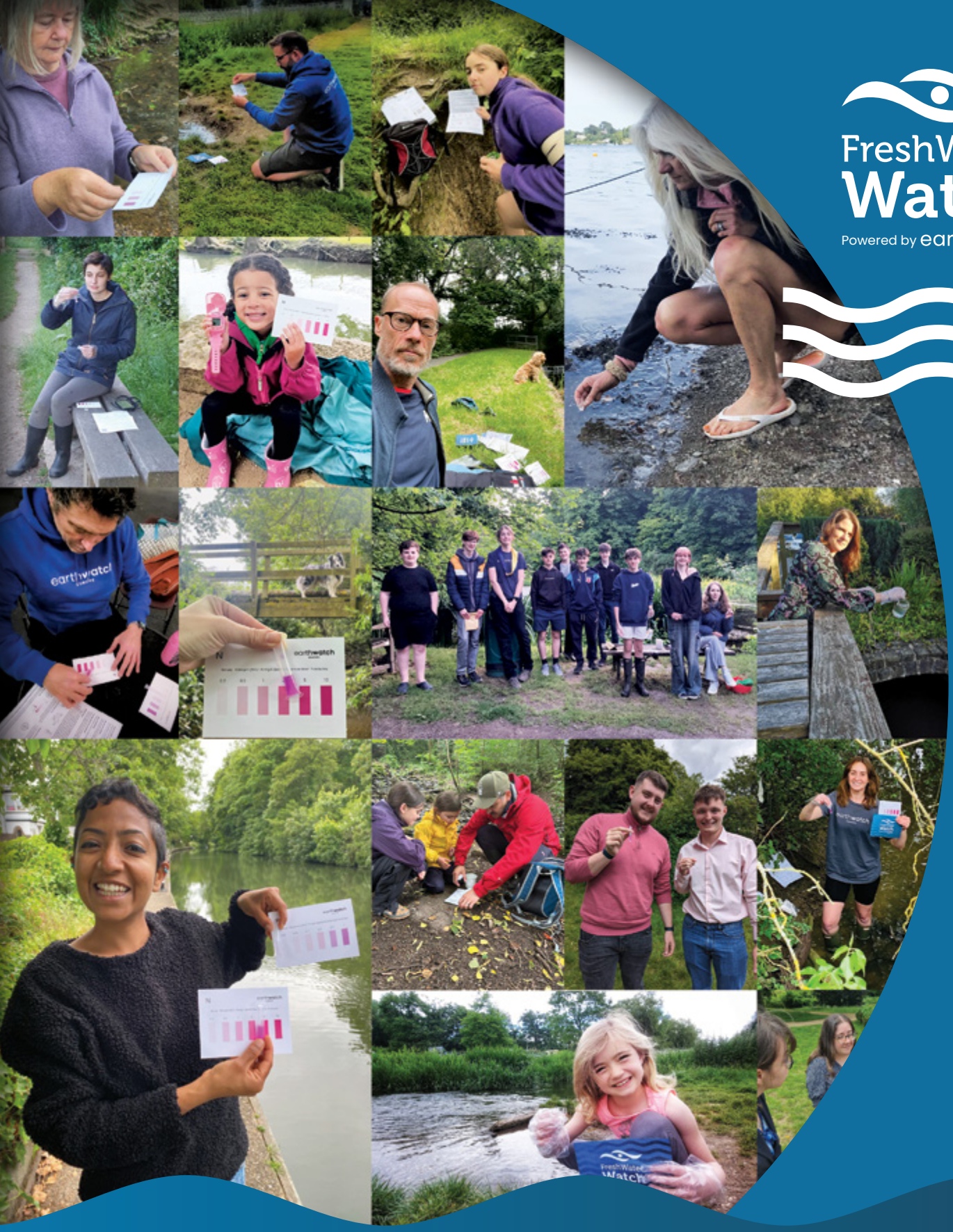

FreshWater Watch
Powered by earthwatch EUROPE

# Great UK WaterBlitz Report

June 2024

Buttermere, Cockermouth **(c) Jonny Gios**

# Earthwatch Europe believes in the power of data for change

# Contents




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**Thank you** to all the participants of the **Great UK WaterBlitz** who made this report possible.

# Executive summary

## Water sustains all life on our planet. Both human and planetary health are dependent on an adequate supply of fresh, clean water.

Despite this, the UK's freshwater ecosystems are in a terrible state. Quite how dire the situation has become has been unclear with incomplete or missing data. The head of the Environment Agency, the organisation responsible for monitoring freshwater in the UK, has even admitted that freedom of information requests have been buried by the regulator, because the truth about river pollution in England is "embarrassing" and that officials are "worried about revealing the true state of what is going on"[1].

Rather than relying on the Environment Agency to disclose information on river health, concerned communities have taken matters into their own hands and created a detailed snapshot of our nation's river health through the power of **citizen science** and the Great UK WaterBlitz. Citizen science is defined as "work undertaken by civic educators together with citizen communities to advance science, foster a broad scientific mentality, and/or encourage democratic engagement"[2]; put simply, it's **science by the people, for the people**. Over 7-10 June, 2,630 citizen scientists across the UK tested the health of rivers, lakes, streams, ponds and canals, with a particular focus on nutrient pollution. This national blitz was the first of its kind, with volunteers collecting data about their local freshwater bodies using the same quality-controlled measurement approach, to gather 1,380 datasets. **Of the 1,380 sites they measured, 75% showed poor water quality.**

There is ongoing debate about the cause of the poor ecological state of many rivers in the UK, due to the complex and interconnected range of pollution sources: sewage discharge, agriculture and urban run-off. Our rivers have been historically and presently stressed by farming and presently are being pushed to the brink by outdated and inadequate sewage treatment works. There is, therefore, a pressing need for both **improvements to wastewater treatment processes and reductions in agricultural pollution** to reduce threats to vulnerable freshwater systems and species.

Earthwatch Europe champions citizen science. Through our FreshWater Watch programme, we enable communities to gather real-time water quality data, which provides valuable insights that complement official monitoring efforts. We know that volunteers can gather extensive, accurate, and timely information on water conditions, ensuring transparency and accountability from polluters. We urge authorities to recognise and integrate citizen science into their freshwater monitoring frameworks, and for citizen scientists to continue monitoring and advocating for their rivers.

*We want to see data-driven change to ensure that our future rivers are healthy from source to sea.*

## This report's key findings are:

- **75%** of data points across the UK showed poor ecological health with significant regional variation.
- The Anglian and Thames river basin districts have the worst water quality in the UK with up to **89%** of data points showing poor ecological health.
- The Solway Tweed river basin district showed the best health with only **50%** of data points showing unacceptable levels of nutrient pollution.

# The picture of freshwater quality across the UK

River Irwell
**(c) Getty Images**

Citizen scientists uploaded data points which included measurements of nitrate and phosphate concentrations and observational data; however, some of these were outside the time frame: 1380 data points were included in the Great UK WaterBlitz dataset for analysis.

We grouped measurements into acceptable water quality (< 1.0 ppm N, <0.1 ppm P, i.e. showing evidence of low nutrient pollution) or unacceptable water quality (> 1.0 ppm N, >0.1 ppm P, i.e. showing moderate to high levels of nutrient pollution).

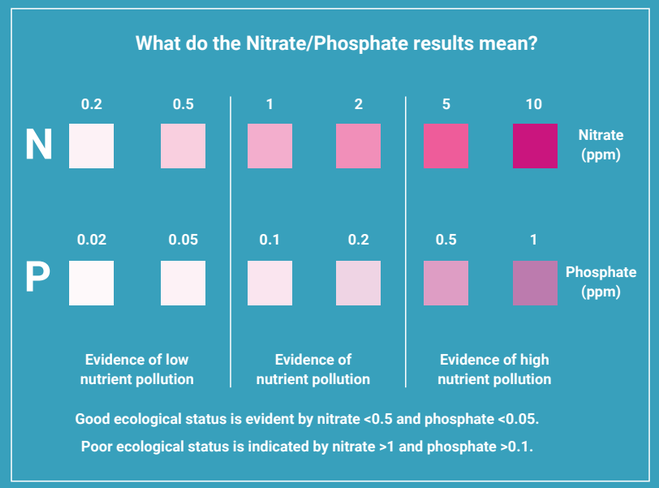
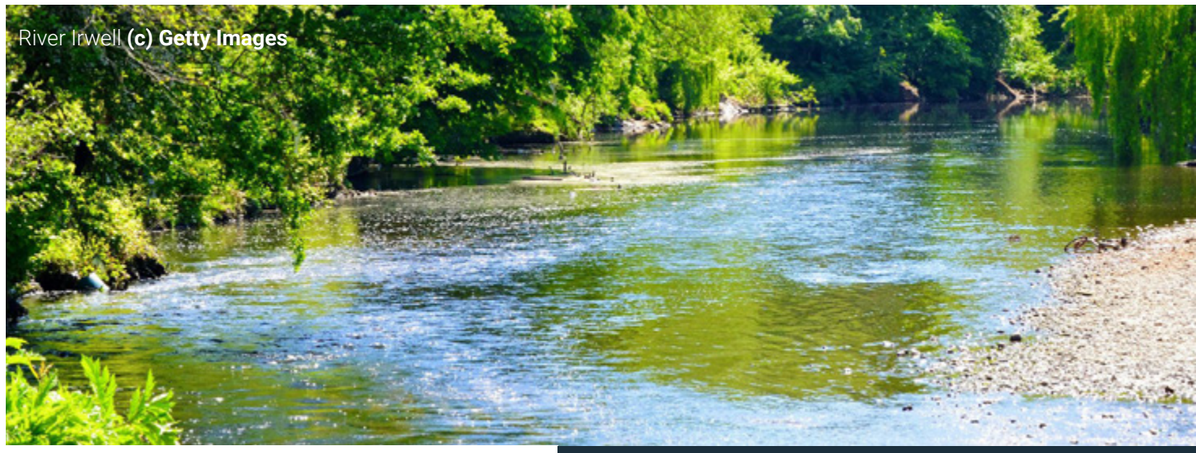



**Figure 1.** An explanation of the nitrate and phosphate results.





River Irwell **(c) Getty Images**

**Unfortunately, 75% of the sites showed unacceptable water quality.** 72% of measurements indicated unacceptable concentrations of nitrate and 27% of measurements indicated unacceptable concentrations of phosphate. These results align closely with official government reporting, which states that only **14% of rivers achieve good ecological status**[6] (a percentage that is even smaller than our findings, because the Environment Agency also carry out additional tests for dissolved oxygen, other compounds such as ammonia, and fifty-two different chemicals).

On a more positive note, our data demonstrate that smaller streams are significantly less polluted than larger rivers. The median concentrations of nitrate and phosphate of streams is less than half that of rivers.

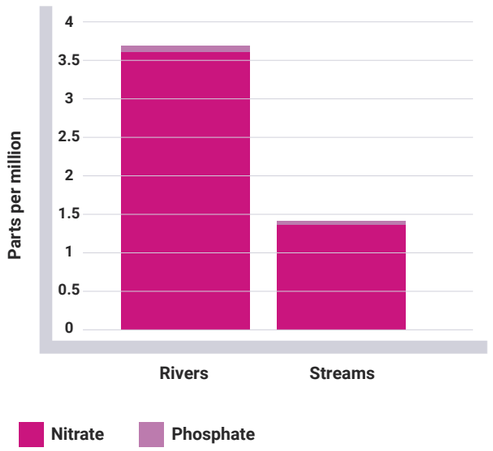



**Figure 2.** Median nitrate and phosphate concentrations in rivers compared to streams

### How does water quality differ across countries?

Our data indicates that **England has the worst water quality in the UK.**

78% of measurements taken across England's waters indicate unacceptable levels of nutrient pollution. This is very much in line with the State of Our Rivers Report by the Rivers Trust, which determined that just 15% of English river stretches reach good ecological health standards[10].

In Scotland and Wales, 51% and 53% of measurements, respectively, indicate unacceptable levels of nutrient pollution (Figure 3). (Northern Ireland had too few data points to draw any reliable conclusions.)

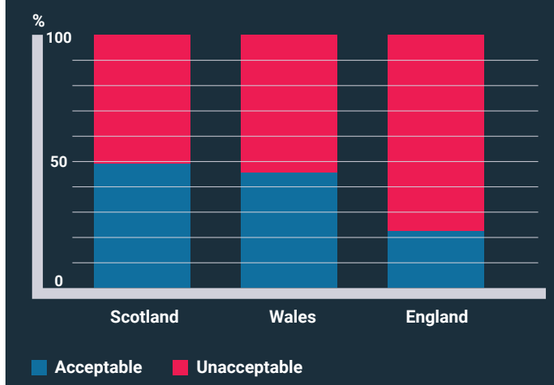



**Figure 3.** National overview of water quality

# Why are nitrates and phosphates so important?

Nitrates and phosphates occur naturally in the environment and are essential for plant growth; but high levels of nutrients trigger a process called eutrophication, whereby excessive plant and algal growth leads to high levels of organic matter and bacterial activity, which in turn decrease oxygen concentrations, negatively impacting aquatic fauna and flora.

Excess nitrate started occurring in the environment because of the modernisation and intensification of agriculture during and after World War II. In particular, the manufacture and application of artificial fertilisers from the 1940s has increased the amount of surplus nitrate in the environment. Artificial fertilisers are readily water soluble, and unlike natural fertilisers, add no organic content to the soil. Consequently, rainfall washes them off into ditches and rivers, and leaches them from the soil into groundwater (water found underground in the cracks and spaces in soil, sand and rock). This makes agricultural areas a legacy source of diffuse water pollution (in contrast to pollutants that enter water courses from a particular point, such as a pipe or outflow). Although the proportions vary from catchment to catchment depending on the surrounding land use, the Environment Agency notes that agriculture is estimated to account for 50-60% of nitrate losses to the water environment, whilst sewage effluent contributes about 25-30% nationally[7]. Conversely, for phosphates, households contribute 73% of total phosphorous to watercourses, while agriculture contributes 20%[8].

In summary: our rivers have been historically and presently stressed by farming and are being made worse by sewage discharge, with high nitrate levels driving the poor ecological state of freshwater bodies across the UK, and phosphate levels adding additional pressures.

### How is sewage treated?

Urban wastewater, commonly referred to as sewage, is generally a mixture of domestic wastewater from baths, sinks, washing machines and toilets, wastewater from industry, and rainwater run-off from roads and other surfaced areas. Every day in the UK about 347,000 kilometres of sewers collect over 11 billion litres of wastewater. This is treated at about 9,000 sewage treatment works before the treated effluent is discharged to inland waters, estuaries and the sea[9].

The purpose of wastewater treatment is to remove organic substances to protect the environment: settling out the solid matter (primary treatment), using bacteria that 'digest' and break down the organic substances (secondary treatment), and removing nitrates and phosphates (tertiary treatment) through, for example, sand filtration, activated carbon filtration, and chemical oxidation.

During heavy rainfall the capacity of sewers can be exceeded, which means the possible inundation of sewage works and the potential to back up and flood peoples' homes, roads and open spaces. Combined sewer overflows were developed as overflow valves to reduce the risk of sewage backing up during heavy rainfall.

River Wye **(c) Getty Images**

**our rivers have been historically and presently stressed by farming and are being made worse by sewage discharge.**

# Which river basin districts are worst-hit?

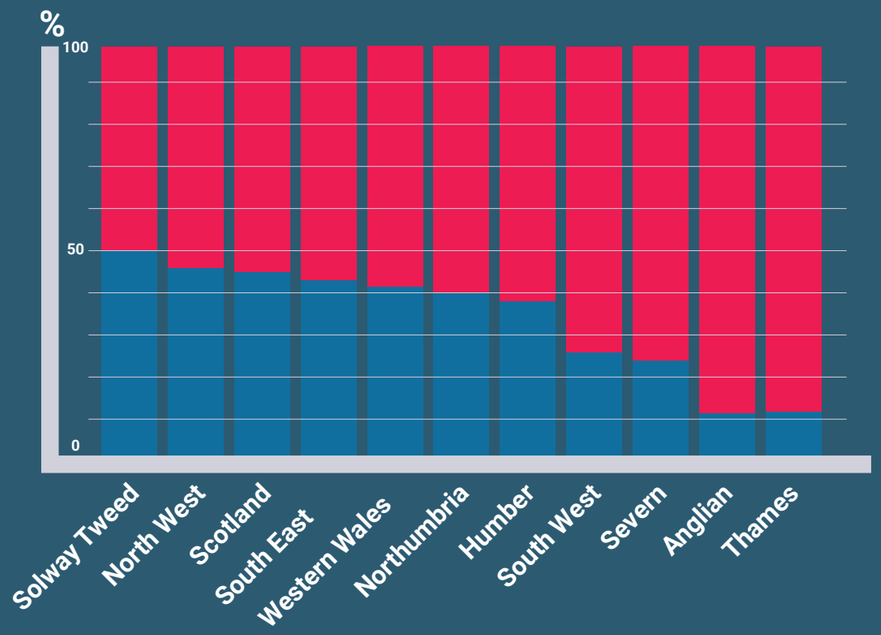



**Figure 4a.** Water quality by river basin district

As can be seen in Figure 4a, our data suggest that the **Solway Tweed and North West regions have the best water quality** in the UK, with around 50% of measurements indicating good ecological status (based on 18 and 102 data points, respectively). **The Anglian and Thames regions have the worst water quality** in the UK, with only 11% of measurements indicating good ecological status (based on 179 and 452 data points, respectively).

The poor ecological status of freshwater bodies is largely driven by nitrates (Figure 4b). The Environment Agency suggests agricultural nitrates impact the East Midlands, East of England and the South West; whereas nitrates from sewage effluent are likely driving the elevated concentrations in London, the North West and predominantly urban parts of eastern England[7].

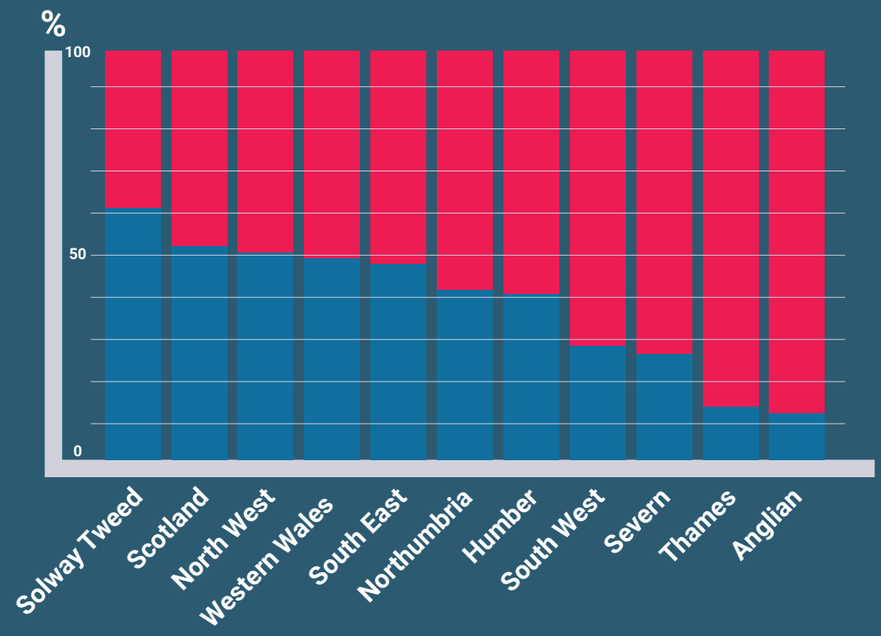



**Figure 4b.** Nitrate pollution by river basin district **Acceptable** **Unacceptable**

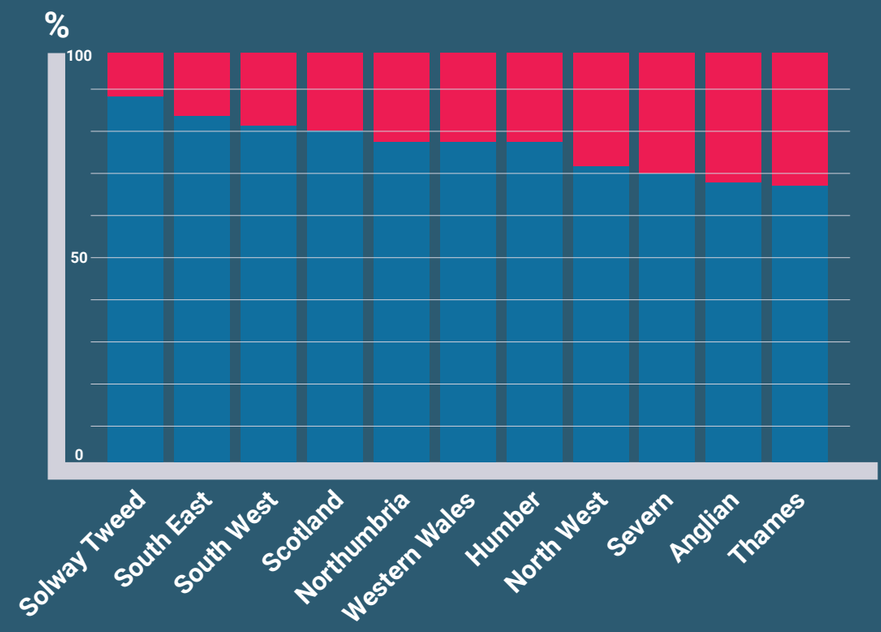



**Figure 4c.** Phosphate pollution by river basin district

### River basins and districts explained

A **river basin**, also known as a drainage basin, is an ecological term for the area of land around a river from which all water is drained.

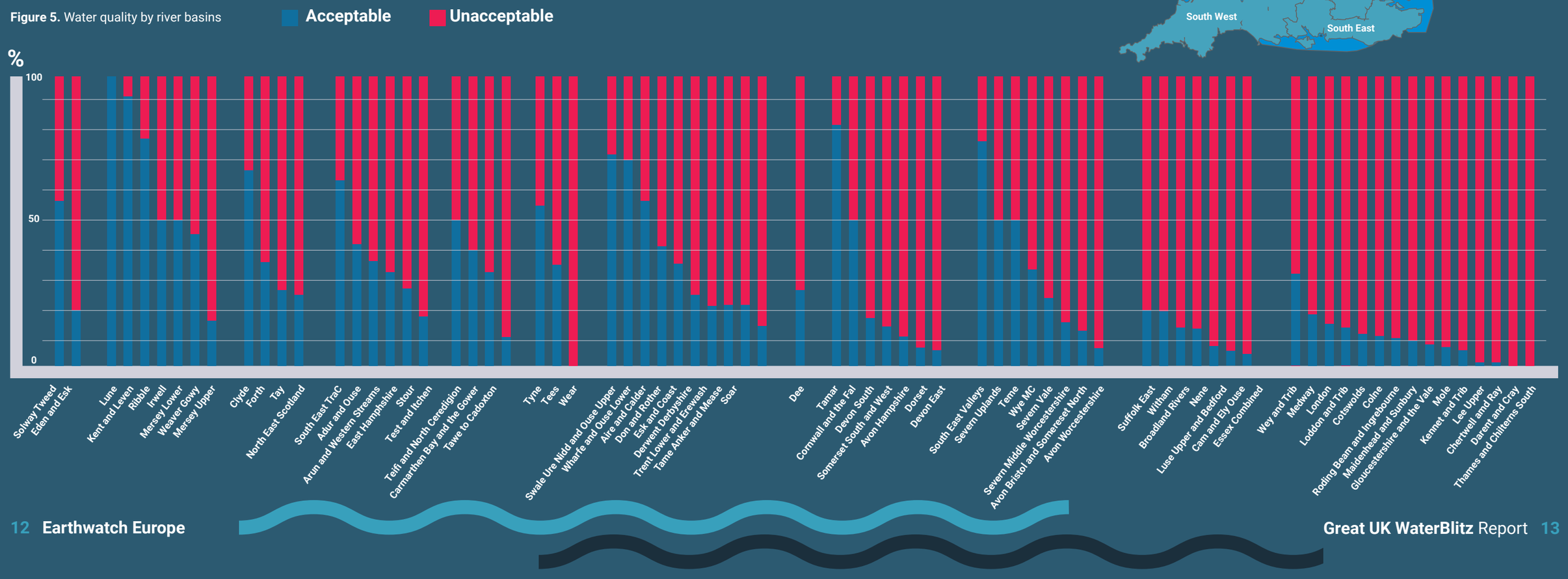
A **river basin district** is an area of land and sea, made up of one or more neighbouring **river basins**, together with their associated groundwaters and coastal waters.

# Which river basins are most polluted?

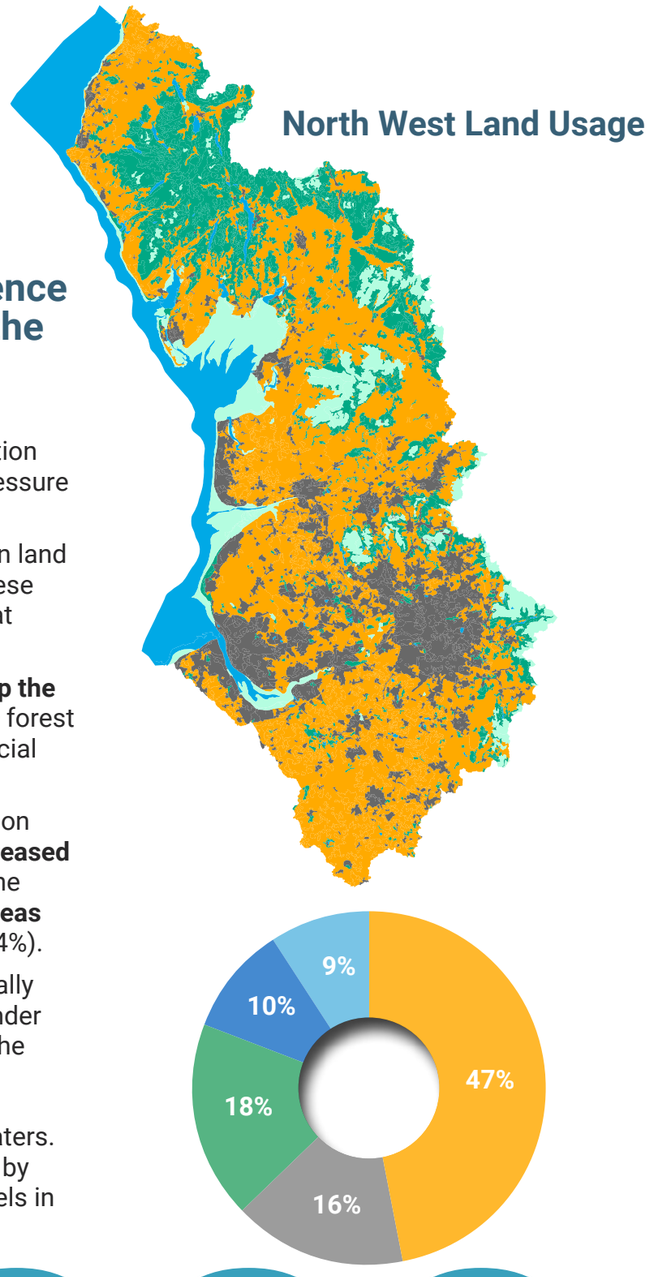
Delving deeper into regional water quality to look at specific river basins (Figure 5), we can see that in **the North West, five out of seven river basins for which data was available had at least 50% good water quality measurements** recorded.

In stark contrast, only **one of the fifteen river basins sampled by citizen scientists in the Thames region had more than 30% of measurements indicating good ecological status.**


**Figure 5.** Water quality by river basins



# The North West versus the Thames: the tale of two river basin districts



North West Land Usage




## What is driving the difference between water quality in the North West compared to the Thames?

The Thames has a much larger population than the North West, meaning more pressure exerted on the sewage system.

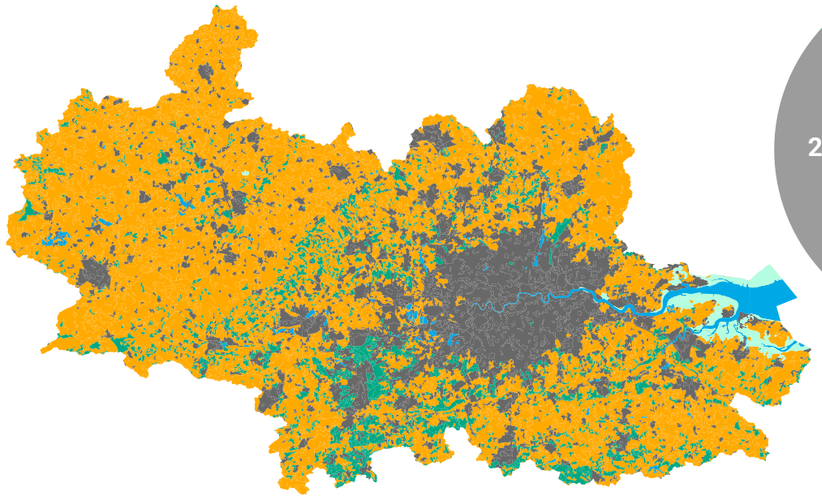
Another major factor is the difference in land use surrounding the water bodies in these regions, and the different pressures that land types exert.

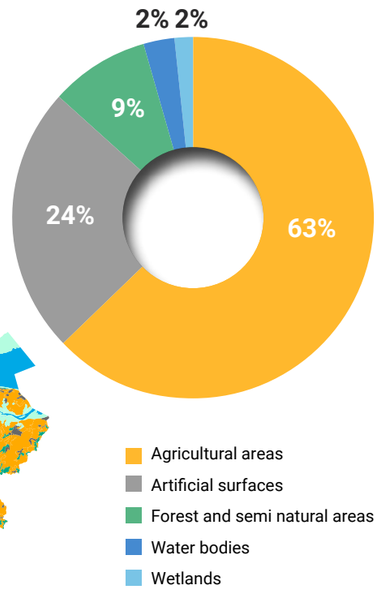
In the North West, **agriculture makes up the majority of land use** (47%), followed by forest and semi-natural areas (18%) and artificial surfaces (16%).

In the Thames, the **increased pressure** on freshwater bodies comes from the **increased use of land for agriculture (63%)** and the **decrease of forest and semi-natural areas (9%)** compared to artificial surfaces (24%).

Forested and semi-natural areas generally offer higher-quality water than areas under alternative land uses, largely because the alternatives – agriculture, industry and settlement – are likely to increase the amounts of pollutants entering headwaters. Forests can also improve water quality by reducing soil erosion and sediment levels in rivers although the extent and significance of this function will vary.

Thames Land Usage






As can be seen from the map of the Thames region, these forests and semi-natural areas are much more dispersed and interspersed with artificial surfaces and agricultural land than in the North West, likely reducing the positive impact these areas can otherwise exert on freshwater systems.

The final important difference between the North West and the Thames is the **presence of wetlands;** places in which the land is covered by water either seasonally or permanently. In the North West, 9% of the land is wetland, compared to only 2% in the Thames. While this may seem like a small difference, the benefits of wetlands to water quality cannot be overstressed. Natural wetlands play a key role in regulating river flows and in processing nutrients and fine sediment. Treatment wetlands, constructed in order to clean up contaminated rivers, can trap and retain up to 90% of sediment and remove significant levels of nitrate and phosphate[11]. By having so little land dedicated to wetland, the Thames region further suffers in terms of water quality.

## Regions At A Glance

**North West**

13,200km$^2$

7 million people

**Thames**

16,200 km$^2$

15 million people

# How healthy are the rivers in your county?

## We have ranked counties by water quality so that you can see the percentage of unacceptable water quality measurements taken in your county and how it compares to others.

The good news is that in **Northumberland and Gwent, 100% of measurements indicated acceptable water quality.** Unsurprisingly, counties in the Thames region - Oxfordshire, Buckinghamshire and Hertfordshire - and counties in the Anglian region - Bedfordshire and Cambridgeshire - are some of the counties with the highest percentage of unacceptable water quality measurements.

River Wye **(c) Getty Images**

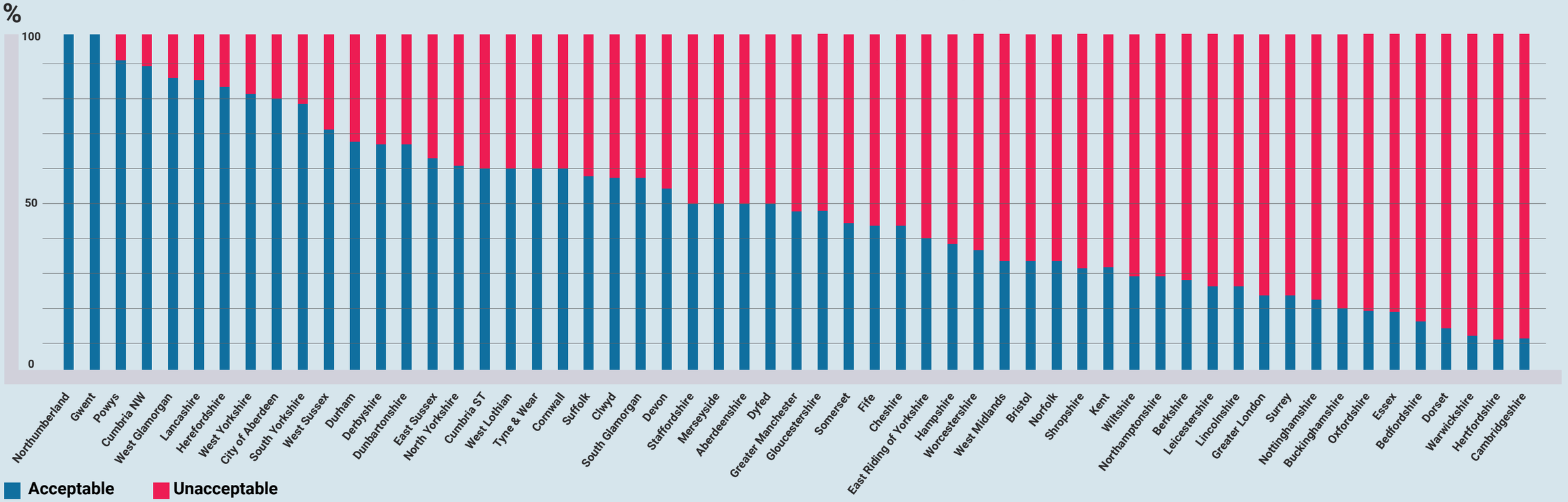



**Figure 6.** Water quality by county

# Stories from the WaterBlitz: The People Behind The Data

## Jane Stewart: Mapping the River Colne and getting the community Involved


I decided to get involved in Earthwatch Europe's Great UK WaterBlitz because I am undertaking an art project that focuses on the health, history and general stories (especially about women through history) of my local river, the Colne in Essex.

I was born in Colchester, where the river Colne changes from fresh to saltwater. I played on the banks of the young river, upstream in Halstead as I grew up in the 70s, using river clay to make pinch pots and catching minnows and sticklebacks in the shallow river with my friends. More recently I lived on the estuary of the river in both Brightlingsea and Wivenhoe, known for herrings and boat building. **I have gone from seeing the river running clear and full as a young person, to now, in my old home town the river being clogged with plants and algae due to the run-off of nitrates.** Old mills are sold on for luxury properties and the river has lost its purpose. Sewage has been spilled into the estuary where people swim and shopping trolleys and traffic cones adorn the city river in Colchester. That is why I took on the 'Mapping of the Colne' project, so I could really look at how we are affecting the river and what the damage is.

I received a small amount of funding from Colchester City Council to organise walks for community groups and members of the public along the River Colne in the Colchester area. I have been working on mapping the entire river from source to estuary for a couple of years.

Over the weekend of the WaterBlitz, I was joined for a walk by staff and service users of Level Best, a café and gallery in Colchester that employs people with learning disabilities. In addition to using the FreshWater Watch water testing kit provided by Earthwatch, we also tested the pH on this walk which was a worrying 7.5. **Taking part in the WaterBlitz was a lovely experience for the people that I was with, both staff and service users were really involved in why we did it, and some felt like 'scientists' performing an experiment and waiting for the colours to change.**



## Reg Godwin & Holsworthy Kingfishers: Inspiring the next generation of freshwater citizen scientists

I'm an environmental scientist, supporting water testing labs and environmental labs across the UK and Ireland. Last October, I joined a local school as a governor and saw an opportunity there to get children involved in science.

I signed up to Earthwatch's FreshWater Watch programme and founded the Holsworthy Kingfishers group. Our focus is on introducing primary school children to citizen science. In collaboration with Exeter Science Centre, we are trying to get even more schools involved.

My two children, Rowan and Hazel, and I joined the Great UK WaterBlitz this June. Our results showed a nitrate issue at Derriton in the River Deer. Seasonal increases are typical with agricultural input. But further investigation is needed upstream.

To people out there who want to take action: go for it! If you're concerned about the environment, then get involved in a citizen science project. The data you record will be really valuable!

# What do we know about our participants' experience?

**2,630 participants took part in the WaterBlitz and 528 responded to our questionnaire about their experiences of the WaterBlitz. 46% of participants had no involvement in the environmental sector before the WaterBlitz, and most took part because they wanted to do something for the environment (83%) or because of personal interest in a local Water body (57%). The majority of participants either agreed (47%) or strongly agreed (13%) that their understanding of water quality issues and river health was improved through taking part in the WaterBlitz; and 22% reported a positive shift in their relationship with nature.**

# Freshwater policy – a national strategy for healthy rivers

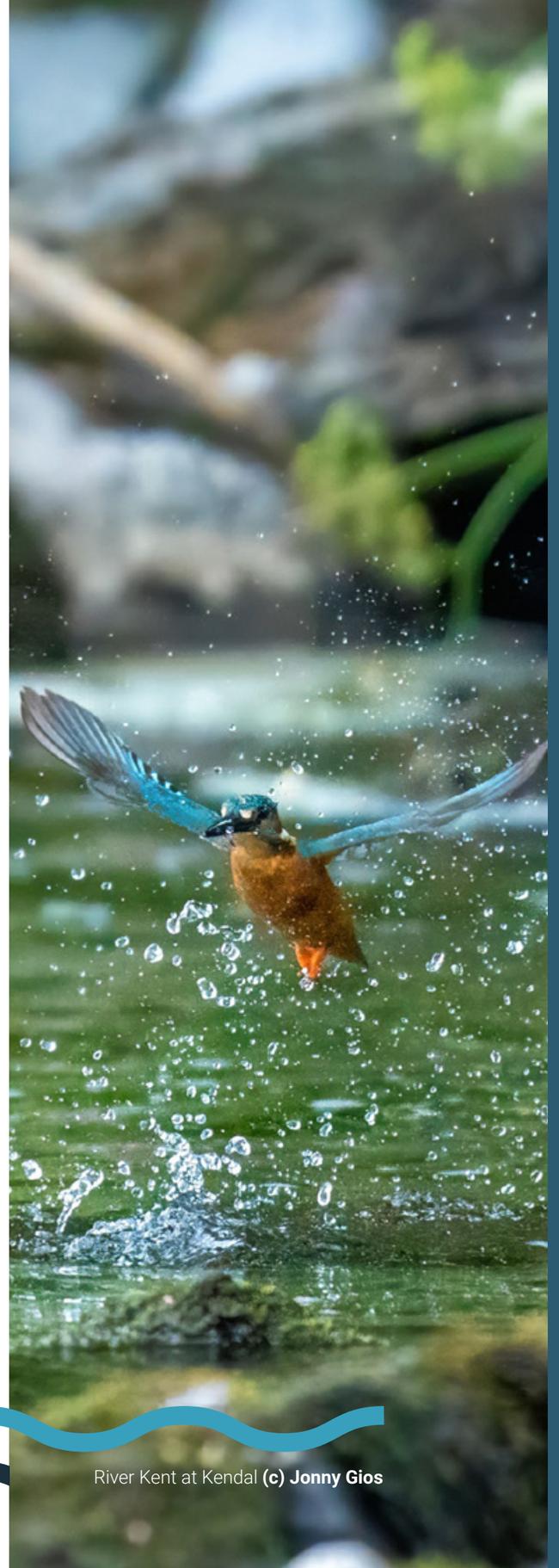
**Restoring and protecting our rivers has never been more important. We believe that there are five key areas that Government and stakeholders need to address to create a national strategy for healthy rivers of the future.**

## 1. Enforce the law

On paper, water legislation has never been stronger. A comprehensive array of instruments—including the Water Industry Act 1991 and Environment Act 2021—provide for a robust freshwater governance regime. However, law is only as effective as its enforcement: crucial for ensuring compliance with environmental regulations, deterring potential violators from polluting, holding polluters to account, and winning public trust.

While in the EU, England was covered by the Water Framework Directive (WFD), and a national survey of rivers was conducted annually. After Brexit, the WFD was transposed into English law, and from 2016 the Government decided to test water quality under the WFD every three years rather than annually.

Earthwatch wants to see **more regular and rigorous environmental inspections** of water treatment operations and stiffer penalties for non-compliance. To support this, we want to see the **regulatory bodies properly funded and resourced** and empowered to take action to protect the environment. Our WaterBlitz has demonstrated the importance of generating a robust dataset to evidence the health of our rivers. With just two indicators of ecological health – nitrate and phosphate – our citizen scientists have conducted their own environmental inspection. We want to see regulating bodies doing the same and more.



River Kent at Kendal **(c) Jonny Gios**

River Tweed

## 2. Make pollution unprofitable

Water companies in the UK have faced substantial criticism for prioritising shareholder dividends over essential environmental investments. In the fiscal year 2022/23 alone, water companies paid out dividends totalling £1.4 billion. Despite this, they underspent their water enhancement allowance—a budgetary provision mandated by Ofwat (the body responsible for economic regulation of the privatised water and sewerage industry in England and Wales) to improve infrastructure, services, and environmental performance—by £587 million from 2020 to 2023. This chronic underinvestment has resulted in an outdated and under-capacity wastewater treatment system, which result in frequent sewage overflows and poor-quality effluent. Alarmingly, only 1% of public sewers in England and Wales were replaced or rehabilitated between 2000 and 2008, reflecting a replacement rate of once every 800 years whereas most sewers require replacing every 60 to 80 years[12]

Our data clearly indicate that the Thames region has the worst water quality due to elevated nutrient loads from sewage effluent. We call for a radical shift to make pollution unprofitable to incentivise water companies to dramatically reduce their negative effect on freshwater systems.

River Tyne

## 3. Focus targets

Our data demonstrates that smaller streams are less polluted than larger rivers. Earthwatch believes investments should prioritise ecologically sensitive areas like protected nature sites, chalk streams, and upper river reaches; areas critical for biodiversity and particularly susceptible to nutrient pollution. Directing resources to these regions will ensure that the reductions in pollution are both significant and beneficial, leveraging the Environmental Land Management (ELM) scheme - which aims to support the rural economy while achieving the goals of the 25 Year Environment Plan and a commitment to net zero carbon emissions by 2050 - to achieve the best outcomes for the environment and public funds.

## 4. Embrace nature-based solutions

Sustainable drainage systems, rain gardens, treatment wetlands, natural buffers, and basin restoration initiatives, are examples of nature-based solutions that can cost-effectively enhance freshwater ecosystems while generating multiple co-benefits. Multiple wetlands, or “wetland complexes” can be five times better at reducing nitrate than the best land-based nitrogen mitigation strategies[13]. By deploying nature-based solutions, we can reduce pollution, improve water quality, and enhance flood management.

Our data indicate that the poor ecological health of rivers is largely driven by nitrate, whose main source in many river basins is predominantly agricultural. We recognise that agricultural legislation is still largely aimed at maximising scale and production with agricultural incentives encouraging this. To give farmers clarity and confidence in a sustainable future it is crucial that governments and businesses are explicit about their direction of travel towards nature-friendly, sustainable farming, commit to this change and back this up with action. We urge the Government to roll out the ELMs with sufficient funding and at scale, rewarding farmers for practices that significantly reduce pollution. Participative initiatives, such as Earthwatch Europe’s Farming with Nature programme, support farmers in their efforts towards reducing nitrogen and phosphate runoffs. It empowers farmers to monitor and minimise their impact by building on their existing knowledge through a peer-learning process and working with nature. By fostering collaboration between banks and financial institutions, suppliers, growers and agrifood companies we can co-create and co-fund solutions that align with the economic, social and environmental realities of Farming with Nature.

## 5. Empower and engage communities

Our citizen scientists have collected a robust dataset which complements findings of the Environment Agency. We urge authorities to recognise and integrate citizen science into their freshwater monitoring frameworks. This recognition will not only validate the efforts of engaged citizens but also vastly expand the data pool, leading to more comprehensive and effective water management strategies. Supporting initiatives like the Great UK WaterBlitz and FreshWater Watch empowers communities, fosters environmental stewardship, and helps achieve cleaner, healthier water bodies for everyone.

Stourbridge Canal

### Vote for rivers

At the time of writing, the UK is just weeks away from a General Election. The General Election presents a crucial opportunity for political parties and their candidates to heed the calls of the electorate to arrest the deterioration of our waterways, accelerating their restoration, and fostering a flourishing freshwater future. The election manifestos for each party will help you determine which parties plan to take action to improve the health of your local freshwater bodies. As this report has shown, nutrient pollution affects rivers across the whole country, so we need a national strategy to tackle it. The Electoral Commission is the independent body which oversees elections and regulates political finance in the UK. You can go to their website to find out who’s standing for election in your area.

# Where do we go from here?

## Earthwatch Europe believes in the power of data for change.

This report has exposed serious failings in our relationship with our freshwater systems in the UK. This is not the end of the story, but, we hope, the beginning of a concerted effort to restore these vital, fragile ecosystems.

Together with our citizen scientists, we have created a robust dataset that evidences the poor ecological health of our rivers. This poor health is due to a combination of both legacy and ongoing diffuse pollution from agriculture, and present-day point source pollution from sewage treatment works. By Farming with Nature and focusing resources to remedy point source pollution, we can substantially improve the health of our rivers.

Doing so is imperative. We have to manage this problem; ensure our rivers remain resilient and are protected so that our children, and their children can continue to sustainably use them.

We are confident there is hope for the future. Some of our rivers do show good ecological status, and some regions have several healthy freshwater bodies. Although much of the responsibility for the health of our rivers lies with those in charge – governments and water companies – there are actions that we as individuals can take: being mindful of what we put down our drains and toilets, reducing water usage, and using our voice to demand that those in power prioritise the environment.

By continuing to encourage public participation in monitoring programmes, we can build a temporal picture of the health of our waters, and foster a sense of ownership and responsibility towards them.

There's an old saying "you never step in the same river twice". In the context of river health, this is both an opportunity and a challenge. An opportunity to change our relationship with our rivers and freshwater bodies and to restore and care for them properly. A challenge to us to ensure that the rivers that future generations step in are clean, healthy and supporting life throughout our country.

### Be part of the next Great UK WaterBlitz!

Join the fight for healthy freshwater by signing up for the next Great UK WaterBlitz in September 2024. Discover more and sign up online at:

**earthwatch.org.uk/greatukwaterblitz**

FreshWaterWatch
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# Methods

## Participant recruitment and feedback

Citizen scientists were recruited through promotional campaigns on social media. Following the WaterBlitz, participants were sent a follow-up questionnaire to report on their experience of the WaterBlitz and their knowledge, attitudes and behaviours towards nature.

## Nutrient testing

The FreshWater Watch (FWW) measurements of nitrate and phosphate are made colourimetrically in closed tubes using a standard plastic cuvette for a fixed volume of 1.5mL. Nitrate measurements are based on the Griess reaction, with a reduction reaction using zinc, which reduces the nitrate ($NO_3$-) to nitrite ($NO_2$-) and a colourimetric reaction for the determination of nitrite. $PO_4$ is detected using 4-amino-antipyrine with phosphatase enzyme to produce hydrogen peroxide, which then undergoes a colourimetric reaction. Both colours are compared to standard reference colour charts provided to the citizen scientists, assigning colour brightness to one of seven concentration intervals. Side-by-side measurements have shown an overall accuracy of 75% to 85% of the citizen scientist estimated $PO_4$ concentrations compared to concentrations measured at the same site and day by professional scientists using standard laboratory analysis[3,4]. Participants submitted data via the ArcGIS Survey123 app, the FWW platform or via paper copy. All data uploaded from 7 June until 1.30pm on 11 June were included in the analysis. Additional data uploaded outside of this period were not included in the analysis but could still be visualised on the public map and will form part of the overall FWW database.

## Data analysis

On closing the survey, the data was exported, and quality checks made for location data. The data was then enriched with nitrate and phosphate nutrient pollution ratings and feedback, and our FWW narrative feedback. The narrative feedback is generated by a matrix based on a suite of water quality indicators such as nitrate, phosphate, and observed parameters.

For the spatial analysis of our data points, we enriched our data set using geospatial layers including Open OS Boundaries, WFD (Water Framework Directive) for England and Wales, and SEPA (Scottish Environment Agency) for surface water catchments. To provide average nitrate and phosphate values for each of the resulting polygons, the mid-

point of each reported nitrate and phosphate range was determined for each record in ArcGIS, and the median of the mid-points was determined for each polygon. Concentration comparisons were made using the Kruskal-Wallis Test and considering a Bonferroni correction for multiple comparisons[5].

## Polygons for spatial analysis

The following polygons were used for spatial analysis:

- Country
- County
- Region (using MNCAT_NAME) field as defined by the Water Framework Directive (WFD) Surface water management catchments (Cycle 2) database, enhanced by Welsh sub-regions (field name ManCatID, and ManCatName) from WFD River Waterbody Catchments Cycle 3.
- River basin/management area (using RBID_NAME) field as defined by the WFD Surface water management catchments (Cycle 2) database.

## Data points per polygon

The number of data points per polygon was determined to assess the representativity of the data. All data points were included in the overall analysis. Northern Ireland was excluded from the country level analysis as only nine points were available, which was considered to be unrepresentative. Regions with fewer than 10 points were excluded from the regional analysis. River basin management areas, and counties with fewer than five data points were excluded from analysis at those levels. For example: The polygon for the Dee as a Region contained only seven data points (<10) and was excluded from the regional analysis. The polygon for the Dee as a river basin was included at that level as it had >5 data points.

Of the 106 river basins defined by the WFD Surface Water Management Catchments Cycle 3 polygons (see data sources, below), 74 had more than five data points. These river basins contained 94% of the 1380 data points that were collected by citizen scientists during the WaterBlitz.

## Data sources

- Earthwatch - Great UK WaterBlitz June 2024 Data source link
- OS Open Boundaries Data source link
- SEPA River Basin Districts Data source link
- Water Framework Directive (WFD) River Basin Districts Cycle 2 Data source link
- WFD Surface Water Management Catchments Cycle 3 Data source link

## Tools used

ESRI ArcGIS Online

ESRI ArcGIS Pro and Python Notebooks

Microsoft Excel (Microsoft Office 365)



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