Why poor water quality is threatening some of our best places for nature and how we can fix it
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Without water, the Earth’s surface would be just rock and dust. Because, as we know, all life sprang from water, and cannot exist in its absence.

It is of major concern, then, that our ability to protect rivers, ponds, lakes and wetlands is facing multiple challenges across the world in the wake of unprecedented global change.

Embedded, as they are, in terrestrial landscapes, freshwater ecosystems have to endure all the pressures that our uses and abuses of land and water throw at them: over-abstraction for domestic, industrial or agricultural use; diffuse pollution from agro-chemicals leached from over-exploited farmland; accidental or purposeful waste disposal as sewage is released into watercourses with its cocktail of effluent chemicals; physical modifications from flood defence or urban encroachment; barriers created by weirs or dams; invasive non-native species whose geographical displacement we have aided; the over-exploitation of inland fisheries; warmer waters, extreme floods and droughts from accelerating climate change.

So often the resulting effects are hidden beneath the water surface where the consequences can be out of sight and out of mind. Yet, growing evidence shows how changes to freshwater ecosystems bring serious and potentially irreversible risks to people and nature: population reduction among freshwater species faster than in any other ecosystem, wetland losses more rapid than for tropical forest, the precipitous decline of iconic river species such as the Atlantic Salmon.

And we are all responsible through our burgeoning demand for resources.

As this report shows, many of these problems are manifest in our own freshwater ecosystems – not only in pressures that permeate downstream from land to sea, but also in consequences that arise in unexpected places, for example where altered water quality impacts precious protected ecosystems.

But this report also gives us both hope and a recipe for action: from systemic solutions in the way we live to direct changes in water use, pollution management or effective planning that avoids downstream impacts.

The value and quality of the lakes and rivers that flow into the future – and carry with them the cultural identities of our past – depend on actions that are within our power and can no longer postpone.
Poor water quality is threatening our freshwater habitats including rivers, lakes, ponds, streams and wetlands, and the wildlife that depends on them. Troubled Waters seeks to highlight how the UK population values and perceives the water environment, whilst investigating the systemic threats to poor water quality and the solutions required.

Water pollution is widespread and unselective and is even threatening our highest valued species and habitats, including those within protected areas. Drawing on case studies from protected sites across England, Wales and Northern Ireland this report exposes some of the major underlying issues impacting water quality across the UK, including inadequate planning systems, pollution from agriculture and the misuse of sewage overflows.

Without significant and urgent action, some of our best loved and most iconic wildlife face a perilous future. We must act now to ensure that generations to come can marvel in the joys that our freshwater habitats can provide, from the magical sight of otters playing in our streams, the vibrant blue flash of kingfishers in flight, and the epic migration of the Atlantic salmon. We know what needs to be done to bring our waters back from the brink of collapse in the UK, and this report makes several recommendations.

Troubled Waters is a project delivered in partnership with the RSPB, the National Trust, the Wildlife Trusts, the Rivers Trust, Wales Environment Link and Afonydd Cymru, which seeks to understand how people value and interact with freshwater habitats, demonstrate the range of water quality issues currently facing our most treasured sites, and identify proposed solutions to improve water quality for both people and nature.
EXECUTIVE SUMMARY

TO IMPROVE WATER QUALITY IN THE UK, WE NEED:

TO REGULARLY MONITOR THE PROTECTED SITES NETWORK TO TRACK PROGRESS AND TARGET ACTION WHERE IT IS MOST NEEDED

SYSTEMIC CHANGE TO THE PLANNING APPROVAL SYSTEM

TO TRANSITION TO REGENERATIVE FARMING PRACTISES AND ENCOURAGE SUSTAINABLE, NATURE FRIENDLY EATING

LEGAONLY BINDING TARGETS FOR BIODIVERSITY AND FRESHWATER

TO STOP UNTREATED SEWAGE FROM REACHING OUR RIVERS

SUFFICIENT RESOURCING OF STATUTORY AGENCIES FOR ROBUST MONITORING AND ENFORCEMENT OF EXISTING POLICY AND PERMITS
INTRODUCTION

OUR BLUE PLANET: WHERE IS THE WORLD’S FRESHWATER AND WHY IS IT IMPORTANT FOR NATURE?

Despite 71% of the world’s surface being covered by water, less than 2.5% of the world’s water exists as accessible freshwater in our rivers, lakes, and groundwater.

These freshwater systems are home to over one third of all vertebrate species and are essential to supporting life on earth through drinking water supply, food production, photosynthesis and sanitation.

Species that depend on these habitats are facing catastrophic population declines with one in three freshwater species being faced with extinction. The Freshwater Living Planet Index found that global populations of freshwater species decreased by 84% since 1970. These declines are being caused by numerous global pressures, including pollution, overfishing, invasive species, dam construction, abstraction and dredging, as highlighted in the recent ‘The World’s Forgotten Fishes’ report.

The UN recognises water pollution as a widespread global issue that all nations must address and estimate that 80% of global wastewater is untreated and released directly into the environment, including human waste and toxic industrial waste products.

80% OF GLOBAL WASTEWATER IS UNTREATED AND RELEASED DIRECTLY INTO THE ENVIRONMENT
WATER QUALITY IN THE UK

The UK’s freshwater network is made up of over 200,000km of streams and rivers, alongside groundwater stores, lakes, ponds and wetlands, which are home to a diverse range of wildlife such as water voles, otters, herons, trout and beavers and provide a lifeline for many migratory and breeding bird species including curlew and geese.

The UK’s freshwaters also have internationally significant populations of species such as the Atlantic salmon, and also lake fish species such as the whitefish, which were left isolated after the last Ice Age.

In England and Wales, only 14% and 46% of rivers respectively meet the standards for good ecological status, and in Northern Ireland, only 31% of waterbodies are classified as good or high quality.

The four nations of the UK report on water quality through the EU-derived Water Framework Directive. This framework created a renewed focus on the health of freshwater systems, however, interventions have failed to drive the necessary change to improve water quality in the UK. As a result, the health of many of our freshwater systems are in poor condition, with many terrestrial and freshwater species in decline and at risk of extinction. The impacts of poor water quality are felt throughout freshwater ecosystems, with negative consequences for invertebrates, plants and larger species, which may live both on water and land.
WHY IS OUR WATER IN SUCH POOR CONDITION?

Pollution in freshwater ecosystems includes pathogens from human and animal waste, nutrients from wastewater and agriculture, organic matter from agricultural run-off, and chemical pollution from pesticides and runoff from mines. For example, the drivers behind freshwater pollution include:

1. **SEWAGE AND STORM OVERFLOWS**

   Water companies require permits to discharge untreated sewage into the local environment, which is allowed under certain exceptional criteria. However, recent monitoring has exposed the alarming rate that sewage is being discharged into our rivers. In 2020, water companies in England discharged raw sewage into rivers 400,000 times, and over 100,000 times in Wales. Even under normal use, sewage systems from small septic tanks and major sewage works contribute nutrients in the form of nitrogen and phosphorus.

2. **EXCESS NUTRIENTS FROM AGRICULTURAL RUN-OFF**

   Agricultural practices often use fertilisers, manure and slurry containing nitrates, including ammonia, and phosphates to improve plant development, yield and crop quality. These can reach our watercourses through both diffuse pollution, where there is no specific discharge point, and point source pollution, e.g. a pipe. Excess nutrient use can cause eutrophication where the nutrients feed aquatic plants, in particular algae, causing oxygen levels in the water to drop; water quality to decrease; and aquatic animals and plants to die.

3. **PESTICIDES INCLUDING HERBICIDES**

   Often applied at scale in agricultural systems to control unwanted plants and insects, pesticides can have significant negative effects on aquatic plants and wildlife. The threat of pesticides is not abating, with a PAN UK study finding that we are using more toxic pesticides, across larger areas of land, more often. Costs arising from the contamination of drinking water with pesticides in the UK has previously been calculated at £120 million per year. These costs are then passed on to people who pay for them through their water bills.
4. CHEMICAL POLLUTION FROM MINES

Active and abandoned mines and waste heaps can cause pollutants, such as heavy metals, to be washed into local watercourses. It is estimated that over 1,500 km of rivers in England are polluted by mines, and in Wales, NRW has recently estimated it will cost £282 million to end water pollution from existing mines.

Several additional pollutants are emerging as threats to our freshwater systems, however the extent and impacts of their presence in our freshwater is relatively understudied. This includes:

5. PLASTIC POLLUTION IN FRESHWATER SYSTEMS

A recent report found that the River Mersey in England was proportionally more polluted with plastic than the Great Pacific Garbage Patch. Whilst the research around the impact of microplastics on water quality is limited, there is significant research which documents the volume of plastic within our river systems. The impact of plastic in freshwater systems on wildlife is understudied compared to the marine environment, however existing estimates suggest detrimental effects to ecosystems.

Whilst several pressures are causing the UK’s rivers, lakes, and other freshwater systems to be polluted, agricultural and wastewater pollution are currently recorded to have the largest impact. Latest reports from England found that 40% of water bodies are suffering from agricultural pollution, and 35% from wastewater from the water industry. In Wales, agricultural pollution has caused water quality failures in 113 waterbodies. There is also increasing concern about the impact of pet flea treatments contaminating UK rivers.

6. PHARMACEUTICAL RESIDUES

The Organisation for Economic Co-operation and Development highlights some stark concerns about the impact of pharmaceuticals used in human and animal health entering freshwater systems, including changes to the behaviour and reproductive success of aquatic species, and increased risk of some cancers and antibiotic resistance in humans. There is also increasing concern about the impact of pet flea treatments contaminating UK rivers.
THE IMPACTS

WHAT DOES POOR WATER QUALITY MEAN FOR WILDLIFE AND PEOPLE?

Poor water quality has numerous negative impacts on wildlife and the natural environment, including:

FISH KILLS AND INVERTEBRATE LOSSES

Eutrophication and pollution events can result in increased incidence of freshwater fish dying en masse, and impacts can extend to coastal ocean fisheries. Eutrophication is predicted to worsen with climate change. More direct effects can result from chemical pollution incidents, such as spills which can temporarily wipe out invertebrate communities.

SPECIES AND FOOD CHAINS UNDER THREAT

Poor water quality creates conditions for a small minority of plants and organisms to thrive, and others to suffer sustained loss in both abundance and diversity. This affects invertebrates, plants and animals, and in turn threatens the structure and stability of the food chain.

DANGEROUS FOR BATHING AND COSTLY TO TREAT

Some algae can produce toxins and can result in water becoming dangerous to bathe or swim in. Significant costs are associated with poor water quality including enhanced drinking water treatments, and losses from tourism.
INTRODUCTION

HOW HEALTHY ARE THE UK’S PROTECTED SITES?

Even in protected sites, the supposed havens for nature, poor and declining water quality is having negative impacts. Across the UK, there are a variety of designations that areas can receive with the goal of protecting key habitats and species. These include designations of international (Ramsar), European (Special Protection Areas and Special Areas of Conservation) and National (Sites of Special Scientific Interest (SSSIs) in England and Wales and Areas of Special Scientific Interest (ASSIs) in Northern Ireland. However, despite the protection afforded to these sites; issues with water quality are undermining their capability to safeguard many of the threatened species and habitats the designations aim to protect.

In 2019, Natural England reported that 89.7% of SSSI units classified under ‘river’ in England are currently in unfavourable condition. In Wales, a 2020 baseline assessment by Natural Resources Wales found that 60% of ‘freshwater biodiversity’ features designated as SSSI or Special Areas of Conservation (SAC) were in unfavourable condition. In Northern Ireland, DAERA’s 2021 statistics report illustrates that 36% of ASSI features are in unfavourable condition. However, a lack of publicly available condition data makes it difficult to gain insight into the condition of river or freshwater features across Northern Ireland.

For as long as polluted water continues to enter our protected sites, few species are safe from the devastating impacts on nature.
The Troubled Waters project has investigated a variety of case studies from across England, Wales, and Northern Ireland, to understand how protected sites are being impacted by poor water quality. Here’s a summary of the issues and key findings from each case study.

**HISTORIC ISSUE WITH DIFFUSE AGRICULTURAL POLLUTION AT A CATCHMENT SCALE**
THE RIVER WYE

**NATIONALLY SIGNIFICANT WETLAND SPECIES UNDER THREAT FROM HIGH PHOSPHORUS LEVELS**
WEST SEDGEMOOR

**FAILURE TO REDUCE DIFFUSE WATER POLLUTION REACHING PROTECTED WETLAND**
LEIGHTON MOSS

**EXCESSIVE NUTRIENTS FROM CATCHMENT CAUSING POOR COASTAL WATER QUALITY**
POOLE HARBOUR

**IMPACTS OF SLURRY AND SEDIMENTATION**
RIVER TEIFI AND CARDIGAN BAY

**FENS AT THREAT FROM NUTRIENT ENRICHMENT AND ABSTRACTION**
ANT BROADS AND MARSHES

**COMPLEX LAKE SYSTEM WITH ONGOING POOR WATER QUALITY**
UPPER LOUGH ERNE

The Troubled Waters project has investigated a variety of case studies from across England, Wales, and Northern Ireland, to understand how protected sites are being impacted by poor water quality. Here’s a summary of the issues and key findings from each case study.
THE RIVER WYE

Rich in biodiversity, popular for recreation, and covering a catchment of over 400,000 hectares. Part of the river is designated as a SSSI to recognise the role of the area as an important wildlife corridor, essential migration route and key breeding area for many nationally important species including otter, salmon, twaite shad, and backwater water crowfoot beds. The Wye also benefits from Special Area of Conservation (SAC) status, with targets focused on reducing damagingly high phosphorus levels.

Despite these protections, recent data from Natural Resources Wales, exposed the widespread failure to control phosphorus levels, with 28 out of 45 monitored areas failing to meet concentration targets. Diffuse agricultural pollution, is widely acknowledged as a key driver of this failure, particularly the mass expansion and approval given to unsustainable numbers of intensive poultry units in recent years. Farms in the UK rear 850 million chickens for meat every year and 20 million of these chickens are estimated to be in the Wye catchment.
West Sedgemoor is a wetland meadow habitat located in the Somerset Levels and Moors and is a designated SSSI, SPA and Ramsar site. The site hosts nationally significant numbers of waterbirds and is notable for its populations of breeding waders in the summer and wildfowl in the winter, including snipe, lapwing, redshank, Bewick’s swan and curlew.

The overall condition across all Somerset Levels and Moors SSSIs is ‘Unfavourable Declining’ due to evidence of failing water quality, most notably high phosphate levels. Phosphate levels at West Sedgemoor, have been rated ‘poor’, for almost every year in the last decade. Natural England have recognised agricultural runoff and water company discharges as the key drivers of this pollution. Historically low nutrient conditions in mainly unimproved grassland have maintained nationally rare and threatened species-rich meadows. However, continued excessive nutrients are likely to reduce sward diversity on the sites, with unknown knock-on impacts on supported invertebrates, amphibians, birds and mammals, and the aquatic plant communities within the unique ditches for which the Somerset Levels are renowned.
Leighton Moss

**KEY ISSUE:** Failure to reduce diffuse water pollution reaching protected wetland

**THREAT TO NATURE:** De-oxygenated water resulting in reduction in frogs, toads and eels, and with potential knock-on effects for large species such as bittern

Containing the largest reedbed in north-west England, Leighton Moss is a SSSI, SPA and Ramsar site hosting breeding bittern and marsh harrier, alongside otter, bearded tit, reed warbler, water rail and spotted crake.

Natural England states that despite water quality being critical for the species dependent on wetland habitats, the site is threatened by diffuse pollution from septic tanks and agriculture in the surrounding catchment. At least 230 properties in the Leighton Moss catchment are not connected to mains sewage facilities and are likely reliant on septic tanks. Of these properties, 30 are of moderate or high risk to SSSI water quality, as springs arising within Leighton Moss could be contaminated septic tank effluent. The latest SSSI assessments for site condition were rated ‘Unfavourable – recovering’ in 2010, which both reference a Diffuse Water Pollution Plan to help remedy water pollution and excessive siltation issues. Actions ongoing under this Plan have not yet been evaluated, or if evaluated have not been made publicly available, however site level water quality monitoring by the RSPB strongly suggests the existing initiatives have not resulted in sustained reduction in diffuse water pollution reaching Leighton Moss.
**POOLE HARBOUR**

**KEY ISSUE:**
Excessive nutrients from catchment causing poor coastal water quality

**THREAT TO NATURE:**
Declines in curlew, shelduck, redshank as thick algal mats limit feeding

Poole Harbour hosts a number of designations including SSSI, Ramsar and SPA largely due to the presence of intertidal marsh, mudflats, saltmarsh and reed habitats. The area supports internationally significant populations of waterbirds and roosting and habitat for a variety of species including red-breasted merganser, goldeneye and the dark-bellied brent goose.

Of the 55 SSSI units in Poole Harbour, 62.78% designated hectares are in 'Unfavourable - declining' condition, largely due to water pollution. Longstanding efforts by regulators and government conservation agencies to define strategies for reducing nitrate and phosphate discharges from sewage treatment works and agriculture, have resulted in the area trialing a voluntary nutrient reduction mechanism. This voluntary scheme is in lieu of a Water Protection Zone being imposed across the catchment, which would compel farmers to undertake closely monitored improvements to their nutrient use and implement pollution prevention plans.

**62.78% DESIGNATED HECTARES ARE IN ‘UNFAVOURABLE – DECLINING’ CONDITION, LARGELY DUE TO WATER POLLUTION**

**THE AREA SUPPORTS INTERNATIONALLY SIGNIFICANT POPULATIONS OF WATERBIRDS AND ROOSTING AND HABITAT FOR A VARIETY OF SPECIES**

CLICK HERE TO VIEW FULL CASE STUDY AND SITE-SPECIFIC RECOMMENDATIONS.
The River Teifi is one of the longest rivers in Wales and one of the most productive salmon and sea trout fisheries in the country. It is a designated SSSI for a range of river types and associated habitats and designated SAC for many species including the three UK lamprey species, bullhead, otter, Atlantic salmon, and floating water plantain, water crowfoot communities and for upland lake species, which require low nutrient levels.

The latest WFD assessment from 2018 indicated that only 22% of waterbodies in the catchment are classified as ‘good’, with the remaining being ‘moderate’ or ‘poor’.

The assessment suggests that current failures are largely the result of pollution from abandoned mines and agricultural and rural land management. The Core Management Plan states that the most significant sources of diffuse pollution and siltation are from agriculture, due to fertiliser, manure, and silage run-off, soil erosion from ploughed land, compaction and nutrient inputs due to unfettered livestock access to watercourses.

The River Teifi and Cardigan Bay

**KEY ISSUE:** Impact of slurry and sedimentation

**THREAT TO NATURE:** Rare plant communities, including floating water plantain and water crowfoot, threatened by excess nutrients

22% of waterbodies in the catchment are classified as ‘good’, with the remaining being ‘moderate’ or ‘poor’.

CLICK HERE TO VIEW FULL CASE STUDY AND SITE-SPECIFIC RECOMMENDATIONS.
The Ant Broads and Marshes SSSI, in Norfolk and Suffolk, were designated partly due to being considered as one the best examples of unpolluted valley fen in Western Europe. It forms part of The Broads Special Area of Conservation (SAC), which collectively support over a quarter of the UK’s rarest species. The site supports a variety of species including the fen orchid, the swallowtail butterfly, and birds such as the bittern and marsh harrier.

Nutrient enrichment and water abstraction pressures have since resulted in reduction of water quality and water levels, and increased acidity. This has caused negative changes in biodiversity. Targets for the phosphate levels in the SAC lakes for the Broads are over two-thirds lower than the levels Anglian Water are permitted to discharge post-sewage treatment. The Diffuse Water Pollution Plan for the area clearly demonstrated that sewage treatment works were the dominant source of phosphate, and that the SSSI is impacted by these high levels of phosphate. Across the SSSI, the fate of calcareous fen is particularly vulnerable, as once phosphate gets into fen, it binds to peat soils and is extremely hard to remove.
Upper Lough Erne is situated in the basin of the River Erne in Northern Ireland and includes a complex system of interconnected smaller satellite lakes. The Upper Lough Erne has a number of protections including ASSIs, SPA and SAC, and Ramsar to support a variety of wildlife and habitats including whooper swans, great crested grebe, snipe, otter, and Western acidic oak woodland. It is a complex wetland of rivers and connected lakes, now rare in the UK, and supports a rich aquatic plant community.  

76% of surface water bodies in the Upper Lough Erne have been classified as less than good, largely due to nutrient enrichment from connected rivers. Several academic studies show that the system has been increasingly affected by eutrophication since the 1950s, with the smaller lakes having higher nutrient loading than the larger lakes. This study also found that as eutrophication increased, the diversity of aquatic plants decreased, and this was more pronounced in the smaller isolated lakes threatening unique species assemblages. A lack of access to data and reporting means we do not know either the timeline or results of monitoring of the relevant ASSIs.
The Troubled Waters project has also conducted a market research survey through YouGov to better understand public perception on the condition and value of the UK’s rivers, streams, lakes and wetlands. It has found that many people across England, Wales and Northern Ireland treasure freshwater habitats but are becoming increasingly concerned with the state of these special places.

Survey figures, unless otherwise stated, are from YouGov Plc. Total sample size was 2067 adults, of which 1889 were from England, Wales or Northern Ireland. Fieldwork was undertaken between 23rd - 24th August 2021. The survey was carried out online. The figures have been weighted and are representative of all UK adults (aged 18+).

### PUBLIC USE
Over the past year 78% of adults in England Wales and Northern Ireland have visited freshwater habitats for a range of reasons...

- **27%** have used waterways to photograph scenery or wildlife
- **27%** have used a waterside path for exercise
- **13%** have had a picnic by a river lake or stream
- **7%** have played pooh sticks

### PUBLIC VALUE

- **73%** agree that having access to waterways for recreation is important to them
- **87%** agree more needs to be done to help the UK’s freshwater habitats
- **88%** agree they are a national treasure

### PUBLIC CONCERN

- **87%** agree more needs to be done to help the UK’s freshwater habitats
- **83%** are concerned about the impact of sewage pollution
- **88%** agree that people take the management and care of our freshwater ecosystems for granted
- **72%** agree that they are concerned about the impact of climate change and extreme weather on freshwater habitats
- **75%** agree that they are concerned about the impact of pollution from farming
### NATURE VALUE

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<th>Animal</th>
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<th>Would like to see</th>
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<td>73%</td>
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<td>Kingfisher</td>
<td>42%</td>
<td>78%</td>
</tr>
<tr>
<td>Dragonfly</td>
<td>72%</td>
<td>69%</td>
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<td>Salmon</td>
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### PUBLIC KNOWLEDGE

<table>
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<th>Opinion</th>
<th>Percentage</th>
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<tr>
<td>17% think that sewage pollution is the biggest issue facing water quality in the UK</td>
<td></td>
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<tr>
<td>10% think that pollution from agriculture is the biggest issue facing water quality in the UK</td>
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<tr>
<td>45% agree that there are already strict rules in place to protect freshwater ecosystems</td>
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<tr>
<td>43% agree they are in good condition</td>
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</tr>
<tr>
<td>35% think that litter and plastic pollution is the biggest issue facing water quality in the UK</td>
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</table>

To see the full results of the YouGov omnibus survey, please visit our interactive storymap.
MARKET RESEARCH

HOW MUCH DO PEOPLE KNOW ABOUT THE CONDITION OF OUR FRESHWATERS, AND HOW ARE THEY VALUED?

Most people surveyed (88%) agree that the UK’s rivers, lakes and streams are a national treasure, and that they are an important part of the UK’s heritage and culture. The survey highlights some of the diverse range of activities that people enjoy in these spaces, from socialising, exercise and recreation.

This survey found that people want to see more aquatic wildlife in the UK, with most respondents stating that they would like to see more species such as otters, salmon, kingfishers and water voles along their waterways. People are already noticing wildlife on their visits to freshwater spaces, with over three-quarters of the public spotting at least one of six recognisable species associated with freshwater ecosystems. Dragonflies have been spotted along waterways by nearly three-quarters of those surveyed, while 4% have seen a beaver.

When asked if they think the UK’s freshwater systems are in good condition, 43% agreed that they were. The survey therefore suggests that most people aren’t aware of the poor condition of the UK’s rivers, streams, and lakes, or the drivers of this pollution. When asked about the biggest issue currently impacting water quality in UK rivers, streams and lakes, the most popular answer was ‘litter and plastic pollution’ (35%) with the dominant drivers of poor water quality, farming (10%) and sewage (17%), falling significantly behind. This likely illustrates the success of the plastic-free movement in building momentum around this issue, and the gap in awareness about the overarching threats to freshwater quality in the UK.

Most people surveyed expressed concern about the impact of pollution and climate change on rivers, lakes and streams in the UK, with only 45% feeling like there are strict rules in place for their protection. It has found that 87% of people want more to be done to help our freshwater environment. However, only 30% felt that there is anything they can do personally to improve the quality of their local freshwater spaces.

IN ENGLAND, WALES AND NORTHERN IRELAND

88% AGREE THAT THE UK’S RIVERS, LAKES AND STREAMS ARE A NATIONAL TREASURE

43% AGREE THE UK’S FRESHWATER SYSTEMS ARE IN GOOD CONDITION

Above image: Common kingfisher Alcedo atthis, adult male perched on branch overhanging a river, Bedfordshire, July. Photography: Ben Andrew (rspb-images.com)
This highlights an opportunity to help empower people to understand the drivers of freshwater pollution, and how to advocate for the systemic and individual changes required. This market research also adds to the growing body of evidence looking to understand the link between well-being and people’s relationship with freshwater ecosystems.

There is research to suggest that exposure to blue spaces, such as rivers, lakes and the coast, can be beneficial to both physical and mental health and well-being, and that when people feel a place has more wildlife, it can have greater well-being benefits. This adds to the evidence suggesting that improving the quality and access to freshwater systems can have multiple benefits to both people and wildlife, with nearly three quarters of respondents stating that access to blue spaces for recreation is important to them.

Similar to the action required to reduce carbon emissions, efforts to improve domestic water quality must not result in transferring the UK’s impact on poor water quality overseas. Eutrophication and pollution of freshwater systems caused by human activity, including farming and industry, is widespread and increasing globally. We need to better understand how the UK’s demand for imported products contributes to this.

For example, the textile industry is regarded by the United Nations as the second most polluting industry in the world. In many cases, untreated toxic wastewaters from textile factories are discharged directly into rivers, and huge quantities of agrochemicals are used in growing crops for material production. This pollution can have devastating impacts on local people and environments, such as neurological and reproductive problems and destroy habitats and the species that spend on them. Given the UK imports 90% of the fashion and textiles sold, we need to understand how UK consumption is impacting overseas ecosystems and communities.
The 200,000km of streams and rivers, 40,000 lakes and the many ponds and wetlands, which form the UK’s vital freshwater networks are home to a diverse range of wildlife and are hugely valued by the public, however, are under severe threats from pollution. This report, supporting market research, and case studies have focused on the impact of poor water quality on the network of protected sites. We know what needs to be done to bring our rivers, lakes and streams back from the brink of collapse in the UK, and this report makes the following recommendations.

TO IMPROVE WATER QUALITY IN THE UK, WE NEED...
TO IMPROVE WATER QUALITY IN THE UK, WE NEED:

SYSTEMIC CHANGE TO THE PLANNING APPROVAL SYSTEM

The scale of agricultural, industrial and water treatment units a catchment or sub-catchment can support, without exceeding nutrient levels required for achieving ‘good ecological status’, needs to be published and underpin planning decisions. This will require ongoing environmental monitoring to systematically review the impacts of these catchment-based capacity thresholds and amend if water quality targets are not met. Restoring healthy freshwater systems cannot be achieve in isolation, and using a catchment-based approach needs to become standard practice. We also need to focus on local impacts of water quality as well as the impacts at waterbody scales used for reporting; we know that small waters are important for wildlife but are seldom monitored or considered in their own right.

TO TRANSITION TO REGENERATIVE FARMING PRACTISES AND ENCOURAGE SUSTAINABLE, NATURE FRIENDLY EATING

As illustrated in this report, the impacts of pollution on our land and water is largely driven by excess nutrients and pesticide use from intensive agriculture. To help address this we need to ensure that farmers and landowners are incentivised to transition to agroecological farming practices, which will allow a better cycling of nutrients, help reduce reliance on chemical pest control and deliver benefits to nature. We must also support a shift to nature friendly eating behaviours, which will help to restore water quality, and achieve the UK’s reduction in carbon emissions as echoed in England’s National Food Strategy.
A framework of robust and legally binding targets in all four governments of the UK is needed to drive improvements in biodiversity and freshwater quality. Targets should be long-term, setting an ambitious direction of travel, and these should be bolstered with binding milestones or interim targets to ensure actions to meet targets are taken at the earliest opportunity and not pushed into the future. Each country’s nature strategy should set out clearly the plans and policies needed to deliver these targets.

Water companies must stop the current overuse of combined sewer overflows and deliver on their environmental duties by stopping the release of raw sewage from CSOs. We also need to see increased monitoring and penalties for breaching existing permits.
TO IMPROVE WATER QUALITY IN THE UK, WE NEED:

SUFFICIENT RESOURCING OF STATUTORY AGENCIES FOR ROBUST MONITORING AND ENFORCEMENT OF EXISTING POLICY AND PERMITS

The authorities need adequate funding for water quality monitoring, regular inspections of farm businesses and water companies, and to respond to pollution incidents to hold polluters to account. The responsible authorities have had funding consistently cut for many years. For example, in England spending on protected area monitoring on land, including freshwaters, fell from around £2 million in 2010 to £700,000 in 2019, and until recently the average farm in England could only expect to be visited by an Environment Agency Officer once every 263 years. It has been estimated that the cost for effective enforcement and advice in England would cost approximately £10 million per year, and should be implemented as part of a wider increase in funding to enable the statutory agencies to fulfil their environmental protection remit.

TO REGULARLY MONITOR THE PROTECTED SITES NETWORK TO ASSESS PROGRESS AND TARGET ACTION WHERE IT IS MOST NEEDED

The UK’s protected sites including SSSIs/ASSIs, Ramsar, SPAs and SACs need to be monitored more consistently, more often and more transparently. This report highlights that some protected sites haven’t been monitored for 10+ years, and some of the agencies responsible are not transparent with their data. This is specifically evident in Northern Ireland, where a lack of public access to data means we do not know the outcome of ASSI assessments. This means that specific pollution events are often undetectable, polluters are not held accountable, and those managing protected sites resort to paying for their own monitoring and analysis.
Troubled Waters is a project delivered in partnership with the RSPB, the National Trust, the Wildlife Trusts, the Rivers Trust, Wales Environment Link and Afonydd Cymru, which seeks to understand how people value and interact with freshwater habitats, demonstrate the range of water quality issues currently facing our most treasured sites, and identify proposed solutions to improve water quality for both people and nature.