

Leaner  
& Greener

# Threats to Biodiversity in NI

TED

Tourism  
Enterprise Development  
Programme



TOURISM  
NORTHERN  
IRELAND



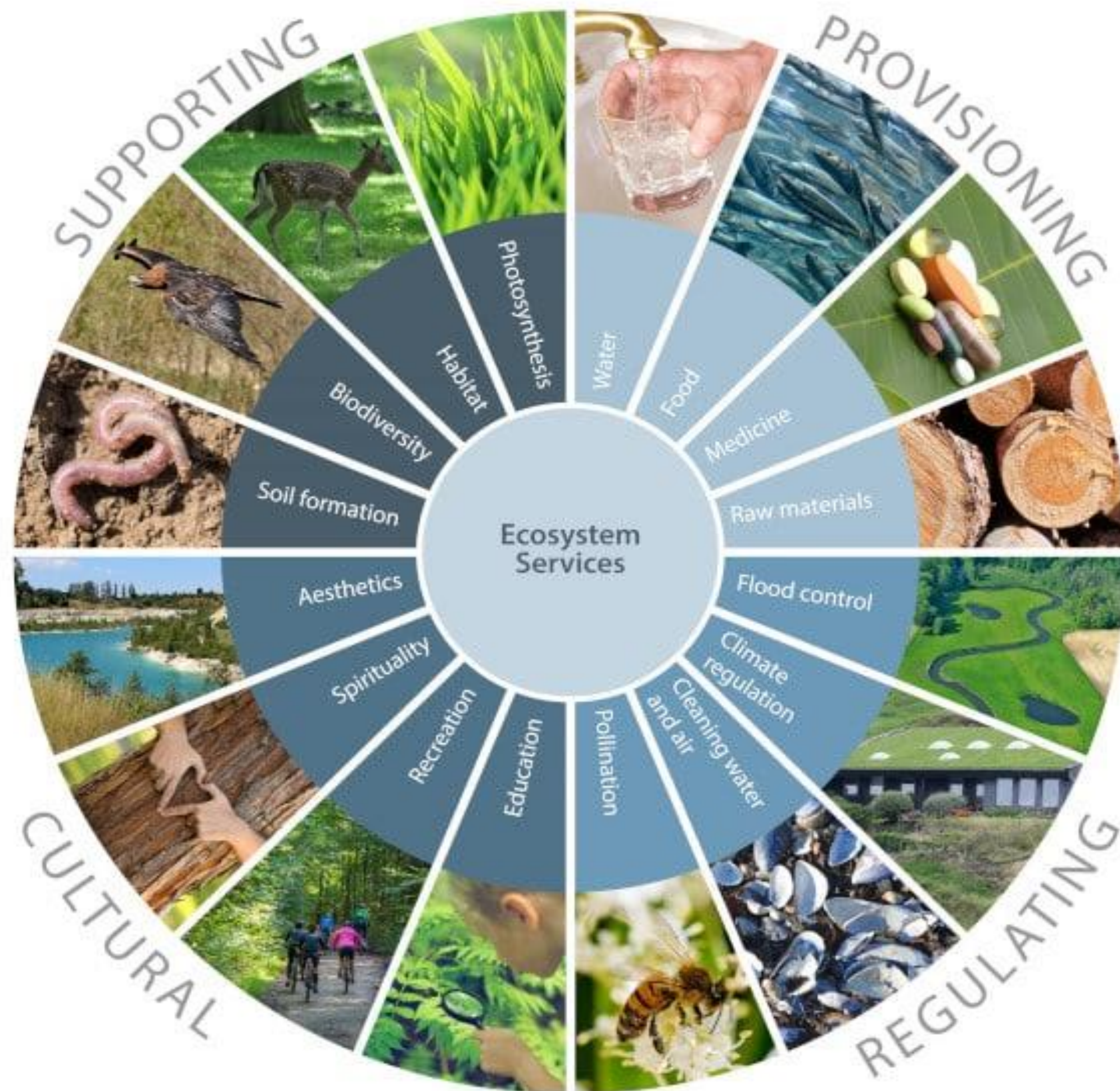
# COURSE OVERVIEW

## Today's Session

- 1** Invasive species on your premises and in our water
- 2** Water Quality and Tourism
- 3** Water and Climate.
- 4** Water Conservation for Tourism Businesses
- 5** Sustainable Drainage Systems (SUD's)



# Why is Native Biodiversity



Biodiversity services are the multitude of benefits nature provides to society

More biodiversity

=

More resilience



# Share in the chat

Have you noticed any changes to the nature in your local area over your lifetime?



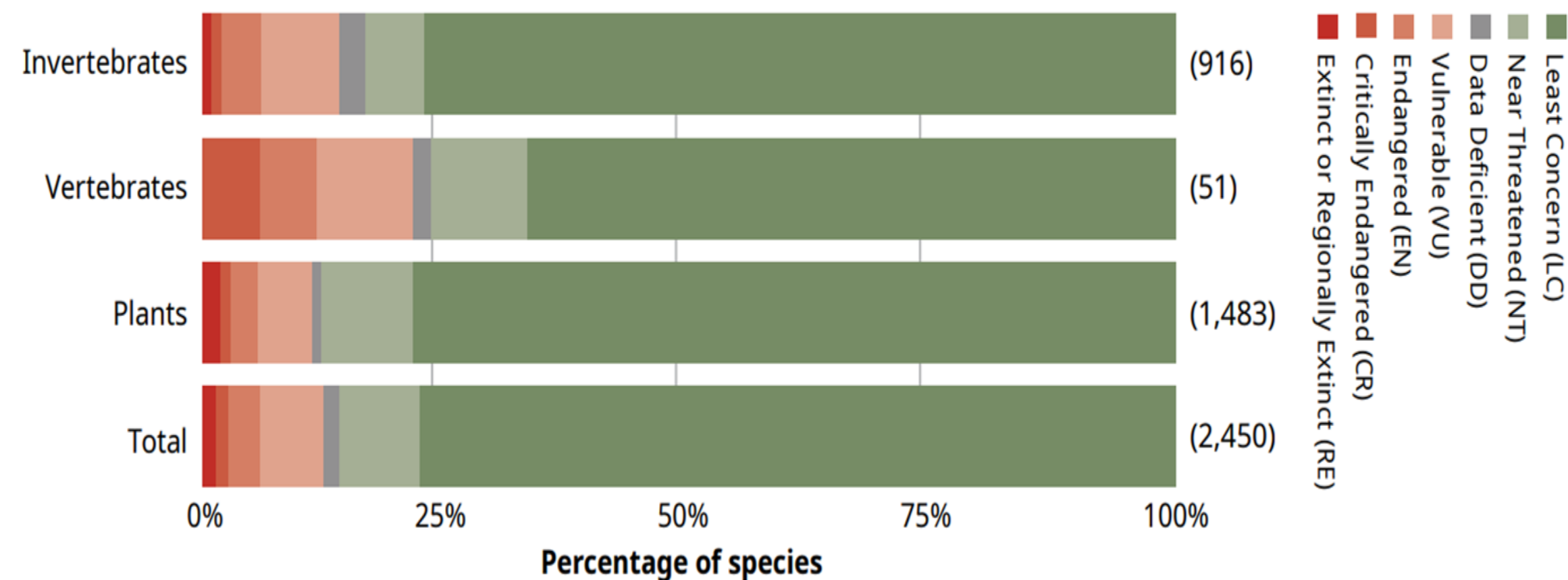
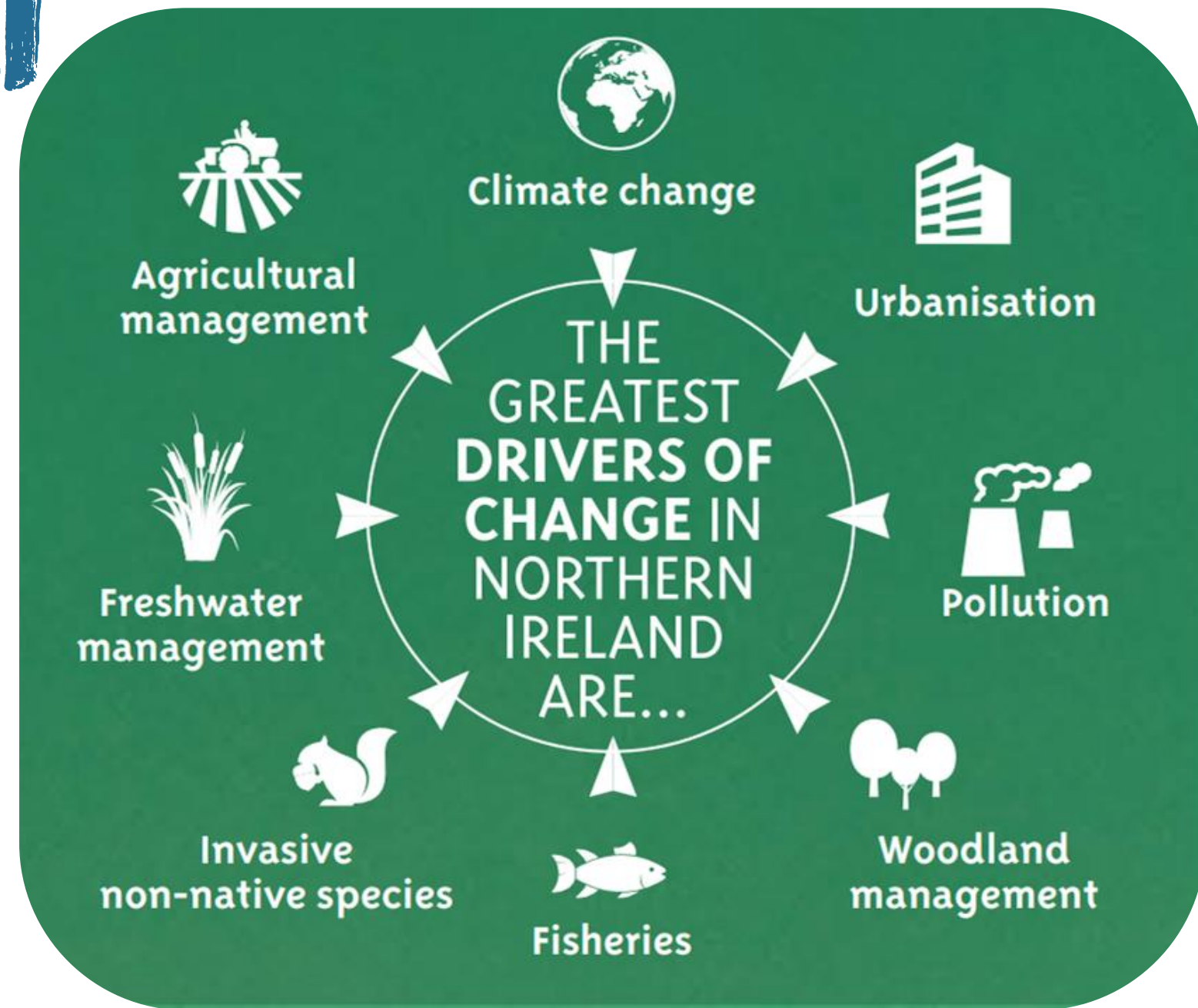
# State of Nature (2019) – Northern Ireland

- 75% Agricultural Land
- Internationally significant areas of blanket bog
- Large inland and coastal waterbodies, including Lough Neagh
- 650 km of Coastline - more than half of NI biodiversity is found beneath the sea!
- Northern Ireland holds species found nowhere else in the UK, including the Irish Hare, Irish Damselfly, Irish Whitebeam, Cryptic Wood White butterfly and Pollan





# Threats to biodiversity in NI



- Northern Ireland is 12th Worst in the World for Biodiversity Loss
- 50% of Biodiversity Intactness (amount lost from a pristine state)
- Curlew populations have decreased 80% since the 80's
- 11% of all wildlife is threatened with extinction
  - Butterflies have decreased by 43%
- Across the UK, 41% of species have decreased in last 10 years



# Saving Mourne's Juniper



One of 3 conifer species in Ireland  
On the decline due to land practices

## Mourne Heritage Trust

- In the Silent Valley in 2015/2016 a propagation unit was established for Mourne Juniper plants
- Mourne Juniper is a genetically distinct species
- There are ongoing conservation efforts to protect this plant, with a dedicated volunteer team working on this project

MOURNE HERITAGE TRUST





# Combating Marine litter & Corporate Volunteering



**LIVE  
HERE  
LOVE  
HERE**



## Keep Northern Ireland Beautiful

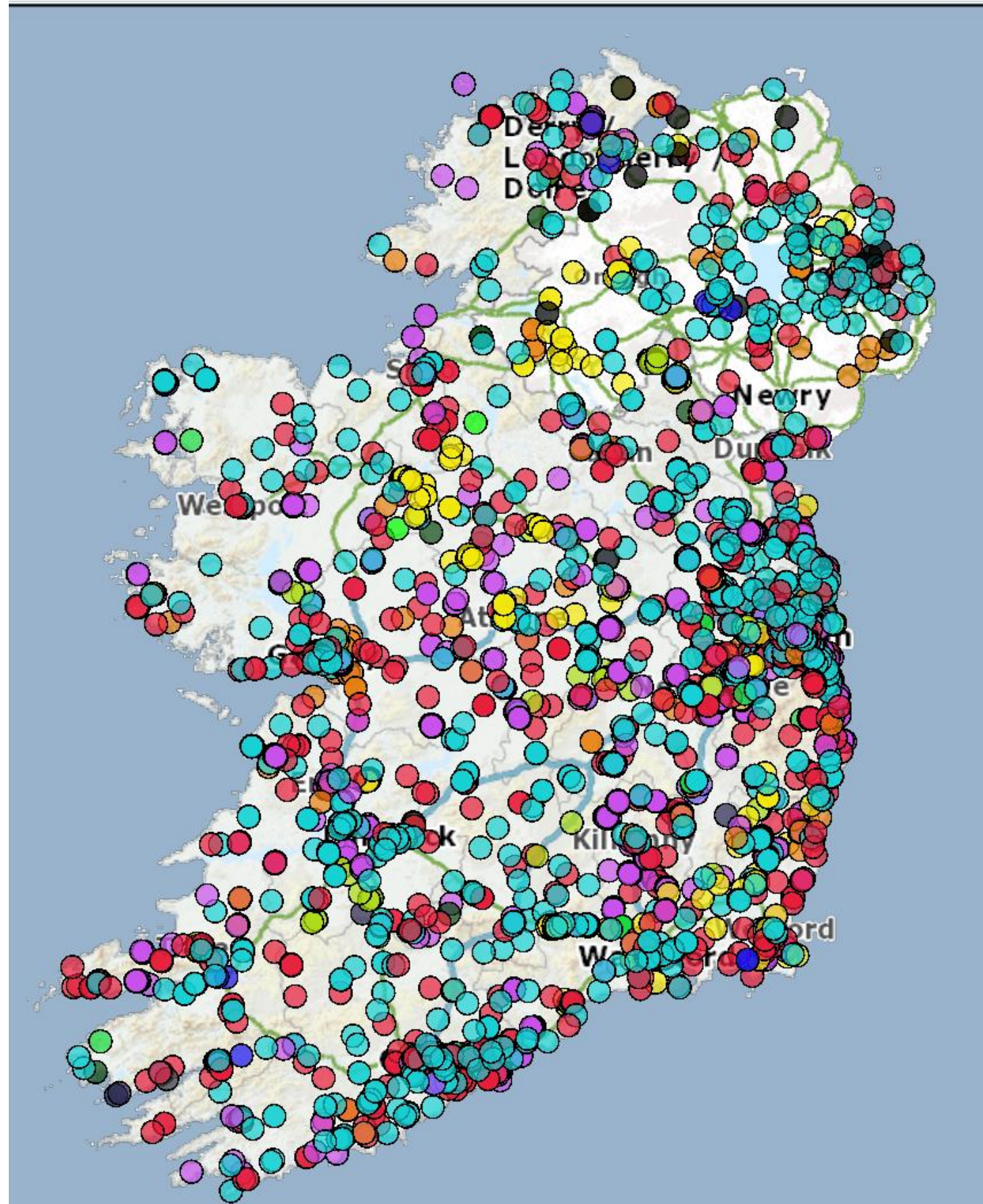
- £36 million estimated year loss to NI beach amenity value from marine litter
- 625 pieces of litter, on average, found per 100 m of beaches in NI
- 80% of all marine litter in NI is made of plastic

<https://liveherelovehere.etinu.net/liveherelovehere/documents/008846.pdf>

<https://www.ulsterwildlife.org/volunteering-opportunities/corporate-volunteering>



# All-Ireland Pollinator Plan



An island-wide attempt to reverse the declines in pollinating insects. The All - Ireland Pollinator Plan seeks participants to register their areas and actions

- Gardeners
  - Farmers
  - Councils
  - Businesses
  - Local communities
  - Schools
- 
- <https://pollinators.biodiversityireland.ie/>





# IAS

## Invasive Alien Species

**TED**

Tourism  
Enterprise Development  
Programme



**TOURISM  
NORTHERN  
IRELAND**



# What are IAS



Organisms (plant, animal, fungus, microbes...) that are not native to a particular area & are environmentally and economically harmful to that area.

\*Species migrate all the time. IAS have been introduced by humans since the last ice age





To understand the **negative significance of IAS**, we must understand the **positive importance of native biodiversity**.

### **Biodiversity:**

- Evolved over 1000's of years to form balances
- Native species are intricately interconnected
- This interconnectedness forms a web of biodiversity that holds ecosystems together



# Why are they so successful?



- Fast growth
- Rapid reproduction
- High dispersal ability
- Tolerance of a wide range of environmental conditions
- Disrupt the balance of natural ecosystems



# Invasive Species

- Not all non-native species are invasive
- Some of these non-native species benefit Irish Society
- Only 10-15% of introduced species become invasive
- Today in Northern Ireland there are approx. 1,280 non-native species





# Threats posed by IAS

**“World-wide, Invasive Alien Species are the second biggest driver of species extinctions overall”**

***Bellard, C., Cassey, P. & Blackburn, T.M. (2016)***

Once established they can pose a series of threats depending on the species.

These threats include;

- Reduction in biodiversity & alteration of habitats
- Increased flood risk & riverbank erosion
- Decrease water quality
- Block access to amenities & can cause structural damage
- Risk to human/animal health
- Economic impact



**Recent estimates suggest that  
Invasive Alien Species now cost  
Northern Ireland approximately  
£46.5 million each year in damage  
and control.**

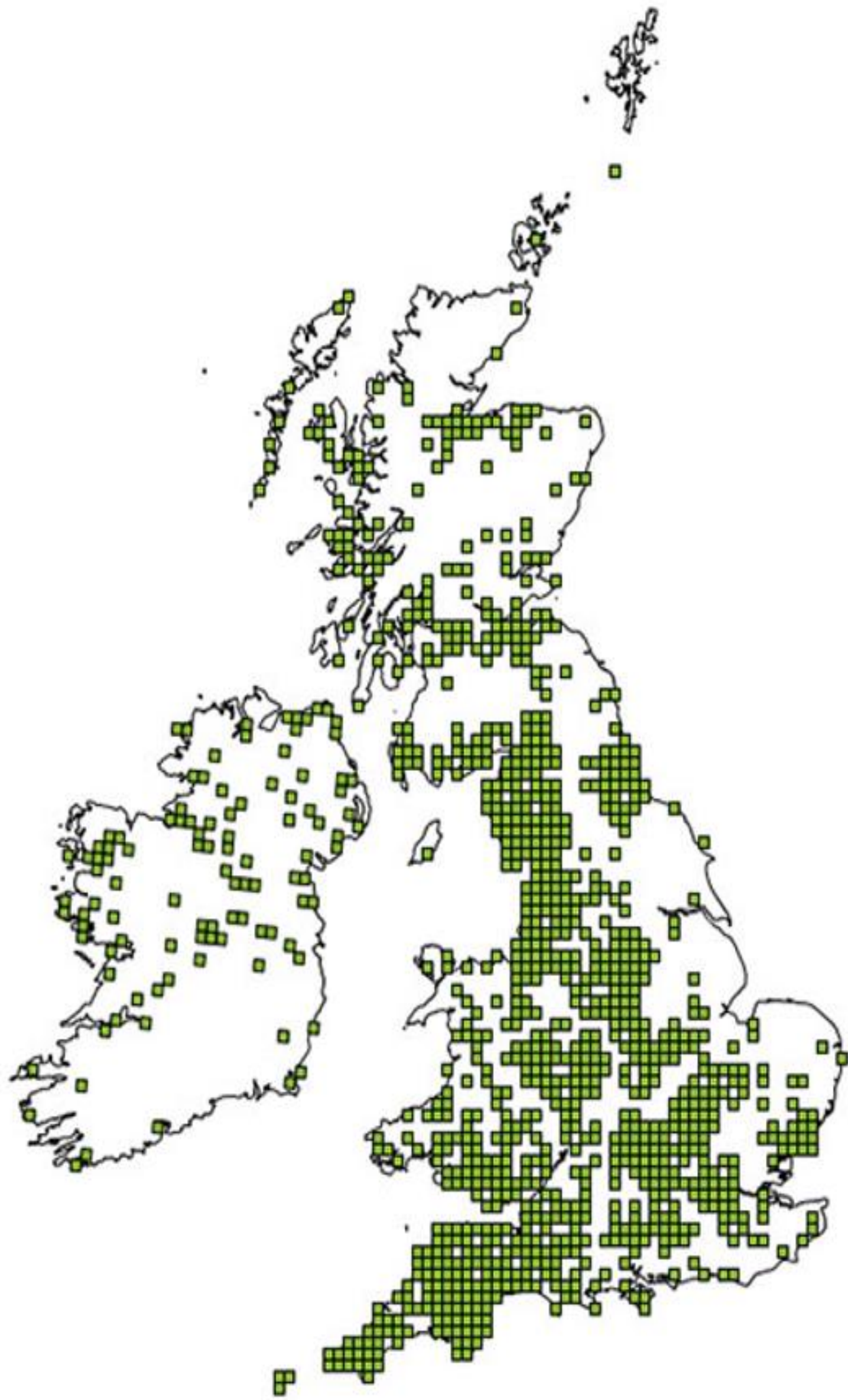


# Japanese Knotweed

Japanese knotweed can cause structural damage to old buildings and roads.







**1980**



**2016**



# Zebra Mussel

First discovered in Lough Derg in 1997, in Lough Neagh in 2005.





# STOP THE SPREAD



Are you unknowingly spreading invasive species on your water sports equipment and clothing?

Invasive species can affect fish and other wildlife, restrict navigation, clog up propellers and be costly to manage. You can help protect the water sports you love by following three simple steps when you leave the water.

**CHECK**

Check your equipment and clothing for live organisms - particular in areas that are damp or hard to inspect.

**CLEAN**

Clean and wash all equipment, footwear and clothes thoroughly.

If you do come across any organisms, leave them at the water body where you found them.

**DRY**

Dry all equipment and clothing - some species can live for many days in moist conditions.

Make sure you don't transfer water elsewhere.

**TED**

Tourism  
Enterprise Development  
Programme



# How to help

Invasive Species Northern Ireland

invasivespecies@daera-ni.gov.uk

Invasive Species Week About ISNI Legislation Species Accounts What can I do? Biosecurity & Prevention Report a Sighting

Search for info on **Invasive Species** in Northern Ireland

Species, Habitat or Threat

16:42 08/01/2024

- 1 Become familiar with the most invasive species
- 2 Always choose native species first
- 3 If you suspect you found an IAS. Report it
- 4 Spread awareness about Check, Clean, Dry
- 5 <https://invasivespeciesni.co.uk/>



# Water Quality

For Tourism Sites

TED

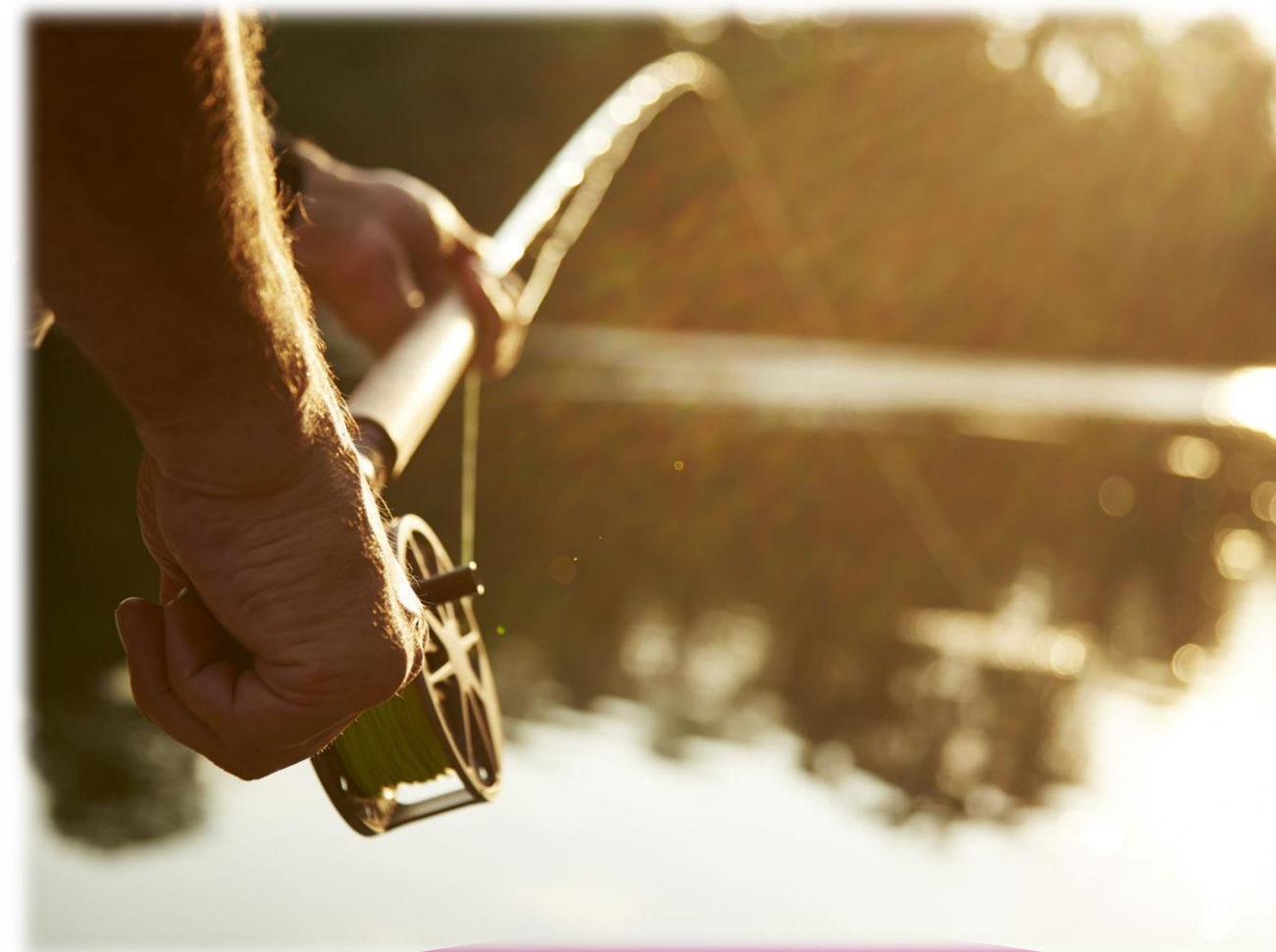
Tourism  
Enterprise Development  
Programme



TOURISM  
NORTHERN  
IRELAND

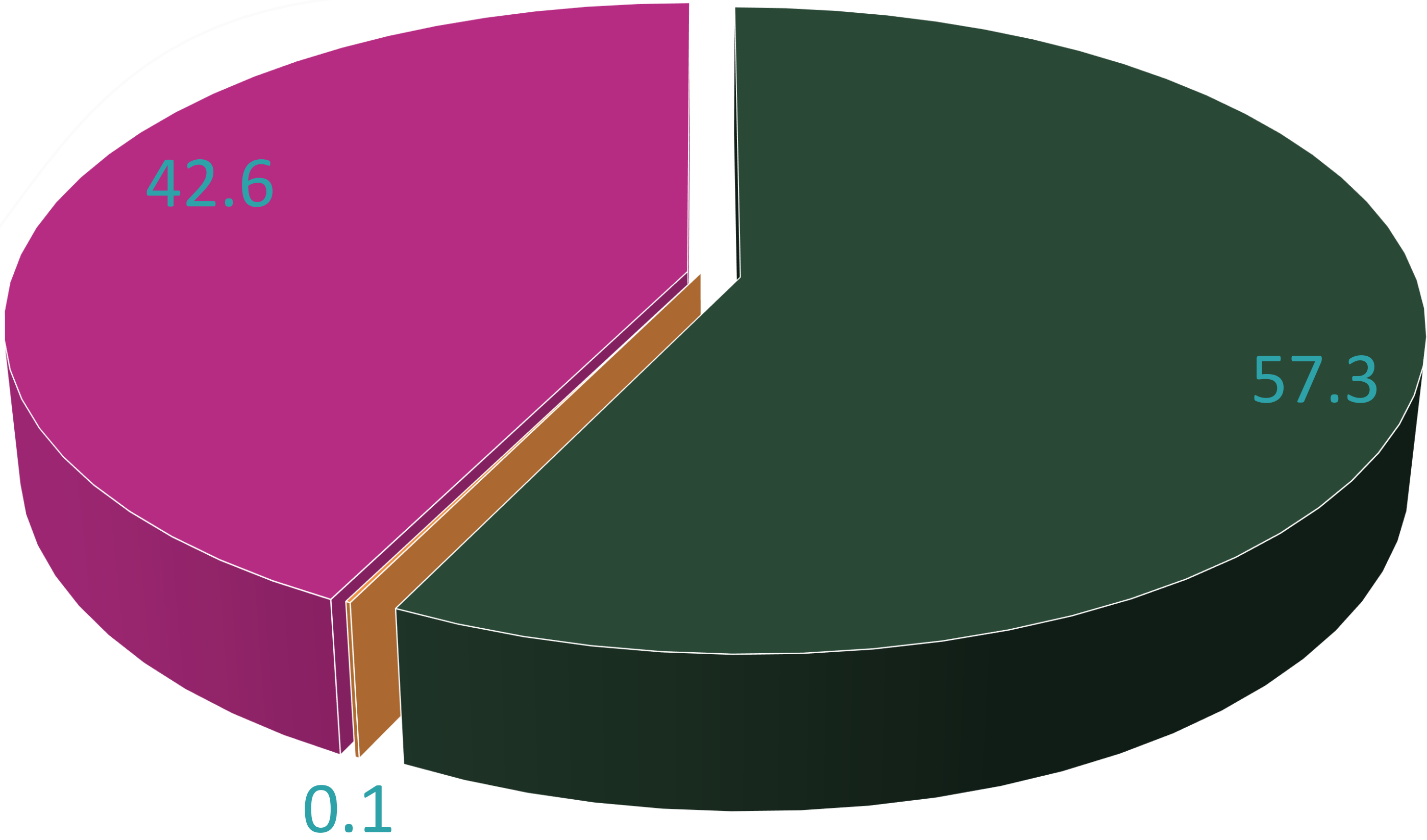


# Water and Tourism in Northern Ireland





# Our Water Resource



■ Rivers and lakes    ■ Boreholes    ■ Impounds and reservoirs



# How is Water Quality Determined?

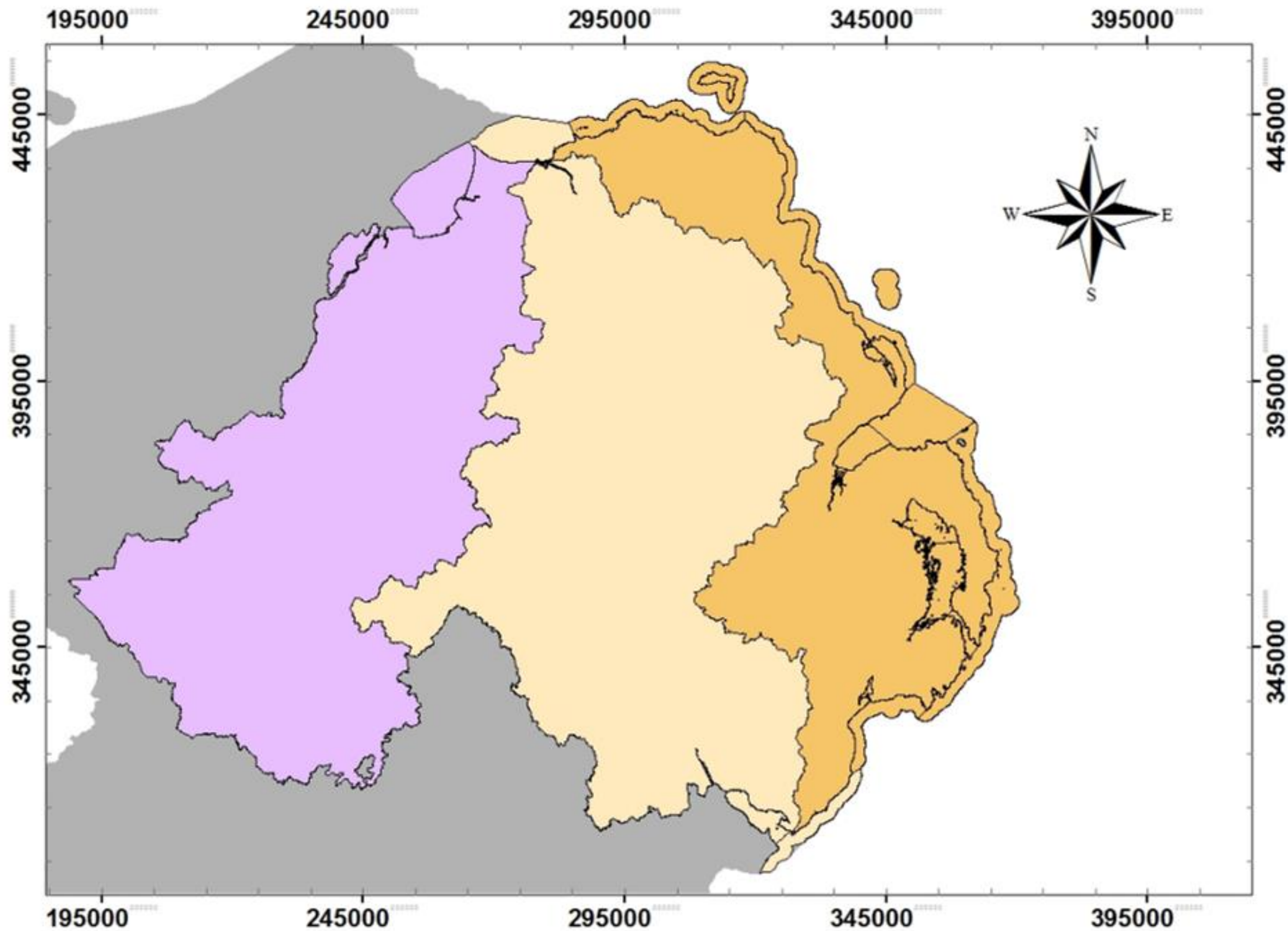
The European Water Framework Directive (2000/60/EC) has been transposed into Northern Ireland regulations through The Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2017.

- It established a new integrated approach to the protection of the water environment
- It use a five status classifications for waterbodies
- The Goal : All water bodies to reach **at least Good status by 2027**
- Implemented using the River Basin Management Plans

Status
High
Good
Moderate
Poor
Bad



# Water Quality in Northern Ireland



## 3 River Basins in NI

- North Western
- Neagh Bann
- North Eastern

571 Water Bodies including:

Rivers, Streams, Lakes, Coastal, Groundwater



# Water Quality in Northern Ireland

## Rivers

**2018**

141 rivers (31%)  
achieved good or high  
overall status

**2021**

140 rivers (31%)  
achieved good or high  
ecological status



# Water Quality in Northern Ireland

## Lakes

**2018**

5 lakes (24%) achieved good or high overall status

**2021**

3 lakes (14%) achieved good ecological status



# Water Quality in Northern Ireland

## Coastal and Transitional waters

**2018**

10 transitional & coastal bodies (40%) achieved good overall status

**2021**

10 transitional & coastal bodies (40%) achieved good ecological status

**TED**

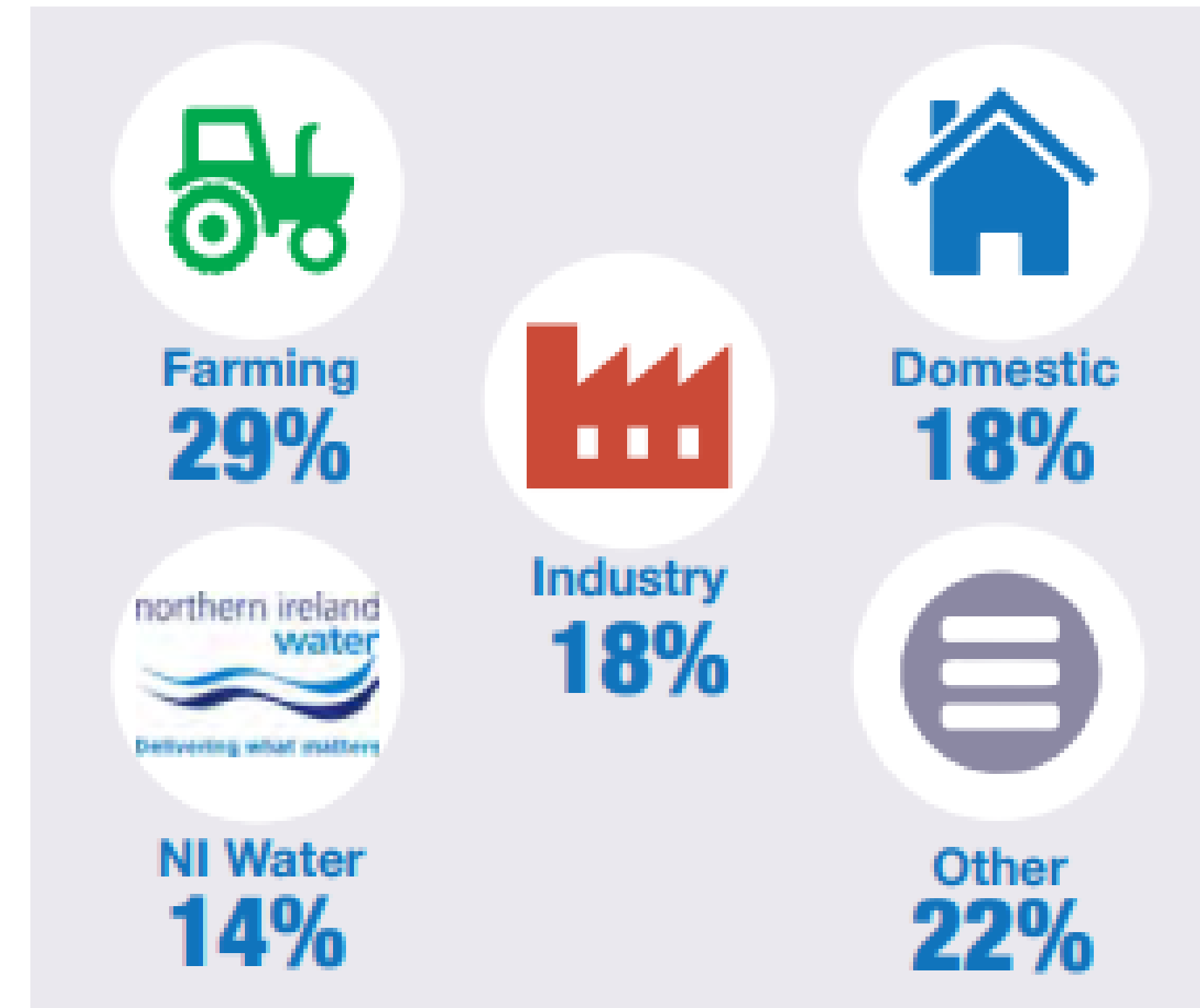
Tourism  
Enterprise Development  
Programme



# Water Quality in Northern Ireland

In 2022 -

- 676 validated water pollution incidents were reported



Source of substantiated water pollution incidents 2022



***“Anglers bass fines for water pollution incidents as ‘absolutely pathetic’ following Co Down fish kill”***

Belfast Telegraph - 25<sup>th</sup> August-2022

***“Fishkill: Agency struggling to confirm severity of slurry spill in Co Armagh river”***

The Irish News - October 2023

***“Concern NI river could take years to recover after more than 2,000 fish are killed”***

Belfast Telegraph - 28<sup>th</sup> November 2023



[Home](#) / [News](#) / [Environment](#)

# Lough Neagh being treated 'like bucket for dumping waste'

As blue-green algal blooms multiply, environmental group that was established to protect our largest freshwater lake hits out at 'years of neglect' by government departments



Toxic Blue-green algae blooms emerge on Lough Neagh

Liam Tunney



## Top Stories

[More](#)

Northern Ireland

**Belfast mother's shock at stress-induced broken-heart syndrome diagnosis following death of father**



Northern Ireland

**Lorry overturned in Co Tyrone incident**



Northern Ireland **Premium**

**EXCLUSIVE** | Fears dissident serial killing hitman behind fatal shooting of Kevin Conway in west Belfast



Analysis **Premium**

**A feared member of The Firm, Kevin Conway was a man with many enemies**





# Muddy waters...

- Northern Ireland has a total of 2,398 operational sewage overflows
- Data for the operation of this infrastructure is sparse
- Northern Ireland Water have provided a map of the locations of overflows
- They still provide no data on how often these overflows are discharging sewage due to a lack of investment and budget for the provision of infrastructure to monitor sewage discharges



# What is the plan?

By the end of 2027:

- Northern Irish Water aim to have over 900 monitors deployed, with the eventual aim of deployment on all sewage overflows.
- Remains unclear whether this information will be made available to the public



# How you can help

- Store chemical properly
- Ensure proper dispose of hazardous materials
- Check that oil tanks are bunded
- Ensure grease traps are functional
- Look to reduce your pesticide usage
- Be mindful of what you allow to go down the drain



# Water and climate

TED

Tourism  
Enterprise Development  
Programme



TOURISM  
NORTHERN  
IRELAND





**Water, water everywhere ...**

**71%** of the Earth's surface is water

**97%** of all the water on earth surface is in the oceans

**3%** of Earth's water is freshwater

**<1%** of the freshwater is easily accessible

**...but not a drop to drink**

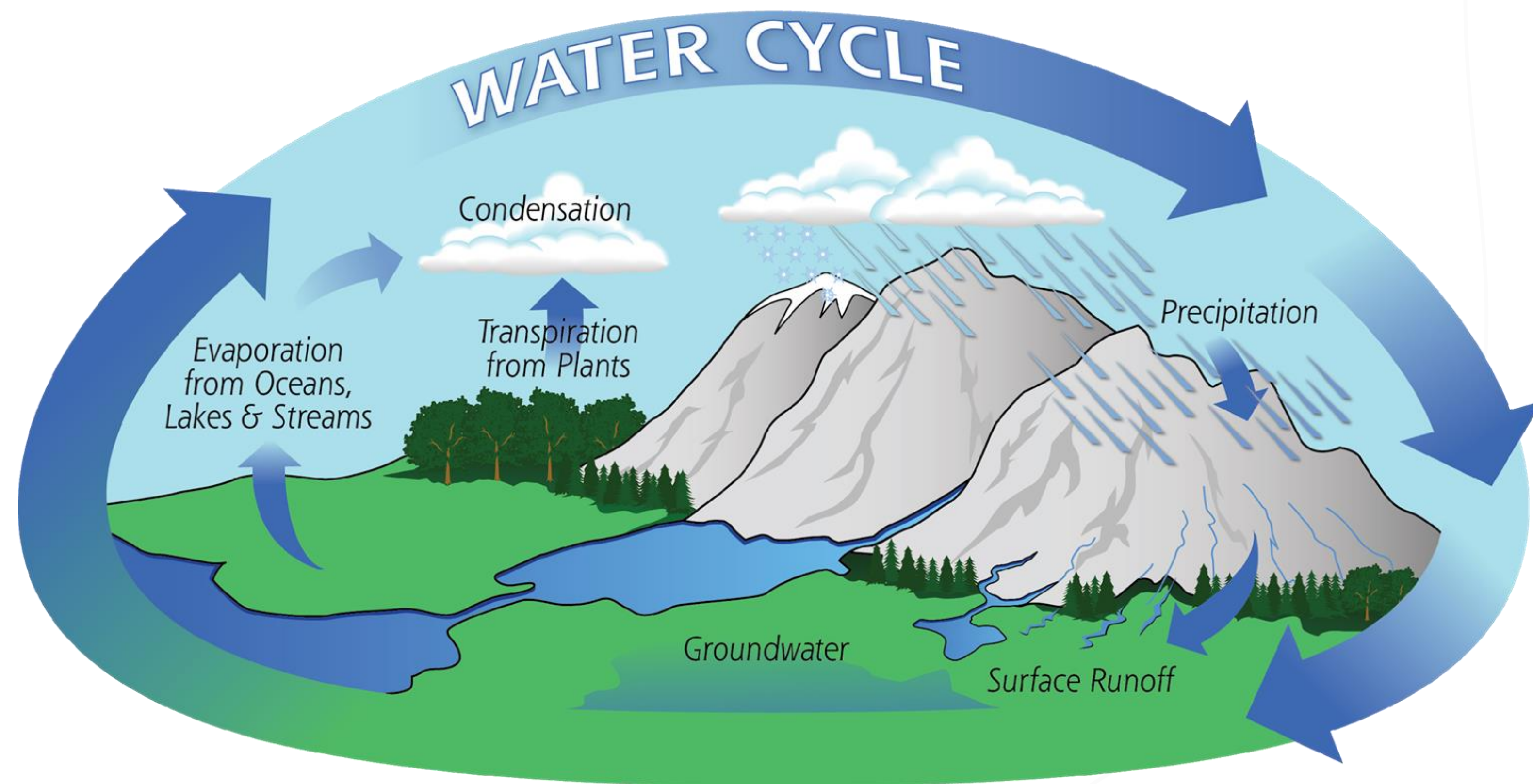


# The Water Cycle

1. Evaporation

2. Condensation

3. Precipitation





# Climate Change Extreme Weather



- Higher temperatures - more water evaporates
- Warmer air can hold more water
- More water in the atmosphere!
- Drought
- Extreme rainfall
- Tropical storms and hurricanes





# Droughts

- Higher concentration of pollutants
- Increased toxins
- Warmer water
- Slower flow
- Less oxygen in water

Water Quality





# Floods

- More pollutants
- More silt and particles in the water
- Increased pathogens

Water Quality



# Water Conservation For Hospitality Businesses

TED

Tourism  
Enterprise Development  
Programme



TOURISM  
NORTHERN  
IRELAND



# Water – a precious resource taken for granted

Northern Ireland Water :

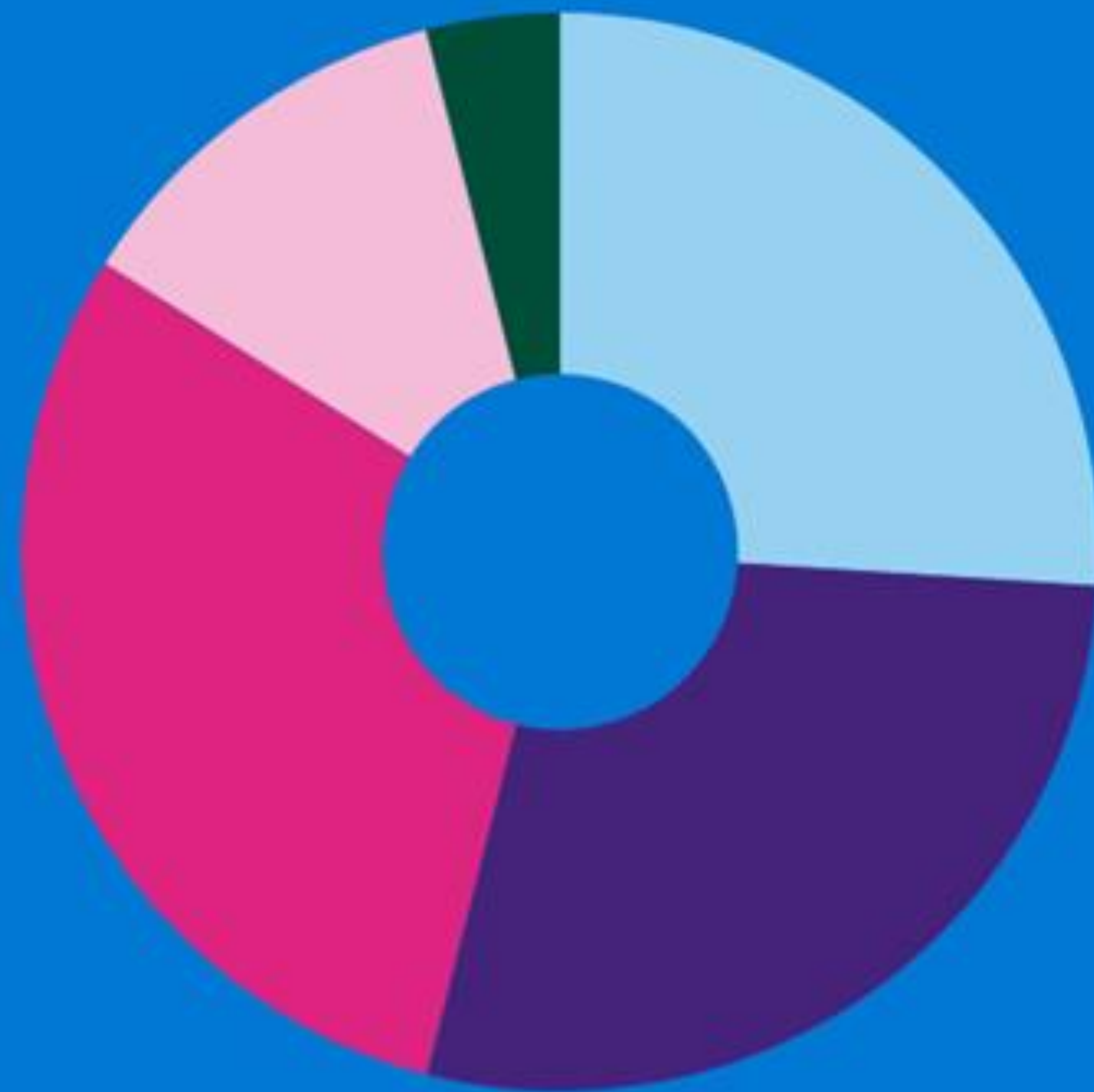
- Approximately 910,098 domestic, agricultural, commercial, and business properties are connected to the public water supply
- Supplied an average of about 608 million litres of drinking water every day during 2022.
- 26,700 kilometres of watermains
- 15,600 kilometres of sewers





# Our Water Footprint – how much do you use?

Northern Irish people use, on average, 145 litres of water a day



- Toilets
- Showers & Baths
- Taps
- Dishwasher & Washing Machines
- External (Garden & Yard)



<https://www.water.ie/conserve/>



# Our Water Footprint – how much do you use?

Calculate how much water you used at this link here:  
<https://www.niwater.com/why-save-water/>

The screenshot shows a blue-themed web interface for a water calculator. At the top left is the NI Water logo with the tagline 'Delivering what matters'. The main heading is 'HOW MUCH WATER DO YOU USE?' in a large, white, monospace font. Below this is a paragraph of text explaining the importance of water and stating that the average person in Northern Ireland uses about 145 litres per day. A large, light blue 'START' button is positioned at the bottom left. On the right side, there is a large graphic of a calculator with the title 'WATER CALCULATOR' on its display. The calculator has a grid of buttons for numbers 0-9, mathematical operators (x, -, +, =), a decimal point, and a water drop icon. Surrounding the calculator are four circular icons: a yellow pitcher, an orange washing machine, a light blue sink, and a teal toilet.

Delivering what matters

## HOW MUCH WATER DO YOU USE?

Water is our most precious natural resource – it is vital to all forms of life. Over the last 50 years changes in lifestyle, climate and population have made it even more precious. In Northern Ireland today the average person uses about 145 litres per day – calculate your water usage today!

START

WATER CALCULATOR

7 8 9 ×  
4 5 6 –  
1 2 3 +  
0 . =

Icons: Pitcher, Washing Machine, Sink, Toilet



# Our Water Footprint

Product	Water (L)
Beef (1kg)	15,415
Cup of coffee	140
Chicken(1kg)	4,325
Pint of Beer	76

Product	Water (L)
Almonds (1kg)	8,047
Mobile phone	909
1L plastic bottle	7
Potatoes (1kg)	287
Laptop	190,000



# So What? Why Conserve Water in Ireland?

## Carbon footprint of our water

- Every **cubic meter of water** consumed generates **10.5kg of carbon emissions**
- Just **one leaky toilet** wastes some **4.5 million litres** and generates 46 tons of carbon emissions **per year**. That's as much as a typical passenger car!





# Simple ways water is wasted

- Leaking pipes ( Number 1 reason)
- Only half filling the washing machine or dishwasher
- Wasting food
- Not turning off tap when:
  - Brushing teeth
  - Preparing vegetables
  - Washing up
  - Shaving





# Simple ways to save water

- Use a jug of water instead of bottle
- Shower vs bath
- Shorter vs longer showers
- Re-use water
- Fixing dripping taps
- Turning off tap
- Machines on full loads





# Simple ways to save water

## Around the premise

- Drop the hose
- Use a bucket
- Fix leaking/dripping taps
- Soil protection
- Keep an eye on running water







# Rainwater Harvesting

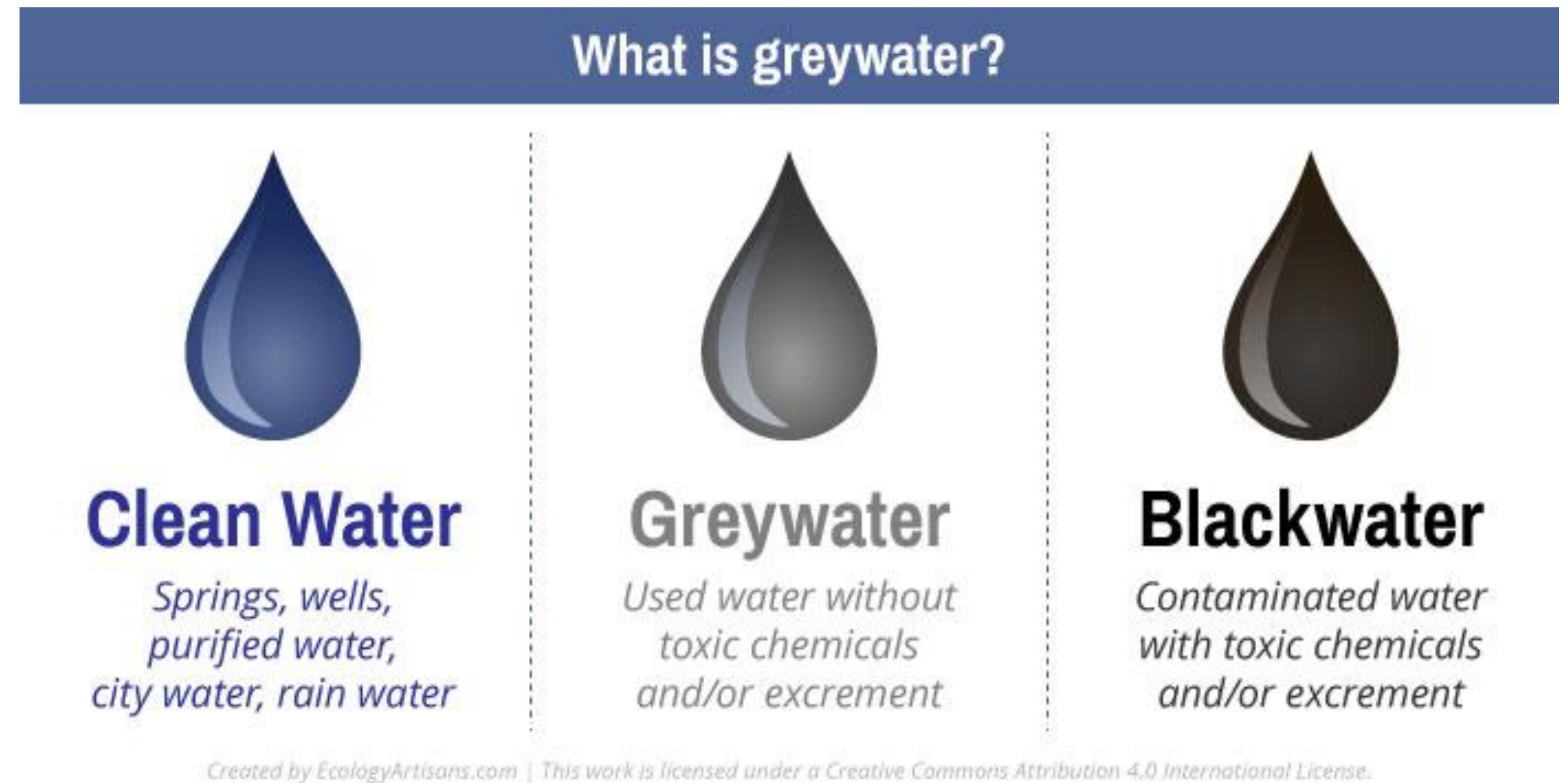
- Collecting rainwater from a building's roof
- Water can be treated to various levels to suit the end user's requirements in terms of quality
- Can be very simple or more complex



# Grey Water

## What exactly is grey water?

- Grey water is all the water that comes from washing machines, baths, showers and sinks
- Accounts for 50-80% of a household's waste-water
- Black water is the term to refer to water that comes from your toilet





# Other Innovations

- Dual Flush Toilets
- Waterless Urinals
- Shower flow regulators
- Aerators





# The Challenge of Leaks

- Currently 158 million litres of treated water in Northern Ireland is lost through leaks before reaching our taps every day
- Pipes are old, damaged and underground - hard to detect
- We use 70% more water today than 40 years ago





# Common Places for Leaks at Home

## Taps

- Hear/see a constant drip
- Don't forget outdoor taps
- A leaking tap can waste over 1,500 litres of water per year!



## Appliances

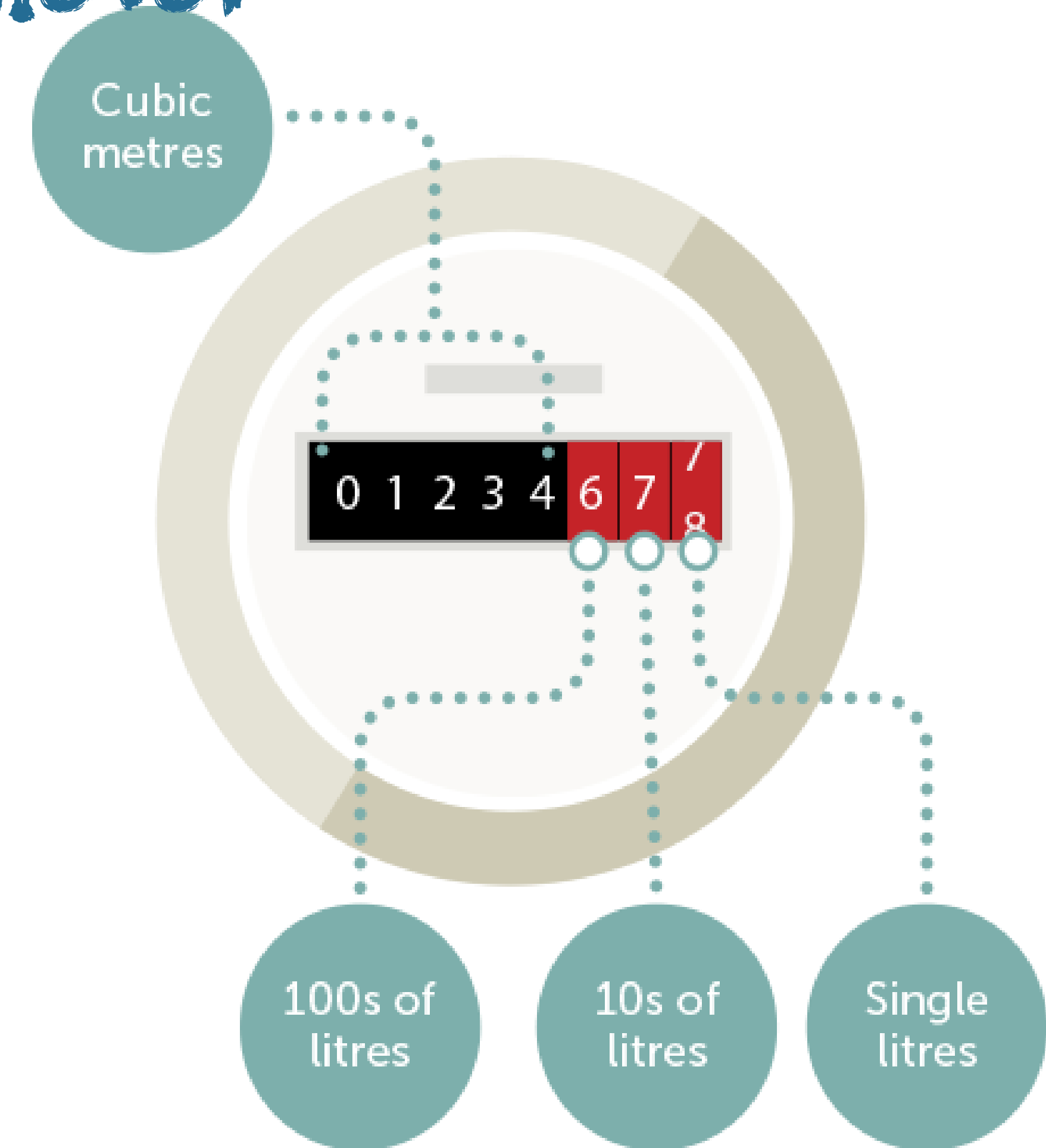
- Loose pipes and valves, dripping joints etc.





# Checking for Leaks Using a Water Meter

1. Make sure all appliances are switched off
2. Turn off your inside stop valve
3. Take a note of your meter reading
4. Wait for an hour
5. Take a second meter reading
6. If the two readings differ contact Northern Ireland Water





# Reasons to Monitor Water Usage

- Helps you to accurately report on your successes in conserving water
- Independent certification requires data on water consumption and water conservation
- To apply for and win green awards, you must provide evidence of improvements
- Sharing data with your staff makes your water conservation projects meaningful and transparent



Need help reading on this site?

Text-to-speech reader:

[Home](#)[Support by sector](#)[Opportunities & campaigns](#)[Events & webinars](#)

[Saving Energy and Reducing Waste](#) > [Leaner & Greener Guide to Water Conservation](#) >

[Part 4: Useful Templates from the Leaner & Greener Water Workbook](#)

### Contents

- [Part 1: Climate, Carbon & Costs](#)
- [Part 2: A Leaner & Greener Roadmap](#)
- [Part 3: Action Ideas for Saving Water & Money](#)

## Part 4: Useful Templates from the Leaner & Greener Water Workbook

Use the templates from the Leaner & Greener Water Workbook to help benchmark & monitor uour water consumption. carru out water audits

## Lots of useful tools and template tourism NI learner greener workbooks

See

<https://www.tourismni.com/business-guidance/business-support/saving-energy-and-reducing-waste/leaner-greener-guide-to-water-conservation/useful-templates-from-the-leaner-greener-water-workbook/>

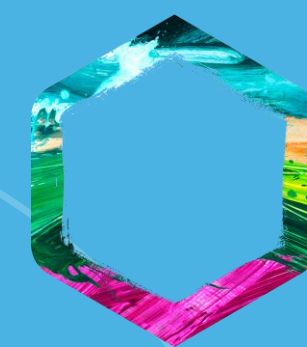


# Sustainable Drainage Systems

## SUDS

TED

Tourism  
Enterprise Development  
Programme



TOURISM  
NORTHERN  
IRELAND



# SUDS

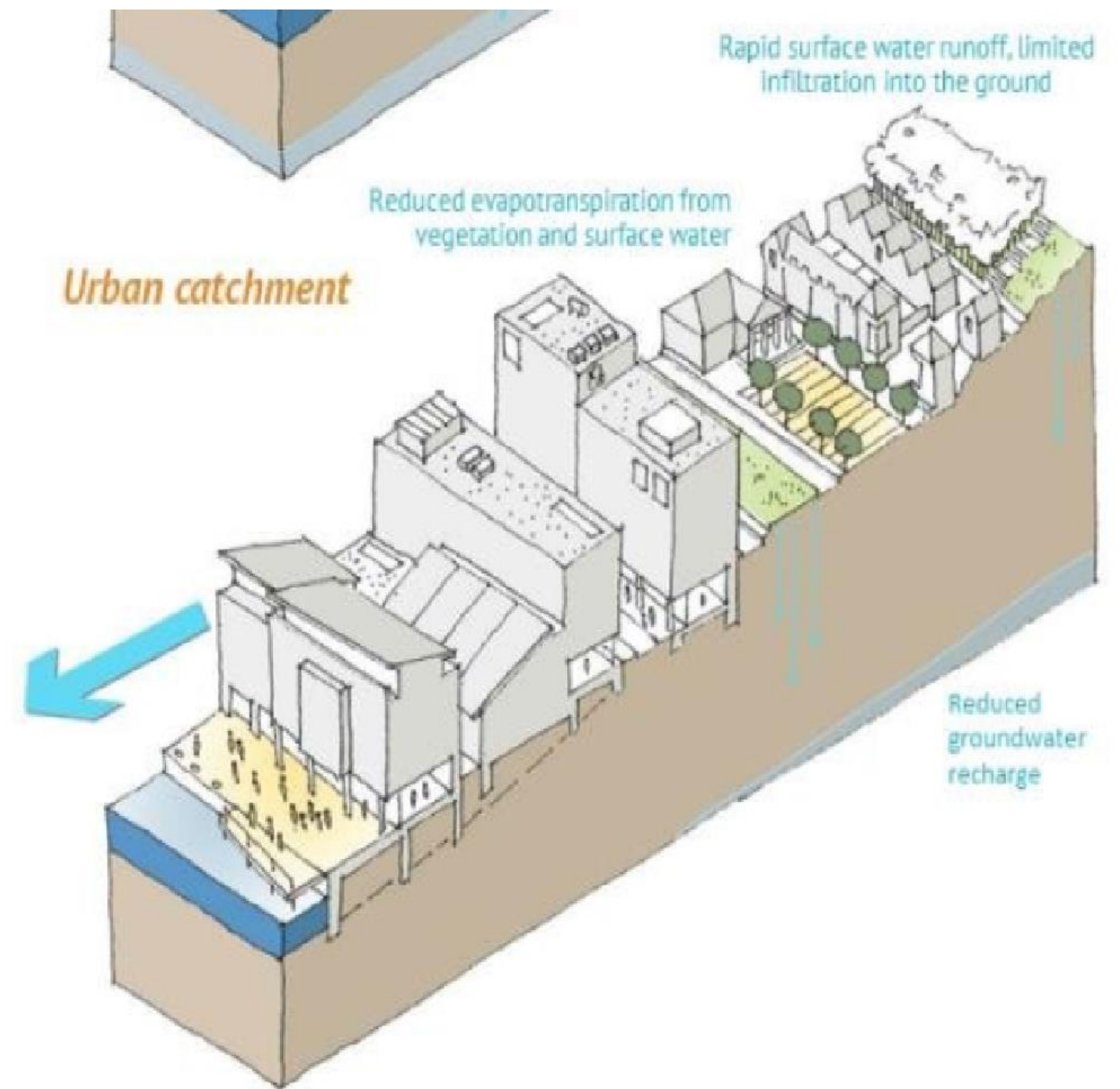
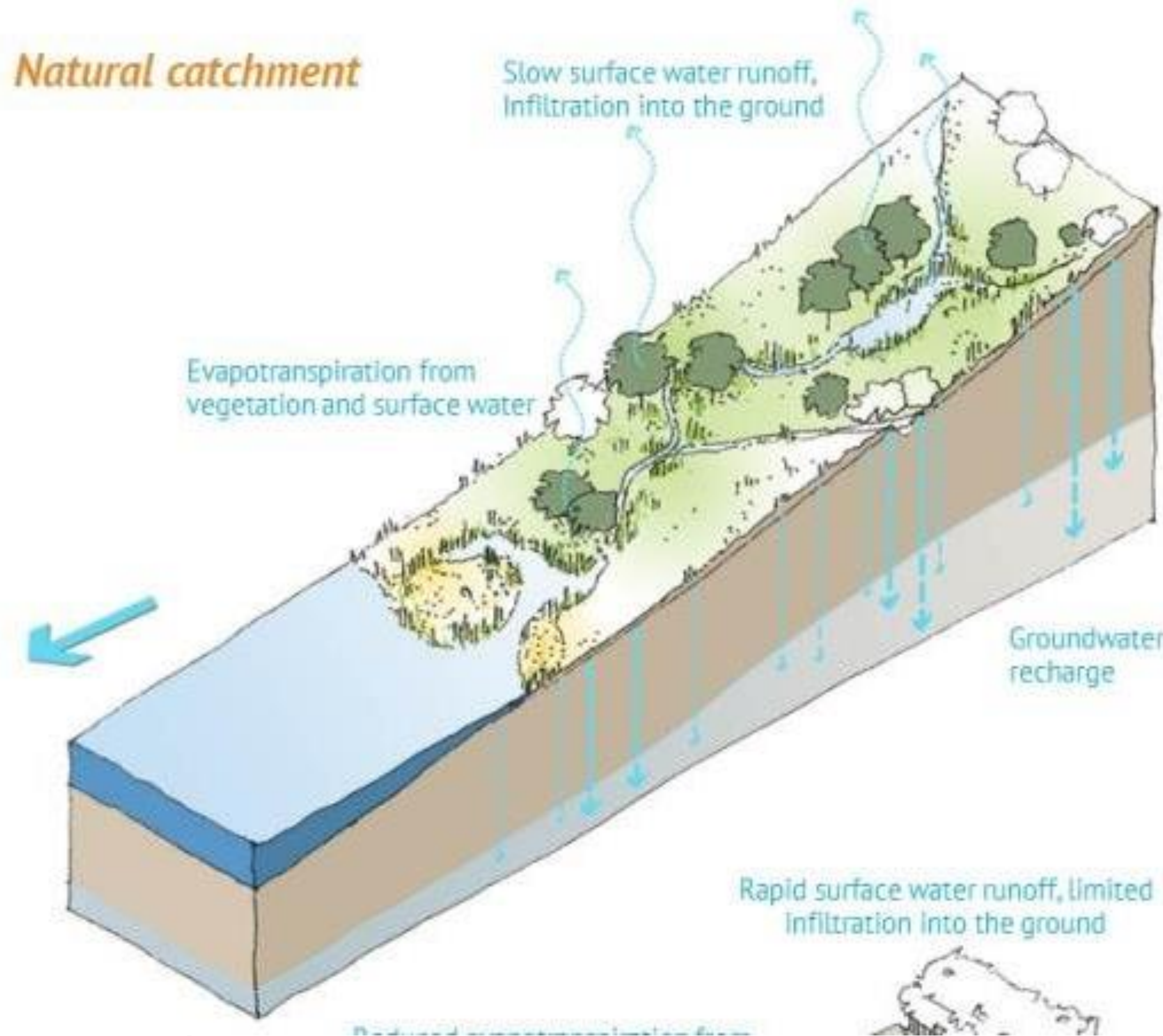


## What are they?

Systems that try to mimic natural drainage.



# How Nature Deals with Rainwater





# How can you employ SUDS

- Permeable surfaces e.g. car parks
- Basins and ponds
- Green roofs
- Rainwater harvesting
- Filter strips and drains
- Swales
- Wetlands





# Benefits of SUDS



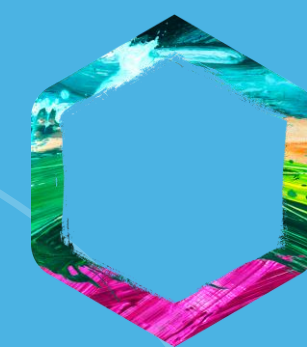
- Reduces water pollution
- Reduces the risk of flooding
- Recharges groundwater – drought prevention
- Provides wildlife habitat
- Provides local amenity spaces



Thank  
you

TED

Tourism  
Enterprise Development  
Programme



TOURISM  
NORTHERN  
IRELAND