



WYRE WATERS
“from Bowland to Bay”
A Catchment Partnership

The Wyre Integrated Catchment Plan

By the Wyre Waters Catchment Partnership (WWCP)

(Version 1.4)

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Catchment Partnership organisations

Wyre Rivers Trust (Host), Abbeystead Estate, Catchment Sensitive Farming, Churchtown Flood Action Group, Environment Agency, The Forest of Bowland National Landscape, The Friends of Garstang Walking Festival, Garstang Millennium Green Trust, Grosvenor Estate, The Lune and Wyre Fisheries Association, The Royal Society of Biology, Wyre Council, Wyresdale Anglers, United Utilities. (Contact descriptions are listed on page 37 or click here).

Estuary Group

Wyre Rivers Trust (Host), APB Ports, Blackpool and the Fylde College, Brine Watch, Catchment Sensitive Farming, Environment Agency, Freeport Fleetwood, Fylde Bird Club, Lancaster University, LOVEmyBEACH, NPL Estates, Northwest IFCA, RNLI Fleetwood, Royal Society of Biology, RSPB, SEALIFE Blackpool, Wyre Council.





Vision

“Develop and support a **thriving Wyre Catchment** that is **resilient**, home to a wide range of **species**, and able to support the **communities** which live in it.”

Executive Summary

The Wyre Waters Catchment Partnership (WWCP) crafted this plan to assess interventions aimed at enhancing the resilience and health of the Wyre Catchment. **This document details our strategy as a partnership for the next five years (2025–2030).**

We desire a catchment that is home to **natural environmental processes**, not impacted by pollution and one that is resilient to newer (and perhaps more ambiguous) challenges such as **climate breakdown, invasive non-native species** and **flooding**. Using spatial data and expert opinion, this plan addresses existing and new challenges threatening the catchment and details opportunities for intervention.

About the Catchment Partnership

The WWCP is part of the **nationwide Catchment-Based Approach (CaBA)**, a framework encouraging collaboration on a river catchment scale. Formed in 1998 by three local interest groups, Wyre Rivers Trust (WRT) has been long dedicated to improving fluvial and riparian conditions within the Wyre Catchment. In 2013, WRT became successful in its bid to become the **host of the Catchment Partnership** for the Wyre Catchment, receiving a grant from DEFRA and a matching sum from United Utilities (UU).

Today the WWCP shares its vision with a wide range of organisations, each of which is a key, equal stakeholder for the Wyre Catchment. The first catchment plan was created in 2019 and has since had one further update in 2020.

The principal aim of the Catchment Partnership is to improve the River Wyre to a “Good” standard under the criteria set out in the Water Framework Directive (WFD) by 2027.

Key findings

- In a national assessment of water body health across the UK:
 - 3 out of 16 Wyre Catchment waterbodies achieved 'Good' status (18.75%).
 - 4 waterbodies were labeled 'Poor' or 'Bad', making up roughly 25% of the catchment.

Looking forward

Over the last five years the WWCP has been vastly successful at securing funding for a number of ambitious, multi-benefit, large-scale projects. We endeavor to expand this in the next five years by:

- Exploring further private green investment opportunities.
 - Facilitating landscape recovery to address the key challenges of climate breakdown, INNS, habitat degradation and declining water quality.
 - Expanding our toolkit of NFM interventions to reduce flood risk.
 - Consider food security and sustainability during project planning.
-

PROJECT PIPELINE:

Brock and Calder Landscape Recovery Project, Natural Flood Management in the Brock and Tributaries, Scorton weir removal, Our Future Coasts and much more.

Our commitments

Working as a team, the WWCP is committed to safeguarding and enhancing the Wyre Catchment. Guided by national plans, we strive to advance broader environmental objectives through our targeted catchment management efforts.

United efforts

The challenges posed by climate change, population growth, and urbanisation call for a united front with environmental protection at its core. The WWCP stands as a proactive and diverse partnership, ready to address these challenges within the Wyre Catchment. Our objectives are in line with the Government's 25-year environment plan 'A Greener Future', supporting key national targets such as ensuring clean and plentiful water, fostering thriving plants and wildlife, and reducing the risk of harm from environmental hazards such as droughts and floods.

Our work ties into several key pieces of policy and legislation pertaining to land and water management within the UK, including the Water Industry National Environment Programme (WINEP) and regional plans such as the River Wyre Catchment Flood Management Plan, North West River Basin Management Plan and the Local Nature Recovery Strategy (LNRS) for Lancashire. We additionally strive to help assist and inform landowners and farmers of the Environmental Land Management Scheme grants available. We are committed to supporting forthcoming strategies such as Biodiversity Net Gain (BNG) on which the WWCP can provide invaluable insights.

The Partnership

The strength of the WWCP lies in its diversity. We have substantial expertise in both the land and marine environmental realms and also collaborate with a variety of stakeholders (i.e., landowners, farmers, charities, public serving bodies, local communities and groups, higher level education, and private bodies). We design detailed yet achievable nature-based projects with multiple benefits for the Wyre and are particularly proud of our long-standing, mutual relationships with local farmers and landowners, whose support is indispensable for the successful execution of our initiatives.

The below principles guide members of the WWCP in all their actions:

Conserve and protect the natural resources within the catchment area.

Align our individual projects with the catchment plan, synchronising targets where possible.

Collaborate, share knowledge, resources, and responsibilities with our fellow partners.

Use scientific research and data to inform planning and implementation.

Foster equity and inclusive partnerships, recognising the equal importance of all stakeholders.

Engage local communities and stakeholders in decision-making processes and promote catchment education.

Our catchment objectives outline how we will deliver our vision of a resilient, healthy catchment:

- 1) Enhance water quality and restore natural river processes.
- 2) Protect and enrich habitats.
- 3) Mitigate flood risks and their consequences.
- 4) Foster collaborative partnerships for effective stewardship.

Interested in joining or investing in The WWCP? Please contact Thomas Myerscough, General Manager at Wyre Rivers Trust (Host of partnership) at tom@wyreriverstrust.org

Catchment characteristics

The Wyre Catchment in a nutshell

The Wyre Catchment (Figure 1) is located wholly within **Lancashire** and is bordered by the Lune and Ribble catchments which are considerably larger. At its coastline, the catchment is bordered by the Irish Sea, and contains the **Northwest Transitional and Coastal Waters**. The Wyre is the most southerly river to flow into the **Morecambe Bay** system which is the largest area of intertidal mud flats in the UK. **The catchment covers 447.74 square kilometres**, with the highest point in the catchment being around 2000ft above sea level.

The Wyre is split into **three distinct operational catchments** under WFD. These are named;

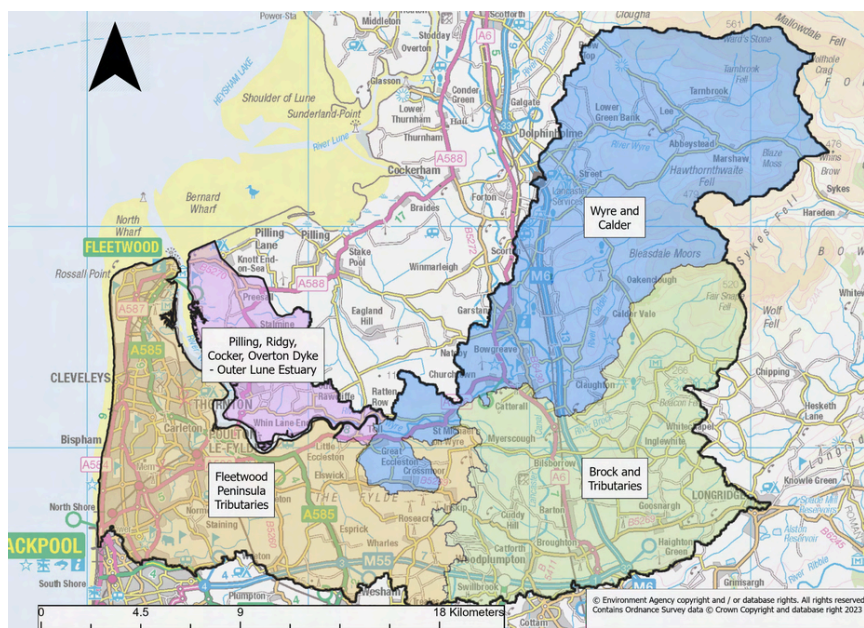
1. Wyre and Calder (163.48km²),
2. Brock and Tributaries (125.79km²)
3. Fleetwood Peninsula Tributaries (124.05km²).

A small area (34.42km²) of the catchment is contained within the concisely named, Pilling, Ridgy, Cocker, Overton Dyke – Outer Lune Estuary operational catchment. Much of this sits in the costal area which surrounds Knott End, Hambleton and Out Rawcliffe.

The Wyre Catchment is noted for its mudflats, saltmarsh, grassland and moorland habitats, many of which are protected under national and international designations. Livestock farming is widespread across both lowland and upland areas. In the east, Fleetwood and the Bay area attract visitors with recreational activities such as angling, sailing, walking, and birdwatching, particularly during the summer months. Caravan and chalet parks also take advantage of the scenic attributes of the catchment here. Despite its allure, socioeconomic variations persist, with urban areas of Fleetwood experiencing high levels of deprivation.

The River Wyre

The River Wyre is formed from the confluence of the Marshaw Wyre and the Tarnbrook Wyre at Abbeystead, flowing south through Scorton and Garstang before it meets its largest tributaries, the Rivers Brock and Calder. The Wyre becomes tidal at St Michaels-on-Wyre and continues on a westerly course before turning northward and entering the Irish Sea at Fleetwood. In total the river is approximately **28 miles long**. The river has seen large physical modifications for past mill usage.



There are a myriad of smaller tributaries, drains and ditches which run across the catchment and enter the River Wyre. These tributaries all have varying geomorphological features and have the potential to support a vast array of flora and fauna. However, insensitive management over the last century has often left habitats that are lacking in diversity, presenting a challenge for the catchment.

Figure 1 The Wyre operational catchments and their boundaries. OS Map, 1:250,000.

Catchment characteristics

Notable flora and fauna

Reflected in its vast diversity of habitats, the Wyre Catchment is host to numerous flora and fauna, including some species of national concern. The protection, and where necessary enhancement of these areas are of great importance to the WWCP.

Lower catchment

Habitats: Mudflats, farmlands and saltmarsh

Renowned for hosting vast flocks of migratory birds, the estuarine section of the lower catchment is a designated Site of Special Scientific Interest (SSSI), Special Area of Conservation (SAC), and Special Protection Area (SPA). Species such as Shelduck, Black Tailed Godwit, Plover, European Oystercatcher, and Redshank commonly gather on the estuarine mudflats to feed.

During winter, migratory birds also frequent the lowland farmland, including Pink Foot, Grey Lag, and Barnacle Geese. Crucially, the estuary features extensive saltmarsh areas, such as Barnaby's Sands and Burrows Marsh, many of these areas are Natura 2000 sites, harboring nationally scarce plants such as Rock Sea Lavender and Sea Wormwood. Other habitats seen in the lower catchment include sand dunes, rock pools and beaches.

A vital pathway

The Wyre estuary is a vital pathway for various migratory fish, including Atlantic Salmon, Sea trout, European eels, Smelt, and River lamprey. Salmon and Sea trout which are returning to the Wyre to spawn will make use of the brackish waters of the estuary for a number of days before moving up the catchment to breed. In the spring months, the estuary forms a thoroughfare for juvenile, critically endangered European eels (IUCN Redlist). Habitat fragmentation due to physical modification of the River Wyre for industrial and agricultural needs currently impedes the migration routes of fish species.

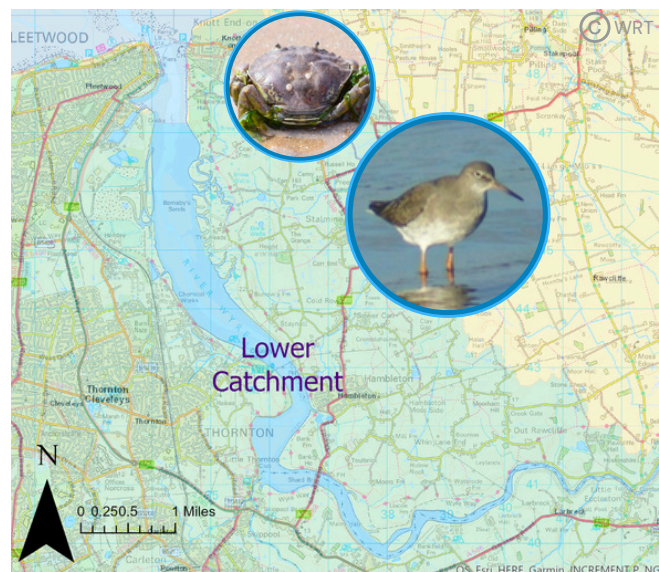


Figure 2 Map of the lower catchment with key species (Right, Shore crab; Left, Redshank). OS scale 1:50,000.

Mid catchment

Habitats: Spate river

Past the tidal limit at St Michaels-on-Wyre, the river becomes majorly modified, with little overhanging cover. At Scorton, the Wyre takes on the characteristics of a classic spate river with fast flowing glides, deep pools, and shallow riffles forming a biotope for a selection of invertebrate and vertebrate species. Riffles host Stone loach, Bullhead and various Mayfly and Stonefly species who use these habitats for a large part of their life cycles. Slowing the river flow and creating more refuge habitats for such species is a key aim of the WWCP.

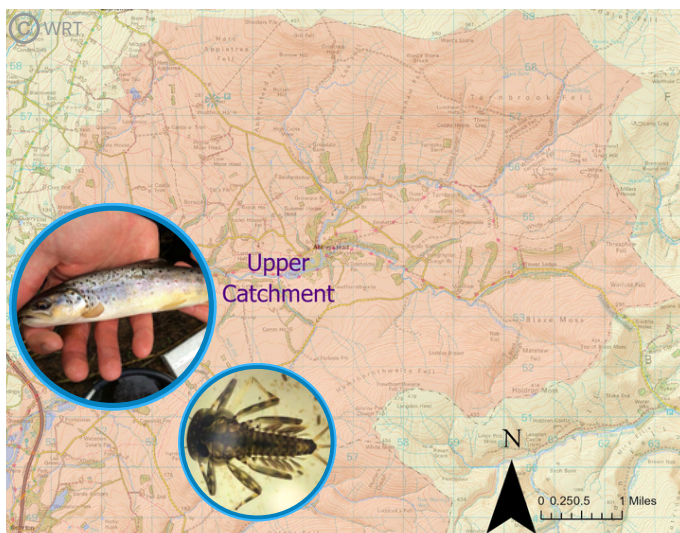


Figure 3 Map of the upper catchment with key species (Left, Brown trout; Right, Flathead mayfly nymph). OS Scale 1:50,000.

Upper catchment

Habitats: Grasslands, moorland and peatland

The majority of the upper catchment sits within the Forest of Bowland National Landscape. The area is characterised by blanket bog, peatland and heather. The area is one of the most important locations for breeding Hen harriers in the UK, it is also home to near threatened Curlews (IUCN Redlist), in addition to Lapwings, Ring ouzels, Golden plovers, Redwing and Fieldfare. Insensitive management and habitat fragmentation are key threats to these species.

Rare invertebrate species such as the Manchester Treble Bar Moth and the Large Heath Butterfly are also present. There is also evidence of European otters within the Mid and Upper catchment, further showcasing the catchments diversity.

Catchment characteristics

Current WFD status

State

Water quality within the Wyre Catchment can be measured using the Water Framework Directive (WFD) classification of waterbodies. The WFD assigns every UK waterbody with a status of 'High', 'Good', 'Moderate', 'Poor', or 'Bad' dependent on a combination of chemical and ecological assessments.

Figure 4 shows the Overall WFD status (Cycle 3, 2019) for each of the waterbodies within the Wyre Catchment. It can be seen that of the total 16, no waterbodies have achieved 'High' status. Three waterbodies are currently at 'Good' status (18.75%), these are the **Marshaw Wyre, Wyre Upper** and **Tarnbrook Wyre** waterbodies. There are nine waterbodies that are currently at 'Moderate' status (56.25%) and three waterbodies which are rated as 'Poor' (18.75%). One water body received 'Bad' status (6.25%). Around 21% of waterbodies are at 'Good' status which puts the catchment slightly above the national figure of 14%.

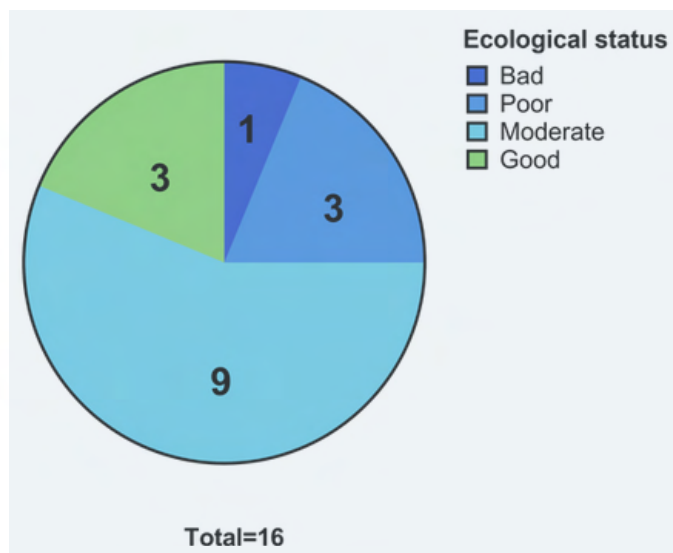
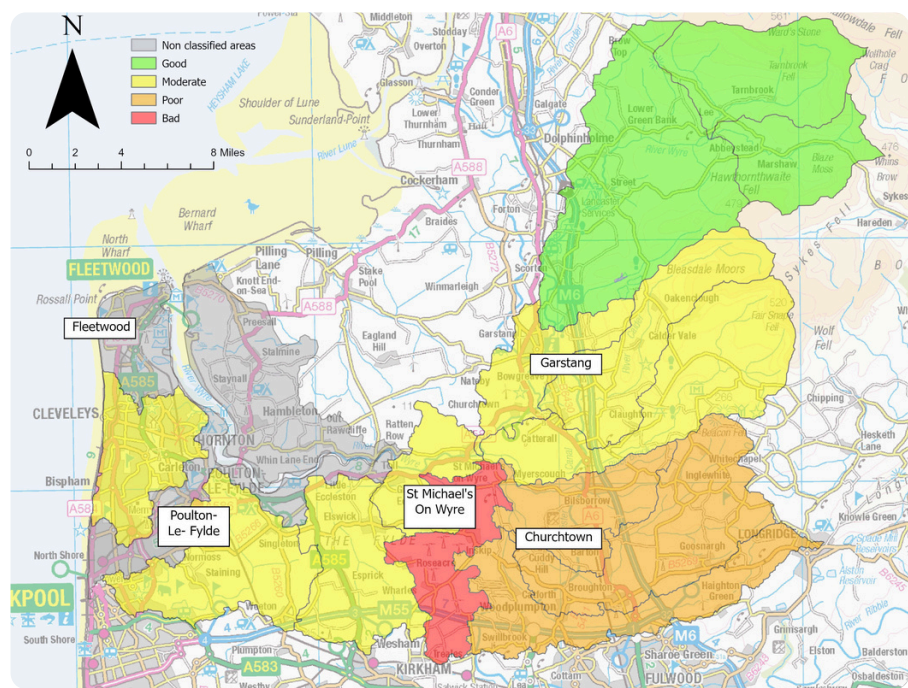


Figure 4 The number of waterbodies and their respective WFD statuses within the Wyre Catchment.

'Poor' waterbodies are concentrated solely in the Brock and Tributaries operational catchment (orange sections in Figure 5) The three 'Poor' waterbodies includes **Barton (Westfield) Brook, New Draught Brook, and Woodplumpton Brook**. The singular 'Bad' waterbody is **Lords Brook** (red section in Figure 5), located in the Fleetwood Peninsula Tributaries operational catchment. These waterbodies require greater attention and intervention to improve water quality.

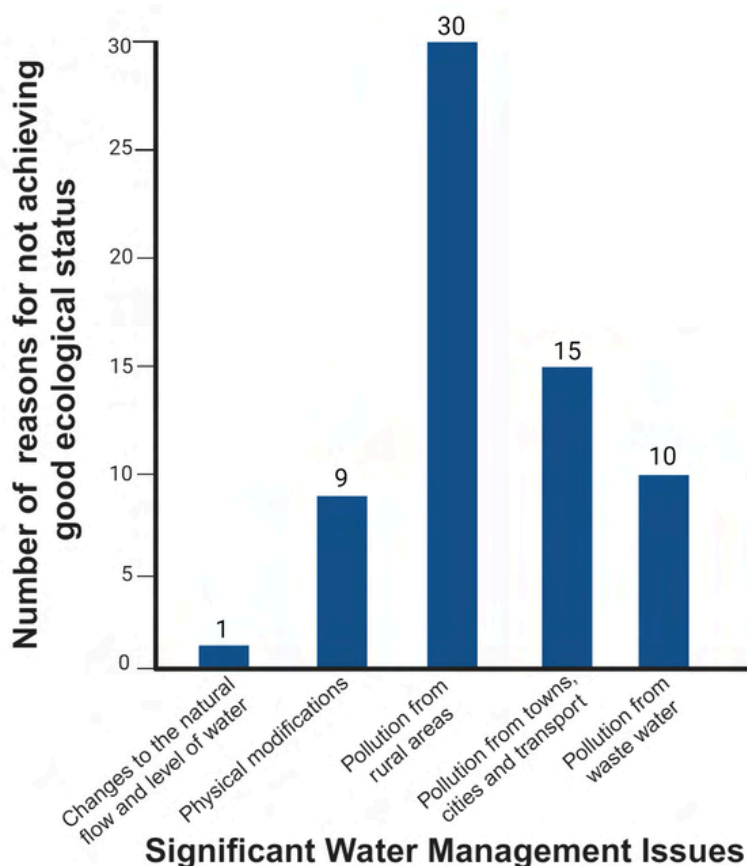


Catchment characteristics

Current WFD status

Pressures

In addition to the WFD status given to each waterbody, the reasons behind each classification are also listed on the Environment Agency Catchment Data Explorer. The current pressures on the catchment's waterbodies are detailed below.



Significant Water Management Issues

Figure 6 Significant Water Management Issues within the Wyre Catchment and their impact on not achieving 'Good' ecological status within waterbodies.

Pollution from towns, cities, and transport also impacts the health of the Wyre waterbodies. **Domestic public usage** and **industry outputs** were the two most prominent sectors causing said pollution. Drainage misconnections and urban runoff are suggested to be the primary causes. This pressure is anticipated to increase with population growth and climate change.

Continuous **sewage discharge** by Water Industry was a key form of pollution identified within the Wyre. More recently, Wyre has seen a surge in the erection of **housing developments**. The increasing pressure of new housing on drainage systems and subsequent impact on the catchment requires further evaluation.

Out of the 65 assessments for Significant Water Management Issues (SWMI), pollution of any kind was the most detrimental to achieving 'Good' WFD status. **Pollution from rural areas** (specifically from the agricultural and rural land management sectors) was the principal reason (46.2%; Figure 6). Following this, pollution from towns, cities and transport was the next most significant issue (23.1%).

Diffuse agricultural pollution continues to be a major challenge within the Wyre Catchment and occurs via a number of pathways such as poor infrastructure, allowing livestock access to watercourses, and poor soil management. This is particularly an issue in lowland areas such as within the Brock and Tributaries operational catchment. Further analysis shows that these areas are associated with elevated levels of Phosphate and Biochemical Oxygen Demand.

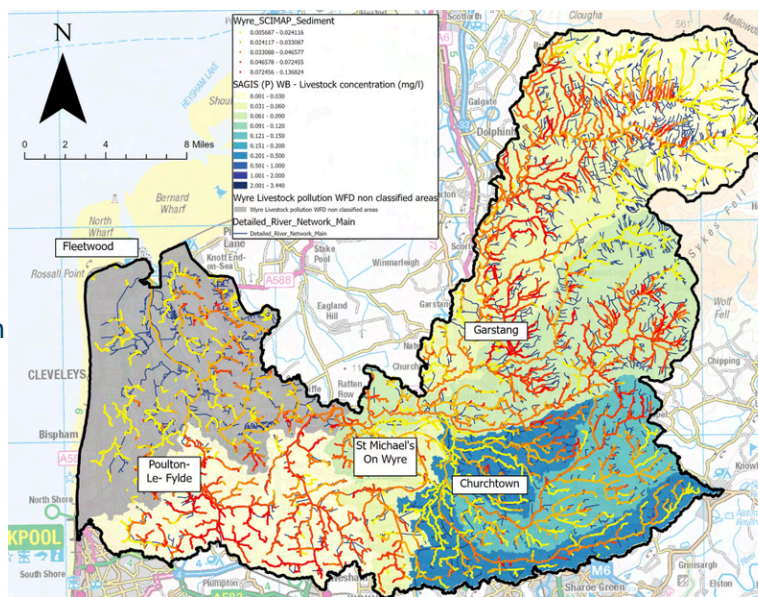


Figure 7 Livestock concentration within the catchment with sediment accumulation also shown. High concentration of livestock in the East of the catchment and increased sediment levels in both the upper and lower catchment. OS 1:250,000.

Challenges

Water quality

Biodiversity, human health, wellbeing, and food production all rely upon healthy river systems. The River Wyre alone supports over 650,000 people with clean drinking water. **Challenges to the water quality of the Wyre Catchment include; agricultural run-off, sewage discharge and sediment transport.** The WWCP is working to implement initiatives designed at renewing the vitality of our river network and improving the overall WFD water quality status of the catchment.

Agriculture and rural land management

Run-off from agricultural practices can leak into nearby waterway courses. This run-off causes **elevated nutrient levels** within river systems resulting in negative impacts such as **algal blooms**, reduced plant diversity and can even influence the **efficiency of our water treatment works**. Farmers are vital partners within our landscape, we are working with them to find ways to reduce the amount of pollutants going into the river.

Franklaw Safeguard Zone Project

2018–Current

Together with the **Environment Agency, United Utilities and Catchment Sensitive Farming**, Wyre Rivers Trust are monitoring the concentrations of contaminants MCPA and Diazinon from agricultural run-off entering the River Wyre.

Pollutants of concern within the Wyre Catchment;

1. **Nitrate**
2. **Phosphate**
3. **MCPA** (a herbicide used to kill rushes and other weeds)
4. **Diazinon** (an insecticide used to kill ticks and lice on sheep).

Higher level actions for the WWCP:

- **Provide farm advice.**
- Improve farm infrastructure and management (e.g., septic tank awareness).
- **Promote farm wetlands** as a means of reducing run-off.



Figure 8 Livestock on a river bank in the Wyre. Trampling causes increased erosion of riparian habitats, enhancing sedimentation.

Sewage discharge

Sewage discharge is becoming an increasing pressure within the catchment. **Two out of the three 'Poor' waterbodies (Barton (Westfield) Brook and New Draught Brook) have continuous sewage discharge** listed as a reason for their 'Poor' status. **Domestic misconnections** resulting in property sewage emitting into surface water drainage systems also causes serious pollution.

Higher level actions for the WWCP:

- **Increase awareness of misconnections** in residential properties and estates.

Sediment

Sediment accumulation within the River Wyre is another challenge. Fine sediment can enter river systems when washed off bare arable fields or from river banks trampled by livestock (Figure 8). Sediment pollution can result in the **murkying of river beds** and smother sites where migratory fish have laid their eggs.

The agreement of landowners and farmers as well as the support of the WWCP has enabled Wyre Rivers Trust to erect livestock-proof **riparian fencing** catchment wide whilst also building up eroded river banks by **tree planting**.

Higher level actions for the WWCP:

- Continue stabilising riparian banks through tree planting.
- Provide **farm advice on reducing bank erosion**.

Challenges

Flooding

Flooding is a persistent threat experienced by communities within the Wyre. Flooding can have detrimental impacts not only to local infrastructure but also to the mental wellbeing of residents. Working with Flood Action Groups and the wider community, WWCP aims to help alleviate flooding through **Natural Flood Management (NFM)** techniques.



It is estimated now that there are **7,600 properties across the Wyre Catchment at risk from river flooding**. There are numerous reasons why the Wyre is more susceptible to flash flooding events including **high levels of rainfall**, **physical modification** of the river network, **soil compaction** from intensive agricultural practices, erection of houses on Zone 3 Flood map areas, and **close proximity to the coast**. As a result of climate change, flooding risk within the catchment is anticipated to grow but so will our project ambitions. Since 2018, Wyre Rivers Trust and WWCP members have been working collaboratively on a number of successful projects to combat flooding and its associated risks.

Communities at risk:

- Thornton
- Churchtown
- St Michael's-on-Wyre
- Garstang
- Bilsborrow

What is NFM?

Natural flood management involves working with natural processes to reduce downstream flood risk. This is generally focused on **slowing down the flow of water** or reducing the amount of water reaching the main river by **storing water in the landscape**. Examples of NFM include; wetland creation, construction of leaky dams, tree planting, and bunded hedges.

Thornton Flood Risk Resilience Project

Thornton has over 3,000 houses at risk of surface water and fluvial flooding. The Wyre **Making Space for Water Group*** came together in 2019 to increase water storage on areas of unused land in Thornton to mitigate the flooding risk. **Wetland creation** was chosen as the primary NFM technique for its ability to store water during times of high rainfall and release it slowly as the weather dries up, or in periods of drought.

Three sites are being restored as part of the project; a former government site at White Carr Lane (Norcross), unused land along the Hillylaid Pool watercourse at the old ICI site in Thornton, and King Georges Playing Fields in Thornton. **The project provides an excellent opportunity for partners and volunteers to work together against local flooding.**

*(Lancashire County Council (Lead Local Flood Authority), Environment Agency, United Utilities and Wyre Council, and Wyre Rivers Trust).



Figure 9 Volunteers helped to plant the Hillylaid Pool watercourse site in Thornton with wetland plants in 2020.

Drought

It seems also contradictory that in addition to flooding, the **catchment is also susceptible to drought**. Over the last four years, the majority of farms within the Wyre have experienced drought, using water abstraction from the River Wyre to elevate the pressure.

Dispelling the Myth Project

2024

Along with Groundwork, Wyre Rivers Trust found that only 18% of farmers had a drought plan. A strategy of 'reduce, capture, and reuse' of farm water resource has been advised along with a series of recommended measures to safeguard their farming practices.

The Wyre NFM Project

Blending both private and public sectors in a pioneering “nature based investor” project, the Wyre NFM Project has been hailed as one of the most innovative flooding focused projects within the North West. Supporting the Government’s Green Finance Strategy, the Project explores the opportunities of private investment in nature-based solutions and how action now can make the homes and business of Churchtown more flood resilient for the future.

The background:

2015 and 2016 saw the community of Churchtown devastated by flash flooding events. It was during this time that the Churchtown Flood Action Group became a valued member of the WWCP. After the floods had subsided, it was clear that action had to be taken and later in 2019, The Wyre NFM Project was born.

A model for success

To assess the feasibility of NFM interventions within the Wyre Catchment, a precursor project named The Wyre NFM Investment Readiness Project was created. Financially supported by Triodos Bank UK and the Esmée Fairbairn Foundation, the River Wyre was modelled and NFM intervention areas identified. A commercial business model was also developed to attract sustainable private finance. The project found that approximately 70 hectares of NFM could reduce the frequency of flooding to up to 120 properties in Churchtown. This precursor project evidenced that NFM intervention was indeed possible, as was the potential for investment funding from private streams into nature-based solutions.

How does the Wyre NFM Project work?

Securing funding for NFM initiatives in the UK is challenging, yet with the support of private investment, we can turn our vision of implementing catchment wide nature-based solutions into a reality. Initial funding from public and private sectors has enabled NFM interventions to be implemented in the Wyre Catchment. The Project aims to **reduce peak flow into Churchtown by 5-15% in a 1 in 50-year flood event**. Flood risk reduction, carbon sequestration, biodiversity enhancement, and water quality improvement are just some of the benefits that will be produced. **The ecosystem services generated will be sold to interested organisations**, with revenue used to reimburse funding sources. Local farmers and landowners will be compensated for hosting and maintaining NFM assets, forming a resilient **flood management 'triangle,'** benefiting Churchtown and downstream communities.

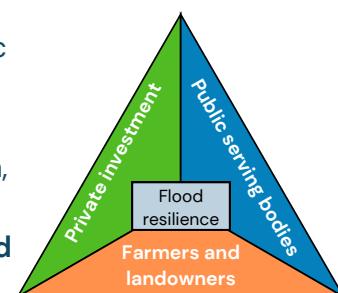


Figure 10 One of the NFM interventions used within the Wyre is leaky barriers. Designed with gaps to slow water flow at peak rainfall events, reducing the likelihood of flash flood events.

“Wyre Rivers Trust and this Project, with support from Triodos Bank UK and the Esmée Fairbairn Foundation, has been a trailblazer in securing private investment for nature-based solutions to tackle the impacts of climate change.”

Emma Howard Boyd, Chair of the Environment Agency

We are delivering over 70ha highly targeted NFM measures over three years, between April 2022 and September 2024 we delivered...



687 leaky barriers installed



16 Ha of peatland restored



11 Ha of grassland converted (permanent to rough pasture)



8.8 km of hedgerows created



21 Ha of woodland created

Challenges

Invasive Non-Native Species (INNS)

INNS are species which have been introduced by humans and have a negative effect on the ecosystem, primarily through outcompeting native wildlife. Due to their often **aggressive** and **highly pervasive** nature, INNS can be **time consuming and costly to remove**. To protect the rich diversity of existing native species within the Wyre, a **three-year INNS removal and mitigation project** has been developed.

Wyre Rivers Trust (WRT) developed the first biosecurity plan for the Wyre Estuary in 2020. **In 2021 during a BioBlitz event, 49 different species of invasive plants and animals were found to be present within the catchment.** With the help of our partners we will further prioritise INNS removal through our proposed response.

Our response:

1. **Map, remove and mitigate INNS spread for three-years**, (project hosted by WRT).
2. **Raise awareness** of INNS risks through **engagement**; volunteering practical days and school workshops.
3. **Promote INNS research** through citizen science and **academic opportunities** (i.e., undergraduate projects at local universities or colleges).

Key invasive non-native species threatening the Wyre Catchment:

Plants:

- Himalayan Balsam
- Giant Hogweed
- Japanese Rose
- Japanese Knotweed

Marine species:

- Chinese Mitten Crab
- Acorn Barnacle

Mammals:

- American Mink

Physical modification and habitat fragmentation

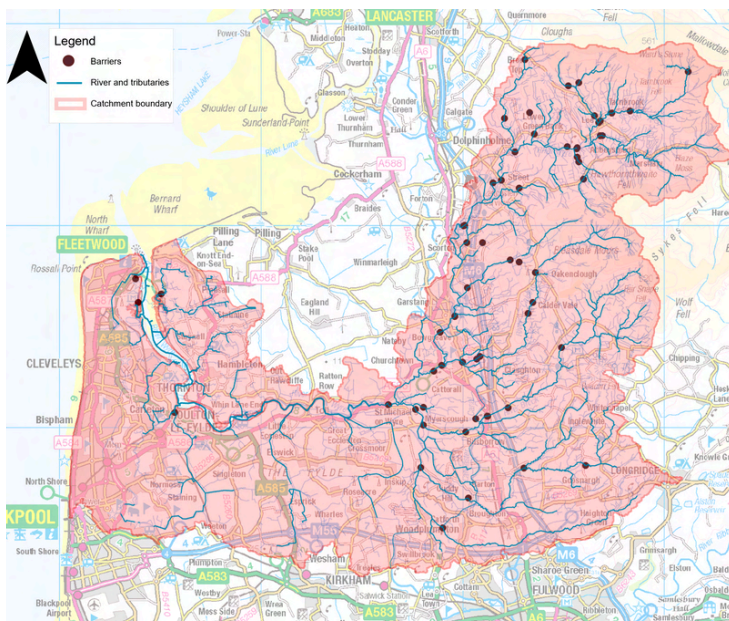


Figure 11 Barriers to fish migration are shown as black dots. These include weirs, sluices and culverts. The Wyre and Calder and Brock and Tributaries operational catchments have been largely modified in terms of the installation of barriers.

Connectivity across habitats is vital in developing resilient ecosystems, particularly within river networks where **migratory fish** rely on unobstructed passages to reach ancestral spawning grounds. In a 2022 report, the Environment Agency determined that 74% of UK salmon rivers are thought to be 'at risk' or 'probable risk'. **In the Wyre Catchment, barriers such as weirs, culverts, sluices and dams largely obstruct fish migration.** Through partner collaboration, the WWCP aims to enhance connectivity by installing new fish easement structures, ensuring unimpeded movement within the River Wyre.

Migratory fish of interest within the River Wyre and estuary include **Atlantic salmon**, Sea trout, **Smelt**, **European Eels** and River lamprey.

Opportunities

Together we can go far

Whilst there remains challenges within the Wyre Catchment there also exists many opportunities. We're empowered to strengthen and diversify our catchment by delivering projects of multi-benefit. The WWCP prioritises six key areas for future efforts: 1) Water quality, 2) Water quantity, 3) Connectivity, 4) Habitat quality, 5) Education and Engagement, and 6) Flood and coastal erosion risk management. Here we detail our general high-level catchment aims for the next 5 years (2025–2030).

© WRT



Water quality

Our goals:

Using a preventative approach, we aim to improve the WFD status of its 'Poor' and 'Bad' waterbodies by collaborating with farmers, developers, the Environment Agency (EA) and United Utilities (UU) to explore options for reducing pollution inputs into the River Wyre. Free farm advice and incentives to update farm infrastructure will be communicated. We will continue 'renaturalising the river network' by planting riparian buffer strips and remeandering modified courses.



Water quantity

Our goals:

The WWCP supports sustainable water abstraction. Our future initiatives include exploring groundwater aquifer recharge methods and collaborating with the EA and UU to monitor and report combined sewage overflow events (CSOs), with particular attention being paid to caravan parks. Additionally, as housing developments increase, we aim to engage with developers to ensure proper management of increased surface water runoff.



Connectivity

Our goals:

Habitat fragmentation due to physical modification and insensitive management is a key issue within the Wyre. The WWCP plans to overcome such pressures by installing migration friendly structures, such as bypass channels for European eels and elvers. Furthermore, the creation of new habitats will enhance terrestrial connectivity by acting as 'green corridors' across vital farmland.



Habitat quality

Our goals:

The Wyre Catchment boasts a wide diversity of habitats and species. We will work in partnership with local NGOs to restore vital habitats and foster catchment wide ecological resilience. Priority projects include the restoration of saltmarshes from Skippol to Thornton and the creation of wetland and peatland areas in the middle and upper catchment. We are also committed to removing INNS, allowing native wildlife to flourish and thrive.



Education and Engagement

Our goals:

Aligning our catchment plan with community priorities and visions remains of great importance to the WWCP. We are committed to educating communities about catchment issues. We also aim to cultivate appreciation for the natural beauty and diverse wildlife that thrive within the River Wyre and its tributaries through school presences, nurturing an early responsibility for safeguarding. We also wish to further our visibility in higher-level academic settings (e.g., Myerscough College).



Flood and coastal erosion risk management (FCERM)

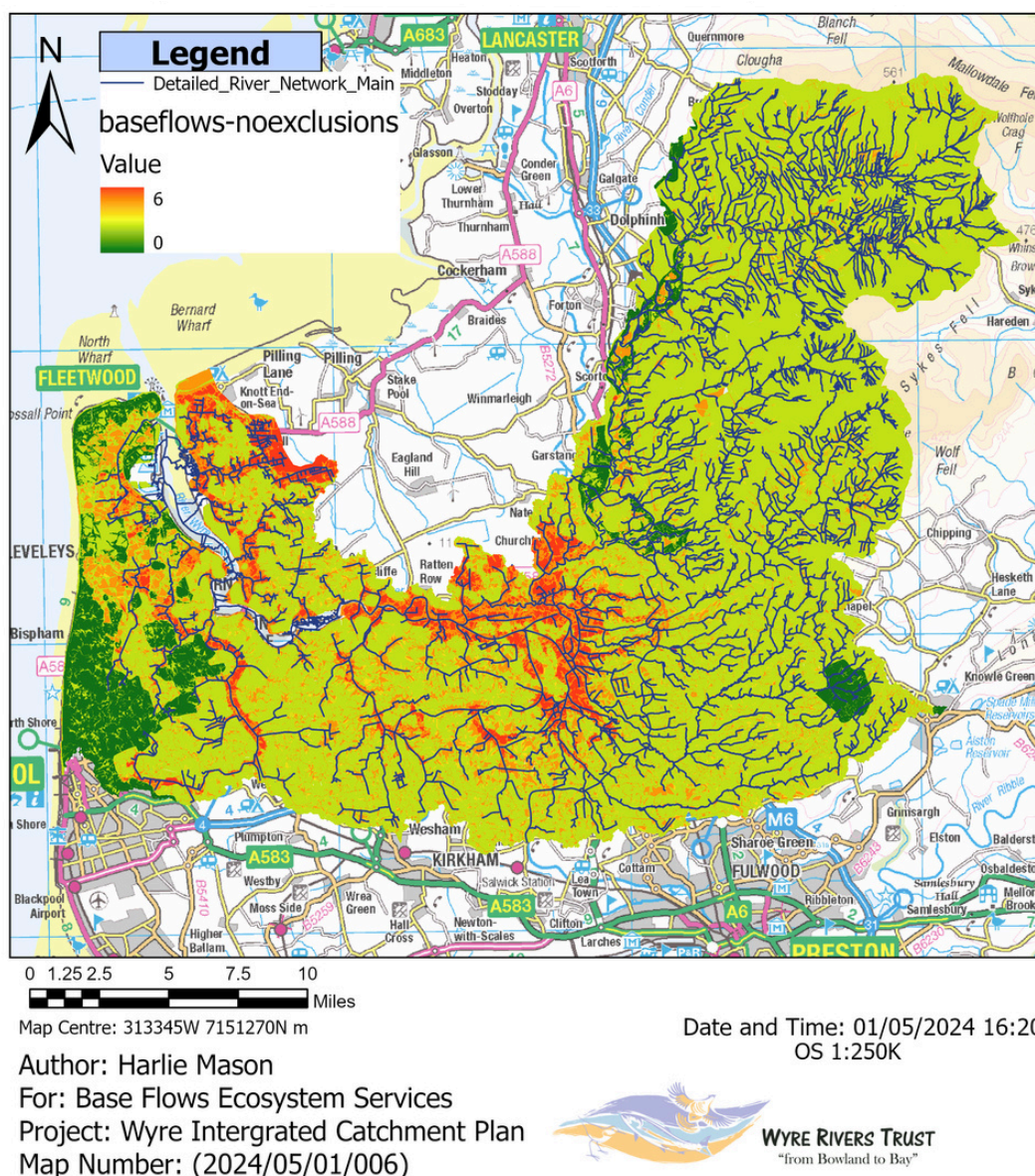
Our goals:

Our catchment plan is inclusive through the integration of FCERM. The success of the Wyre NFM Project demonstrates the feasibility of large-scale flood mitigation projects. We intend to build upon this success by expanding our NFM interventions into the Brock and Tributaries subcatchment. Our future plans involve working with the EA and the Lead Local Flood Authority, ensuring the consideration of vulnerable species and habitats in artificial flood and coastal defence plans.

Ecosystem Service Maps

Ecosystem services are the benefits that people derive from nature, encompassing essential resources like food and water to less tangible contributions like climate regulation and cultural enrichment. Employing a methodology designed by the West Country Rivers Trust, WRT has generated **maps showcasing the current status of ecosystem services within the Wyre Catchment**. These maps serve as a **diagnostic tool**, pinpointing areas of pressure and presenting opportunities for targeted intervention. **Seven maps** have been devised for the catchment: 1) Base flow, 2) Water quality, 3) Carbon sequestration, 4) Ecological networks, 5) Properties at risk of flooding, 6) Recreation and leisure priorities and 7) Multifunctional areas (combined map).

Base flow in the Wyre Catchment



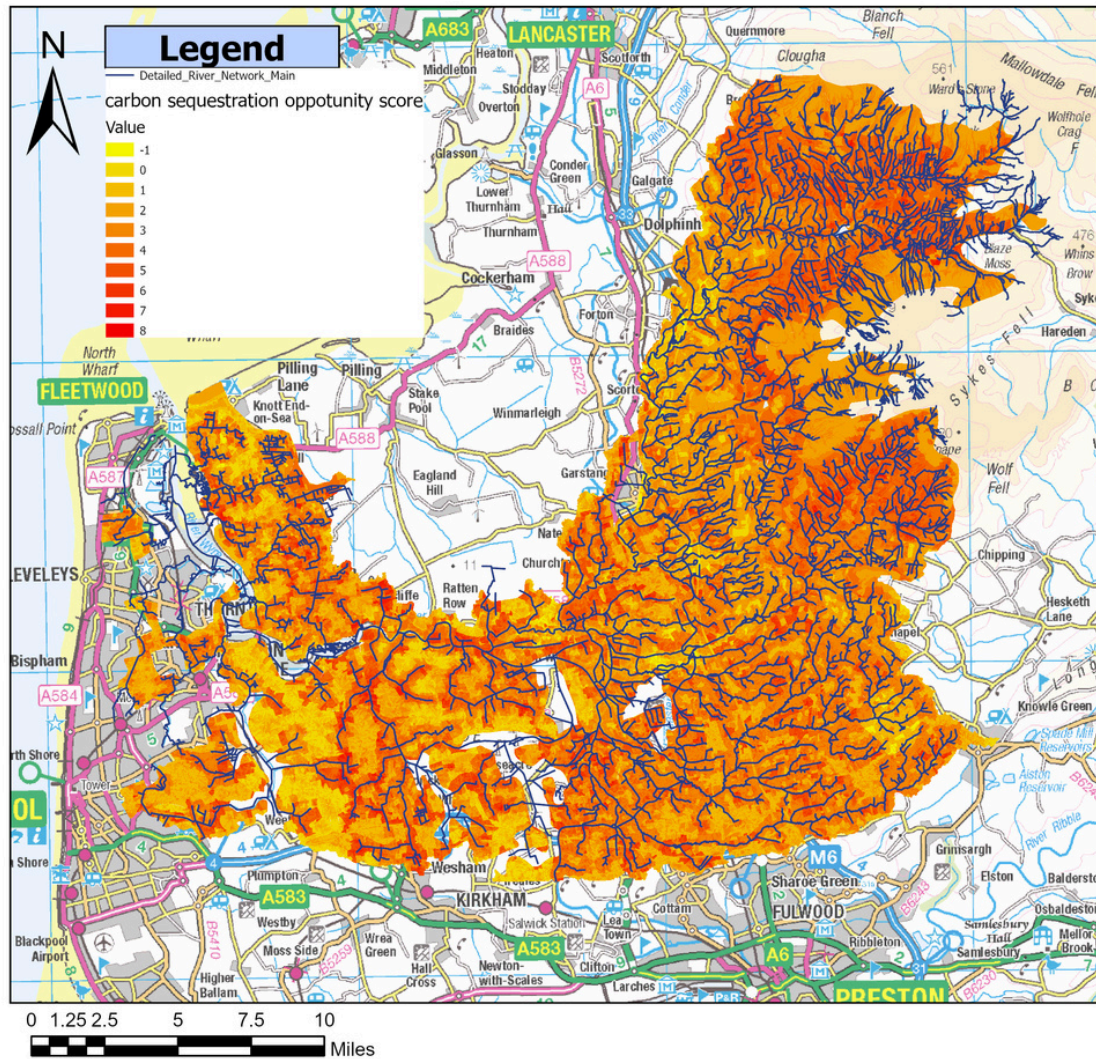
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Figure 12 Baseflow (the portion of the streamflow that is sustained between precipitation events, fed to streams by delayed pathways) of the Wyre Catchment. Higher values and darker red colours indicate larger base flow areas, holding more water for longer periods of time before it drains. Understanding and managing baseflow is essential for sustainable water resource management, especially when anticipating drought events. In the Wyre, areas of high baseflow include Churchtown, St Michael's-on-Wyre and Poulton-le-Fylde.

Ecosystem Services Maps

Carbon sequestration is the process by which carbon dioxide (CO₂) is captured from the atmosphere and stored, typically in natural sinks such as forests, peatlands, and saltmarsh. This helps mitigate climate change by reducing the concentration of greenhouse gases in the atmosphere and is therefore a key ecosystem service. The map below indicates areas of current carbon sequestration within the catchment.

Carbon sequestration in the Wyre Catchment



Date and Time: 01/05/2024 16:29
OS 1:250K

Author: Harlie Mason
For: Carbon Sequestration Ecosystem Services
Project: Wyre Integrated Catchment Plan
Map Number: (2024/05/01/007)



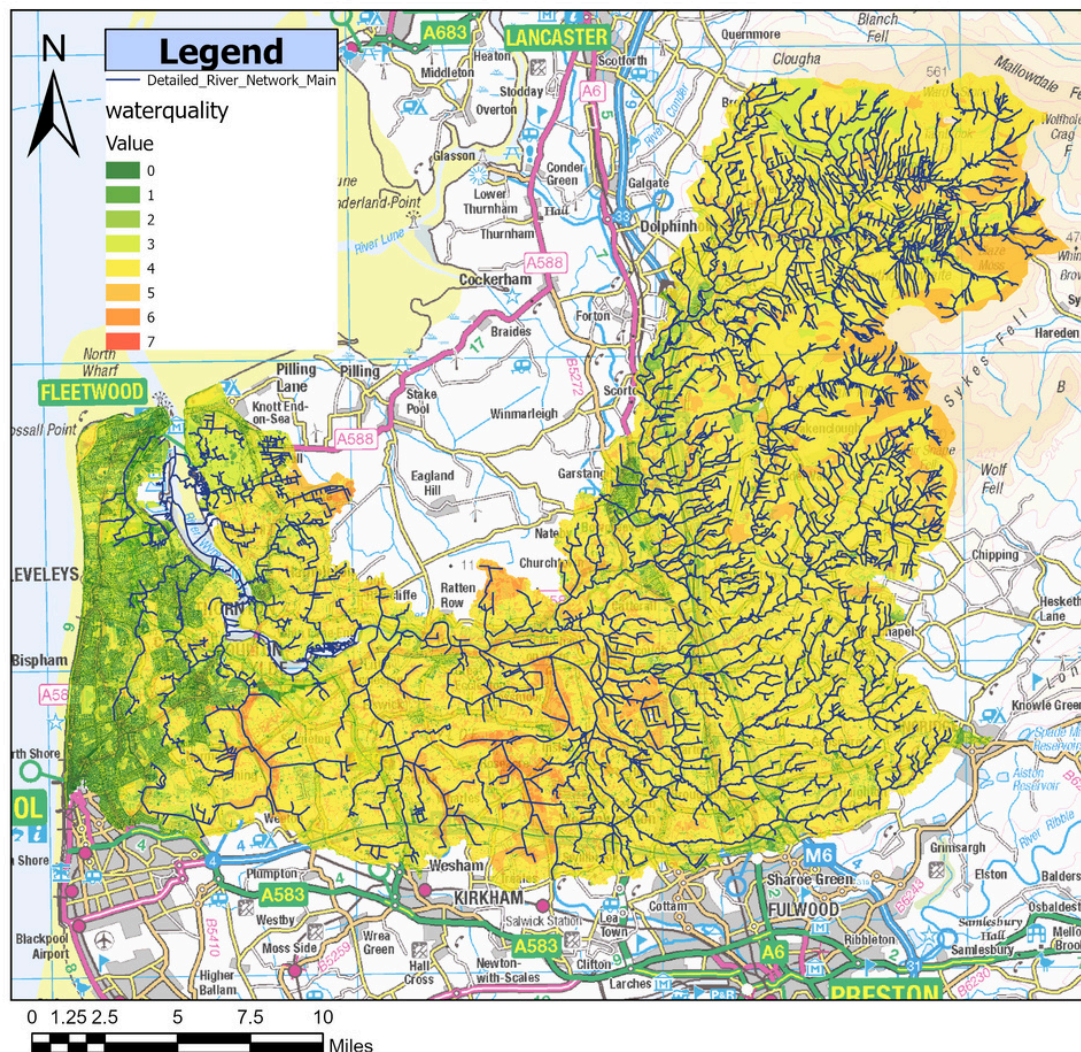
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Figure 13 Carbon sequestration potential of the Wyre Catchment. Higher values and redder areas denote areas of the catchment that have increased potential to sequester carbon. As evidenced, the Wyre and Calder (including Forest of Bowland National Landscape) and Brock and Tributaries operational catchments have increased carbon sequestration potential, offering excellent opportunities for new projects. The gaps within the map indicate the presence of urbanised areas.

Ecosystem Service Maps

Water quality refers to the chemical, physical, biological, and radiological characteristics of water, which determine its suitability for various uses such as drinking, recreation, and ecosystem health. Ensuring high water quality is essential for maintaining public health, supporting biodiversity, sustaining river ecosystems, and promoting sustainable development. The map below illustrates variations in water quality across the catchment area.

Water Quality in the Wyre Catchment



Map Centre: 313345W 7151270N m

Date and Time: 01/05/2024 16:00
OS 1:250K

Author: Harlie Mason

For: Water Quality Ecosystem Services

Project: Wyre Intergrated Catchment Plan

Map Number: (2024/05/01/005)



WYRE RIVERS TRUST
"from Bowland to Bay"

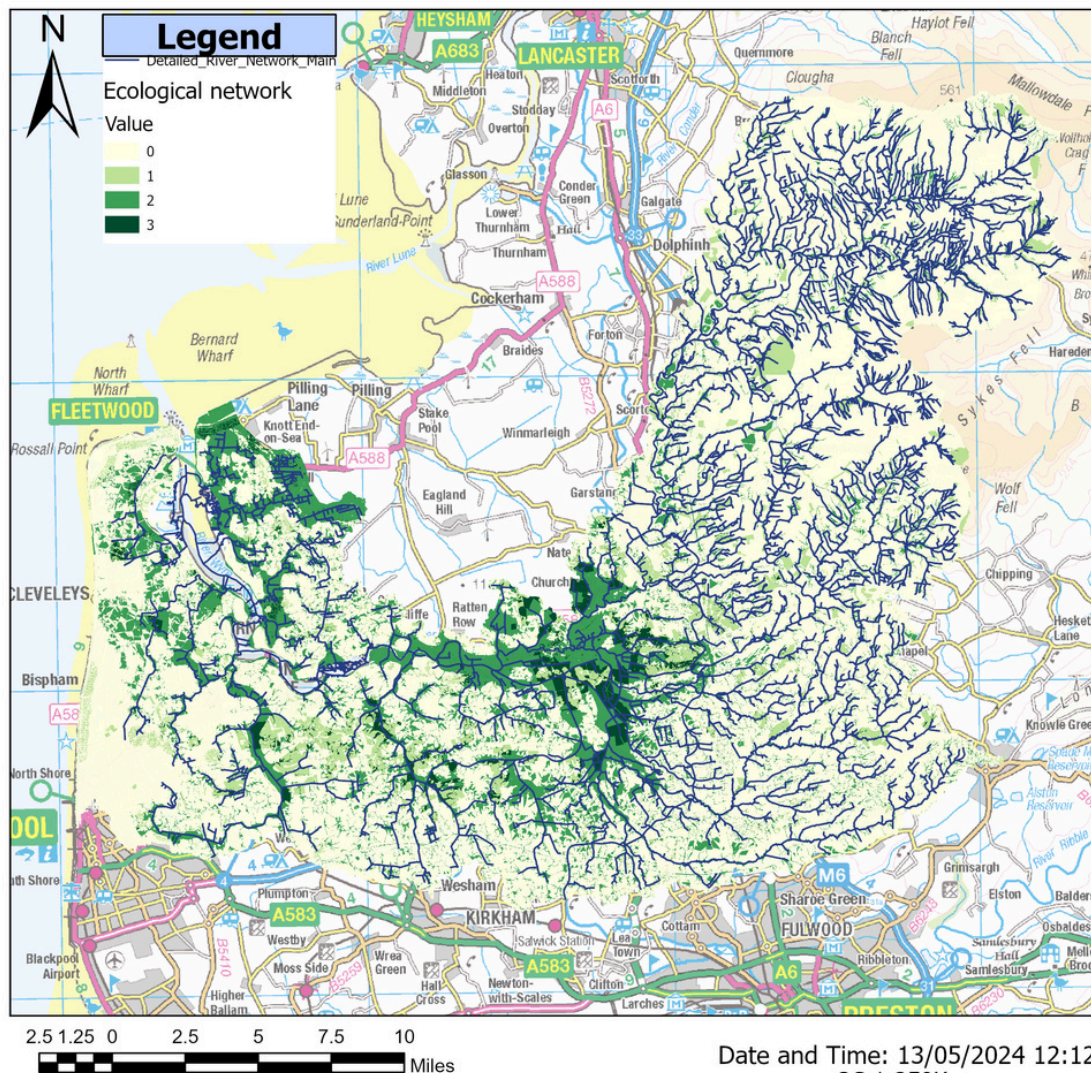
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Figure 14 Water quality within the Wyre Catchment is depicted. Lower values and greener areas denote good water quality (i.e., less phosphates, nitrates, increased BOD and the proper functioning of natural processes). Overall, the Wyre Catchment has relatively uniform water quality status however, there are areas such as Lords Brook in the middle of the catchment which has decreased water quality.

Ecosystem Service Maps

Ecological networks represent interconnected systems of habitats, watercourses, and green spaces that sustain and enhance biodiversity. These networks serve as vital corridors for wildlife movement, promote genetic diversity, and contribute to the resilience of ecosystems in the face of environmental pressures. The River Wyre itself is one of the longest ecological networks within the catchment.

Ecological Network of the Wyre Catchment



Author: Harlie Mason

For: Ecological Networks Ecosystem Services

Project: Wyre Intergrated Catchment Plan

Map Number: (2024/05/01/008)



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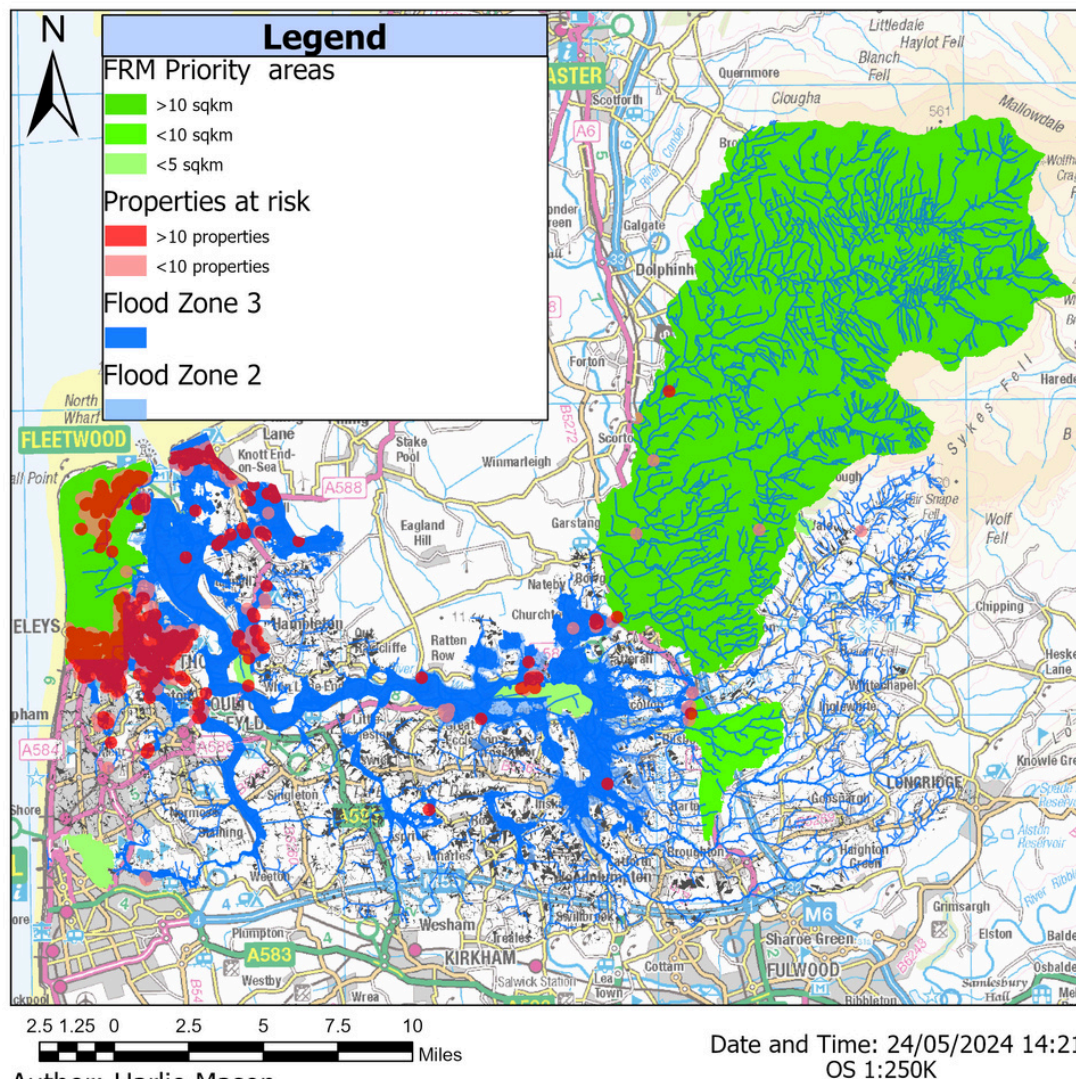
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Figure 15 Current Ecological Networks in the Wyre Catchment. Darker green areas indicate higher functioning of ecological networks, signifying greater habitat connectivity. Upland regions, like those in the Wyre and Calder, may have reduced ecological networks due to landscape fragmentation from agriculture and physical river barriers (e.g., culverts, weirs). The upper and mid catchment offer promising prospects for ecological network enhancement through habitat restoration efforts. Areas with well-functioning ecological networks include Preesall, Stalmine, St Michael's-on-Wyre, and Great Eccleston.

Ecosystem Service Maps

The map below illustrates properties at risk of flooding and areas of flow attenuation within the Wyre Catchment. FRM priority areas refers to areas designated as high priority for Flood Risk Management strategies. Downstream flood risk can be reduced by increasing the peak flow attenuation using floodplain storage areas. Properties at risk of fluvial flooding (i.e. those located in Flood Zones 2 and 3) were identified and, for each, the upstream contributing catchment area was extrapolated. The smaller the upstream contributing area above a property the higher the prioritisation score it was allocated, as smaller areas are associated with decreased flow attenuation and increased flood risk.

Peak flow attenuation in the Wyre Catchment



Author: Harlie Mason

For: Peak Flow Attenuation Ecosystem Services

Project: Wyre Intergrated Catchment Plan

Map Number: (2024/05/24/010)



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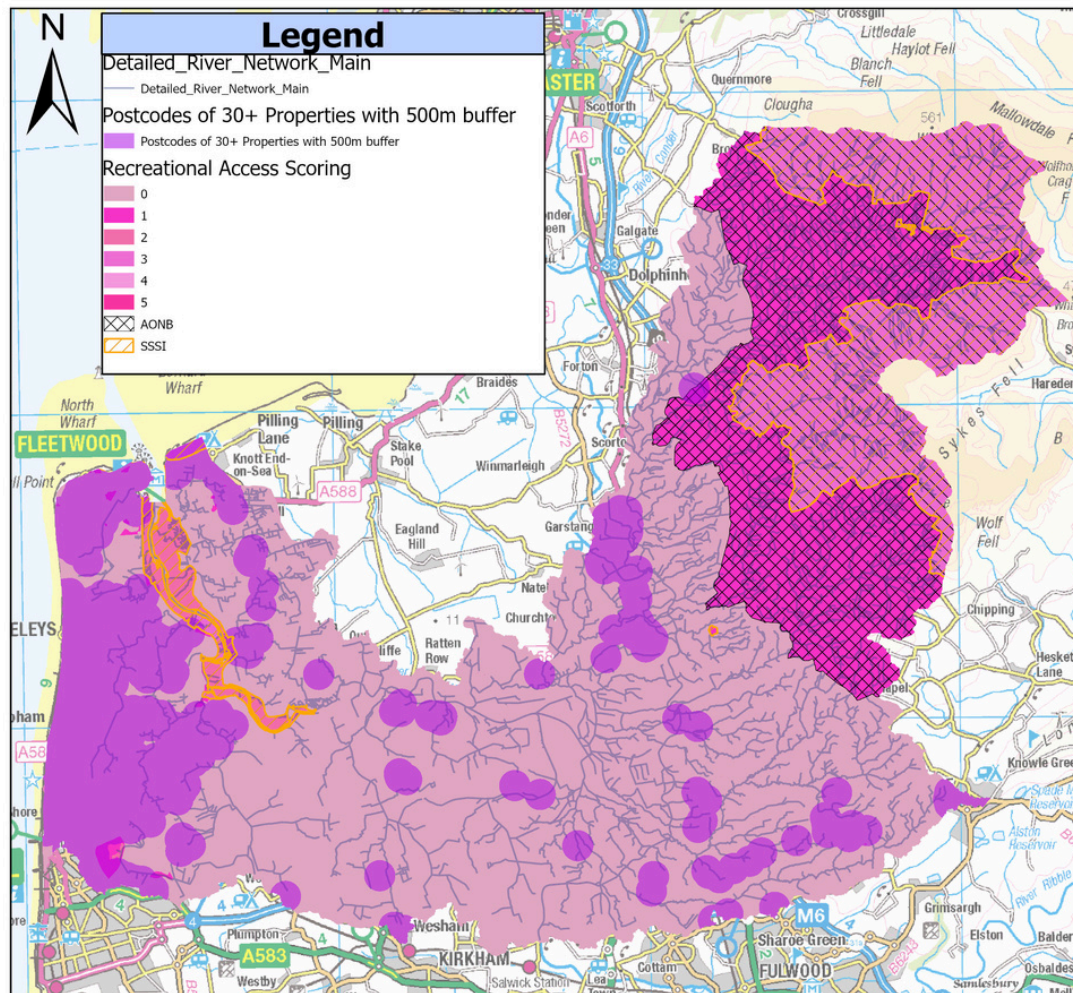
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Figure 16 Areas in the lower catchment, including Fleetwood, Poulton-Le-Fylde, and Thornton-Cleveleys, were identified as mid-high priority FRM zones due to their smaller upstream catchments (<10 sq km) and the presence of many >10 properties at risk of flooding. The Upper Wyre, with its larger contributing catchment, has more <10 properties at risk of flooding is a mid-low priority FRM zone. Comparatively, Churchtown and St Michael's-on-Wyre, have a number of areas of >10 properties at risk, and have been assigned high priority for FRM due to their very small contributing catchment size (<5 sq km). This aligns with previous findings within this catchment plan.

Ecosystem Service Maps

The below map primarily illustrates access to nature (blue and green space) within the Wyre Catchment. It includes data on protected areas such as the Forest of Bowland National Landscape's Area of Outstanding Natural Beauty and Sites of Special Scientific Interest in the upper catchment, as well as saltmarsh habitats at Knott End-On-Sea. Additionally, the maps highlight populated areas (postcodes with over 30 properties) that have access to nature within a 500-meter radius of their residences. Supporting access to nature is of crucial importance to the WWCP.

Recreational priorities within the Wyre Catchment



2.5 1.25 0 2.5 5 7.5 10 Miles
Date and Time: 15/05/2024 16:37
OS 1:250K

Author: Harlie Mason
For: Recreational Provision Access Ecosystem Services
Project: Wyre Intergrated Catchment Plan
Map Number: (2024/05/01/009)



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"from Bowland to Bay"

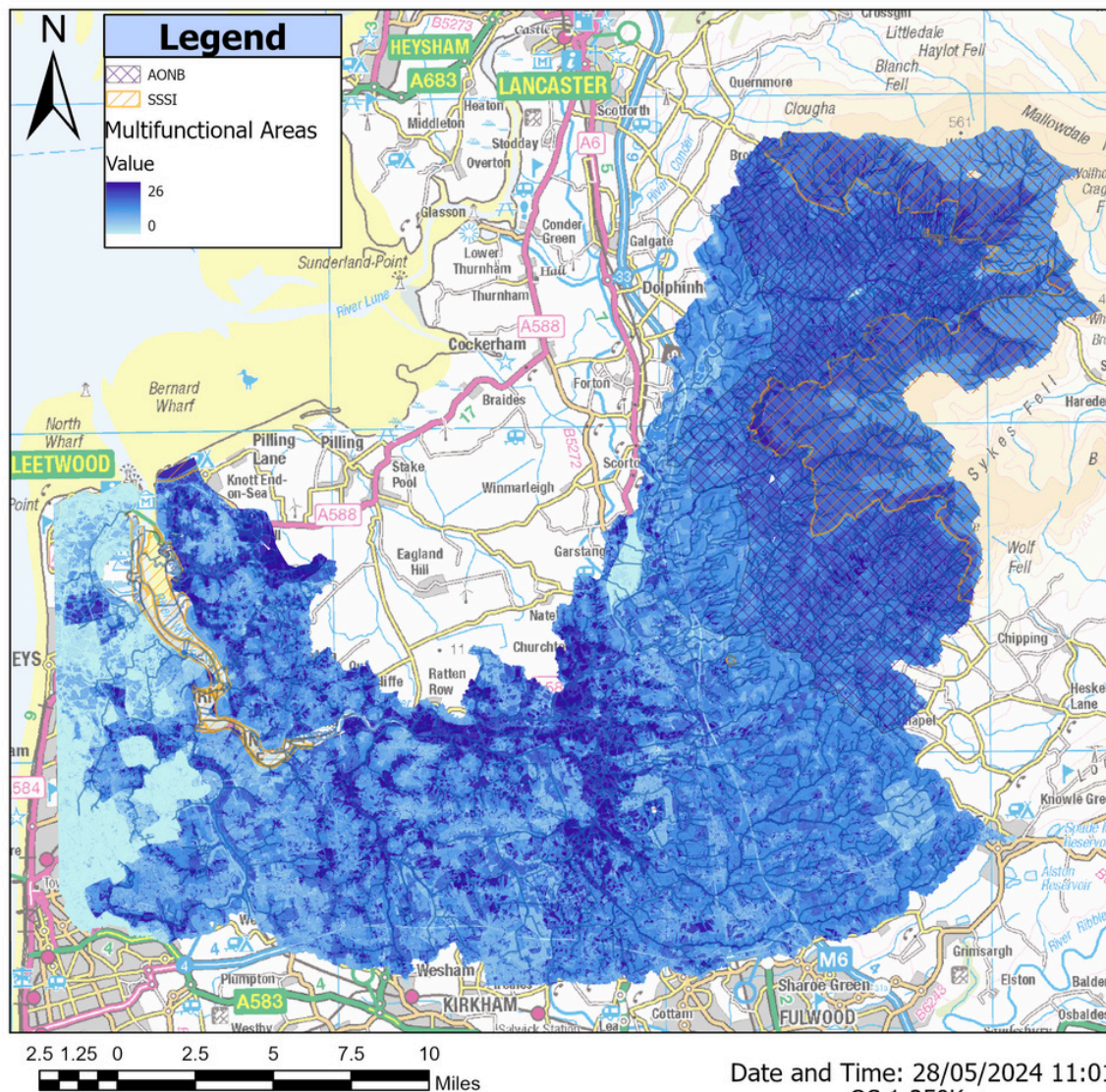
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Figure 17 Recreational access is scored between 0-5. Lighter pink denotes areas where access to green and blue space is restricted and very limited whereas areas with a value of 4-5 denote areas that have greater and easier access to green and blue spaces for recreational use. Much of the properties within the mid and lower catchment denoted by purple circles have little access to nature for recreational purposes when compared with Upper Wyre where there are more protected areas and public rights of way etc.

Ecosystem Service Maps

The above maps (i.e., Base flow, Water quality, Carbon sequestration, Ecological networks, Peak flow attenuation, Recreation priorities) have been combined to delineate areas that can be enhanced via catchment interventions to improve the provision of multiple ecosystem services within Wyre. Protected areas such as Areas of Outstanding Natural Beauty (AONB) and Sites of Special Scientific Interest (SSSI) are also shown. The creation of the ecosystem service maps provide the WWCP with a robust evidence-base, which will help in the design of tailor-made, specific catchment interventions.

Multifunctional areas within the Wyre Catchment



Author: Harlie Mason
For: Multifunctional Ecosystem Services Areas
Project: Wyre Integrated Catchment Plan
Map Number: (2024/05/28/014)



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Figure 18 Darker areas (i.e., those with a higher multifunctional ecosystem service score) represents target areas where multiple ecosystem services need to be improved and hence are opportunity areas for the enhancement of multiple ecosystem services. Lighter areas are indicative of areas providing multiple ecosystem services, they also coincide with more urbanised areas. For example, areas such as South shore and Bispham have low base flow, relatively good water and are less impacted by flooding, and therefore require less targeted improvement. Comparatively, areas such as St Michael's-on-Wyre and Knott End-on-Sea are darker blue in colour, denoting areas where the provision of ecosystem services can be enhanced (e.g., by improving access to green space for recreation, improving water quality, and increasing upstream peak flow attenuation so as to reduce downstream fluvial flooding).

Action plans

Wyre and Calder operational catchment

Local landscape

The River Wyre originates from the confluence of Marshaw and Tarnbrook Wyre within the Wyre and Calder operational catchment. Dominated by agricultural landscape, the upper catchment is predominantly owned by the Duke of Westminster and the Duchy of Lancaster. This operational catchment also consists of high moorland in the Forest of Bowland National Landscape (formerly AONB). The economy thrives on farming, grouse shooting, rural enterprises, and tourism.

Opportunities

The topography of the upper catchment presents ideal conditions for NFM and carbon sequestration initiatives, crucial for curbing high surface water runoff. Moreover, projects within the Wyre and Calder operational catchment will focus on enhancing habitat connectivity for migratory species while fostering community engagement and access improvement.

A selection of current and proposed projects for the Wyre and Calder operational catchment.

Current Projects

Lancaster Canal Feeder and Aqueduct Weir (Calder) – Fish Passage Project: [River Calder at Catterall](#)

1 technical (larinier) pass and 1 bypass channel created to allow fish passage. 3km improved riparian and in river habitat. 17.8km of habitat opened to spawning fish for the first time in ~230 years. £500,000.00.

Scorton Weir Removal Project: [Scorton Weir, River Wyre](#)

1 weir removed. 1km soft engineered bank protection installed. 6 community workshops. 3.5km river opened to migratory fish. Geomorphological improvements, promoting natural processes and resilience. Creation of additional riparian and in river habitats. Local community engagement. £100,000.00.

Ainspool NFM Project: [Ainspool from source to confluence with the Wyre at Churchtown](#)

3km riparian fencing. 200 low cost NFM measures. Creation of 3 flood storage ponds. 1ha of floodplain reconnected. Improved water quality, infiltration of water through soil and storage of water for up to 24hrs, reducing flood risk. Increased aquatic and terrestrial diversity. £50,000.00.

For a full list of the projects of all operational catchments please refer to page 20 or [click here](#).

Proposed Projects

AONB Peatland Restoration Project: [Black Clough, Marshaw and Brown Syke, Tarnbrook](#)

90ha and 50ha of peatland restoration in Marshaw and Tarnbrook respectively. Increased carbon sequestration and natural flood management through water retention. Enhanced habitat for wetland bird species. Black Clough~£1,000,000.00, Brown Syke ~£500,000.00.

Broom Hill to Gubberford Bridge Access: [Broom Hill to Gubberford](#)

Health and recreation focus. Promoting good wellbeing and increased access to nature for local communities within the Wyre and Calder operational catchment. ~£100,000.00.

Upper Wyre Monitoring Project: [Upper Wyre](#)

Installation of temperature and level loggers. Increase intellectual and physical access. Deliver a electrofishing programme. Complete aquatic invertebrate surveys to assess river health.



Figure 19 Electrofishing within the River Wyre Catchment.

Action plans

Fleetwood and Tributaries operational catchment

Local landscape

The Fleetwood and Tributaries operational catchment is the most urbanised of all the operational catchments. The Fylde Coast majorly benefits from the tourism and service sectors. However, the operational catchment faces varying levels of affluence, with some wards in Fleetwood among the most deprived in the country. Areas such as Thornton and Cleveleys are also at risk of flooding and require attention.

Opportunities

Due to the increased population density, Fleetwood and Tributaries provides excellent opportunities to engage and educate the public, encouraging access to nature. Projects of multi-benefit for people and wildlife are also a priority.



Figure 20 Engagement of school groups within the Wyre Estuary Country Park.

A selection of current and proposed projects for the Fleetwood and Tributaries operational catchment.

Current Projects

Thornton Flood Risk Resilience Project (Phase 2): Thornton, Hillylaid Pool

2ha wetland creation, 2ha floodplain reconnection, 2km riparian fencing, 5 school rain gardens created. 3 Sustainable drainage systems (SuDS) created. 5ha of soil and land management, 0.02ha restored river, 1.258 ha floodplain restoration. 1ha of run-off attenuation and management. Installation of leaky barriers and in channel storage. 800 trees planted a Improved water quality, increased storage of water, reducing flood risk. Enhanced carbon sequestration. Education and engagement with schools. £150,000.00. *Lancashire County Council (Lead Local Flood Authority), EA, UU, and Wyre Council.*

Gateway to Wyre Estuary Phase 1 and 2: Stanah, Wyre Estuary

Promoting access to nature. Protection and enhancement of saltmarsh and mudflat habitats. Aim to also reduce recreational disturbance along the estuary. ~£170,000.00 Phase 1, ~£70,000.00 Phase 2. *Wyre Council, Wyre Estuary Group*

Proposed Projects

Preston Road (Inskip) Fish Easement Project: Lords Brook at Preston Road, Inskip

1 low cost novel baffle easement. 4km habitat opened to spawning fish. £3,000.00.

Lords Brook Improvement Project: Lords Brook

5Km riparian fencing. 2km riparian and instream habitat improvements. 10 days farm advice. Water quality improvement interventions on 3 farms. 5 wetlands created. 1000 trees planted. Ambitious, full catchment restoration project focusing on the 'Bad' WFD waterbody. Enhanced water quality by curbing diffuse and point source pollution. Habitat restoration and carbon sequestration. Decreased downstream flood risk. £TBD.

River Wyre Project Hub: Wyre Estuary Country Park

Enhance education and engagement. Incite behavioural change and volunteer recruitment. Generate citizen science based programmes. Delivery of BioBlitz event 2024, anticipating 200 school children and +1000 species recordings. ~£100,000.00. *Wyre Council, Wyre Estuary Group.*

The Wyre Estuary BioBlitz

Accessing green and blue space is proven to be highly beneficial to human health, providing physical and mental wellbeing benefits. The WWCP continues to incorporate access, health, and wellbeing into each and every project that is developed as a result of this catchment plan. Since 2015, the WWCP have come together every three years to deliver one of our most successful projects focused on community engagement, ecological surveying, and healthy wellbeing: **The Wyre Estuary BioBlitz**.



What is a BioBlitz event?

A BioBlitz is an organised **wildlife recording event** where groups of scientists, naturalists, and volunteers get together to survey a designated area in an attempt to **record all the living species present**.

Location: Wyre Estuary Country Park, **Fleetwood and Tributaries operational catchment**

Dates: 1 week in June; 2015, 2018, 2021, 2024.

2021 was the biggest recording event to date in the Wyre Catchment, and resulted in **over 800 animals, plants, fungi and algae being identified**. We are currently analysing the data from 2024.

Why hold a BioBlitz event in the Wyre Estuary?

Renowned for its numerous national and international designations, including RAMSAR and SSSI statuses, the Wyre Estuary is a vital area for various **wading birds and wildfowl**. Featuring diverse **estuarine priority habitats** like saltmarshes and mudflats, it is integral to the Morecambe Bay Special Area of Conservation (SAC). Additionally, it is a crucial component of the Wyre-Lune Marine Conservation Zone (MCZ), particularly valued for sustaining populations of European smelt. Given its significance, species monitoring in the Wyre Estuary is essential for the periodic assessment of our catchment's health and vitality.

Combining surveys, school visits, and health, the BioBlitz is a wholly inclusive, engaging nature event.

Surveys

Amateur naturalists and experts with specialisms such as bramble, hoverflies and plankton all band together to generate a robust species list for the Wyre Catchment. Annual special surveys include dawn bird, dusk bat and moth surveys.

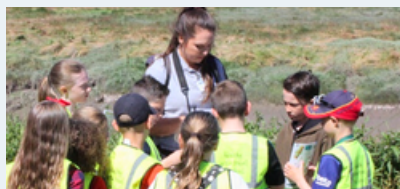


Schools

Inciting an **appreciation for nature** through **engagement**.

Recurring activities include:

- "mini-beast" safaris
- shark egg case ID
- wildlife photography
- bird and bat box construction



Health

In 2015, members of the Thornton Practice provided **free health checks** for participants and visitors, this was continued in 2018 in line with our theme of "Healthy Heroes". Walking around the estuary for exercise was also encouraged to participants.



“The BioBlitz is a way that we can **monitor change**, learn more about the habitats, and **raise awareness** of the issues in the catchment”

Thomas Myerscough, General Manager, WRT



Figure 21 The Wyre Estuary

Action plans

Brock and Tributaries operational catchment

Local landscape

Lowland livestock farmland dominates the Brock and Tributaries operational catchment, including beef, sheep and dairy farming. As a result, the river and tributaries flowing through this area of the catchment have been largely modified through river embanking. The M55 and M6 also converge within the Brock area, forming a major urban transport link to cities such as Lancaster and Preston.

Opportunities

All three 'Poor' waterbodies under the WFD are located within the Brock and Tributaries operational catchment providing an excellent opportunity to investigate and improve water quality conditions (see Ecosystem Services Maps, page 38). Additionally, widespread intensive agricultural practices offers a unique opportunity to rebuild habitats and curate wildlife corridors, balancing both the needs of food production and nature recovery.

A selection of current and proposed projects for the Brock and Tributaries operational catchment.

Current Projects

Brock and Tributaries NFM Project: Whole Brock area

Across the four sub-catchments we will aim to deliver around 10ha of NFM interventions and 5ha of woodland creation. Interventions include leaky barriers, hedges, ponds, scrapes, land management and river restoration. Improved water quality, increased storage of water, reducing flood risk. Enhanced carbon sequestration. £300k.

Brock Soils for Water Project: Whole Brock area

Aim to understand the relationship between land management practices and soil-hydrological functions. Farm field surveys taken then analysed for compaction, organic matter, and volumetric water content. Results will be used to guide NFM interventions on a wider catchment scale. £15,000. *Environment Agency.*

Proposed Projects

Environment Agency Natural Flood Management Programme: Whole Brock area

Development and delivery of a diversity of NFM measures to store more water in the landscape. 10ha of soil and land management. 1ha of river and floodplain restoration. 2ha of offline storage areas. 3ha of farm wetlands/ponds/scrapes. Installation of leaky barriers and in channel storage. 10ha of woodland created. £300k. *Environment Agency.*

Highway Constructed Wetlands: Brock and Tributaries, Wyre and Calder, and Fleetwood and Tributaries

5 wetlands constructed off of Highway Agency Priority road run-off/drainage areas, around the M6 and A585. Improvements to water quality due to the filtration of road/transport run-off. Creation of new habitats for aquatic and riparian species. Wildlife corridors.



Figure 22 Scenic photo of the typical farmlands present within the Brock and Tributaries operational catchment.

Brock and Calder Landscape Recovery (BCLR) Project

To achieve a resilient, sustainable, and diverse catchment that **harmonises food production with nature conservation**, we must adopt an ambitious, landscape-scale strategy. The BCLR Project is a nationally important, pioneering project aimed at empowering land managers, fostering community links and designing spatially explicit nature interventions to positively impact the Brock and Calder catchments.

© WRT

Food security, NFM, and nature at scale

Location: Wyre and Calder and Brock and Tributaries operational catchments

Host: Wyre Rivers Trust

Funding: £750,000.00

Partners: Brock and Calder Farm Cluster Group (Cluster Group), Claughton Hall Estate, Bleasdale Estate, WRT, Lancashire Wildlife Trust, Forest of Bowland National Landscape, Lancashire County Council, Wyre Council, Brock Anglers, Wild Trout Trust, UU, Natural England, Lancaster University, UK Centre for Ecology and Hydrology and Myerscough College.

The BCLR Project

The Brock and Calder Landscape Recovery Project will work across **~4000 ha** alongside **25 farmers** to deliver tailor-made, ambitious **NFM**, innovative **regenerative farming**, **nature recovery** and **social impact programmes**. Close collaboration with farmers and land managers will be of utmost importance to the project.

Funding has been secured for the initial two-year development phase. Success in this phase will pave the way for a **20-year delivery phase**, drawing additional **public and private funding**. The project aligns with national targets outlined in the Environment Act 2021, focusing on biodiversity, water quality, and increasing tree cover. Additionally, the Project aims to contribute to the UK government's plan of protecting 30% of land for nature by 2030 and achieving net zero by 2050.



Figure 23 Presentation on the creation and benefit of hedgerows to wildlife and livestock with local farmers and landowners.

The vision of BCLR Project

- 1) Support agricultural communities
- 2) Enhance ecosystem service efficacy
- 3) Protect and restore protected areas as well as create wildlife-rich habitat mosaics
- 4) Promote and facilitate regenerative farming
- 5) Provide cultural and societal benefits

Targeted habitats:

Grassland, peatland, woodland, riparian, fluvial.

A small selection of targeted interventions:

Farm soil surveys, deep peat restoration, NFM, INNS removal, woodland and hedge planting, fish easements.

Deliverables:

Ecosystem services	Farm Business Benefits
<ul style="list-style-type: none">• Reduced flood risk• Enhanced carbon storage and sequestration• Food security	<ul style="list-style-type: none">• Improved soil health• Greater protection from livestock diseases• Strengthened drought resistance and resilience• Support to adopt innovative lower impact practices, infrastructure and technologies

“This is a fantastic opportunity to deliver for communities and nature. By working with natural processes BCLR will **instil resilience at a landscape scale** to deliver a multitude of benefits including reduced flood risk and safeguarding the future of food production under climate change.”

Heather Stott, Head of Science and Landscape Recovery Project Manager, WRT

Action plans

Pilling, Ridgy, Cocker, Overton Dyke – Outer Lune Estuary operational catchment.

Local landscape

Substantially smaller than the other operational catchments at 34.42km², the Pilling, Ridgy, Cocker, Overton Dyke – Outer Lune Estuary operational catchment sits in the coastal area which surrounds Knott End, Hambleton and Out Rawcliffe. The village of Knott End-on-Sea is the main commercial hub for the Over Wyre area. The Knott End Golf Course is situated adjacent to the Wyre Estuary. Recreational, tourism and rural business are key components in the economy.

Opportunities

Covering both coastal and inland areas, the operational catchment provides ample opportunity to develop a number of multi-benefit projects such as carbon sequestration via saltmarsh restoration, coastal community engagement and farmland initiatives. We value the support and insights gained from our collaborative efforts with farmers and local landowners, and we are actively exploring avenues to broaden this engagement within the operational catchment.

A selection of current and proposed projects for the Pilling, Ridgy, Cocker, Overton Dyke – Outer Lune Estuary operational catchment .

Current Projects

Knott End Beach Clean: Knott End slipway

Monthly engagement event designed to help clear the beach of litter. Promotes mental and physical wellbeing. Opportunity to socialise and improve education about the area to local people. *Wyre Estuary Group Partners.*

Proposed Projects

Over Wyre Farm Engagement Project: LHambleton, Knott End, Preesall, Stalmine and surrounds.

Work closely with land managers in the Over Wyre area to provide land management advice with a focus on reducing the impacts of diffuse pollution from agriculture and in order to reduce local fluvial and surface water flood risk.



Figure 24 Dedicated volunteers helping out with the Knott End Beach Clean event.

Action plans

Northwest Transitional and Coastal Waters

Local landscape

To the Northwest of the catchment stands the Northwest Transitional and Coastal Waters. These are coastal water bodies. Waterbodies of interest to the Wyre Catchment are the Mersey Mouth and Cumbria water bodies.

Opportunities

It is the case that the transitional and coastal waters form the key gateway for all diadromous fish species that make use of the Wyre Catchment and for that reason they are of principal importance to both Wyre Rivers Trust and the WWCP. Unfortunately, it is also the case that making a meaningful impact on water or habitat quality in transitional and coastal waters is very difficult. Despite this, we will continue to work with partners to develop and deliver projects which aim to improve these valuable waters.

A selection of current and proposed projects for the Northwest Transitional and Coastal Waters.

Current Projects

Our Future Coast Project: Stanah, Wyre Estuary

Aimed at reducing flooding risk and coastal erosion through nature defences across the Northwest. Community engagement and nature-based solutions. Citizen science and MoRPH Estuaries.

Wyre Council, Wyre, Fylde and Blackpool Coastal Protection Authorities, Lancashire Wildlife Trust, National Oceanography Centre, Lancaster University, Natural England, Marine Management Organisation, Historic England, National Trust, Sefton Coast Partnership, NW Coastal Forum, Eden project, RSPB, 7 FLAGS.

Proposed Projects

Improved Bathing Water Signage Project: Coastal beaches and estuary access points

Installation of SEPA quality signage. Increase awareness and inform beach and estuary users of water quality and safety. ~£250,000.00. *Wyre Estuary Country Park partnerships.*

Wyre Estuary Juvenile Fish Survey/Priority Fish Monitoring Study: Wyre Estuary from Normal tide limit to Wyre light, Fleetwood

3-year Transitional and Coastal Waters surveys at existing locations. Training component in TraC surveys with local Blackpool and the Fylde College Marine Biology students. Greater understanding of the life histories of estuarine fish species within the River Wyre. Improved social opportunities. Improved vocational skills. Improved knowledge sharing skills. Improved data processing and survey skills. Promoted access to green and blue space. ~£50,000 per annum. *Blackpool and The Fylde College.*

Project database

The project database has been populated with projects from WRT, many of which would be delivered via collaboration with members of the WWCP and other partners such as the Wild Trout Trust. The projects have been scoped and costed using the judgement of WRT staff and trustees. This table is intended to be a working document and we welcome the input of members of the WWCP, local communities within the Wyre Catchment, and stakeholders. The shorthand TBD is meant to signify areas that are yet to be determined.

Table 1 Projects within WRT as of March 2024. Includes both proposed projects for the future and existing projects ongoing within WRT. The table has been updated to remove completed projects.

Project Name	Location	Operational Catchment	Deliverables	Outcomes	Benefits	Costs
AONB Peatland Restoration	Black Clough, Marshaw Brown syke, Tarnsbrook	Wyre and Calder	Increased carbon sequestration and natural flood management through water retention. Enhanced habitat for wetland bird species.	90ha and 50ha of peatland restoration in Marshaw and Tarnsbrook respectively.	Reduced flow down catchment during flooding events. Reduced dissolved organic carbon (DOC) and Particulate organic carbon (POC) in water courses. Biodiversity gain through habitat restoration, benefits for breeding birds.	Black Clough ~£1,000,000.00 Brown Syke ~£500,000.00
River Wyre Project Hub	Wyre Estuary Country Park	Fleetwood Trib	Enhance education and engagement. Increasing awareness of habitat and water quality surrounding the Wyre.	Reaching local communities and visitors at the Country Park of which now stands at 10K visitors per year.	Incite behavioural change and volunteer recruitment Generate inclusive and engaging citizen science based programs Delivery of BioBlitz event 2024, anticipate 200 school children and +1000 species recordings.	~£100,000.00
Gateway to Wyre Estuary Phase 1 and subsequent Phase 2	Wyre Estuary	Fleetwood Trib	Access to Nature.	Contributing to Trust's targets of improving habitat quality, water quality and connectivity.	Protection and enhancement of saltmarsh and mudflat habitats. Aim to also reduce recreational disturbance along estuary.	~£170,000.00 Phase 1 £70,000.00 Phase 2
Engagement Package for catchment partners and staff	All of Wyre Catchment	All of catchment	Engagement.	Design and delivery of a suite of accessible and inclusive engagement opportunities.	Improved awareness and education within the catchment for staff and partnerships. Help partnerships grow and collaborate.	~£100,000.00
Broom Hill to Gubberford Bridge Access	Broom Hill to Gubberford	Wyre and Calder	Access to nature recreation.	Health and wellbeing improvements and increased access.	Nature associated health benefits for local communities.	~£100,000.00
Improved Bathing Water Signage	Coastal beaches and estuary access points	Fleetwood Trib	SEPA quality signage.	Increase awareness and inform beach and estuary users.	Educational benefits. Relay information on safety, biosecurity and pollution reductions.	~£250,000.00
Upper Wyre Salmonid Project	Upper Wyre	Wyre and Calder	20Km of improved water course and habitats. Improvement of riparian buffers. Gravel addition. pH buffering. Research study on smolt river loss.	Improve habitat for salmonid species at all life stages.	Principal benefits for biodiversity (increased fish numbers) also improved water quality, water quantity, habitat quality and, connectivity.	~£300,000.00

Project Name	Location	Operational Catchment	Deliverables	Outcomes	Benefits	Costs
Upper Wyre Monitoring Project	Upper Wyre	Wyre and Calder	Installation of temperature and level loggers. Access routes. Electrofishing programme development and delivery. Aquatic invertebrate surveys.	Design and delivery of a 5-year monitoring programme to inform future catchment work.	TBD Foundational data used to support and inform other projects.	~£80,000.00 ~£100,000.00 per annum.
Climate change Project	All of Wyre	All	1 FTE Job Creation TBD	Provide advice and guidance to landowners within the catchment.	TBD	TBD
Coastal Woodland Project	Wyre Estuary	Fleetwood Trib	TBD	TBD	TBD	TBD
Saltmarsh Restoration Project	Wyre Estuary	Fleetwood Trib	Research, surveying and monitoring. TBD	TBD	Habitat restoration. TBD	~£50,000.00 for first 3 years of development ~£150,000.00 following the 3 years for delivery
Farm Slurry Pits Project	Lowland farmland	Wyre and Calder	Engagement, advice and landowner assistance.	Increase awareness and advice to farmers concerning the holding, separating and managing slurry in pits.	Improvement of habitat quality and water quality. Reduced phosphate inputs into waterways.	TBD. Need to first scope potential interest from respective landowners.
Weir Removal and Fish Pass Project	River Wyre	Wyre and Calder	Weir removal from main river. Addition of fish passes.	Improved migratory pathways to allow fish passage.	Habitat restoration.	Funding secured.
Lancaster Canal Feeder and Aqueduct Weir (Calder) – Fish Passage Project	River Calder at Catterall	Wyre and Calder	Two fish passes. Habitat restoration works. 1 FTE Job Creation.	1 technical (larinier) pass and 1 bypass channel created to allow fish passage. 3km improved riparian and in river habitat.	17.8km of habitat opened to spawning fish for the first time in ~230 years. Restoration of catchment ties in to UU AMP7 responsibility to deliver fish passage at Oakencrough abstraction point. Project would lead to feasibility to make further two weirs passable at Calder Vale. Improved riparian and in river habitat supporting fish at all life stages.	£500,000.00
Preston Road (Inskip) Fish Easement Project	Lords Brook at Preston Road, Inskip	Fleetwood Peninsula Tribs	1 low cost novel baffle easement.	1 low cost baffle easement created.	4km habitat opened to spawning fish.	£3,000.00
Scorton Weir Removal	Scorton Weir, River Wyre	Wyre and Calder	Weir removal and erosion mitigation works. Local engagement.	1 weir removed. 1km soft engineered bank protection installed. 6 community workshops.	3.5km river opened to migratory fish (Salmon, Sea Trout, Eel, Brook Lamprey). Local geomorphological improvements, promoting natural processes and resilience. Creation of additional riparian and in river habitat supporting both aquatic and terrestrial species. Reinstatement of natural processes and resilience of this reach of river. Intellectual and physical access improvements. Local community engagement on issues pertinent to the Wyre.	£100,000.00

Project Name	Location	Operational Catchment	Deliverables	Outcomes	Benefits	Costs
Grizedale Brook Restoration Project (Phase 1)	Grizedale Brook, from confluence with Wyre to Higher Lane (Barnacre with Bonds)	Wyre and Calder	Riparian fencing. Woody deflectors. Instream habitat creation. Fish easements. Ford replacement (Bridge). Farm advice. Septic tank and misconnection advice. Motorway runoff wetland. 1 FTE Job Creation.	3km riparian fencing installed. 2km improved in river and riparian habitat. 2 fish easements created. 1 ford replaced. 30 households engaged on septic tanks and misconnections. 1000 trees planted.	50% catchment restoration. Improved water quality resulting from reduced diffuse and point source pollution. Reduction in nutrients entering watercourses. Creation of motorway wetland to reduce input of chemicals, microplastics and oils. Improved local air quality. 3km of habitat opened to fish passage and spawning fish. Improved riparian and instream habitat benefitting both aquatic and terrestrial species. Increased aquatic and terrestrial biodiversity.	~£150,000.00
Grizedale Brook Restoration Project (Phase 2)	Grizedale Brook from Higher lane Grizedale reservoir and beyond.	Wyre and Calder	Riparian fencing. Riparian and instream habitat improvements. Farm advice. Farm infrastructure interventions. Wetland creation. 1 FTE Job Creation.	5Km riparian fencing. 3km riparian and instream habitat improvements. 10 days farm advice. 3 Farm Carbon Audits. Water quality improvement interventions on 3 farms. 5 wetlands created. 100 low cost NFM Measures installed. 2000 trees planted.	Full catchment restoration. Improved water quality resulting from reduced diffuse and point source pollution. Reduction in nutrients entering watercourses. Improved riparian and instream habitat benefitting both aquatic and terrestrial species. Increased aquatic and terrestrial biodiversity. Improved water quantity and water supply resilience. Carbon storage (trees & wetlands). Reduced carbon cost (farming). Increased community, supply chain and local business resilience. Reduced downstream flood risk to roads and houses. Improved local air quality.	£200,000.00
Ainspool NFM Project	Ainspool from source to confluence with the Wyre at Churchtown	Wyre and Calder	Riparian fencing. Low cost NFM Measures. Flood storage ponds. Floodplain reconnection.	3km riparian fencing. 200 low cost NFM measures. Creation of 3 flood storage ponds. 1ha of floodplain reconnected.	Improved water quality, improved infiltration of water through soil. Increased storage of water for up to 24hrs, resulting in a more resilient catchment and reducing downstream flood risk. Increased aquatic and terrestrial diversity.	Funding Secured
Thornton Flood Risk Resilience (Phase 2)	Thornton, Hillylaid Pool	Fleetwood and Tribs	Wetland Creation. Floodplain Reconnection. Riparian Fencing. SuDS creation. 1 FTE Job Creation.	2ha wetland creation. 2ha Floodplain reconnection. 2km riparian fencing. 5 school rain gardens created. 3 SuDS created.	Improved water quality. Increased storage of water for up to 24hrs, resulting in a more resilient catchment and reducing downstream flood risk. Improved infiltration of water through soil. Carbon sequestration (wetlands). Education on the benefits of SuDS, engagement with school children.	Funding Secured
Wyre Estuary Juvenile Fish Survey/Priority Fish Monitoring Study	Wyre Estuary from Normal tidal limit (St Michaels) to Wyre Light, Fleetwood	North West TRAC – WYRE	Comprehensive Transitional and coastal waters surveys. Training component with Blackpool and The Fylde College Marine Biology Students. 1FTE Job Creation.	3 years of Transitional and Coastal waters surveys at existing WFD locations. 1 B&FC Marine Biology cohort per year trained in TraC surveys.	Greater understanding of the life histories of estuarine fish species within the River Wyre. Improved social opportunities. Improved vocational skills. Improved knowledge sharing skills. Improved data processing skills. Improved access to green and blue space.	~£50,000.00 per annum

Project Name	Location	Operational Catchment	Deliverables	Outcomes	Benefits	Costs
Wyre Catchment Water Quality Monitoring Water Quantity Monitoring	Priority waterbodies throughout Wyre catchment Calder, Tarnbrook Wyre and Upper Wyre	Hillylaid Pool, Lords Brook, Barton Brook, River Calder, Wyre Upper River Calder, Tarnbrook Wyre, Wyre Upper	Comprehensive water quality monitoring project within priority waterbodies. Data will be collected via water sampling, FIO monitoring, pesticide monitoring, novel pollutant monitoring and aquatic invertebrate sampling. Comprehensive water quantity monitoring project within priority waterbodies. Data will be collected via flow monitoring, level loggers, time-lapse photography, fixed point photography, walkovers, aquatic invertebrate sampling, electrofishing. 1FTE Job Creation.	3-year water quality dataset, encompassing FIO's, nutrients, pesticides and novel pollutants (antibiotics etc). 3-year water quantity dataset encompassing abiotic (levels, flows) and biotic data (invertebrate and fish data). 2 x Catchment Science apprenticeships. Engagement and creation of a citizen science group to monitor water quality parameters.	Greater understanding of water quality issues within the priority catchments. Green job creation and training for two apprentices. Health and wellbeing benefits from citizen science participation. Improved social opportunities. Improved knowledge sharing skills. Improved data processing skills. Improved access to green and blue space.	£130,000.00 per annum
Wyre Citizen Science Programme	Wyre Catchment	Entire catchment	Ecology for All. Urban River Care Group. Riverfly Monitoring Group. Soil Survey Group.	Formation and development of 4 citizen science groups. Creation of three new datasets and addition to one existing dataset. Development of four bespoke training courses.	Education and engagement on the key issues faced by our rivers and catchments. Improved health and wellbeing. Improved social opportunities. Improved knowledge sharing skills. Improved data processing skills. Improved access to green and blue space.	£60,000.00 per annum
Wyre INNS Project	Wyre Catchment – Initial focus on 3 sub-catchments (Upper catchments)	Wyre and Calder/Brock and Tribs/Fleetwood Peninsula Tribs/ Wyre TraC	10 volunteer training sessions. 5 free PA1, PA6, PA6AW and PA6INJ training courses for 18-24 year olds. Development of three INNS eradication groups within the catchment. 2 FTE Job creation & 3 apprenticeships.	3-year INNS eradication programme. Removal of 10ha of Himalayan balsam per annum. Development and deployment of riparian seed mix to recolonise cleared areas and reduce further opportunities for HB germination in Y2 and 3. Eradication, or near eradication of 5Ha of Japanese knotweed per annum. Agile Giant hogweed removal across the Wyre Catchment for 3 years. 2-year Japanese rose removal programme. 3-year Apprentice training programme.	Increased biodiversity. Reduced out competition from invasive species, resulting in more resilient habitats and biotopes. Improved water quality, reduction in losses of phosphate from fine sediments. Increased flood resilience. Improved social opportunities. Improved vocational skills. Improved knowledge sharing skills. Improved data processing skills. Improved access to green and blue space.	£120,000.00 per annum
Wyre Culvert Project	Upper catchment	Wyre and Calder	Install low-cost baffles and fish easements.	12 fish easements created.	Increased habitat connectivity and spawning habitat opened to migratory fish (Salmon, Sea Trout, Eel, Brook Lamprey).	£60,000.00

Project Name	Location	Operational Catchment	Deliverables	Outcomes	Benefits	Costs
Scorton Habitat Improvements	Scorton	Wyre and Calder	Improve trackways and use of fords to cross the River Wyre within the already established Scorton habitat improvement scheme.	Installation of hard standing trackways on both banks and hard standing feed point.	Reduction of sediment and nutrient inputs into the River Wyre. Improved water quality. Increased biodiversity. Improved habitat and spawning gravels for important fish species.	£40,000.00
Wyre and Calder Phosphate (Water Quality) Project	Priority water bodies throughout catchment	Wyre and Calder	Riparian fencing Riparian and instream habitat improvements Farm advice Farm infrastructure interventions including trackways/feed points Wetland creation Tree planting. Water quality and macrophyte monitoring.	3-year Project. 15km riparian fencing. 5km riparian and instream habitat improvements. 10 farm advisory visits. Water quality improvement interventions on 5 farms. 3 wetlands created. 2000 trees planted.	Improved water quality resulting from reduced diffuse and point source pollution. Reduction in nutrients entering watercourses. Improved riparian and instream habitat benefitting both aquatic and terrestrial species. Increased aquatic and terrestrial biodiversity. Carbon storage (trees & wetlands). Reduced carbon cost (farming). Increased community, supply chain and local business resilience. Reduced downstream flood risk to roads and houses through floodplain restoration.	£450,000.00
Brock and tribes NFM Project	Whole Brock area	Brock and tribes	Riparian fencing. Riparian and instream habitat improvements. Farm advice. Farm infrastructure interventions including trackways/feed points. Wetland creation. Tree planting.	10ha of NFM interventions and 5ha of woodland creation. Interventions include leaky barriers, hedges, ponds, scrapes, land management and river restoration.	Improved water quality resulting from reduced diffuse and point source pollution. Reduction in nutrients entering watercourses. Improved riparian and instream habitat benefitting both aquatic and terrestrial species. Increased aquatic and terrestrial biodiversity. Carbon storage (trees & wetlands). Reduced carbon cost (farming). Increased community, supply chain and local business resilience. Reduced downstream flood risk to roads and houses through floodplain restoration.	Funding Secured
Fleetwood Peninsula Phosphate (Water Quality) Project	Priority water bodies throughout catchment	Fleetwood Peninsula tribes	Riparian fencing. Riparian and instream habitat improvements. Farm advice Farm infrastructure interventions including trackways/feed points. Wetland creation. Tree planting. Water quality and biotic monitoring.	3-year Project. 15km riparian fencing. 5km riparian and instream habitat improvements. 10 farm advisory visits. Water quality improvement interventions on 5 farms. 3 wetlands created. 2000 trees planted.	Improved water quality resulting from reduced diffuse and point source pollution. Reduction in nutrients entering watercourses. Improved riparian and instream habitat benefitting both aquatic and terrestrial species. Increased aquatic and terrestrial biodiversity. Carbon storage (trees & wetlands). Reduced carbon cost (farming). Increased community, supply chain and local business resilience. Reduced downstream flood risk to roads and houses through floodplain restoration.	£450,000.00
Ephemeral Streams Investigation	Ephemeral waterbodies/ headwater streams	Wyre and Calder	Monitoring and partnership working.	3 year project – dry/wet surveys, macrophyte surveys assessing aquatic/terrestrial species. Species specific surveys.	Greater understanding of the role of ephemeral streams for rare species life histories. Greater understanding of ways to improve habitats in ephemeral streams.	£60,000.00 per annum
Lords Brook Improvement Project	Lords Brook	Fleetwood Peninsula tribes	Riparian fencing. Riparian and instream habitat improvements. Farm advice. Farm infrastructure interventions including trackways/feed points. Wetland creation.	5Km riparian fencing. 2km riparian and instream habitat improvements. 10 days farm advice. Water quality improvement interventions on 3 farms. 5 wetlands created. 1000 trees planted.	Full catchment restoration. Improved water quality resulting from reduced diffuse and point source pollution. Reduction in nutrients entering watercourses. Improved riparian and instream habitat benefitting both aquatic and terrestrial species. Increased aquatic and terrestrial biodiversity. Improved water quantity and water supply resilience. Carbon storage (trees & wetlands). Reduced carbon cost (farming). Increased community, supply chain and local business resilience. Reduced downstream flood risk to roads and houses through floodplain restoration.	£200,000.00

Project Name	Location	Operational Catchment	Deliverables	Outcomes	Benefits	Costs
Highways constructed wetlands	Highways Agency Priority road drainage/runoff areas (Hillylaid Pool – Main Dyke/M6 and A585)	Wyre and Calder/Brock and tribs/Fleetwood Peninsula Tribs	Wetland construction.	5 constructed wetlands.	Water quality improvements due to filtration of road/transport run-off. Creation of new habitats for aquatic and riparian species.	£100,000.00
Upper Wyre Habitat Improvement Project	Wyre – Upper, Marshaw Wyre, Tarnbrook Wyre	Wyre and Calder	Riparian fencing and buffer strip creation. Instream habitat improvements. Farm advice. Fish easements.	5Km riparian fencing. 2km riparian and instream habitat improvements. 10 days farm advice. Water quality improvement interventions on 3 farms. 3 wetlands created. 1000 trees planted.	Improved water quality resulting from reduced diffuse and point source pollution. Reduction in nutrients entering watercourses. Improved riparian and instream habitat benefitting both aquatic and terrestrial species. Increased aquatic and terrestrial biodiversity. Carbon storage (trees & wetlands). Reduced carbon cost (farming). Increased community, supply chain and local business resilience. Reduced downstream flood risk to roads and houses through floodplain restoration.	£200,000.00
Brock Soils for Water	Brock	Brock and Tributaries	Intellectual access, improved understanding of soil-hydrological connectivity. Farm advice. Development of infield NFM interventions.	Surveying fields across the Brock subcatchment to develop a model to show disentangle how land management affects the infiltration and storage of water in soils.	Developing land management plans and delivering interventions which will work to reduce flood risk, increase carbon storage, improve water quality and enhance farm business resilience.	£15,000.00

Monitoring and Evaluation

Our long-term vision

Monitoring and evaluation is a crucial component of this integrated catchment plan. Without monitoring it is very difficult to identify the impact of any project which is delivered, whilst evaluation allows us to assess the development and the progress of the partnership itself. Continuous assessment will also allow us to ensure that the partnership becomes self-sustaining.

WWCP Monitoring Plan

Working with members of the partnership we will develop a comprehensive monitoring plan for the WWCP. Table 2 outlines a basic monitoring plan for the WWCP, it includes the parameters to be measured, a short strategy, the techniques that can be used, data which is freely available from other organisations and priority waterbodies for monitoring. Owing to the costs of regular monitoring it has been considered important to integrate citizen science into the monitoring plan.

Table 2 Monitoring outline for the Wyre Catchment.

Parameter	Strategy	Technique	Data from other organisations	Priority waterbodies
Water Quality	Monitor rural and urban water quality using a variety of techniques. To inform prioritisation of future projects and inform evaluation of the success of previous projects.	<ul style="list-style-type: none"> - Nutrient, BOD and Bacteriological sampling using accredited laboratory for analysis. - Long term multi-parameter water quality meter deployment - Riverfly monitoring group. (Rural only) - Bespoke phosphate and nitrate monitoring <ul style="list-style-type: none"> - Passive sampling - Outfall Safaris - Wet Weather walkovers - WRT Soil Health Index 	<ul style="list-style-type: none"> - Environment Agency Routine Sampling Data - United Utilities Routine Raw Water Samples 	Tarnbrook Wyre, Marshaw Wyre, Upper Wyre, Wyre D/S Grizedale Brook Conf, Calder, Brock, New Draught Brook, Barton Brook, Woodplumpton Brook, Thistleton Brook, Lords Brook, Hillylaid Pool
Water Quantity	Monitor the impact of abstraction on impacted watercourses within the Wyre Catchment.	<ul style="list-style-type: none"> - Fixed Point Photography - Walkovers - Aquatic invertebrate sampling - Electrofishing 	<ul style="list-style-type: none"> - Environment Agency Routine Sampling Data - Anecdotal evidence from landowners, communities and angling groups 	Calder, Tarnbrook Wyre, Upper Wyre
Habitat Quality	Monitor habitat quality within watercourses	<ul style="list-style-type: none"> - Fixed Point Photography - River Habitat Survey Walkovers - Aquatic invertebrate sampling - Electrofishing - Salmonid redd counting - WRT Soil Health Index 	<ul style="list-style-type: none"> - Environment Agency Routine Sampling Data 	Tarnbrook Wyre, Marshaw Wyre, Upper Wyre, Wyre D/S Grizedale Brook Conf, Calder, Brock, New Draught Brook, Barton Brook, Woodplumpton Brook, Thistleton Brook, Lords Brook, Hillylaid Pool

Connectivity	Monitor the impact of Weirs and other barriers within watercourses	<ul style="list-style-type: none"> - Electrofishing - Fluvial audits - Aquatic invertebrate sampling - Redd Counts 	Existing barrier datasets	Tarnbrook Wyre, Marshaw Wyre, Upper Wyre, Wyre D/S Grizedale Brook Conf, Calder, Brock, Lords Brook
Education and Engagement	Monitor the impact of the education and engagement strategies that are employed and the engagement events that take place.	<ul style="list-style-type: none"> - Questionnaires - Water Quality Monitoring (to assess impact of misconnection/private sewage treatment works advice. 	- Environment Agency Routine Sampling Data	All
Wyre Waters Catchment Partnership Evaluation	Evaluating the performance and development of the Wyre Waters Catchment Partnership	<ul style="list-style-type: none"> - Continuous evaluation of the performance of the partnership. 	- Nil	N/A
Individual Project Monitoring and Evaluation	Monitoring and Evaluation of individual projects delivered by WRT in collaboration with WWCP members.	<ul style="list-style-type: none"> - Nutrient, BOD and Bacteriological sampling using accredited laboratory for analysis. - Long term multi-parameter water quality meter deployment - Bespoke phosphate and nitrate monitoring <ul style="list-style-type: none"> - Passive sampling - Fixed Point Photography - River Habitat Survey Walkovers - Aquatic invertebrate sampling <ul style="list-style-type: none"> - Electrofishing - WRT Soil Health Index 	<ul style="list-style-type: none"> - Baseline data collected prior to project. - Environment Agency Routine Sampling Data 	Project Locations

Citizen Science

Citizen science involves local community members collecting and analysing data within their areas of interest. It can be applied to various monitoring activities, ranging from simple to complex tasks. Good examples include riverfly monitoring, the "C.S.I" project by West Country Rivers Trust, and work done by Friends of Bradford's Becks. More locally, we have worked with citizen scientists to collect, collate, and analyse data for our 2015, 2018 2021, and 2024 BioBlitz events, identifying the locations of invasive non-native species and in the analysis of coastal habitats as part of our 'Ecology for all' programme. The WWCP recognises the immense value of citizen science and looks forward to developing our relationship with citizen scientists in the future. Below are some of our proposed citizen science programmes for the Wyre Catchment.

Table 3 Citizen Science Group proposals for the catchment.

Name	Focus	Resource required	Cost per participant
"Ecology for All"	One day courses to focus upon key habitat types and food webs within the Wyre catchment. These include the muddy shore, saltmarsh, sand dunes, aquatic ecology and the Morecambe Bay foodweb.	Lead tutor and support. Basic scientific equipment, microscopes, macroscopes, field guides and other course materials.	To be benchmarked throughout 2019 courses.
Urban River Care Group	Water and Habitat Quality within the Hillylaid Pool waterbody. Combined with outfall safaris to assess impact of point source inputs.	Tutor, simple water quality monitoring equipment (N, P test kits, pH meter, TDS meter), recording form or recording app. Regular meetings to discuss and analyse results	Health and safety Kit £35.00/Participant Monitoring Kit £175.00/Participant based electronic pH/temperature meter, Nitrate, Phosphate, Turbidity and Coliform Bacteria tests.
Riverfly Monitoring Group	Water and Habitat Quality within the Upper Wyre waterbody.	Riverfly accredited tutor, riverfly monitoring kits, reporting mechanism. Irregular meetings to discuss and analyse results.	Monitoring Kit ~£110.00/participant
Soil Survey Group	Water Quality, Natural Flood Management, Habitat Quality	Accredited tutor, soil monitoring kits, guidance (Worm Week methodology etc) Reporting mechanism, irregular meetings to discuss and analyse results	To be investigated

Higher Level Actions

In 2019, Members of the WWCP and the Wyre Estuary Group were asked to contribute to a high-level prioritisation exercise for the Wyre Catchment, identifying issues and opportunities for improvement in each of the operational catchments. To provide narrative to the actions identified within the tables, we asked participants to sort projects according to seven categories; water quality, water quantity, habitat quality, connectivity, flood and coastal erosion risk management, education and engagement and “blue sky projects” (i.e., novel, large-scale projects which achieve a wide range of benefits).

The interventions in the table are deliberately chosen to be at a high level with little or no specific information about project locations. Single projects can have positive impacts, but focusing on entire operational catchments, waterbodies, or sub-catchments can yield greater benefits. These tables are updated during every revision of the integrated catchment plan with comments made by members of WRT to address current issues and opportunities associated with the catchment.

Table 3 Higher level actions for the Wyre and Calder operational catchment as of March 2024.

Theme	Issue	Interventions required	Priority Locations	Projects being delivered by other organisations
Water Quality	Point Source Pollution Diffuse Pollution Soil Loss Erosion Bathing Water Quality Fly tipping	<ul style="list-style-type: none"> -Farm advice. -Improvement of farm infrastructure and land management. Promotion of farm wetlands as sustainable means of dealing with yard runoff. -Increasing awareness of misconceptions in residential properties and businesses. -Septic Tank awareness and education on correct maintenance. -Restoration of natural processes, woody material and the use of soft engineering within watercourses to reduce erosive power of high flows. -Study design and research into suitability of bathing areas. -Monitoring of fly tipping activities. -Monitoring of grey water outputs (caravan and holiday parks). 	Entire catchment	Catchment Sensitive Farming Call of Nature Garstang WwTW has an UWWTD directive and now has an annual average P consent of 2mg/l. This scheme was delivered 14/11/18 CSO Monitoring (UU) Wyre SGZ Investigation (CSF, EA, UU, WRT) Water industry national environment programme (WINEP)
Water Quantity	Abstraction Groundwater Water as a resource CSO leakages	<ul style="list-style-type: none"> -Working in partnership with United Utilities to ensure that sustainable abstraction is taking place. -Investigate ways of recharging of aquifers. -Changes to behaviour (harvesting of rainwater, potential of suDS). -Provide supporting information on the effects of abstraction for infrastructure. Monitoring of CSO events, specifically around caravan parks and sites. 	Calder, Tarnbrook Wyre, Fylde Aquifer (St Michaels-on-Wyre) Entire Catchment	United Utilities – Hands off flow applied at Oakenclough Abstraction Point 2018. Implement compensation flows Grizedale Reservoir – reg date 22/12/24 – level of compensatory flow to be released into the watercourse to be modelled and agreed Investigation into the impact of groundwater abstractions in the Fylde aquifer on surface water bodies in Wyre St Michaels – reg date 31/03/22 Groundwork– Dispelling the Myth Wyre NFM Projects
Habitat Quality	Biodiversity Invasive Non-Native Species Lack of instream habitat	<ul style="list-style-type: none"> -Creation of riparian buffer strips. -Nutrient recovery through herbal leys. -Leaky dam creation. -Peat restoration. -Woodland creation. -Wetland creation/restoration. -INNS Strategy for Himalayan Balsam and Japanese Knotweed. -Installation of large woody material, trailing cover and wood deflectors into watercourses. -Collaboration with local authorities. Engagement with NGOs (LWT etc). 	Entire Catchment	Forest of Bowland AONB – Peatland restoration, Haytime Project Farming in Protected Landscapes (FiPL) DEFRA scheme Calder farmer group

Connectivity	Barriers to migration Habitat Corridors	<ul style="list-style-type: none"> -Weir removal (Small weirs on tributaries). -Fish passes or easements (Large weirs which cannot be removed). -Eel passage measures on tidal flaps. -The creation of wildflower, grassland, hedgerow and woodland habitats in areas such as road verges, public open space and wastelands (green spaces). -Collaboration with local authorities. -Engagement with NGOs (LWT etc). 	Entire Catchment	<p>Scorton weir feasibility study - Wyre Rivers Trust/Wyresdale Anglers (UU) Investigate and appraise fish passage at the Wyre/Calder intake - reg date 31/03/22</p> <p>Monitoring and fish counting- Abbeystead and Rivers Trust</p>
Flood and Coastal Erosion Risk Management	Peatland habitat degradation Fluvial Flooding Surface Water Flooding	<ul style="list-style-type: none"> -Work with Forest of Bowland AONB to assist them with selection of sites for peatland restoration. -NFM interventions (leaky dams, offline ponds, wetlands, riparian bufferstrips, tree planting). -Demonstrate and spread awareness of successful models used (e.g., King George Playing Field NFM Project). 	Upper Wyre and Calder. Ainspool as trial for lowland NFM Entire Catchment	<p>Environment Agency - Mid Wyre Review, Wyre Landscape Assessment & Fluvial Audit</p> <p>Churchtown Flood Action Group - Churchtown Bund</p> <p>Forest of Bowland AONB - Peatland restoration</p> <p>Garstang Community Flood Action Group</p> <p>Lancashire Council - flood risk mitigation and management</p>
Education and Engagement	Misconnections Private Sewage Treatment Works Increase understanding of natural processes Intellectual access to rivers.	<ul style="list-style-type: none"> -Increasing awareness of misconceptions in residential properties and businesses. -Septic Tank awareness and education on correct maintenance. -Work with local organisations and schools to increase awareness of rivers and natural processes. -Work with local flood action groups. -Contractor training (farm advice passed on to contractors and developers). -Target farm and landowner engagement. -Briefings for local authorities and planning departments. -Story board depiction of big issues of Wyre. 	Entire Catchment	<p>Wyre Coast and Countryside Service</p> <p>Garstang Millenium Green- open green space, managed by volunteers</p>
Blue Sky Projects	Water Quality Agri- Environment Schemes Funding	<ul style="list-style-type: none"> -Novel phosphate removal. -Payment for eco-system services - public payment for public goods. -Medium term plan to cover all capital projects for WFD related improvements. -Delivery of "Mid" and "Upper" Wyre BioBlitz's as part of a three year cycle to incorporate Wyre Estuary BioBlitz. -"Lost Catchment" - Rewetting and NFM feasibility study. -Design and deliver monitoring projects on water quality. -Contribute to upcoming Local Nature Recovery Strategy and Biodiversity Net Gain developments. -Increase contribution to Our Future Coasts. Landscape Recovery Project in Brock and Calder. 	Entire Catchment	<p>DEFRA</p> <p>New Environmental Land Management Schemes</p>

Table 4 Higher level actions for the Brock and Tributaries Operational Catchment as of March 2024.

Theme	Issue	Interventions required	Priority Locations	Projects being delivered by other organisations
Water Quality	Point Source Pollution Diffuse Pollution Soil Loss Erosion Road Runoff Bathing Water Quality	<ul style="list-style-type: none"> -Farm advice. -Improvement of farm infrastructure and land management. -Promotion of farm wetlands as sustainable means of dealing with yard runoff. -Increasing awareness of misconnections in residential properties and businesses. -Septic Tank awareness and education on correct maintenance. -Restoration of natural processes to watercourses in areas where previous dredging and canalisation has taken place. -Work with partners to develop study to assess the impacts of inputs from M6, M55 and A6. -Work with EA/UU to monitor & report CSO discharges. -Lowland peatland Projects. 	Woodplumpton Brook, Barton Brook, Brock	<p>Catchment Sensitive Farming Call of Nature Environment Agency Road Runoff Study Barton</p> <p>Brook has a WFD driver for P so the site is getting a 0.5mg/l P consent. Reg date is 31/03/20</p> <p>Whittingham Cottage has a supply and demand driver. Small treatment works to be closed and flows to be diverted into the nearby network – completion date is 31/03/19</p> <p>CSO Monitoring (UU)</p>
Water Quantity		<ul style="list-style-type: none"> - No evidence to show that there are issues with water quantity within this operational catchment. 		
Habitat Quality	Biodiversity - Aquatic invertebrates Invasive Non-Native Species Lack of instream habitat Lack of spawning habitat for fish.	<ul style="list-style-type: none"> -Creation of riparian buffer strips. -Woodland creation. -Wetland creation/restoration. -INNS Strategy for Himalayan Balsam and Giant Hogweed. -Installation of large woody material, trailing cover and woody deflectors into watercourses. -Returning heavily modified watercourses to paleochannels or promoting a return to natural processes. 	Barton Brook, Woodplumpton Brook, New Draught Brook D/S M6	
Connectivity	Barriers to migration Habitat Corridors	<ul style="list-style-type: none"> -Weir removal (Small weirs on tributaries). -Fish passes or easements (Large weirs which cannot be removed). -Work with Canal and Rivers Trust to develop action plan for Brock, Barton Brook and Woodplumpton Brook Weirs. -The creation of wildflower, grassland, hedgerow and woodland habitats in areas such as road verges, public open space and wastelands 	Brock, Barton Brook, Woodplumpton Brook	
Flood and Coastal Erosion Risk Management	Peatland habitat degradation Fluvial Flooding Surface Water Flooding	<ul style="list-style-type: none"> -NFM interventions (leaky dams, offline ponds, wetlands, riparian bufferstrips, tree planting). -Investigate scope for any further peat restoration projects (Brock). -Take part in consultations on housing developments within north Preston and Woodplumpton Brook catchment to ensure that increased surface water runoff is managed correctly. -Work with EA Asset Maintenance teams to integrate habitat creation/restoration into management of watercourses. -Work with local flood action groups. 	Brock, Woodplumpton Brook, Barton Brook, Bleasdale Estate	Fair Snape Fell – Peat Restoration – Forest of Bowland AONB

Education and Engagement	Misconnections, Private Sewage Treatment Works Increase understanding of natural processes Intellectual access to rivers.	<ul style="list-style-type: none"> -Increasing awareness of misconnections in residential properties and businesses. -Septic Tank awareness and education on correct maintenance. -Work with local organisations and schools to increase awareness of rivers and natural processes. 	Entire Catchment	Call of Nature Project
Blue Sky Projects	Water Quality Lack of peatland	<ul style="list-style-type: none"> -Phosphate investigation and delivery of complete sub-catchment project to address results. -Expansion of AONB peatland restoration on large scale, carbon sequestration. 	Woodplumpton Brook	

Table 5 Higher level actions for the Fleetwood and Tributaries operational catchment as of March 2024.

Theme	Issue	Interventions required	Priority Locations	Projects being delivered by other organisations
Water Quality	Point Source Pollution Diffuse Pollution Soil Loss Erosion Road Runoff Bathing Water Quality	<ul style="list-style-type: none"> -Farm advice. -Improvement of farm infrastructure and land management. Promotion of farm wetlands as sustainable means of dealing with yard runoff. -Increasing awareness of misconnections in residential properties and businesses. -Septic Tank awareness and education on correct maintenance. -Restoration of natural processes to watercourses in areas where previous dredging and canalisation has taken place. -Work with partners to develop study to assess the impacts of inputs from road drains. -Work with EA/UU to monitor & report CSO discharges. -Investigate thermal pollution of Hillylaid. 	Royles Brook, Hillylaid Pool, Lords Brook, Thistleton Brook, Main Dyke	Catchment Sensitive Farming Call of Nature Elswick WwTW discharging into Thistleton Brook – 1.5 mg/l P limit – Reg date is 31/12/21 Inskip WwTW discharging into Lords Brook – 3 mg/l P limit and a 4mg/l ammonia limit – Reg date is 31/12/21 CSO Monitoring (UU)
Water Quantity	Abstraction	<ul style="list-style-type: none"> -Take part in consultations on housing developments (e.g., Thornton) to ensure that increased surface water runoff is managed correctly. 		
Habitat Quality	Biodiversity - Aquatic invertebrates & Fish Invasive Non-Native Species Lack of instream habitat Lack of spawning habitat for fish.	<ul style="list-style-type: none"> -Creation of riparian buffer strip. -Woodland creation. -Wetland creation/restoration. -INNS Strategy for Himalayan Balsam, Giant Hogweed, Japanese Knotweed and Rosa Rugosa. -Installation of large woody material, trailing cover and woody deflectors into watercourses. -Returning heavily modified watercourses to paleochannels or promoting a return to natural processes. -Analyse the effect of industrial processes and mitigate negative impacts. -Investigate and advertise opportunities for private investment. -Habitat suitability investigations. -Lowland peat and saltmarsh restoration projects. 	Lords Brook, Thistleton Brook, Hillylaid Pool, Main Dyke, Royles Brook	Saltmarsh Carbon Code Project
Connectivity	Barriers to migration Habitat Corridors	<ul style="list-style-type: none"> -Delivery of fish easements within culverts. Scope and develop daylighting projects of culverted watercourses. -Eel passage measures on Tidal Flaps. -The creation of wildflower, grassland, hedgerow and woodland habitats in areas such as road verges, public open space and wastelands. -Identification of other areas of SSSI or AONB to expand and facilitate connectivity. 	Lords Brook, Thistleton Brook, Hillylaid Pool, Main Dyke, Royles Brook	

Flood and Coastal Erosion Risk Management	Fluvial Flooding Surface Water Flooding	<ul style="list-style-type: none"> -NFM interventions (leaky dams, offline ponds, wetlands, riparian bufferstrips, tree planting). -Take part in consultations on housing developments to ensure that increased surface water runoff is managed correctly. -Work with EA Asset Maintenance teams to integrate habitat creation/restoration into management of watercourses. -Work with local flood action groups to develop action plans for surface water flooding. -Develop and deliver surface water management project for Thornton. -Urban NFM project (feasibility and development). -Integrate finance options for coastal investment (e.g., coastal impacts of upstream investment). 	Hillylaid Pool, Royles Brook, Main Dyke	Management Plan – Wyre Strategic Flood Risk Assessment Environment Agency – Rossall Coastal Defence Scheme
Education and Engagement	Misconnections, Private Sewage Treatment Works, discharges from industry Increase understanding of natural processes Intellectual access to rivers.	<ul style="list-style-type: none"> -Increasing awareness of misconnections in residential properties and businesses. -Septic Tank awareness and education on correct maintenance. -Work with local organisations and schools to increase awareness of rivers and natural processes. -Continue to be a member of the Marine Monitoring Group for the Halite Gas Storage Project. -Develop River Care group for urban watercourses. -Continue the delivery of Wyre Estuary BioBlitz's on a three year cycle. -Engage with housing developers (suDS and surface water management options). -Increase awareness of the human impacts on saltmarsh and its role as a protected landscape. -Highway drainage and role within Local Authorities water strategies. 	Entire Catchment	Call of Nature Project Wyre Waters Catchment Partnership Estuary Group
Blue Sky Projects	Engagement & Access	<ul style="list-style-type: none"> -Environment centre at Wyre Estuary Country Park. To incorporate research laboratories and public engagement lecture theatre. -Creation of a nature reserve to promote birds. -Biometric profiling. -Research opportunities into the impacts of Climate Change on wildlife including macro and micro-invertebrates. -Offline storage- education on value of land, filling in ponds etc. -Solidify position on BNG to align with Project deliveries. 	Hillylaid Pool	

Table 6 Higher level actions for the Pilling, Cocker, Overton Dyke – Outer Lune Estuary operational catchment as of March 2024.

Theme	Issue	Interventions required	Priority Locations	Projects being delivered by other organisations
Water Quality	Point Source Pollution Diffuse Pollution Soil Loss Soil Management Bathing Water Quality	<ul style="list-style-type: none"> -Farm advice. -Improvement of farm infrastructure and land management. Promotion of farm wetlands as sustainable means of dealing with yard runoff. -Increasing awareness of misconnections in residential properties and businesses. -Septic Tank awareness and education on correct maintenance. -Restoration of natural processes to watercourses in areas where previous dredging and canalisation has taken place. -Work with EA/UU to monitor & report CSO discharges. 	Wardleys Pool, Pegs Pool, Grange Pool,	
Water Quantity	Abstraction via industry	<ul style="list-style-type: none"> - Ensure sustainable abstraction of water for industry use with UU. 	Entire Catchment	

Habitat Quality	<p>Biodiversity – Aquatic invertebrates & Fish Invasive Non-Native Species and biosecurity Lack of instream habitat Lack of spawning habitat for fish. Lack of developed lowland peat</p>	<p>–Creation of riparian buffer strips. –Woodland creation. –Wetland creation/restoration. –INNS Strategy for Himalayan Balsam, Giant Hogweed, Japanese Knotweed and Rosa Rugosa. –Installation of large woody material, trailing cover and woody deflectors into watercourses. –Returning heavily modified watercourses to paleochannels or promoting a return to natural processes. –Produce more detailed map of lowland peat areas. –Increase wetland areas (saltmarsh, peatlands). Hedgerow creation.</p>	Wardleys Pool, Pegs Pool, Grange Pool	
Connectivity	<p>Barriers to migration Habitat Corridors</p>	<p>–Eel passage measures on Tidal Flaps. –Assess opportunities to improve smelt movement and breeding. –The creation of wildflower, grassland, hedgerow and woodland habitats in areas such as road verges, public open space and wastelands. –Hedgerow monitoring scheme.</p>	Wardleys Pool, Pegs Pool, Grange Pool	
Flood and Coastal Erosion Risk Management	<p>Fluvial Flooding Surface Water Flooding Lack of peatland Increasing development</p>	<p>–NFM interventions (leaky dams, offline ponds, wetlands, riparian bufferstrips, tree planting). –Take part in consultations on housing developments to ensure that increased surface water runoff is managed correctly. –Work with EA Asset Maintenance teams to integrate habitat creation/restoration into management of watercourses. –Work with local flood action groups to develop action plans for surface water flooding. –Peatland restoration. –Set up farm advisory service supporting landowners, providing information on the alternative use of wetlands.</p>	Wardleys Pool, Pegs Pool, Grange Pool	Management Plan – Wyre Strategic Flood Risk Assessment
Education and Engagement	<p>Misconnections, Private Sewage Treatment Works, discharges from industry Increase understanding of natural processes Intellectual access to rivers.</p>	<p>–Increasing awareness of misconnections in residential properties and businesses. –Septic Tank awareness and education on correct maintenance. –Work with local organisations and schools to increase awareness of rivers and natural processes. –Continue to be a member of the Marine Monitoring Group for the Halite Gas Storage Project. –Continue the delivery of Wyre Estuary BioBlitz's on a three year cycle –Hedgerow monitoring scheme. Enlist engagement officer.</p>	Entire Catchment	Call of Nature Project Wyre Waters Catchment Partnership Estuary Group
Blue Sky Projects	<p>Climate change Connectivity</p>	<p>–Further involvement in 'Our Future Coasts' through saltmarsh restoration etc. –Develop innovative agricultural wetland programme. –Engage in Local Nature Partnership (Morecambe Bay, Lune Rivers Trust etc).</p>	Fleetwood Trib Operational Catchment	Our Future Coasts Partnership Living Seas North West- The Wildlife Trusts

Table 7 Higher level actions for the Northwest Transitional and Coastal Waters as of March 2024.

Theme	Issue	Interventions required	Priority Locations	Projects being delivered by other organisations
Water Quality	Point Source Pollution Diffuse Source Pollution	<ul style="list-style-type: none"> -Novel pollution study. -Shell fisheries Project. -Gain private finance for Bathing Waters Project. -Assess and monitor the impacts of new housing developments and existing caravan sites, holiday parks etc. -Work with EA/UU to monitor & report CSO discharges. -Work with local industry to ensure that discharges to the Wyre are working at consented levels and are improved where necessary. -Delivery of projects within the bathing water catchments and beyond to reduce the amount of faecal matter which enters watercourses and thus is present in bathing waters. 	All	OFC
Water Quantity	Groundwater Recharge	<ul style="list-style-type: none"> -Understanding the impacts on the Fylde aquifer. -Design projects that benefit groundwater recharge. 	Wyre Lane	UU EA- Project Groundwater
Habitat Quality	Biodiversity Habitat linkage Invasive Non-Native Species Marine Litter and Microplastics	<ul style="list-style-type: none"> -Work with partners to promote, develop and/or deliver works to restore coastal and intertidal habitats. -Strategy for breeding waders through grassland and soil management. -Reduction in recreational disturbance. -INNS Strategy for Himalayan Balsam, Giant Hogweed, Japanese Knotweed and Rosa Rugosa. Work with Northwest IFCA to identify and educate stakeholders on key marine INNS within this area. -Work with partners to develop and deliver a coastal and estuarine juvenile fish survey programme to understand the importance of the estuary to various fish species. -Develop and deliver a project to deploy an acoustic monitoring array to monitor migrations of BAP species such as; Atlantic salmon, sea trout, European eel, european smelt and river lamprey. -Continue to deliver the Knott End beach clean and work with LOVEmyBEACH to develop beach clean groups on the Fylde Coast. 	Morecambe Bay, Wyre TraC	<p>NWIFCA INNS Programme LOVEmyBEACH - Beach Care Programme Dynamic Dunescapes - Wyre Dunes Group OFC- Restoration of habitats</p>
Connectivity	Barriers to migration Habitat linkages	<ul style="list-style-type: none"> - Eel passage measures on Tidal Flaps. - Study designed to assess the impact of Tidal Flaps on juvenile fish. - Habitat connectivity study on coastal fringe. 	Morecambe Bay, Wyre TraC	
Flood and Coastal Erosion Risk Management	Coastal Flooding and Erosion	<ul style="list-style-type: none"> -Beck management. -Continue to work with the Wyre Beach Management Group to provide advice and guidance. -Promote the role of saltmarshes and sand dunes in coastal protection. -Continued monitoring of sea level rise and surface water flood rise. 	Morecambe Bay, Wyre TraC	Wyre Beach Management Project, Hambleton Flood Defence Scheme, Shoreline Management Plans - Cells 11b & 11c
Education and Engagement	Intellectual access to coastal and estuarine habitats.	<ul style="list-style-type: none"> -Additional engagement within schools. -Engagement of deprived communities. -Continue to be a member of the Marine Monitoring Group for the Halite Gas Storage Project. -Continue to deliver "Ecology for all" courses across the habitats of the Wyre Estuary. -Continue the delivery of Wyre Estuary BioBlitz's on a three-year cycle. -Work with Lancashire Wildlife Trust to assist in the delivery of the "Living Seas" project. 	All	<p>Call of Nature Project Wyre Waters Catchment Partnership Estuary Group Living Seas Project - Lancs Wildlife Trust LOVEmyBEACH Beach Care IFCA- Communication and engagement</p>
Blue Sky Projects	Engagement & Access Biodiversity	<ul style="list-style-type: none"> -Private finance coastal project. -Improved engagement with fisheries organisations. -Environment centre at Wyre Estuary Country Park. To incorporate research laboratories and public engagement lecture theatre. -Creation of a nature reserve to promote birds. -Continue the delivery of Wyre Estuary BioBlitz's on a three-year cycle. -Fleetwood/Thornton Intertidal Project - Development of coastal NFM measures and use of existing infrastructure to create intertidal habitats. 	Morecambe Bay, Wyre TraC	Rossall radar-based nearshore monitoring system

Appendices

Appendix A

Details of data and evidence usage within the WWCP.

Data and Evidence

The use of data and evidence to inform our project delivery strategy is paramount, it is highly unlikely that funding providers will commit to funding projects which do not have at least some form of data or evidence to support the application for funding. As a conservation charity it is often difficult to obtain our own data to support funding applications. As a matter of course we make use of the CaBA data packages, of which there are four versions. These contain a wide range of data and evidence about the Wyre Catchment and are supplied by the The Rivers Trust.

CaBA Data Packages

Wyre Rivers Trust has made constant use of the data which has been provided in the CaBA data packages. The use of GIS data has been paramount to the success of delivery across the Wyre Catchment since 2014.

Local Data and Evidence

Since 2014 Wyre Rivers Trust has been collecting data at most of the project sites that it has worked at. The data and evidence which has been collected will be uploaded to Wyre Rivers Trust Catchment Data Portal. Where public funds have been received for the completion of the project it will be uploaded as soon as is feasible, where private funding has been received it will be uploaded following the approval of the funder. Data collected includes; Invasive Non-Native Species locations, fish survey data (all fish data), aquatic invertebrate data, flow data, bacteriological and general water quality data. Data that has been collected as part of engagement events is also available, this includes data collected during the 2015, 2018 and 2021 BioBlitz events and the 2016 World Oceans Day event. Where possible we will incorporate data and evidence which is provided by members of the WWCP, although this will require the creation of a data and evidence sharing agreement.

Derived Data

Derived data is that which aids in the understanding of the Wyre Catchment and allows us to prioritise the delivery of projects effectively. Derived data is effectively that which is the result of adding a number of datasets together to create a model which can be simple or complex. Good examples include SCIMAP, our Tidal Wyre prioritisation model, ecosystem services mapping or NFM prioritisation maps. SCIMAP data for the Wyre Catchment is available at [data portal](#), it indicates the diffuse pollution risk within the Wyre Catchment and has been widely applied by rivers trusts and other organisations. Other derived datasets will be added to the catchment data portal in due course.

Sharing Platforms and Data and Evidence Agreement

Allowing the members of the Wyre Waters Catchment Partnership, the local communities of the Wyre Catchment and a wider audience to view the data which is available for the Wyre Catchment is very important. By allowing access to data and evidence we are promoting intellectual access to the catchment and allowing interested parties to gain a greater knowledge of their catchment. It also allows us to promote the projects that we have delivered and allows us to demonstrate the impact of those projects.

For information relating to data licensing and sharing, please see the licensing statement which is attached to each dataset.

Appendix B

Catchment Partner contact details

Wyre Rivers Trust: Host	https://wyriverstrust.org/
Abbeystead Estate	https://www.grosvenor.com/rural-estates/abbeystead-estate-Oefbdbbf9a039ef19e2f4dc6b55a1568
Catchment Sensitive Farming	https://www.gov.uk/guidance/catchment-sensitive-farming-reduce-agricultural-water-pollution
Churchtown Flood Action Group	https://en-gb.facebook.com/Churchtown.flood.action.group/
Environment Agency	https://www.gov.uk/government/organisations/environment-agency
The Forest of Bowland National Landscape	https://www.forestofbowland.com/
The Friends of Garstang Walking Festival	https://www.wyre.gov.uk/garstangwalkingfestival
Garstang Millenium Green Trust	http://www.garstangmillenniumgreen.org.uk/
The Lune and Wyre Fisheries Association	Not available
The Royal Society of Biology	https://www.rsb.org.uk/
Wyre Council	https://www.wyre.gov.uk/
Wyresdale Anglers	https://www.wyresdale-anglers.co.uk/
United Utilities	https://www.unitedutilities.com/

Plan revision history

Date	Revision
10/2024	v.1.4
11/2022	v.1.3
2019	v.1.2

Glossary of terms

Brock and Calder Landscape Recovery Project (BCLR)

Combined Sewage Overflows (CSO)

Invasive Non-Native Species (INNS)

Marine Conservation Zone (MCZ)

Site of Specific Scientific Interest (SSSI)

Significant Water Management Issues (SWMI)

Special Area of Conservation (SAC)

Special Protection Area (SPA)

The Wyre Water Catchment Partnership (WWCP)

Water Framework Directive (WFD)

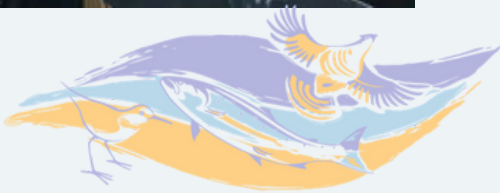
Wyre Rivers Trust (WRT)



VOLUNTEER WITH US

Interested in **making a difference** to your community, **getting outdoors**, and **learning a new skill**?

Volunteer with us at Wyre Rivers Trust!



WYRE RIVERS TRUST
"from Bowland to Bay"

- ✓ Leaky dam construction
- ✓ Brash bundling
- ✓ Tree and hedgerow planting
- ✓ Balsam bashing
- ✓ Beach cleans

