The Dodder River Catchment
Welcome to StreamScapes, a dynamic environmental education programme for schools, community groups, and individual citizens. Undertaking a StreamScapes project will give you a deeper understanding of:

- How your local (rural or urban) catchment environment functions,
- How human activities impact upon natural habitats,
- How high quality freshwater environments reflect wise landscape management,
- How to achieve best practice in pursuit of livelihood and recreation, and,
- How your informed and active participation in environmental stewardship can improve the quality of life now and for those who will follow.

This book provides information in support of theoretical and practical Environmental Studies. It is intended for the use of Primary & Secondary School Students, but may be relevant to Farmers, landowners, or anyone interested in conserving their local waters, such as Angling Clubs or Tidy Towns Committees. An accompanying ‘Teacher’s Guide,’ StreamScapes Múinteoir, is available to advise further Catchment studies, and there are other resources available on the website www.streamscapes.ie in support of projects.

What is a Catchment?

When you think of it, we all live in valleys, no matter how steep or broad, and all of our valleys have streams and rivers. From the hills above us to the sea below, these watercourses make their way across our landscape and define the Catchment in which we live. Here a mountain stream runs swiftly and tumbles over waterfalls, there a wide river flows easily past green fields, through our communities and down to the sea.

In that river, along its banks and into the surrounding landscapes, may be found a wealth of biodiversity; fish, birds, insects, animals, trees, wild flowers, and people, but only if our waters run pure and clean. For our Catchment also contains our farms and factories, towns and toilets. We need all of these, but we must also come to understand how, as we work and play, or cook, and clean, and garden at home, we have a huge impact on water quality around us.

This book introduces us to the River Dodder Catchment, the Water Cycle, the wonderful variety of Biodiversity that clean waters support, and the various people and agencies who are striving to ensure that the Dodder achieves high status water quality and becomes a resource that we all may enjoy. It also encourages us to be aware of how we may minimise our own impacts, and to be active participants in protecting the waters of the Dodder Catchment.

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“To protect your rivers, protect your mountains.”
- Emperor Yu (1600BC)
Welcome to the Water-Cycle!
Our Catchment’s journey from Source to Sea

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

All these things need water

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

And what about people???

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!

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

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

Guess how much you use each day?

Do you know where the water gets into your home?

Hey! That’s my roof!
Septic Tanks (are great if they work!)

A healthy septic tank contains MILLIONS of bacteria. They live short but busy lives making more bacteria and eating everything which comes down from your house.

BUT - the bacteria in your septic tank are sensitive little things and are killed by Bleaches, Toilet cleaners, Disinfectants etc.

Eventually a thin seepage goes into the ground. If too much of this seepage enters the ground it could cause problems.

Pollution

In the past, people have used rivers and streams to dump their rubbish in.

They have cut down the trees on the river banks,

piped streams through long, dark tunnels,

allowed fertilise to wash in from the fields,

taken gravel from the river-bed,

poured poisonous chemicals into the water

and taken out too many fish.

Not surprisingly, this has left lots of miserable, smelly, horrible-looking rivers!

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.
Managing our catchments requires us to understand and integrate a huge range of information - how people are using the water, including drinking, agriculture, industrial, use for bathing; the geography and geology of an area, looking at how all the water bodies are connected both above and below ground, how the water flows from where it falls as rain to the sea: how people use the land and water bodies and what livelihoods are supported; and possible sources of pollution, including urban waste water treatment plants, septic tanks and runoff from farming, forestry, hard surfaces, construction and landfills.

In recent years there has been good progress in tackling serious pollution but small point and diffuse sources of pollution and physical damage to river corridors remain an issue.

This booklet is designed to inform people of the part they play in nature’s water cycle and provide us with lots of information on how we can reduce our impact on waters. Hopefully, it will also encourage better informed individuals and communities to reconnect with their local river and work together to restore habitat and water quality.
We are interested in Salmon and Trout (the salmonids) because they are the proof of clean water and a healthy habitat - and they taste delicious too!
ALL LIVING CREATURES NEED

- oxygen
- clean water
- shelter
- good food

(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)
influent, rubbish, paint, oil, etc...

Salmon

Food Webs

every living (or dead) thing around us is caught up in a food web, 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!).
Healthy STREAMS and RIVERS have a huge range of plants and animals living in and around them. They need deep, sheltered pools for fish to hide in, but they also need shallow, fast-flowing areas where air can mix with water. Overhanging plants provide shelter and food for insects and birds.

Algae and mosses grow on the stones - food for snails and insects. The stream-bed will be scattered with stones of different sizes, as well as dead leaves, food for micro-organisms and bigger animals.

Large destructive animals like cows will be kept away. It’s ok to go fishing in a healthy river, as long as plenty of fish are left to breed.

So, how's your stream? go on, have a look!

Here are a few things you might find - what else can you see?
Our Wildlife

If we can achieve high-quality waters in our water catchment, lots of benefits follow.

These pictures are a few examples of the variety of birds which we might see in The River Dodder, and along its banks. Most of these photos were taken by local people, who kindly allowed us to use them in this book.

How many species can you find?

If you are visiting the Dodder, tick the boxes of any of the species shown here that you are lucky to see... and don’t forget to tell your friends and family all about the wild and wonderful nature you’ve seen when you visited The Dodder.
The insects that live in a stream provide an indication of water quality in what is known as the ‘Q’ Scale:
- **Q1** = Very Poor
- **Q2** = Poor
- **Q3** = Moderate
- **Q4** = Good
- **Q5** = Very Good

What bugs will we find in Our Stream?

**Q1 Worm**
- Fíor - Phylum Annelida: normally live in silt and mud and can tolerate pollution

**Q2 Whirlygig Beetle**
- Ciaróg Whirlygig – Gyrinidae: Oval, black-bronze sheen: predators/scavengers

**Q3 Water Boatman**
- Bhádóra Uisce – Notonecta glauca: Carry bubbles of air under their wings

**Q3 Cased Caddis Fly**
- Nimfeach Caddis Eitilt – Hydropsychidae: Builds home of twigs or pebbles

**Q4 Mayfly nymph**
- Nimfeach Mayfly - Ephemeroptera Baetis: Very sensitive to pollution

**Q5 Stone Fly nymph**
- Nimfeach Eitilt Cloch - Dinocras cephalotes: Indicator of the highest water quality

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**Built Heritage**

The River Dodder has been an important part of Dublin’s history, and has been a source of drinking water for centuries. The Dodder used to be very important for industry, with many mills using its water for power. Nowadays, only some millraces survive. These photos highlight some of the built heritage along The Dodder.
The Dodder catchment is 168 square kilometres, with the Dodder rising in the south of the catchment and generally flowing north until it reaches the Liffey estuary between Grand Canal Dock and Ringsend.

The Dodder is 26 kilometers long and flows through areas managed by South Dublin County Council, Dun Laoghaire Rathdown County Council, and Dublin City Council.

The Dodder flows into Dublin Bay, which is a UNESCO Biosphere. The Dublin Bay Biosphere covers all of Dublin Bay, reflecting its significant environmental, economic, cultural and tourism importance, and extends to over 300 square kilometres. Over 300,000 people live within the Biosphere. You can read more on www.dublinbaybiosphere.ie

A predominantly urban catchment, it displays some of the major issues associated with inefficient drainage systems and problems with sewer misconnections. This is a known major issue for the respective Local Authorities and work is underway to further identify the sources of these environmental pressures. The Dodder’s catchment has a large variation in land cover types, with a dominance of peat bogs and forestry in the headwaters of the Dodder.

As the river flows downstream and enters the greater Dublin area, the land cover changes to urban fabric, with a large number of industrial, sports & leisure, construction and dumping sites throughout.

The catchment has a low Standard Average Annual Rainfall in the range of 670-1035mm in the lower catchment, with a more moderate 1278-1597mm in the upper reaches. The Dodder has been divided up into 5 segments as it flows from the mountains to the sea. Each of these segments has been assigned a status to tell us how healthy it is. These 5 statuses are High, Good, Moderate, Poor and Bad, and are assigned based on scientific assessments of The Dodder’s chemistry, ecology and hydromorphology (how the river flows).

Starting from the Dodder’s headwaters on Kippure Mountain in The Dublin Mountains, the Dodder_010 is Good, then flowing downstream from the Dodder_020 (which includes the the Glenamoloe Upper and Lower reservoirs) is Good, the Dodder_030 which starts near Kilteer is Good, The Dodder_040 which starts near Oldbawn is Moderate, and finally The Dodder_050 which starts at Bushy Park and flows all the way to The Liffey beside Grand Canal Dock is Moderate.

Urban rivers hold a certain fascination in that they have the potential to be extremely rich wildlife corridors in the midst of densely populated areas. Though the River Dodder has had its share of threats to its integrity over the years, the efforts of local citizens and community organisations, environmental NGOs, Local Authorities and State Agencies have combined to the point where one may now see otters, kingfishers, and jumping trout...in Milltown and along other stretches!

The Dodder is one of the three main rivers that flow through the greater Dublin area, along with the River Liffey and the Tolka. The Dodder Catchment encompasses much of south County Dublin from the Wicklow County bounds to Ringsend. The river can be broadly divided into two sections; an upland stage from its source to the Oldbawn / Jobstown area; and a lowland and urban stage from Oldbawn to the river’s confluence with the River Liffey. In the stark beauty of the uplands or the pools and riffles of the lowlands, the River Dodder offers a corridor of tranquillity away from the hectic pace of Dublin life.

Many people who know the Dodder as it flows through Dublin are unaware that 26 km upstream of Dublin Bay there is a collection of little known streams, on the side of Kippure Mountain, that are the sources of the River Dodder. These little rivulets and streams, cut into the hillside, are surrounded by Upland blanket bog (PB1). This bog is composed mostly of purple moorgrass and heathers with bog asphodel, bog cotton, and Sphagnum moss present. There are also patches of Wet Heath (WH3) that are dominated by heather. Two rare birds, merlin and peregrine falcon, are occasionally sighted, as are deer such as Red deer and Sika. Where these streambeds are lower due to erosion, there is shelter for grasses and the odd windblown tree to develop. The streams from here are Eroding upland streams (FW1), and continue down through to areas of deeper peat lower along the mountainside, which when harvested and are known as Cutover Bogs (PB4). The bankside vegetation continues to develop as trees such as ash, sycamore, hawthorn and oak are present along the bankside vegetation.

Bogs on the riverbank are Eroding peatlands (PB2), and continue down through to areas of deeper peat lower along the mountainside, which when harvested and are known as Cutover Bogs (PB4). There are a number of rare birds found here such as kingfisher, dipper, badger, otter and various species of bats. Fish species include trout, eel, stone loach and three-spined stickleback. Salmon have also begun to return to the river as water quality has improved. Invasive alien species such as Japanese knotweed and Himalayan balsam are present and will require control as they cause erosion and replace native plants.

Just upstream from Ballsbridge is a weir that marks the point where the river enters its tidal phase. This 2km Tidal River (CW2) stretch links the Dodder to the mouth of the River Liffey in Ringsend, the Liffey’s Estuary (MW4) and Dublin Bay (Sea Inlets & Bays MW5). The River Dodder comprises a complete river cycle with a wealth of ecological and social services in Dublin’s own backyard!

Vincent Murphy, StreamScapes Consultant Biologist

You can find out more on www.catchments.ie

- Check out the Maps & Data pages
- Sign up to receive the ‘Catchments Newsletter’
- Read the article about the Dodder at: www.catchments.ie/dodder-gathering-2017-inspiring-positive-future-connecting-people-nature/

And, if you have a story to tell about The Dodder let your Community Water Officer know at: www.watersandcommunities.ie/
The Dodder Bank
a poem by Paddy O'Toole

I tripped along the Dodder bank, I think that I was three. My Da he carried my net and jar, there’s one there you see. They swam around my crystal dome, a kaleidoscope so bright. My first encounter with our stream oh how I slept that night.

I ran along the Dodder Bank, my age now ten and three. I steered my worm beneath a bush, and let my line run free. It lay upon a dinner plate, my trout, two pounds or more. A wonderful encounter, with many more in store.

I sat upon the Dodder bank, my age now twenty and three. I held her hand, and babbled on and let my words run free, that little river heard those words, and carried to the sea. My happiest encounter, between my love and me.

I crouched along the Dodder bank, my age now forty and three. I present my fly, but I give a sigh, there’s something wrong you see. Now plastic leaves grow on that bush, tin cans replace the gravel. Now what’s that smell? Well fight it like the devil. My saddest encounter, our stream its lowest level.

I grope along the Dodder bank, my age now sixty three. The going is hard, be on your guard, keep our river pollution free. And with gods will, clean ups, and no spills. The day it soon may come, complete restoration, I’ll say, thank god, well done.
One of the ways you can help improve the Dodder is by becoming a Citizen Scientist, and recording data that will help us understand and manage the river better using an app on your phone. You can also report any environmental pollution you see.

**Citizen Science and reporting pollution**

**Record River Obstacles**

The Reconnect citizen science project is looking for your help to identify and record river obstacles, and you can download a mobile phone app to allow you to do this easily. Mapping the locations of river obstacles is not a simple task. Ireland’s rivers are over 74,000 kilometres long, and we need your help to map all the barriers in them. River obstacles can make it hard for fish and other creatures to swim up or down stream, trapping them and reducing the length of the river they can access. Mapping these obstacles can help us understand what needs to be done to help fish and other creatures survive and thrive.

**What to do:**
1. Download the 'River Obstacles' App from Apple’s App Store or Google’s Play Store.
2. When you are walking beside a river, take a photograph of any obstacles you see in the river and report it with the App.

**‘Report Invasive Plants’ in your community**

Invasive alien plants pose the second greatest risk to wildlife after habitat destruction, and pose a threat to water quality by leaving banks vulnerable to erosion. The ‘Report Invasive Plants’ app allows you to report sightings of invasive plants in your area. Once reported the information will help track the extent of these invasive plants. This app has been designed to be easy to use. It includes photos of the four most common invasive plants: Giant hogweed, Himalayan balsam, Japanese knotweed and Winter heliotrope.

**What to do:**
1. Download the ‘Report Invasive Plants’ App from Apple’s App Store or Google’s Play Store.
2. When you are walking beside a river, take a photograph of any Giant hogweed, Himalayan balsam, Japanese knotweed or Winter heliotrope you see and upload the photo using the App.

**‘See it? say it!’ if you spot environmental pollution in your area**

The ‘See it? Say it!’ app developed by the EPA, helps to collect and direct your environmental concern to the correct local authority so that they can act and address it. You can report water (fish kill/pollution), waste (dumping/littering), air pollution (backyard burning/odour/toxic fumes), and noise (commercial premises/small factory).

**What to do:**
1. Download the ‘See it? Say it!’ App from Apple’s App Store or Google’s Play Store.
2. Click ‘Report Environmental Complaint’ – please note your contact information may be passed on to local authorities and others so that your report can be addressed.
3. Take a Photo & Click ‘Submit’ Use the app to take a photo and provide details that may be important, and your contact information. Your report is logged on FixYourStreet.ie where the location and photo is publicly visible, but your contact details are not visible. The local authority can see and respond to your report using this site.

You can also contact the National Environmental Complaints Line on a 24 hour basis at 1850 365 121.

**Contacts & Further Information**

- Local Authority Waters Programme: www.watersandcommunities.ie
- Dublin City Council: www.dublincity.ie
- Dun Laoghaire Rathdown County Council: www.dlrcoco.ie
- South Dublin County Council: www.sdcc.ie/en/
- Dodder Action: www.dodderaction.org
- Dodder Anglers: www.facebook.com/dodder.anglers
Home Truths

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:

Household Best Practice

- Get your car washed in a licensed car wash so that the runoff is collected and doesn’t end up in the Dodder.
- Avoid using cleaning products that contain phosphates or bleach as these products can damage our river.
- Never pour common household products down a drain.
- Many household products are labelled as a Hazard, Poison or Irritant. They must be treated as a toxic waste regarding disposal by following Local Authority Guidelines.
- Avoid using pesticides, herbicides and fertilisers in your garden as they end up in our rivers and cause problems. Explore more natural ways to garden.
- When carrying out any excavation work remember that silt harms water courses so don’t let it enter our rivers and harm biodiversity.
- If getting a new patio or driveway, choose a permeable surface rather than an impervious surface.
- Always remember that water is precious and it’s necessary to protect our rivers so that future generations can enjoy them.

What is Biodiversity?
The terms ‘nature’ and ‘biodiversity’ are interchangeable. Human beings are an intrinsic part of biodiversity and interact with it on a daily basis. The River Dodder is home to many different creatures which can be grouped into mammals, invertebrates, plants, birds and fish. You can also see different types of landscapes as you walk alongside the Dodder including semi wild areas like the river banks, the river itself, grass land, woodland and ponds.

Hydromorphology
Hydromorphology is a physical characteristic relating to the shape, boundary and content of a water body. Good hydromorphological conditions allow physical habitats for fish, invertebrates and aquatic macrophytes. Pressures which can affect good hydromorphological Conditions include canalisation, embankments and abstraction.

Instream Insects
Did you know that a survey or census on the insects that live in the Dodder River reveals the environmental quality of the water? Stone flies, mayflies and cased caddis fly larvae are amongst the most pollution sensitive aquatic insects. If you ever find them in the Dodder it is a good sign, and a great example of biodiversity in action.

Don’t let Nature go down the Drain!

A StreamScapes Publication
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This project is supported by the EPA, LAWPRO, DCC, SDCC, DLRCC and aims to promote awareness of the rich and natural resources of the Dodder Catchment as well as to further stimulate community engagement in Catchment Management in the area.