source to Sea Initiative is endorsed as an activity of the United Nations Decade of Ocean Science for Sustainable Development. The Decade, coordinated by UNESCO, recognises contributions which, at a local level, increase awareness of the ocean and its influence on human life and contribute to better understanding and more sustainable management of the ocean. The decade runs from 2021 to 2030 and provides a common framework to ensure that ocean science can fully support countries' actions to sustainably manage the Oceans and particularly to achieve the 2030 Sustainable Development Objectives.

The series is available to all schools on the Scoil na Mara YouTube Channel and links to additional resources are also provided beneath each video to support more in-depth learning at home or in school.

Learn more:

Watch the video on YouTube: www.bit.ly/scoilsourcetosea

A still from the Moments by the Water video.

Kilteevan TidyTowns helps their community enjoy Moments by the Water

Eileen Fahy, Chair of Kilteevan TidyTowns, reflects on a project they worked on called Moments by the Water. Kilteevan's wetland walks, cycleways, fairy trail, seating areas and picnic benches were a respite during the pandemic, connecting the local community with nature, and even more importantly, each other...

Kilteevan TidyTowns supports the Sustainable Development Goals of the United Nations. We value our wild and natural places and wish to protect them as a natural heritage for present and future generations to enjoy.

From 2017 to 2021, with funding from the Peatlands Community Engagement Scheme, the Outdoor Recreation Infrastructure Scheme, the support of the National Parks and Wildlife Service, Roscommon Co. Council and the local community, we developed walks, cycle ways and installed a fairy trail, picnic bench, seating areas and information points. Little did we know how quickly our project would become a vitally important resource.

During COVID-19, large numbers walked the network of roadways around our 10,000-year-old raised bogs. Our Wetlands kept us connected and engaged with each other and with nature. This was of major benefit to our health and well-being.

To fight COVID-19, we washed and washed our hands and listened to constant reminders to wash our hands again. During all that time, did we once stop to think about the life giving and lifesaving resource flowing from the tap?

We wanted to take part in National Heritage Week 2021 and wondered what could we do? The thinking caps went on. Because of ongoing restrictions on events and gatherings, we explored the possibility of a project which everyone could view online.

Reflecting on our walks and all the handwashing we could see WATER was the common denominator. The time had come to celebrate Water–the 24/7 365 day of the year, frontline resource which underpins our health, wellbeing, environment and future prosperity. We decided on a Water /Well-Being project to lift our spirits as we cautiously emerged from cocooning, lockdowns, social distancing and self-isolation.

Albert Einstein advised "Look deep into nature and you will understand everything better". With this in mind, we created a mindfulness video to celebrate our water bodies–The Cloneigh River, the Kilteevan River, Lough Ree and the Cloonlarge Loop.

Our project idea was developed by collaborating with Conor Ruane, Community Water Officer, Local Authority Water Programme and Nollaig Feeney Heritage Officer, Roscommon Co Council. A local video company, Spicy Dog Media was contracted to create our video. The video premiered on Kilteevan TidyTowns Facebook page and Kilteevan Community website on August 22 2021, Water Heritage Day.

Watch the video: https://www.kilteevancommunity.ie/forthcoming-events/item/801-moments-by-the-water

Reflections on the video

Seeing things from a different perspective gave us new insight and experience. The bird's-eye view in the video helped to understand the concept of a catchment. We could see how the water catchment supports plants, animals, fish and insects and livelihoods such as agriculture, recreational angling and water sports. It was also interesting to see our water bodies feeding into the habitats of our Special Protected Area (SPA) and Lough Ree Special Area of Conservation (SAC)

Feedback on the project

Many people enjoyed and appreciated the video, which was viewed over 700 times on our Facebook page. The video was described as "brilliant", "beautiful", "an excellent job", "the images of water unlocked inner peace and calmed a very overactive mind".

Some found it hard to believe this was Kilteevan. Viewers appreciated being able to see the beauty, the power, the grace, the meandering, the flow, the colours, the sounds, the magic and the mystery of the living water.

The benefits of the human /nature relationship and its interconnectedness with our health and wellbeing were experienced and expressed.

Conclusion: Einstein was right, nature has the answers, we just need to look... deeply.

Eileen Fahey, Chair of Kilteevan TidyTowns

River Derry Bubbles Project 2020-2021

This is the fifth year of the River Derry Bubbles project, who have been working with five local schools to help children understand their local catchment, and to listen to what the children have learned and what they say about how we can all look after their water...

The River Derry Bubbles Project is a catchment-based project now in its fifth year. It was developed by Sarah Rubalcava of Rubalcava Heritage Services with the help of Maeve Hunter of Mae Art Ed. The project focuses on the benefits, issues and threats facing a river and its surrounding catchment area.

The River Derry flows from its source, south of Hacketstown, Co. Carlow. Its journey takes the river through counties Carlow, Wicklow, and Wexford, returning to Carlow at Kildavin where it meets the larger River Slaney. Worthy to note, a large stretch of the River Derry is included in the Slaney SAC that includes Tomnafinnoge Woods (pNHA), of the old Coolattin oak woodland.

The River Derry Bubble Project's aims are:

- To encourage the local community to be aware of the river and how to protect it and the surrounding areas
- To gain more enjoyment from their local catchment areas, and in turn participate in its protection and enhancement of same, thus fulfilling one of the objectives of the Water Framework Directive by educating and immersing a small section of the community i.e. primary school students in their local catchment
- To raise awareness of the issues and benefits associated with the river, being local biodiversity (freshwater and terrestrial), Tomnafinnoge Woods, water abstraction, and treatment and local business needs
- To raise awareness of the threats from litter and water pollution by taking part in a litter pick
- To engage with the local schools and facilitate outreach days in a fun, creative and educational way
- To incorporate an arts/craft element throughout the project resulting in the development and organisation of an end of project school/community exhibition
- To complement the work of Tinahely TidyTowns and in particular assist with the new category where this funded project will contribute to Tinahely's water resources/Special Water Award sponsored by the Water Communities Office,
- Ultimately this project must be sustainable and be designed so it can be replicated and adapted nationwide for other communities on a catchment level

A local development group, Tinahely Area Community Projects (TCP), were made aware of the issues facing the river and

How did the River Derry get its name? It all comes from the Irish word for an oak tree – An Doire. An Doireach (coming from dairgech meaning 'abounding in oak' or another source 'Abha an doire', meaning River of the oak'. Photo and caption: Rubalclava Heritage Services.

Some of the great ideas from children in the River Derry catchment.

associated streams and its priority for action as noted in the River Basin Management Plan 2018-2021. The project in 2020 won a competitive tendering process when TCP put out a call for the provision of a Water Heritage and Community Outreach Services for the River Derry Catchment. It was aimed at national schools located within the catchment. TCP, with the help of Dónal O'Keeffe, Wicklow's Community Water Officer (Local Authorities Waters Programme), secured a LEADER training grant through Co Wicklow Partnership.

During the school year 2020-2021 and amidst Covid19, Sarah and Maeve with the help and support of teachers organised seven outreach days in local schools. These days covered themes such as the water cycle, an introduction to the word catchment, fresh water biodiversity and recycling. TCP manages a community recycling centre and the school children learnt about litter and recycling.

Due to Covid19 restriction, Zoom and pre-recorded videos were used. The River Derry Bubbles Project also used Facebook and Instagram to help raise awareness across the local community. Outreach to the wider community was increased during National Tree Week, World Wetland day and Biodiversity Week.

Similarly, visits to the drinking water abstraction point (Tinahely, Shillelagh, Carnew and surrounding areas are dependent on the Derry for its potable needs), water treatment and waste water treatment facilities had to be delivered by recorded Zoom and presentation.

An integral part of the project was the regular guided walks with the classes. This element was particularly useful after the themed recordings as it allowed the pupils to make a connection with the topic. The regular walks allowed us to help enforce the links between land management uses/issues, the river, and even the ocean.

All five schools enjoyed taking part in an age appropriate biodiversity survey, involving a kick sample. Sarah and Maeve with help from Dónal O'Keeffe led school visits to the river at different locations. Riparian zones were also included. Indeed, one school was given an impromptu lesson on Japanese Knotweed they sadly found at a site visited. All pupils were encouraged to identify and note the differences between stoneflies, mayflies, caddisflies and other freshwater invertebrates in trays of water and now have a better understanding of their importance in the food chain and as an important tool for monitoring water quality in their catchment.

A valuable part of the project involved an art/craft element. The pupils were asked to develop their own visual diaries. The Visual Nature Diary was introduced to the students to record their experience of the project through drawing, photos, writings, poetry, collecting. On day 1 we introduced them to the idea of the diaries and explained what they were about and how they would help to record in one place their experiences throughout the project. We encouraged them to use recycled materials to construct the diaries and for the pages.

As part of the outreach days, an art/craft day was included in the programme. Artist Educator, Maeve, facilitated this day and led the pupils in the making of wildflower seed, handmade paper. We have already heard reports back from parents about this day already. The students were asked to collect collected used papers in school in preparation and soak them in water. This day also helped us to

bring back the theme of re-using paper as we asked that paper was collected from the classroom. In addition, proactive measures to support local pollinators was discussed, like the sowing of wildflowers.

Another theme was 'Food & Water'. In preparation of this class, we developed some activities for all the students to help them think about various aspects of water and food. The students were given opportunities to explore and discuss in the class water percentages of various fruit and vegetables. This element also helped to raise other subjects around gardening, biodiversity, role of pollinators for example. We were able to bring the students on an exploration of water usage during the production or various household items and other food stuffs for example cotton t-shirts, meat and cheese.

Reponses from pupils who were surveyed after this engagement project were overwhelmingly positive. The 5 schools involved had a virtual meetup and shared their learning experiences and visual diaries. Each school's students also shared the details of their local catchment with the other four schools taking part.

A LEADER grant evaluation form had to be completed by all participants. It was important to Sarah, as trainer/project lead to get a good sense of what the pupils enjoyed but also to tease out how much they learnt. Two questions were asked:

1. What day(s) did they enjoy and
2. If you could do one thing to protect the water/catchment what would it be?

A summary using phrases they used are as follows:

- Go out every Sunday and collect litter from rivers and footpaths
- Try to use less water
- Recycle their rubbish
- Put up more anti-litter posters
- Make everyone aware of global warming
- Stop running water while brushing your teeth
- Stop putting plastics into the oceans
- Kick sampling to save the water
- Clean the water to save the animals
- Stop killing wildlife in the water
- Volunteer to check water life
- Don't pollute the surrounding area
- Visit the rivers often
- Plant more wildflowers
- Arrest anyone that litters
- Make nets to catch floating plastics
- Try to stop people throwing rubbish out their windows while driving
- Start a charity to help protect the rivers

This project will also be submitted to the TidyTowns Waters ad Communities special awards. If funds allow, it is planned to implement some (or all) of the excellent suggestions made above. The student's responses were of such high quality and were so proactive that they were sent to two local councillors for their consideration.

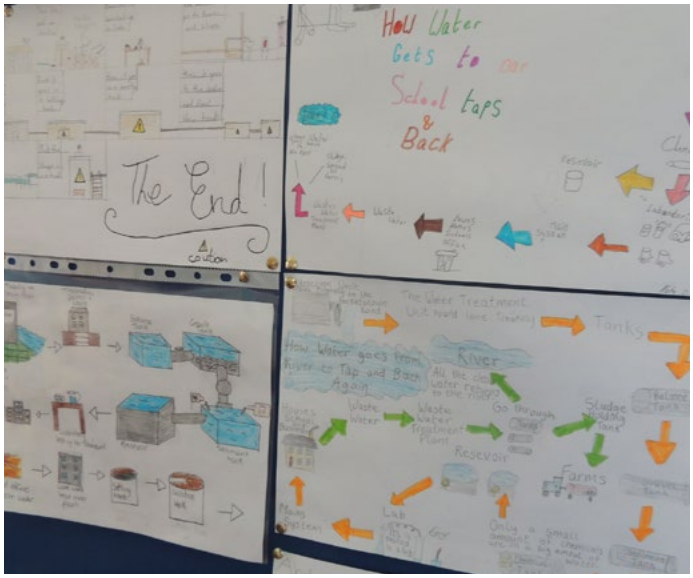
Sarah Rubalcava, Rubalcava Heritage Services

Learn more:

Tinahely Community Area Projects http://tinahely.ie/around-town/tinahely-community-projects/

Project Lead: Rubalcava Heritage Services www.rubalcavaheritageservices.com

Art/Craft/Creative lead Maeve Hunter MaeArtEd https://maedecart.portfoliobox.net/



Some of the students work looking at the River Derry and their local drinking water supplies.

Public consultation opened on Ireland's draft River Basin Management Plan for 2022-2027

The Department of Housing, Local Government and Heritage has published the draft River Basin Management Plan for 2022-2027. You can now have your say on this plan during the public consultation, which runs until Thursday 31 March 2022.

The Minister for Housing, Local Government and Heritage, Darragh O'Brien, TD, has published the draft River Basin Management Plan for Ireland 2022-2027 for public consultation. The Minister now invites submissions, observations and comments on the proposed plan.

A key commitment in the Programme for Government, launching a new strengthened River Basin Management Plan will help Ireland protect, improve and sustainably manage our water environment to 2027. Achieving good water quality in our rivers, lakes, estuaries and seas is essential for protecting Ireland's drinking water sources, environment and people's quality of life. The plan is produced in implementation of the EU Water Framework Directive (WFD).

Why is the Department launching a public consultation?

Ireland is currently in the latter stages of preparing the next River Basin Management Plan (RBMP) for Ireland. The Plan is required under the Water Framework Directive for the period 2022-2027. These plans, amongst other requirements, set out the environmental improvements to be delivered during a river basin planning cycle.

The plans contain water quality objectives and a programme of measures to achieve those objectives. Building on earlier consultation phases, the purpose of this consultation is to gather your views on what should be in the final plan.

It is important that all sectors respond to make the 3rd cycle plan as inclusive and strong as possible, and to ensure that everyone gets a chance to contribute to shaping the overall management of Ireland's water environment. The information gathered will help us prepare for the next cycle of River Basin Management Plans. The finalised plan is due to be published in 2022.

A strengthened River Basin Management Plan

The Programme for Government committed to producing a new, stronger River Basin Management Plan in 2022. This draft text will continue the collaborative dialog towards producing the new Plan. Over the next six months of consultation, there will be opportunities at all levels: local, regional and national to hear and to contribute towards a new and strengthened programme of measures for water quality.

The draft measures are based on three principles that emerged during our review of the second cycle:

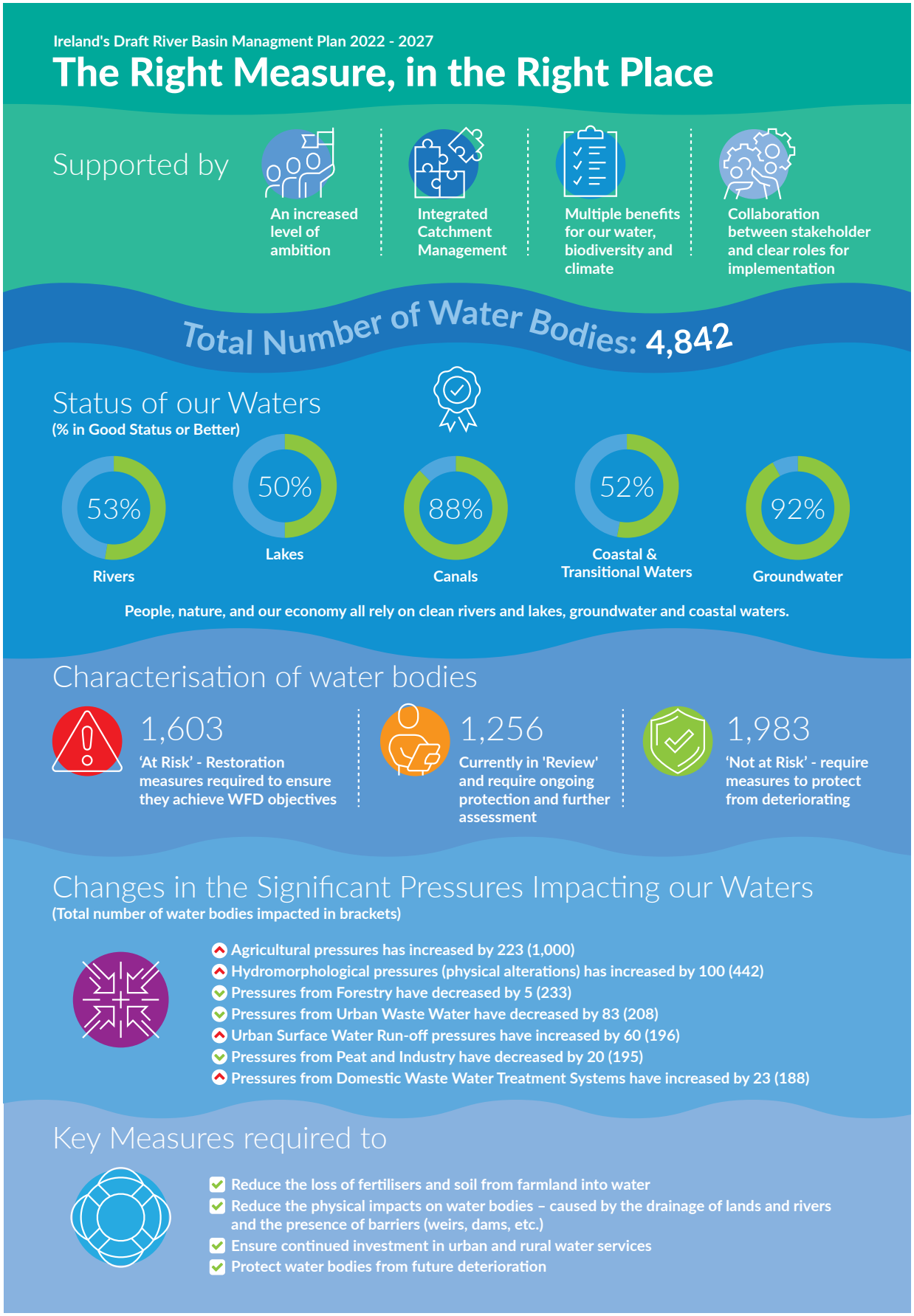
- An increased level of ambition: the third cycle plan will need a high level of ambition in response to water quality trends.
- Integrated Catchment Planning: local catchment management plans, which will be sub-plans to the national Plan, will be put in place in the next cycle for each of the 46 catchments. Building over time into fully integrated catchment management plans, these will eventually provide a continuing opportunity for greater public participation and engagement of key stakeholders and sectors at a local and regional level in the ongoing management of catchments and water bodies.
- Multiple benefits: Many of the measures needed to protect and improve water quality can also deliver benefits for biodiversity and climate change.

How to respond to this public consultation

An online survey and details of how to make a submission by post or email is available online at www.gov.ie/draftRBMP

The Local Authority Waters Programme will be organising virtual consultations around the country - www.lawaters.ie

Department of Housing, Local Government and Heritage



Infographic from the Draft River Basin Management Plan 2022-2027.

Water Quality in 2020: An Indicators Report

On 14 July 2021 the Environmental Protection Agency (EPA) published Water Quality in 2020: An Indicators Report which provides an assessment of the quality of Ireland's rivers, lakes, estuaries and groundwaters.

The EPA produces this report annually to provide a summary of how water quality trends are changing in Ireland. Ireland's surface waters and groundwaters continue to be under pressure from human activities. Just over half of Ireland's rivers and lakes are in a satisfactory condition which means that a large number are unable to sustain healthy ecosystems for fish, insects and plants. There has been a modest improvement in river biological quality overall with 345 rivers showing improvements and 230 rivers declining in quality.

The main threat to water quality is high nutrient levels, such as phosphorus and nitrogen which come from human activities. Nitrogen levels in rivers, groundwater, and estuaries in the south, southeast and east of Ireland are too high and increasing. This is primarily due to agricultural activities. Urgent and targeted action is required to reduce the amount of nitrogen entering our waters

Almost half our rivers (47%), a quarter of our groundwaters (24%) and one fifth of our estuarine and coastal water bodies (21%) have nitrogen levels that are too high. The levels impact the ability of these waters to sustain healthy ecosystems and cause nuisance algal blooms in our estuaries. High nitrogen levels, above the drinking water standard, can pose a risk to human health.

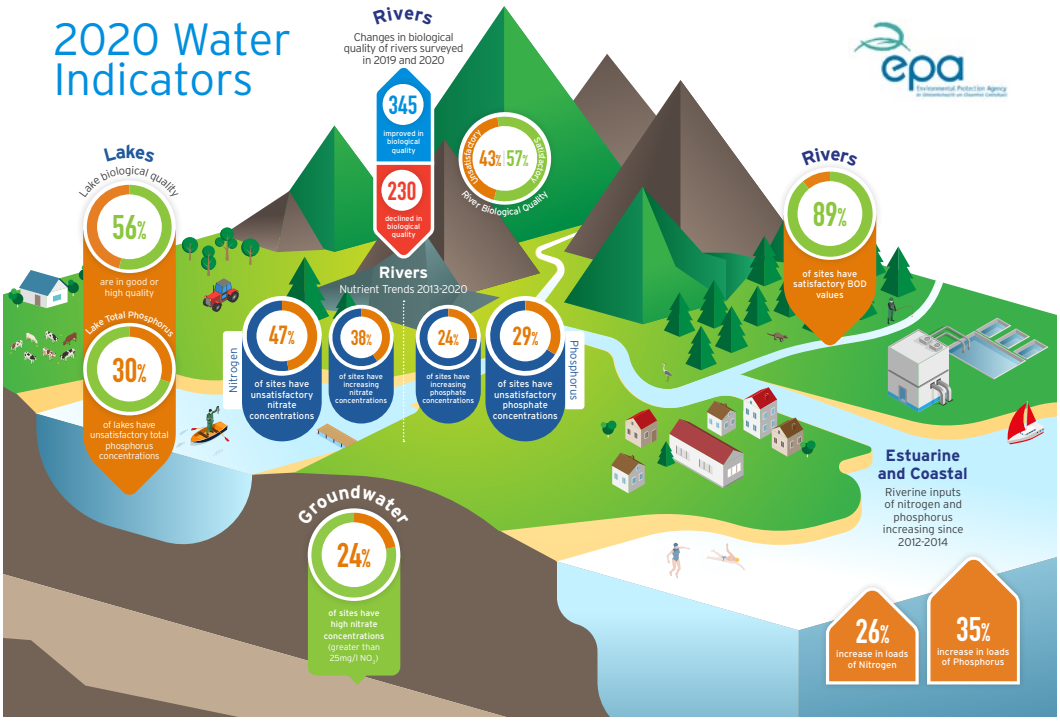
Commenting on the report, EPA Director of Evidence and Assessment, Dr Eimear Cotter said:

"Our water quality is currently under threat with nitrogen pollution from agriculture causing particular pressure in parts of the south, southeast and east of the country. Rivers such as the Bandon, Lee, Blackwater, Suir, Nore, Barrow and Slaney have nitrogen levels that are too high with significant implications for the marine environments they flow into. We urgently need to address nitrogen pollution so that we can protect and restore the water quality in these areas. If we do not substantially reduce nitrogen inputs to our rivers, and ultimately our marine environment, we are in danger of further deteriorations in water quality and losing our excellent coastal water quality."

While there are encouraging signs of improvements in the areas prioritised for action in the River Basin Management Plan, a lot more needs to be done to improve water quality. In 2019 and 2020, 345 rivers showed improvements in quality, including an increase in the number of high-quality river sites, however, 230 rivers declined in quality.

Mary Gurrie, EPA Water Programme Manager, added:

"While there has been an overall net improvement in the biological quality of rivers monitored in 2019 and 2020, EPA found that 230 rivers declined in quality. It is a key requirement of the Water Framework Directive that we protect water quality and prevent deterioration. The scale of declines is off setting the improvements and hampering progress towards improving water quality. It is essential that action is taken in both the next River Basin Management Plan and the Nitrates Action Programme to continue improvements whilst also preventing further deterioration.'



Water quality in 2020: an indicators report.

Learn more:

Water Quality in 2020: an indicators report and its infographic can be downloaded from the EPA website: https://www.epa.ie/publications/monitoring--assessment/freshwater--marine/water-quality-in-2020.php

EPA publishes an assessment of which catchments need reductions in nitrogen concentrations

On 14 June 2020, the EPA published an assessment of the catchments that need reductions in nitrogen concentrations to achieve their water quality objectives. The primary water quality issue of concern in Ireland is elevated concentrations of nutrients (nitrogen and phosphorus), which contributes to an increase in the growth of algae and aquatics plants, which in turn impacts on aquatic ecosystem health. Excess nitrogen in waters can also impact on drinking water quality.

The EPA has carried out an analysis to identify the catchments where nitrogen concentrations are too high to support healthy aquatic ecosystems, or at least Good Ecological Status under the Water Framework Directive.

The reductions in nitrogen in waters that are needed in these catchments has been calculated, and critical source area maps have been developed to help target nitrogen control measures in the landscape. Although achieving Good Ecological Status requires that relevant standards are also met for other quality elements, such as macroinvertebrates, dissolved oxygen, phosphorus, fish and other relevant parameters, for the purposes of this assessment, the focus is on nitrogen.

Nitrogen losses to waters are of particular concern at present because our estuaries are in the poorest condition overall, with only 38% meeting their water quality targets, and these waters are particularly sensitive to elevated nitrogen concentrations. Trends in nitrogen concentrations in waters have also been increasing since 2013. The key catchments of concern are in the south and south east of the country (Figure 1).

Key points

- Elevated nitrogen concentrations in waters is one of the factors that leads to poor water quality outcomes in all waters. Estuaries and coastal waters, and groundwater drinking water supplies are particularly at risk
- There are a number of key catchments of concern with elevated nitrogen concentrations along the south, southeast and east coasts including the Maigue/Deel, Bandon, Lee, Blackwater, Suir, Nore, Barrow, Slaney, Tolka/Liffey and the Boyne river catchments
- Nitrogen concentrations in waters have been increasing since 2013 — between 2013 and 2019, all but one of the catchments of concern showed increasing trends in the amount, or load, of nitrogen discharging to the sea via our rivers

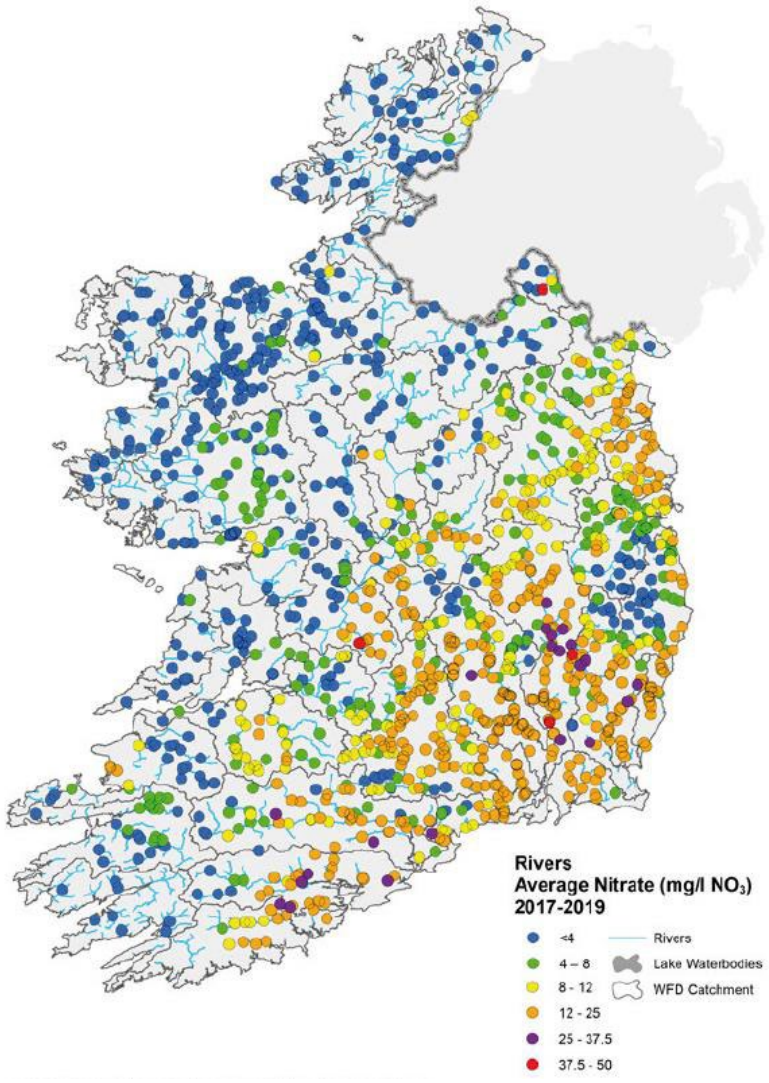


Figure 1: Average nitrate concentrations in rivers for the period 2017-2019, showing elevated concentrations in the catchments in the south, southeast and east of the country.

- The nitrogen load discharging to sea needs to be reduced in the catchments of concern to support healthy aquatic ecosystems. The scale of reduction needed ranged from zero in some years, to just over 8,000 tonnes of nitrogen in the Barrow catchment in 2018

- The data show that in the predominantly rural catchments, more than 85% of the sources of nitrogen in the catchment are from agriculture, from chemical and organic fertilisers. In contrast, the majority of the nitrogen in Liffey/Tolka catchment, which incorporates Dublin City, is from urban waste water
- Maps have been developed of the critical source areas for nitrogen. These are the highest risk areas in the landscape where nitrogen from agriculture leaches to waters. Measures to reduce leaching should be targeted in the critical source areas, in the catchments of concern, to deliver maximum environmental benefits

Assessment of the types of actions on land that will be needed to achieve the required reductions in nitrogen in waters is being considered by the Department of Agriculture, Food and the Marine and the Department of Housing, Local Government and Heritage, with support from Teagasc, and is outside the scope of this assessment.

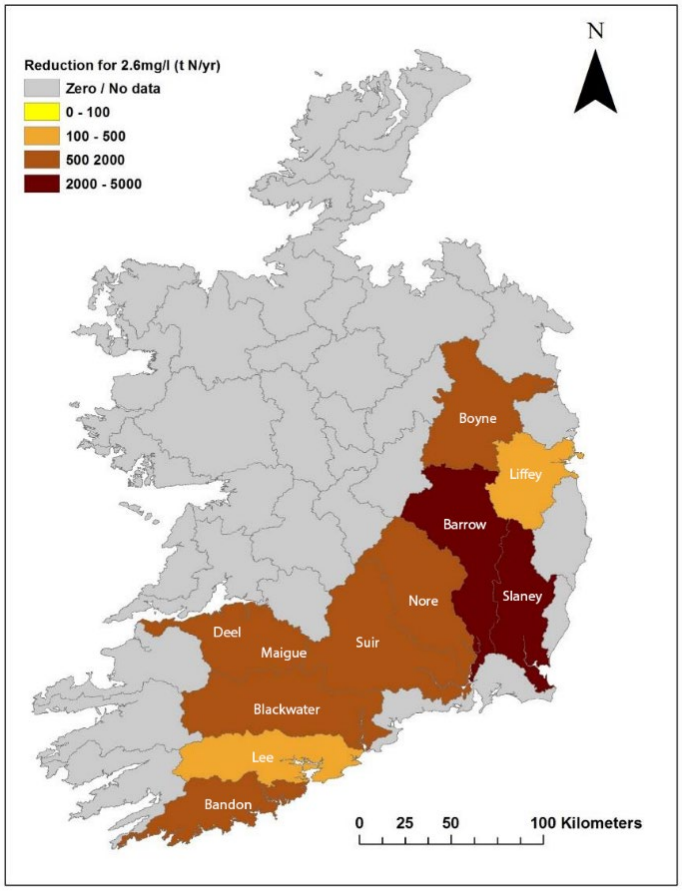


Figure 2: Catchments of concern with elevated nitrogen concentrations. Catchment shading shows the relative scale of nitrogen reductions needed to achieve the Environmental Water Quality Standard of 2.6 mg/l N in the downstream estuary, based on the peak.

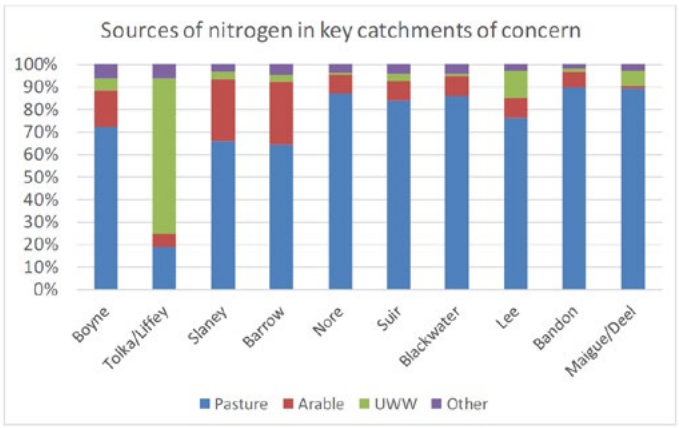


Figure 3: Sources of nitrogen in the catchments of concern. UWW means urban wastewater. Other includes forestry, septic tanks, peat, urban runoff and atmospheric deposition.

Learn more:

www.catchments.ie/assessment-of-the-catchments-that-need-reductions-in-nitrogen-concentrations-to-achieve-water-quality-objectives

This assessment includes information on:

- The catchments of concern that have elevated nitrogen concentrations
- The annual load (tonnes) of nitrogen that has discharged from major catchments out to sea over the last decade
- The annual nitrogen load reductions that would have been needed to keep the nitrogen concentration below the Environmental Quality Standard[1] over the decade
- The sources of nitrogen in the catchments of concern
- The critical source area maps that have been developed by EPA to help target nitrogen measures in catchments

1 Nitrogen reductions were also needed in the years prior to this period but for the purposes of this report, the focus is on the last decade.

EPA submission on the fourth review of Ireland's Nitrate action Programme

On 17 September 2021, the EPA made a submission on the second-stage consultation about the measures being considered as part of the fourth review of the Nitrates Action Programme by the Department of Housing, Local Government and Heritage.

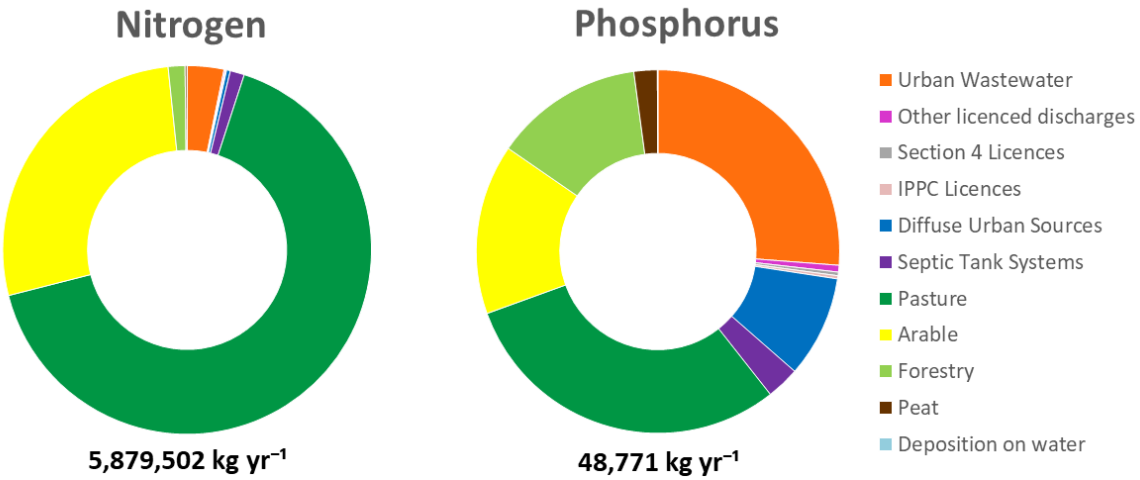
The key points from this submission are that:

- The 4th Nitrates Action Programme has not delivered the required water quality outcomes. Agriculture is the most significant pressure, with excess nutrients impacting on water quality and trends going in the wrong direction.
- Measures must be more targeted to achieve our water quality objectives. They must also be joined up and aligned across agricultural and other environmental policy to achieve multiple environmental benefits.
- While the measures outlined may be challenging to implement in full, they must be taken as a matter of urgency to protect our environment. These actions must be substantial and sustained with full accountability.
- The current levels of non-compliance with existing minimum statutory standards is unacceptable. Securing compliance with all existing and new regulations needs to be given priority. The full suite of enforcement tools should be utilised, including support and advice, incentives and a strengthened enforcement and inspection regime.

The full submission is online at www.catchments.ie/epa-submission-on-the-4th-review-of-irelands-nitrates-action-programme-2nd-consultation/

EPA publishes 46 updated draft Catchment Assessments on catchments.ie to support public consultation on the draft River Basin Management Plan

The EPA has published an updated draft Catchment Assessment for each of our 46 catchments. These assessments provide an overview of the situation in the catchment, draw comparison between Cycle 2 and Cycle 3, and will help support the draft Plan consultation process.



Source Load Apportionment Modelling is now available for every catchment: these charts show estimated proportions of N & P from each sector in the Slaney & Wexford Harbour Catchment.

ARTICLES

The EPA has published 46 updated Catchment Assessments. These assessments provide an overview of the situation in the catchment, draw comparison between Cycle 2 and Cycle 3, and will help support the draft River Basin Management Plan 2022-2027 consultation process. Once the consultation process is completed the assessments will be finalised to reflect any changes and comments made as a result of the consultation process.

Each Catchment Assessment includes the following:

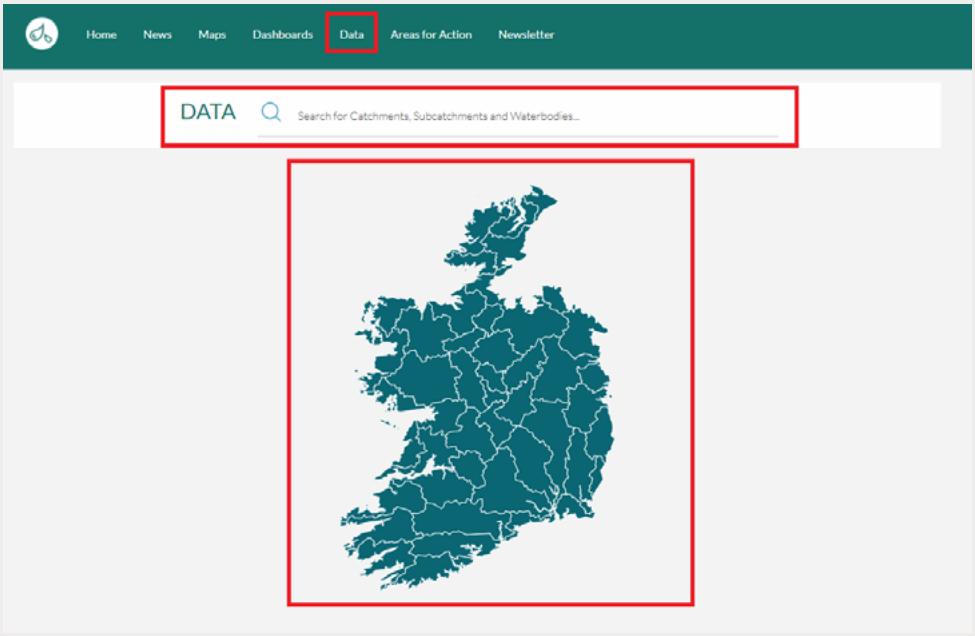
- Status and Risk categories of all waterbodies
- Details on protected areas
- Significant issues and Significant Pressures
- Source load apportionment modelling for each catchment and load reduction assessments for nutrients where applicable
- An overview of the 2nd Cycle Areas for Action and a list of proposed 3rd Cycle Areas for Action

These characterisation assessments are largely based on information available to the end of 2018, including the WFD Status Assessment for 2013-2018. Protected Area assessments are based on water quality information up to 2018 for Natura 2000 and Salmonid Waters; 2019 for Drinking Water; and 2020 for Nutrient Sensitive Areas and Bathing Waters.

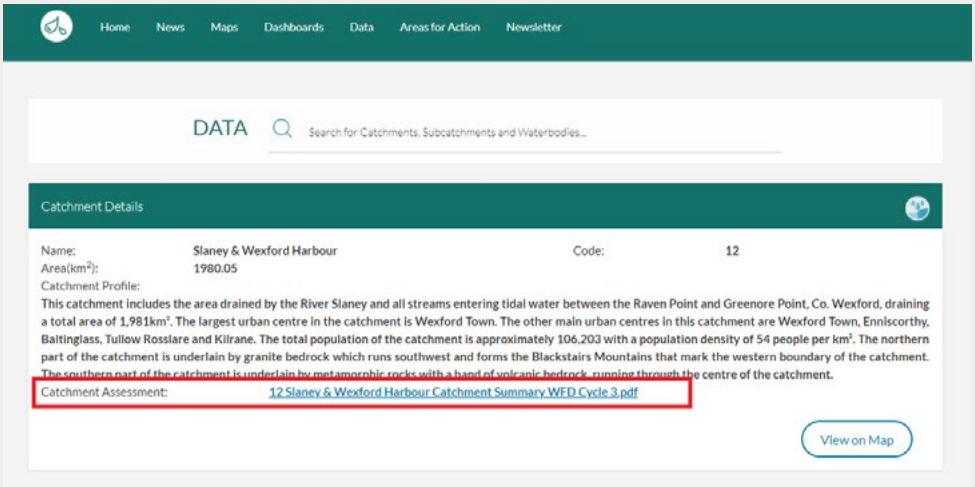
Paddy Morris, EPA Catchments Unit

How to access these Catchment Assessments

1. Go to the catchments.ie Data page: https://www.catchments.ie/data/
2. Type in the name of the catchment you are looking for in the Data search box, or click on the catchment you are interested in on the map of Ireland



3. Once the page for your catchment is opened, you will see a link to the PDF of the Catchment Assessment



Lough Feagh, Co. Mayo. Photo Tom Carolan, Community Water Officer, Mayo.

Public consultation and local engagement on the draft River Basin Management Plan for Ireland 2022 – 2027

The Minister for Housing, Local Government and Heritage, Darragh O'Brien, TD, has published the draft River Basin Management Plan for Ireland 2022-2027 for public consultation until 31 March 2022. The Minister now invites submissions, observations and comments on the proposed plan. LAWPRO will organise meetings all around Ireland so local communities can have their say.

Public consultation on water quality management is a fundamental requirement of the Water Framework Directive. It is a chance for individuals, communities, and interested parties to put forward views on how our rivers, lakes, estuaries, groundwater, and coastal water are managed. In this way, local knowledge can be combined with science to provide a greater understanding of the issues affecting water quality, at both the local and national levels. Public involvement during consultation on the draft RBMP helps in the decision-making process, resulting in a stronger River Basin Management Plan and water quality objectives for the next six years.

Water quality in Ireland

In Ireland, we place great value on water for health and well-being. But do we place the same importance on water in our rivers, lakes, and estuaries? Ireland's natural waters are assets that underpin a healthy society, supporting jobs in sectors like tourism, manufacturing, agriculture and food production. Ireland's image as a clean, green island completely depends on the health of our rivers, lakes, and natural waters. These natural waters are part of our shared heritage and must be protected, defended, and treated with respect.

Recent water quality reports from the Environmental Protection

2nd Cycle RBMP public meeting in Bettystown, Co. Meath. Photo Sinéad Hurson.

Agency show that 47% of surface water bodies are failing to meet the minimum criteria of 'good ecological status' as required by the Ireland's river basin management plans. If we don't act now to address the problems, it's likely water quality will further deteriorate. This will require action across all of society, involving the State, public, private, and community sectors. This concerted approach is at the core of the Draft River Basin Management Plan for Ireland 2022 -2027.

Role of Local Authorities

Local Authorities have a statutory obligation to support and assist the Minister in the development of river basin management plans. The Local Authority Waters Programme (LAWPRO) will host virtual public meetings at Municipal District level. LAWPRO staff will facilitate these meetings across each county.

This method proved successful in 2017 during public consultation on the draft River Basin Management Plan 2018-2021. This was evident by the attendance at meetings, the volume of public submissions received, and the resultant changes to the final River Basin Management Plan. This consultation is also an opportunity for continued engagement with those already involved in caring for their local waterbodies and a chance for more people to get involved. It is hoped that this will lead to more views, more involvement, and more action.

At the local meetings, a Community Water Officer will provide an overview of key points in the draft plan and what this means for communities. There will be a focus on water quality actions and developments over the past four years and how these have benefitted local waters and communities. Catchment Scientists will present an up-to-date picture on water quality, both locally and nationally.

The core purpose of the meetings is to facilitate dialogue on local water quality and what people would like to see included in the River Basin Management Plan. A submission form will be made available to each meeting attendee to put forward their views. LAWPRO will document the issues raised, and the submissions made, and present them to the Department of Housing, Local Government, and Heritage for consideration in the development of the final River Basin Management Plan.

Public consultation on the draft RBMP - get involved online

Public information, including access to the Draft River Basin Management Plan for Ireland 2022- 2027, is provided by the Department of Housing, Local Government, and Heritage and submissions can also be made direct to the department here: www.gov.ie/draftRBMP

The public meetings will take place online via Zoom. Updates will be provided online and on social media, local press, and radio.

To support the public consultation and provide people with online access to relevant information, a Virtual Consultation Room is available at www.lawaters.ie This is a new way of providing access to the public consultation.

Alan Walsh, Communications and Marketing Lead, Local Authority Waters Programme

Learn more:

www.lawaters.ie

Email: info@lawaters.ie

Ireland's Quality Rating (Q-Value) River Monitoring System 1971-2021 - how 50 years of looking at what lives in our rivers can tell us about the health of our freshwater ecosystems

2021 marked the 50th anniversary of the Quality Rating system (Q-value), a methodology for assessing Irish rivers using aquatic invertebrates. This is one of the longest-term environmental datasets of its kind available and gives an idea of the health of our freshwater river ecosystems.

Ireland is as much blue as it is green. Our small island has well over 84,000 km of river channel and more than 12,000 lakes. The river network, in many ways, acts like the capillaries and blood vessels of the land, flowing from the high mountains to the hill to the plains and onwards eventually reaching the sea. The intricate connection between land and water means that our streams and rivers are highly susceptible to what happens on land. Therefore, there is a need to monitor and assess the quality of these rivers to ensure human activities do not pollute or degrade the very waters we use daily for our drinking water, for food production, for amenities and tourism. Our rivers also provide habitats for nature.

This year is the fiftieth anniversary of Ireland's national river monitoring programme. This programme was established in Ireland in 1971 by An Foras Forbartha (succeeded by the Environmental Protection Agency (EPA) in 1993) to 'provide a comprehensive service in relation to all aspects of the national use of our water resources, including surveys and investigations into water pollution'. Initially the programme covered 121 rivers with 765 monitoring stations or 2,900 km of river channel length.

The national monitoring programme and the application of the Q-value expanded through the 1980s and 1990s and by the end of 2006 over 5,200 river stations had been sampled and their water quality assessed, aiding the management needs of local authorities and assessment of the performance of wastewater treatment plants and indicating new and changing pollution sources.

In 2007, the Water Framework Directive (WFD) monitoring programme began, covering 1,200 rivers and over 3,000 river stations or 13,000 km of river channel length and is still on-going today, over 15 years later. All stations are assessed using the Q-value system at least once every three years. This approach is one of the oldest and longest running river ecological monitoring programmes in Europe. As part of the WFD the Q-value system was intercalibrated (i.e. compared with) with other assessment methods used in other similar geographical European areas to allow for results to be comparable across EU countries.

River kick-sampling as part of the national river monitoring programme, circa 1983. Photo courtesy of Martin McGarrigle.

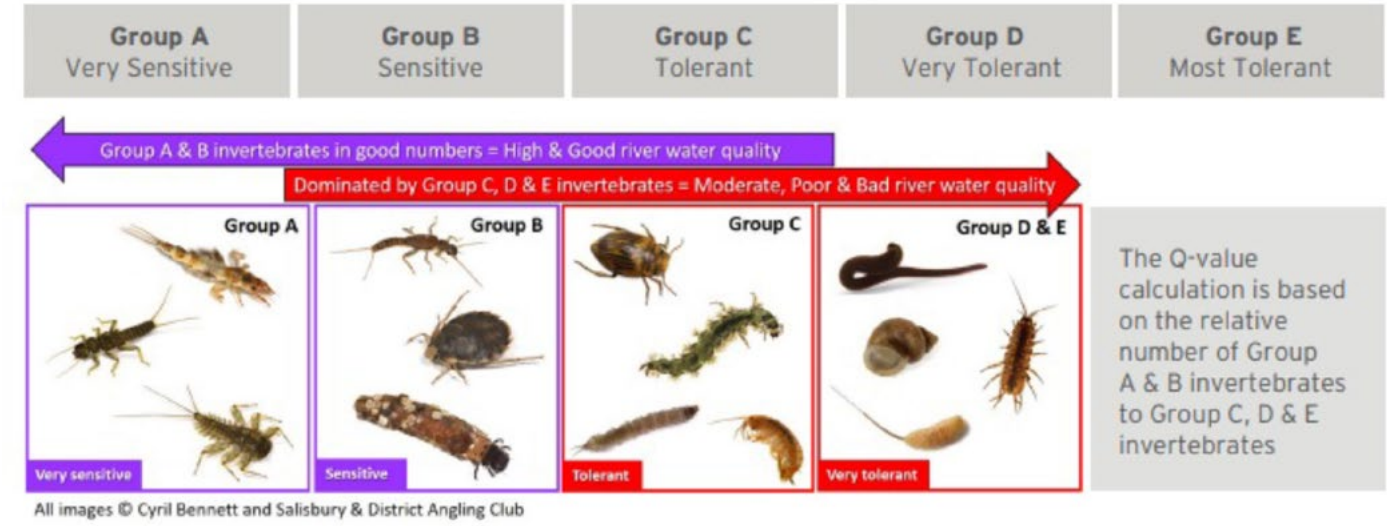
River sampling using a kick net and kick-sampling. This method disturbs the river substrate and captures aquatic invertebrates living instream. The aquatic invertebrates are transferred to a white tray and identified on the riverbank. This approach allows the EPA ecologists to calculate the Q-value and assess the health of the river.

The Quality Rating (Q-value) System

As part of a move to establish a national programme in the early 1970s, Paul Toner developed the Quality Rating System or Q-value which was rolled out nationally in 1971. Since then, the Q-value has been the main method used in the assessment of our river's health over the past 50 years. The system assesses the aquatic invertebrate community collected from June to September each year when flows are likely to be low and the impact of pollution is likely to be at its worst.

Aquatic invertebrates (also referred to as 'macroinvertebrates') are small animals that lack a backbone and live under water. In our rivers they can be found attached to, and amongst, stones and gravel, logs, leaf material and vegetation, or burrowed into the bottom sand and mud. They include juvenile (larvae) and adult insects, crustaceans, mites, snails, mussels, leeches, and worms. Aquatic invertebrates inhabit all rivers from small mountain streams to large systems entering the sea. They are food for fish and aquatic birds and are vital for healthy rivers. Most invertebrates are present in rivers all year round and are easy to collect and they are used as indicators of pollution in rivers and lakes around the world.

Examples of aquatic invertebrates used in the Q-value assessment method.



A visual representation of the Q-value system using the relative abundance of sensitivity of aquatic invertebrates to that of pollution tolerant aquatic invertebrates. (Source: EPA Fact Sheet on River Monitoring – Aquatic Invertebrates).

The Q-value method involves a sampling process known as 'kick-sampling'. The process loosens the invertebrates from the riverbed and allows them to be collected in the net as they drift downstream in the river flow. Samples are preferably collected from the shallower, faster flowing habitats called 'riffles'.

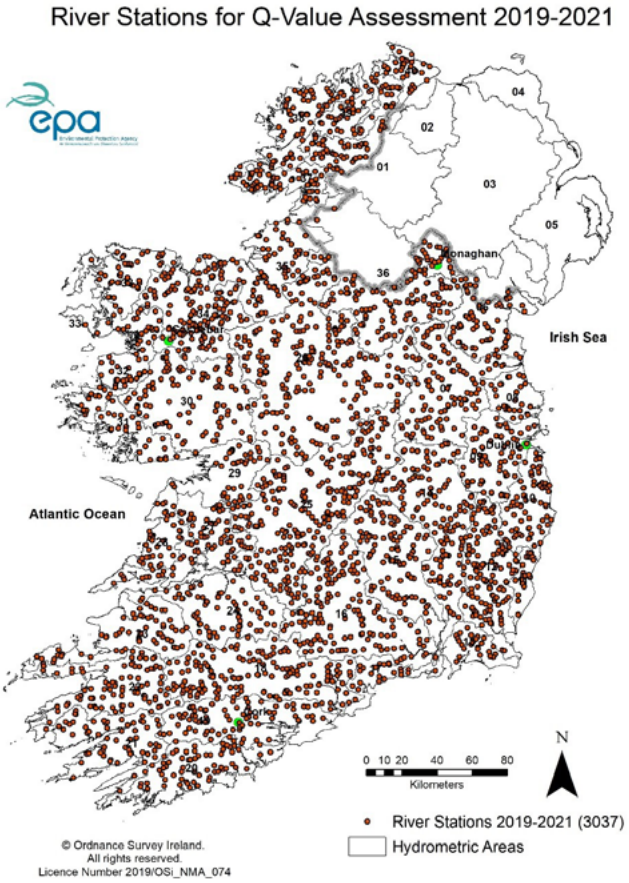
Aquatic invertebrates are good at showing if the quality of the river water is good or bad. The Q-value system gives a measure of the ecological health of each river stretch based on the known sensitivities and tolerances of each aquatic invertebrate to water pollution. This allows us to classify our rivers into five quality classes based on the Q-value result. 'High' river water quality is when the water is not polluted at all, and 'Bad' river water quality is when the water is most polluted.

Aquatic invertebrates are divided into five 'Indicator Groups' based on their sensitivity to pollution. The relative numbers of invertebrates indicate the health of the river. The presence of pollution sensitive species or groups, such as stoneflies and mayflies, indicates that the river is unpolluted, whereas the presence of pollution-tolerant species, such as certain types of snails, leeches and worms, indicates that the river is polluted.

Changes and trends in water quality

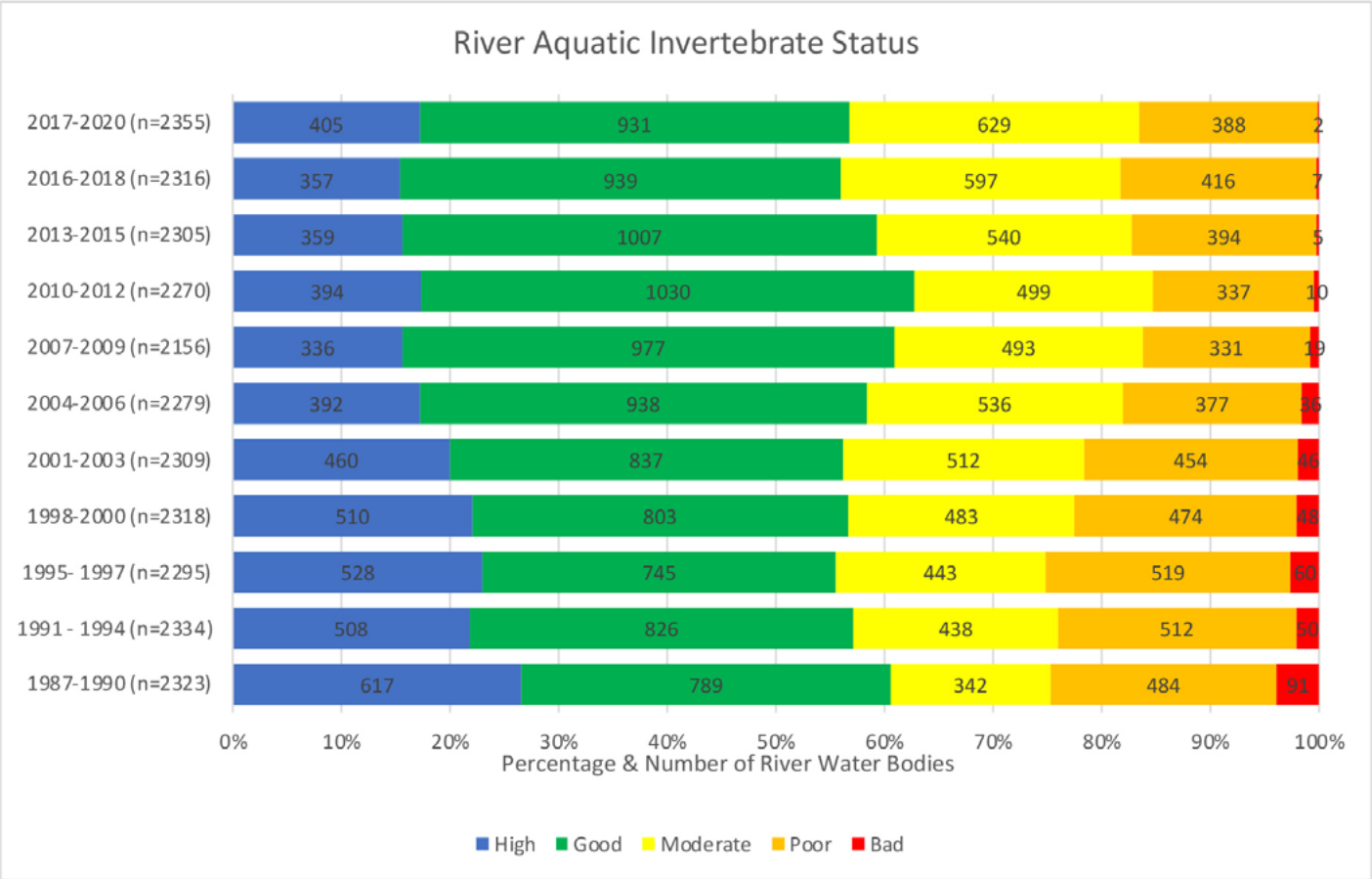
Having 50 years of Q-value data allows the EPA to look at the long-term trends and understand what is happening in our freshwaters. Human activities, such as agriculture, hydromorphological alterations (physical changes to rivers that affect their structure and flow), forestry, wastewater and urban run-off continue to put pressure on the health of our freshwater ecosystems.

Over the last three decades, the data collected from our rivers has shown a marked decline in the proportion of bad quality most polluted river water bodies which is welcomed. More worryingly, the temporal trend also shows a significant decline in our best quality, least polluted high status waters. These least impacted rivers are hugely important reservoirs of aquatic biodiversity and they provide a home to species sensitive to pollution including river insects such as stoneflies and mayflies and the young and larval stages of salmon and trout. Their loss is a significant concern.



Location of river stations surveyed for aquatic invertebrates using the Q-value system, 2019-2021. All stations are surveyed at least once in a 3-year cycle under the WFD monitoring programme.

The Blue Dot programme and new Waters of LIFE project aims to help protect and restore the health and wellbeing of our most precious and healthiest waters. You can read more about what is being done to protect and restore our freshwaters in the recently published draft River Basin Management Plan for 2022-2027.



Changes in river water body ecological quality based on aquatic invertebrates in each survey period between 1987 and 2020 (Source: EPA 2021).

Past, Present and Future

The biologists team in An Foras Forbartha was established in the 1970s and 1980s and over the next 30 years evolved and grew. In 2021, the EPA ecology team involved in river monitoring consists of eight ecologists and is part of a larger ecology team monitoring rivers, lakes, estuaries and coastal waters as part of a wider WFD monitoring programme nationally.

As well as looking at the aquatic invertebrates, the current river monitoring programme also collects information on water chemistry, aquatic plants, diatoms, hydromorphology (river form, function and flow). Future developments will see the introduction of other monitoring assessment methods to cover plant life and river acidification.

In 2020 the ecology team made all its national Q-value aquatic invertebrate data from 2007 -2018 publicly available and are currently working to digitize all data collected since 1971, where available. Annual updates on the Interim river aquatic invertebrate survey reports are also available.

Hugh Feeley, Catherine Bradley, Paddy Morris & Shane O'Boyle

Learn more:

Learn about the work of the EPA and how we monitor and assess our waters: www.epa.ie/our-services/monitoring--assessment/freshwater--marine/

Plain English factsheet on river monitoring using aquatic invertebrates: www.epa.ie/media/epa-2020/monitoring-amp-assessment/freshwater-amp-marine/River-Monitoring-Invertebrates-fact-sheet-final.pdf

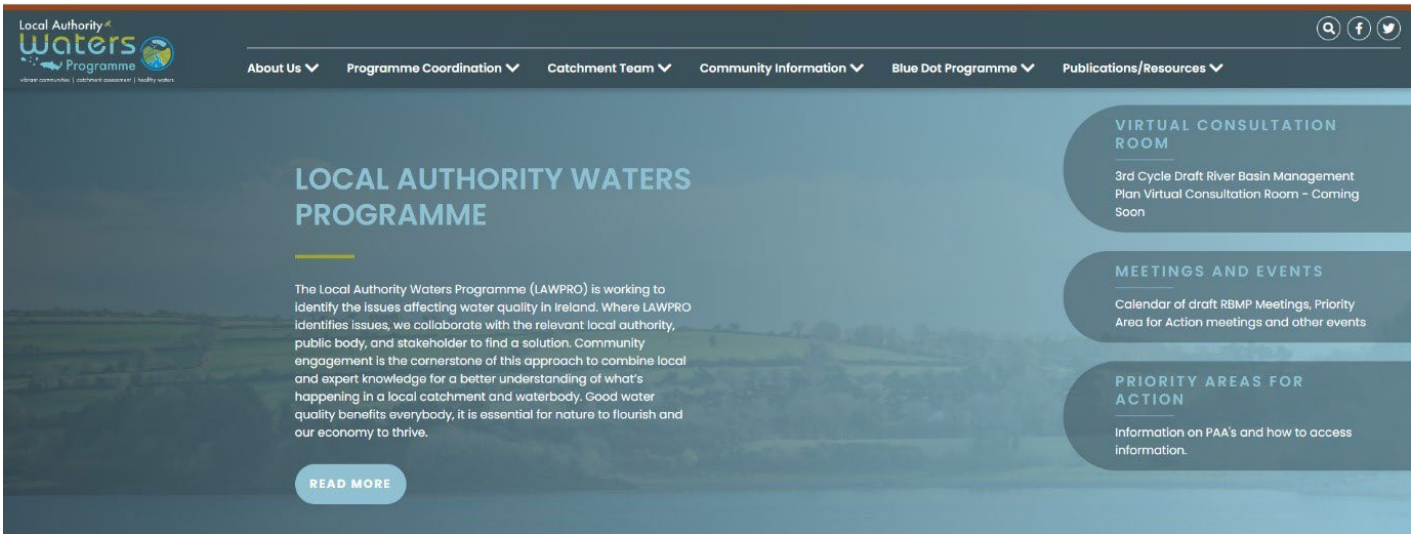
A national macroinvertebrate dataset covering 2007-2018 has been published by the EPA: www.catchments.ie/national-river-macroinvertebrate-surveys-in-ireland-2007-2018/

You can read an article on Ireland's freshwaters and how a world of wonder and discovery awaits you: www.catchments.ie/irelands-freshwaters-a-world-of-wonder-and-discovery-awaits-you/

Annual updates on the Interim river aquatic invertebrate survey reports are available at epawebapp.epa.ie/qvalue/webusers

Local Authority Waters Programme launches their new website www.lawaters.ie

The Local Authority Waters Programme has launched their new website www.lawaters.ie which has a huge range of information on the work of the LA waters programme, resources for communities and updates on local events. This website will also support the public consultation on the River Basin Management plan for 2022-2207.



The new website www.lawaters.ie

The Local Authority Waters Programme (LAWPRO) is working to identify the issues affecting water quality in Ireland. Where LAWPRO identifies issues, we collaborate with the relevant local authority, public body, and stakeholder to find a solution. Community engagement is the cornerstone of this approach to combine local and expert knowledge for a better understanding of what's happening in a local catchment and waterbody. Good water quality benefits everybody, it is essential for nature to flourish and our economy to thrive.

The improvement of water quality is the responsibility not only of Local Authorities, but also management of a wide range of implementing bodies, whose work can impact on water quality in various ways. An important part LAWPRO's work is to ensure that relevant public agencies are cooperating effectively in order to produce positive water quality outcomes, both locally and nationally.

You can find out lots more about LAWPRO's work on their new website, which will help support the public consultation on the draft River Basin Management Plan for 2022-2027.

LAWPRO – The Communities Team

The Communities Team work with local groups, education providers, TidyTowns, Rural Development Companies, Rivers Trusts, etc, to spread awareness on the importance of water quality. Community Water Officers, working at both water body and catchment scales, continue to build awareness, help build group capacity, support training and citizen science initiatives and strengthen links between public bodies, funders and communities.

You can learn more about this work at www.lawaters.ie/communities-page

LAWPRO – The Catchments Team

The LAWPRO the Catchment Assessment Team has 30 Catchment Scientists, one Blue Dot Scientist, five Catchments Managers and a Catchments Team Manager. We work throughout the five respective regions across the country:

- Border
- Midlands & East
- South East
- South West
- West

We are a multidisciplinary team, with expert scientists in areas like ecology, hydrogeology and agricultural science. The Catchments Team meet with local community and farmer groups, liaise with

Teagasc ASSAP advisors and a range of implementing bodies. This team focuses on work in Priority Areas for Action.

You can learn more about this work at www.lawaters.ie/our-catchment-work/

LAWPRO work to in Priority Areas for Action (PAAs)

LAWPRO catchment scientists work in specific catchment areas called Priority Areas for Action (PAAs). A comprehensive selection process in 2017 identified these PAAs.

We are keen to share our findings and recommendations on water quality in Areas for Action with you in a clear and useful way. That is why we are developing a glossary of technical terms with plain English explanations.

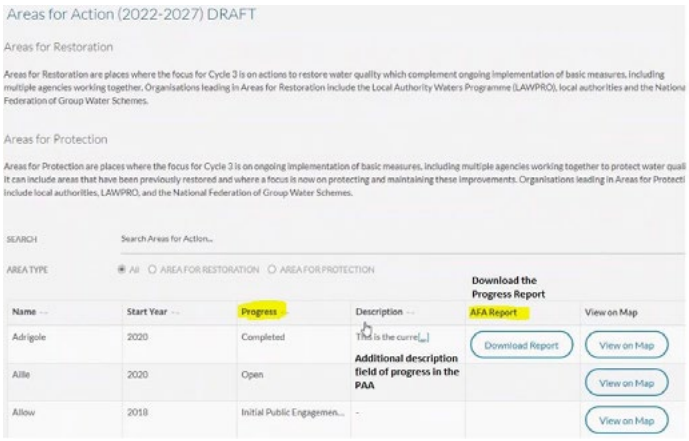
So, when you read our reports, expect to see some technical language but do not worry as we have explained these words and expressions using plain English. If you come across a technical term that is new to you, check to see if it is in our glossary. Our glossary is new, so we would appreciate your feedback and suggestions to improve it.

You can learn more about this work and read our glossary here: www.lawaters.ie/priority-areas-for-action/

Viewing updates on PAA progress on Catchments.ie

There are two ways in which you can do this:

1. Search by Area for Action name
   a. If you know the name of the AFA you are interested in go to https://www.catchments.ie/data/#/areaforaction
   b. Type the name of the AFA you are looking for
   c. You should be able to see the progress status, a brief description of progress. If one is available, you will eb able to download the Desk Study Summary report as a PDF
   d. You can also view the Area for Action on a map by clicking **'View on Map'**



2. Map search on EPA Water Map
   a. Go to https://gis.epa.ie/EPAMaps/Water
   b. Select **"Taking Action"** from the top menu
   c. Turn on the **"WFD Areas For Action"** layer
   d. Click on the layer for the location you are interested in
   e. The left-hand side of the map will expand with information for the location you selected - you may need to press the two down arrows to make the information visible

The Blue Dot Programme

The Blue Dot Catchments Programme is a collaborative programme being delivered by a range of agencies as a means of focusing attention and resources towards the protection and restoration of our high-status objective waters. The programme will also raise awareness amongst land managers and state bodies on the sensitivity of these waters.

The vision for the Blue Dots Programme is:

"Collaborating with local communities to protect and improve our pristine waters so that the benefits to biodiversity, our health and well-being, our heritage and the climate can be enjoyed by current and future generations."

Ireland has seen a long-term trend of decline in the number of high-status (Q5 and Q4-5) river sites in recent decades. Of monitored river sites, 19% had high status in the 2017-2019 assessment period compared to 31.6% in the 1987-1990.

You can read more about this work at www.lawaters.ie/blue-dot-programme

Regional operational and management committees

The combined LAWPRO teams facilitate regional operational (ROC) and management meetings and liaised with all public agencies in the natural waters' arena. You can read an article about the work of these regional governance structures by Fran Igoe, LAWPRO Regional Coordinator on page 31.

Learn more:

www.lawaters.ie

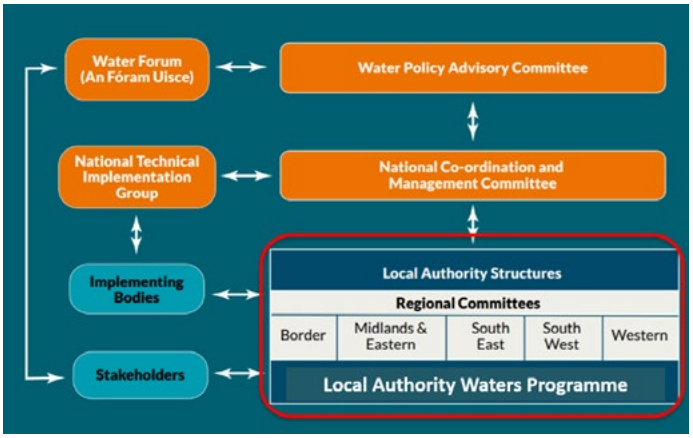
Ireland's River Basin Management Plan: regional governance structures - what do they do?

Fran Igoe, Regional Coordinator for the South East and South West Regions with LAWPRO, explains how implementation of Ireland's River Basin Management Plan is coordinated at local level using regional governance structures.

The protection, conservation and management of water is complex. It involves a wide range of pressures from human activities which means that effectively all stakeholders need to be involved. River Basin Management Plans set out how we go about protecting and restoring water quality necessary to meet the objectives of the Water Framework Directive (WFD). But to action the programme of measures required, there needs to be a structure that can allow for this to happen; from the local level right up to the national level.

- At the local level, this will often involve on the ground physical actions, changes in management patterns, awareness and education. All of this leading to behaviour change by the relevant stakeholders where needed
- At the national level the changes may involve sectoral plans, cooperation between government departments and industry, and changes in policy direction
- In between the top-down and the bottom-up approach there also needs to be linkages between both

Recognising this, new Water Framework Directive governance structures were established under the 2nd Cycle River Basin Management Plan for 2028-2021. This included the establishment of five regional committees, where public bodies who implement the WFD could meet and plan actions in a collaborative process.



Governance and co-ordination structures for implementation of the second cycle RBMP (modified from RBMP 2018-2021).

During the public consultations for the 2nd Cycle River Basin Management Plan, a recurring theme across the country at the 123 public meetings held, was a perception by the public that there are too many different agencies dealing with water in Ireland and that there is a lack of a joined up approach to river basin management. These structures aim to address some of these issues as well as introduce a more effective approach to addressing issues as they arise.

Regional Local Authority Structures

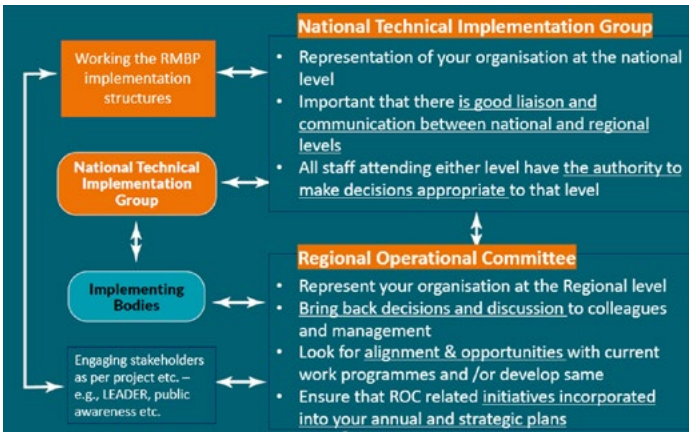
There are five local authority regional committees, known as Water and Environment Management Committees. Each one is supported by the Local Authority Waters Programme (LAWPRO) and they have responsibility for the co-ordinated delivery of measures at the regional and local level and to ensure a consistency of approach across the regions. The five regional committees are chaired at Chief Executive level, with active participation and technical advice from the EPA.

Regional Operational Committees

Each of the regional committees is supported by an Operational Committee with membership drawn from the relevant Local Authorities and 29 different implementing bodies (including cross border) and chaired at Director of Service level.

Representation from sectoral areas such as Agriculture, Forestry, Fisheries, Aquaculture and shellfish production, food safety, Nature Conservation, Heritage, water supply and of course water protection and regulation attend – basically implementing bodies with an interest in ensuring good water quality from source (i.e., freshwater) to sea (i.e., marine) attend.

Technical issues or barriers that cannot be addressed at the regional level are referred to the National Technical Implementation Group (NTIG). NTIG oversees technical implementation of the RBMP at a national level and provides a forum to ensure co-ordinated actions among all relevant State actors. Policy issues are referred via the National Coordination Advisory Committee and onto the Water Policy Advisory Committee if necessary.



Five regional operational committees established - how attendees are encouraged to engage.

Examples of issues discussed at Regional Operational Committees

- WFD Characterisation
- RBMP & Significant Water Management Issues public consultation & feedback
- LAWPRO & ASSAP updates
- Implementing body updates
- Intensification of Agriculture
- Marine issues
- Hydromorphology, land drainage, local drainage districts
- Planning/Blue Dots/Nature-based SuDS – County Development Plans
- Forestry licensing and management issues
- Community engagement & funding
- Biosecurity (crayfish plague), Blue/Greenways
- Projects – e.g., water relevant European Innovation Projects, LEADER, Catchment CARE, Freshwater Pearl Mussel captive breeding project on the Portlaw Clodiagh, Community Water Development Fund Projects, Citizen science

Examples of issues raised to National Technical Implementation Group

- Pesticides - Sheep dip
- Movement of manures
- Norovirus
- Marine issues

These committees are important for a number of reasons. They allow for a coordinated approach to bringing the Water Framework Directive to the relevant public bodies in fora where there is collective learning and knowledge sharing.

LAWPRO and the Agricultural Sustainability Support and Advisory Service bring updates in the Areas prioritised for Action and outline progress (including for high status or Blue Dot waterbodies).

The fora have allowed for the incorporation of local expertise together with scientific evidence to select Areas for Action going into the 3rd RBMP (2022-2027) during the latest characterisation process. Issues on the ground are raised and discussed, actioned where possible at the local level.

Where the issue is significant and needs to be actioned at a higher level, then this can be referred up through the governance structures as described above. A key benefit of these committees is the collective discussions, problem solving and provision of context to issues from the various sector perspectives. Going forward climate is also an emerging issue that will need to be taken into account.

Fran Igoe, Regional Coordinator, Local Authorities Waters Programme

Learn more:

The EPA-IPA Research Programme on Ireland's water governance arrangements resulted in two reports being published: https://www.catchments.ie/research-on-irelands-water-governance-arrangements/

Minutes from the Water Policy Advisory Committee: www.gov.ie/en/collection/ebebd-water-policy-advisory-committee-meetings

Minutes from the National Technical Implementation Group: www.catchments.ie/download/wfd-national-technical-implementation-group/


Water agencies and experts meet in Dungarvan

Field trip organised after one of the regional operational committee meetings in the South East to visit wetlands constructed by Waterford County Council to address leachate from a municipal landfill in Dungarvan and examine their relevance to other sectors for addressing water quality and promoting biodiversity. This was covered in local media.

ASSAP Advisor Meabh O'Hagan visits a drystock farm in Co. Meath and identifies the 5 key measures to help protect water quality on farms.

Smart Farming Seminar: Sources and Solutions – the link between our soils & water quality

On 20 October 2021 the IFA Smart Farming Programme held a seminar on Sources and Solutions which included discussion and the launch of some videos highlighting some practical steps farmers can take to improve water quality in their catchments.

Following the publication of the EPA Water Quality 2020 report, which showed that despite some improvements in water quality, some water bodies continued to be under pressure due to high nutrient levels from agriculture, Smart Farming, which is a voluntary resource efficiency programme led by IFA in partnership with the EPA wanted to help to improve farmer understanding of the interaction between farming management practices and water quality.

Smart Farming recognised the need to share the key learnings from the Agricultural Sustainability Support and Advisory Programme (ASSAP) with a wider cohort of farmers. It also wanted to increase awareness among farmers of the EPA Pollution Impact Potential (PIP) maps to improve their understanding of the risks in their area, in order to support changes to optimise nutrient management.

Bearing that in mind, it was decided to hold a seminar on the 20 October on "Sources and Solutions, the link between our Soils and Water Quality" to launch a series of short information videos for farmers with Dr Paul Murphy from the School of Agriculture and Food Science, UCD giving a wide-ranging presentation on how farmers can optimise production more sustainably by improving soil fertility and water quality. He spoke about research on the long-term grazing platform at UCD Lyons Farm and how hydrologically isolated units are being implemented to measure the effect multispecies swards and different pasture types can have on water quality. A recording of the seminar can be viewed here.

There was great engagement from farmers during the Q&A session which showed a strong demand for more information and engagement with experts to support the transition to more sustainable farming practices.

The series of short information videos were launched at the seminar which aim to support farmers providing practical advice to improve water quality.

Video: How to improve water quality

Meabh O'Hagan, ASSAP Advisor with Teagasc shares the top 5 measures identified from the programme to help protect water quality. The 5 measures are:

1. Apply manure, slurry and fertiliser correctly
2. Introduce an extended buffer zone
3. Locate water troughs away from waterways
4. Implement a nutrient management plan
5. Introduce mixed species & clover to grass swards (to reduce fertiliser requirements)

Video: What are Pollution Impact Potential (PIP) Maps?

Meabh O'Hagan, ASSAP Advisor with Teagasc explains what the EPA Pollution Impact Potential maps are used for and how they can be used by farmers to identify water pressures in their area.

If farmers identify on the PIP maps that their farm is located in an area with a high pollution impact potential for Phosphorous, farmers are advised to take measures which prevent surface water containing phosphorus from entering waterways e.g. using buffer zones.

If farmers identify on the PIP maps that their farm is located in an area with a high pollution impact potential for Nitrogen, with free draining soils, farmers are advised to reduce the amount of Nitrogen applied to land to protect water.

Nutrient management plans, improving soil fertility and reducing Nitrogen requirements by including clover and mixed species in your grass sward were also suggested to help reduce Nitrogen losses.

Video: How to use PIP maps

This video aims to show farmers how to use the catchments map to better understand the nutrient loss risks in their area and where critical source are located. Jenny Deakin, Manager of the Catchment Science and Management Unit, EPA gives a step-by-step tutorial on how to access the PIP maps on www.catchments.ie, search for a location and identify the relative risk areas for diffuse phosphorus to surface water and diffuse nitrogen to surface and groundwater.

All videos from this seminar are available at www.smartfarming.ie/sources-solutions/

Edel McEvoy, Policy Executive Environment & Forestry, IFA

Learn more:

To learn more about the Smart Farming programme, the resources available to farmers or to register to take part in the 2022 programme visit www.smartfarming.ie, email smartfarming@ifa.ie or call 01 4260343.

Nature-based Catchment Management – working with nature to benefit biodiversity, water and the climate

Nature-based Catchment Management means working with nature and using natural processes where possible to protect and improve water quality in our catchments. New frameworks are being developed to help identify the right measure for the right place, with a focus on multiple benefits for water, climate and biodiversity.

Nature-based Catchment Management (NbCM) measures are multi-functional measures that aim to protect water resources and address water-related challenges by restoring or maintaining ecosystems as well as natural features and characteristics of water bodies using natural means and processes (EU, 2014).

The main functions of these measures are to reduce flood risk, improve water quality, and create habitats. In carrying out these functions these measures can also provide multiple co-benefits such as climate regulation, climate change adaptation, improved soil management, and the creation of amenities. It must be noted that the concept of NbCM is not a new one and many of these measures already exist and are being actively implemented within different sectors plans and policies in Ireland.

NbCM are ideally used as part of the overall Integrated Catchment Management (ICM) approach. Many measures are ineffective when deployed in isolation without other supporting measures. The ideal solution will be at the catchment scale usually taking the form of a suite of measures designed to complement each other across the landscape. The key benefit of these measures lies in the multiple benefits that they bring, key benefits include:

- improving water quality

- regulating water storage and delivery
- flood risk reduction
- sequestering carbon
- supporting and enhancing biodiversity
- improving amenity value (e.g. angling and walking)
- health benefits (e.g. mental health benefits/improved air quality)
- aesthetic quality (e.g. visually desirable features such as ponds)
- cultural benefits (i.e. tourism and recreational value of rivers)
- climate change resilience (e.g. increased buffering to extreme rainfall events)

How does this fit in with the Water Framework Directive?

The objective of the WFD is to prevent any further deterioration in status of surface waters, groundwater and water dependent ecosystems, and to restore polluted water bodies to at least good status. The EPA is responsible for assisting with the preparation of the River Basin Management Plan (RBMP), including undertaking initial characterisation which involves an assessment of pressures and impacts of all water bodies in the country.

During the 2nd Cycle Characterisation process, hydromorphological pressures were identified as the second most prevalent significant pressure type for "At Risk" river water bodies. This pressure relates to damage to habitat and natural river, lake or transitional/coastal (TraC) water body processes through physical modifications. Physical modification includes channelisation, land drainage, dams, weirs, barriers and locks, overgrazing, embankments and culverts.

The EPA leads the national hydromorphology work programme under the aegis of the WFD National Technical Implementation Group. This was supported by a Natural Water Retention Measures (NWRM) Working Group. The NWRM group was co-chaired by EPA and OPW and was tasked with assessing the potential for implementing Natural Water Retention Measures in Ireland, as part of a suite of measures to address water quality, reduce flooding and achieve other environmental outcomes.

The group produced a report for the WFD National Technical Implementation Group (NTIG) and the output of their work will feed into the development of the Programme of Measures for the 3rd Cycle RBMP. It was recommended as part of this work to refer to these measures as Nature-based Catchment Management (NbCM) as a significant proportion of the measures identified during the review are not primarily focused at flood prevention or mitigation.

What do these Nature-based Catchment Management measures look like?

There are a significant number of measures which fall under this heading and are capable of achieving multiple benefits. Measures vary in scale, cost and applicability from very small-scale measures such as permeable pavements in urban settings to large scale river restoration projects spanning tens of kilometres of river channel. An example of a NbCM measure identified as having high potential for implementation in Ireland is engineered ditches. This measure is designed to reduce flow velocities in networks of traditional agricultural or forestry drainage ditches. The principle is to re-engineer existing ditch cross-sectional areas to incorporate flow control structures and, where practical, widen and flatten the ditch to further reduce flow velocities (Environment Agency, 2012). Engineered ditches will have a limited lifespan before maintenance is required as sediment will eventually accumulate upstream of the flow barriers. Many of these methods have been trialled at the Nafferton Farm study led by researchers from Newcastle University and have shown this measure to be very effective at removal of sediment, nutrients and in dampening the peak discharge to watercourses (Quinn et. al., 2007). Given the vast network of drainage ditches present across the country, this measure has the potential to provide enormous benefit if rolled out nationally in a targeted manner. These measures can also have multiple benefits for climate and biodiversity as well as water quality.

Figure 1: Engineered ditch as part of a study at Newcastle University.

How can these measures be implemented nationally?

The EPA are currently overseeing a national project which is developing a draft framework for prioritising measures for both river restoration and NbCM. This will allow targeting to suit the position with the catchment and the specific setting in which measures are to be implemented. This work is steered by NWRM working group members in consultation with key stakeholders. It is anticipated that this project will be completed by the end of 2021.

The availability of a national implementation framework and associated decision support tools will allow policy makers, state agencies and local community groups to target the right Nature-based Catchment Management measures in the right place and help achieve maximum multiple benefits from targeted investments.

Patrick Morrisey, EPA Catchments Unit

Learn more:

Minutes from the Natural Water Retention Measures Working Group and a report on Nature-based Catchment Management: https://www.catchments.ie/download/wfd-natural-water-retention-measures/

The Water Forum – working together for water quality

The Water Forum

AN FÓRAM UISCE

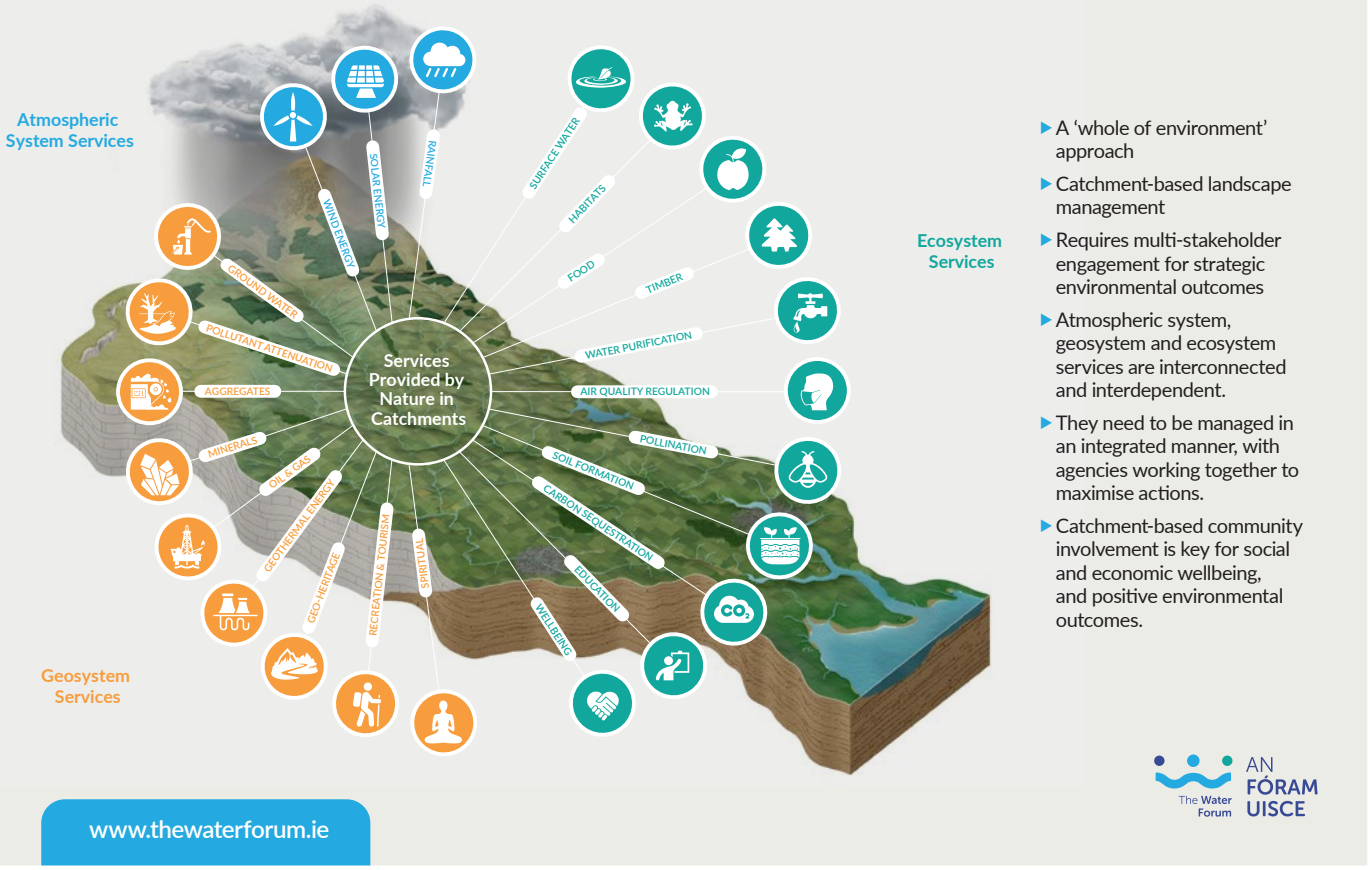
Since 2018, the Water Forum has worked to strengthen democratic input into our decision-making on water. It advises on national water policy and works with stakeholders on achieving a shared vision of clean and healthy waters.

The Water Forum was established in 2018[1] to provide a platform for stakeholder engagement on all matters relating to water and the roll out of the RBMP 2018-2021. It consists of 26 members including representation from a wide range of organisations including the IFA, ICMSA, ICOS, IBEC, Trade Unions, Hotels Federation, Tree Council of Ireland, Sustainable Water Network, An Taisce, Irish Rural Link, National Federation of Groups Water Schemes as well as public water consumers. It is the only independent stakeholder body advising on the full range of water issues from catchment management to water and wastewater services.

The functions of the Forum were set out in the Water Services Act, 2017 and include:

- Advise the Minister on water policy particularly in regard to water conservation, rural water services and future proofing.
- Make recommendations to Irish Water in relation to the performance of its functions.

A Framework for Integrated Land and Landscape Management (FILLM)



- A 'whole of environment' approach
- Catchment-based landscape management
- Requires multi-stakeholder engagement for strategic environmental outcomes
- Atmospheric system, geosystem and ecosystem services are interconnected and interdependent.
- They need to be managed in an integrated manner, with agencies working together to maximise actions.
- Catchment-based community involvement is key for social and economic wellbeing, and positive environmental outcomes.

Some of the services provided by nature in our catchments.

1 The Water Forum was established in April 2017 initially on administrative basis, to provide a platform for public engagement in the drafting and implementation of the RBMP for Ireland 2018-2921 and on all matters relating to water as an environmental, social and economic resource. Subsequently the Water Services Act 2017 provided for the establishment of An Fóram Uisce on a statutory basis.

- Advise and provide observation to the Commission for the Regulation of Utilities (CRU), Irish Water and on any consultation documents in respect to water services.
- Advise the Water Policy Advisory Committee (WPAC) in relation to the RBMP and matters pertaining to the objectives of the Water Framework Directive.
- Examine such other water related matters as the Minister requests.

The members meet monthly at plenary level & the Forum has also established two standing Committees (Catchment Management & Water Services) to discuss, debate and analyse current issues, plans and programmes pertaining to water quality, rural water concerns, issues affecting customers of Irish Water and the implementation of the River Basin Management Plan.

The outputs of this work include submissions to policy consultations on a wide range of topics, from the CRU consultation on Irish Water's First Fix Scheme, to the Department of Housing, Local Government and Heritage on the Signification Water Management Issues and recently on Irish Water's National Water Resources Plan Framework.

To ensure submissions and the advice offered is well-informed, based on sound science and the most recent data, the Water Forum commission research to support decision making. In 2019, research was carried out by Patrick Bresnihan and Adrienne Hesse of Trinity College Dublin on *Public engagement in water governance*[2] and this work informed a Policy Briefing Note that was submitted to the Minister and informed the public participation elements of the Framework for Integrated Land and Landscape Management policy document.

In 2020, Dr Charles Larkin from the Institute of Public Policy at Bath University was commissioned to research Optimising water quality returns from the reform of CAP: A rapid evidence assessment that led to a very informative webinar with contributions from Professor Alan Matthews and Professor John Fitzgerald. The recommendations from this discussion has informed the recent submission on the Agri-food Strategy 2030 and will inform future submissions to the CAP Strategic Policy consultation and the Nitrates Action Plan.

There was very good interest in the Forum's latest webinar that explored the research findings commissioned by the Forum on Peatland management for water quality, biodiversity and climate mitigation. The Research Report and Synthesis Report are on the Forum's website and the insights from this research will form part of our submission to the draft RBMP for Cycle 3.

The Forum's proposed Framework for Integrated Land and Landscape Management policy (FILLM) recommends that the integrated catchment management approach used in the 2nd cycle is expanded in the 3rd cycle to account for outcomes for biodiversity and climate mitigation as well. Such an approach would allow for greater policy integration and encourage the disintegration of silos in environmental management. The identification of co-benefits for climate and biodiversity; the application of trade-offs for better outcomes will result in more collaborative learning and potentially robust environmental achievements. The process is summarised in an infographic and begins with a community vision that allows for the co-creation of catchment management plans at local level as recommended in the Bresnihan research paper.

The Water Forum also has a role in raising awareness of the value of water and the future proofing of water resources. A short-animated video called 'Water Matters at Home' provides easy steps to protect water resources in everyday life.

The Forum is currently in the process of developing its Strategic Plan for 2022 – 2027, as part of this process a review will be undertaken of progress to-date and the plan will build on what we've learned from the 2nd cycle. The new Strategic Plan will be finalised by the end of 2021.

Gretta McCarron
Communications and Education Lead, The Water Forum / An Fóram Usice

Learn more:

The work of the Water Forum is on the website www.thewaterforum.ie

A quarterly Newsletter reporting on the Forum's work is available on the website and if you would like to subscribe to this publication, please email info@nationalwaterforum.ie

Webinar presentations and discussions are on the Water Forum's YouTube channel.

Twitter: @anforamuisce

2 Bresnihan, P. & Hesse, A. (2019). Public engagement in water governance. Report to The Water Forum. [Online]. Available from: https://thewaterforum.ie/app/uploads/2020/03/Water-Forum_Public-Participation_Bresnihan-and-Hesse_2019.pdf

Factsheet 2

River Basin Management Plan

The Water Forum AN FÓRAM UISCE

The national stakeholder body representative of stakeholders with an interest in the quality of Ireland's waters.

Introduction to the River Basin Management Plan

The EU legislation that regulates water management in Europe is the **Water Framework Directive (WFD)**. Its main objective is to protect water quality in lakes, rivers, groundwaters and coastal waters and enhance freshwater resources, with the aim of achieving *'good ecological status'* of all waters within the EU. **Ireland's 3rd River Basin Management Plan** will outline Ireland's plans over the next 6 years to protect the water bodies with good ecological status and to restore waterbodies that do not meet good ecological status.

Ireland's river catchments

A river catchment (also called river basin) is the area of land drained by a river. For management purposes, Ireland's waterways are broken down into 46 catchment management units. These are made up of 583 sub-catchments containing 4,842 water bodies (Table 1). A water body is an individual unit of a water feature used for monitoring and planning purposes. In groundwater that could be part of an aquifer, for surface water it could be part of a stream, river, estuary or stretch of coastline. A map of the 46 catchment units is available here.

Table 1: Breakdown and number of waterbody types

Waterbody type	No. of waterbodies
River	3,192
Canal	16
Lake	812
Coastal	112
Transitional	196
Groundwater	514
Total	**4,842**

Water quality in Ireland

Water quality monitoring is carried out by the Environmental Protection Agency (EPA). Water quality is assessed against the standards and environmental objectives set out by the EU Water Framework Directive. Surface waters are assessed in terms of their ecological status and groundwater is assessed in terms of chemical status. (Figure 1)

Further details are available at www.epa.ie/publciations/monitoring-assessment/freshwater-marine/water-quality-in-ireland-2013-2018.php

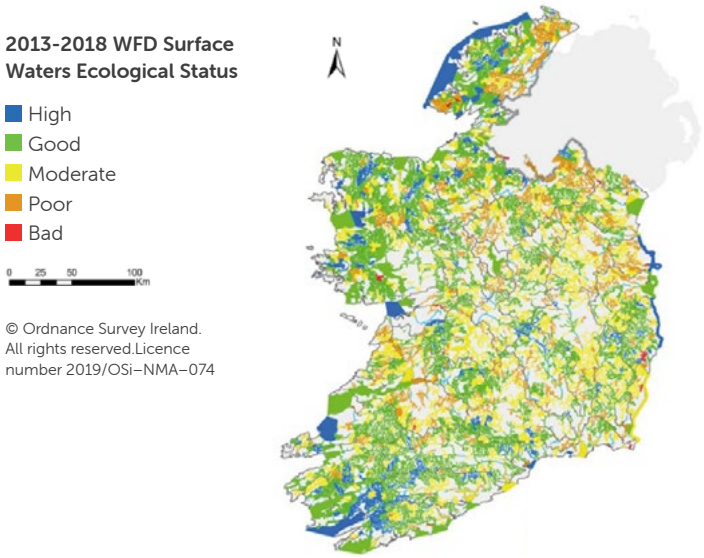


Figure 1. A map showing distribution of water quality in Ireland also available here.

Characterising water quality

Ireland manages its rivers, lakes, estuaries and coastal areas using an approach known as *integrated catchment management*. A catchment is the entire area of land that drains into a particular river, lake, groundwater or coastal waterbody. Using integrated catchment approaches means that catchments, sub-catchments and water bodies are examined from the source to sea to identify the pressure on water quality along the whole course of the waterbody. All water uses are examined such as agriculture, industry, recreation, drinking water resources. It also aims to work with local communities so that local knowledge can be integrated and that communities are engaged in protecting their local waterways.

Figure 2. Water bodies not meeting WFD objectives need restoration and not at risk water bodies need protection.

The significant pressures impacting the status of water bodies and measures proposed to address these pressures

Agriculture is a major pressure on water quality. Incorrect use of fertiliser (nitrogen and phosphorous) can result in excess nutrients entering river courses, lakes and coastal areas polluting the ecosystem. Measures to reduce the use of fertilisers and provide buffers to absorb some of the excess nutrients are needed to protect water.

Hydromorphology pressures result from improper drainage or changes to the physical character of the waterway such as straightening or deepening rivers. This impacts on the habitats available to plants and animals. Measures to reduce hydro-morphological pressures include reducing land drainage and river channel disturbances and rewetting peat and organic soil.

Forestry alters habitats and can result in nutrient and sediment impacts. Measures to reduce the pressures from forestry include improved licencing for forestry activities, more appropriate setbacks from water courses and native woodland creation.

Urban wastewater is the most significant pressure in 208 water bodies and while improvements have been noted in recent years, significant more work is needed.

To find out more about the draft River Basin Management Plan 2022-2027 see: **gov.ie – Public Consultation on the draft River Basin Management Plan for Ireland 2022-2027 (www.gov.ie)**

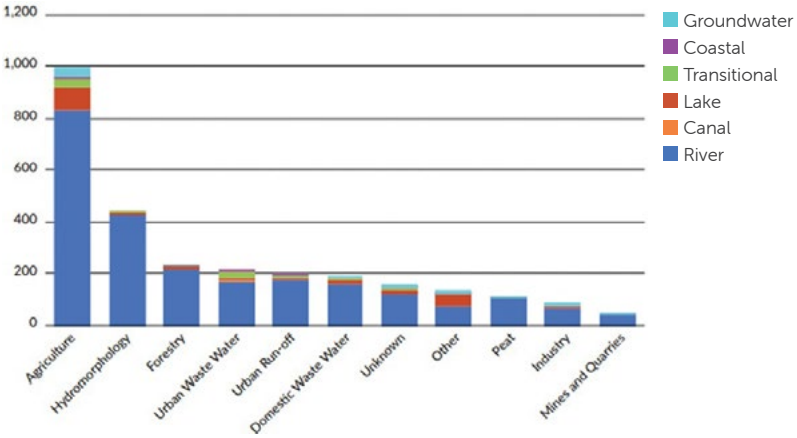


Figure 3. Pressures on water quality.

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