



Welcome back to the Fifth Issue of the Source to Tap Newsletter

In this issue

- The 'C' word
 - Land Incentive Scheme continues to grow
 - Back on the road with our project updates
 - The knowns and unknowns of the herbicide MCPA
 - An insight into how our water is treated
 - Working from home but learning from home
 - A word to contractors
 - Forestry Pilot Update
 - Peat Pilot Update
 - Drone videos of the Erne and Derg
-

The 'C' word

Here at Source to Tap we have not been immune to the challenges brought about by Covid-19. But challenges are opportunities as the old saying goes. The Land Incentive

the kitchen table. The Riverfly Monitoring Programme has ceased and the school visits have been put on hold. But these times have made us adaptive to the challenge. We have learned new ways to communicate with farmers, accepting and checking quotes online, through 'Whatsapp' and email. We have translated our education programme and materials and made them available to everyone online with instructional videos.

One thing that remains unchanged is our project officers being at the end of the phone for any query from teachers, volunteers or farmers alike. We continue to ride the wave, by remaining together while staying apart.

#stayathome



The Land Incentive Scheme continues to grow



Some weed wiping being carried out at Aghyaran by contractor Paul McCaughey- Safety Training NI

Interest in the Land Incentive Scheme continues to move in an upward trend. After a busy period of farm visits, the Source to Tap team took stock and looked at areas which were underrepresented within the catchment. We made the decision to host a series of Information Exchange Events and drop-in clinics to help new applicants to the scheme and those who are already in the possession of a water environment management plan (WEMP) made by us.

We hosted events in new venues such as Meenreagh Social Centre, Donegal, Garvagh Hall, Co. Tyrone and in Blacktown Arms, Scraghey, Co. Tyrone. This brought over 30 new farmers into the scheme. We returned to venues

Heritage Centre for daytime events to learn about the scheme and evening events which were aimed at helping farmers and landowners fill out applications and claim forms.

Despite the challenges of Covid 19, agricultural contractors remain active in the catchment following government guidelines around social distancing and safety precautions. Farmers who have already been given 'permission to start' letters are proceeding with work such as stock fencing and weed wiping given the good weather in April.

A wise word from the Ulster Farmers Union

The Ulster Farmers Union (UFU) have released advice through an article in Farming Life. It reads that Agri contractors are one of the 'key workers' that are exempt from being at home due to their line of work. Their profession puts them in a very vulnerable situation as they conduct jobs for various farmers and visit numerous locations on a weekly basis.

UFU deputy president Victor Chestnutt said:

"Agri contractors play a valuable role in the Northern Ireland agriculture industry. Their service is particularly important at this time of year when there is plenty of field work to be done and the weather improves. Due to the work that they do agri contractors must travel to where the work is, visiting farms and locations across

avail of an agri contractor's services, follows social distancing guidance and takes extra precautions to protect them during the COVID-19 outbreak.

"Farmers should minimise face-to-face interaction with contractors on their farm as much as possible. If they need to speak to them to provide details about the job that needs to be done, they should do so by phone. In this day and age the majority of people have access to a mobile phone, we should be maximising our mobile usage to protect one another and ensure we stay apart. Farmers should allow agri contractors to get on with their job without engaging in direct contact with them. They're as vital to the food production process as farmers and we need their service to continue throughout this pandemic. Agri contractors work hard around the clock so we can continue to provide quality produce, supplying local shops and larger retails stores across the country. Their work is essential to our plan to manage COVID-19."

Back on the Road with our Project Updates

Here at Source to Tap we like to keep the local communities in the Erne and Derg Catchments up to date with how the Source to Tap Project is progressing.

We do so through Project Roadshows. At these we discuss the 5 areas of the project; Learning for Water, Farming for Water, Love your Water, Peatlands for Water

When we go out to local communities, we invite local people to discuss their interests in the river environment with other like-minded individuals. We encourage local people to raise awareness of the importance of protecting our precious drinking water resource and how they can get involved.

Since our last e-zine, as part of our winter and spring series of Project Roadshow Events we visited Ulster Canal Stores, Clones, Co. Monaghan, Enniskillen Library, Co. Fermanagh, and were scheduled to host events in Belturbet, Co. Cavan. Killeter Heritage Centre and Castlederg Leisure Centre, Co. Tyrone but due to the government advice on Covid-19 these have been postponed. We look forward to resuming these once it is safe to do so.



A recent roadshow event

The knowns and unknowns of the herbicide MCPA

Members of the Source to Tap team from AFBI and Ulster University have recently published a scientific review paper in the journal WIREs Water on the herbicide MCPA. Additionally, the team has produced a public news article, summarising the review, which was published on the Advanced Science News website (linked at the end of this article).

So what is MCPA? The herbicide 2-methyl-4-chlorophenoxyacetic acid (MCPA) is a grassland herbicide; it is specifically designed to kill weeds without harming crops and is a common active ingredient in both

widely used for broad leaf control, controlling the growth of weeds like the Common Soft Rush, which has flourished in grassland following wet weather periods in recent years.

The news article describes how MCPA is used across Ireland, MCPA is primarily used to reduce the growth of rushes (*Juncus* species) to improve sward growth in upland and marginal agricultural land. However, despite the worrying trends observed in Irish surface waters, and in water bodies elsewhere across the globe, little is known about many aspects of this particular herbicide.

The scientific review paper that Source to Tap team within AFBI have produced delves more deeply into the usage trends of MCPA and provides a brief history of MCPA and other related phenoxy herbicides, including the first known use of 2,4-D as a growth enhancer for tomatoes! The paper also reviews the state of knowledge on the movement of MCPA in soil and water and demonstrates the increase in detections of MCPA in rivers and lakes on both sides of the Irish border the effects of MCPA, the legislation surrounding its use and possibilities for pollution mitigation. The latter includes the consideration of the use of weed-wipers containing glyphosate instead of broadcast spraying MCPA: this is the technique being trialled in the Derg catchment by Source to Tap.



Image of boom spraying with MCPA

[Press for Newspaper Article](#)

[Press for Scientific Paper](#)

An insight into how our water gets treated before supply

As a thank you to the farmers and landowners and their families involved in the pilot Land Incentive Scheme, we invited them along to a special open day at the Northern Ireland Water Derg Water Treatment Plant outside Ardstraw on 29th January 2020.



Staff and attendees alike enjoying the Water Treatment Plant Visit

Attendees received a short presentation on the project. The Water Treatment Plant staff then brought us on a journey, stage by stage showing where the water enters the plant, they explained how lime and aluminium sulphate are added in the initial stage to allow the soil particles and other contaminants to stick together, before the water enters the large tanks filled with dissolved air which float contaminants in a frothy mixture to be decanted off, and its journey through the sand filters and granulated activated carbon (GAC) filters which are so important for removing herbicides such as MCPA

This was a great insight for attendees to see in action how their local treatment plant treats their water and

This was a successful event and we hope to run another for local schoolchildren in the area.

You too can watch the evening on our Instagram highlights below:

[Press for Water Treatment Plant Tour](#)

Working from home but learning from home too

We have had a busy few months with school visits and hosting educational workshops, the length and breadth of the Derg and Erne Catchments.

We have been as far as Killeevan National School, Newbliss Co. Monaghan, Kesh Primary School and Jones Memorial primary school, with plans to visit Kilyhommon Primary School Boho, St. Caireall's PS, Castlederg, St. Patrick's PS, Mullanskea, Lisbellaw PS, Lisbellaw and St Mary's PS, Maguiresbridge once restrictions are lifted.

We were invited to hold a biodiversity river workshop in conjunction with Waterways Ireland on 12th February 2020 as part of the Northern Ireland Science Festival. We held 3 workshops for 3 different schools – Enniskillen Model PS, Jones Memorial PS, and St. Patrick's PS, Mullanaskea. We engaged with 84 pupils at the workshops.



Project Officer Lisa Stewart hosting a river workshop at Waterways Ireland

We were invited to give a talk on rivers, pollution and water treatment to a youth group in Garvagh Hall, within the Derg catchment. This took place on Friday 28th February 2020. Around 50 young children aged between 4 and 12 came along to listen to our message on the importance of protecting our rivers and lakes, to see our sample of river invertebrates and to build a water treatment plant.

We have 5 units in our education programme which we are in the process of making available online with teacher notes and instructional videos.

These topics cover

Unit 1: Where does our water come from?

the opportunity to create their own water cycle as a class.

Unit 2: How are our rivers formed?

In this unit pupils will learn about what a river is, how rivers are formed and the journey it makes. Pupils will also learn about catchments and about the Erne and Derg catchments that they live within.

Unit 3: What lives in our rivers?

Pupils will learn about the wildlife found in our rivers and learn about our riverbank habitats and learn about how food webs operate in these habitats.

Unit 4: How do rivers get polluted?

In this unit pupils will learn about pollution, the signs of pollution, pollution by agriculture. Pupils get to learn how to measure water quality and learn how it can affect river invertebrates.

Unit 5: How does water get from our rivers to our taps?

In this unit, pupils will gain an insight into the process of how our water is treated before it can be sent to our taps for drinking. The pupils will make their own Water Treatment Plant enabling them to see how water is treated before it is safe to drink.

All in all that's another 360 children who heard our message about the importance of protecting their local rivers and lakes.

These will be available to download soon from:

[Press for school resources](#)

Forestry Pilot Update

Work has been continuing in the forests of the Erne and

have been out in all weathers to collect water samples in Killeter Forest, Pettigo and Lough Derg which help determine how the sediment reduction measures are performing. These measures include a cover crop, geotextile dams and a sedimentation pond. Analysis of the data is ongoing at present however there is evidence that these measures are making a difference to the amount of sediment entering our streams and rivers.



Figure 1: Water taken from TISS Samplers upstream (281) and downstream (282) of sediment reduction measures.

Our measures stood up to the winter storms and even continued to work effectively through the wettest February on record in the Derg catchments.

Over the last few months, there have been numerous visits to forestry sites due for felling in 2020. This was to select 7 more pilot sites, both in Tyrone and Donegal, to trial different measures of sediment retention. To date, five sites have been chosen and plans drawn up for another series of pilot studies.

The first 2020 pilot was installed at a stream draining Compartment 3 and 5 in Killeter Forest, and has already been fitted with a “longitudinal log dam.” The COVID-19 crisis has prevented regular monitoring of water quality at present, however sample collection will be resumed as soon as it is safe to do so.



Tree harvester fitting a log dam in Compartment 3 & 5, Killeter Forest.

As part of a commitment to improving water quality in the Erne and Derg catchments, Source to Tap are restoring an area of afforested blanket bog on Forest Service land. The site, in Tullychurry Forest, is directly adjacent to the Pettigoe Plateau Special Protection Area. Restoration of an area of peat requires the water table to be raised to less than 30cm of the soil surface which creates ideal conditions for the growth of Sphagnum. Sphagnum is a type of moss which is considered to be the building block of peat soils. The aim of the pilot is to trial and compare 3 methods of peat restoration and monitor the changes in ground water levels in each of three treatment areas.

- Area 1 (Control) - This area will have all drains which cross the boundary blocked at the crossing point. This is a technique observed at another nearby Forest Service restoration project.
- Area 2 (Drain blocking area) – This area will have all drains blocked at regular intervals using peat from the surrounding soil. This is a common method of peat restoration used around the UK and Ireland.
- Area 3 (Intensive Restoration Area) – The intensive restoration area is where a recently developed form of restoration, called cell bunding, will be trialled. Cell bunding is the construction of low walls, made from peat, which create watertight cells roughly 20mx20m square. This retains water within the cell and creates conditions for Sphagnum moss growth.



Part of the Tullychurry peat restoration site during felling.

Preparation is under way to ensure that contractors can be brought in soon after the COVID-19 lock down is relaxed.

A peat depth survey has already been completed in late January and more GIS and ground slope surveys are required. Results from the peat depth survey showed that in some areas, the depth of the peat bog under the tree canopy was greater than 3m.

Drone videos of the Derg and Erne

To help us explain the Source to Tap story in each catchment we recently commissioned the production of two drone videos telling the story of water in the Erne and Derg catchments as it travels from Source to the Tap and the pressures it is under.

The Erne Catchment

From Source to Tap

The Derg Catchment

From Source to Tap

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