RIBBLE RIVERS TRUST

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PEAT RESTORATION
How rivers will benefit from improved moorland

NEW WOODLANDS FOR WATER
Volunteers help plant 15,000 trees

WATER FRIENDLY FARMING
Farmers working together for a better environment

JOURNEY THROUGH THE CATCHMENT
A guide to our projects from source to sea

RECONNECTING HABITAT - IMPROVING BATHING WATERS - WETLAND CREATION

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Welcome

CEO Jack Spees

Pheeew!!!! What a year… 2017 saw the Trust deliver the most work in the 19 years since the Trust began. After two years of planning and development it has been a pleasure to see the work happening, particularly because it has been across the whole catchment, covering a wide range of types of work, focused on the key issues, and in the places that will benefit wildlife and importantly people. All this has been possible due to the support of National Lottery players through the Heritage Lottery Fund. This support has allowed us to galvanise Ribble Life, our Catchment Based Approach (CaBA) partnership, quite fitting that the project is called Ribble Life Together!

WORKING IN PARTNERSHIP

Through the partnership we have been able to attract funding to support Ribble Life Together, but also deliver activities in locations that otherwise we couldn't have. This highlights the importance of partnership working and that we are stronger together.

It was fantastic to see so many partners and supporters attend the Launch event for Ribble Life Together in April 2017. It showcased the various activities that we are delivering over the three and a half years of the project. One of the highlights of the launch was hearing about experiences from Sir Tom Finney Community High School that helped shape our project, and also from one of our dedicated volunteers Lorraine Ritchen-Stones. Both were quite emotional, and highlighted the importance of what we do and how it affects people, both the outcomes of our work, but the involvement in doing our work.

A BIG THANK YOU TO OUR MEMBERS, VOLUNTEERS AND SUPPORTERS

We are very lucky to have such keen members and volunteers, and their support and involvement is invaluable. To that end, in 2018 we are planning a barbeque for the late spring and early summer to say thank you, and also to encourage a few new volunteers to get involved by seeing how it can be a rewarding experience, socially, mentally, physically and environmentally!

Will you see a kingfisher this year? Our projects have a common aim: to help you see more wildlife.

LOOKING TO THE FUTURE

2017 was also quite a strange year for me. At times I didn't really get much chance to take in the start of the Ribble Life Together project and the achievements in the first year. Why you ask? I am already having to think about the future!

Ribble Life Together will deliver huge amounts of improvements and benefit, but it is not the end, there is still so much to be done to improve the Ribble Catchment and realise the benefits it can provide to visitors and the communities within. As such, future planning has begun, which has been made complicated by Brexit, largely due to uncertainty around funding, legislation, and motivation for the environment. We have been fortunate in securing our first significant amounts of EU funding in 2016 and 2017, but Brexit is very likely going to vastly reduce potential sources of funding available to make the catchment better in the future. But we won't give up, and with your support we will keep on making the Ribble Catchment a better place for people and wildlife.

I hope you enjoy this newsletter and your journey through the catchment!

To find out more about membership, turn to the back page.

Our journey through the Ribble Catchment begins at the headwaters of the River Ribble in the Yorkshire Dales National Park, where two streams, Cam Beck and Gayle Beck, converge to form a nascent River Ribble.

The moorland that envelops the two streams is degraded due to excessive peat erosion caused by historic draining and land management and this has impacted on the health of our rivers in several ways.

Cam Fell Peat Restoration

Drainage channels, known as grips, were dug decades ago on moorlands throughout the country to bring what was perceived as 'unproductive land' into agricultural production by increasing drainage for sheep grazing. Over the years, erosion has caused grips to widen and deepen, resulting in a loss of valuable peat and blanket bog habitat.

The influx of peat sediment into our becks has affected the water quality and impacted on invertebrate and fish populations, particularly during the spawning seasons when fine sediment can choke the eggs.

The rapid moorland drainage has also caused the becks' hydrology to become uncharacteristically 'flashy', leading to over-widened, eroded channels with a shallow depth of water for most of the year round. This constitutes poor habitat for aquatic wildlife because shallow water can warm rapidly during summer months, raising the water temperature to a level that fish cannot tolerate, resulting in fish kills.

Aquatic wildlife living in shallow becks is vulnerable to pollution becasue the dilution rate is reduced. Shallow water also leaves fish exposed to predators. Furthermore, the speed at which the water level can rise poses a flood risk to people living downstream.

During the summer of 2017, more than 25km of grips were filled in and reprofiled with a grant from Natural England. The steep sides of the grips, which were vulnerable to erosion, were flattened by diggers to create a more resistant, graduated slope and the bare exposed peat was re-turfed.

Healthy moorland acts like a natural sponge. These restoration works will enable a greater volume of rainfall to be stored and released at a steadier rate, reinstating a more natural hydrology in the becks and improving their water quality to support greater numbers of fish and invertebrates.

Cam Beck: over-widened, shallow channel

Drone image showing locations of gravel deposits before the weir removal

Selside Weir Removal

Coming down from the fells and arriving at Gayle Beck, we find a loose stone structure crossing the channel. Although not a significant barrier in terms of its size, its impact on fish was considerable because of its location within the catchment's headwaters, which crucially act as nursery streams for salmon and trout.

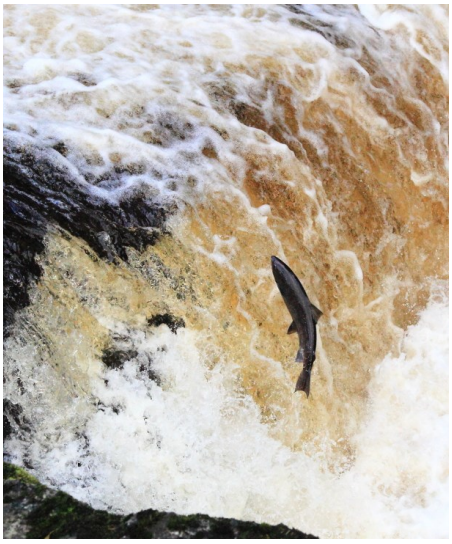
Selside weir was made from un-set cobbles and boulders topped with stone slabs. An archaeological survey found that it once formed part of an old field boundary but was no longer in use. A fish survey determined that more salmon, trout and bullhead were found downstream of the structure than upstream, indicating that it was interfering with the natural migration of fish.

As well as impeding fish movement, the weir was also affecting the transport of gravel along the riverbed. Gravel is crucial to spawning salmon and trout as they lay their eggs in this type of substrate. With the beck downstream of the weir starved of gravel, the amount of spawning habitat for fish was limited.

The weir was removed in June 2017 as part of the Ribble Life Together project, reconnecting the upstream and downstream habitat. To monitor resulting changes in gravel movement, students from Durham University surveyed a 400m stretch of the beck by drone before the weir was removed to create a 3D model of the channel. It is hoped that over time, riffles and pools will naturally begin to form downstream of the weir, increasing the amount of spawning habitat for fish and boosting their populations.

Watch the video! Search YouTube for 'Selside Weir Removal by Drone'.

Selside Weir before and after removal



Stainforth Foss

Just north of Settle, the River Ribble cuts across the North Craven Fault and tumbles down an impressive series of cascades know as Stainforth Force, or Stainforth Foss locally.

This local beauty spot is a popular picnic destination in the summer and the famous Ribble Way footpath passes right beside it.

Immediately upstream of the foss is a picturesque old packhorse bridge that dates back to circa 1675. Under the care of the National Trust since 1931, it's one of the most photographed bridges in the catchment and was the subject of the winning entry in our 2017 photography competition run as part of the Ribble Life Together project.

From mid-October to mid-November, salmon can be seen leaping the cascades as they make their annual journey upstream to the catchment's headwaters to spawn.

The salmon run is one of the most remarkable journeys in the animal kingdom, epitomising the phrase 'survival of the fittest'. Atlantic salmon cease to feed once they enter the freshwater environment and so must rely on their energy reserves to battle their way upstream against the flow of water, overcoming natural and man-made obstacles, tolerating pollution and evading predators.

Only the strongest survive the journey through to spawning and only around 5% will make it back out to sea to repeat the journey for a second year. It is therefore crucial that our rivers provide optimal habitat if the Atlantic salmon is to survive as a species.

Photo by Peter Knight, winner of our photography competition in 2017

Ribblesdale Farmers' Group

In early 2017, farmers with land in the Long Preston Deeps area formed a group to look at ways to deliver natural flood risk management projects. The projects aim not only to reduce the risk of flooding downstream, but also improve the water quality of the River Ribble and enhance their collective 2,600 hectares of farmland for both wildlife and their businesses.

The formation of the Ribblesdale Farmers' Group followed on from successes with the Long Preston Floodplain Project (see opposite), which has carried out various schemes to allow the River Ribble to take a more natural course and reconnect it with its floodplain, as well as restoring wetland habitat for wading birds.

Workshops and training events are being run for the farmers to improve their knowledge and awareness of how to derive the most benefit from the land without compromising the natural value of this unique part of the catchment. The group, totalling 25 local farmers, has so far been learning about the importance of good soil structure and nutrient management.

Ribblesdale Farmers' Group is being facilitated by the Yorkshire Dales Millennium Trust, with support from the Ribble Trust and three years of funding from the European Union via the Countryside Stewardship's Facilitation Fund. It is hoped that working together as a group will enable better access to funding for capital projects and therefore have a greater impact on the environment.

Long Preston Deeps (John Bentley—Alamy Stock Photo)

Long Preston Flood Banks

Travelling south down the River Ribble past Settle, we arrive at a unique part of the catchment called Long Preston Deeps. Despite its designation as a Site of Special Scientific Interest (SSSI), the habitat is poor in places.

Sandwiched between the Yorkshire Dales and the Forest of Bowland, the Long Preston floodplain has been designated as an SSSI because of the unique interaction between the river and the land surrounding it, creating landscape features that are particularly important to breeding wading birds such as snipe, lapwing, curlew and oystercatcher.

Flooding is a natural river process and has occurred regularly at Long Preston Deeps. As such, flood embankments have been constructed by farmers seeking to improve the drainage of their land to increase production. Since the land is now wetted less frequently, rare habitat has been lost and with it, a proportion of the wildlife that relies on this type of environment.

The Long Preston Floodplain partnership has been working to improve the area for a number of years. It comprises a range of stakeholders and interest groups, including the Yorkshire Dales Millennium Trust, RSPB, Environment Agency, Natural England and the Ribble Rivers Trust. The partnership's aim is to improve the condition of the SSSI to encourage a greater biodiversity.

The project partners identified an eroded flood embankment towards the lower extent of the floodplain. After negotiations with the landowner, funding was secured from the Environment Agency to reposition a 500m section of the damaged flood bank 25 metres further back from the river's edge.

The relocation of the flood bank will result in a sizeable area of land that will readily flood, helping some wetland habitat to become re-established. Fencing will be erected to allow the new vegetation to mature before livestock are permitted to graze the area. This allows the farmer to retain productive land. The embankment will also be planted with 300 low-crown height trees to provide stability and additional habitat.

Not only will the works benefit wildlife, they will also provide an element of floodwater storage during high flows, reducing the risk of flooding downstream.


The flood bank being relocated

Our journey through the catchment takes us across the county border as the River Ribble flows into Lancashire.

Skirting along the edge of the Forest of Bowland, we leave the Ribble behind for a while as we explore some of the tributaries in this Area of Outstanding Natural Beauty (AONB).

The first of these tributaries is the Skirden Beck sub-catchment, whose unique topography has been shaped by glaciation. With incised channels and glacial terraces, the becks are disconnected from their floodplains, which means they rise rapidly during periods of heavy rainfall, posing a flood risk to villages downstream and washing away fish eggs during spawning seasons.

Skirden's Woodlands

Trees provide countless benefits for the ecology and health of a river catchment, not only within the watercourses themselves, but also the wider environment. These include;

- More varied and abundant habitat for wildlife, promoting biodiversity
- A means of absorbing carbon dioxide from the atmosphere, reducing the rate of climate change
- Casting of shade over watercourses, keeping the water temperature cooler for aquatic wildlife on hot days
- Improved soil structure, allowing more rainfall to be absorbed and released slowly into watercourses
- Reduced surface run-off, meaning less soil, nutrients and pollutants are washed into watercourses.

Using GIS mapping software, we created a tool which allows us to prioritise where new woodlands should be planted in order to derive the greatest benefit for rivers. The Skirden catchment, owing to its undulating topography, incised channels and lack of tree cover, was highlighted as a priority.

New woodlands were agreed with landowners on four farms, resulting in 13,700 new native trees being planted across an area of nearly nine hectares within the Skirden catchment.

Working with the Forest of Bowland AONB and the RSPB, the new woodlands were carefully designed so as not to disrupt existing pockets of important plant assemblages or wading bird habitat.

The trees have been planted as part of the Ribble Life Together project and were funded by the Heritage Lottery Fund, Environment Agency, Woodland Trust, and the European Union via the LIFE Integrated Project 'Natural Course'.

Volunteers helped to plant the trees week in, week out, from the start of November 2017 right through the winter, for which we are most grateful.

It is hoped that the new woodlands will encourage more wildlife to the area, improve the water quality of the becks and reduce the likelihood of flash floods, benefitting both the people that live in the area and the populations of fish that spawn in the Skirden catchment.

Skirden's Wetlands

There are various forms that a wetland can take, from ponds and scrapes, to water meadows and upland peat bogs. Each type of wetland has the potential to intercept rainfall and slow the speed at which it runs off the land into rivers. This gives sediment, nutrients and pollutants time to settle out of the water before reaching our rivers and streams. The slower overland flow also reduces the likelihood of flash flooding.

Wetlands aren't just beneficial to rivers either, they're a priority habitat for conservation in their own right, supporting many species of bird, amphibian, insect and mammal.

Wading bird conservation is of particular concern in the Forest of Bowland. According to the RSPB, the numbers of lapwing, curlew, oystercatcher, snipe and redshank have declined significantly over the past decade due to the drainage of agricultural land, resulting in fewer areas for the birds to feed and raise chicks.

Working with the landowners of four farms in the Skirden catchment, ten wetland features will be created as part of the Heritage Lottery funded Ribble Life Together project.

The design and location of each wetland was carefully considered in order to provide the most benefit to wildlife. The creation of small, shallow, irregularly shaped pools with muddy edges will supply wading birds with a rich diet of insect life during the breeding season and hopefully improve their survival rates. The numbers of breeding waders will be surveyed annually by the RSPB.

It is hoped that the new wetlands, combined with the new woodlands, will significantly improve the water quality of the becks within the Skirden catchment so that invertebrate and fish populations may recover.

Hungrill Fish Pass

Hungrill Weir was a stepped, vertical weir located on Hungrill Beck, which is a tributary of Skirden Beck. The weir was originally constructed to create a ford, providing access across the beck for agricultural purposes. Nowadays, the ford enables access to a private dwelling.

It was identified that the structure posed a significant barrier to fish seeking to migrate upstream because of the shallow depth of water at the base of each step, which did not provide fish with sufficient depth from which to jump.

Since removal of the weir was not an option, modifications were made using a combination of loose rocks and timber baffles to create additional steps, each lower than the originals. The design incorporated deeper pools at the base of each step and notches were cut to allow fish of varying size to traverse the structure.

The modifications to Hungrill Weir have meant that the beck's habitat is now better connected. Migratory salmon and trout now have access to a further 4.5 kilometres of potential spawning grounds, which we hope will help to increase fish populations in the Skirden catchment.

Staying within the Forest of Bowland AONB, our journey takes us into the River Hodder catchment, of which the River Loud is a major tributary.

The Hodder and Loud are sourced from the Bowland Fells and flow through agricultural land before converging with the River Ribble near Whalley.

Certain farming practices have had a significant impact on the health of the watercourses in this catchment, so it is important that land management improves to reduce pollution and restore habitat for wildlife.

The River Loud Farmers' Group learn about the RSPB's Bowland Wading Bird Project

Farming in the Forest of Bowland

Diffuse pollution is defined as the release of pollutants from a range of activities that, individually, may have no effect on the water environment, but, at the scale of a catchment, can have a significant impact.

Some rivers and streams within the Forest of Bowland and Pendle Hill areas have been negatively impacted by diffuse pollution from agriculture, which includes faecal matter, sediment, phosphorus, nitrates and pesticides. As a result, the watercourses have been unable to support the diversity and abundance of river wildlife that would be expected in such remote and rural settings.

To help tackle this problem, we've been working with Natural England on their Catchment Sensitive Farming initiative for the past five years, supporting farmers in identifying opportunities and taking action to address sources of diffuse pollution on their land.

Our Farm Advisors arrange a suitable time with the farmer to conduct a thorough survey of their land. The visit is followed up with a written report, known as a Pinpoint Plan, which highlights areas on the farm where improvements could be made and identifies grants that may be available to help the farmer to carry out the works.

Any interventions that are delivered will not only improve the water quality of the rivers and streams, but also contribute to the improvement of bathing water standards at the coast.

A separate grant from Natural England has enabled us to set up and facilitate the River Loud Farmers' Group, which comprises 28 neighbouring farms covering an area of 4,000 hectares in the Forest of Bowland.

The group meets regularly to collectively identify ways in which the water quality of the River Loud and its tributaries can be improved by reducing diffuse pollution from their farms, as well as improving habitat connectivity and biodiversity on their land.

Group members have attended training events and workshops to increase their knowledge of environmental management, including improving their land for wading birds and pollinating insects, natural flood management, soil and nutrient management, hedgerow and boundary maintenance, and Countryside Stewardship applications.

The work carried out by this farmers' group demonstrates that working together at a catchment scale can achieve greater environmental benefits than would be possible if each farm operated in isolation.

High Head Wood

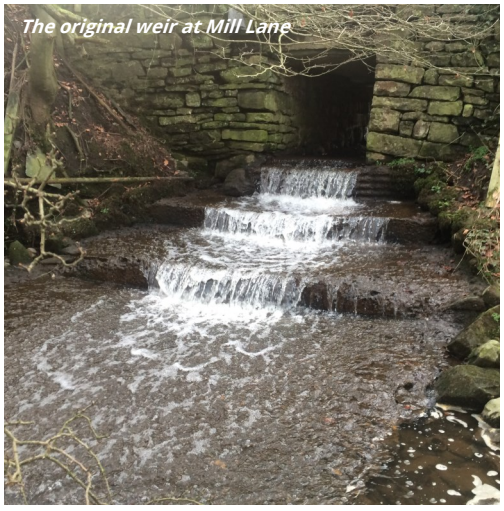
One of the members of the River Loud Farmers' Group identified a suitable area of land for woodland planting near Chipping to help to reduce diffuse pollution in Leagram Brook, a tributary of the River Loud.

Approximately 400m of Leagram Brook was fenced off to stop livestock from gaining access to the watercourse, preventing direct inputs of faecal matter and reducing the amount of soil erosion caused by cattle walking up and down the riverbanks.

The fenced area was planted with 2,000 native trees with the help of volunteers to link existing pockets of woodland, creating a larger area of habitat for wildlife. The works were delivered as part of the Ribble Life Together project.

The woodland will benefit the aquatic wildlife inhabiting Leagram Brook as the trees will intercept surface run-off from the surrounding farmland that may contain pollutants. Intercepting rainfall will also help to reduce the risk of flooding downstream.

Once established, the trees will cast shade over the brook and maintain favourable conditions for fish during hot summer days by keeping the water temperature cooler.



The original weir at Mill Lane

Mill Lane Fish Pass

Also near Chipping, a weir and culvert on an unnamed tributary of the River Loud had been found to be limiting the upstream migration of trout and salmon, which was believed to be contributing to low fish populations within the River Loud Catchment.

Mill Lane Weir is situated at the end of a 50m long culvert on the former site of 'Little Mill', which used to make clay drainpipes. Upstream of the mill was an intricate system of weirs, mill races, sluices and lodges, which were built to supply water to the mill.

Although the mill has now been demolished, some of the structures remain, like this weir and culvert. With a height of over 1m, the weir was a barrier to the natural migration of fish species such as trout and eels, which migrate up this brook.

In June 2017, two extra steps were constructed to reduce the height of each obstacle and make it easier for fish to ascend. The works were delivered as part of the Ribble Life Together project and funded by the Heritage Lottery Fund and Environment Agency.

This fish easement has unlocked a further 5km of potential spawning habitat for fish.

Sabden Weir Fish Pass

Sabden Weir was built in the late 18th century to provide a supply of water to the nearby Sabden Printworks. Having served its purpose, the weir stood redundant, however it continued to restrict the natural migration of fish.

The Ribble Trust always prefers to remove a weir in its entirety as it is the most effective way of enabling fish to migrate. However this is not always an option when the subsequent erosion could pose a risk to buildings, roads and infrastructure, as was the case here in Sabden.

Instead, boulders were set into the existing flat face of Sabden Weir to funnel the flow of water into a zig-zag channel, creating a greater depth of water for fish to swim up. The works were delivered as part of the Ribble Life Together project with funding from the Heritage Lottery Fund and the Environment Agency.

A further 7km of potential spawning habitat has now been unlocked on Sabden Brook, which will hopefully result in an increase in migratory fish populations such as salmon and trout.

Monitoring

Owing to its innovative design, Sabden fish pass was chosen for a discrete investigation to assess its effectiveness in enabling fish to move upstream of the weir.

A total of 41 resident non-migratory brown trout were captured from the brook above the weir. They were given a distinctive marking before being released downstream of the weir.

The natural homing instinct of brown trout resulted in 13 of them successfully using the fish pass to return to their upstream pools. They ranged in size from 31cm adults to 11cm juveniles, demonstrating that the fish pass was effective for all life stages. A further 8 trout were found immediately downstream of the weir having not attempted the pass, while 20 fish moved away from the netting area, either upstream or downstream, evading recapture.


The original weir

Our journey through the catchment returns us briefly to the main River Ribble before we make our way up another major tributary, the River Calder.

The Calder Catchment is characterised by mill towns such as Burnley, Nelson, Colne and Accrington, which were at the forefront of the Industrial Revolution.

Rivers were crucial for supplying water to the various industries and as a result, became heavily modified with the construction of weirs, sluices and mill races.

The industries have since declined and most mills have been demolished, but the in-river structures that have been left behind continue to damage the riverine ecology.

Circular River Walks

As part of the Ribble Life Together project, we've been developing circular walk routes and guides that take in some of our catchment's most scenic and intriguing waterways. The first in the series to be released follows the course of the rivers Calder and Brun around Burnley.

Burnley has a rich industrial heritage and its very existence is intrinsically linked with the presence of the rivers Calder and Brun, which powered the town's mills and factories.

The new 8-mile walking route offers a mix of the cultural and natural heritage of the rivers that have shaped Burnley, contrasting between the urban rivers at the heart of the town and rural streams with fantastic views over the Calder Valley to Pendle Hill.

Many of the Ribble Trust's project sites are incorporated into the walk, including fish passage works that were undertaken as part of the Urban River Enhancement Scheme in 2013/2014 and the more recent Bluebell Wood weir removal (see right). Volunteers have helped to undertake footpath improvements where required.

A further 14 river walks covering different areas of the catchment are in development and will be made available over the course of the 3-year project. As well as paper guides, the routes will be available to download from **ribblelifetogether.org**. An app is also being created that will complement the routes, providing the walker with images, short videos and audio recordings for a fully immersive river experience!

The walks are designed to increase people's access to and enjoyment of rivers and nature, whilst raising awareness of issues that can threaten the health of our rivers, streams and wildlife.


Volunteers improving footpaths

Bluebell Wood Weir Removal


Original weir


Site of weir after removal

Bluebell Wood Weir was situated on the main River Calder upstream from Towneley Park in Burnley. It is believed to have been constructed in the 1960s to help oxygenate the water, which at the time was heavily polluted by water discharging from mines upriver.

The water quality has since vastly improved and the weir was left surplus to requirements. However, it posed a barrier to the natural migration of fish species such as salmon and trout, which migrate up the River Calder to spawn.

In June 2017, the central section of the weir was removed in order to allow fish to pass freely upstream. Being one of the last remaining barriers to fish migration on the River Calder, these works have now given fish access to almost the entire length of the river.

The work was undertaken with a grant from Tesco's Bags of Help Fund, which distributes monies raised from the plastic bag charge. The grant also funded educational visits for school children and guided river walks.

Staying within the Calder Catchment, we head away from Burnley over the edge of the West Pennines towards Accrington.

Several streams flow from the moors and converge in the town, which made Accrington an ideal place to construct mills during the Industrial Revolution.

As the town grew in size, the streams were diverted through underground culverts. Hyndburn Brook finally emerges east of the town and flows north to join the River Calder.


Slate Pits Wetland under construction

Slate Pits Wetland

The Lancashire Wildlife Trust, one of our catchment partners, has been working to improve the upland habitats of the Pennine Moors with funding from the Scout Moor Wind Farm Habitat Enhancement Fund. An opportunity was identified to create a new wetland along the course of a small flush on a hillside above Accrington.

The field offered little ecological value, particularly the watercourse itself, which flowed from an elevated pipe and down through thick rush before disappearing into a culvert beneath a dual carriageway.

During periods of heavy rainfall, the discharge of water was such that a farm track was being eroded. It was agreed that transforming the field into a wetland would not only improve the quality of habitat, but also help to slow the flow of water from the hillside and provide natural flood risk management to benefit the town below.

Funding was granted from the Lancashire Environmental Fund to construct the wetland area comprising one permanent pond, one ephemeral pond and a reedbed.

Ponds are an immensely valuable resource for wildlife, supporting two thirds of all freshwater species. The variation in wetland habitat will encourage a greater diversity of wildlife to the area, such as great crested newt, common frog, and dragonflies. Due to its location on the upland fringe, it is also hoped that breeding wading birds such as snipe and lapwing will use the wetland.

A footpath and viewing platform will be installed at the new wetland to serve as an educational resource for school and community groups, helping to raise awareness of the importance of conserving such habitats and improving water quality in the area.

Oakenshaw Weir Bypass Channel

Following the course of Hyndburn Brook as it meanders through fields away from Accrington, we encounter a steep, 4m high weir posing a complete barrier to fish migration. Its sheer scale called for a more radical design of fish pass.

Oakenshaw Weir was historically constructed to supply water to a print works, however this had long since been demolished.

During the Ribble Trust's annual fish surveys, salmon were discovered at the foot of the weir, but this marked the upper extent of their reach.

The only feasible option to enable fish passage was to excavate a bypass channel around the weir through the adjacent field. It is believed that this area of rough grassland was most likely the original course of the river before the weir was constructed.

Lined with rock and cobbles, the bypass channel was designed to be as natural as possible whilst maintaining a defence against erosion. The whole field was subsequently planted with 1,650 native trees by volunteers.

This project has unlocked almost a mile of good river habitat for migratory fish to repopulate and their numbers will be closely monitored to determine the effectiveness of the bypass channel's design.

A number of well-used public footpaths pass through the area, making Oakenshaw an ideal point of interest for one of the 15 circular river walks that are being developed as part of the Ribble Life Together project.

The project was jointly funded by funded by the Heritage Lottery Fund, Natural Course – an EU LIFE funded project, and the Windfall Fund – a partnership between EnergieKontor and the PROSPECTS Foundation.

Oakenshaw Weir

Volunteers help to plant trees

Our journey through the catchment takes us back down the River Calder to re-join the River Ribble beyond Whalley. The river swells in size, meandering past Ribchester and Brockholes before passing beneath the M6 Motorway and entering the tidal zone.

Here, concerns shift towards the significant impact our rivers have on the coastal environment, not only on marine wildlife, but also the people who enjoy our beaches.

Anything entering the Ribble at this point, whether it's sewage, slurry, pesticides, sediment or litter, will be transported out to sea, with some of it being washed back onto beaches by the incoming tide.


The Ribble Estuary

Commission Air/ Alamy Stock Photo

Tidal Ribble

A grant from United Utilities has enabled us to work with farmers within the tidal zone and deliver interventions that will reduce the amount of pollution entering watercourses. Our neighbours to the north, the Wyre Rivers Trust, also received a grant, and together we hope to have a significant impact on water quality along the Fylde Coast.

One farm situated on Savick Brook near Longridge opted to fence off the watercourse to stop livestock from accessing the brook, preventing direct inputs of faecal matter into the water. The resulting buffer zone was planted with 250 native trees, which will help to reduce the amount of slurry, nutrients and soil being washed off the fields and into the brook during periods of heavy rainfall, to the benefit of both the water environment and the farm business itself.

The farm also constructed a roof over their manure store to help separate 'clean' and 'dirty' water. This reduces the volume of dirty liquid being collected, meaning less time and money spent spreading it on fields and less risk of it polluting the watercourses.

Another farm located on the banks of the main River Ribble at Cuerdale, east of Preston, was losing a significant amount of farmland to riverbank erosion. A hard rock defence wall had been installed by the farmer years ago, however the water had found its way behind the revetment and accelerated the rate of erosion, causing the bank to recede by a further 25m. The erosion also meant that an excessive amount of sediment was entering the river and affecting water quality, both within the river itself and at the coast.

Since the hard revetment had failed to stop the erosion, the farmer was keen to try a soft engineering approach. Using a digger, 150m of the eroding bank was reprofiled to a 40 degree angle and re-turfed, using wooden pegs to keep the turf in place while it established itself (see photos opposite). The angle and smoothness of the slope helps to dissipate the river's energy so that it has less power to erode the bank as it sweeps over it during high flow events.

The original rock wall was removed from the channel to allow the river to flow more naturally. These rocks were transported to another site within the catchment to be used for the construction of a fish easement later this year.

Finally, the riverbank was planted with 2,600 native trees, including willow harvested from Grimsargh Wetlands, a nearby nature reserve, which is currently being restored by volunteers. The trees were planted with the help of Bowland Game Fishing Association and local primary school children, who had been involved in the Trust's 'Rivers in the Classroom' education programme.

Before and after: reprofiling a significantly eroding bank of the River Ribble at Cuerdale.

Volunteers from Bowland Game Fishing Association help plant trees at Cuerdale.

With match funding from the Heritage Lottery Fund, education has been a significant component of the project. Thirteen primary schools within the Tidal Ribble area have already taken part in river conservation activities and more schools are lined up for the programme over the coming year.

Several litter picks have also been undertaken around the lower reaches of the River Ribble, included a well-attended 'Cache in, Trash Out' event, during which avid geocachers helped remove litter whilst indulging in their hobby and seeking out new caches in the area. Many hands make light work, and by partnering with other organisations such as LOVEmyBEACH, Surfers Against Sewage and the Preston Birdwatching & Natural History Society, significant quantities of litter were removed, reducing the amount of harmful plastics entering our oceans and helping to protect marine wildlife.

The Tidal Ribble project is set to complete in March 2018, in which time we will have worked with 20 different farms to improve water quality, as well as engaged with schools and members of the public to raise awareness about the importance of healthy rivers. Ongoing monitoring of streams and coastal bathing waters will indicate the level of impact the project has had on water quality.

Volunteers collect litter from riverbanks near Preston.

What can you do to protect river and marine wildlife?

LOVEmyBEACH, our catchment partners, continue to run fantastic awareness campaigns to help people make small alterations to their lifestyles and improve the marine environment. Here are 5 simple things you can do to help;

1. BIN IT FOR BEACHES

Please, please, please don't drop litter! It finds its way into rivers, gets washed out to sea, harms wildlife and often gets washed back onto beaches, creating an unsightly mess. Keep your litter with you until you find a bin.

2. DOG OWNERS

The same goes for dog poo. Bag it and bin it, especially if you're walking your dog on the beach. Even though the tide washes it away, it's not ok! The bacteria is harmful to paddlers, swimmers and wildlife.

3. SEPTIC TANK OWNERS

Did you know you should get your tank checked annually? If you don't know that it's full, it could be leaking into nearby watercourses, polluting rivers and coastal waters. Visit **www.callofnature.info** for everything you need to know about maintaining a healthy and safe private sewage treatment system.

4. FLUSH ONLY THE 3 P's

Blocked sewage systems overflow into rivers and the sea and heavily pollute the water, killing wildlife. It costs United Utilities £10 million per year to unblock them. Wet wipes are the latest culprit. Even if they say on the pack they're biodegradable, they won't degrade in the time it takes to travel from your toilet to the sewage treatment works. Only flush the 3 P's - pee, poo and paper!

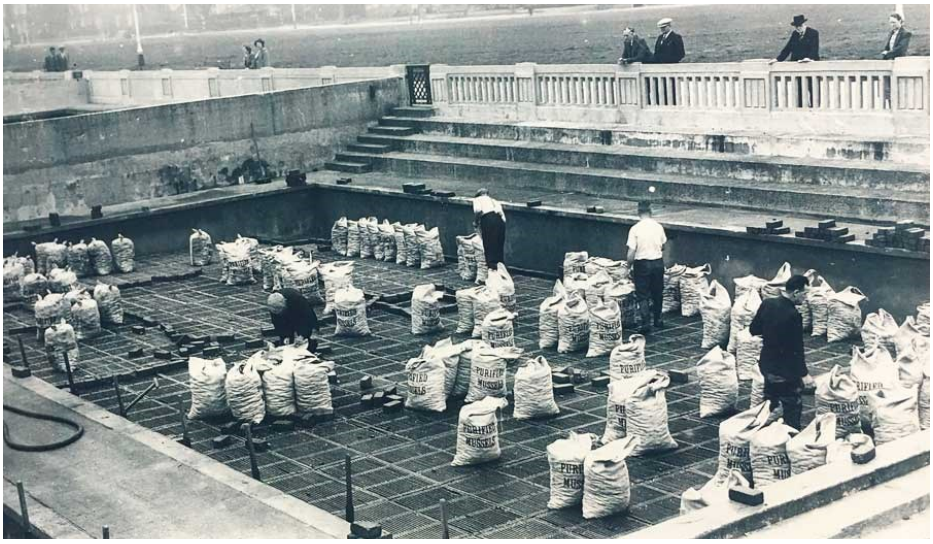
5. LOOK AFTER YOUR DRAINS

Is your washing machine plumbed into the correct drain? Or is dirty water going into a surface water drain that connects directly to the river? Find out more at **www.connectright.org.uk**.

The final stop on our tour of the Ribble Catchment is Lytham, a charming seaside town situated beside the Ribble Estuary.

The water quality of our catchment can have a significant impact on marine life such as corals, fish and shellfish.

The impact was highlighted during a previous year's study when our endeavours to survey smelt numbers failed to return one fish. Smelt were historically caught in their thousands daily from the estuary, however their populations have failed to recover from the over-fishing due to pollution and poor quality habitat. It is a lesson learned therefore that we must protect our rivers, not just for riverine species but for the wider ecosystem.



Lytham Mussel Tank

River pollution was extensive in the early 20th century. Industry was at its peak and environmental protection featured low on the agenda. As a result, our estuaries and coasts suffered greatly from poor water quality.

In 1934, three mussel tanks were constructed on the foreshore at Lytham to wash polluted mussels brought in by fishermen from as far as Morecambe Bay before they were sold at market.

The tanks fell into disuse in the 1940s. One was transformed into a boating club, while another accommodated the RNLI lifeboat station. The third housed a restaurant and nightclub before it burned down in the 1990s, after which the site was paved over by the council, creating a public open space.

Over time, the area deteriorated until in 2010, the Lytham Civic Society embarked on a project to improve the site for public use, whilst keeping the unique beauty spot clear of commercial development.

Seating areas and information boards are being developed to educate visitors about the history of the former mussel tanks and preserve their heritage.

As part of our Ribble Life Together project, a stone mussel sculpture has been commissioned to be installed within the mussel tank. This piece of sensory, tactile art will highlight the historic purpose of the mussel tank and serve to remind the public of how sensitive marine life is to water pollution, and why maintaining good water quality in our rivers, estuaries and coasts is important.

Pupils from Edisford Primary School helped to plant trees in the Skirden Catchment

Education

The Ribble Life Together project has enabled us to enhance our education programme, which aims to engage primary school children in freshwater science. By doing so, we hope that the next generation will develop an appreciation of the catchment's rich natural heritage and inspire in them a sense of responsibility towards its protection.

2017 saw 12 new schools take part in Rivers in the Classroom, alongside many schools who keep coming back for more year after year. Most of these were in the Preston and Longridge areas. Through close interactions with river wildlife, two schools undertook river clean-ups of their local brooks to improve the habitat and encourage others to enjoy and take good care of their waterways. All the children who took part also discovered how they can make simple choices to protect their rivers from a major polluter of the Ribble and the bathing waters along our coast: poo!

The children's knowledge and interest are filtering further to families and beyond. At shows, it has been a delight to meet family members who have caught the enthusiasm for river wildlife and protection from the children. We have also linked schools to other local schools and nurseries to share their passion for local rivers further.

CREATING WOODLANDS FOR THEIR FUTURES

School children and college students have donned their woolly garments and spades and have been a great help in planting trees over the winter. Not only will this be fantastic for our rivers and wildlife, these woodlands will also be a special space for the young people to visit in years to come.

BAGS OF HELP

It was great to be able to share the recent changes that the Trust has made to a weir at Bluebell Wood in Burnley. Through river walks and our river simulation table, the children saw, first-hand, the impact that our alteration to the weir will have on their river system.

OTHER NEWS

Our newly signed education trailer means that we can take a mobile, pop-up classroom on the road to set up at schools, shows and near river sites. It is really helping to get our interactive, hands-on resources directly to schools and communities. We are delighted with the artwork created by pupils from Sabden Primary School of local landmarks, which is displayed on the side.

Education trailer designed by Sabden Primary

In 2017, we had more pupils taking part in Rivers in the Classroom than ever before. The Ribble Life Together project is enabling us to work with new schools across the catchment. A secondary school and two colleges are also enjoying adopting Trout in the Classroom tanks.

If you are from a school interested in finding out more about our education programme, please get in touch with emily@ribbletrust.com.

Fish Surveys

Every summer we survey the populations of fish at over 300 sites around the catchment to build a picture of how their numbers fluctuate and to help highlight areas of the catchment that are most in need of restoration work. Here we report on the findings from summer 2017 - our 10th year of the survey programme.

The surveys focus mainly on the numbers of salmon and trout fry, as these are the most indicative of a river's health.

With the previous season's populations affected by the Boxing Day floods of 2015, concerns were high for 2017's young as they were impacted by high spates early on in the year. This large volume of water occurred at a critical time when the young had exhausted their yolk reserves and were to emerge from the substrate for their first feed. At this early lifecycle stage, swimming ability is poor and so high flow events can lead to mortalities.

Results showed that 2017's brown trout populations had recovered across the catchment from the previous year's low. Egg to fry survivorship had improved on the Calder catchment with 63% of sites increasing in abundance. The Hodder saw a positive outcome with 35% of sites yielding better results and the main River Ribble remained consistent from 2016's high.

Atlantic salmon saw fry densities above Gisburn improve, with 18% of sites increasing in abundance. However, overall populations across the catchment continued to decline. Minimal recruitment was achieved on the Calder with only three individuals captured and the Hodder continued its downward trend after 2016's peak. During a summer engagement event at Oakenshaw Weir on the River Hyndburn, salmon fry were discovered below the structure. This find was a positive result because the newly constructed bypass channel was opened in October 2017 connecting the lower reaches of the river to the upper, allowing migrating salmonids to reach new spawning habitat.

The connectivity of a river system is highly important for the lifecycle of diadromous species (those migrating between the sea and freshwater for spawning). The Ribble Trust over the past ten years has re-opened the river to migration and reconnected waterbodies to the Ribble estuary. The re-population of these areas is reliant on the ecological stability and quality of habitat. This can be achieved through sustainable river management and the education of people and industries that affect it. Moreover, the increase in habitat size and complexity through sustainable restoration schemes will lead to a greater abundance and diversity of aquatic species.

The Ribble is host to many fish species that have high conservational interest and habitat importance. By monitoring these keystone organisms, the Trust can continue to direct its efforts to improving the catchment's water environment for the benefit of people and wildlife.

Adam Wheeler – Fisheries Officer

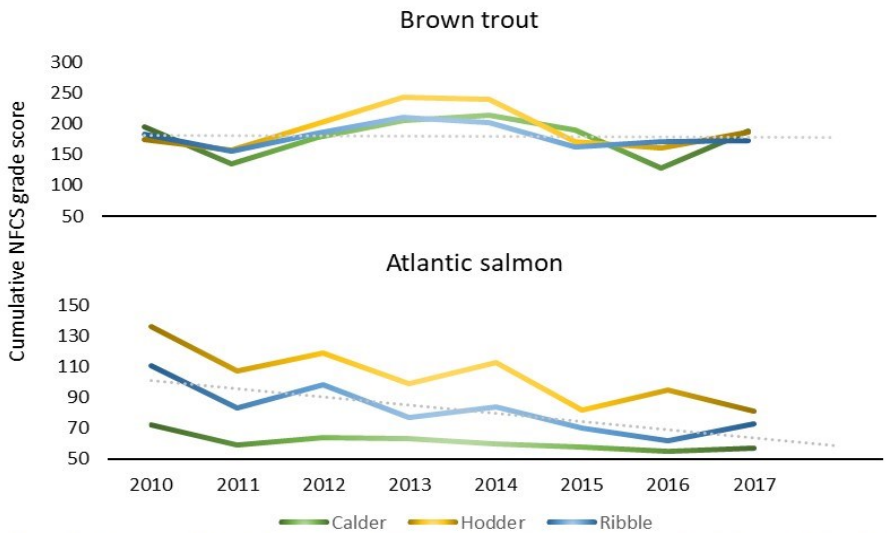


Figure 1. Cumulative Fisheries Classification System (NFCS) grade scores by sub-catchments 2010 to 2017

Game and coarse fishing at several locations around the Ribble Catchment, including the main Ribble and Calder rivers.

The Angling Passport scheme aims to highlight the importance of maintaining a clean and healthy river as a valuable asset to recreation and the local economy. Proceeds from the ticket sales are invested back into the conservation of the Ribble Catchment's rivers and streams. Catch and release is encouraged on all beats.

Buy your tickets online at: www.ribbletrust.org.uk/go-fishing

Do you want to help make a difference?

Volunteer with us!

Simply email admin@ribbletrust.com and ask to join our volunteer mailing list.

From tree planting, fencing and Himalayan balsam pulling, to litter picks, fish surveys and riverfly monitoring, there are many things you can do to help protect your local rivers and wildlife. We send out bulletins whenever an opportunity is coming up and if you wish to take part, just reply to the email to let us know. Experience is not required as we provide all the training and tools. You just need to dress appropriately for outdoor work and get stuck in!

Hanson HEIDELBERGCEMENT Group

heritage lottery fund LOTTERY FUNDED

Environment Agency

United Utilities helping life flow smoothly

European Union European Regional Development Fund

Life

NATURAL COURSE OUR WATER. OUR FUTURE

NATURAL ENGLAND

A clear solution for farmers CATCHMENT SENSITIVE FARMING

Ribble Life Together

YORKSHIRE DALES MILLENNIUM TRUST

FOREST OF BOWLAND Area of Outstanding Natural Beauty

Forestry Commission England

WOODLAND TRUST

Catchment Based Approach Partnerships for Action

THE RIVERS TRUST the umbrella body of the rivers trust movement where there's water there's life

EnergieKontor

ARTS COUNCIL ENGLAND LOTTERY FUNDED

Supported using public funding by ARTS COUNCIL ENGLAND

GREGGS FOUNDATION

TESCO Bags of Help

LANCASHIRE ENVIRONMENTAL FUND

THE PROSPECTS FOUNDATION

FATFACE UNITED KINGDOM

NATIONAL CITIZEN SERVICE

Membership Form

As a charity, we rely entirely on membership fees, donations and grants to continue the vital conservation of our rivers. If you love nature and would like to make a difference, please join us.

Your details

Title | Surname

Forename(s)

Address

Postcode

Telephone

Email

Your membership

Your subscription is a donation towards our work. The more you can afford to give, the more we can do to improve our rivers.

- ○ **Individual Membership** £20 per year
- ○ **Life Membership** £250 one-off payment
- ○ **Your own amount:** £ per year

A little extra help

giftaid it

Boost your donation by 25p of GiftAid for every £1 you donate at no extra cost to you! GiftAid is reclaimed by our charity from the tax you pay for the current tax year.

- ○ **Yes** - I want to GiftAid my donation
  and any donations I make in the future or have made in the past 4 years.
- ○ **No** - I don't want to GiftAid it

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I am a UK taxpayer and understand that if I pay less Income Tax and/or Capital Gains Tax than the amount of Gift Aid claimed on all my donations in that tax year it is my responsibility to pay any difference.

Please notify us if you wish to cancel the declaration, change your name or address, or no longer pay sufficient tax on your income and/or capital gains.

Payment method

- ○ **Cash or Cheque**
  Payable to 'Ribble Catchment Conservation Trust'
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  Please fill in your details below...

Bank/Building Society name

Branch Address

Sort Code | Account number

Please pay £ to Ribble Catchment Conservation Trust Ltd. starting on / /
and repeating annually / quarterly

Full name

Address

Postcode

Signature | Date

Instructions to Bank or Building Society
Account name: Ribble Catchment Conservation Trust Ltd. Sort Code: 16-29-34, Account Number: 10046013, Address: Royal Bank of Scotland Plc, The Butts, Rochdale, Lancashire, OL16 1EJ.

Another way to help

We run many **volunteering days** throughout the year and are always on the lookout for fresh faces! Activities include tree planting, litter picks, Himalayan balsam pulling and wildlife monitoring. Experience isn't necessary and we provide the training and tools.

If you would like to receive bulletins about upcoming volunteering events, please leave your email address here;

Email

Please return completed membership forms with payment to;

Ribble Rivers Trust, c/o Hanson Cement, Ribblesdale Works, Clitheroe, Lancashire, BB7 4QF

Why not join online? Visit www.ribbletrust.org.uk/membership

Help secure a better future for our environment

Become a member

As a charity, we depend on the generosity of our members and supporters who care about the environment and want to make sure it's protected for future generations. Become a member of the Ribble Rivers Trust today and together we can help make a difference.

Complete and return the membership form overleaf

As a member you will receive:

- Annual newsletter
- Mid-year e-newsletter
- Water Friendly Homes guide
- Membership card
- Member discounts
- Car window sticker

Membership £20 per year