Reimagining Irish Rivers: Working with Nature

March 22 & March 23

2021

#IrishRivers

Reimagining Irish Rivers: Working with Nature

Day 1: Restoration, Management and Biodiversity

09.00	Welcome (Catherine Dalton) Partners: **The Maigue Rivers Trust/MIC Geography, Leaf/LC&CC, Rivers Trust, LAWPRO,** Housekeeping
09.10	Keynote: **Rewilding** Pádraic Fogarty (Irish Wildlife Trust)
09.30	**Riparian Management in the Wild Nephin Ballycroy National Park** William Cormacan/Sam Birch (NPWS)
09.45	**Q&A** (15 mins)

15 mins break 10-10.15

Session 1.1: Managing river flow (Chair: Fran Igoe (assistant C. Dalton))

10.15	**Hydromorphology - what does a natural river look like?** Hamish Moir (cBEC)
10.30	**Natural Flood Management: the potential, the process** Dan Turner (The Rivers Trust)
10.45	**The Irish context for nature-based solutions for Flood Risk Management** Conor Galvin (OPW)
11.00	**Dam and weir removal practical examples and procedural issues** Alan Cullagh (IFI)
11.15	**Q&A** (15 mins)

15 mins break 11.30-11.45

Session 1.2: Tackling biodiversity threats in our river catchments (Chair Anne Goggin (assistant M. Horton))

11.45	**Invasive species threat and responses** Collette O'Flynn (NBDC)
12.00	**Invasive species in river corridors – giant hogweed control on the River Loobagh** Fran Giaquinto (Indep. Plant ecologist)
12.15	**Biosecurity and conserving endangered crayfish** Brian Nelson (NPWS)
12.30	**Q&A** (15 mins)

Day 2: Communities & Rivers

Session 2.1: Catchment management through Partnership working (Chair: Mark Horton (assistant A.Goggin))

09.00	Welcome (Mark)Partnership Housekeeping
09.05	**The Role of Rivers Trusts in Connecting Communities and Other Stakeholders** Liz Gabbett (Maigue Rivers Trust)/Trish Murphy (Inishowen Rivers Trust)
09.20	**Bride - EIP Report** Donal Sheehan
09.35	**Mulkear - EIP Report** Carol Quish
09.50	**Allow - EIP Report** Maura Walsh Maura Walsh
10.05	**Duncannon - EIP** Report Eoin Kinsella
10.20	**Q&A** (10 mins)

15 mins break 10.30-10.45

Session 2.2 Achieving for rivers with small resources (Chair: Fran Igoe (assistant C.Dalton))

10.45	**Integrating communities into catchment management** Fran Igoe (LAWPRO)
11.00	**Proactive community engagement for scalable river restoration** Ruairí Ó Conchúir (LAWPRO)
11.15	Six communities working on the ground - local initiatives **Geashill Tidy Towns, Castleconnell Fisheries Association, Friends of the Camac, Cloughaneely Angling Association, Suircan, Kilkenny LEADER Partnership**
11.45	**Developing support tools for citizen scientists** Michelle Walker (The Rivers Trust)
12.00	**The role of citizen science in river water quality monitoring** Mary Kelly Quinn (UCD)/Simon Harrison (UCC)
12.15	**Q&A** (15 mins) & Closing Remarks

Organising Partners

Buaiteoir/Winner 2020 - Luimneach/Limerick EUROPEAN GREEN LEAF	Limerick received the European Green Leaf Award 2020. The award recognises cities' commitment to better environmental outcomes. 'Reimagining Irish Rivers: Working with Nature' is a key event in a programme of exciting and engaging events to raise awareness and build capacity around environmental issues.
Limerick CITY & COUNTY COUNCIL	Limerick City and County Council covers a geographical area of 2755 sq.km and provides a wide range of services to more than 191,000 people - Limerick City: 57,106 and Limerick County: 134,703.

Local Authority Waters Programme vibrant communities | catchment assessment | healthy waters	The Local Authorites Water Programme (LAWPRO) was established to coordinate efforts by Local Authorities, support public bodies and other stakeholders to achieve the water quality objectives of the EU Water Framework Directive. LAWPRO support local communities to get involved in caring for their local waters and participate in decision making and river basin management plans. LAWPRO additionally apply catchment science, identify the issues impacting on water quality in the priority areas for action and refer them for action.

The Rivers Trust	The Rivers Trust (www.theriverstrust.org) is the umbrella organisation for 60 local member trusts in the UK and Ireland. The Trust is the only group of environmental charities, dedicated to protecting and improving river environments for the benefit of people and wildlife.

MAIGUE RIVERS TRUST	The Maigue Rivers Trust (www.maigueriverstrust.ie) was established in 2016. The mission of this charitable trust is "*To protect, enhance and cherish the rivers and lakes of the Maigue catchment for the benefit and enjoyment of all.*" The trust aims to work with local communities to ensure that the rivers and lakes of the Maigue catchment can achieve their full potential both environmentally and recreationally.

MIC COLÁISTE MHUIRE GAN SMÁL MARY IMMACULATE COLLEGE	The Geography Department was established in Mary Immaculate College in 1974. The department provides geography to degree level as a major subject on the BA in Liberal Arts in both MIC and the University of Limerick (UL), as well as the BSc in Physical Education in UL. In addition, elective modules are provided for students on the BEd in Primary Teaching offered at MIC.

Abstracts & Speaker Biographies

Day 1 Restoration, Management and Biodiversity

Rewilding

Pádraic Fogarty (Irish Wildlife Trust)

Abstract: Rewilding is the cheapest, fastest and easiest way to restore natural ecosystems and, in doing so, to address the biodiversity and climate emergency. But what is rewilding? How does it apply to Ireland and what could it mean for our rivers? How can we apply it in a socially just way? And how can it be done in a way that promotes co-benefits, such as addressing water pollution, flooding, soil protection, carbon storage, biodiversity restoration and amenity? This talk will look at rewilding Irish rivers and why we need to move from theory to practice.

Pádraic Fogarty
Irish Wildlife Trust

Pádraic Fogarty is an ecologist and environmentalist. He has been Campaign Officer for the Irish Wildlife Trust (IWT) since 2013 and was its Chairman from 2009 to 2013. Pádraic is the author of *Whittled Away – Ireland's Vanishing Nature,* editor of the IWT's quarterly *'Irish Wildlife'* magazine and recently launched a podcast series reimagining Ireland called *Shaping New Mountains.*

Riparian Management in the Wild Nephin Ballycroy National Park

William Cormacan & Sam Birch (National Parks & Wildlife Service)

Abstract: Wild Nephin Ballycroy National Park is Ireland's sixth National Park and located on the western seaboard in Mayo. It comprises of 11,000 hectares of Atlantic blanket bog and mountainous terrain, which is dominated by the Nephin Beg mountain range, and a further 4,000 hectares of relative poor conifer plantation. The National Park forms part of the headwaters for four major salmonid catchments – the Owenmore, the Owenduff, the Deel and the Burrishoole, with the latter three being specifically designated SACs for the conservation of Atlantic Salmon and other freshwater species. The NPWS presentation will outline some of the management initiative planned and ongoing in the National Park to help conserve these unique river systems.

William Cormacan
Western Regional Manager (National Parks & Wildlife Service)

As Regional Manager in the Western Region William is responsible for 40 staff, two National Parks (Connemara National Park and Wild Nephin Ballycroy National Park), six Nature Reserves and several other state properties He is responsible for the overall management of the region and must ensure the objectives of protecting, maintaining, conserving, managing, supporting and presenting natural heritage is achieved. William is an environmental science graduate and additionally worked as an agricultural and environmental consultant and was a Department of Agriculture approved agri-environmental planner.

Sam Birch
District Conservation Officer, National Parks & Wildlife Service

Sam Birch is currently the District Conservation Officer for Mayo including Wild Nephin National Park. Sam's current role includes managing a team of Conservation Rangers that carry out a range of nature conservation tasks including enforcement of national and European legislation and monitoring habitats, species and designated conservations areas. Sam has previously worked on the Corncrake Conservation Project and the Bioclass Project. Sam has degrees in Environmental Science, Business Studies, Ecological Assessment and has more recently completed courses in areas such as GIS and sustainable deer management.

Session 1.1: Managing river flow
(Chair: Fran Igoe)

Hydromorphology - what does a natural river look like?
Hamish Moir (cBEC Ecoengineering)

Abstract: Setting 'targets' for the restoration of rivers (including their channels, riparian margins, floodplains and headwaters) requires an understanding of their 'natural' condition and functioning. The interaction of water flow, sediments and vegetation (importantly including 'large wood') defines the fundamental geomorphic (or 'hydromorphic') processes responsible for the physical state of river systems and, therefore, the habitats and biota they support. However, these interactions are spatially and temporally complex and determining a 'reference state' for a river must consider that:

- the physical character of a river is continuously evolving in relation to environmental changes/succession;
- previous environmental conditions (*e.g.*, glaciation) can have a significant 'legacy' effect on the current character of a river;
- human activity (past, present and future) also exerts important contemporary and legacy influences on river character that, to some degree, should be regarded as an integral (and 'natural') component of the fluvial environment.

It is therefore not appropriate to define a single fixed morphology that represents 'optimal' river condition. Rather, a practicable target for reference conditions is to integrate the necessity of dynamic river behaviour, represent a 'low, not no' human impact condition (*i.e.*, that permits sustainable utilisation of the river environment) and accept that previous biophysical conditions may not be achievable due to intervening changes in larger scale environmental (*e.g.*, climate change) and land-use controls. Adopting such a realistic approach to defining 'natural' condition provides a much greater practical opportunity to deliver and maintain a sustainable river environment that supports both ecological function and necessary human interests.

Hamish Moir
cBEC Ecoengineering

Dr Hamish Moir is UK Managing Director of cBEC who are restoration specialists for the water environment. He has extensive training in the fields of fluvial geomorphology, in-stream ecology interactions and sustainable river engineering. His consulting and research work experience includes the areas of salmonid physical habitat characterisation, catchment management and river (channel/ floodplain/ wetland) restoration.

Natural Flood Management: Wyre Investment Readiness Project

Dan Turner (The Rivers Trust)

Abstract: The Rivers Trust and Wyre Rivers Trust are leading a new pioneering project to investigate innovative funding opportunities for implementing Natural Flood Management (NFM) measures, to help reduce the risk of flooding from the river Wyre and its tributaries in Churchtown.
The project will explore the potential for securing green finance from investors which can be paid back over several years by a range of organisations, which will benefit from the reduced flood risk and other benefits from the project.

This project is being delivered by The Rivers Trust, Wyre Rivers Trust, Environment Agency (EA), United Utilities, Triodos Bank, Co-op Insurance and FloodRE with funding from Esme Fairburn Foundation.

Dan Turner
The Rivers Trust

Dan Turner is a Project Manager at the Rivers Trust. Dan is lead on the Wyre Natural Flood Management (NFM) Investment Readiness project and is a co-author for the Ciria NFM manual. Dan has led several natural flood management projects delivering physical interventions on the ground and recently completed a PGcert in Flood Risk and Coastal Management. Brought up on a large commercial farm, Dan has extensive experience of the agricultural sector.

The Irish context for nature-based solutions for Flood Risk Management

Conor Galvin (Office of Public Works)

Abstract: In May 2018 the OPW published twenty-nine river-basin scale Flood Risk Management Plans that set out the whole of Government approach to managing flood risk in Ireland. Each of these Plans includes a specific measure to identify nature-based solutions that can be applied to reduce flood risk and achieve multiple co-benefits.

This presentation details how the OPW are implementing this measure through research, pilot-projects, and as part of the programme of flood relief schemes.

Conor Galvin
Office of Public Works

Conor Galvin is a Chartered Engineer with fifteen years' experience in the Flood Relief and Risk Management Division of the Office of Public Works. Conor previously managed the South Western Catchment Flood Risk Assessment and Management Study. He is currently heading up a team responsible for Climate Change Adaptation, Spatial Planning Services, Flood Map updates, national scale risk assessments, and Nature-based Catchment Management Solutions.

Dam and weir removal practical examples and procedural issues

Alan Cullagh (Inland Fisheries Ireland)

Abstract: Weirs dams and other manmade physical structures are classed as barriers to both upstream and downstream for fish species and aquatic organisms. Barrier's block and slow the flow of water, creating upstream ponding. This habitat is more akin to a lake, resulting in loss of important habitats e.g. riffles. These shallow, bubbling-water areas are critical spawning sites for salmonid and lamprey.
Habitat degradation, fragmentation and pollution are the greatest threats to freshwater biodiversity. These threats may be caused directly or indirectly by dams and weirs, meaning the Water Framework Directive (WFD) 2000/60/EC is directly applicable to these structures. The aim of the WFD is to improve the ecological and chemical status of watercourses and to restore them to a more natural state where feasible.
In this talk, we will describe what a barrier consists of, its implications and what mitigating measures can be implemented. This will involve the removal of the barrier or the construction of natural type fish passes to alleviate the difficulties created by barriers. Two simple options for barrier removal will be discussed using real project examples.

Alan Cullagh
Inland Fisheries Ireland

Alan Cullagh is a member of IFI's Operations team with over 30 years' experience in fisheries management and protection. His specialist area is in physical infrastructure issues in rivers and mitigating their impact on migratory fish. He led the POMS survey on the River Nore catchment, identifying over 500 barriers and has since been involved with the National Barrier Atlas which has identified approximately 5,000 barriers. He is involved in designing, planning, and overseeing barrier removal, rock ramp construction and other mitigation measures. The key focus is the naturalization and the connectivity of the river basin.

Session 1.2: Tackling biodiversity threats in our river catchments (Chair Anne Goggin)

Invasive species threats and responses

Colette O'Flynn (National Biodiversity Data Centre)

Abstract: One of the more recent but significant threats to Irish rivers is the introduction of invasive alien species. When present, they can thrive to the point of negatively impacting on native species, altering habitats, and affecting ecosystem functioning and services. The threat from invasive alien species is increasing and a hierarchy of measures is required prevent further introductions and tackle the species already present. Whether we work or play in or near the water, we can all take simple actions to reduce the threat to our rivers from invasive alien species.

Colette O'Flynn
National Biodiversity Data Centre

Colette is responsible for the Invasive Species work **programmes** of the National Biodiversity Data Centre. She manages the National Invasive Species Database, provides coordination of invasive species data and information, and contributes advice and policy support at the national and European level.

Invasive species in river corridors – giant hogweed control on the River Loobagh **Fran Giaquinto** (Indep. Plant Ecologist)

Abstract: Here, we share observations and findings of the first 2 years of a 3-year programme to control giant hogweed and restore native vegetation to the riparian margins of the River Loobagh corridor in Co. Limerick. The approach has focused on manual methods with minimal use of herbicides. This project is led by Limerick City and County Council in partnership with Ballyhoura Development CLG and is funded by the DHLGH through the National Biodiversity Action Plan.

Fran Giaquinto
Indep. Plant ecologist

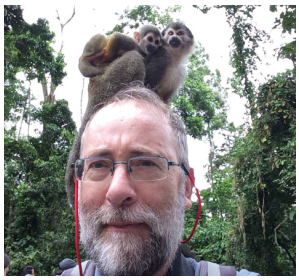
Frances Giaquinto is a plant ecologist who specialises in invasive species and the negative effects they may have on the surrounding natural environment. She focuses on developing evidence-based solutions to environmental problems, particularly for the restoration of damaged habitats and the protection of biodiversity.

Biosecurity and conserving endangered crayfish
Brian Nelson (National Park & Wildlife Service)

Abstract: Crayfish species worldwide are threatened by disease of Crayfish Plague which is fatal to non-American crayfish species. In Ireland outbreaks of Crayfish Plague have been proven since 2015 affecting rivers across the island. How it arrived in Ireland is unclear but it has happened several times and was ultimately caused by human activity. The impact of the disease and actions needed to protect the native crayfish species will be discussed.

Brian Nelson
National Parks & Wildlife Service

Brian Nelson is the Invertebrate Ecologist with the National Parks & Wildlife Service with responsibility for White-clawed Crayfish. He is interested in the biogeography and conservation of all Irish invertebrates with a special interest in freshwater and wetland species.



Day 2 Communities & Rivers

Session 2.1: Catchment management through Partnership working (Chair: Mark Horton)

The Role of Rivers Trusts in Connecting Communities and Other Stakeholders

Liz Gabbett Maigue Rivers Trust **Trish Murphy** Inishowen Rivers Trust

Abstract: Rivers Trusts are organisations of local people who have come together to identify and implement practical solutions to protect and enhance their local waterbodies. The Rivers Trust movement in Ireland and the UK has shown its unique value in many ways, particularly in bridging the communication gap between local communities, government agencies and academia. Trish and Liz's presentation details their experience on how to build connections between the stakeholders in their respective catchments.

Liz Gabbett
Maigue Rivers Trust

Liz Gabbett is the project officer for Maigue Rivers Trust. The trust aims to work with local communities to ensure that the rivers and lakes of the Maigue catchment can achieve their full potential. Liz grew up on a dairy farm and is committed to working with farmers to improve on-farm water and biodiversity sustainability. Liz has a degree in Zoology-Parasitology and a masters in Technical Communication and eLearning.

Trish Murphy
Inishowen Rivers Trust

Trish Murphy is a founding member and current project officer for the Inishowen Rivers Trust. Trish has a PhD in Zoology from UCC and in 2020 completed a course on Nature Based Solutions for Water and Land Management at Cranfield University. Trish has delivered science education programmes throughout Donegal. She also actively promotes experiential learning and education as a key enabler for community based environmental engagement.

The BRIDE Project - EIP Report

Donal Sheehan

Abstract: The BRIDE (Biodiversity Regeneration In a Dairying Environment) Project was set up in 2018 as a pilot project to create a template for farmers in an intensive farming landscape to restore the farmland biodiversity that has been lost through farm intensification over the last 50 years. The project carried out baseline biodiversity surveys in 2018 and this will be repeated in 2023. It is hoped to see a marked improvement at that stage, based on tailored Biodiversity Management Plans (BMP's) and incentive-based payments (RBP's) that reward farmers for creating and managing habitats on their farms. The initiative is a DAFM/EU funded project.

Donal Sheehan
BRIDE EIP

Donal Sheehan is a 70-cow dairy farmer based near Castlelyons in Co. Cork. Donal has a keen in interest in creating a more sustainable way of farming by increasing biodiversity, lowering carbon footprint and improving water quality. Donal is one of the main drivers (and project leader) for the BRIDE (Biodiversity Regeneration in a Dairying Environment) project and was the 2018 Farming for Nature Ambassador.

Duncannon EIP
Eoin Kinsella

Abstract: Improving the bacterial quality of the two coastal streams that flow onto Duncannon beach, by reducing pollution from agricultural and domestic sources. Using a framework of integrated catchment management, whereby a range of pollution sources and types are considered in unison, for multiple benefits in an integrated, holistic manner. The scheme uses a results based reward scheme within the agricultural setting.

Eoin Kinsella
Wexford County Council

Eoin Kinsella is an Agricultural Scientist working as Project manager of Duncannon Blue Flag Farming & Communities Scheme European Innovation Project. He has a background in agri-environmental land management with a focus on nutrient levels in water and is a member of the Agricultural Science Association and also farms a pedigree herd of Parthenaise cows in partnership with his father.

Abstract: Mulkear EIP
Carol Quish

Abstract: Mulkear European Innovation Programme (MEIP) received funding of c. €1.2 m for a five year project (2019 to 2023). The project office is located in Pallasgreen, Co. Limerick. The overarching objective of MEIP is to work collaboratively with catchment farmers and MEIP partners to improve water quality by a process of shared learning. The MEIP partners include LAWPRO, ASSAP, Limerick and Tipperary local authorities and four dairy processing co-ops. The Management formation consists of a three person Board, Advisory and Steering Panel (SAP) and an Operational Group (OP). There will be a minimum of 60 participant farmers from the seven priority action areas in the catchment. There is a community outreach element which focuses on local schools and community groups in the catchment.

Carol Quish
Mulkear EIP

Carol Quish is Project Manager for Mulkear European Innovation Programme (EIP). Carol grew up on a Dairy farm in East Limerick and has worked in the Dairy processing industry and was self-employed in the solid fuel and oil industry. In addition to her senior management positions Carol is a qualified accountant, is completing a PhD at the University of Limerick, judges and competes in Eventing and Dressage and is a keen amateur photographer.

Abstract: Duhallow EIP

Maura Walsh (IRD Duhallow)

Abstract: IRD Duhallow has been committed to the sustainable development of the wider Duhallow Region and in particular the river catchments within the Blackwater river SAC, for over 30 years. Our Duhallow Farming for Blue Dot Catchments EIP will assist in the transition to a low carbon economy & deliver GHG savings. It will have an impact on policy in terms of climate, catchment management and high nature value farming as well as further demonstrating the value of Integrated Rural Development, the capacity of Local Development Companies to deliver across a wide range of initiatives and the resource that LDC's are to government and society. Our aim is to develop a model which can be implemented in agricultural catchments nationally and will subsequently impact future Agri-environment policies, in particular the results-based payment system. Our EIP will also assist Ireland in meeting its international obligations under the Water Framework Directive & climate agreements.

Maura Walsh
IRD Duhallow

Maura Walsh is CEO of IRD Duhallow a rural development company established in 1989, which covers the Sliabh Luachra area of East Kerry, North-West and Mid Cork. Her work has focussed on the Social, Cultural, Economic and Environmental development of the region. IRD Duhallow has implemented a number of National Exchequer funded as well as European Programmes including Social Inclusion, Tus and RSS and LEADER, Ability, Two LIFE Environment programmes and European Innovation Fund (Agri).

Session 2.2 Achieving for rivers with small resources (Chair: Fran Igoe)

Integrating Communities into Catchment Management

Fran Igoe (Local Authority Waters Programme)

Abstract: The River Basin Management Plan (2018-2022) is Ireland's road map to delivering water quality targets in compliance with the EU Water Framework Directive. It takes an Integrated Catchment Management approach recognising that all stakeholders have a role. This includes the public and the local communities within which we live. Having a sense of place is very important for people's identity and has a strong influence on our general wellbeing. Feedback from various public consultations show that community interest in local water bodies is high and there is a strong desire to get more involved in local water projects. Understanding the context (location, geography, geology, hydrology, history, ecology etc) of where a community sits within a catchment is important as it allows for a more holistic (or joined up) approach, leading to better planning of projects and more effective project outcomes in terms of the environment and community gain.
This presentation discusses this approach and encourages community groups to think catchments, looking to nature as a guide, to ensure that local community projects deliver for the catchment as well at the local level.

Fran Igoe
Local Authority Waters Programme

Fran Igoe is the Southern Regional Coordinator of the Local Authority Waters Programme. He previously worked on EU co-funded large scale nature conservation catchment based programmes with the rural development company IRD Duhallow, with local communities on the River Blackwater (Munster). He also worked with Inland Fisheries Ireland for 15 years, primarily on River Restoration, Research and Catchment Management and has a PhD in Zoology.

Proactive Community Engagement For Scalable River Restoration in Ireland

Ruairí Ó Conchúir (Local Authority Waters Programme)

Abstract: Since the commencement of the 1st Cycle of the WFD significant river restoration work has taken place in Ireland. Much of this work has lacked a coordinated catchment focus and has, with notable exceptions, largely taken place devoid of community input. To ensure proactive community engagement, for scalable river restoration, perceptions need to change. A new understanding of how we perceive and value our rivers and how we understand river restoration needs to be developed. It requires capacity building at multiple levels and a shared understanding of river restoration principles and techniques within a uniquely Irish context and not an imposed imported model. It must support all partners to identify, co-design, co-develop and implement catchment scale projects to protect and restore rivers and enhance water quality and related instream habitat.

Ruairí Ó Conchúir
Local Authority Waters Programme

Ruairí Ó Conchuir is Community Water Officer for Clare, Limerick and Tipperary. He has more than 25 years' work experience in conservation management, land reform and community based natural resource management. Ruairí has worked in large conservation projects, including 10 years in two multi award winning EU LIFE projects, BurrenLIFE and MulkearLIFE, the latter focused on integrated catchment management (Lower Shannon SAC).

Six communities working on the ground - local initiatives

Pat Foley
Geashill Tidy Towns

Pat is a former Art Teacher and is the vice chair of Geashill Tidy Towns. Over recent years Geashill village has made great progress in the National Tidy Towns competition. For the committee and volunteers, being awarded joint 3rd place out of 918 entries in 2019, is the latest in a long list of highpoints. Geashill Tidy Towns is very much community driven, working hand in hand with other local organisations – and with the village National School.

Dr. Pat O'Connor **Castleconnell Fisheries Association** Pat is from Castleconnell, Co. Limerick on the Lower River Shannon SAC. Pat is Chairperson of the Castleconnell Fisheries Association who work to preserve, protect and restore this internationally important river and its inputting water bodies. Their work is focused on improving water quality, instream and riparian habitat for salmonid and general biodiversity. They have successfully delivered multiple river restoration projects over the past 14 years.	
Brian Ronan, **Friends of the Camac** Brian is the current Treasurer of FOTC (Friends of the Camac). He has been involved with the group since their formation in 2017. He lives in Clondalkin close to where the group's activities are focused.	
Colm Gallagher **Cloughaneely Angling Association** Colm is a retired primary school teacher and lives in Dublin. He is a keen salmon and trout angler and has fished widely in Ireland and Scotland. His grandfather was Station Master for the Londondonderry and Lough Swilly Railway at Falcarragh station in Co. Donegal, on the banks of the river Ray. It was here his father and his uncles taught him to fish for trout and salmon. He has been involved with Cloughaneely Angling for many years and has served as Chairman since 2009. He is committed to restoring the rivers Ray and Tullaghobegley to high status both as a sustainable resource for angling and as an environment of the highest quality.	
Dr. Alan Moore **Suircan** Dr Alan Moore (a retired medic) is Chair of Suircan Environmental a community group dedicated to the River Suir's health which also champions wider environmental issues. He is also involved in a new national group, 'Hedgerows Ireland' which has recently met with two government ministers to argue for better legal protection and proper incentivisation for hedgerows. He believes that to make a difference to the biodiversity/climate crisis, we have to both lead by example locally as well as use people- power to lobby, demonstrate and use the media to apply pressure where it matters.	
Mairead Rohan **Kilkenny LEADER Partnership** Mairead is the Enterprise Development Officer with Kilkenny LEADER Partnership and has almost 19 years' experience working with communities, enterprises and statutory bodies on the EU LEADER Rural Development Programme. Kilkenny is an inland county with a rich tapestry of rivers flowing throughout namely the Nore, Barrow and Suir. The Nore Vision initiative began in 2017/2018 during a developmental process to help small tourism enterprises and residents of riverside towns and villages to look towards the river and realise their potential.	

Developing support tools for citizen scientists

Michelle Walker (The Rivers Trust)

Abstract: The water environment is facing growing pressures around pollution, climate change and population growth. Tackling these 'wicked problems' requires integrated systems thinking to assess the challenges and identify solutions; and an adaptive management approach to evaluate the success of measures and adjust future delivery.
Data is the lifeblood of this process, yet environmental monitoring continues to be undervalued as an investment in environmental protection leading to fragmented decision making. The Rivers Trust works to fill this gap in knowledge by supporting and promoting citizen science approaches which provide detailed, timely and reliable data as well as multiple societal benefits.

Michelle Walker
The Rivers Trust

Michelle Walker is Deputy Technical Director with the Rivers Trust, jointly heading up the technical team providing GIS, modelling, monitoring, and data management support to Rivers Trusts and CaBA Catchment Partnerships. She has been working with The Rivers Trust since 2010 and co-founding the Catchment Data User Group in 2012 to promote collaboration and access to data and tools underpinning integrated catchment management. Michelle is now leading the development of the Catchment Monitoring Cooperative which aims to create a standardised and integrated local evidence base to fill knowledge gaps, support better decision making and enable locally-driven environmental improvement.

The role of citizen science in river water quality monitoring

Mary Kelly-Quinn (UCD) **& Simon Harrison** (UCC)

Abstract: It is widely acknowledged that there are huge data gaps on the quality of surface waters globally and Ireland is no exception. This is particularly true for the small stream network which represents 75% of the river network, at total of 64,000km of 1st and 2nd order streams, so called headwaters. There are few EPA monitoring points on small streams and the water quality of much of the network is unknown. At the same time this is the most vulnerable part of the river network due to high land-water contact and low dilution capacity. Water quality in the headwaters will also influence water quality further downstream and efforts to meet WFD objectives. Here is whether citizen science is best targeted. Various individuals in collaboration with LAWPRO have been working to develop a strategy to operationalise the potential of citizen science. This presentation will provide an overview of the strategy and challenges to be addressed to enable effective citizen science, together with progress to date in terms of monitoring schemes (based on macroinvertebrates), which are targeting different levels of expertise, data handling and communication.

Mary Kelly-Quinn
University College Dublin

Mary Kelly-Quinn is an associate professor in the School of Biology and Environmental Science. Her research focuses on assessment of land-use and other anthropogenic activities on the physical, hydrochemical and ecological quality of surface waters with particular reference to multiple stressors and climate change. Among her current projects are RECONNECT (mapping and assessing barrier impacts on rivers, SSNet (on small streams) and ESDecide (freshwater ecosystem services decision support. She is also collaborating on a project on natural capital accounting in Ireland and further afield (Ethiopia and Kenya) on water quality issues.

Simon Harrison
University College Cork

Simon Harrison's research interests include the ecology of streams, rivers, wetlands and lakes; freshwater biomonitoring; ecology of salmonids; restoration ecology; catchment management; links between agriculture and freshwaters. His research has focussed on 1) impacts of riparian vegetation on stream ecology and 2) pollution and nutrient enrichment of streams and lakes.