

# Catchments Newsletter

Integrated Catchment Management: sharing science and stories



Lough Ree photo scoops the top prize in LAWPRO's 'My Favourite Waterbody' national photography competition



## Inside this issue

**EPA publishes updated Catchment Assessments and 2023 Water Quality Indicators report**

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**Cabragh Wetlands Trust: working to sustain the biggest single area of freshwater semi-natural floodplain habitats on the River Suir**

**An Taisce launch 'The Irish Pond Manual: a guide to the creation and management of ponds'**

**Slaney workshop held to develop a water quality community forum**

*Main photo: Overall Winner – Lough Rea, County Longford by Lee Williamson (p4).*

*Top, L-R: John Collins with his photo of Derryclare Lough, in Galway (p7), Marie Melvin, with her photo of Lacken, Blessington Lake in Co. Wicklow (p7), Dalia Guzauskaite, with her photo from Connemara (p7).*

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# Editorial: Welcome to the Summer 2024 Catchments Newsletter

The EPA published *Water Quality in 2023: an indicators report* in June 2024. There are no signs yet of an improvement in water quality, and more action is needed from all sectors. 34% of waterbodies are at risk of not meeting their quality objectives because of human activities. Agriculture remains the most significant pressure on water quality.

In this issue you can read about the EPA's recent Water Conference, where we launched the latest 2023 Water Indicators Report. The EPA has updated its 46 Catchment Assessments and Significant Pressure sectoral assessments and launched a new dedicated online map for 'Targeting Agricultural Measures' – sharing EPA science to help get the right measure in the right place. We've also included a story on some recent ESRI research that gauged farmers' willingness to mitigate the risks of water pollution in line with ASSAP advice.

## The Water Action Plan 2024: a river basin management plan for Ireland

The Third Cycle *Water Action Plan 2024: a river basin management plan for Ireland* was approved by government in late July 2024, and will be published in September.

Our natural water systems are at substantial risk from such issues as increasing nutrient pollution, physical modifications, and urban pollution, all while our water systems are becoming more vulnerable due to changing weather patterns. The Water Action Plan sets out a roadmap to restore Ireland's waterbodies to the equivalent of 'good status' or better and to protect water from any further deterioration.

## People and projects - working together for water quality

People all around the country are working together to protect and improve water quality – you can read stories about this in the Waters and Communities section and see the wonderful photos that won LAWPRO's recent 'My favourite waterbody' competition, which were also on the cover of this issue. You can also learn about the Community Water Development Fund and how your local group can apply for funding.

We have stories from Waters of Life, the Farming for Water European Innovation Project, and FarmPeat, who are working with farmers to get the right measure in the right place to help protect and improve water quality, and also about the launch of a national implementation strategy for nature-based solutions.

An Taisce recently released a guide to creating a pond, one of the best actions you can take for freshwater biodiversity. You can see the poster they created in the middle pages of this issue.

An Fóram Uisce have launched educational resources on water, including a guide to using the catchments.ie digital maps; while aimed at schools, these resources are useful for anyone who wants to learn about water.

Finally, we have a discussion piece on drained peaty soils, and how these valuable assets can be protected now and into the future.

Jenny Deakin and Paddy Morris, Editors

## One thing you can do

### Check if your septic tank is working properly and if you are eligible for a grant of up to €12,000 to upgrade it

Septic tank and other domestic waste water treatment systems are used by rural home owners to treat waste water from their homes. There are nearly half a million of these systems in Ireland. The majority are septic tank systems, with some more complex filter systems and mechanical treatment plants.

Maintaining your wastewater system will help to protect your health and local environment.

You can complete a septic tank system check to see if your septic tank was constructed and has been maintained properly: [www.epa.ie/publications/compliance--enforcement/waste-water/have-you-completed-a-septic-tank-system-check.php](http://www.epa.ie/publications/compliance--enforcement/waste-water/have-you-completed-a-septic-tank-system-check.php)

### Grants for upgrading septic tanks have been increased to up to €12,000.

Grants are available to assist householders with the cost of works for the remediation, repair, upgrade, or replacement of a domestic waste water treatment system (DWWTS) serving a house.

Grants are available under three separate schemes:

- DWWTS grant under the National Inspection Plan – this will only be available to you if you fail an inspection carried out by your local authority
- DWWTS grant in Prioritised Areas for Action – in these areas, the Local Authority Waters Programme will contact you if you are eligible to apply
- DWWTS grant in High Status Objective Catchment Areas – this grant is available to anyone in the catchment area for one of these waterbodies; you can check your Eircode to see if you are eligible on this map: <https://storymaps.arcgis.com/stories/5eaae1b83cf84197b1f184a5ef7c2696>

## Learn more:

[www.gov.ie/en/publication/6cc1e-domestic-waste-water-treatment-systems-septic-tanks/#financial-assistance](http://www.gov.ie/en/publication/6cc1e-domestic-waste-water-treatment-systems-septic-tanks/#financial-assistance)



*Overall Winner – Lough Rea, County Longford by Lee Williamson.*

## Lough Rea photo scoops the top prize in LAWPRO's 'My Favourite Waterbody' national photography competition

There were over 600 entries in the Local Authority Waters Programme 'My Favourite Waterbody' photo competition, which was launched to celebrate World Wetlands Day. The winners were announced on 24 June 2024.

## WATERS AND COMMUNITIES NEWS



One overall winner and runners up have been selected in the 'My Favourite Waterbody' national photography competition that was ran as part of the Local Authority Waters Programme (LAWPRO) World Wetlands Day celebration.

*"We are delighted to announce the winners of the 'My Favourite Waterbody' photo competition as part of LAWPRO's World Wetlands Day celebrations. We would like to congratulate all of the participants in the competition and in particular our overall winner and runners up. The photos showcased Ireland's inland waterways, lakes and coastal waters and communicated a sense of beauty, comfort and wellbeing in people's favourite waterside places."* - Anthony Coleman, Director of Services at LAWPRO

The overall winner is Lee Williamson, from Lanesborough in Co. Longford for his photo of Lough Ree, Co. Longford. Lee is also the regional winner for the Midlands & East and won the top prize of a €500 voucher for Powerscourt Hotel Resort and Spa in Co. Wicklow along with an A3 framed print of his winning photo.

## WATERS AND COMMUNITIES NEWS

The other regional winners are:



*Left: Jimmy O'Neill, with his photo of Hollywood Lake in Scotstown, Co. Monaghan.*

## WATERS AND COMMUNITIES NEWS



*Left: John Collins with his photo of Derryclare Lough, in Galway.*

*Below: Marie Melvin, with her photo of Lacken, Blessington Lake in Co. Wicklow.*



*Below: Dalia Guzauskaite, with her photo from Connemara.*



The competition was shortlisted by an internal panel and the winning photos were selected by an external judge the award-winning Cameraman, Director and Broadcaster, Colin Stafford-Johnson.

Winning and shortlisted photos will be featured in LAWPRO's 2025 calendar and winners will receive a calendar later in the year in addition to their prize.

### **Learn more:**

[www.lawwaters.ie/press-release-lough-ree-photo-scoops-top-prize-in-national-photography-competition](http://www.lawwaters.ie/press-release-lough-ree-photo-scoops-top-prize-in-national-photography-competition)

## WATERS AND COMMUNITIES NEWS



Arctic char mosaic that is at Lough Mask created by artist Anne Annaliese Brown - Brown Bear Art and funded by LAWPRO's Blue Dot Fund.

## Lough Mask, County Mayo: Arctic char mosaic to celebrate pristine Blue Dot waters

This community event in Tuar Mhic Éadaigh, Co. Mayo highlighted the power of art, media, and design to draw attention to the natural world around us, and the need to protect it for sensitive and rare species like the Arctic Char.

The local community in Tuar Mhic Éadaigh, Co. Mayo in collaboration with Mayo County Council and the Local Authority Waters Programme (LAWPRO) have worked to mark Lough Mask as one of Ireland's Blue Dot waters through beautiful artwork, a film and a booklet.

Lough Mask is one of Ireland's Blue Dots and also one of the places that the native and rare arctic char remains. Blue Dots are high status objective waterbodies and there are 48 of these in County Mayo. When achieving this target, they have the highest ecological quality of all our waters and often a greater diversity of species that are sensitive to pollution.

A celebration of Mayo's Blue Dots took place on the shore of Lough Mask on the 18 May 2024. The mosaic was designed and created by Annaliese Brown - Brown Bear Art and funded by LAWPRO's Blue Dot Fund. It is a beautiful addition to the area, that pays homage to the landscape in Tuar Mhic Éadaigh and Lough Mask, and the rare and native Arctic Char that lives in this Blue Dot Waterbody. The piece also depicts the Mayfly that emerges once a year and is a world-famous wildlife spectacle.

The community in Tuar Mhic Éadaigh were central to preparing the site for the mosaic and the details that went into ensuring that its launch was a success. Particular credit goes to Nora McHugh and the RSS scheme workers John Casey, Pádraig Collins, Tom Whelan, Philip O'Malley and John Gibbons. A mention also to Michael Philbin who was involved at the start of the project and the CE Supervisor Mary Teresa Nee and her team of workers, Tom Heneghan, Shane Jones and Tommy Maree.

It was their help and dedication that made this project possible and showcases the invaluable work the community scheme participants carry out in their local areas.

Mayo is home to numerous Blue Dot Waters and particularly stands out for hosting the largest number of Q5 sites nationally, with the Aille, Bundorragha, Glenree, Glenummera, Owenmore (Mayo) and Yellow (Foxford) rivers all hosting 1 or more Q5 sites in 2021 totalling 28% of the national count.

Protecting and restoring the Blue Dots relies heavily on community action. Collaborative efforts, including the involvement of local groups facilitated by programs like the Blue Dot Catchments Programme and the Local Authority Waters Programme, are crucial. This publication on Mayo's Blue Dots aims to raise awareness and foster community involvement in safeguarding these vital water resources.



## WATERS AND COMMUNITIES NEWS



*Stock fencing to keep livestock out of the water.*

# East Corrib Alliance carries out critical river restoration and maintenance works

Formed by four angling clubs with interests in Lough Corrib, the East Corrib Alliance was set up to be guardians over Lough Corrib and the rivers and streams on the eastern side of the lake. The group organised works to conserve and protect native fish species and to manage and monitor water quality throughout the area.

The East Corrib Alliance works to restore and maintain spawning habitat for wild brown trout and Atlantic salmon to help conserve and protect both species and they also help to manage and monitor the water quality throughout the area. One of the latest beneficiaries of LAWPRO's Community Water Development Fund was the Ballycurrin River through an application made by the East Corrib Alliance.

The river was identified as needing stock proofing to lower agricultural impacts on the waterbody. The Glencorrib and Cross Anglers received €7,000 from the fund to deliver this project with help from local social/ rural employment schemes and local landowners.

Four livestock access slips were closed off and one solar powered water pump and drinking trough was provided. Approximately 500 trees were planted along the riparian zone of the river.



*Solar powered water trough for animals.*

## WATERS AND COMMUNITIES NEWS

# Drummin Bog Project: working to restore the only raised bog in Co. Carlow

A group of volunteers is working to raise the water table and remove trees to help protect and restore Drummin Bog. They are also planning how to improve access to the bog.

The Drummin Bog Project is a voluntary community project to restore the only raised bog in Co. Carlow. The Bog is located in South Carlow adjacent to the River Barrow, a couple of miles south of St. Mullins and approximately halfway between the towns of Graigenmanagh, Co. Kilkenny and New Ross, Co. Wexford

The raised bog "Drummin" or "Red" bog has been drained and parts were cut away in the past leading it to be in a degraded and dried out state resulting in an increase of mixed scrub and woodland.

The restoration project will start with topographical, hydrogeological, geological and ecological baseline surveys.

information from these surveys will inform the restoration works (i.e. raising the water table, removing trees etc). Greg Roche, LAWPRO Community Water Officer for Co. Carlow is working with the group to help manage invasive species and support the various other restoration elements of the bog.

The final phase of the project will be to develop access on to the bog to make it a local amenity and to enable it to be used for educational purposes. LAWPRO are supporting the project through the Community Water Development Fund and awareness grants. In 2024 LAWPRO contributed to the core costs of the group through the Community Support Fund. The group received a total of €5,037 in funding from LAWPRO this year.



*Drummin Bog in County Carlow.*

## WATERS AND COMMUNITIES NEWS



*A viewing deck at Cabragh Wetlands.*

# Cabragh Wetlands Trust: working to sustain the biggest single area of freshwater semi-natural floodplain habitats on the River Suir

Cabragh Wetlands Trust, long standing custodians of the unique and important wetland ecosystem along the Suir, have acquired more land and are working preserve it as a sanctuary for the species that live there.

Located between Thurles and Holycross, Cabragh Wetlands is a mosaic of habitats, including reedbed, tall herb swamp, wet grassland, calcareous fen, transition mire, alluvial woodland, watercourse, lake, ponds, and springs.

Established in 1993, the Cabragh Wetlands Trust arose from a collective determination to preserve a large expanse of wetland ecosystems at risk by the closure of the Thurles Sugar Factory and subsequent filling-in of settling pools. Once flourishing hubs of biodiversity, renowned for their bird species, these lagoons represented a cherished sanctuary for countless species.



*Cabragh Wetlands.*

To preserve the wetlands, the Trust was founded and strategically acquired the land adjoining the filled-in lagoons, securing the ongoing existence of this vital haven for migratory birds and ensuring the preservation of their migratory routes and resting grounds.

LAWPRO has worked closely with the Trust over several years, providing project funding through the Community Water Development Fund and awareness funds. In 2024 the trust has received project funding for habitat restoration and significant organisational assistance through the Community Support Fund. LAWPRO greatly values the education and conservation work done at Cabragh wetlands.

Wetlands play a crucial role in conservation efforts, serving as habitats for diverse flora and fauna while also providing essential ecosystem services such as water filtration and flood control. They are places for recreation, allowing people to engage in activities like birdwatching, fishing, and walking, fostering a connection with nature. Additionally, wetlands serve as outdoor classrooms, facilitating environmental education initiatives where individuals can learn about the importance of wetland ecosystems, biodiversity, and conservation practices to promote their preservation for future generations.

## WATERS AND COMMUNITIES NEWS



Volunteers restoring the bank of the Culdaff River with woody debris.

## River Restoration event by Culdaff Development Association to improve water quality, flood mitigation, and habitats

The local community are working to restore the riverbanks of their local river using tree branches and other woody material, with funding from LAWPRO. This will help manage erosion, reducing sediment while enhancing habitats for fish, mammals, and insects.

The Culdaff River in Co. Donegal is significant for both its ecological and historical value. It once teemed with salmon and eels, as recalled by a local farmer and fisherman who remembers seeing large eels swimming out to sea from the village's stone bridge. The decline in fish populations and sediment accumulation are current concerns for the river and estuary's health.

Following a workshop on citizen science and river ecosystems with St. Boden's National School, Tomas Lawrence conducted a survey of the Culdaff River in October 2023. Based on his recommendations, the Culdaff Development Association initiated a project funded by LAWPRO's Community Water Development Fund to address the identified water quality issues. The bank restoration was a key phase of this project, aimed at improving the river's health and ecosystem.

Riverbank restoration involves stabilising eroding riverbanks using tree branches and other woody materials with an aim of

improving water quality, enhancing habitats and engaging the community in practical action to benefit the environment. By building up the riverbank with woody debris erosion is reduced as the newly placed branches trap sediment which in turn builds up the riverbank. The woody material acts as a natural filter, trapping sediments and pollutants and improving water quality.

The branched and increased vegetation creates habitats for fish, mammals, and insects. The woody brush slows down the flow of water in high rainfall, mitigating the risk of flooding. The riverbank project was led by an experienced team of staff and board members of the Inishowen Rivers Trust who have been involved in nature-based restoration projects of several rivers throughout Inishowen. The response from volunteers is always positive, with the event being an opportunity to involve the community in connection and stewardship of the local environment.

*'It is an opportunity to do something constructive and positive for the environment whilst spending the day in nature on the river.'* – one of the local volunteers

The riverbank restoration took place on the land of Johnny McGuinness, a keen angler who supports the efforts to improve water quality and habitats in the Culdaff River.

There will be another opportunity to take part in riverbank restoration in August and September 2024. If you are interested in getting involved contact [info@inishowenriverstrust.com](mailto:info@inishowenriverstrust.com)

# Slaney workshop held to develop a water quality community forum

Community involvement in catchment management plans is a key focus in the third cycle River Basin Management Plan. The Slaney is one of five catchments chosen to pilot this new approach, working together with the local community. Local groups met in Enniscorthy, Co. Wexford in June 2024 to give their views on public participation in catchment management.

LAWPRO facilitated a conversation on public participation in water catchment management in the Riverside Park Hotel in Enniscorthy on Saturday 15 June 2024. Community groups and representatives from across the Slaney catchment met to discuss and co-design a community forum model for Ireland, focused on improving local water quality and ways to actively engage communities in the river basin management process.

This is part of a wider initiative across the country to develop a model for community and public participation as part of the next River Basin Management Plan. The River Basin Management Plan is Ireland's roadmap for restoring and protecting water quality, across the 46 river catchments in Ireland. An ambition in the plan is to put in place community fora that meet the needs of local communities when it comes to involvement in water quality management.

*“Today is part of a wider process of developing a public participation process for Irish rivers that reflects the aspirations of community groups. This River Slaney workshop will inform that process and we are delighted with such a great turnout.”* - Dr Fran Igoe, Regional Coordinator with LAWPRO

Fran went on to explain the current water governance process within the River Basin Management Plan and anticipated next steps. This was followed by an excellent presentation on the water quality status of the River Slaney by Michael Nugent with support from colleagues in LAWPRO. Detailed maps of the water quality pressures were also on display for delegates to review throughout the day.

The River Slaney catchment was chosen as one of five pilot areas to have a focus group discussion and was selected on account of its geography and the wide range of sectors and industries operating within it. All of these potentially pose water quality challenges that need to be met by actions taken at the individual, local and national level, if we are serious about achieving sustainable water management.



The River Slaney, just south of Enniscorthy where the workshop took place.

*“It was great to meet people who were so passionate about the river, working together to come up with a model to safeguard the future of our rivers and to protect them. It's a team effort with everybody living in a catchment to work to improve water quality. It was very solutions focused rather than passing blame which was refreshing.”* - Alan Poole, dairy farmer from Gorey

Representatives from the Enniscorthy Tidy Towns, Wicklow Uplands Council, The Slaney Rivers Trust, The Ahare River and Biodiversity Development Group, Coastwatch, Myshall Nature/Myshall Muintir Na Tire, Wexford PPN, Soul Sanctuary Wexford, Wexford Naturalists Field Club, Tirlán's dairy suppliers, Enniscorthy Fáilte, Enniscorthy Tidy Towns, Slaney River Trust- Fisheries Consultant, Myshall Nature/Myshall Muintir Na Tire, Sustainable Enniscorthy, Gorey Teacher & Angling Club, Slaney River Trust CLG, Protect Moylisha Hill as well as private individuals took part. Philip Isard, senior facilitator with Quality Matters outlined the purpose of the workshop and facilitated the sessions.

There were some questions specific to the Slaney concerning water quality challenges posed by different sectors including agriculture. This offered the opportunity to raise awareness of the new €60m Farming for Water EIP project and Tirlán's Farming for Water Slaney project. Both of these initiatives were recently launched and pay farmers for work to improve water quality and complement each other. The need for a good uptake of measures by farmers and landowners and integration of the two projects to achieve the best water quality outcomes was emphasised. Other issues raised at the workshop were captured with a view to addressing them in more detail at a later stage.

There was great engagement in the room and lots of energy around what needs to get done and how we can go about improving and protecting water quality.

## WATERS AND COMMUNITIES NEWS

# Cork GAA Club embracing water quality project under the Green Clubs Programme

Midleton GAA, beside the Dungourney River in Cork, is one of 30 GAA clubs in Ireland working with funding from LAWPRO's Green Club Water Action Fund to protect and enhance their local water quality.

In 2023 the LAWPRO Green Club Water Action Fund small-grant programme was opened to GAA, LGFA and Camogie Clubs participating in Phase 2 of the Green Club Programme. Phase 2 of the GAA's Green Club programme runs from March 2023 to November 2024, at the end of which period clubs reporting on at least two actions across the themes of Water, Biodiversity, Energy, Waste and Travel & Transport will be awarded official Green Club status.

Clubs were invited to submit project ideas that corresponded to LAWPRO objectives of protecting and enhancing water quality, caring for local waters (e.g., rivers, coasts, lakes, groundwater) and/or the objectives of the EU Water Framework Directive.

30 Green Club projects from 16 counties across all four provinces were approved, each awarded €1000, with project proposals ranging from river and wildlife workshops through water butts, water taps and water conservation to biodiversity initiatives.

Midleton GAA club beside the Dungourney River were one of the recipients of the grants. One of the Midleton GAA Green Club members regularly monitors the river for water quality and the club has an established and ever-developing water & biodiversity programme. With this funding the club erected biodiversity signs around the grounds, created a 'rootery' of old tree roots on the grounds to form a habitat for insects/wildlife adjacent to the river, which is known to support both water mammals and water birds, and installed bird boxes for birdlife including owls. The club has benefitted in its ongoing river-based biodiversity projects from the input and advice of LAWPRO's Community Water Officer Catherine Seale.

*The GAA Green Club Programme is a partnership that has its origins in the Sustainable Development Goals Champions Programme launched by the Department of Communication, Climate Action, and Environment in September 2019.*



Swan family in the Dungourney river adjacent to the Midleton GAA pitch and rootery under construction.

### Learn more:

[www.gaa.ie/my-gaa/community-and-health/green-clubs-sustainability](http://www.gaa.ie/my-gaa/community-and-health/green-clubs-sustainability)

## LAWPRO's Community Water Development Fund 2024

155 projects in 26 counties were funded in 2024 to support the delivery of projects and initiatives to enhance local water bodies and benefit water quality and biodiversity. If you are interested in applying for funding in 2025, you can contact your Community Water Officer.

Since 2018, LAWPRO has made over €2.7m available through this funding scheme to local communities and groups, assisting in the implementation of the Water Framework Directive through Ireland's River Basin Management Plan. Types of projects approved for funding under this year's open call include:

- River and habitat enhancement work, such as planting of native tree species and hedgerows, pollinator friendly planting, river-bank stabilisation, fencing and installation of riparian buffer zones near water bodies (areas free of chemical and organic fertilisers, cultivation and spraying)
- Preparation of reports: feasibility studies, habitat management plans, ecological surveys, and hydromorphology studies
- Awareness raising initiatives such as citizen science workshops, biodiversity information boards, outdoor classrooms, river clean-ups, rainwater harvesting, and wetlands

A full list of the grants awarded funding in the 2024 call can be found here: [www.lawaters.ie/funding](http://www.lawaters.ie/funding)



Minister Malcom Noonan, TD at the official launch of the Community Water Development Fund 2024 on behalf of the Local Authority Waters Programme (LAWPRO). The Minister is pictured with Margaret Keegan, Regional Coordinator, LAWPRO along with LAWPRO staff, local Stoneybatter residents and representatives from Bi Urban social enterprise.

## New funding stream: LAWPRO's Catchment Support Fund 2024

The Catchment Support Fund is working to build capacity within groups to support the delivery of the third cycle River Basin Management Plan by funding their core costs, with over €500,000 awarded in 2024.

The Catchment Support Fund is a new funding stream that was rolled out by LAWPRO for 2024 on behalf of the Department of Housing, Local Government and Heritage. The purpose of the fund is to build the capacity of catchment partnerships in support of the delivery of the third cycle River Basin Management Plan by providing grants for their core costs.



LAWPRO awarded €501,427 of grant aid to 37 organisations under the new 'LAWPRO Catchment Support Fund'. This funding call will build the capacity of non-governmental organisations working on water quality in Ireland by providing funding toward organisational running costs and core costs.

LAWPRO has always been supportive of Community Groups and a key element of LAWPRO's Catchment Support Fund is to foster stronger local partnerships through the continued support and development of bodies who can provide additional vital water quality services to communities and support the objectives of the River Basin Management Plan.

Under the fund, organisations were invited to apply for financial assistance to support Strand 1 organisational costs such as statutory and/or legal fees, insurance costs associated with catchment management, accountancy fees, website annual support costs, organisation promotional materials and group development activities.

In cases where an organisation has Company limited by guarantee status and a proven track record with LAWPRO, organisations were also invited to apply for Strand 2 capacity costs included funding towards staff costs, rent and rates.

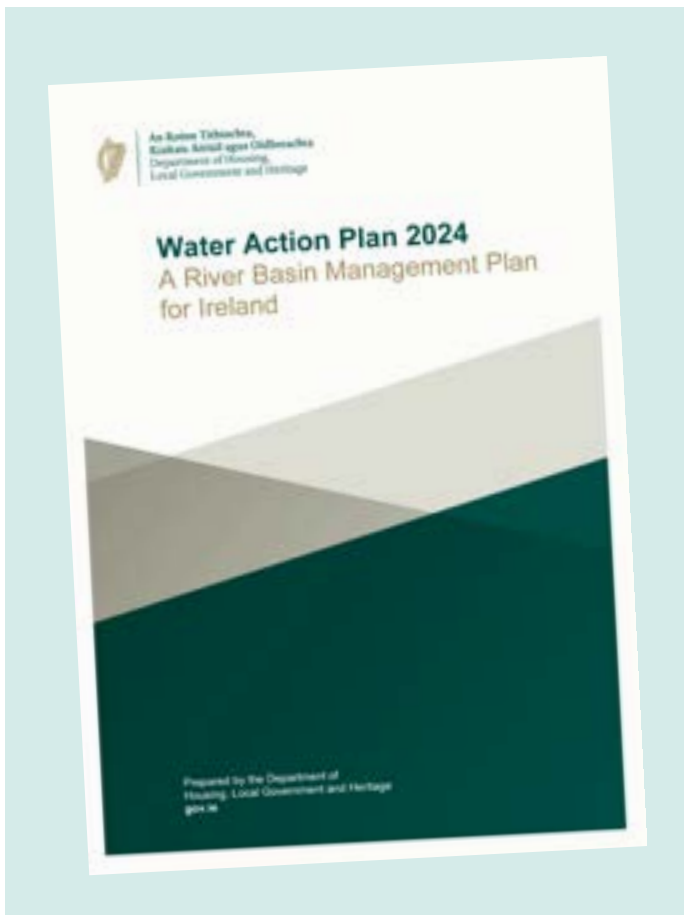
### Learn more:

The full list of groups awarded funding in 2024 is available on [www.lawaters.ie/funding](http://www.lawaters.ie/funding)

## ARTICLES

# Water Action Plan 2024: a river basin management plan for Ireland - implementing actions to protect and improve waterbodies

It is now more apparent than ever that global progress on water-related goals and targets remains alarmingly off track. The considerable challenges to ensuring the sustainable use and management of water resources requires a new determination at a global, national and local scale.



Even in Ireland, where our water quality is comparatively good and water is relatively abundant, our natural water systems are at substantial risk from such issues as increasing nutrient pollution, physical modifications, and urban pollution, all while our water systems are becoming more vulnerable due to changing weather patterns.

The 2024 Water Action Plan sets out a roadmap to restore Ireland's waterbodies to the equivalent of 'good status' or better and to protect water from any further deterioration. Ireland's water

quality has declined in spite of actions taken to date. This decline in water quality is putting Ireland's 'clean and green' image at risk – as well as the livelihoods of farmers and those working in industries such as food and tourism that depend directly on this green image of Ireland.

The Water Action Plan focuses on protecting and restoring water quality by preventing and reducing pollution, by restoring the natural ecosystem functions of rivers and by continuing to invest in water infrastructure.

New governance structures have improved how we manage water in an integrated way at local and at national level by bringing together all of the key water stakeholders – people living in catchments, environmental NGOs, farmers, implementing bodies, state agencies and departments, and industry.

However, even where progress is being made, we must do more to meet the challenge of protecting and improving our water quality. A collaborative effort is the best way to achieve this outcome as the causes and the answers to protecting and restoring our water catchments are not within the grasp of any one group.

Everyone needs healthy and well-protected water catchments – for nature, for growing crops, for our industries, for bathing areas, for clean drinking water supply and for effective sanitation. The Water Action Plan 2024 will focus on implementing actions to protect and improve waterbodies.

We will achieve this by ensuring that the necessary resources are available but also by having clear accountability that will require each implementing body to deliver on the water action targets in the programme of measures. Each agency and authority will be required to monitor and report publicly on its progress. This plan will help mobilise a joint effort of the State, local authorities, public sector agencies, public and private sector companies, environmental organisations, farm organisations and the people living in each river catchment.

**Darragh O'Brien, TD - Minister for Housing, Local Government and Heritage**

**Malcolm Noonan, TD - Minister of State for Nature, Heritage and Electoral Reform at the Department of Housing, Local Government and Heritage**

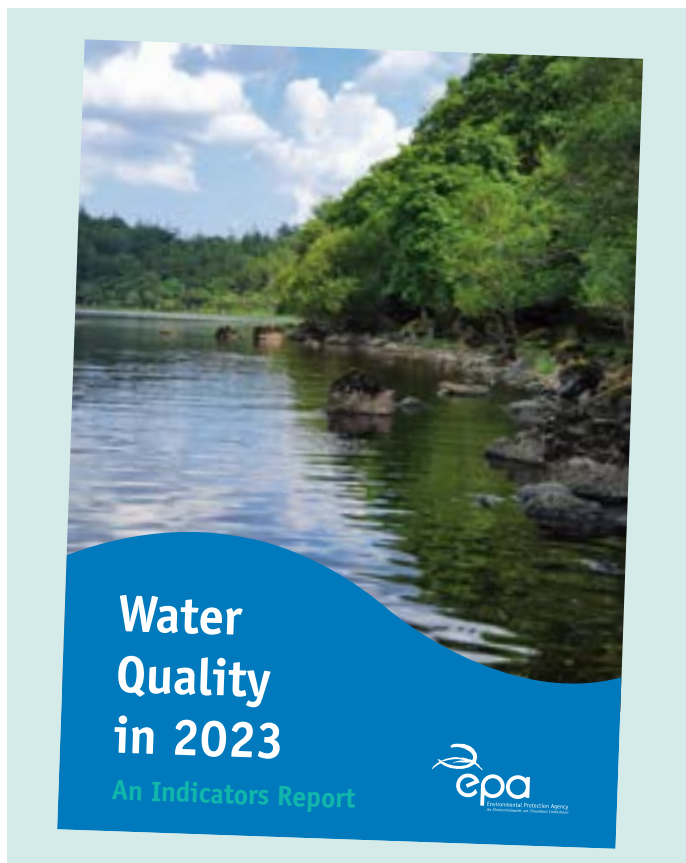
**Learn more:**

[www.gov.ie/en/policy-information/ace5b-water/](http://www.gov.ie/en/policy-information/ace5b-water/)

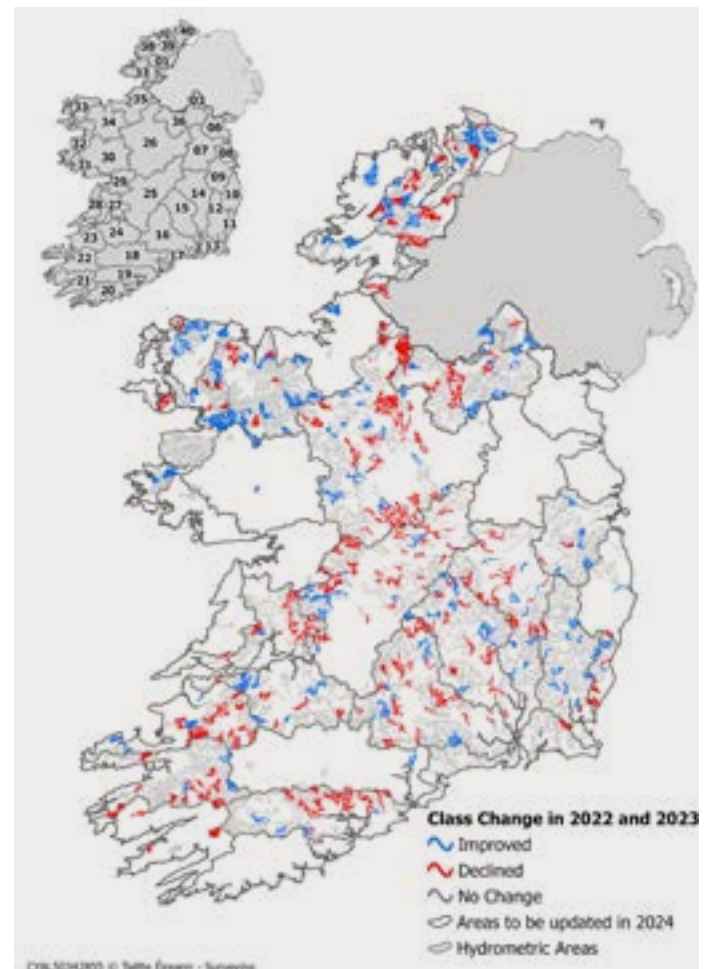


# Water quality in 2023: an indicators report - no signs yet of an improvement in water quality and more action is needed

This report, published 11 June 2024, updates the key indicators of water quality of Ireland's rivers, lakes, estuaries, coastal waters and groundwaters using monitoring data collected in 2023. There are no signs yet of an improvement in water quality and more action is needed.



Similarly, phosphorus levels in rivers and lakes show no significant change, with elevated levels detected in 27% of rivers and 35% of lakes.



River waterbody class changes in 2022 and 2023.

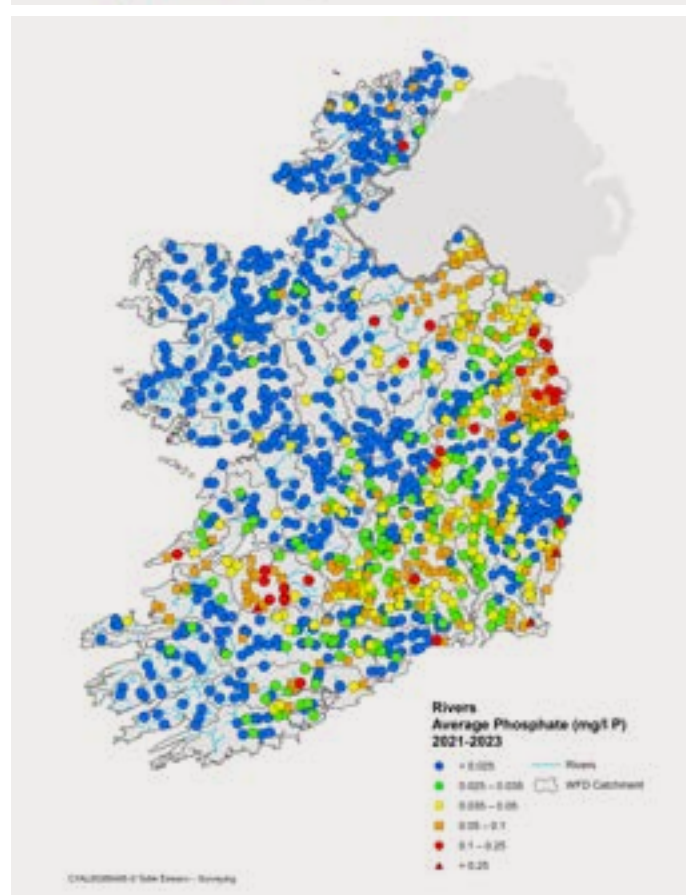
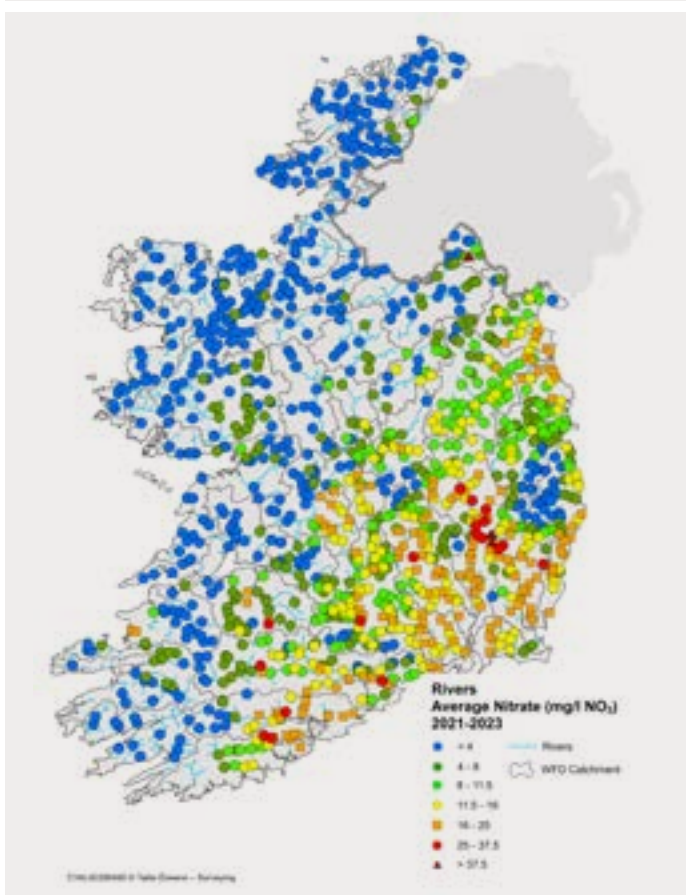
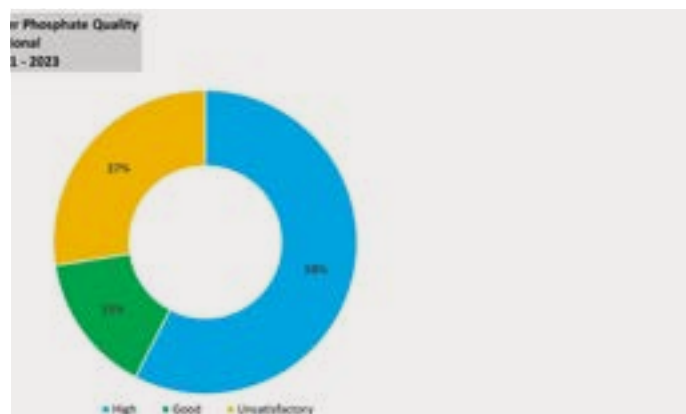
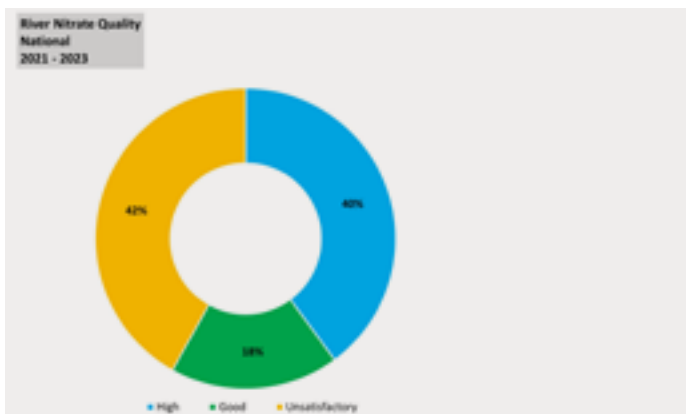
*“It is disappointing to report that our water quality is not improving. National initiatives are in place, but measures to address water quality are not being implemented at the scale or pace required. The quality of our water bodies will not improve until nutrient levels are reduced in areas where they are elevated.”* - Dr Eimear Cotter, Director of the EPA's Office of Evidence and Assessment

The Environmental Protection Agency (EPA) has reported no significant improvements in water quality across the country's rivers, lakes, estuaries, and groundwater in 2023. The report, “Water Quality in 2023: an indicators report,” indicates that while some areas have seen minor improvements, these gains have been offset by declines elsewhere.

Nutrient pollution from agriculture and wastewater is the most significant issue. Average nitrate levels in rivers, groundwater, estuaries, and coastal waters remain largely unchanged and persistently high, particularly in the east, southeast, and south.

Nitrogen pollution, stemming primarily from intensive agricultural activities on freely draining soils, remains a significant issue. The report highlights that 42% of river sites, 17% of estuarine and coastal waters, and 20% of groundwater sites have unsatisfactory nitrogen levels.

## ARTICLES



River Nitrate Quality 2021-2023.

River Phosphate Quality 2021-2023.

Phosphorus pollution, largely from poorly treated wastewater and runoff from agricultural lands with poorly draining soils, continues to affect water quality, especially in the north and northeast.

*“The report shows that more action is needed to achieve our legally binding water quality objectives. The next River Basin Management Plan, which is now over two years late, must be published without further delay. Additionally, there needs to be significant improvement in tracking and reporting measures to identify what is and isn’t working.”* - Mary Gurrie, EPA Programme Manager

The EPA’s report emphasises the need for full compliance with

the Good Agricultural Practice Regulations and accelerated improvements in wastewater infrastructure by Uisce Éireann.

The persistent high levels of nutrients like nitrate and phosphorus pose risks to the ecological health of Ireland’s waters, potentially leading to overgrowth of plants and algae, oxygen depletion, and broader ecological damage.

### Learn more:

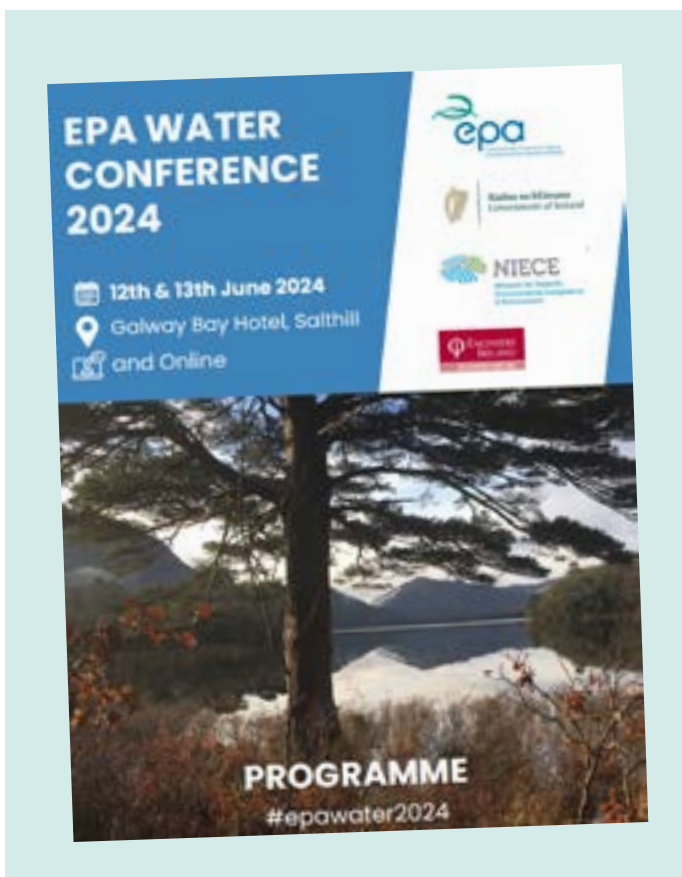
“Water Quality in 2023: An Indicators Report,” is available on the EPA website.

[www.epa.ie/publications/monitoring--assessment/freshwater--marine/water-quality-in-2023.php](http://www.epa.ie/publications/monitoring--assessment/freshwater--marine/water-quality-in-2023.php)

ARTICLES

# EPA Water Conference 2024 – all talks are now available to watch online

The EPA Water Conference took place on 12 and 13 June 2024 in Galway and online. Over 200 people attended in person with 420 registered online. The conference had sessions on scene setting, which launched the EPA Water Quality Indicators report for 2023, climate, agriculture, and water for health, while the final session highlighted people and projects working to improve water quality around Ireland.



Introduction and scene setting		
Water and biodiversity – plans for the future	Fintan Towe, Assistant Secretary, Water Division	Department of Housing, Local Government and Heritage
European perspective (Resilience/water report)	Trine Christiansen	European Environment Agency
Ireland's latest water quality indicators	Wayne Trodd	Environmental Protection Agency
Water and Climate: adaptation and resilience		
Scenario planning and climate adaptation for water	Conor Quinlan	Environmental Protection Agency
HydroPredict: Ensemble River Flow Scenarios for Climate Change Adaptation	Conor Murphy	National University of Ireland, Maynooth

Flood forecasting in Ireland: the story so far	Rosemarie Lawlor	Met Éireann
Water and agriculture: awareness and action		
Policy development	Bill Callinan	Department of Agriculture, Food and the Marine
Teagasc's water quality campaign	Stan Lalor	Teagasc
The National Agricultural Inspection Programme	Ray Cullinane	Environmental Protection Agency
Farming for Water EIP – working with farmers to move beyond compliance	Mairead Whitty	Farming for Water EIP
A data-driven approach to target nitrogen reductions	Eoin McAleer	Local Authority Waters Programme
Water for health		
Water services - Overview	Donal Cronin	Department of Housing, Local Government and Heritage
Rural Water Services Review	Jean Rosney	National Federation of Group Water Schemes
Drinking Water Source Protection - achieving success together	Lorraine Gaston	Uisce Éireann
The recast Urban Wastewater Directive – the future for wastewater treatment?	Carla McNeil	Uisce Éireann
Ripple effects – learning from people and projects		
The role of Rivers Trusts across the island of Ireland	Carol Quish & Freya Connolly	The Rivers Trust
The Burrishole Catchment – what long term monitoring can tell us	Elvira de Eyto	Marine Institute
Dublin Urban Rivers Life	Lorraine Beirne	South Dublin County Council
CatchmentCare: an evidence-based approach to restoring river habitats	Sarah McClean	Loughs Agency

## Learn more:

All talks can be watched on [www.catchments.ie/epa-water-conference-2024](http://www.catchments.ie/epa-water-conference-2024)

# Importance of PONDS FOR WILDLIFE

FSC certified, 100% recyclable paper



Yellow flag iris



Barn swallow

Fox

Larger animals such as foxes, badgers, and hedgehogs will drink from ponds

Grey heron

Loves to feast on frogs and newts

Coot

♂ Mallard

Dragonfly predators on their dar

Lily leaves provide cover & microclimates in the pond

Hoverfly

Pirate spider

Did you know that many aquatic invertebrates can breathe through their bum?! From bum-snorkelling water scorpions, mosquito larvae, rat-tailed maggots and water stick insects to bubble-butt diving beetles.

Common frog

Pond skater

Tadpoles

Bum-breathing insects

Rat-tailed maggots

Water scorpion

Stickleback

♂ Smooth newt

Ponds are important for carbon sequestration because they can hold high levels of organic carbon in their sediments

Water scorpions are key indicators for ponds that are in good environmental condition. These predators use their pincer-like legs to catch prey such as tadpoles and fish

The incorporation of different habitats surrounding the border edges of ponds such as tree lines, thick moss swards and aquatic grasses increase the amount of wildlife attracted to the site and also significantly improves the potential for carbon sequestration

Ponds act as an important habitat refuge for many species including amphibians such as common frogs, smooth newts and natterjack toads

Ponds act as great feeding grounds for birds, including herons, swallows and house martins

Sediment for carbon

Larvae of the hoverfly tribe Eristalini

Springtails

Hairworm

Dragonfly nymphs capture their prey with an extendable catapult-like mouthpart

♂ Has vibrant orange belly during breeding season. They also do a wiggle dance

♀ Smooth newt

Leech

Watermilfoil

Dragonfly nymph

Freshwater limpet

Ramshorn snail

White waterlily

Bivalves

Brooklime

Newt egg





Daubenton's bat



Long-eared owl

Weeping willow tree

Logpile house

Otter  
Otters enjoy ponds for hunting

House martin

Dragonfly

es are ferocious and even feed close relatives themselves



Damselfly

Bullrush



White-tailed bumblebee

Whirligig beetle



Damselfly

Dipping

Lesser water boatman

Water stick insect



Raft-spider

Frogspawn

Water beetle

Water cricket

Greater water boatman

Rushes



Peacock butterfly

They also support aquatic plants, insects such as dragonflies and damselflies, water beetles, whirligig beetles, mayflies, stoneflies, moths, springtails and hoverflies

Beetle larva

Demoiselle

Mosquito larva

Tadpole growth stages

Non-biting midge larva

Midge pupa

Water mite

Blackfly larva

Alderfly larva

True damselfly

♂

Taseless caddis fly larva

Freshwater shrimp

Meniscus midge larva

Freshwater waterlouse....

Pond snail

Spotted mayfly nymph

Flatworm

Diving bell spider

Common frog

White-clawed crayfish

Phantom midge larva

Swimming mayfly nymph

Biting midge larva

Caddisfly larva

Mare's tail

Ponds are a great place for recreation and to learn about nature

Pond plants play a role in supporting many insect pollinators such as bees, butterflies, moths, hoverflies and wasps

nt & silt. Very important in sequestration

Ponds are excellent feeding grounds for nocturnal insectivorous animals such as bats and owls. Certain owls even eat bats!



Co-funded by the European Union



An Roinn Tithíochta, Rialtais Áitiúil agus Oidhreachta  
Department of Housing, Local Government and Heritage

## ARTICLES

# EPA Catchments Unit publishes an update on the significant pressures impacting on water quality

The Environmental Protection Agency (EPA) has published the latest assessment of the pressures that impact on water quality in our rivers, lakes, estuaries, coastal waters and groundwaters. The assessment shows that 34% of our waterbodies are at risk of not meeting their water quality objectives because of the impacts of human activities. The EPA has also published a series of reports that summarises the evidence on each of the main significant pressures on water quality.

The 'Update on the pressures impacting on water quality' report summarises the latest EPA assessment of the pressures and impacts on our waters, using data up to 2021. The outcomes are compared with the assessments for 2015 and 2018 to provide an indication of direction and pace of change in response to measures.

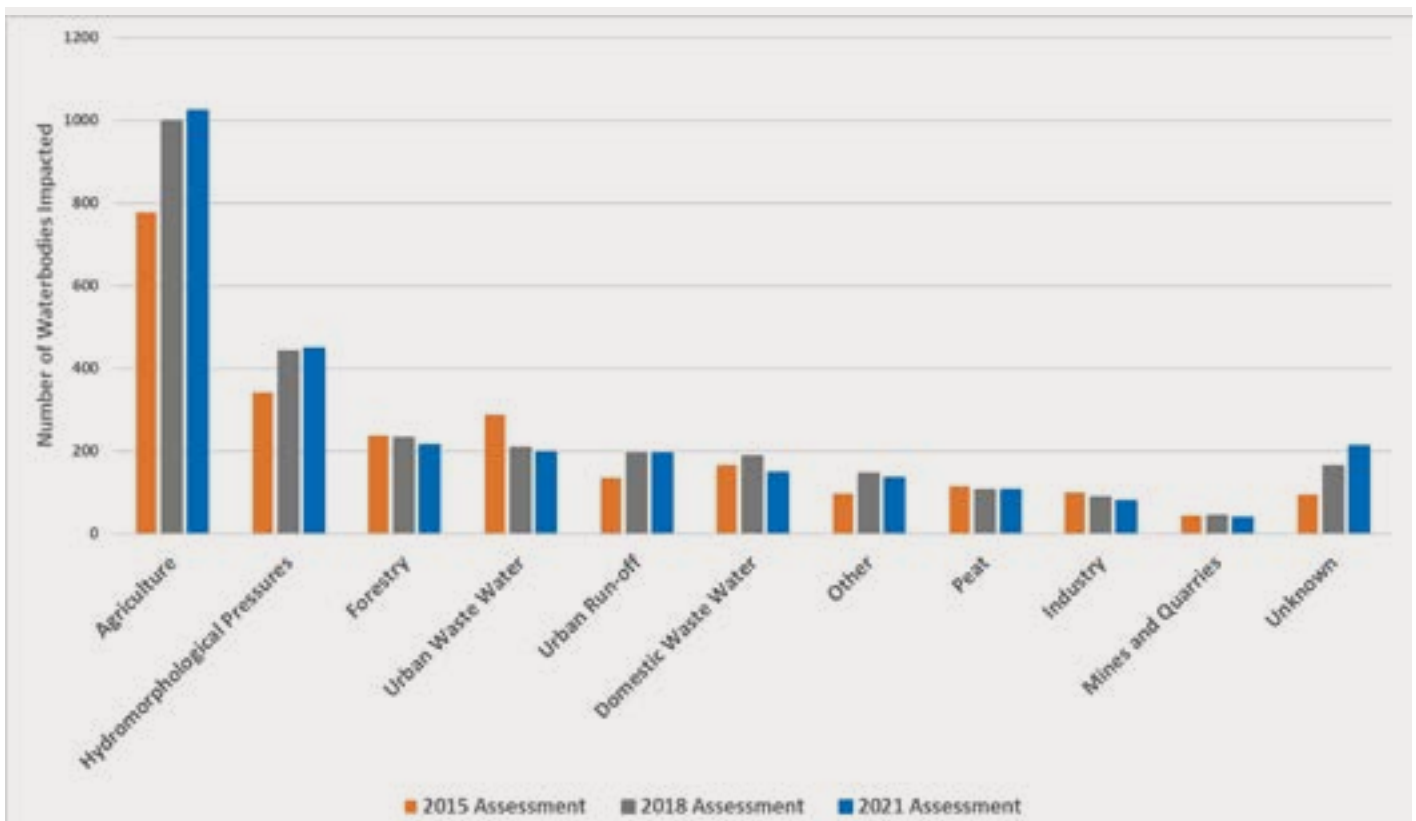
The pressures have been identified using over 140 datasets, including water quality monitoring data, data on landuse and human activities in catchments, and models and tools to assess the relative importance and impacts of the pressures.

Nutrient pollution from agriculture and urban waste water remains the most significant issue. Alterations to the physical aquatic habitat (hydromorphology) caused by dredging, straightening of

river channels and drainage, and loss of excess fine sediment to waterways are also a significant concern.

Agriculture is the most significant pressure impacting over 1000 waterbodies, followed by hydromorphological pressures (physical changes to habitat conditions), forestry, and urban wastewater.

The output of this pressure and impact assessment provides the evidence to support the targeting of action. Improvements in tracking and reporting on progress with measures implementation will be an important priority for the third river basin management plan, to allow more refined assessments of whether the measures are working.



Significant Pressures identified by the EPA during the 2015, 2018 and 2021 assessments.

## ARTICLES

# Impacts of the main significant pressures on water quality

The EPA has prepared a series of reports that summarises the evidence on each of the main significant pressures that impact on water quality. The series currently includes reports on the following key pressures:

- Agriculture - [www.catchments.ie/significant-pressures-agriculture/](http://www.catchments.ie/significant-pressures-agriculture/)
- Urban waste water - [www.catchments.ie/significant-pressures-urban-waste-water/](http://www.catchments.ie/significant-pressures-urban-waste-water/)
- Hydromorphology - [www.catchments.ie/significant-pressures-hydromorphology/](http://www.catchments.ie/significant-pressures-hydromorphology/)
- Forestry - [www.catchments.ie/significant-pressures-forestry/](http://www.catchments.ie/significant-pressures-forestry/)

- Domestic waste water - [www.catchments.ie/significant-pressures-domestic-waste-water/](http://www.catchments.ie/significant-pressures-domestic-waste-water/)
- Industry - [www.catchments.ie/significant-pressures-industry/](http://www.catchments.ie/significant-pressures-industry/)
- Drained peat - [www.catchments.ie/significant-pressures-peat/](http://www.catchments.ie/significant-pressures-peat/)

### Learn more:

[www.epa.ie/publications/monitoring--assessment/freshwater--marine/update-on-pressures-impacting-on-water-quality.php](http://www.epa.ie/publications/monitoring--assessment/freshwater--marine/update-on-pressures-impacting-on-water-quality.php)

## Catchment Assessment Master Spreadsheet

A spreadsheet is available to download at the above link which has key information for all 4842 waterbodies in Ireland, including the ecological status, impacts and pressures. It also has a link to allow you to view each waterbody on the EPA Water Map and its data page (which includes downloadable chemistry data, where available) on [catchments.ie](http://catchments.ie)

# Updated Catchment Assessments published to support the new Water Action Plan

The EPA has published an updated Cycle 3 Catchment Report for each of our 46 catchments. These assessments provide an overview of the situation in the catchment and will help support the River Basin Management Plan 2022-2027 implementation process.

Each Cycle 3 Catchment Report includes the following:

- A Water Quality Summary
- Details on High Status Objective waterbodies, where applicable
- Water Quality Changes
- WFD Risk
- Significant Pressures
- Action
- An appendix with detailed waterbody scale information for all waterbodies in the catchment, including links to view their data page on [catchments.ie](http://catchments.ie) and on the EPA Water Map



The cover of the 2024 Slaney Catchment Report

### How to access the Cycle 3 Catchment Assessments

1. Go to the [catchments.ie](http://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

## ARTICLES

# ESRI Research Bulletin: Farmers' knowledge, attitudes and intentions towards water quality and pollution risk mitigation actions

This ESRI Research Bulletin summarises the findings from: Osawe, W., and Curtis, J. "An assessment of farmers' knowledge, attitudes and intentions towards water quality and pollution risk mitigation actions". The objective of this research is to gauge farmers' willingness to mitigate the risks of water pollution in line with ASSAP advice. The research showed that in areas where agriculture has been identified as a Significant Pressure, only 1 in 2 farmers believed that water pollution is a relevant issue in their local area, and almost 2 in 3 farmers believed that they were already doing enough to protect water quality.



## Introduction

The Agricultural Sustainability Support and Advisory Programme (ASSAP) is a collaborative initiative between government and industry to help address agricultural pressures on water quality. ASSAP is a free and confidential advisory service for farmers operating within 190 Priority Areas for Action identified under the River Basin Action Plan. The objective of this research is to gauge farmers' willingness to mitigate the risks of water pollution in line with ASSAP advice.

## Methods

The research engaged farmers via an online survey on their willingness to comply with specific ASSAP advice. Given the variety of potential pollution risks associated with individual farms, farmers were asked about a set of standardised scenarios that could potentially arise on their farms. For example, one scenario described silage effluent leaking from a pit, ultimately draining into a stream. The ASSAP advice in this instance is to fix the leak and divert effluent into a collection tank. The survey asked farmers whether they would comply with the advice and in what timeframe. Of the 9 scenarios and associated mitigation actions included in the survey, 3 are categorised as falling within current regulatory requirements, 5 of the 9 scenarios are classified as having both mandatory and voluntary aspects, and one scenario is

entirely voluntary, i.e., not within current regulatory requirements. A total of 162 ASSAP participant farmers completed the survey.

## Findings

In the case of the leaking silage pit scenario described earlier, all farmers indicated a willingness to fix the problem, but one-quarter of respondents indicated it would take them a month or longer before addressing the issue. Across all 484 instances of the scenario questions posed, farmers indicated they would implement the ASSAP guidance as a matter of priority in 75 per cent of time. The willingness to implement, or willingness to implement in a timely manner, varies across types of mitigation. In scenarios comprising a risk of diffuse pollution (where mitigation actions are more difficult to verify), the average stated compliance rate of ASSAP advice is almost 100%. For the farmyard-based scenarios comprising a risk of point source pollution (where mitigation actions are easier to verify), the average stated compliance rate is 54%.

Across scenarios, the most common reason given for willingness to implement ASSAP advice is that "it's a high environmental risk & needs attention". A concern about cross-compliance issues also motivates farmers' intentions, which demonstrates that the risk of the financial penalty clearly influences farmers' decisions. The reason given for not implementing ASSAP advice in a timely manner was generally related to insufficient time or resources to implement, whereas in some instances, it was not considered a priority.

Only 1 in 2 farmers believe that water pollution is a relevant issue in their local area. Almost 2 in 3 farmers believe that they are already doing enough to protect water quality. Considering that the ASSAP programme specifically operates in water catchments where agricultural pressure on water quality has been identified, such a relatively low level of acknowledgement that agriculture is a leading source of nutrient loads in local water catchments is a concern.



## ARTICLES

The overwhelming viewpoint among farmers is that they should receive payment for measures leading to improvement in water quality, either as payment for environmental performance or via grant schemes. This contrasts with the philosophy of the ASSAP programme, which is a voluntary advice scheme without any associated financial payments. If beliefs on financial payments are strongly held, i.e., that some type of payment is necessary, it raises a concern about the extent to which farmers will fully engage with the ASSAP programme and thereby adjust practices to deliver improvements in water quality.

### Policy Recommendations

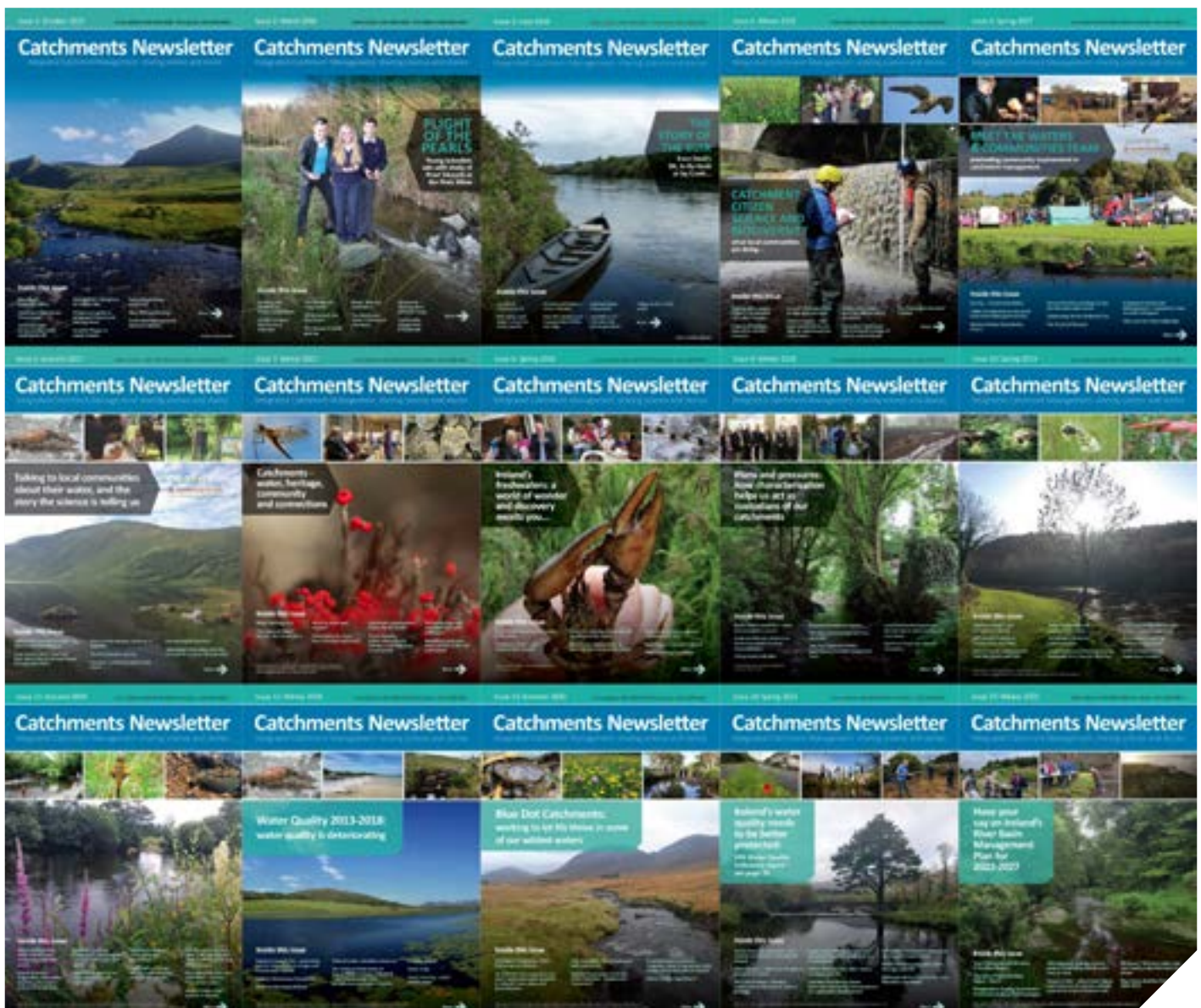
Based on the survey responses, there was evidence that farmers were not always consistent in their responses to questions, in some instances responding in a strategic manner. If this is indicative of

a wider trend, it suggests the need to verify the implementation of ASSAP advice to ensure that the programme will deliver on its water quality ambitions. However, developing a system to verify the implementation of all mitigation actions across all farms would be challenging.

An alternative solution, reflecting experience in The Netherlands, could be to change from a confidential advisory scheme to one with greater transparency and public commitments among farmers.

### Learn more:

[www.esri.ie/publications/farmers-knowledge-attitudes-and-intentions-towards-water-quality-and-pollution-risk](http://www.esri.ie/publications/farmers-knowledge-attitudes-and-intentions-towards-water-quality-and-pollution-risk)



All previous issues of the Catchments Newsletter are available to download from [www.catchments.ie/catchments-newsletter](http://www.catchments.ie/catchments-newsletter)

## ARTICLES

# New map available: Targeting Agricultural Measures

An updated farmer-friendly EPA Map on Targeting Agricultural Measures is now available, which has key information that will help farmers and other landholders understand their local water quality and where action needs to be taken.

The new EPA Targeting Agricultural Measures Map has the following layers:

### Status and Monitoring

- WFD Ecological Status: This shows the latest ecological status for all waterbodies in Ireland
- National Water Monitoring Stations

### Targeting Agricultural Measures

- Targeting Agricultural Measures: This colour-coded layer shows which actions by farmers have the greatest potential to improve water quality for each area in the country.
  - » Navy – Target Phosphorus/Sediment losses
  - » Navy and Orange: Target Phosphorus/Sediment and Nitrate losses
  - » Orange: Target Nitrate losses

- » Red, Orange and Navy: Target Point Source and Phosphorus/Sediment losses
- » Navy and Red: Target Phosphorus/Sediment losses, and point sources
- » White: Protect measures
- River agriculture pressures: This layer shows the rivers where agriculture is a Significant Pressure impacting water quality

### Nitrogen / Freely Draining Soils

- Pollution Impact Potential - Phosphorus (PIP-P): This layer shows Nitrate Critical Source Areas (CSA) where there is a source of N from agricultural areas and the land is susceptible to losses.

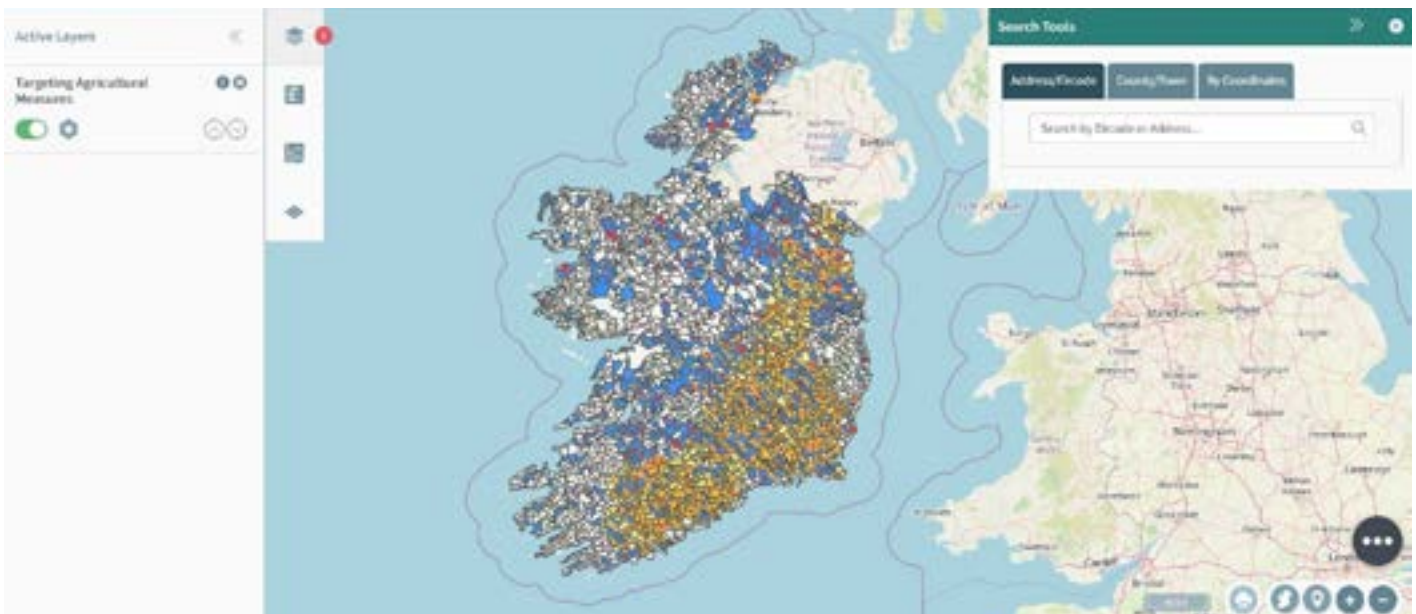
### Phosphorus / Heavy Soils

- Phosphorus (PIP-P): This layer shows Phosphorus Critical Source Area (CSA) where there is a diffuse source of P from agricultural areas and the land is susceptible to losses
- PIP-P Flow Delivery Paths: Focused Delivery Flow Paths are the areas of converging overland runoff that results in an increasing accumulation of water flowing overland. It is important to consider the available source of phosphorus in these contributing areas when deciding whether to target measures (check the underlying PIP-P rank, see layer above). The red flow paths have the highest surface runoff. Where these cross High PIP-P areas, expect higher P losses
- PIP-P Flow Delivery Points: Focused Flow Delivery Points are where Focused Flow Paths enter a watercourse. The size of the point indicates the relative volume of water flowing

### Learn more:

You can access the EPA Targeting Agricultural Measures Map here: <https://gis.epa.ie/EPAMaps/agriculture>

Additional information, including videos explaining the key layers, is on [catchments.ie](http://catchments.ie): [www.catchments.ie/water-map](http://www.catchments.ie/water-map)



The new EPA Map on Targeting Agricultural Measures.

ARTICLES

# The Farming for Water EIP: working with farmers and local communities to benefit the environment, water life and all society

The Farming for Water European Innovation Project (EIP) is a 5-year €60 million project that will be working together with farmers and the community at large to deliver enhanced and sustained water quality improvement measures for the benefit of the environment, water life and all society.



The Farming for Water project was launched by the Minister for Agriculture, Food and the Marine, Charlie McConalogue,

together with Minister of State Pippa Hackett and Minister of State at the Department of Housing, Local Government and Heritage, Malcolm Noonan on the shores of Lough Ennell in March 2024. The Farming for Water EIP is aimed at improving water quality at local, catchment and national levels.



*Pictured above: At the launch of the Farming for Water EIP on the shores of Lough Ennell are left to right: David Fay, landowner; Anthony Coleman, Director of Services, LAWPRO; Minister of State, Pippa Hackett; Minister Charlie McConalogue; and Minister of State at the Department of Housing, Local Government and Heritage, Malcolm Noonan.*

The primary focus of the Farming for Water project - co-partnered by LAWPRO, Teagasc, ASSAP, Dairy Industry Ireland and Bord Bia - centres on mitigating losses of phosphorus, nitrogen, sediment, and pesticides from agricultural lands. The aim is the adoption of innovative best practices in nutrient management; the application of nature-based Natural Water Retention Measures; and other suitable strategies at farm level; all guided by the principles of Integrated Catchment Management and science.

The project is a collaborative water quality improvement initiative with the Department of Agriculture, Food and the Marine providing €50 million for participating farmers, co-funded by the national

exchequer and the EU, with the objective of involving up to 15,000 farmers in Priority Areas for Action (PAAs). The Department of Housing, Local Government and Heritage is providing €10 million in administrative support for the project.

The initiative will focus on voluntary supplementary measures for water quality but will also include multiple benefits such as aquatic and terrestrial biodiversity, climate action and natural flood management measures.

The Farming for Water EIP Research hub has been established and involves researchers from several institutions including University College Cork, University College Dublin, Dundalk Institute of Technology, Atlantic Technical University, and the James Hutten Institute UK. This innovative approach will complement core project evaluation and will facilitate input from the academic community and applied research.

A pilot phase of farm visits was carried out in October 2023. Forty-seven farms were engaged by ASSAP advisors across several farm sectors including tillage, dairy and dry stock. These visits have validated the proposed process and have also led to a refinement of the measures to provide clarity for both advisors and farmers.

The refined measures were further tested at the end of January when the Farming for Water EIP was rolled out to a group of approximately 50 farmers in the Castleisland area who are suppliers of Kerry Co-op, in tandem with the Kerry Evolve Sustainability Scheme. The grant payment system has now been established and the first grants have been paid to farmers.

A dedicated Farming for Water team, led by Mairead Whitty, is now in place. They are eagerly looking forward to making meaningful inroads into the preservation and improvement of water quality throughout the country. Project offices have been set up in Rossmore Village Centre in Tipperary Town and the process has been digitised from engagement to final payment.

This is not an open call project. Instead, farmers whose land is adjacent to areas affected most by poor water quality will be invited and encouraged by ASSAP personnel and farm advisors to come on board and will be assisted in making the application and availing of the grants to provide the necessary measures which include amongst others, rainwater management plans, riparian margins, earthen bunds, tree planting on the river bank, and fencing to prevent bovine entry to the water course.

**Noel Dundon, Farming for Water EIP Communications and Engagement Lead**

## Learn more:

[www.gov.ie/en/press-release/468aa-ministers-mcconalogue-hackett-and-noonan-launch-60-million-farming-for-water-eip/](http://www.gov.ie/en/press-release/468aa-ministers-mcconalogue-hackett-and-noonan-launch-60-million-farming-for-water-eip/)

## ARTICLES

# Farming for Water case study: willow beds - a nature-based solution to reduce overland runoff and pollution in Kerry

The Farming for Water Project is funding an innovative willow bed on the land of Mike and Bernie O’Sullivan, Cordal, Castleisland, Co. Kerry. A willow bed is an area of densely planted willow trees, and this nature-based solution will help slow the flow of water, allow sediment to settle and prevent any dissolved nutrients from ending up in the surrounding water courses, primarily the River Maine, a Priority Area for Action identified in the second cycle River Basin Management Plan. This measure is just one of the 41 possible actions identified by the Farming for Water EIP.

Mike and Bernie are milking 135 cows on the family farm and Mike, having engaged with Kerry Agri Business Sustainability Advisers Terry O’Mahony and Caoilfhionn Dodd explored the Farming for Water EIP concept and decided to introduce additional measures to help make his farm even more sustainable and environmentally friendly.

*“Protecting water quality is very important and even just for peace of mind for us when the inspectors are coming, it is good to have everything in order. This is a great project and the key to it is that the funding is right. You have to have the funding in place, and I must say it has been a very straight forward process for us because the advisors have been so pro-active.”* - Mike O’Sullivan

The first step on the journey for Mike in conjunction with the advisors was to devise a Rainwater Management Plan. This is a whole farm assessment identifying areas on the farm where water flows both within the farmyard & the land area. This assessment is critical to establish and pinpoint the most suitable location for mitigation measures.

After that the measures to be introduced were identified in conjunction with the farmer and the result has been included:

- holding off on slurry and chemical spreading until April in critical source areas
- roadway run-off management and sediment traps
- the introduction of solar pumps in an out-farm
- the planting of 16 acres of multi-species swards

*“I see this as a huge opportunity to put our property in order for our children coming along after us. I feel it is a very good initiative and I have learned a lot from it. The aim is that other farmers will be able to come to my farm, observe the work and follow suit on their own farms. It is a no brainer really.”* - Mike O’Sullivan

Construction of the willow bed has taken less than two days in total. The bed which measures 100 x 4 metres was dug out by an excavator with the topsoil re-used, and the subsoil drawn away to another part of the farm. The 1050 willow plants were then sown in six rows at 0.7 metres between the rows and 50cm between each stem, along the length of the bed and these will need to be cut back after a year. However, they will be harvested every third year thereafter, but if Mike decides to use the willow for firewood, the cycle will be seven years. The stems which were 8 inches long, were sown 2-3 inches above the ground.



The willow bed is prepared by digging out an area 4 metres wide to allow for the sowing of the stems.

*“Willow beds are a nature-based solution that contribute positively to the challenges that lie ahead. They help improve water quality, provide renewable energy production, enhance biodiversity, help mitigate against climate change impacts through carbon sequestration, and can help increase resilience to flooding. We will be monitoring the effectiveness of this measure throughout the life cycle of the project through our Research Hub”* - The Farming for Water Project Team

“Mike can decide what to use the willow for, but there is the option of cutting it back after a year, mulching it and then using it as bedding for the cattle. Or he can get into the seven-year cycle

## ARTICLES

and use it for firewood if he prefers. He has options,” said Terry who explained that the willow bed will be fenced off from livestock, even though the willow is in no way harmful to the animals. Willow beds were constructed under the watchful eye of Féidhlim Harty of FH Wetland systems Ltd, based in Clare, who did the original design for the willow bed, and was on hand to give additional guidance on construction.



Planting of the 1050 stems 0-7metres between each row at 50cm apart took the three helpers an hour to complete.



Advisor Caoilfhionn Dodd, Kerry Agri Business Sustainability Advisor, explains the stems to Bernie O’Sullivan.

In Ireland water shortage will seldom be a limiting factor for willow growth and calculations indicate that a growing season annual precipitation level of 550-600mm is required for optimum growth. Willow’s high-water uptake makes it a very suitable crop for sustainable water management, and it can help reduce fine sediment run-off.

*“We have about fifty dairy farmers in the Castleisland area who are signing up for the Farming for Water project with the view to introducing different measures. We now have this example of a willow bed to showcase, and we have the expertise locally to demonstrate how the work should be done. I would certainly encourage others to do the same because improving water quality is key to retaining the derogation as well as everything else.”* – Terry O’Mahony, Kerry Agri Business Sustainability Advisor

Planting of the willow took approximately one hour to complete with three planters working on it while the excavation work took a day and a half. But the impact the willow bed will make on the farm into the future will be enormous.

*“It will be a real feature on our farm. It will be great to see it growing and having an impact on the landscape as well as on the land itself. I can see nothing but benefit from having introduced this measure. Nobody made me do it – it was a voluntary action but the fact that it is funded makes it very attractive.”* – Mike O’Sullivan

**Noel Dundon, Farming for Water EIP Communications and Engagement Lead**



Terry O’Mahony, Kerry Agri Business Sustainability Advisor, pictured with Mike O’Sullivan.

All the water from the clean concreted areas of the farm will be directed through a sediment trap towards the willow bed which allows for the settlement and polishing of water. The willow beds help to slow the flow of water, allow sediment to settle out and any traces of dissolved nutrients to be taken up by the growing vegetation and through evapotranspiration of the growing willows.

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Agriculture Scientist Ciarán Sheelan at work in the Shournagh sub-catchment in Cork.

## Waters of Life: trialling water quality solutions that work for local landowners

Waters of LIFE is an EU LIFE Integrated Project (IP) which aims to help reverse the deterioration of Ireland’s most pristine waters. It is focused on trialling water quality solutions that work for local landowners and which can feed into future EU policy.

Waters of Life is working in high-status objective river catchments. There are five demonstration catchments and a sixth control catchment, which are spread across Clare, Cork, Galway, Roscommon, Wicklow, and Kerry. It is working in support of LAWPRO’s Blue Dot Catchments Programme.

Project Manager Anne Goggin is from Limerick and she has been building capacity for Waters of LIFE since she took the helm in 2021. There’s now a core team of data, communications and administration specialists supporting agricultural and catchment

scientists in the protection and improvement of high-status objective waters.

*“The big thing for us this year is the development of our agri-environment scheme. It’s another move towards paying landowners for ecosystem services other than food production. That to me is very exciting. We’ve been working with key decision makers and experts to look at previous schemes and adapt them specifically for water quality. So, what we’re looking at now is a hybrid scheme that can be locally adapted. Every catchment has its own pressures that need to be addressed.”*

– Project Manager Anne Goggin

The EPA’s Indicators Report concludes that all sectors have a role to play in improving water quality when it comes to addressing those pressures that arise from human activities. Waters of Life Senior Scientist Tom Drinan believes that collaboration is the way forward:

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Agricultural Scientist John Kelly meets with a local farmer in the Graney sub-catchment in Co. Clare.

*“The co-design element is really important. It has to be workable for landowners and that won’t work without their input. That’s the basis for delivering on improved and protected water quality. The measures we’re looking at aren’t hard engineering bespoke measures. It’s very much evidence-based and nature-based solutions. Working with nature and co-designing with landowners means longevity and workable farms. The effectiveness of measures like planted riparian buffers can actually improve over time, where we’re planting vegetation along river banks. We want the project to be win-win.”* – Waters of Life Senior Scientist Tom Drinan

The project’s agri-environment scheme will be informed by a Framework of Measures and Best Practice Guidance for High Status Objective River Water Bodies, first published in August 2023.

*“What was new about this document was how it ranked the measures by effectiveness against particular issues and scenarios. For example, it might give you a measure for dealing with phosphorous or sediment in a poorly draining area or nitrate in a free-draining area. Those measures are then ranked as low, medium, high or not effective in each scenario.”* – Anne Goggin

Waters of LIFE is one of a number of newly established initiatives with a water quality focus. For example, Farming for Water EIP is measures-based and co-funded through the Rural Development Component of the Common Agricultural Policy. Waters of LIFE has

a results-based element and is funded through EU LIFE, the EU’s funding mechanism for environment and climate action.

### The right measure in the right place

It all comes down to the right measure in the right place. And perhaps the project’s new agri-environment scheme is coming at the right time – it’s due for roll out in the spring of 2025.

*“For us it’s about filling the gaps rather than reinventing the wheel; we’re very mindful of the types of measures included in Farming for Water as well as the likes of ACRES. Under Farming for Water, a farmer might be paid to put in a pond or a woodland. We can add to that by paying out for the quality and effectiveness of that environmental feature in how it serves water quality.”* – Anne Goggin

### Learn more:

[www.watersoflife.ie](http://www.watersoflife.ie)

The Waters of Life Framework of Measures for High Status Objective Waterbodies, which has sections on agriculture, forestry, peat extraction, quarries and domestic water treatment systems is available here: [www.watersoflife.ie/resources](http://www.watersoflife.ie/resources)



Waters of LIFE is an EU LIFE Integrated Project co-funded by the European Union.

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# Minister Noonan launches national implementation strategy at Nature-Based Solutions Conference

Minister of State for Nature, Heritage and Electoral Reform Malcolm Noonan T.D, opened the *Nature-Based Solutions Conference – to Protect and Restore Water Quality* on 22 May 2024 in Dundalk Institute of Technology (DkIT) and launched two important documents: a national strategy for the implementation of nature-based solutions and a template guidance document on managing rainwater for local authorities.

The nature-based solutions conference was organised by the Local Authority Waters Programme (LAWPRO), with several supporting partners. It brought together international and Irish experts to share their experiences and ideas for the upscaling and mainstreaming of nature-based solutions.

The conference focused on urban, rural, riverine, and coastal areas and draws from practical, on-the-ground examples, with an examination of policy and finding opportunities to implement solutions.



L-R- Averil Gannon (Policy Advisor, Water Division, Department of Housing, Local Government & Housing), Dr Fran Igoe (LAWPRO), Minister of State for Nature, Heritage and Electoral Reform Malcolm Noonan T.D, Dr Suzanne Linnane (Senior Lecturer – School of Health and Science, DKIT), Dr Caroline Gilleran Stephens (Lecturer in Biotechnology, DKIT).

*“We are in an era of environmental change and need to look at ways we can incorporate nature-based solutions to protect and restore our urban, rural, coastal and riverine environments. I am delighted to launch the ‘Nature-Based Management of Urban Rainwater and Urban Surface Water Discharges’ and the ‘Rainwater Management Planning – Guidance for Local Authorities’ today. Working together, several departments and agencies collaborated to create this strategy as a roadmap to bring urban Nature-based Solutions into the mainstream in Ireland. This is a live document, and its steering group will continue to oversee*

*its implementation of urban nature-based solutions in the years ahead. I am also pleased to publish the ‘Rainwater Management Planning Guidance’ document for local authorities, an information document that will assist them in the decision making at settlement level.”* - Minister Noonan

Nature-based solutions can significantly contribute to addressing multiple societal challenges. The International Union of Conservation Concern estimate that one third of climate mitigation, needed to meet the goals of the Paris Agreement, can be provided by nature-based solutions.

*“Nature-based solutions can play an important role in protecting water quality, biodiversity and assisting in efforts to address climate change, but nature-based solutions need to be upscaled and mainstreamed to be effective. Mitigation against pollution, coastal erosion, flooding as well as public wellbeing are all potential benefits. However, how we plan for, design and roll out nature-based solutions is critical. To be delivered there must be a clear understanding of what they are and how they can be implemented into projects at different scales. We are delighted to host this conference in Ireland - the first of its kind. It shows the progress we are making in bringing together the sectors and developing policy supports. This is an exciting opportunity for Ireland to develop best practice through collaborations with our European colleagues in the ResiRiver Interreg project with both private and public bodies across the country.”* - Dr Fran Igoe, Local Authority Waters Programme

### Learn more:

[www.lawaters.ie/nature-based-suds/](http://www.lawaters.ie/nature-based-suds/)

### Natural Water Retention Measures (NWRM) – overview and recommendations for use in Ireland

The Water Framework Directive National Technical Implementation Group (NTIG) established a working group to look at the potential for NWRM in Ireland. The working group determined that the best approach was to categorise NWRM in Ireland into the following five categories:

- Agriculture
- Urban
- Peat
- Forest
- River Restoration

A report looking at the potential of NWRM across these five categories and multiple sectors was published in 2021 and is available here: [www.catchments.ie/natural-water-retention-measures-a-nature-based-solution/](http://www.catchments.ie/natural-water-retention-measures-a-nature-based-solution/)



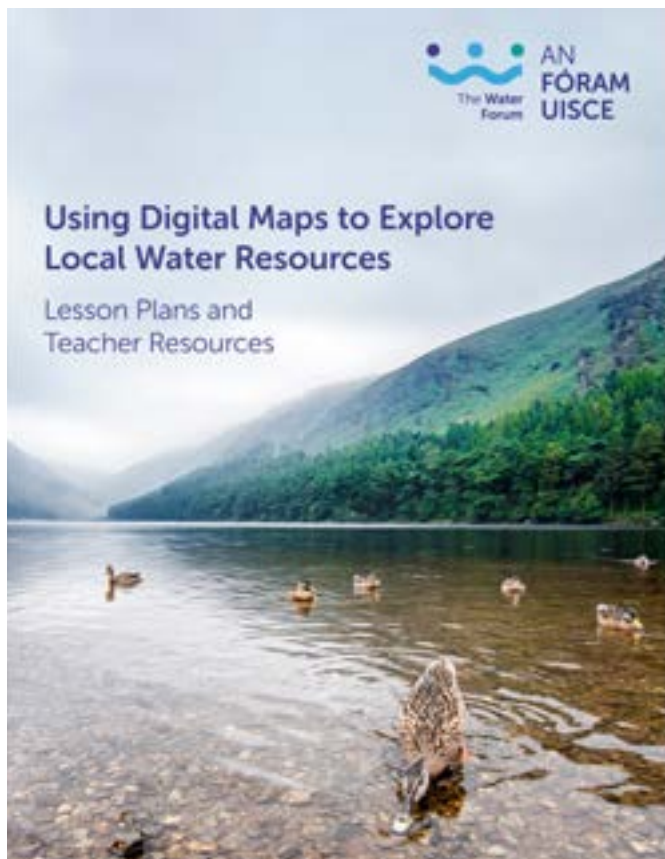
# The Water Forum launches education modules on water supply, treatment, water quality and pollution

To improve education and awareness of local water resources, the Water Forum commissioned Maigue Rivers Trust, with support from Mary Immaculate College, to develop education modules for schools.

The Water Forum has published educational modules on four key topics:

- Using digital maps to explore local water resources
- Freshwater life and habitats
- The global impacts of how we use water
- Water quality and pollution

The modules are suitable for secondary school Junior Cycle classroom-based assessments, for Transition Year students and for any learner, such as angling or community groups, who want to learn about water supply, treatment, freshwater life, habitats and the impacts of water pollution. All modules comprise a resource book that includes 4 or 5 lessons with supporting Power Point presentations and links to additional information and an assessment of learning.



## Learning about digital maps and exploring your local waters with [catchments.ie](http://www.catchments.ie)

The digital maps module introduces the Environmental Protection Agency (EPA) digital maps accessible free on [www.catchments.ie](http://www.catchments.ie). That module covers:

- where drinking water is sourced
- how to find out about local water quality
- how drinking water is treated
- where and how wastewater is treated

In the summer of 2023, the Water Forum (An Fóram Uisce) commissioned a survey of water consumers to assess their knowledge of water supply and security, to identify levels of satisfaction with water suppliers and to gauge interest in action for water conservation. A nationally representative sample of 1518 adults responded and one of the key findings was that 54% of the respondents were *completely or somewhat lacking in knowledge* of where their drinking water comes from or how it is treated. People surveyed also showed a lack of awareness of potential future water quality and security challenges owing to climate change and increasing population. In addition, 26% of the national sample always drink bottled water despite the quality of the public water supply being a very high standard.

*“This research has identified the need for a public information campaign to build knowledge on water treatment and supply processes, how wastewater is treated and the potential threats to drinking water security and supply. The education resource can provide a first step in addressing the knowledge gap and while it is targeted at schools, the Forum would encourage individuals and groups to use the materials as well.”*

– Dr Matt Crowe, Chair of the Water Forum

## Learn more:

The resources are available on Scoilnet.ie, an online platform for school resources and the Water Forum website: [thewaterforum.ie/resources-category/education-resources/](http://thewaterforum.ie/resources-category/education-resources/)

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# FarmPEAT: farming with nature in the midland raised bog landscape

The FarmPEAT Programme is a locally-led, innovative, results-based pilot programme for farmers who manage lands that surround some of Ireland’s finest remaining raised bogs in the midlands of Ireland. Working with local farmers, the project will design and trial a scheme especially adapted to the local landscape that will incentivise the delivery of enhanced environmental outcomes.



FarmPEAT’s newsletter ‘The Bog Standard’ is available on [www.farmpeat.ie](http://www.farmpeat.ie)

The FarmPEAT Project is a results-based agri-environmental programme. This means that payments are linked to habitat and environmental quality (the result). Farms with higher nature quality will receive a higher payment than a farm with a lower nature quality.

The programme will reward farmers for improved management of habitats on peat soils along with other important landscape features such as eskers, field boundaries and watercourses. The programme will be results-based whereby farmers will get paid depending on the scores they achieve, with higher scores, indicating higher environmental quality, getting higher payments. It is hoped that this programme will form a basis for future agri-environmental schemes in these areas. The project it presents an opportunity for farmers to be involved in developing policy that could provide long term environmental and economic benefits to their communities into the future.

The FarmPEAT Project is operating at up to eight candidate study sites centered on raised bogs or former raised bog areas. These sites are in the Irish midland counties of Roscommon, Offaly, Kildare, and Westmeath. Coupled with the development of the results-based agri-environmental model, the FarmPEAT Project will

assist farmers and the broader community to transition towards a more sustainable use of the peatland resource in the area through a range of educational tools and peer mentoring.



Some of the excellent resources the FarmPEAT project have prepared – this is part of their guide to the positive indicator species that can be found on bogs.

## The ‘Love your wellies’ Awards for 2024

On 20 June 2024, FarmPEAT were delighted to join the Irish Peatland Conservation Council (IPCC) for a tour of the Bog of Allen

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Nature Centre and their Lodge Bog boardwalk. The IPCC guided the attendees through the story of bog formation, Ireland's history of turf cutting, and peatland biodiversity.

On the boardwalk, people learned about the Sphagnum plugs planted to improve bog health, and saw plants such as Bog Asphodel, bog cotton, and Sundews. They also learned about aquatic biodiversity through pond dipping back at the Centre.

After that, people headed to the Lullymore Heritage & Discovery Park to celebrate the Awards Ceremony. Ray Stapleton spoke about the role of Lullymore as an educational space for schools from all over Ireland, bringing students closer to our natural and cultural heritage. Meabh Boylan, Biodiversity Officer with Kildare County Council, joined us to present the awards and share some words of inspiration with the students. She emphasised the importance of communicating biodiversity and climate issues, and how the Love Your Wellies finalists accomplished this in their brilliant entries.

After the Ceremony, some of the finalists took the opportunity to explore Lullymore's boardwalk and other activities. Thank you from the FarmPEAT team to all who entered this year's competition.



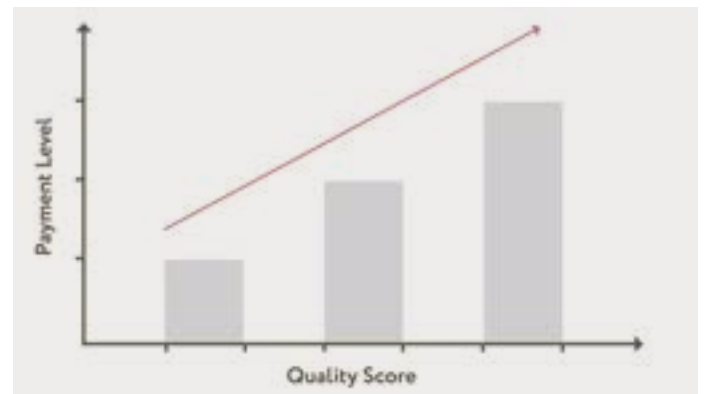
The 2024 Love Your Wellies finalists – one of the many ways FarmPEAT is working with local communities.

### How FarmPEAT works with farmers

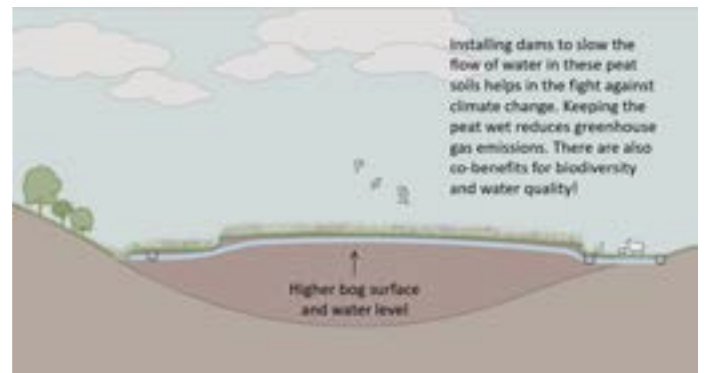
On joining the programme, a participating farm is scored (using the FarmPEAT scoring system) and the farmer gets paid a corresponding payment based on that score. The following year, if the score increases (indicating that the habitat and environmental quality has increased), then a higher payment is issued. If, following the scoring of the farm, a farmer wishes to undertake measures to improve the farm score, the FarmPEAT Project Team will be on hand to advise and provide guidance on appropriate measures that will help improve the score. In addition, the Project Team will offer financial assistance to complete these actions in the form of a Supporting Actions Payment.

*“One of the benefits in the FarmPEAT Project were the supporting actions you could take. I could use them to pay for new fencing, wire, and stakes. For the rewetting, I said I’d sign up at the start and then there was some kickback locally and nationally*

*about rewetting. There was a lot of negative press on it. But on my own side, I’m still interested in rewetting. My field which is directly neighbouring Raheenmore Bog is fairly wet and not really productive at the best of times, so rewetting won’t be too much of an issue and I can lower the plastic dams if needed. It’s kind of good in a way, because the wetter land grows more grass if there’s a drought. In the sandy, lacky ground, the grass would be burnt out of it. Our farm is right beside the bog and growing up, I wouldn’t have known all I know now. With FarmPEAT and the different experts coming along and giving talks, it opened my eyes to what people were actually doing to the bog and how Ireland’s raised bogs are so important. There was one comment on our FarmPEAT community day that was praising the farmers involved with the project. We have to do what we can to protect the raised bogs for the next few generations.”* – Ray Brennan, farming near Raheenmore Bog, Co. Offaly



Payments are linked to the nature quality of your farm. Higher Nature Quality = Higher Payment Level. Each plot (Field) is scored out of 10 using a scorecard that captures high and low quality which reflect past and current management.



An image from one of the presentations by FarmPEAT that explains how bogs are formed and can be protected.

Supporting actions are voluntary measures that a farmer may choose to undertake with the aim of improving their habitat quality or whole-farm score. This document sets out the typical supporting actions that are available to farmers within the Programme. The rate of funding varies from 25% to 100% depending on the environmental benefit of the action. Each participant is provided with an annual works plan which details the proposed supporting actions to be completed during the following year.

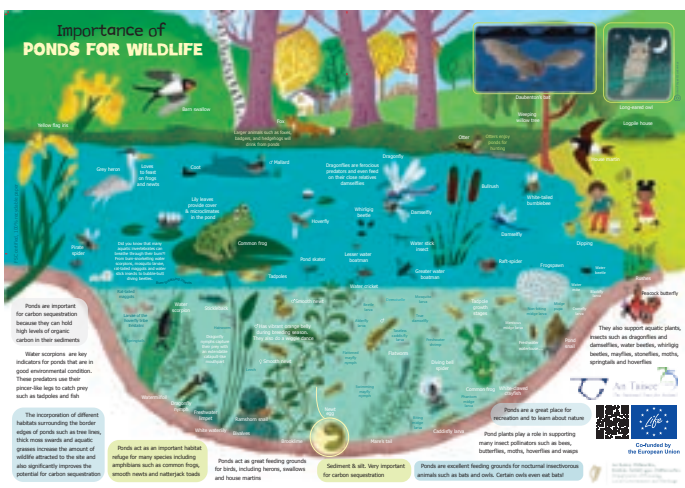
**Learn more:**  
[www.farmpeat.ie](http://www.farmpeat.ie)

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# An Taisce launch ‘The Irish Pond Manual: a guide to the creation and management of ponds’

An Taisce’s Legacy4LIFE project recently finished work on its ‘Ponds for Biodiversity’ project. This project worked to enhance public awareness and community consciousness about the value of these small wetland habitats for biodiversity, water quality and climate adaptation. It also worked to create guides for those interested in building their own pond.

Ponds are extraordinary reservoirs of biodiversity and have a critical role as Ireland faces significant biodiversity loss. Over 50% of Ireland’s amphibian wetlands have been lost to drainage, industrial peat extraction, pollution, and natural senescence in the past 100 years. Of the 12,200 small, enclosed water bodies across Ireland, 8,000 are less than a hectare in extent and the smallest categories have been subject to the greatest pressures.



An Taisce’s poster highlighting the importance of ponds for biodiversity. A large version of this poster is on the middle pages of this issue of the Catchments Newsletter.

Ponds have been demonstrated to host more biodiversity than rivers and lakes, particularly macroinvertebrates and less common species (two-thirds of all freshwater species!). Permanent and naturally vegetated ponds are excellent at carbon sequestration (Gilbert et al., 2014). Taylor et al. (2019) found that small ponds sequestered 20-30 times the amount of carbon compared with woodlands, grasslands and other habitats.



An Taisce’s project worked to:

- establish a network of local authorities and other bodies who understand the value of ponds, and commit to protecting/creating ponds on public lands
- create a set of demonstration sites across Ireland which demonstrate to practitioners and policy makers how ponds can help to mitigate and adapt to the effects of climate change
- ascertain the status of recent pond initiatives
- establish an ‘adopt a pond’ network of citizen scientists/ community groups to monitor and manage the newly created ponds, or existing ponds. Information is fed back to the National Biodiversity Centre
- disseminate the project’s results to policy makers, practitioners, and other stakeholders
- engage individuals to establish ponds in their gardens, with clear guidance and tips, and a portal to enter their pond location, potential for awards for the most ‘pond-friendly’ town/county in Ireland
- build capacity within Ireland for pond expertise, and operators skilled in pond creation

## Learn more:

[www.antaisce.org/ponds-for-biodiversity-resources](http://www.antaisce.org/ponds-for-biodiversity-resources)

# Opinion piece: discussion on drained peaty soils – a guide to preserving them while protecting the wider environment.

*This discussion piece was written by Donal Daly, an independent catchment scientist.*

Raising the water level in drained peatlands has a major role in achieving Ireland’s climate, water quality and biodiversity obligations, as well improving our environment generally. ‘Rewetting’ of farmed peaty soils is a controversial topic at present, with fears among the farming community that it has the potential to cause significant socio-economic impacts. Engagement with farmers and achieving agreement and collaboration will be critical to achieving the progress needed.



*Photo 1 shows a typical scenario where drainage channels in and alongside peatlands are usually >0.5 m and often >1 m deep.*

Peat is an extraordinary geological material. A striking characteristic is its high water content – 5 m of undisturbed peat may contain 4.7 m of water and as little as 0.3 m of solid plant material - as often mentioned, “*there are more solids in milk than in peat*”.

Water in peat, as with other mineral soils/subsoils and bedrock, is present as free water in the pores and cracks, but unlike mineral soils/subsoils and bedrock, it contains a significant quantity of water bound to the peat, so that water is an essential part of

the structure of the peat. Only a small proportion of the water is mobile, although this varies with the hydraulic conditions.

Peat forms in water-logged conditions, which slows the decomposition of the dead plant matter due to the absence of oxygen. The mineral content of undisturbed raised and blanket bogs may be as low as 2% by weight, whereas fen peat generally has a somewhat higher mineral-matter content because mineral-enriched groundwater is an important water source (Lindsay, *et al.*, 2014).

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The water level is a key environmental supporting condition for undisturbed and intact peatlands. The water level requirements are as follows:

- Raised bogs: within 10 cm of ground surface for approximately 90% of year (Gill *et al.* 2022)
- Blanket bogs: within 10 cm of surface in Winter and 20 cm in Summer (Flynn *et al.* 2021)
- Fens: 2.9 to 28 cm above ground level, sustained for at least 60% of the year, with the mean annual water level always above the surface (Gill *et al.* 2022)

#### *A personal reflection from the author*

*“I grew up on a farm in County Offaly. A significant proportion of the farm was cut-over bog. Over a number of years in the 1960s and 1970s my parents, with my assistance at times, drained this land and converted it to productive pastureland. This was not only vital for the economic wellbeing of the family, but also a source of pride for my parents. Therefore, I know the importance both economically and psychologically of farmed peaty soils for farmers and rural communities.”* – Donal Daly



### Farming on peatlands

Approximately 28% of peatlands (420,000 ha) (or ~5% of the total land surface) in Ireland are used for agricultural activities (Pschenyckj *et al.* 2021) and therefore potentially have a water table generally tens centimetres to over 1 m below ground level.

This is:

- negatively impacting on water quality by releasing pollutants to watercourses
- releasing greenhouse gases to the atmosphere
- leading to a reduction in both aquatic and terrestrial biodiversity
- reducing the capacity of peatlands to mitigate flooding in the Autumn and early Winter

In the Good Agricultural Practices Regulations (2022), an organic matter content greater than 20% has implications for fertilisation rates. Irrespective of the percentage in the upper 20-30 cm of the soil, the underlying material is invariably a varying thickness of peat with a high organic matter content. While farming on peaty soils may often be more challenging than on mineral soils, peaty soils are nevertheless a productive growing medium for grass (farmed peaty soils are mainly utilised as pasture in Ireland) and vegetables, and are therefore important economically for farmers with peaty soils areas. Therefore, they are a significant asset for these farmers.



Photo 2 and 3 – the implications of drainage in peatlands.

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### Wastage of Peaty Soils

While farming on peaty soils has significant detrimental implications for water quality, biodiversity, and climate, it is also not a viable medium- to long-term use of the soil in many circumstances. The lowering of the water table in these areas will already have resulted in subsidence because of three processes – shrinkage, consolidation by loss of buoyant force and contraction by capillary force.

However, wastage by oxidation is also occurring and will continue to occur. For instance, the area of peatlands in the Fens in East Anglia are less than half of what it was 400 years ago (Waltham, 2000). Peat is a wasting asset – it can be drained and farmed only at the cost of its inevitable destruction.

The implications of drainage of peatland are shown in Photo 2 and Photo 3. The fields were drained by open drainage channels and piped drainage in the late 1970s. The fields have been used for pasture and silage ground. Subsidence has occurred. Now the fields are somewhat uneven due to differential subsidence, probably caused by varying peat thicknesses overlying an undulating mineral subsoil. In addition, tree trunks are now protruding in many places above the ground surface (see photo 2 and photo 3). These fields can no longer be used as silage ground unless they are removed.

More importantly, in the coming years the peaty soil will continue to waste away, and the land surface will continue to subside until the water table is within perhaps 10-20 cm of the surface, significantly lowering the productivity of the land for the farmer.

### Looking to the future

1. In a country where approximately 20% of our land surface comprises peatlands and organic soils, raising the water table in substantial areas is an essential means of achieving not only a significant national reduction of carbon dioxide (CO<sub>2</sub>) and nitrous oxide (NO<sub>2</sub>) missions (for every 10 cm that the water table is raised, a reported reduction in greenhouse gas emissions of 5 tonnes/ha/yr occurs), but also improvements in both water quality and biodiversity.
2. Currently, farmed peaty soils are emitting CO<sub>2</sub> and NO<sub>2</sub> to air, and ammonia (NH<sub>3</sub>), dissolved organic carbon (DOC) and particulate organic carbon (POC) to watercourses. While these soils are beneficial for farmers in terms, for instance, of grass production, and are an asset currently, they are a ‘wasting’ or disappearing asset.
3. While the emphasis in the short-term may be on ‘rewetting’ areas of cut-over bogs owned by public bodies, such as Bord na Mona, raising the water table in farmed peaty soils could also be prioritised as a means of achieving rapid environmental benefits. The Teagasc Marginal Abatement Cost Curve (MACC) 2023 highlights that water table management of agricultural peat soils can have a significant potential role in reducing GHG emissions.

4. Even if there were no environmental benefits, there are significant advantages for farmers in raising the water level in the drainage ditches and the water table in the peat underlying the peaty soil while still maintaining farm production. This will slow down subsidence and peat wastage, and will ensure an economic benefit from the land, probably for many decades.
5. In a competitive global market for farm products, GHG emissions from and the carbon footprint of these products are likely to become more and more relevant to the economic well-being of farmers and rural communities. Prioritisation of measures based on the range of environmental benefits and costs is urgently needed, followed by establishment of the higher priority measures.
6. The environmental benefits of raising the water table in peatlands are so great that a payment scheme for the environmental services provided by farmers is justifiable. Payments could be based on the water levels achieved, with the highest payments for circumstances where the water level is close to ground level, enabling no or minimal carbon losses and perhaps peat formation. The FarmPEAT Project ([www.farmpeat.ie/](http://www.farmpeat.ie/)) uses the results-based approach to pay farmers for raising the water level in drainage ditches. The outcomes of this project and the experience gained provide a good example of how this could be done in future.
7. The negative conversations and atmosphere in which so-called ‘rewetting’ is being considered and communicated currently needs to change. Constructive collaboration, taking a long-term view based on the best available science, agreement on the goals, and how results should be paid for, is essential. Dialogue between policy makers, public bodies and the farming community is needed. Changing the term ‘rewetting’ to, for instance, ‘water table management’ may also be helpful.
8. Telling the story and including the issue of peat wastage due to drainage is essential; realisation and understanding of this, and then raising of water tables in peaty soils areas to a level that still allows productive farming, would have major environmental benefits, and protect these assets for farmers into the future.

**Donal Daly, Independent Catchment Scientist**

### Learn more:

A more detailed version of this article with references is available on [www.catchments.ie](http://www.catchments.ie)



## For further information

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[www.catchments.ie](http://www.catchments.ie)



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