

# Welcome to the WaterBlitz!



# EARTHWATCH

## *Our history*

Earthwatch Europe is an environmental charity with science at its heart. We drive the change needed to live within our means and in balance with nature. We do this by:

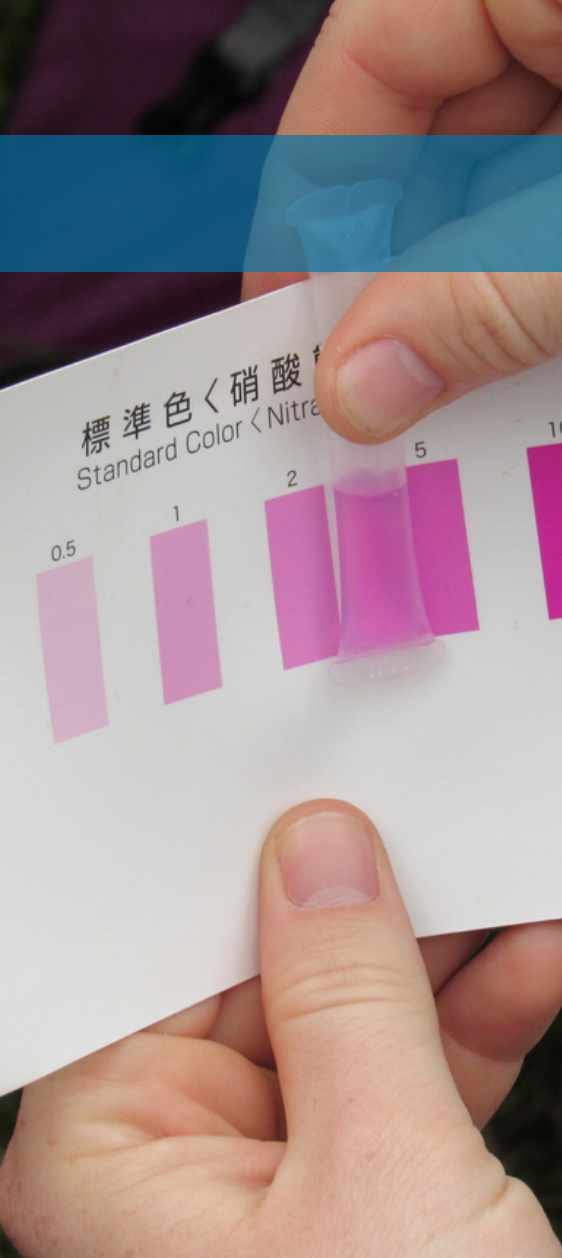
- Connecting people with the natural world
- Monitoring the health of our natural resources
- Informing the actions that will have the greatest positive impact.

## *Our freshwater mission*

Our planet, and all life on it, is facing unprecedented challenges. Climate change and loss of biodiversity threaten our very existence and the beauty of the natural world as we know it. Science has identified the causes of these global challenges, and science is essential if we're to face and solve them.

Earthwatch connects people with the natural world, monitoring the health of our natural resources, and informing the actions that will have the greatest positive impact.

Freshwater pollution is one of our priorities because a world of 9 billion people needs to conserve and protect every drop of fresh water that we have.



## THE WATERBLITZ

A WaterBlitz is a campaign to collect as many water measurements as possible, over a short period of time, across a specific area.

Earthwatch Europe has been running bi-annual WaterBlitzes for seven years, including in Sweden, Italy, France, Ireland and Luxembourg. Volunteers collect hundreds of measurements over one weekend, to provide a snapshot of water quality. Our WaterBlitzes are free to take part in, quick and simple to do, and the data that you upload can be used by scientists to identify any pollution hotspots, track pollution events, and find out about the health of our freshwater bodies.

During WaterBlitzes, we ask you to measure nitrate and phosphate levels using fun, simple testing kits, and record some observations about the area you are measuring in, such as where you are and what is around you. The whole process should take less than 15 minutes (although you are welcome to stay out longer!) and will provide us with invaluable data about your favourite freshwater spot.



# HELLO, I'M KES!

Aquatic Research Assistant



## What do I do?

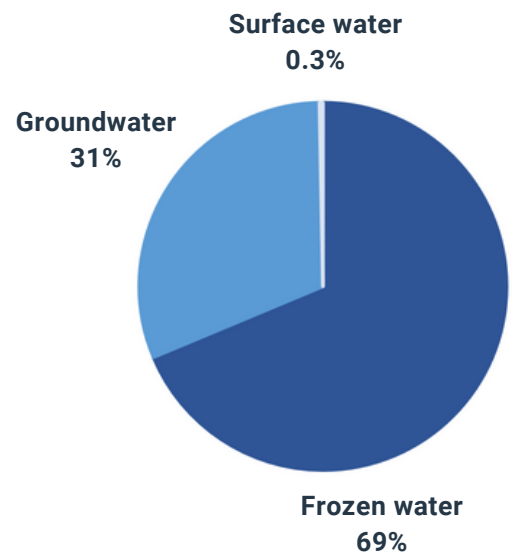
"I work on the FreshWater Watch project here at Earthwatch Europe. We run at least two WaterBlitzes each year, and we also have many ongoing community projects where groups of people regularly collect data for the global FreshWater Watch project.

I help to run the WaterBlitzes and manage these projects, but I also look at the collected data and start to write it up into scientific papers, or use it in other ways to help take action on freshwater issues."

## The big picture

### WHY WATER?

Almost all of the water on Earth is in our oceans. Salt water is no good for us to drink, produce our food, wash, or many of the other tasks that we need to do to survive. Only 2.5% of water on Earth is fresh water - of this, two-thirds is locked away as ice or snow. The remaining third is split into our groundwater and surface water, which, making up just 0.3% of all water on Earth, includes all of our rivers, streams, ponds and lakes. We can access some groundwater for drinking, but overall, we have access to less than 1% of the Earth's fresh water.



### 20%

### FOOD

Rice provides about 20% of the total calories in the world. Rice is a wetland plant that can only grow in freshwater ecosystems. Almost all of our crops are dependant on fresh water to grow. Of the water we use, most goes to food production - we drink less than 1% of what we use.

### 25%

### CARBON STORAGE

Wetlands (especially peatlands) are carbon sinks, storing more than twice the amount of carbon as all of the world's forests together. But destroying these vital habitats releases all of that carbon back into the atmosphere. Over a quarter of our peatlands have so far been destroyed.

### 50%

### BIODIVERSITY

Freshwater ecosystems support over 140,000 species (that's 10% of all known global species!), including over half the world's fish species. More than 50% of fish are at risk of extinction, with water birds and amphibians also threatened.

### 30%

### POLLUTION

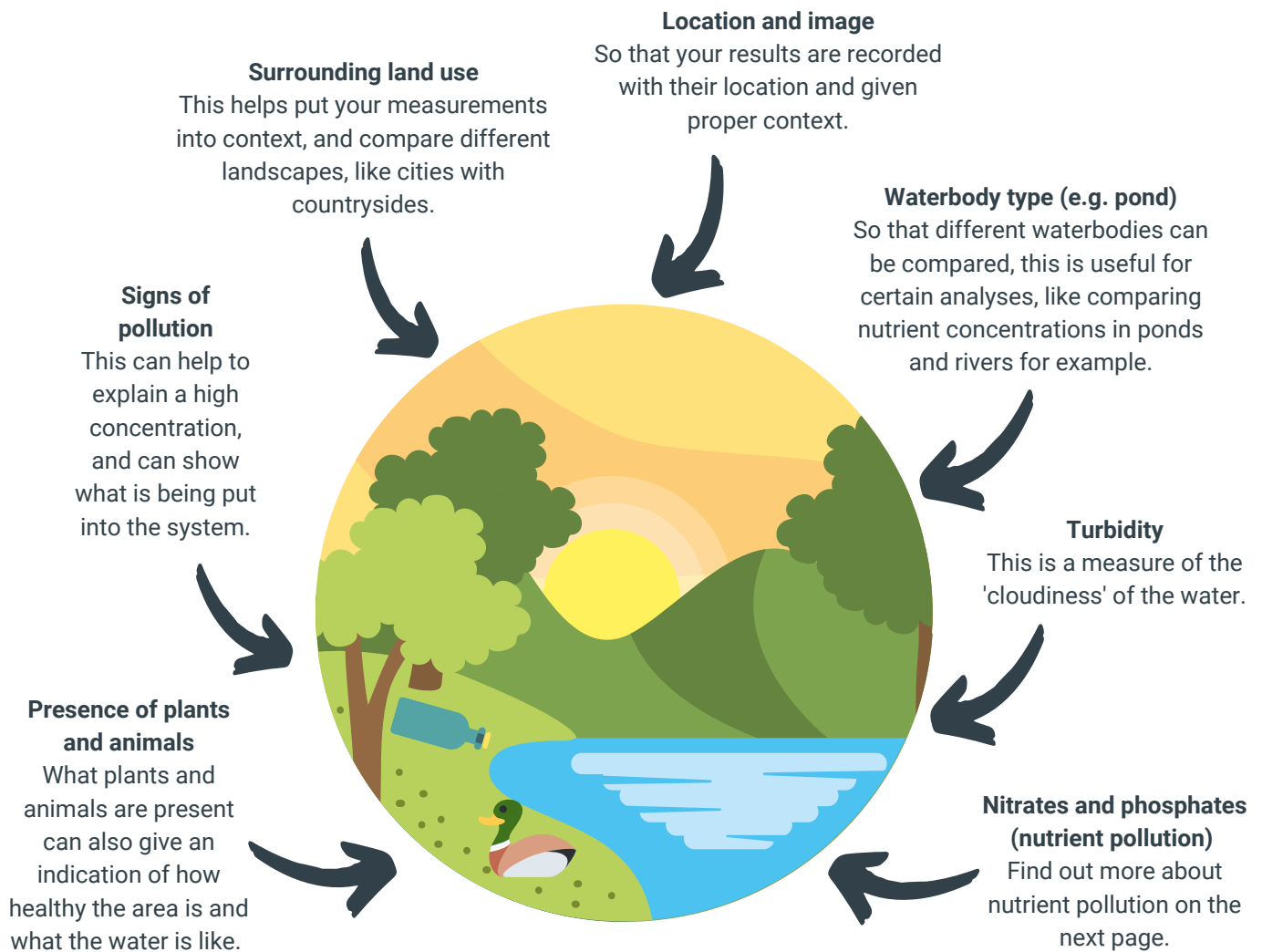
Up to 30% of the nitrogen that is used in modern agriculture ends up in our fresh water. Almost all of our water systems globally show some signs of pollution and man-made chemicals have been found almost everywhere we have looked.

It's clear we need water, and clear we have been using it as a dumping ground for our waste for far too long. Earthwatch is committed to taking action against water pollution.

## The big picture

# WHAT ARE WE MEASURING FOR?

Your data is used by scientists to build a picture of what is happening where you take your measurement. This includes the chemical tests for nutrient pollution, but also the observations you make, like what the land around you looks like. These observations help to build a picture of what is affecting your ecosystem, and identifies key areas which are heavily polluted and need action, or are very clean and need protecting.



## The UN Global Goals - SDG 6

The Sustainable Development Goals (SDGs) are a call to action for United Nations member states on key issues affecting people and our planet.

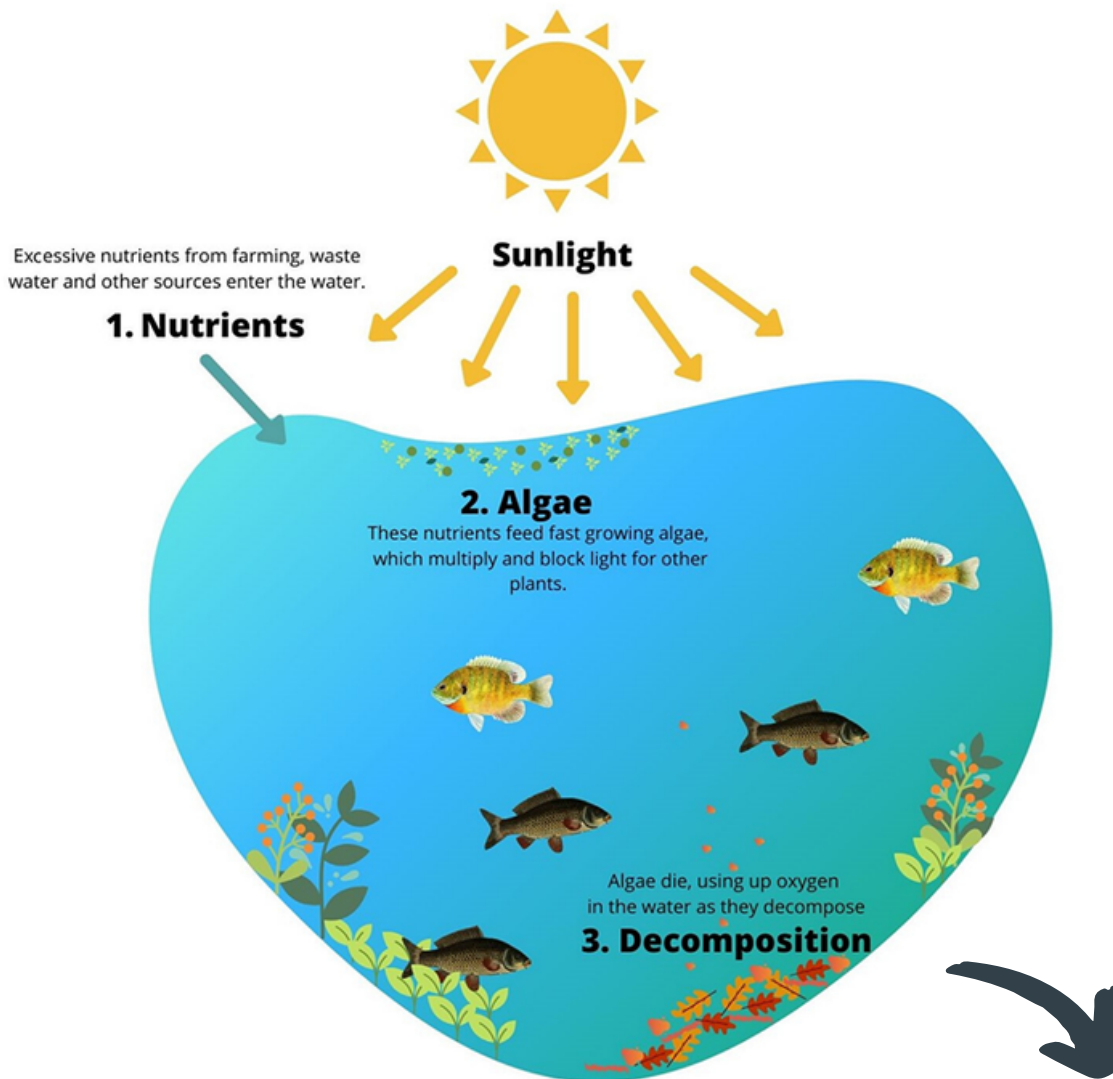
SDG 6 is focused on improving water quality. However, because very little monitoring takes place, we don't know the state of many of our waterways, and are in desperate need of data. Data collected by volunteers can help to provide much needed information on water quality, so that we can target efforts to create the improvements needed to meet SDG 6.



## Nutrient pollution

# THE PROBLEM

Nutrients may sound like a good thing, but too many nutrients entering our waters are bad news for the plants and animals that live there, and ultimately for us too. Nitrates get into our water mainly through fertilizers, sewage and waste, causing eutrophication (see explanation below). The decline in quality of natural habitat due to nutrient pollution means that our fresh water is less safe for us to drink and to use. Our food can become contaminated and other services that natural systems provide, like regulating the climate and storing carbon, are also hampered. This can have widespread impacts on our lives.



# EUTROPHICATION

Eutrophication can hamper or prevent ecosystem services. Ecosystem services are what is provided to us by our natural habitat, such as fish we can catch for food, drinking water, and also other less obvious services, like the cleaning of our air. Eutrophication can hamper or stop ecosystem services in many ways. For example, fast growing algae and other plants not only block light, but can also clog our pipes and block boats from moving around easily. Having low oxygen and lots of dying material in the water promotes the growth of bacteria, which can cause illness and disease in people using the area. Sometimes nutrients in the water can cause 'Harmful Algal Blooms' (HABs) - this refers to fast growing algae which produce toxins that can be extremely dangerous for humans and other animals. This not only affects people directly, but can also kill off fish or other animals living in the water, which people may be relying on for food.



## TAKING ACTION

Here at Earthwatch we have many more fun activities and resources for you to use to continue your own learning and to engage and inspire young people too.

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## Plastic Rivers

### FOOTPRINT CALCULATOR

Find out your plastic footprint and top tips you can follow to reduce it, with our [plastic footprint calculator](#). You can also read more about our plastics research and find out what else you can do on the [Earthwatch Europe website](#).

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## Family Learning

### GET EVERYONE INVOLVED

Looking for ways to get your children or students hands on with nature? We have loads of exciting and inspiring outdoor learning activities, creative craft ideas and wildlife-friendly actions here:

<https://edu.earthwatch.org.uk/>



## SHARE YOUR STORIES



### YOUR BLITZ DATA

To view the data that you collect during our WaterBlitzes, go to the [FreshWater Watch website](#) and have a look under 'Our data'. Here you can find all of the data collected under the global FreshWater Watch project and also find out more about the other work that we do.

### YOUR ADVENTURES

We would love to hear all about your experience taking part in the WaterBlitz. Maybe you have a story, a photo or a video you can share with us on Twitter, Facebook or Instagram - use **#WaterBlitz** in your post!



Earthwatch Europe



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