CatchmentCARE
Community Actions for Resilient Ecosystems

newsletter
Autumn 2021 - issue 6.

Bioblitzing the Blackwater

The Community Incentive Scheme (CIS) has been one of the success stories of the CatchmentCARE project. In the Blackwater Catchment alone 23 successful community projects have been supported and delivered over two phases of the scheme.

In Phase 2 of the scheme, 12 projects were funded which included access works, community river trails, funding for volunteer training and supply of specialised equipment, citizen science projects and interpretation and signage. In Phase 2 of the CIS, six local community groups were interested in running Bioblitz type events to help upskill their members and local community as to the Biodiversity of their local river / watercourse.

In 2021, local environmental expert Karl Hamilton ran events for: Blackwater Community Barge, Emyvale Tidy Towns, Eskra Community Association, Mongahan Tidy Towns, Torrent River Enhancement Association and Castlecaulfield Horticultural Society.

What is a Bioblitz?

A bioblitz is a biological surveying method that attempts to record all the living species within a designated area. Groups of scientists, naturalists and volunteers conduct an intensive field study over a continuous time period - this mixture of wildlife experts and the wider public is key to the BioBlitz concept. It is an informal and fun way to create a snapshot of the variety of life that can be found in an area and provides an opportunity for participants to learn together and share their expertise and enthusiasm for nature. This is a great way of breaking down barriers to engagement with science and raising awareness of the role of biological recording. It also gives the public an opportunity to contribute to a genuine scientific survey.

Department of Agriculture, Environment and Rural Affairs
www.daera-ni.gov.uk

Interreg
Northern Ireland - Ireland - Scotland
European Regional Development Fund

An Roinn Tithíochta, Pleanála, Pobail agus Rialtais Áitiúil
Department of Housing, Planning, Community and Local Government

Inside this Issue

A Word from the Project Manager

Welcome back to the latest CatchmentCARE Project's Newsletter.

The Project continues to deliver on a wide range of improvements; research and initiatives which we hope are well reflected both here in the newsletter but also on the Project website. I would like to draw your attention to a few which will be of interest to many of our readers

The Groundwater Team (GW) has completed further drilling for the groundwater monitoring stations with more to follow. Flow monitoring and water quality analyses will follow. Separately the GW Team are keen to convey their findings to a wider audience and are progressing some very interesting groundwater visualisation work using both Virtual Reality (VR) and Augmented Reality (AR) Technology. This immersive 'VR' technology will allow users to experience real-life simulations of groundwaters in boreholes or caves.

The Project is also looking at additional visualisation modules for the Agri sector, the Education Programme and to capture the River Restoration works currently being progressed.

A further challenge for the project was to address a chemical export issue which is affecting water quality in the Finn Catchment. Loughs Agency completed a detailed literature review and highlighted three pesticides (Cypermethrin; Acetamiprid & Organophosphates (Diazinon)) and a herbicide (MCPA) which are of concern. Sheep dips and forestry were identified as the likely sources and detailed surveys of both activities were conducted and mapped.

Donegal County Council and Loughs Agency combined project resources to put a monitoring programme in place for selected sites throughout the Finn. The monthly results from that monitoring will help define the scale and sources of the pollution involved.

Finally, I need to mention the success of the Educational programme on water quality, the initial intention was for this to be delivered to 30 schools (approximately 900 pupils). Andy Griggs, ABC Council is leading this work and has recently recorded the following progress, which is impressive:

- 24 schools totalling 1,064 children & 43 teachers received the programmes to date

- 72 additional schools (to date) – that includes 2,880 children / 108 teachers based both within /outside of the project catchments have requested & received the programmes for teaching use.

Andy plans to further rollout the Education Programme in a Road Show starting with the initial pilot schools shortly which will further enhance that element of the project.

Check out more on **www.catchmentcare.eu.**

CatchmentCARE YouTube Channel Bursting with Information

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YouTube

One of the main mediums that CatchmentCARE uses to engage with audiences is through its social media channels and via the online video hosting site, YouTube. To date, the CatchmentCARE YouTube channel has been populated with over 50 informative videos for people to learn about the project and to understand the actions that need to be taken to look after our important river systems. Videos on the channel include:

Understanding Groundwater for Communities - this new video contains a demonstration of what is involved with the installation of groundwater monitoring boreholes and discusses how discovering more about the valuable groundwater resources will play a vital role in sustaining our rivers, lakes, and wetlands.

https://youtu.be/ibHmVujnARo - Full Version
https://youtu.be/hqQmEy3HHV4- Short Version

As well as all of the Education 'The River' Series 1 & 2 videos, others include:	
Caring for River Catchments – 'Pressures & Solutions'	www.youtube.com/watch?v=hR4jUv1IEK8
Sheep Dip Information Video 1	www.youtube.com/watch?v=AGLOgeMmA5g&t=106s
Sheep Dip Information Video 2	www.youtube.com/watch?v=_LEQzJVWIxc&t=617s
Bioblitz Videos for Local Communities	
Woodlands in autumn	www.youtube.com/watch?v=cRSvWBYLvxo
Woodland invertebrates	www.youtube.com/watch?v=9WVxSTRZM68
Blanket & raised bogs	www.youtube.com/ watch?v=_Ia87vdsIIA
Aquatic invertebrates	www.youtube.com/watch?v=62kOTqbK_b8
Upland River Biodiversity	www.youtube.com/watch?v=k7Xep0bnae4
Arney Dye Tracing Video	www.youtube.com/watch?v=022Wb5Werko&feature=youtu.be
Education Pilot Programme Catchment Videos	
Arney Catchment	www.youtube.com/watch?v=jOkxNkOAO4M&t=149s
Blackwater Catchment	www.youtube.com/watch?v=Vrhun6U7Pxg&t=4s
Finn Catchment (English)	www.youtube.com/watch?v=YZ9gCDAJ4uw&t=27s
Finn Catchment (Irish)	www.youtube.com/watch?v=H76Xsttecn0&t=2s

'CatchmentCARE Week' a Success

The CatchmentCARE mid-term conference took place online from Tuesday 18th May to Thursday 20th May. The event, entitled "CatchmentCARE Week", was a series of six short webinars that explored integrated approaches to the protection, improvement and sustainable management of our water environment.

The webinars were an opportunity to catch up with some of the work which has been happening across the partnership but also across the Arney, Blackwater and Finn catchments. An impressive 569 attendees were registered over the 3 days and were treated to an interesting array of presentations from project staff and local experts.

Chairs and Speakers for the webinars were generally from the Project partners. Lead partner, Donegal County Council, coordinated the event programme and worked closely with i2 Total Marketing on branding and marketing of the event and the individual webinars. Technical support was provided by AVC Limited.

All of the presentations from the Mid Term Event are available to view on the CatchmentCARE You Tube Channel at:

https://www.youtube.com/channel/UCbV3m1oYBcw1Bi7qPzL6T_g

'The River' is back for Series 2

In the previous issue of this Newsletter we reported on how CatchmentCARE's education programme had gone online due to the Educators not being able to access local schools or facilitate out of classroom visits due to the C19 Pandemic.

In response to this, series 1 of "The River" was developed, which allowed young people to still learn about and understand their local rivers during this time. After the great response from local teachers, principals and pupils across the country, we have been out and about again and have created a brand new series of "The River". Yes! We're back for series 2.

Series 2 contains lots of new features, great interviews, and activities based on our local rivers and is a continuation of the learning from series 1 but we hope, a whole lot more fun. It also includes information for teachers to contact the individuals and organisations featured in each episode so that, in the future, they could use them and their educational resources at the teachers' school.

There are five episodes in the first series, each accompanied by a teacher's pack and teacher notes. The programmes are linked to the NI curriculum at KS2 (P5 – P7) and the ROI curriculum (Classes 3, 4 and 5). The five episodes are as follows and are available on the CatchmentCARE YouTube channel -

Episode 1: "**Tangled**"	Alyn and Stephen explore the river ecosystem and habitats, they discuss species adaptation and encourage birds to the garden to survey. https://youtu.be/RPcCx4WOOqY
Episode 2: "**Wer RU**"	Stephen and Alyn discuss how to use plans, maps and GIS to find our way around. https://youtu.be/nlN0UdfES20
Episode 3: "**EIEIO**"	Stephen and Alyn are down on the farm and see how eutrophication affects our rivers and lakes. https://youtu.be/z34Fbq2qDWo
Episode 4: "**School of Rocks**"	Alyn and Stephen explore the connection between rocks and rivers. https://youtu.be/JgJS6BTuD8A
Episode 5: "**Little Fishy**	In this, the concluding episode of "The River", Alyn and Stephen switch their focus to freshwater biodiversity and explore the difference between freshwater and saltwater. Interviews with the Loughs Agency and Inland Fisheries Ireland help provide valuable insight into fish species and local river biology. https://youtu.be/JODMLdDu1KA

The River presenters Stephen and Alyn

Passive Samplers Deployed on the Finn

The CatchmentCARE Team has been busy throughout this summer due to the delivery, deployment and collection of Passive Samplers across the FinnCatchment.

The aim of the passive sampler survey is to detect the presence of herbicides and pesticides such as MCPA, Diazinon, Cypermethrin and Acetamiprid in the target areas. The samplers have been placed strategically at five key locations; these include: a control site deployed in the Stranagoppoge, two Sheep Dip monitoring sites at the Reelan Bridge and Altnapaste; and forestry monitoring sites in the Upper Reelan and Cummirk, which will monitor private and public forestry respectively. Sites were chosen based on data collected by the CatchmentCARE Team on locations of active dipping facilities and forestry in the Finn.

The samplers will be deployed for a period of 12 months and the CatchmentCARE Team will visit the sites every two weeks to collect the samples, which will be sent to T.E. Laboratories for analysis.

The team is hopeful that the results from the passive sampler will highlight the extent to which herbicides and pesticides related to sheep dip and forestry activities are impacting the aquatic environment. The nature of the passive sampling equipment allows us to continuously monitor for the presence of these chemicals, which is not possible with traditional spot sampling of water and sediments.

The use of this type of equipment for the monitoring of pesticides in Ireland is very novel and expressions of interest in the results have been received by several environmental regulatory bodies on the island, as well as academic researchers.

Blackwater Projects Officer Finding Answers

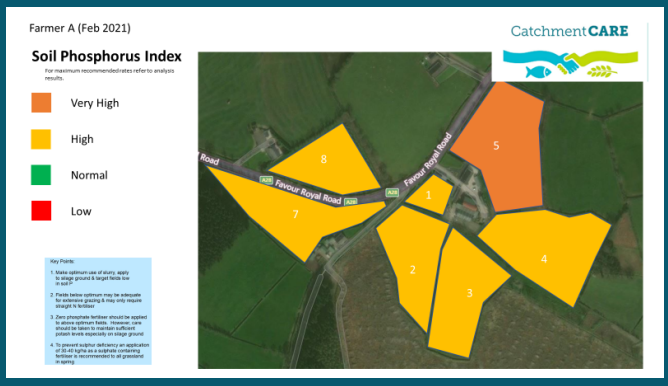
The Blackwater Projects Officer has been busy throughout 2021 carrying out a range of soil, water and invertebrate sampling. Early in 2021 a programme of soil sampling on local farms was carried out. Colour coded maps were developed for each farm and a one-to-one consultations held with each farmer to discuss their nutrient requirements. The main issue was soil pH which, on most farms was sub-optimal, with the vast majority of farms needing lime. Some were applying too much Phosphorus and a small number were not applying enough. This simplified mapping approach was greatly received, as the farmer could quickly recognise any nutrient problems and take appropriate actions. Another positive was the opportunity to meet farmers on their lands and discuss all matters regarding water quality, football, cattle prices etc!

During late spring and summer, baselining and creating a profile of the water quality in the Blackwater catchment was a priority. A combination of river surveys, nutrient sampling and invertebrate kick samples were employed (SSRS). River quality scores from pristine Q5 to poor Q1 were recorded in the catchment, with this valuable data being fed into action plans or with other water quality groups. CatchmentCARE and Glaslough/Tyholland group water scheme collaborated on a deep dive survey of the Mountain Water River in North County Monaghan. This river feeds Emy lough, which is an extraction point for the local group water scheme.

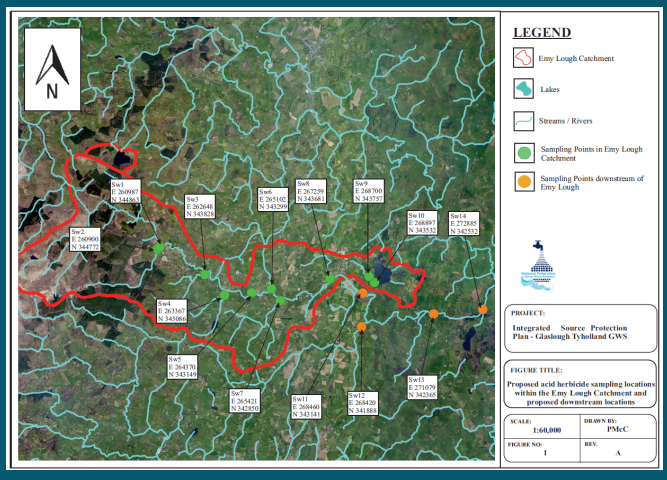
Invertebrate Sampling on the Ballygawley River

The scheme has been experiencing MCPA problems for many years and wanted to get a good overview of the catchment. 14 sample points were chosen and 500 samples were taken over 18 weeks, with nutrient levels and acid herbicides monitored. The most notable event was a MCPA incident report with an exceedance 90 times over the limit (Sp3). The levels downstream in Emy lough exceeded the limits some days later and remained in exceedance for 6 weeks following this single event!

Small Stream River Survey (SSRS) was the method used for river scoring river quality. It was a great opportunity to build on invertebrate identification and know the difference between Ecdyonurus and Heptagenia sulphurea (Mayflies). The stream order, colour, velocity, chemistry, bank condition and other factors were noted during the survey and will feed into a catchment profile. Locals involved have found the technique fascinating!



Soil Sampling Map



Water Quality Map

Elatagh Works Update

Loughs Agency is nearing completion of the Elatagh instream habitat improvement and riparian works along a 3.4km stretch on the Elatagh River, Co. Donegal.

The team have implemented several habitat restoration measures along the Elatagh River. These measures include pinning of woody material, wetland installation, gravel regrading, rubble mats, limestone deflectors and artificial pool creation.

Artificial meanders were created at two locations using limestone boulder deflectors and rubble mats to help address lower than optimal pH levels. Pools were excavated to various depths and sizes and the excavated gravel was then spread evenly around the pools to ensure no obstruction to the rivers flow. Additional limestone rubble mats were placed at the upstream and downstream sides of the pool to recreate a natural riffle habitat.

Elatagh River Restoration Works

A recent site walkover by Loughs Agency staff saw the instream measures in action and all were pleased with their effectiveness in increasing the diversity of instream micro-habitats.

Bush trimming was carried out in several areas along the stretch to reduce the dense overgrowing canopy and allow more light into these areas. The trimming also incorporated felling several whole trees, which were used as pinned woody material. Woody material was pinned to the bank, to provide protection to the bank and also provide aquatic refugia and a source of food for aquatic fauna. In front of the pinned woody material, two rows of stakes were driven in to the bed of the river and between these stakes, brash and brushwood fascine were packed to help soften the impact of the water flow and collect sediment from the water column.

A small wetland area of 145m2 was planted using native emergent and submerged wetland plants including species such as Common Reed, Yellow Flag, Common Sedge, Marsh Pennywort and Tussock Sedge.

In addition to the instream habitat restoration measures, the works also included planting a mix of native grasses and shrubs in 20m2 clumps throughout the 3.4km sketch to cover an overall area of approximately 5000m2. The decision to plant native grasses and shrubs instead of a selection of trees was influenced by discussions with the Curlew Conservation Project, who are trying to protect a breeding pair of Curlew in the area. This pair is one of only two pairs remaining in Co. Donegal and the presence of trees on their breeding grounds increases the risk of predation from birds such as Corvids.

Blackwater Catchment River Works Update

River improvement works in the Blackwater Catchment have continued throughout 2021 despite Covid 19 restrictions. The Blackwater Catchment Officer, Tom Woods, has pushed on with developing and delivering some successful schemes which will see an improvement in local water quality in the coming years.

A variety of works are taking place across the Catchment, including:

- Installing fencing along rivers to help decrease erosion of banks by cattle
- Supplying and installing livestock drinkers for local farmers
- Installing field gates and stiles to provide access for farmers and local user groups.• Planting native species of trees and riverside vegetation to help stabilise riverbanks and create a buffer strip between the river and agricultural land.
- Installing bank revetments and other in-stream works such as rubble mats and flow deflectors (to create a more diverse flow and habitat in the river channel).

Works are also in process for tendering in 2022 for improvements on the Callan River, Tynan River and Mountain Water. For more information on this and other Blackwater catchment works please contact Tom Woods on thomas.woods@armaghbanbridgecraigavon.gov.uk

Livestock Damage to River Bank

Solar Drinker

Additional Interpretive Panels funded in CIS Phase 2

Phase 2 of CatchmentCARE's Community Incentive Scheme (CIS) has funded another 20 projects to 18 different community groups across the three CatchmentCARE project catchments. As with Phase 1 of the CIS, these projects are designed to support community engagement, knowledge transfer, capacity building and legacy actions at a local level.

As part of the development and delivery of the work, eight of the groups have been allocated funding to introduce signage at agreed sites, in the form of interpretive panels. These panels have been produced in both English & Irish and contain a variety of information to help users understand the local area, landscape, history, wildlife and water quality issues within their local area. In this round of CIS projects, ten panels are being installed in the Blackwater Catchment, and a further three will be installed in the Arney Catchment.

Case Study – Arney Catchment

Kiltyclogher Heritage Group was funded for a project entitled 'Crayfish Habitat Enhancement'. The project aims to protect native white clawed crayfish. The group hopes to continue to survey and monitor under licence local populations.

With support from Gortatole Education Centre and the Cleenish Angling Club, sites will be selected in Upper and Lower Lough MacNean, as well as the Belcoo/Toam River which links them. The new information panel will help to inform people as the plight of the species and give information on their conservation status and measures which can be taken to help conserve them.

Case Study – Blackwater Catchment

Monaghan Tidy Towns has been developing a project called 'Monaghan Riverwatch' which aims to engage and inform local people as to the importance of the River Blackwater Catchment for wildlife habitats and as a source of drinking water. Young people in the area have been taking part in social media campaigns and the group have run water quality events and bio-blitzes. Two new interpretive panels are being placed in and around the town to help impart information on water quality; the aim is to ensure people are informed and motivated to make a change to benefit water quality.

Habitat restoration works completed on the Cummirk River

Habitat restoration works on the Cummirk River at Letterbrick in Donegal have recently been completed by the Loughs Agency.

The works involved using soft engineering measures in two locations to address bank erosion. These measures involve using environmentally friendly materials such as tree branches (brash) and tree trunks to help prevent erosion of the riverbank.

In addition to this method, fencing was installed along the 1.8km stretch of the Cummirk River to assist in creating a 5m riparian buffer zone. A diverse mix of trees such as alder, willow, silver birch, and rowan were planted within this buffer. The addition of this zone means that livestock will be prevented from entering the watercourse, creating a natural "buffer" between the river and the land being farmed. It also ensures that farm-related substances such as slurry or pesticide are much less likely to enter the river, which helps protect the plants and species within it.

Solar-powered water pumps and drinking troughs were supplied to ensure livestock have access to water. Access gates and stiles have also been installed along the length of the fence line to allow landowners to access the riparian zone for maintenance or to retrieve any livestock that may have gotten through the fencing.

As part of the CatchmentCARE Project, the Loughs Agency is currently contacting local landowners to determine their interest in being involved in habitat restoration projects in their area, and to take on board what the landowners may feel are the best measures to be implemented in their locality.

All works resulting from an agreement between the landowner and representatives of the CatchmentCARE project will be fully funded by the project, with no cost to the landowner.

Soft engineering structure installed on the Cummirk River in Letterbrick

Stile installed on Cummirk River

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CatchmentCARE Project Partners

Lead Partner: Donegal County Council (DCC)

Partners:

Agri-Food & Biosciences Institute (AFBI)
Armagh City, Banbridge & Craigavon Borough Council (ABC)
British Geological Survey (BGS)
Geological Survey Ireland (GSI)
Inland Fisheries Ireland (IFI)
Loughs Agency (LA)
Ulster University (UU)