

An aerial photograph of Lough Arrow, a large body of water with a rocky shoreline in the foreground and lush green forests along the banks. The water is dark blue, and the surrounding landscape is vibrant green. In the distance, a long, low mountain range stretches across the horizon under a clear sky.

streamscapes | catchments

Lough Arrow

A Gem in our Midst

APPRECIATION IS EXPRESSED TO:

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LAWPRO / Karen Kennedy, Community Water Officer; Patsy Ryan, Catchment Scientist; Francis Deery

Atlantic Technological University / Sara Meehan & Darren Garland

Teagasc – ASSAP Advisor / Eamonn Avery

IFI / Jimmy Frazier and Ciaran Jennings

Sligo County Council / Siobhán Ryan

Participating Project Schools:

Geevagh National School; Cloghogue NS;

St Paul's NS Collooney; Ardeeran NS;

Taunagh NS; Collooney NS;

Kilmactranny NS; Corrigeenroe NS

Lough Arrow Fish Preservation Association & District Anglers / Roger Maxwell & Jerry Martin & gratitude for the use of Flynn's Pier Amenity for the School Field Trips

Collooney-Ballisodare & District Anglers Association / Paul McConigly

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Old Schoolhouse Café, Ballinacfad

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www.streamscapes.ie



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SAFETY FIRST!!!

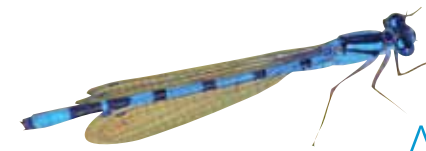
The 'StreamScapes' programme involves a hands-on survey of your local landscape and waterways...safety must always be the underlying concern. If you are undertaking aquatic survey, remember that all bodies of water are potentially dangerous places.

Slippery stones and banks, broken glass and other rubbish, polluted water courses which may host disease, poisonous plants, barbed wire in riparian zones, fast moving currents, misjudging the depth of water, cold temperatures...all of these are hazards to be minded!

If you and your group are planning a visit to a stream, river, canal, or lake for purposes of assessment, ensure that you have a good ratio of experienced and water-friendly adults to students, keep clear of danger, and insist on discipline and caution!



CANN PROJECT BACKGROUND



About this booklet

Over the last five years, the staff from the Atlantic Technological University (ATU) have been working with local organisations to conserve the unique habitats of Lough Arrow. The Lough is a Special Area of Conservation (SAC), because of its crystal-clear waters and complex biodiversity, including wild brown trout and extraordinary underwater plants.

The project attracted funds from the EU INTERREG VA programme for practical conservation works on Lough Arrow. We recognise that Lough Arrow is part of a wider "Catchment" that includes the River Unshin and our conservation efforts will be wasted unless all communities and stakeholders in the wider Unshin / Lough Arrow Catchment appreciate the wonderful place they live, and everyone works together to protect it. We hope this book provides some tools to help you!

So, what is a 'Catchment'?

A Catchment is an area of land, essentially a valley, defined by the fall of water... From the hills above us to the sea below, streams and rivers make their way across our landscape and define the Catchment in which we live. Government at all levels have realised that it is the citizens of a Catchment who, equipped with knowledge of their area and the skills to act, will look after their own rivers and lakes.

This booklet:

- celebrates Lough Arrow and the people who live in its Catchment
- describes the efforts that farmers, anglers and households are making to protect the Unshin / Lough Arrow catchment
- contains info-graphics to illustrate aspects of the Water Cycle
- features Schools around the Lough who participated in Catchment Studies



Come dip your toes!



Welcome to Lough Arrow

SARA MEEHAN, ATLANTIC TECHNOLOGICAL UNIVERSITY

For local people who live within the Catchment, or for those from across the country or around the world who visit its shores, Lough Arrow is one of Ireland's best natural landscapes, known for its crystal-clear waters and complex biodiversity including wild brown trout and extraordinary underwater plants, notably its Charophytes. Lying mainly in County Sligo and partly in County Roscommon, the Lough is approximately 6km long and 2km wide and has four main islands; Annaghgawla, Inishmore, Inishbeg, and Muck. It is situated between three ranges of mountains and hills; the Bricklieve Mountains to the west, the Curlews to the south and the Braulieves or Arignas to the east.

Lough Arrow is classified as an oligo-mesotrophic limestone lake with a small catchment that is fed mainly by springs on the lakebed, making it hydrologically unique and it is therefore designated as a 'Special Area of Conservation' (SAC). Mesotrophic lakes generally have clear water, with medium levels of nutrients and beds of submerged vegetation. The Lough is famous for these underwater plants, chiefly

the Charophytes, which are large algae that grow in dense underwater meadows. They are the temperate freshwater equivalent of coral reefs, providing food and shelter for a wide mix of biodiversity including invertebrates, waterfowl and many species of fish. The Charophytes cannot tolerate significant levels of nutrients (phosphates & nitrates), therefore the presence of these plants is a really useful indicator of healthy ecosystems.

Due to its unique status, and as Lough Arrow is a Special Area of Conservation (SAC), 'Collaborative Action for Natura Networks' (CANN) and Atlantic Technological University (ATU) are working together with local communities to conserve and improve the environmental condition of the Lough, including commissioning of scientific studies, identifying means to halt the spread of invasive species, and delivering educational and outreach programmes and raising awareness of the significance of the habitats and species. This booklet is one of the fruits of this programme.



Trout & Angling

Trout, as well as Salmon, Pike, Perch, Minnow, Crayfish, Eels, Roach, Rudd, Bream, Tench and River Lamprey all live in the Lough Arrow/River Unshin Catchment. Anglers were always in the vanguard of environmental awareness... they know how the fish behave and interact with the hatches of various insects, and are often the first to notice when things aren't right.

One of Ireland's best-loved fishing lakes, Lough Arrow is home to wild, native brown trout, with a long tradition of fly-fishing. The Lough is famous for its mayfly hatches, which can start as early as April and go through to July and it was here that the technique of 'spent gnat fishing with dry flies', which imitates a mayfly on the surface of the water, was pioneered in the early 1900s. The pollution-intolerant aquatic plant charophytes provide essential habitat for the brown trout, including shelter from predators as well as hosting aquatic insect life including Mayfly, Large Dark Olives, Caenis, Duckfly, Black Gnat, Blue Winged Olives, Stoneflies and Sedges. Lough Arrow Fish Preservation Association & District Anglers, and Collooney-Ballisodare & District Anglers Association, play active roles in conserving Lough Arrow as well as the Unshin, Owenmore and Owenboy Rivers.

CONTRIBUTED BY PAUL MCCONIGLY
& SARA MEEHAN

LAWPRO & Lough Arrow

The Local Authority Waters Programme (LAWPRO) is working to identify the issues affecting water quality in Ireland. Where LAWPRO identifies issues, we collaborate with the relevant local authority, public body, and stakeholder to find a solution. Community engagement is the cornerstone of this approach to combine local and expert knowledge for a better understanding of what's happening in a local catchment and waterbody. The overall aim of the approach is to protect and restore good water quality in Ireland's rivers, lakes, estuaries, groundwater, and coastal waters. We are pleased to support the Schools Environmental Education Programme for Lough Arrow with CANN partners Armagh City, Banbridge & Craigavon Borough Council and IT ATU. Indeed, we are keen to continue to support schools and the broader community with initiatives that help protect Lough Arrow and the River Unshin catchment area into the future. For further information please see the LAWPRO website <https://lawaters.ie/>

KAREN KENNEDY, COMMUNITY WATER OFFICER
FOR SLIGO, LEITRIM AND LONGFORD



Farming

Farming is at the heart of our rural communities, providing our food and generating livelihoods which are the basis of local economy and culture. Farms shape local Biodiversity in terms of the habitats & species which grace our landscape, and interact with water quality across our Catchment

Agricultural Sustainability Support and Advisory Programme- ASSAP

There are two ASSAP advisors working in the local Priority Area of Action (PAA). Their function is to work alongside the Catchment Science Team and the Farming Community to lessen the impact of farming on water quality. Over 50 farmers have been engaged and, working together, improvements have been identified. These enhancements are generally in the areas of buffer zones adjacent to streams, rivers, and lakes; bale storage, soiled water management and nutrient management. This free and confidential service has had a good uptake with farmers. Four years into the ASSAP programme there is an improvement in water quality; the improvement is not all down to farmers, but the problems were not all down to farmers either. The challenge is to maintain and improve the good status already achieved - everyone has a role to play!

EAMONN AVERY, TEAGASC ASSAP ADVISOR

Useful 'Best-Practice' Farming Videos & Resources:
<https://smartfarming.ie/sources-solutions/>



Reedbeds

Lough Arrow is surrounded by thriving reedbeds which are dominated by the common reed *Phragmites australis*. These reedbeds are large patches of reeds in shallow, fresh water, growing in dense patches up to 2m tall, with their root stems running horizontally under the lakebed. The Lough Arrow reedbeds support a huge variety of life such as dragonflies and damselflies, migrating birds, wading birds, ducks, geese and swans. They provide the perfect spot for nesting birds as it is difficult for ground predators to reach nesting chicks and they provide camouflage and cover for wading birds. Historically reeds were harvested to roof houses, or the reedbed areas were drained to create arable land. It is important to protect the reedbeds as they are supporting a large amount of the Lough's biodiversity.

Invasive Species – Nuttall's Waterweed

Nuttall's Waterweed, *Elodea nuttallii*, is an invasive macrophyte species, originally from North America from which it has spread, and is a major problem in Lough Arrow. Elodea was probably brought in on the underside of boats, or on boat engines. It forms dense mats of vegetation that shade and kill the beneficial Chara aquatic plant species, prevents boats from navigating in the waters, makes angling very difficult, and is damaging the natural ecosystem of the lake. To help stop the spread of Elodea and other invasive species you should:

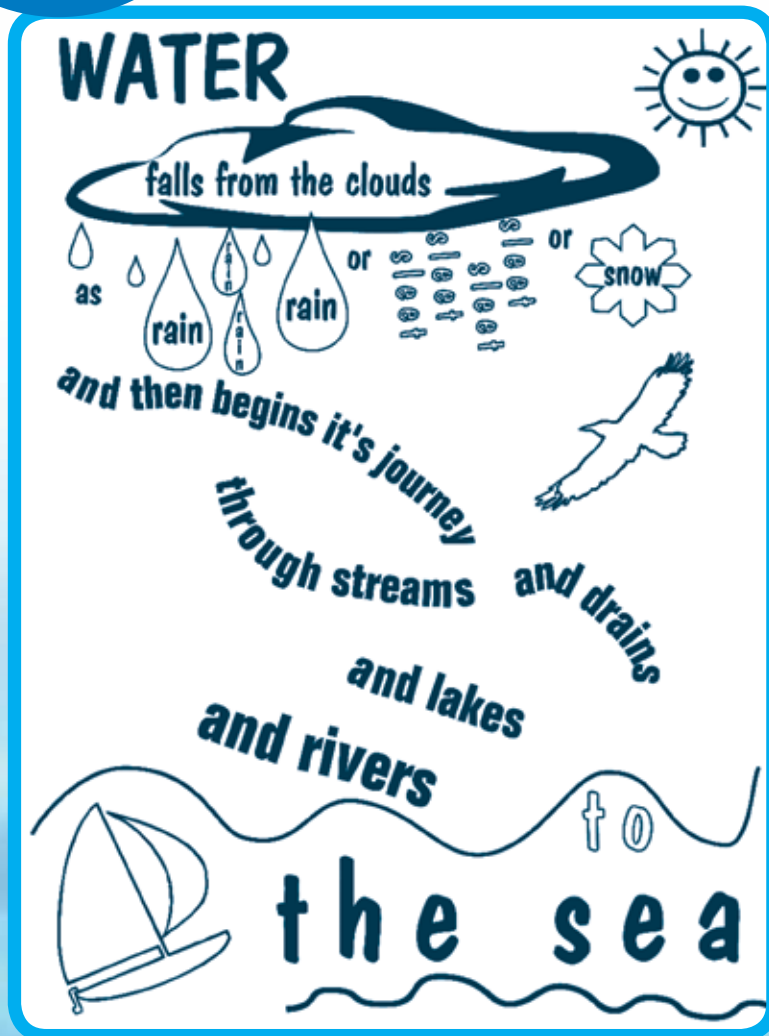
- Check your equipment, clothing and footwear
- Clean everything thoroughly, use hot water where possible
- Disinfect everything thoroughly using a disinfectant agent like Virkon
- Dry everything as some species can live for over two weeks in damp conditions.



The water that's on the earth today is exactly the same water that was always here - no more and no less!

Welcome to the Water-Cycle!

Our Catchment's journey from Source to Sea



But

that's only half the story - how does it get up there in there first place?

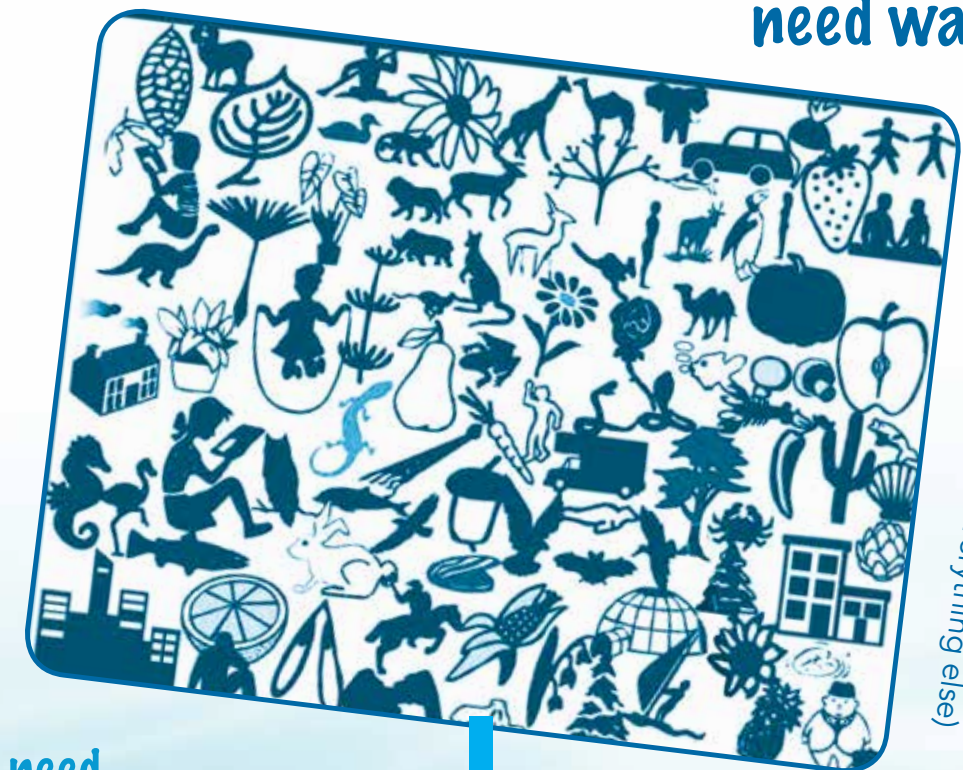
(clue)

And

what about people???



All these things need water



(well ok, maybe not ginger bread people)

(or dinosaurs)

(but everything else)

Most animals need to drink every day (adult humans 2-3 litres) and die within a few days if they don't

Some animals don't usually drink but get the water they need in their food

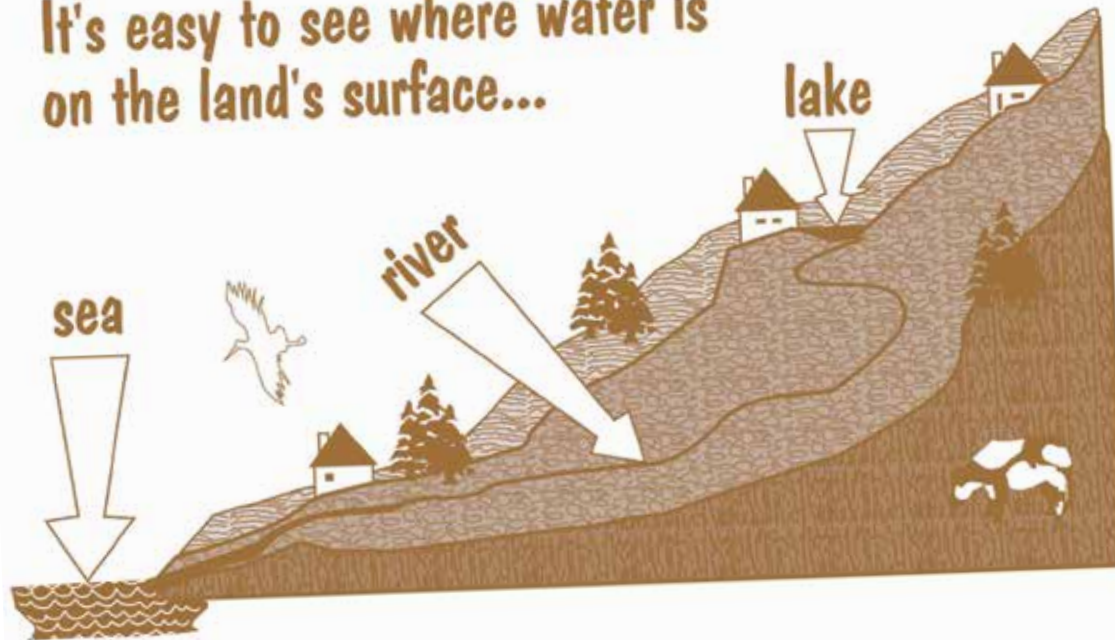
In the summer a big tree needs about 200 buckets-full of water EVERY DAY!



3D Catchments

Water is used
for all sorts of things
in your home

It's easy to see where water is
on the land's surface...

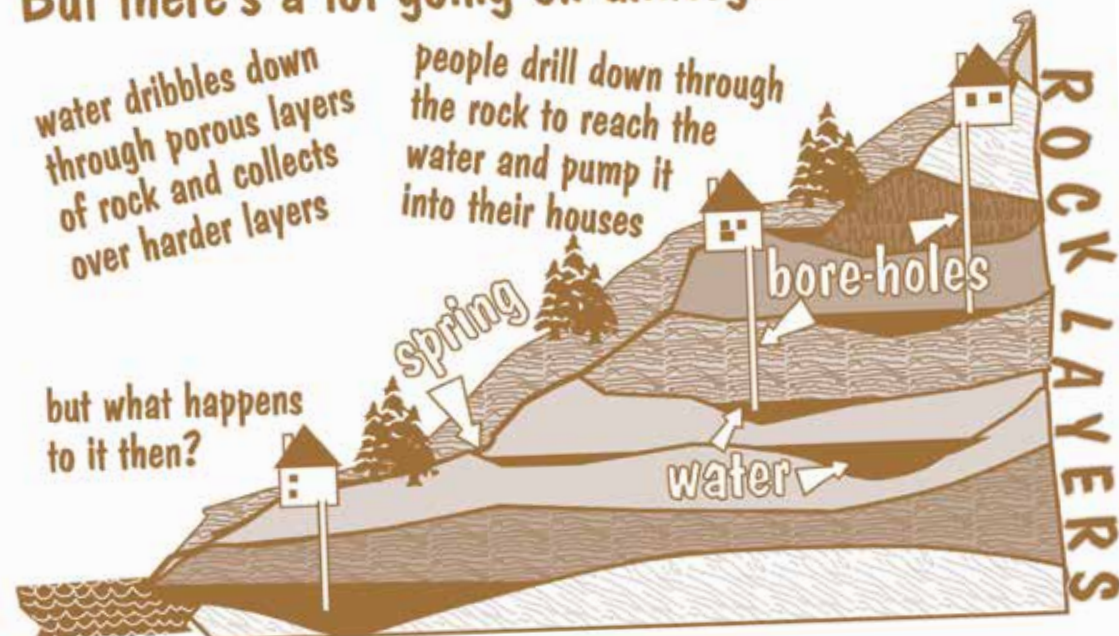


But there's a lot going on underground too...

water dribbles down
through porous layers
of rock and collects
over harder layers

people drill down through
the rock to reach the
water and pump it
into their houses

but what happens
to it then?



Let's have a look inside your house

water is used
for all sorts
of things in
your home



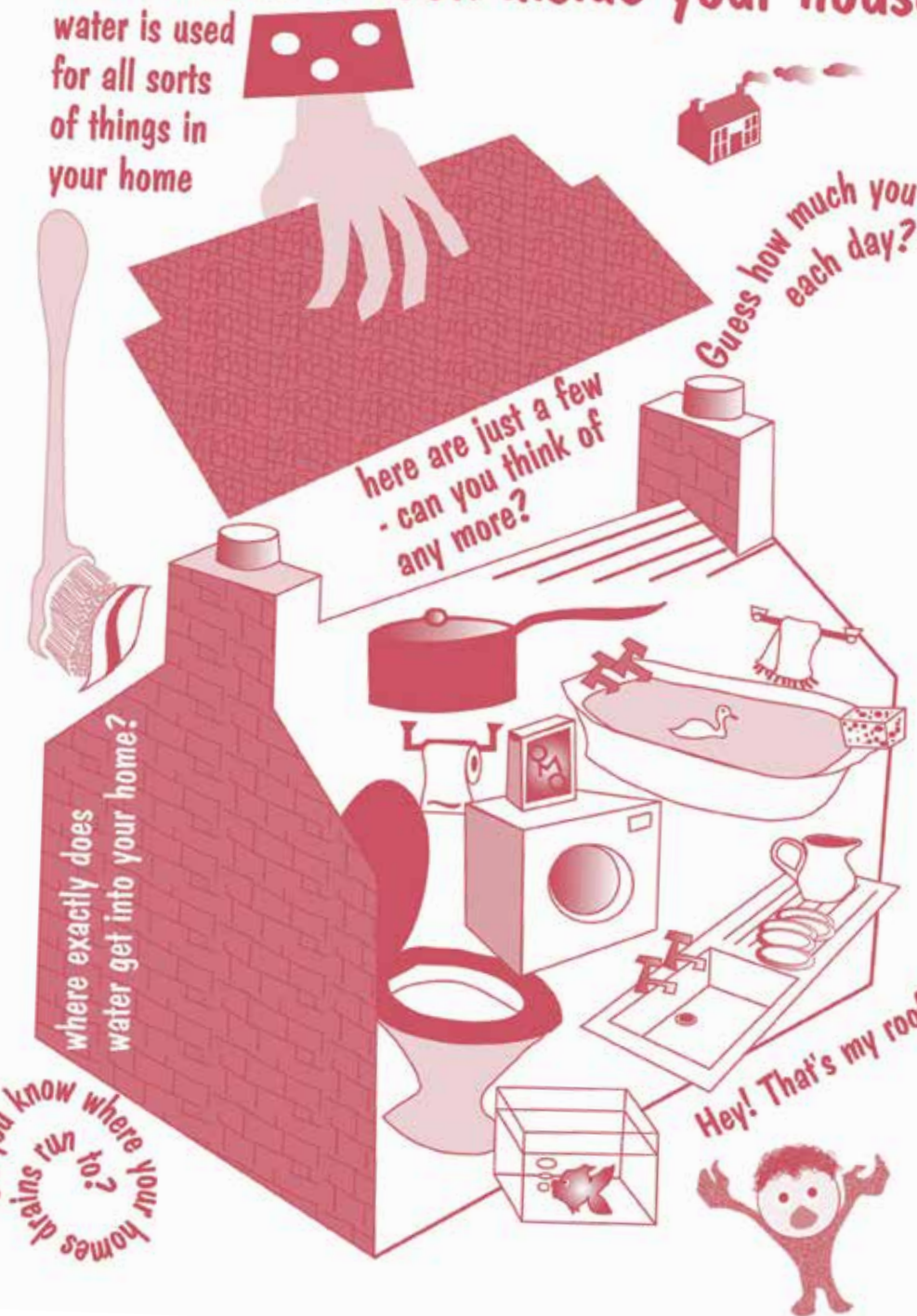
Guess how much you use
each day?

here are just a few
- can you think of
any more?

where exactly does
water get into your home?

Do you know where your
homes drains run to?

Hey! That's my roof!



Lough Arrow Catchment

Graniamore

Ballindoon

Castlebaldwin

Lough Arrow

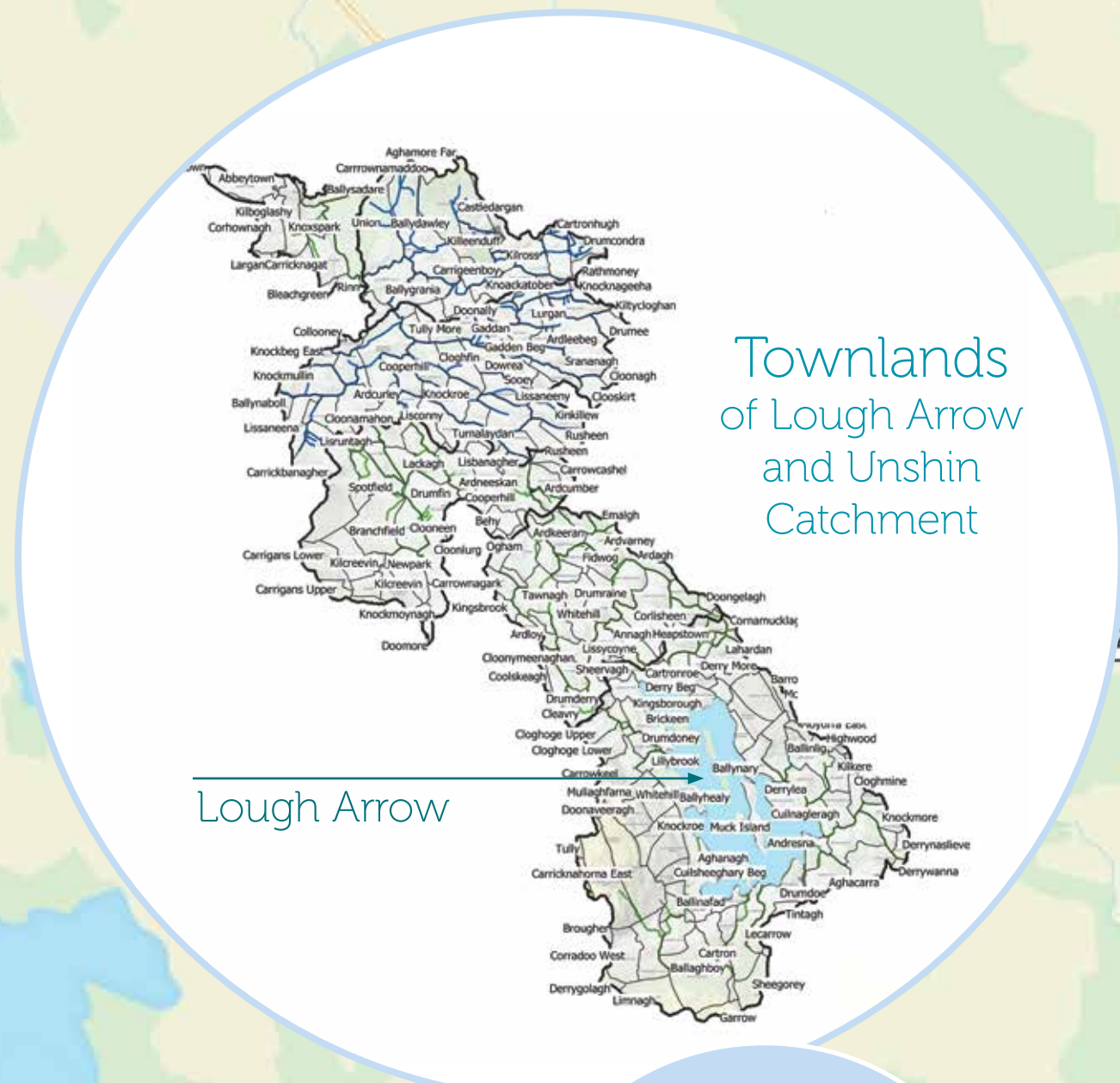
N4

Kesh

Ballinafad

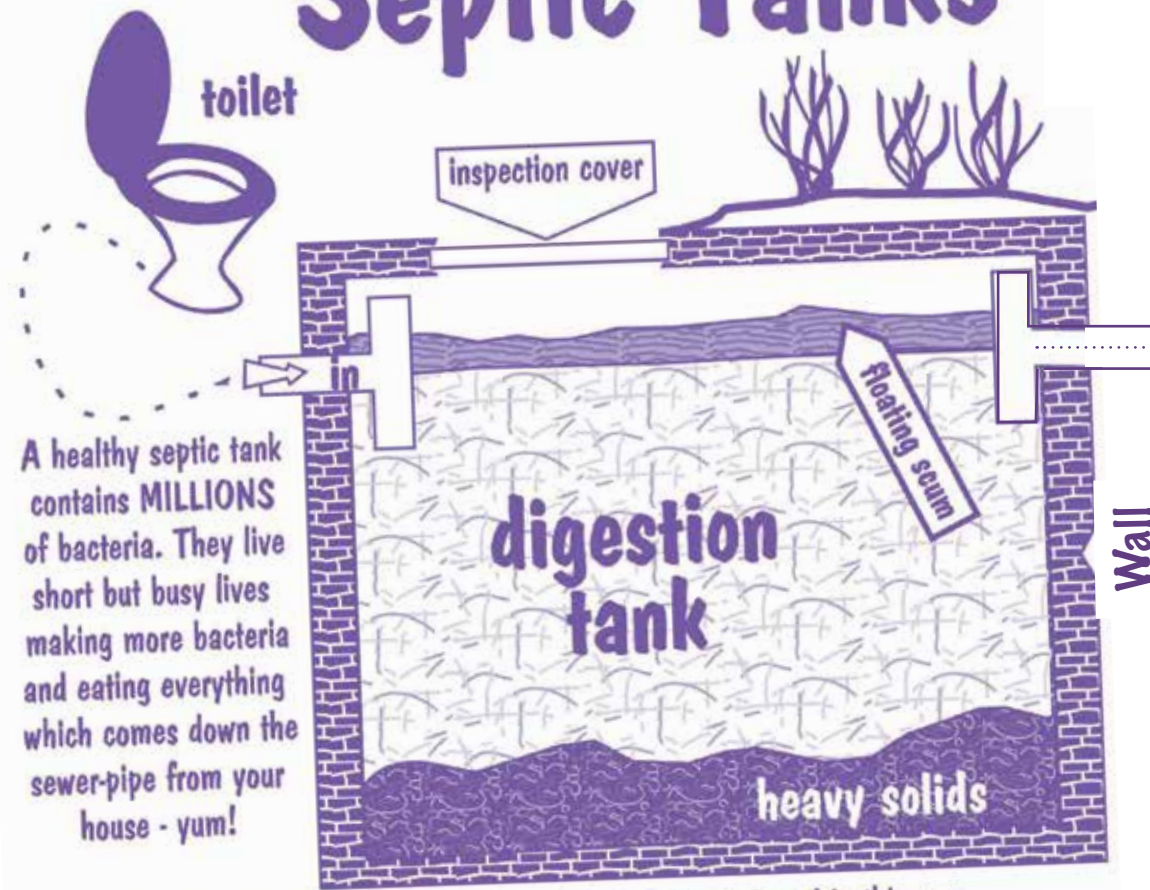
Carrigeenroe

Knockvica



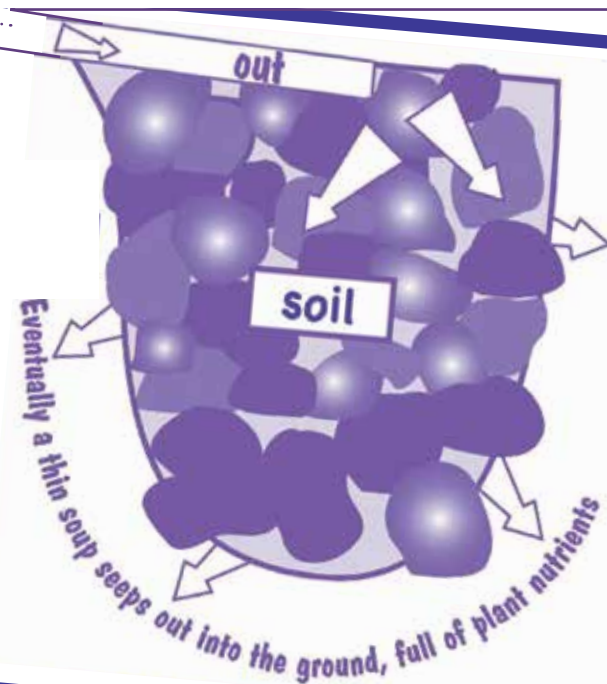
For further Maps and Water Quality information visit www.catchments.ie

Septic Tanks



A healthy septic tank contains **MILLIONS** of bacteria. They live short but busy lives making more bacteria and eating everything which comes down the sewer-pipe from your house - yum!

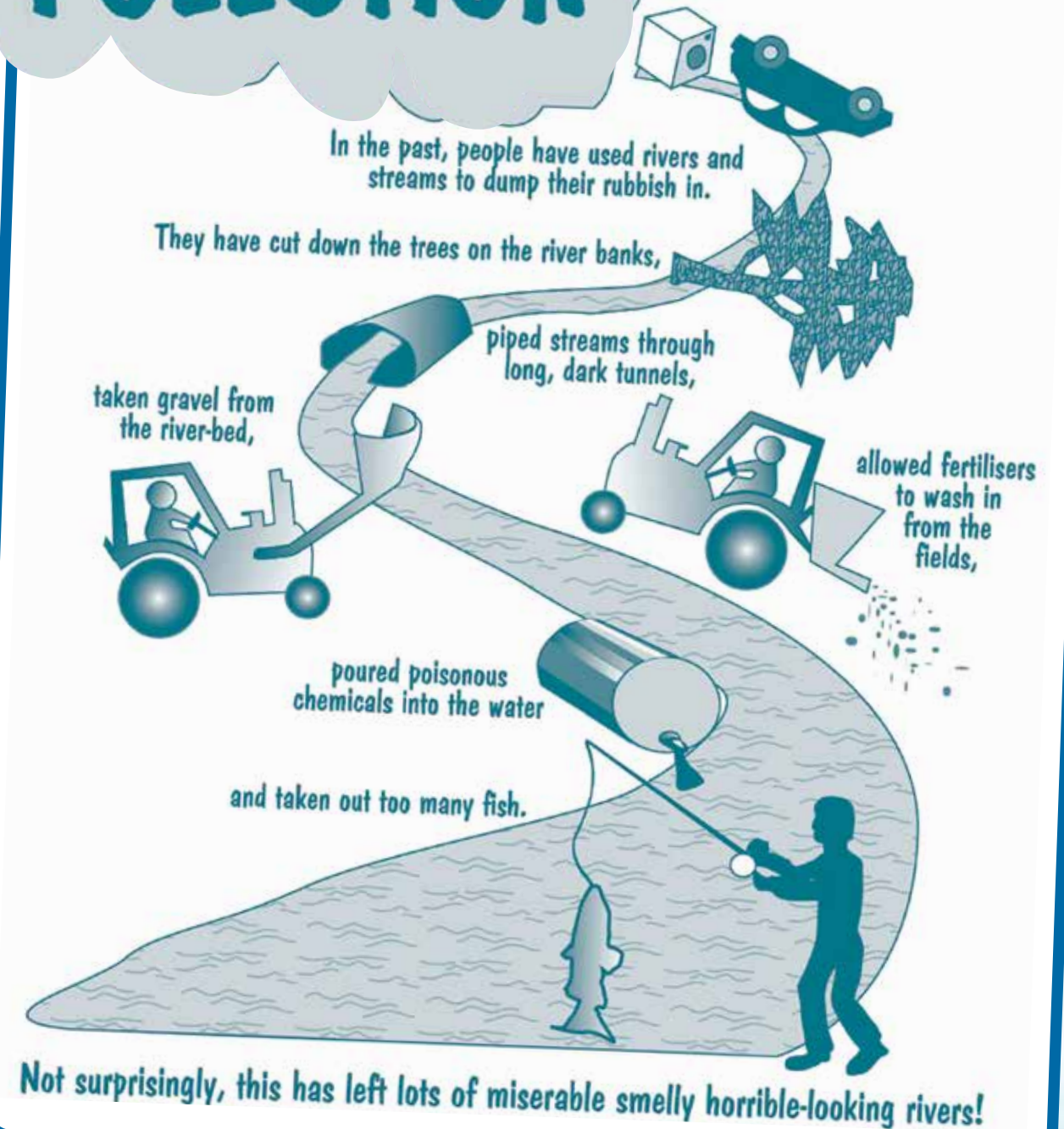
When these bacteria die they are eaten too (by other sorts) and in this way human waste is gradually broken down and washed through the system.



(Septic Tanks are great if they work!)

Shared town septic tanks are a little more sophisticated but they do the same thing

POLLUTION



BUT these days

everybody realises how important water is to all of us. If we respect our water systems then we can all have a happy healthy life in an interesting and exciting environment.

oxygen

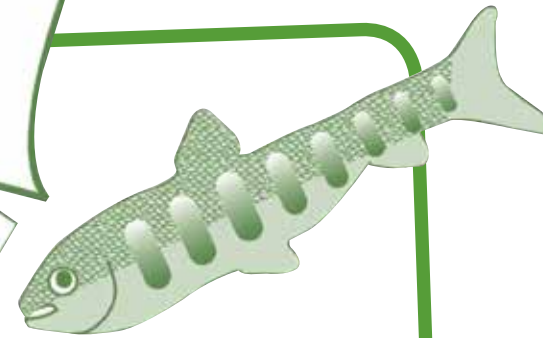
ALL LIVING CREATURES NEED

good food

clean water

shelter

(and a lot need love and affection too!)



Salmon

use their gills to take the oxygen they need from the water

but it has to be in the water first!

eat worms and insects and smaller fish

but what do these creatures eat?

need protection from the sun and from predators

overhanging banks and vegetation, fallen trees

die as soon as the water they're in becomes polluted

silage effluent, rubbish, paint, oil, etc...

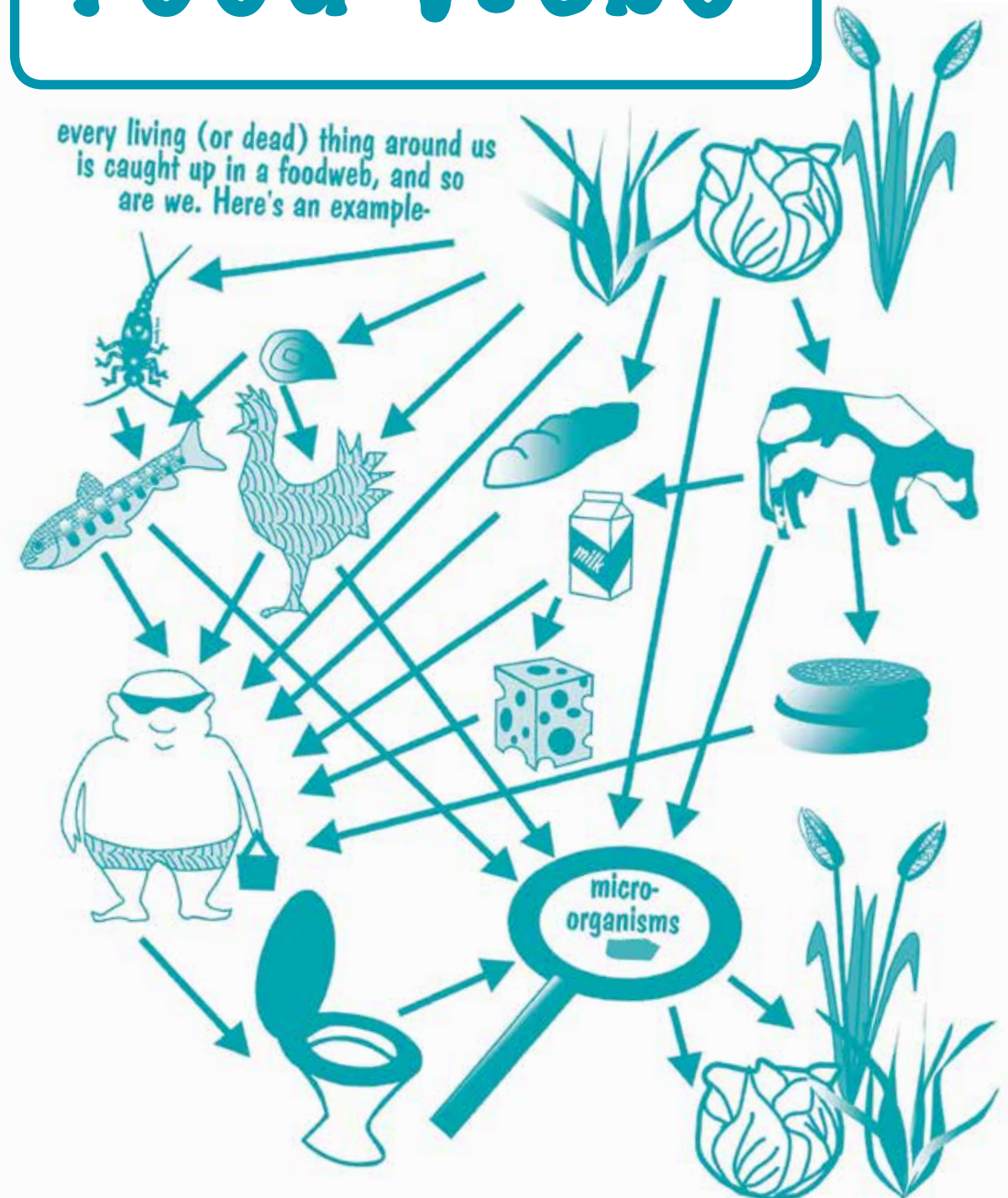
worm

stonefly larva

beetle larva

Food Webs

every living (or dead) thing around us is caught up in a foodweb, and so are we. Here's an example-



All animals (fish, insects, people etc.) eat plants - either directly (like cows who eat grass), or indirectly (like lions, who eat antelopes who eat grass), or both (like people who eat just about anything).

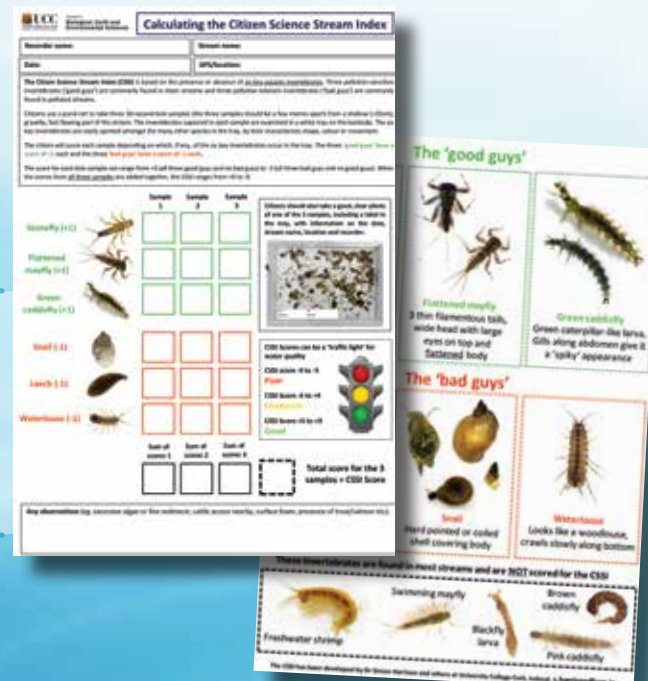
Classroom Learning & Field Trips

Classroom studies were combined with exciting Field Trips to Flynn's Pier on Lough Arrow. Students learned of the wonders of the Lough Arrow Catchment, and of how 'best-practice' in pursuit of our livelihoods, recreation, and domestic management will help us conserve these wonders. Here, Paul Colreavy, Principal of Scoil Mhuire Agus Iosaf in Collooney, County Sligo, tells us about the students' day out to Lough Arrow:

Pupils recently had the pleasure of taking to the outdoor classroom. The venue was Lough Arrow, to study the bugs and organisms to be found there. Chris Mc Carney of CANN invited us to participate and learn about the importance of the conservation measures needed to preserve this special habitat. Living within a mile of the shore myself and a keen angler and into fly-tying, I am all too aware of the significance of Lough Arrow, as exemplified by its Special Area of Conservation status, so it didn't take any convincing to bring the pupils there. Stephanie

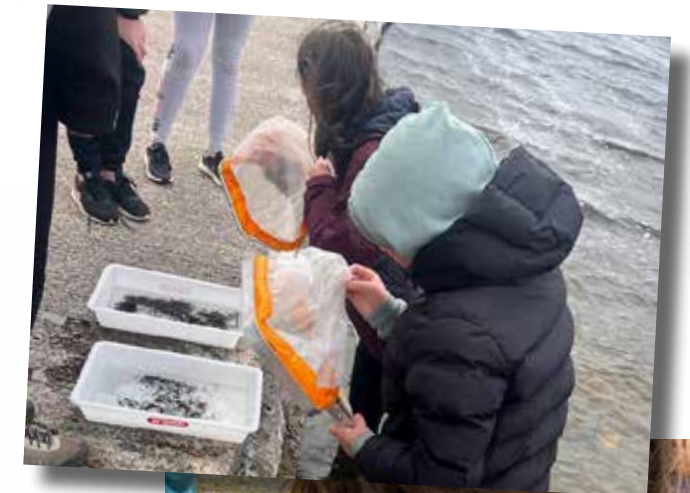
O'Toole & Rauri Maguire from StreamScapes, along with Chris from CANN, Karen Kennedy of LAWPRO, and Lizet, Yosef, and Amanda from the VERI Citizen Science Project, treated the pupils to an amazing afternoon of discovery, from bringing up samples from the lake bed to the identification of the various nymphs, shrimps, larvae etc. which indicate water quality. These are the days that stand out in a child's memory, where the learning is brought to life. The famous trout lakes of Ireland, for anyone who has spent any time on them, draw us back to that magical world of wonder and mystery, where as a child we first dreamt of a fish in a pond or stream. Lough Arrow is one of these lakes that we must be careful to cherish and education is always the starting point. I wish to thank all of those involved in the day, for their enthusiasm, attention to detail and for helping to inspire our pupils to learn why we must pay attention to the natural wonders that surround us.

The VERI-Connect Team led the Citizen Science lessons on our Field Trips



At the heart of the CANN/ Lough Arrow Project StreamScapes schools' engagement was the enthusiastic participation of students and teachers from around the Lough. The participating schools are:

Geevagh National School
Cloghogue National School
St Paul's National School
Ardeeran National School
Taunagh National School
Collooney National School
Kilmactranny National School
Corrigeenroe National School



Scéalta

Stories convey the legacy of a locality, assisting us to gain an appreciation of a spirit of place. First we have a piece on wells at Castlebaldwin, written by Vera Taheny (Ni Morrison) who is turning 100 this year;

There are three natural spring wells behind the old creamery (now in ruins) in Castlebaldwin, Co Sligo; Tobar Bride, Tobar Muire and Tobar Padraig. It is believed pilgrims visited these wells in bygone years.

Tobar Bride is near a tree in the corner of the field behind the creamery. Pilgrims prayed at the well asking St. Brigid to intercede on their behalf. They hung ribbons or strips of cloth on the branches of this tree. Tobar Muire was the main source of water for Castlebaldwin residents and for surrounding townlands. Two local men cleaned it regularly and added lime, to ensure its freshness and purity. Farmers bringing milk to the creamery by donkey and cart had an extra empty can to bring home a supply of water for tea-making and cooking. Men and women drawing buckets of crystal clear water from the well was a daily scene. They always had time to greet each other and share the local news. A stream flowed from the wells into Lough Arrow, where watercress grew also. Tradition holds that St. Patrick on his travels prayed at these wells when going from Tاونagh to Aughanagh where he founded churches.

Some legends collected by the storytellers
Gearóid Ó Cróinín & Gillian Watt

- The Moytura hills, looking over Lough Arrow from the east, are the scene of a great battle in the distant past. Magh Tuired (Moytura) means the 'plain of the pillars', because of the many standing stones and other ancient structures there. Some say that these represent the fallen in the great second battle of Moytura, when the Tuatha de Danann conquered the opposing Fomorian invaders. Others say that poets stood on the stones and recited poetry during the onslaught.

- The outflow from Lough Arrow is the River Unshin, a rich limestone river with deep weed beds. A spot on the river is called 'the bed of the couple'. This is because Dagda, leader of the Tuatha de Danann, and the war goddess Mórrígan made a pact here to join forces to get rid of the Fomorians. With the help of Mórrígan's spells and magic, the Tuatha de Danann beat the Fomorians in the second battle of Moytura.

- In the second battle of Moytura there were loads of Tuatha de Danann casualties but, luckily for them, they had a superpower in the form of the healer Dian Cecht. He fixed the water in a well, not far from Lough Arrow, and he dipped all the dead and wounded into it. Magically, they were healed. Unluckily for them, the Fomorians were not impressed and threw piles of stones in it to block it up. It is now called Heapstown Cairn.

- Another few miles to the east of Lough Arrow is a disappearing lake! It is called Lough na Súil - the lake of the eye. This was the great wizard-king Balor's huge (evil) eye that another leader of the Tuatha de Dannan, Lugh, (as in Lughnasa), put out by firing a slingshot. It burned a great hole in the ground which filled with water and made a lake. Every 100 years or so the lake empties to remind everyone of Balor's evil eye.

- Overlooking Lough Arrow on the western side is Carrowkeel, where people from Brittany set up home about 6000 years ago. They left us a large number of cairns and passage tombs. One of them has a roof box like the one in Newgrange, but in Carrowkeel it is the light from the setting sun at summer solstice that enters into the passage. Another passage tomb looks out on, and is aligned to, Queen Maebh's giant cairn at Knocknarea mountain.

- Kesh Corran is a hill to the west of Lough Arrow lying in the plains of Corran. Corran was the harpist of Dian Cecht, the healer. Kesh is a word for harp. There are caves high up on the western slopes of the hill. These caves are the location of one of the entrances to 'The Otherworld'. Later on, the Tuatha de Danaan took residence in 'The Otherworld' after their ultimate agreement in Ireland with the Milesians.

Want to know more?

Siobhán Ryan, Heritage Officer with Sligo County Council, reports that the Old Schoolhouse Café in Ballinafad did a lovely local Place-Names Project in 2021; see: www.facebook.com/oldschoolhousecommunitycafe/

Historical stories from School children may be found at: www.duchas.ie/en/src?q=lough+arrow

Carmel Taheny reports: There's a Book containing stories produced by the Ballinafad Active Retirement Association, also available at the Café

Useful Links

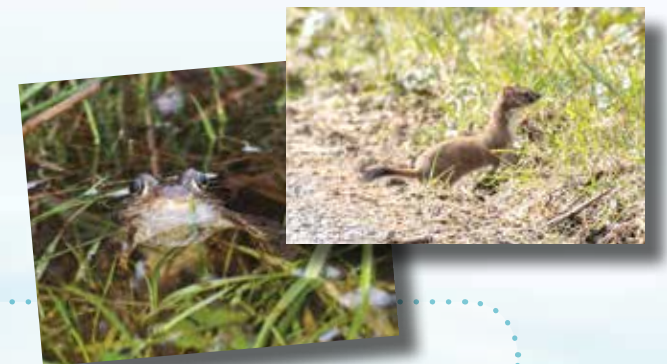
<https://thecannproject.org/>
<https://www.duchas.ie/en/src?q=lough+arrow>
<https://sligohub.com/lough-arrow-loop-drive/>
<https://www.independent.ie/regionals/sligo/champion/business/ballinafad-centre-to-cater-for-tourists-41051411.html>

nice black and white video footage of the Lough

<http://www.ballinafad.com/heritage-and-history-ballinafad-sligo.html>

Useful 'Best-Practice' Farming Videos & Resources:

<https://smartfarming.ie/sources-solutions/>



Lough Arrow Catchment – more information

VINCENT MURPHY

Lough Arrow is a naturally 'Mesotrophic' lake. What does this mean? There are three basic lake types: *Oligotrophic*, meaning low nutrient levels and high water quality; *Mesotrophic*, meaning moderate nutrients and fair to good water quality; and *Eutrophic*, with high nutrients and poor water quality. Lough Arrow is a naturally mesotrophic lake containing 'hard' water (tending towards alkaline rather than the usual acid, and is designated as a Special Area of Conservation (SAC).

GEOLOGY: The Lough has six chief feeder streams, but these are not the main source of its water. Most of the lake volume is fed by an upwelling from underground springs through limestone bedrock, which has helped protect this delicate lake system from otherwise fairly widespread 21st century pollution.



TOPOGRAPHY: Lough Arrow is protected on three sides by high hills and mountains, most notably by the Bricklieve Mountains to the west of the lake. To the south are the Curlews, a set of hills and to the east are the Braulieves, or Arigna Mountains. The lake is about 12.5 square kilometers. Most of the lake is about 9m deep and the deepest point of the lake is 33 meters.

NATURE & HABITATS: An unusual wet 'Alder Carr' woodland lies upon the northwest side of the lake, with alder and willow as the dominant species, and an understory featuring yellow flag iris, reeds, rushes and lesser-known species such as Marsh-marigold. The dry woodland in other areas of the lake shore are dominated by ash with hawthorn and blackthorn, another somewhat unusual species combination. The wooded islands are used as nesting sites by water birds. Tufted duck is the rare nesting resident popular with birdwatchers. Healthy trout abound, and the lake supports a declining and protected populations of eels. Another 'Red Data Book' protected species found in relative abundance around the lake is otter. Salmon? Not really...there is a local myth that there are no salmon in the lake because of a priest's curse but the real reason is likely to be that the streams that flow into Lough Arrow are too small for salmon to spawn in, hence remain in the rivers downstream of the Lough.

HISTORY: there are also three visible Crannogs (there may have been as many as eleven through history) which are easily defended man-made islands, so dating from 4,500 years ago. These Neolithic features are part of the ancient landscape, with ringforts, Fulacht Fiadh sites, Megalithic tombs, Cairns, and Barrows among other historic sites, showing the reverence and historic importance of the landscape in the history of the area. All of these aspects contribute to the Lough Arrow Catchment being one of the most unusual and high value places in the country.



From Lough Arrow to the Atlantic

The Unshin River (sometimes called the Arrow River) flows from Lough Arrow north to Ballysodare Bay in County Sligo. It is a low-lying limestone river, supporting a rich community of animals and plants, unique and almost unknown in Europe. Plant species include Blunt Fruited Water Starwort, River Water Drop-wort, and the Ribbon-leaved Pondweed. The deep, slow flowing sections of the river and riparian habitat provide refuge for many freshwater inhabitants such as Salmon, Otter, Dragonflies, Damselflies and Trout. Under the European Water Framework Directive (WFD), rivers are split up into sections. The section of the Unshin River from Lisconny Bridge to the Owenmore River (which drains Lough Gara) is currently part of a Priority Area for Action (PAA) for the Local Authority Waters Programme, and has a 'High Status Objective'. The aim of the Local Authority Waters Programme (LAWPRO) is to identify pollution pressures affecting the river, and to recommend improvement measures to help restore and protect water quality. Rivers with a High Status Objective form part of the Blue Dot Programme which is an effort of focusing attention on the protection and restoration of these waters. Following their confluence, the Unshin and Owenmore Rivers become the Ballysadare River flowing down to Ballysadare Bay, Sligo Bay, and into the oceanic waters of the Atlantic. (For more information on Blue Dot waters visit: www.lawaters.ie/blue-dot-programme/).

PATSY RYAN, LAWPRO



Best Practice

The StreamScapes method views our toilets, sinks, baths and showers as Tributaries to our Rivers! What we put in them has a huge capacity to impact on local Water Quality and Biodiversity. Outside our homes in our gardens and yards we have an equal ability to create or destroy natural habitats. These tips will help restore water quality & biodiversity:

In our pursuit of livelihood, recreation, and household management we have a huge ability to harm, or help, our local Water Quality and Biodiversity. We are dependent upon clean water coming to us from upstream, while other folk, as well as wildlife, depend on the water we discharge being as clean and clear as possible. It can be helpful to think of our sinks, showers, toilets, and washing machines as tributaries of our local river! Outside, on our farms and in our gardens, we also have a huge capacity to help or hinder water and habitat quality. Here are a few tips to lessen our impacts:

- Avoid any Cleaning Products which contain Phosphates or Bleach – they spoil the good work of your sewage treatment/septic tank, leading to aquatic pollution – use eco-friendly products or learn how to make your own citrus- and vinegar-based cleaning agents*!
- Use the minimum of any cleaning products – enough is enough!
- Any common Household Product labelled ‘Hazard’ or ‘Poison’ or ‘Toxic’ or ‘Irritant’ must be treated as Toxic Waste when disposing of – follow Local

Authority Guidelines, and never rinse down sink or into drains; this includes Paint, Antifreeze, Drain Cleaners, ‘Air Fresheners’, Carpet & Upholstery Cleaners, Toilet-water ‘Fresheners’, Bleach & Ammonia...they’re all poisonous!!!

- Keep your garden low-maintenance and low water-dependent; use native plants & trees to establish suitable local habitats and assist insects/pollinators, birds, mammals & fish.
- Avoid pesticides, herbicides, and application of synthetic fertilisers – they are all enemies of Biodiversity and Soil Health.
- Whether digging your garden, preparing a building site, or ploughing a field, remember that Silts & Sediments are one of the biggest enemies of Aquatic Biodiversity...contain them as best you can.
- Allow for healthy riparian zones along streams and rivers...these help buffer the effects of fertilisers and silts, and enable a flourishing of riverside vegetation.

*To learn how to make your own Household Cleaners visit:
<https://www.rte.ie/lifestyle/living/2020/0422/1134147-10-cleaning-hacks-with-vinegar-lemons-and-bicarb/>



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