



Reimagining Irish Rivers: Working with Nature



Online Zoom Conference Webinar

March 22 & March 23, 2021

#IrishRivers

Organisers:

Catherine Dalton (Mague Rivers Trust and Department Geography MIC-UL)

Anne Goggin (European Green Leaf Award 2020 and Limerick City and County Council)

Fran Igoe (Local Authorities Water Programme)

Mark Horton (The Rivers Trust)

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 (Co-Chair 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 (Co-Chair 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 (Co-Chair 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 (Co-Chair 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

	<p>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.</p> <p>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.</p>
	<p>The Local Authorities 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.</p>
	<p>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.</p>
	<p>The Maigue Rivers Trust (www.mauguerverstrust.ie) was established in 2016. The mission of this charitable trust is <i>"To protect, enhance and cherish the rivers and lakes of the Maigue catchment for the benefit and enjoyment of all."</i> 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.</p>
	<p>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.</p>

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

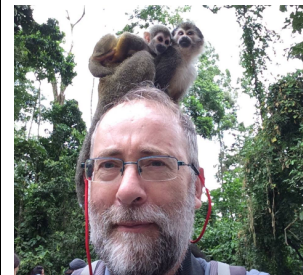
Brian Nelson (National Park & Wildlife Service)

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 Mague 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
Mague Rivers Trust

Liz Gabbett is the project officer for Mague Rivers Trust. The trust aims to work with local communities to ensure that the rivers and lakes of the Mague 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 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.

**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.



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 as 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 Londonderry 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.



Questions & Answers and Chat

Day 1 Restoration, Management and Biodiversity

Rewilding

Pádraic Fogarty (Irish Wildlife Trust)

Q&A

- Is there a movement to introduce Beavers (as nature's flood engineers) in Ireland?
- Why has the law that directs that OPW to drain streams and rivers not been changed? This work is really damaging the habitat along our waterways.
- We really ignore the soil and floods also being a soil challenge - with compaction, pouching and only growing shallow rooted monocrops of rye grass and then over ploughing? How can we address these challenges?
- Who is in charge of rivers through Blackrock Co. Dublin as they change so much from week to week?
- Are there any active rewilding projects on a river in Ireland?
- At what scale do you think rewilding should / can be done in Ireland? Like how big should these areas be and in what locations would they be most useful?
- We have online technology now to detect increase in bacteria or virus in water, drinking water sources and wastewater, would this be useful for river deployment?
- Why are the different bodies not communicating with each other like IFA, COILLTE, water catchments etc on a national level. There is now forestry along major stretches of a riverway where I live which has blue dot status and farmers are clearing much of the rest of the river banks. What can be done?
- What about the impacts of N fertiliser use on peatlands and national parks? how can this be addressed?
- Do you think there are areas where farmers should be incentivised to give over their land to nature (full re-wilding) in order to bring back pristine Q5 rivers and freshwater pearl mussel?
- Is there a worry that invasive species may invade and take over rewilded areas?
- Do you have any examples of successful projects that affected public attitudes and behaviour towards pollution (dumping rubbish) in riverside areas?
- Rewilding as noted has benefits from a biodiversity perspective. In locations where properties are situated within the floodplain does this constrain options available with respect to reconnecting the river and the floodplain?
- Rivers and their riparian zones are under destruction continuously, drainage, realignment, culverts and gravel removal to create more productive land, why, due mainly to the 'use it or lose it' policy for agriculture. Some landowners unwilling have to remove scrub, hedgerows etc or they will not be paid. But then get paid for bird boxes. Fencing one river, yet in another area reclaiming hectares of wild land removing all its biodiversity and introducing drainage changing another river process, for payment. We know the solutions for many years, but it is not allowed. For every biodiversity project, which are productive and innovative projects, there is an even large destruction project underway. Why can't the approach to conservation be payment to leave the habitat alone, incentive farmers/landowners to leave the scrub, the floodplains, the rivers and wood debris alone, let it take its natural course.
- Is there any hope to bring back wolves in this century, taking into account that any such move must be beneficial to the wolves?
- Can the rewilding of our rivers be safeguarded under the Landscape Convention 2000 to which Ireland signed up?
- Can you provide an update on his petition for the amendment to the Arterial Drainage Act. Has there been any feedback at a ministerial / Govt level on political will for change?
- A big fear of river management is flooding. As Padraic says, the uplands is the place to start, where we can slow the flow using swales and percolation areas which are also good for biodiversity. How about making this a mandatory part of upland management?
- The idea of rewilding anything is and was in the mind of many people in the past - it is not new - but, the management of rivers was in the hands of diverse 'authorities' presently and in the past. Local people and communities with live-long experiences and knowledge should be listened to, especially when they see/notice small and large changes and events on their rivers.

Chat

- What do you think about allowing drainage for human blue activities i.e. water sports, Is this right?

- A really good video about how badly wrong they have got things in New Zealand can be seen here. It's a real warning to us all. <https://www.abc.net.au/foreign/troubled-waters/13253728>
- So interesting thanks will look after local rivers now
- All streams and the river Liffey around Celbridge and downstream from it to the Leixlip water treatment plant are EPA protected drinking water rivers - ignored by builders, not known or understood by many KCC personnel, and not taken seriously, with a massive (one hundred and sixty thousand tons - 160 000 tons) unauthorised landfill sitting on top of an aquifer in a bog that is a source of this drinking water system and yet, nothing done despite years of trying to address this - very unsatisfactory - many toxic intolerant plant species have since disappeared
- Rivers could form an integral part of an 'All-Ireland Wildlife Web' bit.ly/392mmIH
- Are Sitka spruce and high levels of grazing sheep compatible with creating a natural wilderness?
- Given the impacts from drainage activities how can there be no Adverse Effects on the conservation objectives of SACs/SPAs?
- There are many problems in NZ too with glyphosate
- A family at Dunsany in Meath are rewilding a considerable amount of the large estate.
- The image of the embankment works used in this morning's presentation was not arterial drainage maintenance related. This included embankment works to protect properties and a nursing home at risk of flooding. Properties had flood here the year previous.
- Note work done in Kielder, Northumberland in restoring bogs - Border Mires Active Blanket Bog Rehabilitation Project?
- Who gave permission for these buildings to be constructed in an area susceptible to flooding?
- For information <https://my.uplift.ie/petitions/reform-the-arterial-drainage-act>
- For context, Recent review paper on riparian buffers including buffer width (Evaluating riparian solutions to multiple stressor problems in river ecosystems) <https://pubmed.ncbi.nlm.nih.gov/29673937/>

Riparian Management in the Wild Nephin Ballycroy National Park

William Cormacan (NPWS)

Sam Birch (NPWS)

Q&A

- Can you explain "fell to waste" please?
- Are the planting tubes biodegradable?
- Much of the woodland is coniferous - why not more deciduous especially around the river areas?
- Can rhododendron grow on functioning bog?
- Why not remove more conifers? (Rather than just the 25 m buffers?)
- Is there a reason you chose to re-establish the riparian vegetation 25m either side of the river? Is that typically a good number for most rivers?
- What species of native Irish trees have you planted?
- Do you envisage a time when Rhododendron might be completely eradicated or will this be a permanent fire-fighting exercise
- Deer and sheep eat the native trees planted
- Do you use Salix species as part of your replanting?
- Re deer fencing - How does this fit in with rewilding? Are the deer not seen as part of the wild nature? Where will they go if their movement is restricted? Would it not be better to manage their numbers by careful culling of weaker animals as would happen if there were natural predators?
- How did you treat the Rhododendron?
- How is Rhododendron treated? Are chemicals (i.e. herbicides) used? Which one(s)?
- Which method of rhododendron clearance are you using? If it is stem injection and the dead stems are left standing, will this not cause a fire hazard later.
- What method was used to characterise the Owenduff River?

- What consideration has been given to rewilding parts of the Nephin i.e. not planting but letting the land do its thing once issues are dealt with and considering the deer, fence off smaller areas where you do want specific projects?
- Wild rivers label. Can we have details on how to apply?
- What other invasive species are you managing?
- Could someone talk about knotweed in riparian habitats please?
- Where do you source native Irish plants?
- What do you use to treat the Rhododendron and how do you treat it?
- Why are you employing 'fell to waste' policy rather than allowing deadwood to naturally decompose?
- It is positive to see what is happening at Wild Nephin. What can be done about invasive species in private lands encroaching onto European designated sites. Example Pettigo Plateau in Donegal
- What did you mean by "treating the Rhodo" when trying to lessen the invasive species. Did you use herbicides so close to the river?
- The NPWS have river set backs but others seem to suggest trees right down to the river bank. The set back is probably more correct as herbivores did keep river banks clear of trees, there is old evidence for this. Also some work from the UK has shown that riparian (on river bank) tree cover reduces biodiversity on the river bank. Which is it - a set back of X meters or trees at the water edge.
- Plastic tubes for trees cause pollution, often fall over as the stake breaks at base breaking the tree above the root. Observation in state forest indicates a negligence around removing these plastic tubes. They are forgotten and there is a plastic litter issue. Maybe large area deer fencing or massive seed broadcasting of alder and birch seed would be better?
- Is deer damage an ongoing issue even when trees reach the top of the protective tube? And if so what's the solution.
- What chemicals have been used to control the rhododendron along the Owenduff?
- Why do you think woodland restoration gets all the attention in a wet country such as Ireland when likely in the long distant past we probably had as much wetlands as forests if not more.
- The conifer plantations! Why is no one discussing them and the damage they do? How likely is it that the practise could be phased out or drastically reduced?
- Perhaps there needs to be a funded plan to remove and collect all the plastic tubes, but looks like this might not be an itemised task. Maintenance and management - is this funded into the future and what is the time horizon for funding?
- Are the collars used on the trees plastic or biodegradable?
- Is there buy in from the local community in Ballycroy for the works being carried out, and do you actively include them in the process
- The same CAP single farm payment rules are what are leading to the use of MCPA to kill reed that is then also polluting drinking water sources - clearly this doesn't make sense - yet more reason to change the rules
- How about a national scheme under EU funding to improve riparian buffer zone biodiversity with native trees and wetlands ?

General Panel 1 Questions & Chat

General Panel Questions

- Re Lack of space of nature. Has the panel ever thought of joining GARN (Global Alliance for the Rights of Nature) - they have achieved throughout various countries to not only protect certain environments but also gave them the same rights as humans. In New Zealand, for instance, a river was given this right and is also protected therefore, one of many examples.
- What does the panel feel can be done to address the EPA reports of only 20 rivers remaining designated as 'pristine'?
- Do you think that there could be a Leaving Cert subject for Biodiversity?
- Given the impacts from drainage activities how can there be no Adverse Effects on the conservation objectives of SACs/SPAs given the scale of activities in some cases?
- Are there any other active river restoration projects in Ireland?
- What are the institutional constraints to river/floodplain restoration?

Session 1.1: Managing river flow

Hydromorphology - what does a natural river look like?

Hamish Moir (cBEC Ecoengineering)

Q&A

- What do you mean by the river not being 'perched'?
- We have an adjacent brook with good flow and are thinking of small hydro installation for home electric generation. How do such hydro schemes square with natural river restoration?
- At a community/ local level how can one begin to restore deep, fast riverbodies that have been heavily drained for the last two centuries, that are also surrounded by agricultural fields and human populations?
- Where is best to place large wood in a very small river whose channel has been adjusted but is increasing erosion due to that disturbance? Is there a prime spot to place it?
- There is a current trend to look for stage 0 restoration opportunities, but this is not always possible for a number of reasons - how does the approach you have outlined around reference state identification differ and would you agree it offers the same benefits?
- Now we know the importance of large wood in rivers. How can we address landowner fears around flooding and allowing woody debris in our lowland rural catchments?
- Experience in other European countries (e.g. Germany and Switzerland) has shown that river restoration needs more than just buffer strips ... rather a river-type specific "development corridor" that allows the river to meander etc. Most prominent problem is lateral land ownership & land use. What's your experience with this in Scotland? Germany is thinking of allowing for/securing "development corridors" in the State's water acts.
- In restoring the sediment from the embankment back to the river, how was that modelled/assessed in terms of potential impacts downstream - were there concerns that this would for example increase flood risk downstream?
- How do you undertake the restoration on a heavily managed (agricultural) catchment that has been arterially drained i.e. lowered by several metres and is annually managed by OPW/Rivers Agency to prevent flooding to infrastructure. The pictorial examples seem to be mostly upland low-density rivers
- Benefits to agriculture were mentioned after re-naturalising the Sprey. Could he outline the key ones, in particular those that the farmers really valued?
- I had acidification, mineral release, siltation leading to poor fish spawning and juvenile habitat more in mind than flood risk
- There is increased interest in NFM, it's the red tape that stops it flourishing sometimes.

Chat

- Most of our Connemara rivers have monoculture conifers in headwaters, the negative impact of which I believe is understated, the elephant in the room comes to mind.
- I want to reinforce the idea that Fluvial Geomorphology recognises the importance of connectivity (channel to floodplain and upstream to downstream). Any, and all efforts to return a river towards a 'natural' state will have an effect on other river reaches. We must perceive the river SYSTEM rather than the separate components of the system in isolation.
- Yaaaay! to fluvial geomorphology..... Not a dry topic!
- Obvious solutions but hard to implement

Natural Flood Management: Wyre Investment Readiness Project

Dan Turner (The Rivers Trust)

Q&A

- Re flooding in Church Town - did the NFM also look at the upland farming practises, increased urban impermeability, such as increased roads, houses, paths, industries, etc all causing increased overland flow directly into the river?
- Can you please give a few examples of how to 'Improve soil health'.
- Really inspiring Wyre project but how would this translate to Irish OPW centralised top-down approach to flood risk management?
- What are the projected benefit / cost ratios for the NFM interventions?
I think this is quite hard to fully quantify in a simple response, but what I would say is, this is a blended finance model, sharing the costs between several buyers.

- Is there a mechanism for "charging/reimbursement" anyone having a negative impact upon the NFM capacity in the catchment i.e.: those removing woodland/hedging/grazing up to rivers/misconnections etc? This would seem to be "fair".
- On a detail, Ireland is still seeing net hedgerow removal with resulting negative effect on flooding. This is due to poor/absent legal protection and poor incentivisation for hedgerows.
- What can the success of NFM in Pickering UK tell policy makers about the merits of this approach?
- What is the incentive for investors in NFM SPV's?
There is a huge move towards investors looking for investment opportunities that don't just deliver a financial return on investment but also an environmental return. As this project is a pilot, we will likely be engaging social impact investors.
- I led a project in Rwanda that developed a very similar programme, we called it 'Payment for Ecosystem Services' scheme, aimed at promoting better land management to reduce/prevent soil erosion that is a major issue there - in the 'Land of 1000 hills!'. Would it be possible to swap more details and experience and check for similarities and differences, and see if and where we could improve these based on the different context and experiences?
- What standard of protection is this pilot scheme hoping to achieve for the town (1 % AEP?). Will it be supplemented with urban hard engineered Flood mitigation measures?
The hydrological model demonstrates it could reduce peak flow by 10% at Churchtown, which could result in 56 properties being protected in a 1 in 50 year flood event.
- NFM at this scale will be of great benefit to water quality - but you didn't mention the EA or WFD. How is the EA involved in the Wyre scheme?
The EA have been an essential partner in the project. In this model they are a 'buyer'. In terms of WFD. The NFM interventions all form part of a catchment-based approach to maximise the multiple benefits, which go towards meeting WFD targets.
- If you can't raise as much investment as you would like to implement all interventions, how will you prioritise techniques?
- Would it be possible, do you think, to engage a community in management of their river by applying the NFM model as a co-op?
- What was the initial response from landowners when you first introduced the concept of renting land for flooding
- Is it fair to say that mechanical/engineered flood solutions will always be easier to 'sell' for historical and political reasons?

Chat

- Very deep thinking in the project and excellent to have this thought process to observe for our implementation project.

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

Conor Galvin (Office of Public Works)

Q&A

- How do you explain the actions of the OPW on many occasions where the OPW went onto landowners premises with no interaction or permission and cleared river banks and river basins themselves to try alleviate flooding which didn't work. It was and still is both devastating to both flora and fauna. How is this practice environmentally beneficial?
- Why permit developments on floodplains? While it is recognised there was mistakes in the past we have to learn and develop new strategies and policies to ensure greater protection of floodplains and river corridors.
The OPW advise against developing in floodplains. There are planning guidelines available here: <https://www.opw.ie/wp-content/uploads/2019/08/2009-Planning-System-Flood-Risk-Mgmt-1.pdf> The OPW comment on all county development plans and how they follow these guidelines. We also discuss this regularly with the Office of the Planning Regulator.
- Re managing floods - why are housing estates still allowed to be built on flood plains - see Kilcock on the Rye river, despite being made aware to MCC? The Rye river was 'managed' at least twice as it flooded the new housing estates twice within 2 years.
- Should the OPW be moving away from quantifying their works outputs as "benefitting land" to one that focuses more on a community model benefitting and encompassing all stakeholders in the catchment?
- Out of all the upcoming flood relief schemes in Ireland what % are nature based compared to "Hard engineering"?
- With all the projects and legislation that OPW are involved with, why has there been so much destruction in the last few months by the OPW. Is communication the issue or non-compliance of your own recommendations?
The OPW follow Environmental Guidance:Drainage Maintenance & Construction available here: <https://s3-eu-west-1.amazonaws.com/docs.floodinfo.opw/environment/Environmental+Guidance+-+Drainage+Maintenance+and+Construction+2019+WEB.pdf> and our staff are trained on implementing this procedure

- Is the report from the NTIG publicly available?
No the report wasn't made publicly available.
- Is it anticipated that SLOWWATERS research results will impact significantly upon existing OPW CFRAM plans?
One of the purposes of the research is to inform the work we do. We are a member of the steering group and are actively taking on-board the learnings from it
- Have you included landowner willingness to participate as part of your feasibility? Without them nothing changes
I agree landowner willingness is critical. Delivery routes will be assessed including how to incentivise uptake
- How many flood relief schemes are in Ireland?
There are 118 proposed in the published Flood Risk Management Plans, available here: www.floodinfo.ie
- Are there any NFM pilots ongoing or planned in Ireland?
- We are a small voluntary group looking for advice on riverbank restoration & issues with dumping I will link with you after for some direction and advice.
- Will any of these measures be included in the redesign of the Dodder scheme from Rathfarnham to Clonskeagh?
- Re Opportunity Maps - how are these collated? Is the data collected by voluntary submissions or by compulsory ones through local authorities? We have incomplete flood maps where I live and flood occurrences that are not in the OPW data base as it turned out, and therefore a new large-scale housing estate will be build that may very much likely increase the already increased flood occurrence risk. Thus, who's responsibility is it to submit any flood data to the OPW and if it should be done by the public too, how are they to know that a) that a flood occurrence should be recorded and b) to whom should they send it to as neither are in the public domain/knowledge? Some flood events are also not recorded due to insurance policies.
- Is there any plan to engage with local knowledge to define actual flood risk and flood events as CFRAMs doesn't represent the number of flood events or where they happen, for example on the River Barrow. This was acknowledged by An Bord Pleanála's Inspector's report on the Barrow Blueway application where the community proved that much more flooding was happening than CFRAM or Waterways Ireland defined.
- Drier summers - the EPA projections state that Irish Summers are projected to be up to 20% drier - which is likely to have an impact on aquatic biodiversity in upper catchment areas. Is this aspect being considered also in the SLOW RIVERS project?
- As an "Additional Tool", to what extent does Nature Based Solutions and maintaining water in catchment currently feature as a key objective of management, rather than a possible option to reduce flood risk?
- Are there any plans for something like an All Ireland Rivers plan (like the All Ireland Pollinator Plan) to connect the public to their waterways?

Chat

- One of the human activities that increases flood risk in river catchments is OPW arterial drainage and maintenance. It is presented as a solution to flooding - but in most cases it makes it worse.
- Here is some recent OPW maintenance works on the Nenagh River. This is the reality of what the OPW are doing on the ground <https://youtu.be/w8BG7WiQGqk>
- The OPW Environmental Guidance for Drainage maintenance are inadequate and contain many measures which are not compatible with the EU Habitats Directive - machine drivers cannot do Otter surveys for example. Even these inadequate guidelines are not implemented on site.
- From experience, the entire process (in UK) needs to change in order to get communities (and individuals) to participate. Jargon and red tape are major disincentives and also make timescales frustrating.
- The barriers to local/ community knowledge being taken seriously in these discussions and decisions needs to be removed because often it is a tick box exercise. County Councils and Waterways Ireland are out of step with community desire to apply natural and sensitive solutions, and to understand that humans are part of the ecosystem and need to act accordingly.
- A community group in Fethard in Co. Tipperary is building close links with the OPW to positively influence the flood plan in favour of Nature based and natural water retention methods and also the reopening of blocked bridge arches to facilitate water flow.

Dam and weir removal practical examples and procedural issues

Alan Cullagh (Inland Fisheries Ireland)

Q&A

- Why do IFI never reply or acknowledge emails.

- Do you see any inherent conflict between the removal of obstructions and the deliberate placement of barriers as part of rewinding schemes?
- How do you address river levels u/s and d/s after weir removal, scouring of banks etc, water levelling rising/flooding d/s
- In the removing of weirs I assume Appropriate Assessment is carried out. Weirs do have heritage value also
- How do we change landowner attitudes to allow for the retention of fallen trees and other coarse woody debris in rivers?
- Where a barrier ownership proves difficult to identify and yet the barrier is having a significant impact on the river - is there a legislative tool to allow IFI to go ahead with weir remediation work
- I was asked to participate in a new community climate action project - hydroelectricity. I have reservations because of the very examples you have just outlined. What is your opinion on new, even if small scale, hydro-electricity projects as a climate action project?
- Why were these weirs built in the first place? was it for flood protection?
- Have farmers a right to cut trees along the bank of a river.
- Was the farmer building that ford illegal? What are the rules?
- The map of weirs nationally showed a very high density in Donegal. Is there a historical reason for this?
The reason for this is that staff were available to do the surveys in this area. This work will continue to cover the entire country.
- Just wondering if beavers are native to this country? If not, would it be worthwhile introducing them as they are good water managers and what are the disadvantages if non-native
- IFI working with ESB on solutions for the larger dams. When can we expect to see real movement on solutions here? I'm sure you have seen the fish kill images that are shared from Ardnacrusha nearly every day.
- Is an economic appraisal or Business Case considered for your weir removal projects. It seems great value for money and the benefits are very worthwhile.
- Will we ever see the removal of large dams like Ardnacrusha or Carrigadrohid dam in Ireland?
- The Boyne River has multiple weirs along its course - nevertheless many salmon and eels used to be able to navigate far up the river. Why is it then necessary to remove weirs on other rivers?
- Exciting work by IFI on removing weirs.
- How much approx, did the Carlow Hanover Weir mitigation project cost?
- Do you have any information on when the Working Group on the Ardnacrusha barrier will report?
- Does the removal of the weir affect the river substrate downstream or is this controlled by the river width and length and the other catchment processes?
- How much post-removal monitoring of sites is undertaken after barrier removal and who is responsible for this? Are effects (changes in sediment delivery) considered further downstream?
- Have you tried using notches in small fixed crest weirs? It something we used to use in UK EA Fisheries a lot.
Thanks for your question, sometimes the use of notches will increase water velocity through the opening. This velocity becomes the barrier as fish are unable to swim against the fast flowing current.
- What's the position with Clondulane weir at present?
- What is the rationale for letting the sediment out slowly as you remove weirs? Might there be situations where letting the sediment out quickly will better promote habitat development downstream?

Chat

- Please see comments here on IFI 'ramps' such at Castletown, Hanover, and Tinnahinch Lower <https://lampreysurveys.com/2019/08/31/fish-passes-need-to-cater-for-all-species-not-just-salmonids/>
- River Lampreys blocked below Annacotty weir on the River Mulkear last week. IFI have refused to engage with me on this issue <https://www.youtube.com/watch?v=fAZu4BWw2to>
- There needs to be more collaborative approaches and actions taken between communities, county councils, agencies and the OPW.
- AMBER Programme; This project seeks to apply adaptive management to the operation of dams and barriers in European rivers to achieve a more efficient restoration of stream connectivity and address impacts caused by river fragmentation <https://portal.amber.international/> <https://amber.international/>

General Panel Questions

- Well done to all speakers, the common denominator is allowing the river to connect/reconnect to the floodplain. But how can we do this when landowners will be penalised under the Agri single payments. Why aren't we changing this policy.
- A question: OPW and IFI - insurance requirements to do any instream works is proving a major stumbling block for NGOs. Is there scope for IFI or OPW to assist in managing the risk and insurance requirement?
- Trees obviously play a large part in many realms of nature-based solution and NFM. I see a lot of tree guards washed into the river and putting unwanted plastic into the water system and ocean. Nearly all presentations have shown trees planted and they all have plastic guards around them. Will people move to the cardboard guards which can naturally decompose?
- Have smaller waterway projects ever been used as models for larger scale? If so can you direct to literature please?
- Do we need a catchment management authority with legislative powers for WFD targets that coordinates all the goals that are currently too sectoral and not integrated?
- What is the process to have an "Irish river crossing" removed?
- Is there any scope in Ireland of working with the aggregate industry to fund large scale river restoration projects similar to the Netherlands?
- Is there a deficit in policy direction in UK given Brexit i.e. UK not in Floods Directive WFD etc What about shared catchments in Ireland?

Chat

- Highly recommend watching "River Runner" <https://www.youtube.com/watch?v=5eyNX6JEGN4>
- Development of Blueways and slalom courses in Natura 2000 rivers also legally require Appropriate Assessment - why was this not done in the River Suir?
- Directive 2004/35/EC of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage (ELD) establishes a framework based on the polluter pays principle to prevent and remedy environmental damage.
- <https://tweedforum.org/our-work/projects/north-east-invasive-non-native-species-strategy-and-action-plan/>

Session 1.2: Tackling biodiversity threats in our river catchments

Invasive species threats and responses

Colette O'Flynn (National Biodiversity Data Centre)

Q&A

- Can you give an example of an 'intentional release' of an invasive species?
Probably most of the non-native fish in Ireland e.g. roach, Muntjac, terrapins
- What measures are in place to regulate introduction of non-native species? i.e. horticultural controls, fishing controls, etc
- We have Japanese knotweed, Himalayan balsam, winter butterbur along the Liffey and New Zealand pigmy weed and the crayfish plague (crayfish all disappeared last summer in our area) in the Grand Canal, which flows into the Liffey further downstream, but nothing is done despite informing both the local authorities and Waterways Ireland. Therefore, what would you advise that one can do?
- I noticed Chinese Mitten Crab on the list of likely invasive species into Ireland - there are a couple of entries on Biodiversity Ireland for CMC, are these verified? Do you think CMC could be established in Ireland now?
- Re Invasive species Mustelids e.g. Mink are among the most voracious predatory species what is their current status and what measures are or could be taken to control their numbers?
- Should laurel be a designated invasive species as it destroys woodland regeneration
- I have reported incidence and locations of invasive species on privately owned land but according to authorities they can do nothing about it, is there any plans to rectify this
- How are records validated / verified on your website. If the record is there can we assume it is correct?
- What action is being done on Oak moth that's been sited already in Ireland??

Invasive species in river corridors – giant hogweed control on the River Loobagh

Fran Giaquinto (Indep. Plant Ecologist)

Q&A

- How did you control any Japanese Knotweed you might have come across if you didn't use herbicide.
- What is the current thinking on Glyphosates? It is used extensively for Invasive Species management in Ireland.
- How do you dispose of the dug-out plants?
- How did you dispose of the flowering seed heads of the Hogweed?
- How do you dispose of stalks, flowering heads, seeds and what you dig out? What do you do with it?
- With manual removal of giant hogweed how do you avoid injury of workers from chemical burns from sap?
- Is all the giant hogweed chopped and left on site? Also, if seeds last 15 years will you need to monitor annually?
- How can one distinguish between the native hogweed and the giant hogweed
- Did I hear you say that winter heliotrope a native species?
- How were the Giant hogweed seedheads disposed of if they were deemed viable? Are they classed as contaminated waste?
- Whilst digging out invasive plants works well in some circumstances, is not soil disturbance one of the primary means by which some of these species were able to spread in the first place?
- Can we ask if seed-heading on its own will eventually clear G Hogweed, esp in rocky areas where impossible to dig tap roots out? i.e. how long can tap roots last?
- Some say it's too dangerous due to health risk to manually control GH. Can you reassure them from your experience and precautionary measures and have you had many incidents? Also does digging out beat spraying with Glyphosate biactive (is spraying effective or do the roots recover?)
- Did you have to get a NPWS licence under Section 49 for the removal and management plan for the giant hogweed and what were the requirements for treatment of the vegetation and seeds removed?
- Do DAFM distribute information to farmers on specific invasives such as Giant Hogweed?

Chat

- Great to see practical work being carried out by people who clearly know what they are doing. I fished to Loobagh as a boy and used to be full of trout.
- With regard to Butterbur I think that as the removal of the invasive Giant Hogweed creates soil disturbance it is not surprising that species of disturbed soils will colonise these area. It would be interesting to follow these areas and observe if they remain invasive or permit niche colonisation of other native species over time

Biosecurity and conserving endangered crayfish

Brian Nelson (National Park & Wildlife Service)

Q&A

- I am slightly unclear if non-natives are found on any "infected" rivers as a source of plague??
- Crayfish plague also in the canals, where there are boats and barges constantly coming and going. Are the canals monitored re crayfish?
- As the barges move from Kildare to the Shannon on the Grand Canal, how can one stop the crayfish plague?

Chat

- Outbreak on the River Suir occurred after a major Blueway and slalom course was developed in the SAC with no Appropriate Assessment completed
- Drainage maintenance works were undertaken in AI and Lorrach rivers immediately prior to the outbreaks

General Panel Questions & Chat

Q&A

- If agricultural subsidies were conditional on the control of noxious or invasive species, we might get somewhere?
- I agree that we should all be highly vigilant and do what we can to combat invasive species, but given that the mobility of humans and the dispersal of species is not going to change any time soon, is the containment of alien species going to be a losing battle? and should these invaders now be regarded as part of the national species pool, whether we like it or not.
- In areas where G. Hogweed is long established, are there viable seed banks of G. Hogweed which can germinate after removal of mature plants?
- There has been a few incidents of terrapins being released into Irish waterways in recent years, I presume they were dumped by pet owners. My question is, are they a threat? or are they capable of breeding in our environment?
- We have old mans beard growing both sides of our river bank. It's so rampant it's impossible to dig out and in places has gone to 40 ft high, choking trees and the natural vegetation. We've cut it back fully on part of the walk but we probably need stem injection. Are there grants available for this or anyone who helps volunteer groups with this?
- Can't help but notice the appalling water quality in the slide with two dead crayfish. Could there be a link between such badly degraded water quality and the susceptibility of white-clawed crayfish to crayfish plague and the spread of crayfish plague?
- What do you think is the best way to get the communication around IAS Regulation out to pet/aquaculture/ornamental trade and public?
- Are there any measures that could be used to reduce the prevalence of zebra mussels in Irish rivers? Are there any predator introductions that could be effective in controlling this species?
- Does Brexit pose an additional challenge to the work against IAS on the island of Ireland? Are there any good examples of co-ordinated action in Ireland/UK to address IAS which have been successful and how can this response be mainstreamed?
- Is there financial support for landowners to deal with invasives on their land especially riparian habitats?
- Would like to find out how winter heliotrope can be controlled?

Day 2 Communities & Rivers

Session 2.1: Catchment management through Partnership working

The Role of Rivers Trusts in Connecting Communities and Other Stakeholders

Liz Gabbett (Maigue Rivers Trust)

Trish Murphy (Inishowen Rivers Trust)

Q&A

- Where can we find Liz's article on Trees on riverbanks?
Liz's Gabbett (Maigue River Trust) article on riverside trees <https://maigueriverstrust.ie/2021/02/11/protecting-our-riverside-trees-in-order-to-have-healthy-rivers/>
- Are there any plans for the Mulkear or Deel rivers?
Carol Quish - administrator for the Mulkear EIP - is presenting next. She might be best placed to answer about the Mulkear. As for the Deel, I have seen signs that they are considering a Rivers Trust structure but I haven't been in touch directly with them yet.
- Do you feel enough people get involved in those awareness days?
Attendance at the awareness days can be variable. It would always be good to have more and reach a wider audience. Joining in with larger events such as agricultural days and festivals helps to reach that wider audience. It is an ongoing effort to keep in contact with people.
- The community in Corbally really would love the Corbally baths to be protected and the sediment to be gotten rid of. How can we get this process done?
The Narwhals (the outdoor swimming group led by Mark Dempsey) is doing a lot of liaising with LCCC on this. some of the elected reps have been advocating for the development for a few years.
- How do we get more communities involved in starting Rivers Trusts? Are there resources out there for funding, training, and awareness?

The BRIDE Project - EIP Report

Donal Sheehan

Q&A

- Where do you get the wildflowers?
Available in a few places in Ireland online.
- How did you develop the ponds and was there a cost involved?
Few hours work with an excavator. We contribute €450 towards cost. Dimensions can be got on our Habitat Management Guidelines online.
- What does the wild bird cover mix include and where do you source this mix?
- Have you any fundamental key points for creating a wildlife pond to ensure the most favourable outcome, eg what size, depth and such like?
See Habitat Management Guidelines book on our website. Downloadable for.
- Are you taking an average width for the hedgerows and field margins for your calculations of the area of each habitat or are you taking the width of each habitat separately?
- Did the farm biodiversity plan include management of fertilizer/herbicide inputs and assessment/reduction of stocking rates into the 3 large fields as a means of improving biodiversity on the grassland area?
No but Results-based Payments scorecards will penalise if habitat is of poor quality. Farmer can do as they please but the payment will reflect the quality of the habitat
- Did you do a baseline biodiversity study?
Yes, in 2018. Surveyed birds, pollinators, bats and a botanical also. Will be surveyed again in 2023 to determine changes
- What's needed to make a bee scrape? Do you need an earthen bank?
Earthen bank, preferably adjacent to some foraging habitat. Just a shovel after that! See our Habitat Management Guidelines book on website.

- Congratulations on the BRIDE it is an amazing project. Just wondering if there is anything you would have done differently in hindsight or anything else you would have included?
- How are the payments to farmers funded?
EIP Funding - European Innovation Partnership funded by Dept. of Ag and the EU.
- Do you try to use mix species swards or continuous crop cover so no bare soil?? or try different tillage approaches??
MSS are one of our measures as is winter stubble retention for tillage farmers. We don't fund cover crops as DAFM already fund this.
- 1) How were farmers approached for the project, individually or were there gatherings? 2) where there was compensation for initiatives, like here the pollinator area, where is the money for compensation coming from?
- How do you get engagement when their single farm payments are affected, especially the over cutting of hedges in dairy farms, they will lose payment if NOT cut and tided...?
- How can protection of the Riverbank be maintained in sheep farms where fencing is not undertaken and the ground is poached. Fencing not undertaken due to flooding issues, fence catching debris and breaking.
- Any figures on economics, in particular change in stocking rate, income, subsidies, premiums paid etc?
- Just wondering if there were any conflicts with Basic Farm Payments encountered during the project?
- Is there a role for some farmers to become farming ambassadors for the promotion of farming for nature that could perhaps be involved in an outreach programmes? If these ambassadors could meet with different community farming groups and talk Farmer to Farmer so to speak, would this be of value. This is obviously restricted with Covid at the moment.
- How do monitor results as basis for payments
- Generally, what do farm roadway upgrades consist of?
- Is there a methodology for costing catchment scale projects?
- Where do farm payments come from and is this a sustainable payment model?
- I'm not familiar with the 10% objective that you referred to. Where is that from?
- This year the Dept. of Ag have said that if an area is a 'water quality feature ASSAP area' (i.e. being used to improve water quality, now not grazed), then it will be eligible for BPS this year!! Will the farmers involved in your project be adding these areas back into their BPS this year as a result?
- Who are the decision makers with regard to re-imbursing/incentivising farmers to carry out the biodiversity works etc?

Chat

- Encouraging to see how much can be done for biodiversity on an intensive farm with some considered adjustments. Well done to all involved including the farmers on the BRIDE project - from a local resident.
- A 2m hedge margin is "painless extraction" there is hope!
- Here is a link to a great guide produced by Donal's project <https://www.thebrideproject.ie/wp-content/uploads/2020/04/BRIDE-Project-Farm-Habitat-Management-Guidelines.pdf>

Duncannon EIP

Eoin Kinsella

Q&A

- Was the economic impact of losing blue flag status evaluated and if so, what was the estimated financial loss to the Duncannon area
- Any supports for households for improvement works e.g. septic tanks?
- Are the Water Protection Payments to farmers one off or recurring and how are they funded?
- You mentioned that nutrient levels still high. What do you think would help that? And in the EIP programme across the country, are you aware whether the measures being implemented are making a step change in water quality?
- Do you pay the farmers for winter green crops?
- Regarding septic tank failures. Are there often simple fixes for these or are they usually costly interventions?
- Does the prevalence of leased farmland make it difficult to get landowner engagement?
- Can private riparian owners apply to join similar projects as a group or community-based project moving forward?
- Is knowledge increasing so that timescales can be estimated for short and the longer-term recovery and how do the project managers record failed projects and their corresponding factors.

Mulkear EIP

Carol Quish

Q&A

- Is the funding for the Mulkear being used to remove the weir in Annacotty? As its preventing Lamprey Eels and other species going up the river to spawn.
- What does the 'Farm Roadways' mitigation measure mean?
- What percentage of farmers signed up to the project?
Hi, as I reported we plan to have 60 farmers in the scheme. If you are interested contact me at carol@mulkeareip.com
- There is a significant problem with invasive species on the Mulkear catchment (Giant hogweed, Japanese knotweed, Himalayan balsam). Are there any plans to tackle that?
- How can or will you create uptake in buffer zones and habitat retention, they were the lowest,
That is what I reported to date but as I said we will try harder to prompt uptake of these measures, but it is a voluntary scheme
- I will link with you after in relation to the Bilboa River & a number of community projects.
Look forward to that - carol@mulkeareip.com
- Why do you think farmers are slower to take up the riparian margin mitigation and are the riparian margins advised on farms targeted to a specific area or all along the river/drain
- Could say a little more about the Farmland Enhancement measure in the EIP?
These measures include in-channel ponds, infield mounds, critical source area tree planting....etc.
- What is involved with farm roadways actions?

Chat

- Annacotty weir in the lower reaches of this catchment blocks the migration of thousands of lampreys. This is a key issue in the catchment and has never been addressed despite millions of euros now being spent on projects here
- Despite claims by Mulkear LIFE lamprey passage problems were not addressed at Annacotty weir. The migration of all three lamprey species is blocked. Passage of the critically endangered eel is also blocked by this ornamental weir. Even salmon have problems here. This key issue is totally ignored by agencies working in this catchment
- The lamprey tiles did not work, and the results of success were fabricated
- Mulkear LIFE - life sign at Annacotty, its only legacy? <https://olddrivershannon.com/2015/07/12/mulkear-life-sign-at-annacotty-its-only-legacy/>

Duhallow EIP

Maura Walsh (IRD Duhallow)

Q&A

- Do you submit records of the species that are found to the data centre
- Why are the riparian buffers exactly there? What are the reasons?
- Settlement ponds will fill with silt over time and require dredging. A potential source of conflict with any established organisms in these ponds?
- Who is it that sows the initial seed or gets the ball rolling for these River EIPs?
- When did gas networks Ireland get involved in Duhallow?
Duhallow were involved with GNI since EIP application stage
- Do Biodiversity ponds need to be lined, and subject to s4 licencing?
Biodiversity ponds do not need to be lined here because of our soil-type
- Are biodiversity ponds subject to s4 licencing

Chat

- The app is for ground truthing - the monitoring and verification of habitats/measures. It is also used by staff here at IRD Duhallow on trails for identifying any issues to be addressed on walks. Also mapping invasives.

General Panel Questions & Chat

Q&A

- Do the panel as environmental organisations feel that having a Shannon Interpretation Centre will benefit the community participation in Limerick?
Looking forward to hearing more from you.
- As experts, do you feel the hydromorphology of the River Shannon has been damaged by the ESB hydroelectric dam? Same with the weir by the Hunt Museum? If we are looking at rivers we need more protection and a more natural healthy river and quite frankly I kayak on the River Shannon regularly and its destroyed. Japanese Knotweed, Hogweed, Himalayan Balsam invasive species are choking the river. Can we not get the public involved to help out and do this as part of a CE Scheme?
- I believe it would be great to work together and personally I feel I have been ignored for being passionate about my local river.
- How can we use zoonotic diseases such as covid that's had such a detrimental effect on our livelihoods to our advantage? I feel people will be afraid of the environment as a result of covid. What's the way forward during and after covid19? Will funding be cut as a result of covid? Or increased?
- If the presenters were granted one agriculture policy wish, what change would they make.
You need to come to the Mulkear catchment, always sunny!
- Could some guidance be given on engaging /reassuring farmers/communities in the first instance. For e.g. how do these actions for biodiversity interact with the single farm payment requirements and (2) what are the first tasks to do to work towards an EIP for a catchment.
- I wonder if you have struggled with "measuring" benefits related to diffuse pollution in order to justify spend or interventions? In our part of England, this has become a problem - particularly proving it within a project period!
- What % of river catchments are covered by some type of project; rivers trusts, catchment management plans etc?
- I was involved in the development of a Payment for Ecosystem Services scheme, focussed on the reduction of soil erosion and subsequent ingress of that into watercourses, and would be happy to share details about it if anyone is interested. It pays landowners for the implementation of agreed interventions initially, and then for management of these - ultimately, an additional payment is made for achievement of the desired results of the interventions, e.g. reduced sediment loads in rivers.
- Who will advise me on bank restoration on our local river in East Cork? I want to prepare a specification for the owners to upgrade the water's edge, with appropriate planting to assure bank stabilisation and to meet pollinator positive policy, and to provide fenced footpath?
- Is there a funding stream for farm bridges?
- EA/EPA? will not pay for interventions unless we can prove a pathway and demonstrate benefits within the project period - sometimes in a year - lessons to learn
- What chemical tests are done to monitor progress in improving water quality
- Does anybody know Coillte's water quality plan and how to engage with this state body
- DHLGH has expanded the DWWTs grant scheme - see details on department's website
- To get communities more involved in general around Ireland, such as knowing what water policies are around to support them and what initiatives they can partake in, how can this happen practically on a larger scale? It's like people don't know how involved they can get.
- Great information and outcomes. Can this event be done for catchments that are in urban areas where the constraints and problems are very different?
- Is there funding or other supports available for weir removal? Many weirs are just obstacles for fish without having any positive functions
- Good suggestion on river habitat restoration centre. Unfortunately, we have known most problems for 20+ years, with what serious improvements in that time? Also, the suggestion of not finger pointing could be another way of avoiding responsibility. Also be hearing that for 20+years. So where are the tangible actions by those who have the power and remit. Otherwise, where will we be in another 20 years?
- What's the reason for / results of raking gravel?
- Is anyone measuring microplastics in their water as a standard for water quality (alongside the usual invertebrates)?

- For FOTC, how can your Local Community Water Officer help support your work?
- Found that some farmers were under the impression that Himalayan balsam was a benefit to the farm and were not aware of the issues with it. A beekeeper had told the farmer it is a great pollinator, confusing and conflicting advice out there
- Has anyone done any work or research on Biochar?

Chat

- It would be fantastic to see Pearl mussels coming back into rivers...there's only a few spots around Ireland. Very unfortunate.
- We need to work with farmers as they are the most important advocates that can protect the environment and biodiversity of an area.
- Fantastic to see the wide range of interested parties to improve/reverse their degraded rivers. Brilliant!
- What's the current national average cattle stocking density - anyone has an idea?
- approximately 1 cow to 1 acre
- Teagasc national farm survey should have that data <https://www.teagasc.ie/publications/2020/teagasc-national-farm-survey-2019-preliminary-results.php>
- 1.4 LU/ha for beef; probably a bit higher for dairy
- The highest trending tweet with the #irishrivers hashtag is about lampreys being blocked at Annacotty weir. Just under 7,000 views now of this post from yesterday. But this issue is totally ignored by Irish government agencies <https://twitter.com/EcofactEcology/status/1374056660352778243>
- Pollinators.ie also have a freely downloadable guide on how to create nesting habitat for wild bees <https://pollinators.ie/wordpress/wp-content/uploads/2018/04/How-to-guide-Nesting-2018-WEB.pdf>
- Community Water Officer contact details <http://watersandcommunities.ie/community-water-officers/>
- Irish farmers are richest in Europe
- Does anyone know what scheme is offered as an incentive to farmers to save the area where Curlew are found nesting please?
- There has been a huge change by the Dept of Ag this year -these areas are now eligible for payment this year!!!! (Provided they had been eligible in 2008) This change has been kept very quiet by the Dept of Ag but the change to the regulations has been made and is in this year's BPS
- Eligibility issue has been around for a long time. How can it be resolved? Who should do what?
- Teagasc have a water quality event coming up hopefully of support, Teagasc is running a water quality week 22 - 26 March 2021 in collaboration with LAWPRO and Dairy Sustainability Ireland. The aim is to provide water quality advice and information to farmers using digital and print media platforms. For more information check out <https://www.teagasc.ie/waterqualityweek> // www.teagasc.ie/environment/water-quality/assap-farming-for-water-quality/
- Oxford real farming conference too on you tube - real farm life and a recent soil regeneration summit may have some talks of support <https://www.soilregensummit.com/replays/>

Session 2.2 Achieving for rivers with small resources

Integrating Communities into Catchment Management

Fran Igoe (Local Authority Waters Programme)

Q&A

- Do you need a valuable target species in order to start a project – e.g. freshwater Pearl mussel etc, to get Life funding? Our catchment tends to have relatively good water quality but lacks a 'catchy species' so to speak.
- Do you have a reference for the 10m set-back of pathways adjacent to riverbanks please?

Proactive Community Engagement For Scalable River Restoration in Ireland Ruairí Ó Conchúir (Local Authority Waters Programme)

Q&A

- For river restoration, how do you define your goal- do you have a historical reference from what the river was like before human interventions, do you have a (list of) target species you want to bring back / increase population of? Re species, do they have to be 'species of interest' as indicated by SAC Annexes or can they be outside of that?
- With so many stakeholders involved in the Catchment Based approach, does this ever cause any difficulties in negotiations, in trying to save water environments?
- What measures are in place re machinery working (photos shown in Ruairi presentation) in waterways, re oil pollution? On Social media there are plenty of photos re these kind of activity which is worrying me re quality of river biodiversity.

Chat

- First overhead slide clearly illustrates historic hedgerow removal in the land next to the river channel which further increases the vital nature of the riparian buffer in maintaining a corridor for wildlife
- That free StreamScapes resource Eire – Tir na naibhneacha (Ireland – Land of Rivers) <https://bit.ly/30NiHNJ> and in English <https://bit.ly/3evyicu>
- YES! A one stop shop for environmental regulation. Fragmentation has been so detrimental. Take Current state of NPWS for example
- Maybe the NPWS should be the one stop shop? Rivers often contain historical structures and definitely relate to local culture.

Six communities working on the ground - local initiatives

Pat Foley (Geashill Tidy Towns)

Dr. Pat O'Connor (Castleconnell Fisheries Association)

Brian Ronan (Friends of the Camac)

Colm Gallagher (Cloughaneely Angling Association)

Dr. Alan Moore (Suiran)

Mairead Rohan (Kilkenny LEADER Partnership)

Developing support tools for citizen scientists

Michelle Walker (The Rivers Trust)

Q&A

- Are there any plans for an Irish River Trust
- How much does a test kit that is just shown by the rivers trust organisation cost?
- Here in Ireland the rivers trust system is in its infancy. In the future will it be possible to expand and bring in privately owned riparian owned and several fisheries. Will the system allow this or could several small rivers join for example the Carrowbeg in Westport a small trout fishery and the Owenwee/Belclare (a salmon and sea trout fishery) with a number of small lakes along each catchment some private, some state-run. All of which could be managed under a community or group catchment management system! I believe it would allow better structured management coordination and as each catchment have schools along, it could also lead to an education approach also. Both rivers are used by outdoor sports and adventure sport enthusiasts too. So all could be welcomed into the future development and management approach, as would farmers, forestry operators and other interested parties.
- Too many apps!... which is the best then for recording data that can be used by all in Ireland in rivers and marine? NBDC one?

Chat

- Wouldn't it make sense to have an Irish river trust, rather than be lumped in with UK? It's great to work together but since the funding for anything in UK would be totally different from that for an EU country, it would make more sense to me if there was an Irish river trust, just like we have the Irish native woodland trust... thoughts?
- Although it makes sense to combine NI Rivers Trusts with those in the south as some of the catchments (e.g. Blackwater) are trans-border?
- There will be a new Ireland River trust development officer appointed over this summer I believe.
- A lot of our rivers and lakes are our borders with the north so at the moment. It would be necessary to know initiatives on both sides of the catchment though an all Ireland approach to water makes sense too
- The Rivers Trust is UK-based but its not UK exclusive. It is working right across the island. As All-Ireland Director I work on an all-island basis supporting trusts in NI and Ireland and cross-border. We are about to appoint an Ireland Development Manager that will be able to provide further support to the network of trusts in Ireland, including capacity building, project development and sustainability.
- The Rivers Trust have an incredible capacity for supporting citizen science activities in the UK, with dedicated resources given to grow this area/mode of science in terms of engagement, training and also in terms of data analysis, data modelling and adding real value to the efforts of those who volunteer their time and effort to participate on the ground. Interesting presentation!

The role of citizen science in river water quality monitoring

Mary Kelly-Quinn (UCD)

Simon Harrison (UCC)

Q&A

- Do you think the Q value is an adequate measure of water quality? I always struggle with it, since some mayfly sp may be present in every river whereas others are very rare, yet the Q system doesn't distinguish between them. And most rivers I've sampled tend to have something from all Q groups, from leeches to stonefly larvae, making it hard for me to put a number on it
I think the Q value works well but does require the operator to gain experience in its use.
- What recommendations and plans are there for statutory bodies to invest meaningfully in supporting citizen groups, to provide better resources for their involvement, and take account of their voice?
- Is there much citizen monitoring done on forestry sites?
Not that I am aware of.
- Is the SSCI booklet available online? it looks more useful to me than the Q value I have now
Both booklets (SCCS and SSIS) will be produced over the next month, initially in hard copy on waterproof paper to enable their use in the field. We will then look at making them available online.
- How do you get around Tidy Towns committees that are obsessed with neat and reluctant to engage with a wilder approach to rivers? Do you have any good educational slides that might help with this?
- CSSI report has a comments section...what sort of records are you interested in...other insects, flow rate, temperature, little fish, the nature of river bed at sample point....?
- I have sought to address a small stream of diffuse pollution source, but was told as this stream, although an EPA protected drinking water source, is not a priority stream no help was forthcoming. We have now lost in the last two years both water nymphs and water beetles, with only a few frogs remaining, but have instead accumulated snails, leeches and algae. Who can I ask to help with this problem - children and dogs play in this stream too.
Where is your stream located? send me an email (mary.kelly-quinn@ucd.ie) and I will speak to you offline.
- What is the best way to report a pollution incident? I have done this to EPA and local authority both in the past and found a lack of sound response and commitment to action?
- I would really like to get a hard copy of SSIS. Where can I order it please?

Chat

- How can we find out about the citizen science data trainings? I live near a river and am doing a short course located near 2 rivers to be great to find out about the trainings... thanks so much
- It would be great to involve the training colleges located near rivers in such trainings too.
- With respect to reliability of data, we have a Facebook group called Insects and Invertebrates of Ireland, where national experts also are members and able to verify your sightings. Just join our group and upload your photos. If your photo has been verified by one of the experts it can be submitted to NBDC / biodiversity ireland

- Newcastle University (Dove Marine Lab) did some research into citizen science data robustness and it showed data was usually more thorough than "professionals", who usually had greater time constraints.
- Citizen science training - try your local Council Heritage Officer
- Marine invasive species: validation of citizen science and implications for national monitoring networks <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.556.6716&rep=rep1&type=pdf>
- Stream Biomonitoring - The Citizen Science Stream Index (CSSI) Tutorial https://www.youtube.com/watch?v=SBaA_zk2cpQ

General Panel Questions & Chat

Chat

- Does anybody know Coillte's forestry approach to the water catchment and its engagement with communities
- Just a comment on the blueways / greenways. I've noticed where they get large funding, it often leads to habitat destruction. Greenways were highlighted for their huge potential for pollinators, but developing them into 3 m wide tarmac roads doesn't provide for wildflowers / pollinators
- The Blueway was built without Appropriate Assessment in an SAC - this was a breach of EU law. Crayfish -a qualifying interest of the SAC - now facing extinction in this river.
- Recent destruction of mature trees & habitat on Rochestown Greenway near Cork City for upgrading of track
- Is Lagarosiphon outlawed for sales at this point?
- "Greenway" is a misleading name. Nothing to do with biodiversity in my opinion. Only created for tourism and get people walking and cycling. the grass verges along the tarmac paths are too manicured.
- Suir Blueway / Greenway / Slalom course built in SAC without Appropriate Assessment. "State is the biggest transgressor of European law"
- Where does SWAN fit into all these efforts? I may be mistaken but I thought they were responsible for rolling out our commitment to the WFD?
- Anyone thinking of planting trees along riverbanks, please do this with bare root trees only! invasive flatworms are increasing their spread rapidly and you don't want to introduce more problems
- I feel like I live in an alternative universe to all this great work. Locally, all I see are trees been felled rather than planted, rock-armour along our river, and blatant water pollution, and that's just by the state institutions. I'm now twice as depressed rather than inspired...
- It's easy to get down about what's being done elsewhere, but something that might help you maintain enthusiasm would be to try and get involved with a community project in your locality. It might not be river specific, but there's likely an initiative close by that might pique your interest. The feeling of hopelessness is something that a lot of us feel at times, so you're not alone in that respect.
- In Dublin there's Dublin environment community network and also Irish environment network who maybe could help find groups ??
- Is there a publicly accessible site where you can find out who owns what land? I'd like to contact landowners in our (Feale) catchment for access permission etc, but it's hard to figure out for me who owns which part of land. It's been accidental contacts over the years which provided me with some info, but I'd love to be able to contact all landowners in the area I'm working in
- Landdirect.ie won't tell you who owns what land, but it shows you what the land boundaries are, and you can sometimes figure it out from that.
- GDPR is a problem. We used the yellow pages in England - just to get farm details. Not perfect but better than nothing.
- You can buy individual folios or larger areas from landdirect.ie, these will show the landowner names, I think it's about €5 per folio
- Finding word of mouth is actually preferable due to connecting and collaborating and engaging. Once you get one or two landowners on board, you can connect in with others as they will all know their neighbours! (usually anyway)
- An overall comment about this fantastic two-day conference is the sense of massive local effort to improve river quality. This however must be matched by a change in government policy including ongoing commodity driven and intensification agricultural policies. Without this, we will continue to play catchup.
- How do you stop invasive coming back if seeds are transported by water
- Is Japanese knotweed the most difficult to eradicate invasive on the Suir? Massive populations along the banks below Carrick on Suir

- Great to see all the local activities. Maybe this bottom-up community approach is the key to future protection and restoration of Irish rivers.
- Is anyone actively dealing with Crocosmia removal? (I'm doing mainly Himalayan Balsam but I see a lot of Crocosmia reappearing, not good. I fight them in our garden...much harder to remove than Himalayan Balsam!)
- Locally I and many others have spent years trying to protect the river Barrow. Despite many efforts to try and engage with all government agencies we are excluded from any conversation. Unless you want a Blueway you can forget it around here for support...
- I am excluded also and my conservation work highlighting fish passage at ESB dams and barriers like Annacotty weir is ignored by government agencies. Unless you have some feel good story no one is interested. I have tried for years to raise these issues.
- The National Biodiversity Data Centre have created this short animation video on the aquatic biosecurity campaign of Check Clean Dry to help prevent the introduction and spread of invasive alien species. It has not been made publicly available yet as we are working on a new invasives.ie website that is referred to in the video. Just thought you might be interested to see it now. <https://youtu.be/eBwS7ko7NUU>
- Would seem a "no brainer" as collective coordinated action so much more effective than individual trusts, or local action groups
- I find all this very useful to help starting to get a few things off the ground here in the Sliabh Aughties which is going to be a huge challenge with Coillte in the driving seat for most of the area.
- such urgent need for CAP reform....
- Lough Carra Catchment Association in Mayo have just applied for 2021 LIFE funding...Our chair will talk to anyone interested
- Re LIFE funding, South Dublin Co Co and DLR got funding for an urban rivers misconnections and ICW project
- Has anyone completed any work or research on Biochar
- Research in the UK on Biochar, Dung beetles and soil health. Huge for water quality.

