NATION FOCUS: ENGLAND

SECTION EXTRACTED FROM THE SURFERS AGAINST SEWAGE WATER QUALITY REPORT 2023. SCAN TO READ THE FULL REPORT, OR VISIT:

WATERQUALITY.SAS.ORG.UK

HOW IS SEWAGE MANAGED IN ENGLAND?

Water policy in England has been changing rapidly over the last few years as a result of dedicated campaigning.

The bulk of the policy is contained within the UK government's '*Plan for Water'* and '*Storm Overflow Discharge Reduction Plan'* which set out the actions government, regulators and industry will take to tackle sewage pollution.

There are nine wastewater companies in England that are responsible for the majority of the country's wastewater and sewage. These are all private companies owned by shareholders. They are all regulated by the **ENVIRONMENT AGENCY** (the environmental regulator) and **OFWAT** (the financial regulator).

RIVER HEALTH REVEALED

OUR RIVERS ARE IN A DIRE STATE

Inland waters throughout the UK are dying. Only 14% of rivers in England meet good ecological status, and none meet good chemical status.

This is owing to a variety of factors, including the widespread and persistent discharging of treated and untreated sewage, agricultural runoff, and industrial activity. Of the 86% of inland water bodies which fail to meet targets in England, 36% have been identified as failing directly as a result of sewage and wastewater discharges[1]. This matters not just for the health of our rivers and lakes but also for the ocean and the coastal surf and swim spots we love so much. Ultimately what goes into our rivers goes into our ocean.

Water quality monitoring in the UK is shockingly sparse, but this data is crucial for understanding water quality and ecological health. The most recent round of water quality assessments in England were undertaken 4 years ago in 2019 by the Environment Agency (EA) as part of the Water Framework Directive. Prior to that, the last assessment was undertaken in 2016. And now we know the next round of water quality assessments will not be undertaken until 2025[2].

Over the course of a decade, the health of most English rivers will only be checked three times.

What testing we do have only provides a 'snapshot' view of how a waterway looked at one point. This doesn't account for their dynamic nature and decreases the probability of detecting pollution. As a result, our knowledge of the health of UK waters is, on the whole, outdated and inaccurate. Our citizen science data shows 60% of the bathing sites we monitored didn't meet minimum safety requirements for water users in England.

In specific sites with Designated Bathing Water status, water quality is tested on a more frequent basis due to legal recognition that they are popular bathing sites. At these sites, the EA tests weekly for bacterial indicators of sewage. But, there are currently only 3 sites on UK rivers and these sites are only monitored from May - September (the official bathing season in England). So yet again what monitoring we do, still fails to provide a clear picture of the state of our rivers and the potential impact on human health.

1 https://www.theguardian.com/environment/2020/sep/17/rivers-in-england-fail-pollution-tests-due-to-sewage-and-chemicals

2 https://www.theguardian.com/environment/2023/aug/19/fury-as-national-health-check-of-englands-waters-delayed-by-six-years#:~:text=In%202019%2C%20the%20last%20time,latest%20permissible%20under%20the%20WFD.

HOW DOES IT WORK?

On a weekly basis, citizen scientists test for two main types of bacteria: Escherichia coli (E. coli), and intestinal Enterococci. These are known as faecal indicator organisms (FIOs), so-called due to their common presence in the intestinal tracts of mammals (i.e. humans). Because they thrive in the human gut, they are often found in untreated sewage.

This, in combination with the ease with which they can be grown in a laboratory environment, means that they are easily detectable and a convenient marker for untreated sewage.

WHAT IS CITIZEN SCIENCE?

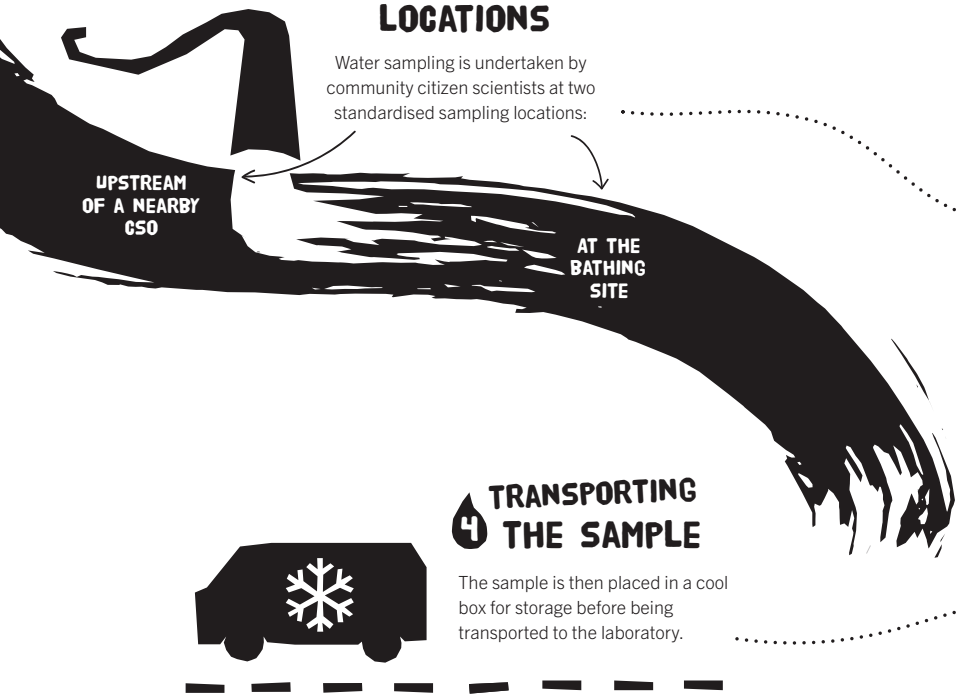
Citizen science is the collection of data, by non-scientists, to achieve a common goal.

In our case, our citizen scientists are community members who want to understand more about the presence of sewage in their local waters.

THE SAMPLING PROCESS

1 SAMPLING LOCATIONS

Water sampling is undertaken by community citizen scientists at two standardised sampling locations:



2 COLLECTING THE SAMPLE

A water sample is collected from either a nearby riverbank or bridge using a sampling pole and stainless steel beaker.

The beaker rinsed three times to ensure the sample collected is representative of the water body.

3 HANDLING THE SAMPLE

Once the sample is collected, 500ml is decanted into a sterile sampling bottle and labelled with the date and time.

4 TRANSPORTING THE SAMPLE

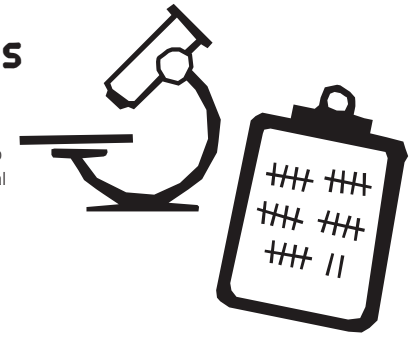
The sample is then placed in a cool box for storage before being transported to the laboratory.

5 NOURISHING THE NASTIES

Sample analysis is undertaken at an accredited microbiology testing laboratory, where the water sample is placed on a petri dish containing a selective agar, encouraging only the bacteria of interest to grow, before being incubated overnight at 37°c.

6 COUNTING THE COLONIES

The number of colonies (each colony representing a single bacterial cell) are then counted to determine the number of bacterial cells present within the sample.



WATER QUALITY REPORT 23

WHAT DID WE FIND?

Our community of citizen scientists have collected data over an 18-week period (May - Sept 2023).This data has been collated and used to replicate Bathing Water Classifications.

Designated bathing sites are given one of the four following classifications:

EXCELLENT GOOD SUFFICIENT POOR

These classifications use the EA statistical technique to categorise each sampling location into either Excellent, Good, Moderate, or Poor, depending on the levels of E. coli and Enterococci in the samples.

The statistical technique looks at the average values over the season, as well as how much the values change over time, to determine the probability of the location being hazardous for water-users' health.

Figure 7
English rivers that were tested in the SAS Citizen Science Programme.

MAJORITY OF TESTING SITES SHOWED POOR WATER QUALITY

A total of 40 sites were investigated for our citizen science water quality testing programme.

This included 20 locations throughout the UK where communities were applying for Designated Bathing Water status, and a further 20 sites upstream of a nearby sewage overflow (to find out if sewage discharges are causing a decrease in quality).

Of the 40 sites, we found that 24 sites received a Poor bathing water classification, 5 sites received a Sufficient classification, 4 sites received a Good classification and just 7 sites received an Excellent classification.

60% OF SITES TESTED DID NOT MEET THE MINIMUM STANDARD FOR SAFETY REQUIRED FOR WATER USERS.

These sites were found to have such high levels of bacteria present that the EA would classify them as being unsafe for human recreational use. If these sites were officially designated bathing areas the EA would be required to open a formal investigation into the source of the pollution.

One iconic river which tragically received poor water quality was the River Dart in south Devon. Of the 6 sampling locations on the River Dart, 4 locations received a 'Poor' water quality classification for the 2023 bathing season, and many of the weekly samples taken at these 4 sites consistently showed dangerously high levels of FIOs such as E. coli and Enterococci.

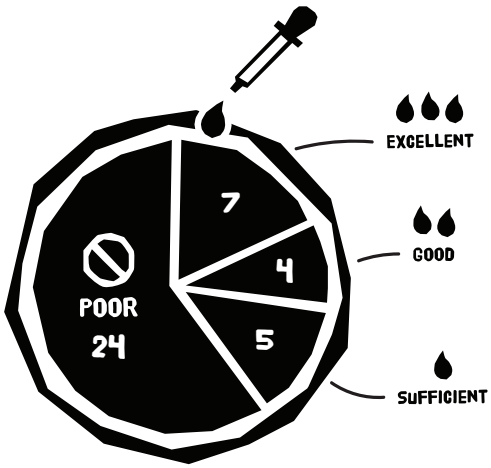
This means that this ecologically and culturally important river which is so popular with water users, and is host to many events including the annual Dart 10k swim race and the Dartmouth Royal Regatta, would fail to meet safe bathing standards in these 4 sites.

The data presented here was collected by one of our fantastic communities who are campaigning on the River Dart to achieve Designated Bathing Water Status as part of our Protecting Wild Waters programme.

All of our testing sites are well used for dipping, swimming and watersports, yet without intervention from Protecting Wild Waters communities, they would remain completely untested throughout the year. And unknowingly, the local water users may be swimming in dangerously contaminated water on a regular basis. Don't they have the right to be informed of dangers to their health?

Figure 8

Bathing water classifications from 40 sites investigated by the SAS Citizen Science water quality testing programme.



IMPACT OF SEWAGE OVERFLOWS

Of the 20 different locations across the UK, 4 bathing sites showed a clear decrease in water quality from locations upstream to downstream of a sewage overflow. All of these sampling locations have sewage overflows in between them, all of which discharged untreated sewage last year.

Whilst there is currently a lack of available real-time data relating to the discharge of untreated sewage, last year's discharge data suggests that these locations are affected by the regular use of sewage overflows.

Figure 9

Locations where water quality changes between sampling locations and the Sewer Overflows between the testing sites.

SITE	CHANGE IN WATER QUALITY CLASSIFICATION BETWEEN UPSTREAM AND DOWNSTREAM	NUMBER OF SEWER OVERFLOWS BETWEEN SAMPLING LOCATIONS
River Severn (Atcham/Ismore)	SUFFICIENT → POOR	1
River Severn (Shrewsbury)	SUFFICIENT → POOR	6
Jubilee River / River Thames	EXCELLENT → GOOD	1
River Thames (Kennington/Longbridges)	EXCELLENT → SUFFICIENT	2

WHY AREN'T WE SEEING MORE?

The citizen science program is replicating the EAs water quality testing regime, which only samples on a weekly basis.

With more frequent sampling, we would increase the likelihood of testing directly after a sewage discharge, which would likely decrease water quality. What our results indicate is that at least four of our locations are directly impacted by sewage discharges - we cannot say that the other 16 are not. By limiting ourselves to weekly testing, we could be missing bouts of bad water quality. The more frequent testing a location receives, the more accurate picture we have. We know that sewage pollution will move downstream quickly in heavy-flowing water. But ultimately all rivers lead to the ocean - taking the pollution down to the coast as it goes.

WHAT WE NEED TO HAPPEN

We need an enhanced, world-leading testing regime all year round which gives a true picture of the UK's water quality. To help us achieve a greater amount of water quality testing across the UK we're campaigning for the introduction of 200 designated inland bathing waters by 2030, leveraging the legislation that's already in place to track and improve water quality at local inland sites, so we can start improving the health of our rivers and lakes – which are currently in disastrously poor condition.

As part of our End Sewage Pollution Manifesto, we are calling for the incoming government to prioritise high-risk pollution and take immediate, targeted action to tackle the highest-risk pollution events, which include those impacting on designated bathing sites and other popular water user sites.

WHAT NEEDS TO HAPPEN?

We are calling on this and the next government to;

REVEAL THE TRUTH

We need UK wide transparency about sewage pollution.

- ✔ Accurate and accessible real-time water quality information year-round
- ✔ A transparent bathing water application process
- ✔ Water quality testing that shows the full picture
- ✔ Transparency across the sewage system

PRIORITISE HIGH RISK POLLUTION

Take immediate targeted action to tackle the highest risk pollution events.

- ✔ End untreated discharges affecting bathing waters and popular water usage areas by 2030
- ✔ End untreated discharges affecting high priority nature sites by 2030

BATHING WATER DESIGNATION

Bathing water designation qualifies sites for regular water quality testing throughout the bathing season. These sites are the only stretches of water where regulators are legally obliged to test and monitor the water quality (which is still limited).

There are currently only three inland bathing sites in England (the River Wharfe at Ilkley, Wolvercote Mill Stream at Oxford and River Deben at Waldringfield). All 3 of these designations were achieved by incredible community campaigns. This year SAS is engaging with 50 communities, through the Protecting Wild Waters campaign, who want to see improvements to their river and lakes by applying for bathing water designation, 20 of which plan to apply this year.

Designation means that water users have the information they need about the quality of the water allowing them to decide if they should use their favourite swim spot.

Bathing water designation is the mechanism to not only ensure water is regularly tested, but to ensure if a bathing site receives a classification of 'Poor' that the appropriate agency takes measures at the bathing water to prevent, reduce or eliminate (as appropriate) the causes of pollution.

Following the bathing water application process leads to other benefits – MP engagement, citizen science, media attention, engaged communities, protests – all of which builds the campaign for change at local and national level.

CHALLENGES WITH DESIGNATION

The designation process does come with its challenges.

The application requires evidence of the number of bathers (anybody swimming or paddling in the water), available facilities, support of the community, local authority and landowner.

Whilst the Department for Environment, Food and Rural Affairs (Defra) gave clarity this year that 100 bathers are required each day to meet the criteria in England, this isn't fit for purpose in relation to how inland waters are used.

NO MATTER HOW MANY PEOPLE USE THEIR WELL-LOVED RIVER, LAKE OR SEA, INFORMATION ON WATER QUALITY SHOULD BE AVAILABLE.

We know that people use their bathing sites to surf, swim and paddle all year. The Bathing Water Regulations 2013 only enforces that regulators monitor water quality for just two bacteria during the bathing season.

We need changes to the regulations to create an enhanced testing regime, monitoring for additional pollutants all year round (including phosphates, nitrates, microplastics and antibiotic resistance).

DE-DESIGNATION

If a bathing site receives a classification of "Poor" for 5 consecutive years then it is de-designated.

This time period isn't always long enough to make changes to the water quality, to therefore improve the bathing sites' classification.

One of the biggest barriers in making improvements is the price review cycle. Water companies are currently planning their delivery and investment for the next 5 years in line with the price review; PR24. If a bathing site is designated and falls outside the planning period of the price review there may not be investment in place that is required to make improvements and prevent de-designation. We need regulations and price review limitations to ensure that our bathing sites are given the best possible opportunity to succeed.

We are working with 20 of these bathing water communities to support them in a citizen science programme to conduct their own water quality testing – so they can see the real picture of water quality at their site to help them campaign for designation.

Pop over to:
PROTECTINGWILDWATERS.ORG.UK
to find out more, explore the toolkit or join a local campaign!

ENGLAND SPOTLIGHT: DIRTY MONEY

In last year's Water Quality Report, we revealed a staggering £965 billion was paid out of water companies in dividends and £16.5 million was handed over to water company CEOs for a "good job well done" in 2021 despite failing environmentally and letting down their customers.

In March 2023 we launched the Dirty Money petition to bring the public together to stand up against these profiteering actions of water companies, and demand that they put the environment before profit.

173,000 people across the UK signed in support of our calls to: tie the payment of dividends to compliance with environmental regulations, see a cap on CEO bonuses and see more transparency in water company finances.

WITH THE UK PUBLIC RISING UP IN FORCE, WE HAVE STARTED TO MAKE A DIFFERENCE TO HOW THIS IS REGULATED.

Ofwat, the economic regulator of water companies in England and Wales, have announced plans to change regulations to make sure water company executives' bonus won't be paid out of customer money. They also announced plans to link shareholder payouts to environmental performance.

These announcements are warmly welcome, but they have plenty of loopholes and still allow water companies to take money out of the system to line the pockets of investors and CEOs even if the company's performance is going backwards, or they are breaking their permit requirements.

EMPTY GESTURES AND FILLED POCKETS

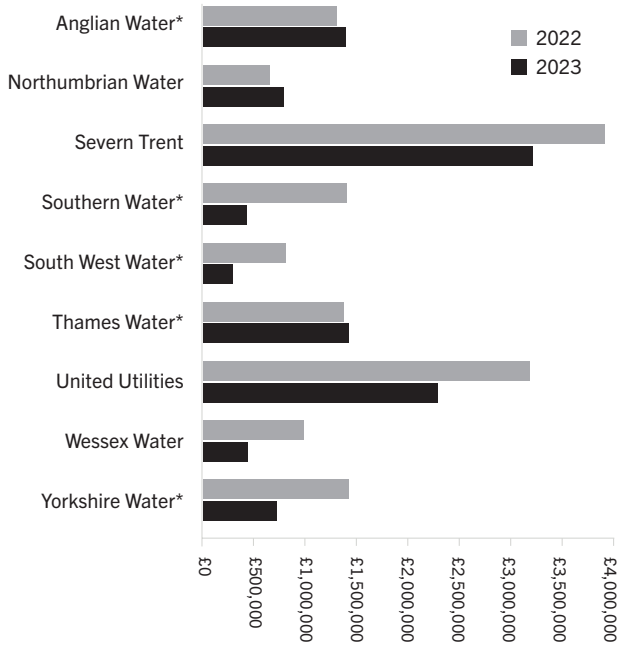
Water companies also quickly responded to this public outcry with promises of better dividend policies and forgoed bonuses, but has anything really changed?

Some water companies seem to have genuinely listened to their customers, with CEOs taking a drop in overall pay and dividends reduced. But out of the 5 water companies that gave up their CEO bonuses, 2 CEOs walked away with higher overall pay than last year. (Figure 11).

We're not fooled by their PR stunts, this year England's water company CEOs still cumulatively took away nearly £11 million, whilst discharging raw sewage over 300,000 times last year. We need lasting and enforceable legislation changes, and that's why we're working to influence Ofwat, on how they can use their powers to finally reign in water company self-regulation, and start holding these companies to account.

Figure 11

CEO take-home pay for the years ending March 2022 and March 2023.



* Water company CEO did not receive bonus for 2023

ANOTHER BILLION LEAVES THE BANK

Despite Ofwat creating new regulations to prevent dividends being paid on poor environmental performance, another £1.4 billion has been funnelled out of England's water companies (Figure 12).

These millions of pounds that water companies see fit to dole out, go to a mix of external investors and parent companies - where the trail of money gets even more murky.

This year a minority of water companies have attempted to explain their corporate structure (for example Severn Trent and Southern Water, but for the most part, understanding where the money goes is a difficult task which is still not transparent to the public (see Figure 13 for each water company's parent and owner).

Figure 12

Water company dividends paid year ending March 2023 (£ millions).

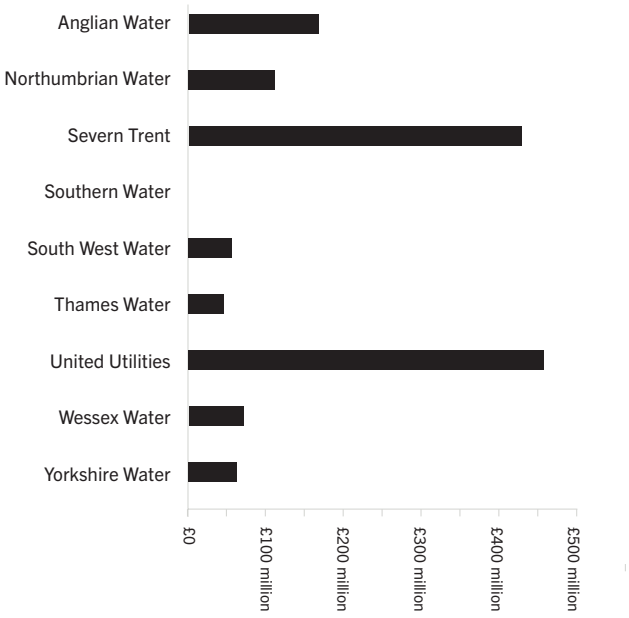


Figure 13

Water company parent companies and owners.

WATER COMPANY	OWNERS	PARENT COMPANY
Anglian Water	Osprey Consortium (led by 3i and Canadian and Australian pension funds)	AWG plc
Northumbrian Water	CK Infrastructure Holdings (based in Hong Kong)	Northumbrian Water Group plc
Severn Trent	Range of shareholders including Black Rock (American multinational investment company based in New York City)	Severn Trent PLC
South West Water	Range of investors including Black Rock (an American multinational investment company based in New York City)	Pennon
Southern Water	Macquarie Asset Management	Greensands Holdings
Thames Water	German Utility giant RWE	Thames Water Holdings Plc
United Utilities	Range of investors including Black Rock (an American multinational investment company based in New York City)	United Utilities Group
Wessex Water	Malaysian power company YTL Corporation.	
Yorkshire Water	Saltaire Water (based in UK)	Kelda Group

WHERE DOES THE MONEY REALLY GO?

What we do know is, ultimately the privatised English sewage system is being rinsed for cash, which ends up in the hands of companies based across the world from Germany and Canada to Malaysia and Australia.

Only one of nine companies are majority owned by UK based investors. Do these parent companies have the UK public and environment at heart? The gross and negligent under-investment of sewage infrastructure since privatisation suggests not.

Figure 14

Primary countries water companies' shareholders are based.

WHAT NEEDS TO HAPPEN?

We are calling on this and the next government to;

STOP POLLUTION FOR PROFIT

Water companies' first responsibility must be to the environment, not their shareholders and executives.

- ✔ Cap CEO bonuses
- ✔ Make dividends dependent on environmental performance

SCAN FOR THE FULL WATER QUALITY REPORT, WATCH THE HUMAN IMPACT STORIES AND SHARE THE FINDINGS.

WATERQUALITY.SAS.ORG.UK

WATER QUALITY REPORT 23