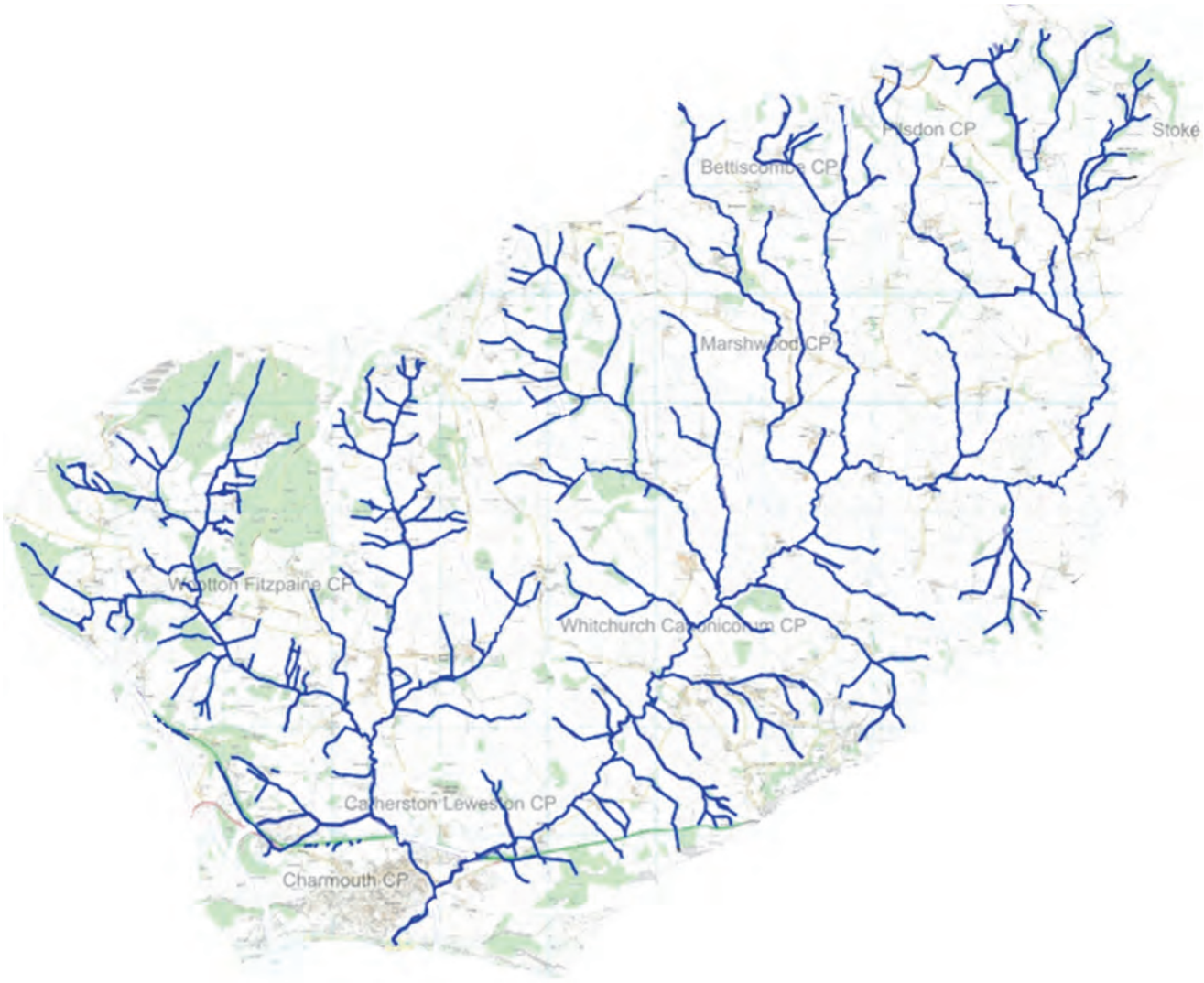
Our River, Our Responsibility

The River Char in 2025



2025 Annual Report by:

River Char Action Group

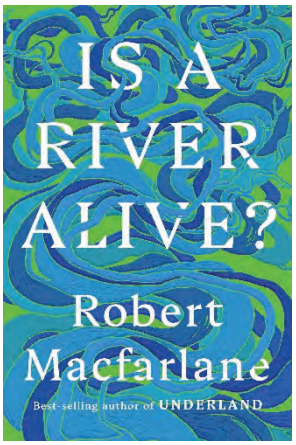
With the **River Char Community Project**

www.riverchar.org

Find this report online at www.riverchar.org/2025report

A report on:
Citizen science, community action and the state of the River Char in 2025

The Footbridge at Charmouth Lagoon *Photo: Dana Assinder*



In the year when Robert Macfarlane's *Is a River Alive?* was published, we – like him – answer with a resounding YES!

As Macfarlane shows, rivers can be wounded by what we pour into them and how we hem them in, yet – given room and care – they show an extraordinary capacity to recover and to heal. Their life pours back – and with it, ours too.

At the root of the wounding is our attitude to rivers. 'Natural capital' is the now-standard phrase for describing nature as a stock of assets (rivers, soils, forests, etc.) that provide a range of benefits called 'ecosystem services'. Too often a river like our River Char is a drain, into which slurry lagoons spill, toxic fertilisers run-off, septic tanks empty, sewage pumping stations overflow, and household and garden chemicals, human and pet medicines are flushed and dumped unthinkingly.

If we can learn again to see our river as alive – flowing and flooding, giving life to beech and alder, trout and mayfly, eel and kingfisher, dragonfly and rosebay willowherb, we can help life pour back into it.

This is how we tried to help our River Char heal in 2025 and how we plan to continue in 2026.
Please help us if you can.

Contents

Summary 3
Introduction 3
Our River Char Charter 4
The Charmouth Dragon River Festival 5
Stopping Spills at Newlands Bridge 6
Problem plants 7
Biobeads and Nurdles at the river mouth 7
In Praise of Rivers 8
Goyles and Leaky Dams 9
A headwaters project for the River Char? 9
Hedges and water management 10
Farmers Cluster and Open Farm Sunday 10
Pollution and Water Testing 11
E. coli and human health 14
Chemicals and ecological health 16
Riverfly Monitoring 16
10 Key Findings 21
10 Next Steps 22

Summary

In 2025, local volunteers and partners continued to monitor and care for the River Char. Our results show a mixed picture.

In terms of human health, *E. coli* levels remain high enough to pose frequent risks, especially at Charmouth Lagoon and after heavy rain.

In terms of ecological health, ***phosphate*** levels are, at times, high in the upper river, indicating nutrient pressure from land use. ***Ammonia*** levels are generally low and are not an ecological pressure. ***Persistent chemicals*** and ***mercury*** in the water mean that the river is classed as 'Fail' by the Environment Agency. Toxic pesticides and herbicides like ***Glyphosate*** and ***Cypermethrin*** are present in the river.

The reliability of our tests improved in 2025. Our *E. coli* and phosphate results now track Wessex Water's closely, giving us confidence to use them in public communications and regulatory discussions.

Riverfly surveys grew from 7 to 14 sites and show encouraging stability in invertebrate diversity and numbers, with the Monkton Wyld Stream generally supporting richer communities than the main Char.

2025 saw **major practical gains**: a near-elimination of sewage spills at Newlands Bridge; progress on leaky dams and hedges to slow the flow of our river; a second Charmouth Dragon River Festival; and the creation of a River Charter and Declaration of Rights for the Char.

These efforts show that a small catchment community can generate robust evidence, influence infrastructure decisions and begin to shift cultural attitudes to a river that we must treat as alive, not as a drain.

River Char Action Group ~ January 2026

Introduction

Since 2021, two community groups have been working to clean up the River Char in West Dorset: the **River Char Community Project**[1] (launched by Char Valley Parish Council and working on the upper river) and the **River Char Action Group**[2] (working on the lower river).

Together, members of these two groups monitored the health of the River Char throughout 2025 and worked to clean it up.

This Report reviews our findings and actions during the year. It builds on:

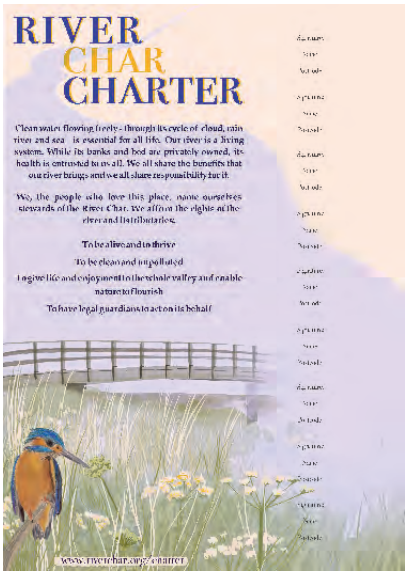
- an investigation commissioned by Char Valley Parish Council and prepared by the Dorset Wild Rivers Partnership in 2021, called ***State of the River Char and Monkton Wyld Stream***[3].
- our detailed report on pollution monitoring in the River Char in 2024[4].

It includes the results of previous statutory monitoring by the Environment Agency and the findings of our three Citizen Science monitoring schemes:

1. Our Riverfly kicktest monitoring programme (run with the support of The Riverfly Partnership[5])
2. Our bacteriological pollution monitoring programme (run with Wessex Water and CROWD – Clean Rivers of West Dorset[6])
3. Our chemicals and metals pollution monitoring programme (run with The Westcountry Rivers Trust, Wessex Water and CROWD)

The year on the River Char…

Our River Char Charter



At the start of 2025 the River Char Action Group began work on drafting and agreeing a Charter for the River Char.

Drawing on the experience of two river groups in this country and work in New Zealand, Canada, Ecuador and India, we drew up a definitive charter which was publicly launched in May. Ours is only the fourth river in the UK to have its own Charter.

Our Charter sets out our shared vision for the river and our belief that it should have the right to be unpolluted, to thrive and to flow freely. It has been signed by around 600 residents, visitors and others interested in our river.

Please sign it if you agree: www.riverchar.org/charter.

Declaration of Rights of the River Char

We also agreed a Declaration which formally sets out the rights that we believe our river should have and explains why. It is based on The Universal Declaration of Human Rights (adopted by the UN in 1948) and the English Bill of Rights of 1689.

These earlier Declarations of Rights helped to define and establish basic human rights. They seemed idealistic at first but now we take them for granted and they underpin the basic rights to freedom of speech and to elect our government – rights that we fight to preserve in the face of oppressive regimes and dictators.

Our Declaration (a handwritten scroll designed by local resident Eva Goulden) was read out at the Charmouth Dragon River Festival by the Town Crier of Lyme Regis on 31st May.

Currently, neither our Charter nor our Declaration carry any legal weight. But, across the UK, there are growing calls for river rights and nature rights to be recognised in law. Other countries have done it (and Wales is closest in the UK). One day soon, we hope the UK Government will follow and change the law to recognise the rights of rivers.

A Charter for Every River in Dorset?

We hosted two 'Rivers of Hope' workshops in July – organised by Tracy Bell-Reeves and led by Josh Levene of the UK River Rights Network.

Participants came from Dorchester Town Council, Devon County Council, Somerset Rivers Authority, the Brit Valley Project and Dorset Wildlife Trust – as well as community groups representing the Rivers Asker, Axe, Bride, Brit, Char, Frome, Lim, Otter, Piddle, Sid and Simene.

It makes little sense for us to campaign for the rights of the River Char on its own. We want to help create the momentum for a charter for **all** Dorset's rivers – to be recognised by Dorset and BCP Councils, plus town and parish councils.

Our vision: Help build momentum for a Charter for The Rivers of Dorset – as part of a national movement for change.

If you haven't already, please visit www.riverchar.org/charter to sign the charter. And please get in touch if you would like to get involved in our efforts to get a Charter for The Rivers of Dorset.

The year on the River Char…

The Charmouth Dragon River Festival

In May 2025 we held our second Charmouth Dragon River Festival. We brought Misty the Dragon (designed for the first festival by local artist Holly Miller) out of her home in the Charmouth Heritage Coast Centre. Around 100 people paraded her from the Barr's Lane playing fields, down the river to the beach and then back to St Andrew's Hall.

This year we also welcomed our first guest Dragon from the River Lim as well as the Cynewulf Morris Side, who led the parade.

Throughout the afternoon, residents and holidaymakers visited our exhibition at St Andrew's Hall, which included stalls hosted by Wessex Water, Dorset National Landscape, Dorset Climate Action Network and Trudi Ochiltree, a contemporary fine artist, art tutor and local resident.

Misty & Morris Men *Photo: Dana Assinder*

The parade in Seadown Holiday Park *Photo: Bob Hamblett*

The festival, along with regular information evenings, meetings and workshops, is the most significant way in which we try to involve the local community in our work. It raises awareness about pollution and things we can all do to save water and reduce the damage to the river – helping it to heal itself in the process.
Our Vision: Plan the next festival (2027) and work towards a big 'Rivers of Dorset' Festival thereafter.

If you'd like to help Sandra Reeve and Julie Leah with the huge task of organising the next festival in 2027 (planning starts soon), please get in touch: rivercharmonitoring@gmail.com

The year on the River Char…

Stopping Spills at Newlands Bridge

We are lucky that our river is short and has only one Sewage Treatment Works. What's more, all the treated sewage from that plant is pumped nearly a mile out to sea – not into the river.

Even when the Plant gets overloaded during heavy rain and spills untreated sewage, that too is usually pumped out to sea.

The impact on the sea around our coast (where it's quickly diluted) is debatable (see page 14). But it's good news for the river itself.

The problem at Newlands Bridge

For years, the main sewage problem on the River Char has been a pumping station at Newlands Bridge which pumps mixed sewage and stormwater up to the Sewage Treatment Works (STW). When the pumping station is overwhelmed in heavy rain, it spills into the River Char to avoid sewage flooding back into people's homes.

Over the last few years it has spilled untreated sewage into the river 60-100 times a year, often for over 100 hours. (Those numbers are low compared with the horrific spills on many rivers.)

Unlike many River Groups which campaign *against* their Water Company, we have worked *with* ours – and have built a good relationship with Wessex Water. In 2022, Andy Mears (Permitting Manager) shared detailed maps of the village sewage system. Dana Assinder studied them and realised that all the water handled at Newlands Bridge came from Stonebarrow Lane and from Newlands Holiday Park.

Fixing the problem

We talked to Andy Mears, discussed solutions and… the company took action. With the full co-operation of the Holiday Park, Wessex Water found ways to separate stormwater from the sewage. The engineering work was completed in January 2025. The result – no spills for the next 10 months. The table shows just 5 spills for the year – 4 before the works were done and just 1 in very heavy rain in December.

It also meant a dramatic reduction in spills at the STW: a win for everyone.

Our Vision: Build on the Newlands Bridge and work with Wessex Water to use a similar approach to reduce spills and runoff at other holiday parks, schools and commercial sites locally.

ID	Site Name	Discharge Asset Type	2020 spills	2021 spills	2022 spills	2023 spills	2024 spills	2025 spills
13056C	CHARMOUTH SEA OUTFALL	Inlet SO at STW	69	65	65	101	95	56
13056S	CHARMOUTH STORM TANKS	Storm tank at STW	4	2	1	7	12	1
16819C	CHARMOUTH THE STREET	SO on sewer network	5	3	0	0	0	0
15699E	NEWLANDS BRIDGE PS	Storm discharge	12	7	8	19	20	5

The year on the River Char…

Problem plants

Himalayan Balsam is a pretty plant that does serious damage to rivers. It overwhelms native plants, so that the river banks lose the deep root systems that normally hold the soil together.

Because it dies back completely, it leaves long stretches bare in winter – causing erosion in heavy rain. Soil runs off into the river, smothering gravel and damaging places where fish and insects lay eggs. It also increases flooding.

The plant also alters river ecology more subtly. It attracts pollinators away from native flowers, so they set less seed.

River Char working parties

Keith Miller ran a series of summer working parties to clear sections of the river banks of the plant between Charmouth and Wootton. It was hard work and demonstrated that the numbers of volunteers we muster, especially given the need to 'repeat clear' each section, is hopelessly inadequate to address the wholesale infestations of the river banks.

Our Vision: In future years, work with landowners near the sources of key tributaries to start clearing the river from the top down.

We also provided an ad-hoc Giant Hogweed removal service during 2025 with a highly-skilled local resource at several locations on the Lower Char. We plan to continue this on a limited scale during 2026.

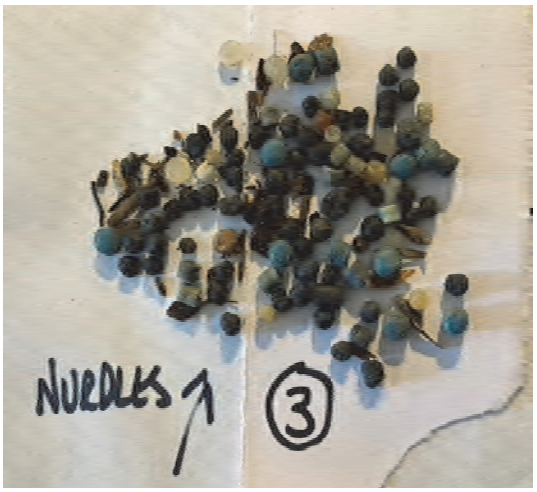
To help with clearing problem plants, please get in touch: rivercharmonitoring@gmail.com

Biobeads and Nurdles at the river mouth and on the beach

Biobeads are tiny plastic pellets used in some Sewage Treatment Works to help break down sewage. In the environment they are virtually indestructible. For some years, biobeads and nurdles (tiny micro-plastic pellets used to manufacture plastic goods) have been found in growing numbers on Charmouth beach and in the banks at the river mouth.

Wildlife mistake them for fish eggs, and they can carry and pick up toxic chemicals, heavy metals and harmful bacteria. When eaten they can poison, fish, birds and marine mammals, clog their digestion and introduce plastic and pollutants into the food chain.

Charmouth Heritage Coast Centre has for several years organised volunteers to clean up the beach and scientist Philip Strange has investigated the problem and written about it[7].



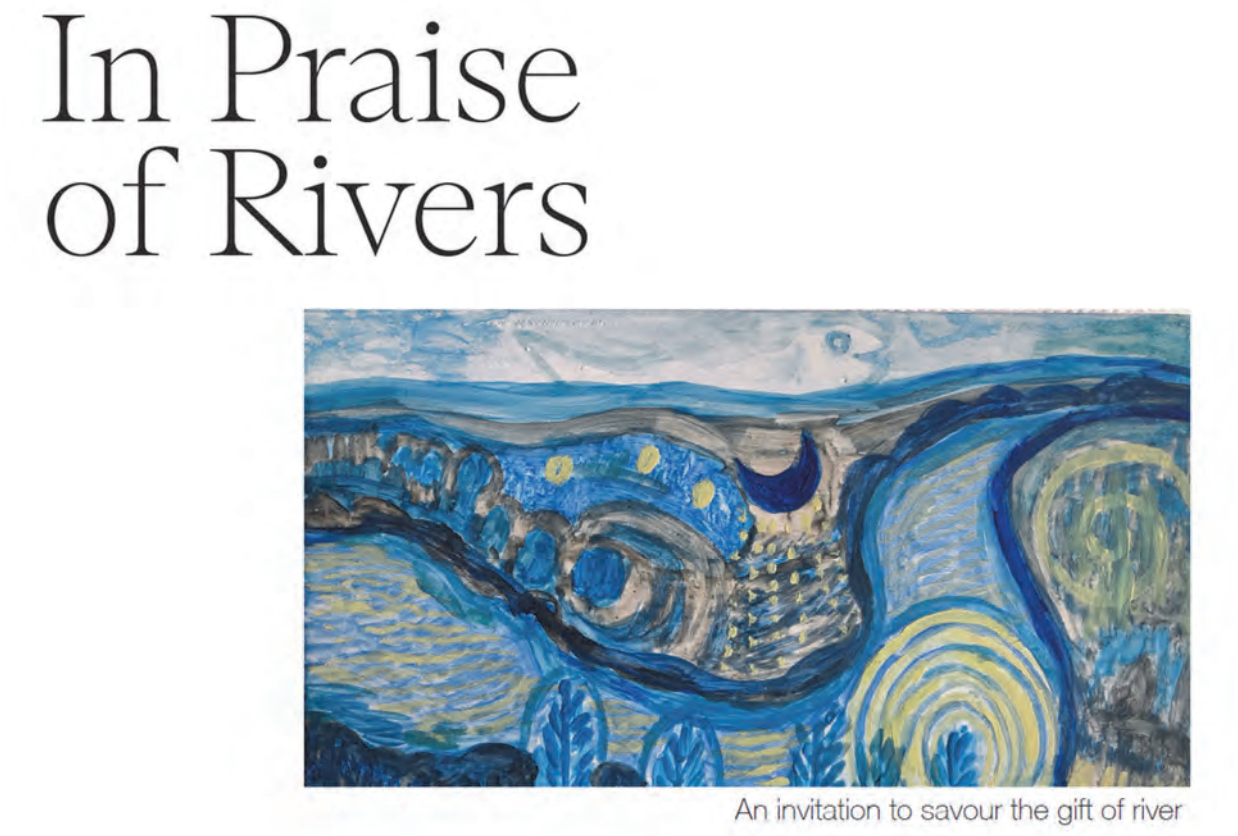
In Spring 2024 RCAG negotiated significant funding from South West Water for two large-scale, mechanised beach cleans by the pioneering group Nurdle.

But in 2025, new biobeads were found – these resemble a new generation of biobeads used by South West Water in some of its Sewage Treatment Works (including Uplyme).

You can read an article called *Tracing the Truth – a community's decade-long fight over biobead pollution* on the Surfers Against Sewage website[8].

To help with clearing up these microplastics, please get in touch: rivercharmonitoring@gmail.com

The year on the River Char…



Look out for *In Praise of Rivers* – an inspiring book bringing together paintings and other artwork, poetry and prose, all dedicated to the rivers that run through our land.

Edited by Char Valley resident and artist, Katharine Roberts, *In Praise of Rivers* invites you to savour the wonder and complexity of river life – from the spirits of rushing water to the otter's fur.

Built around the paintings and dreamwork of the Creativity Café community, and drawing on literary inspiration from Ted Hughes, Alice Oswald, Robert Macfarlane and others, *In Praise of Rivers* explores the river as a living body, an ecosystem of spirit and matter, memory and renewal. The poems and images flow together – reminding us what it means to celebrate and reconnect with the rivers that sustain us.

To find out more and register your interest, visit: www.inpraiseofrivers.co.uk

Katharine Roberts 'No Separation' Gouache

The year on the River Char…

Goyles and Leaky Dams

Leaky dams are permeable barriers of logs and branches that let normal flows pass but, in heavy rain, slow the water, hold some back in pools, and spill it onto water meadows so that more soaks into the ground instead of racing on. They trap sediment, reduce erosion and limit flooding downstream. (Untamed by humans, rivers do this naturally: meandering and spilling onto nearby land, which acts like a sponge.) Dorset National Landscape and Dorset Wildlife Trust have worked on the Char for years and are big supporters of our efforts. DWT's Nick Gray (right) talks about a 2025 working party at Bettiscombe:

"The River Char headwaters at Revelshay are as lively as many others in the catchment, morphing into raging torrents in heavy rain. While there are many deep goyles, some broader reaches present worthy sites to slow the flow and DWT volunteers were delighted to work with the landowners one sunny day in winter to rustle up a series of woody debris dams.

Laying stream-side hazel into the channel with other material coppiced at the site, our work opened up areas of woodland for spring flowers – including marvellous Moschatel, the 'Town Hall Clock' – to accompany the swathes of flower-rich grassland found all across Revelshay."

Photo: Katharine Roberts

Photo: Nick Gray

A headwaters project for the River Char?

Other committed local landowners have also been experimenting with leaky dams on the River Char. And we visited some great work by Leo Dugdale to raise the bed of the Yarty, where it has been gouged out and deepened by storm water. (Raising the bed to the level it was at a few decades ago, has a similar effect – forcing the river to spill into the fields rather than flood the villages downstream.) Work like this could reduce flooding in Wootton, Whitchurch and Charmouth.

Our Vision: Building on the experience of Nick Gray and others, develop a coordinated Natural Flood Management programme of leaky dams across the Char Valley.

We need someone to organise and manage the project! If you can help, please get in touch: rivercharmonitoring@gmail.com

The year on the River Char…

Hedges and water management

Farmers (particularly on the heavy clay soils of the Char Valley) have tried many ruses, from drains to poplars, to dry up damp patches on their farms for hundreds of years. One of the most elegant is hedge planting.

Hedges like those planted eight years ago by Hilary Joyce at Becklands Farm in Whitchurch have several functions. They provide browsing, containment and shelter for animals and they offer havens and food for wildlife. They also look good!

Hedge planted 2018. The mulch is wool from the farm's sheep which provides nutrients and blocks the growth of weeds. *All photos: Hilary Joyce*

Two hedges were planted to stop rain reaching the river too quickly, where it erodes river banks as well as flooding downstream.

This one (right) grew so fast that it had to be cut back after 2 years to ensure thick growth at ground level.

This winter, both were laid in the traditional way with a few trees left tall as hedgerow trees, giving homes for birds.

Dormice and other small rodents live on the farm and before it was laid, one hedge was home to a small flock of greenfinches. They will have migrated to other hedges and hopefully, in a year or so, will return to the hedge as it grows up again.

The same hedge trimmed before laying (above) and after (below).

Both hedges were planted, maintained and laid with Countryside Stewardship grants and Becklands Farm has been managed organically since 1973.

Depending on local conditions, a typical native species hedge will contain hazel, hawthorn, dogwood, blackthorn, field maple, wild crab apple, alder, spindle, hornbeam, guelder rose and dog rose. Brambles, as Hilary notes wrily, will arrive whether you want them or not!

Farmers Cluster and Open Farm Sunday

Elsewhere in the catchment, the Marshwood Vale Farmers Cluster[9] have been gathering to share notes on deer management (to protect rain-intercepting woodlands), soil husbandry, and scrape creation – a very wildlife-friendly element of re-sponging the landscape – as well as putting on Open Farm Sunday, full of regenerative celebration and clean-water friendly innovations.

Make a note on your 2026 calendar: Open Farm Sunday will be at Coppet Hill on 7th June.

The year on the River Char…

Pollution and Water Testing

Background

The Environment Agency (EA) is responsible for testing water quality. But its test programme has been cut and no official data is available for the River Char since 2019. So we run our own tests.

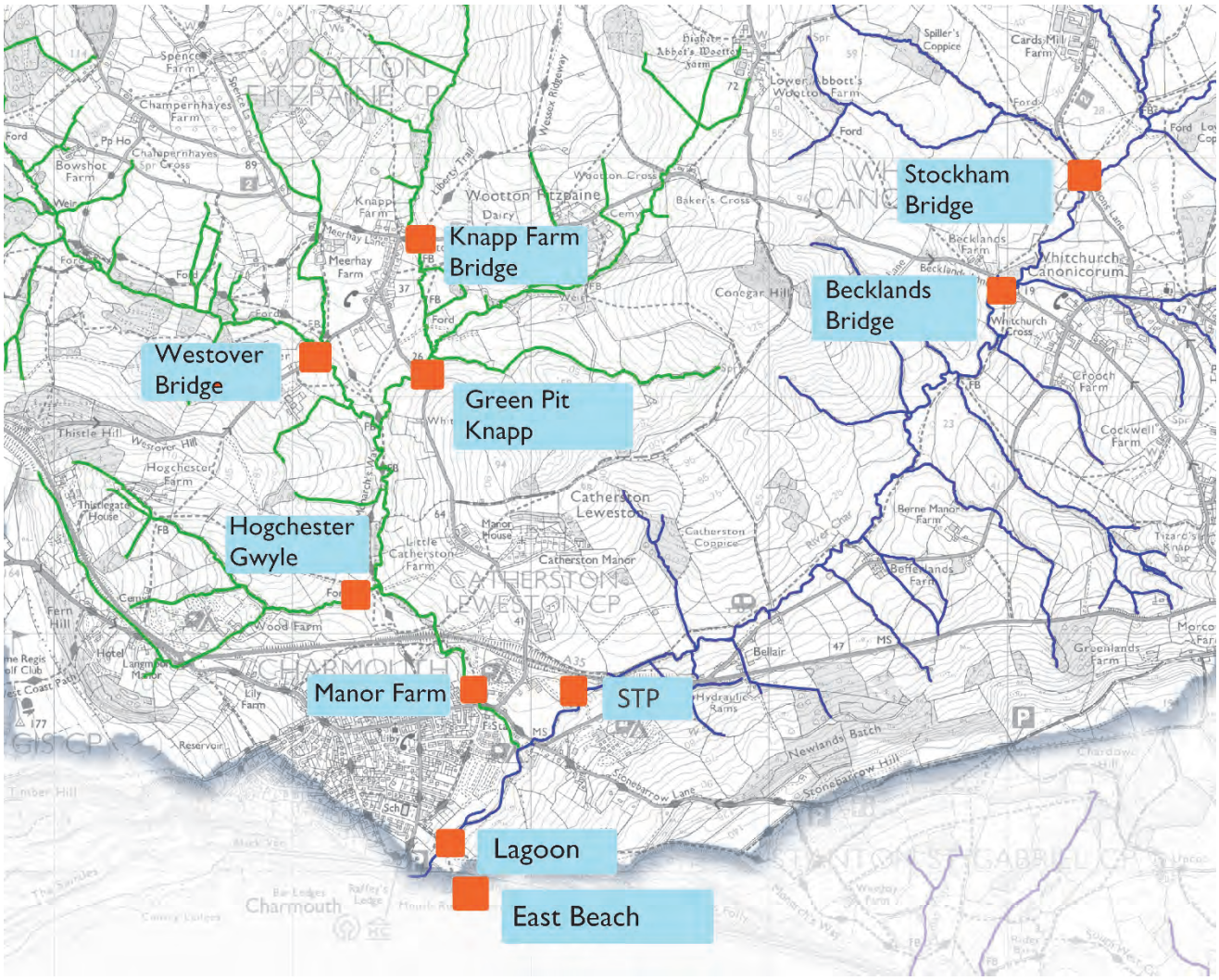
In 2019, the EA classified the River Char [blue on the map] as **'Poor' ecological status with chemical status 'Fail'.** The Monkton Wyld Stream [green] was **'Moderate' ecological status with chemical status 'Fail'**. It also showed alarming levels of bacteria at the Lagoon at the river mouth.

We've extended the tests that the EA used to run and are building a set of baseline data, so we know the 'normal' state of the river at different times of year and in different conditions (particularly after heavy rain). This helps us identify significant pollution events when they happen.

We are also trying to identify the main pollution risks and 'hotspots' – so we can reduce the amount of pollution entering the river along its 10-mile journey to the sea at Charmouth.

This section contains a summary of the results of our tests in 2025. The data are available online. More detailed results are available in our Technical Report.[10]

Test sites



In 2024, we monitored at five sites (the Lagoon, Manor Farm, the Sewage Treatment Works (STW), Becklands Bridge and Stockham Bridge). In 2025 we added four more – all on the Monkton Wyld Stream. (For sites where we test for Riverfly – see page 17.) We also test at new sites near Whitchurch, on Prime Lane and upstream. We look for places where there's heavy run-off or polluted drains.

Working with home-owners

In 2025 we tested water quality every fortnight in our home lab (below) and Wessex Water did matching tests on our samples. In February 2025 we also visited Wessex Water's Saltford Lab to learn from their testing procedures.

We also run tests for anyone who wants us to check a stretch of the river they own or to see if their septic tank is working well. We don't share the results with anyone else and we try to help remedy any problems. **If you would like us to run a test, contact us:** **rivercharmonitoring@gmail.com**

Working with farmers

When we identify serious agricultural pollution sources (like run-off from fields or some field drains), we approach the farmer or landowner confidentially and look to find ways to reduce pollution.

But, where pollution is persistent and remains unaddressed – and in an emergency – we report it to the Environment Agency (we reported two serious events to the EA during 2025).

If you see pollution, please report it.

On our website – **www.riverchar.org/pollution** – you'll find links to emergency numbers/sites for Wessex Water and the Environment Agency. You can always also tell us: **rivercharmonitoring@gmail.com**

Our Vision:

- **One by one to identify and eliminate pollution sources all along the river, working with landowners, homeowners and farmers.**

Lab procedures

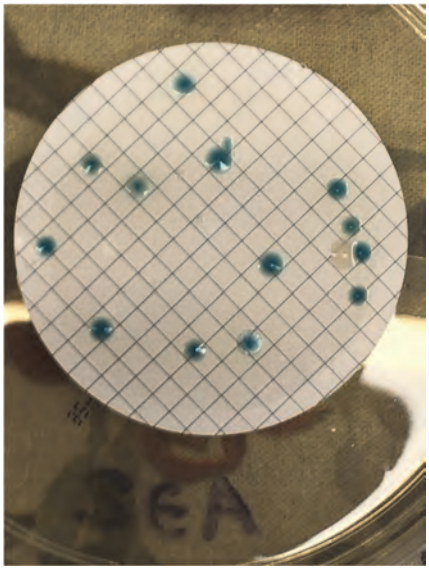
We filter our water samples through cellulose 45µm grid filter-membranes, using a Millipore laboratory benchtop vacuum diaphragm pump. These filter-membranes are transferred to Petri dishes and are cultured for 24-30 hours at 41°C in a lab incubator.

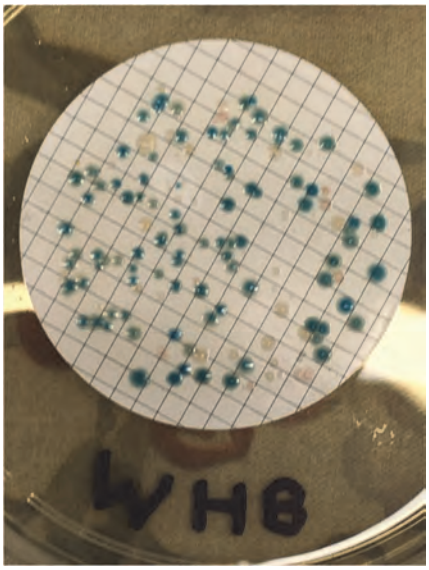
Plates are photographed, and colonies counted manually. Each bluish blob represents one *E. coli* colony forming unit (CFU). We use a multiplier, depending on dilution, to get the number of CFUs.

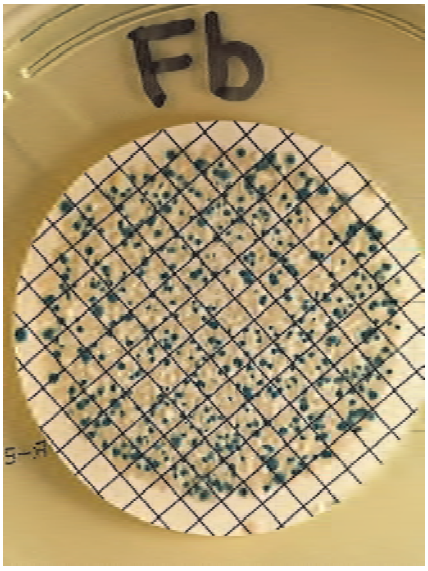
Below, the sample on the left, which we collected from the sea east of the river mouth, has a very safe 260 CFUs per 100 ml.

The centre sample, taken at Becklands Bridge, has around 1,700 CFUs per 100 ml (over the safe level of 1,000 CFUs but not too alarming).

Finally, on the right, the sample taken from the footbridge at the Lagoon in Charmouth last summer shows why people should be careful when swimming and playing in the very inviting water there!







Reliability of our tests improves

Bacteriology – *E. coli*

The correlation between our results and Wessex Water's in 2025 improved sharply. This chart shows that our average results got much closer to theirs in 2025. [11]

Statistical Analysis: The correlation between our own and the Wessex Water *E. coli* measurements is very highly significant (r = +0.71 in 2024 using 52 data points rising to r = +0.86 in 2025 with 89 points).

As a result we can say that the CROWD measurements provide a robust, independent index of variations in bacterial load for a range of baseflows. The results for each of the five key sample sites showed the same variations in *E. coli* (correlations of +0.55 to +0.75) again demonstrating the reliability of our data.

Figure 1: Our E. coli *counts compared to Wessex Water's - average counts at all 5 sites*

Chemicals – Ammonia and Phosphate

Ammonia

For **ammonia** (mg/L as N), the systematic difference that we saw in 2024 reduced considerably. [12] However the difference is still significant and it is only safe to rely on our measurements as a general guide.

Statistical Analysis: For ammonia, our own and Wessex Water's values are not correlated and there is no consistency in variations between the sample sites.

These observations result from the very low ammonia levels in the catchment and differences in analytical methods.

Figure 2: Our ammonia counts compared to Wessex Water's

Phosphate

For **phosphate** RCAG consistently records higher levels than Wessex Water for the same samples – though the gap was more than halved in 2025. [13] [In this report and in our Technical Report, 'phosphate' refers to Orthophosphate specifically.]

Statistical Analysis: Our phosphate data average about 3 times those of Wessex Water. Nevertheless, for 2024 and 2025 they are very highly correlated (r = +0.88 using 150 data points).

Our higher values reflect differences in analytical methods but still provide a reliable index of phosphate variations.

For a much more rigorous statistical analysis see our separate Technical Report [14].

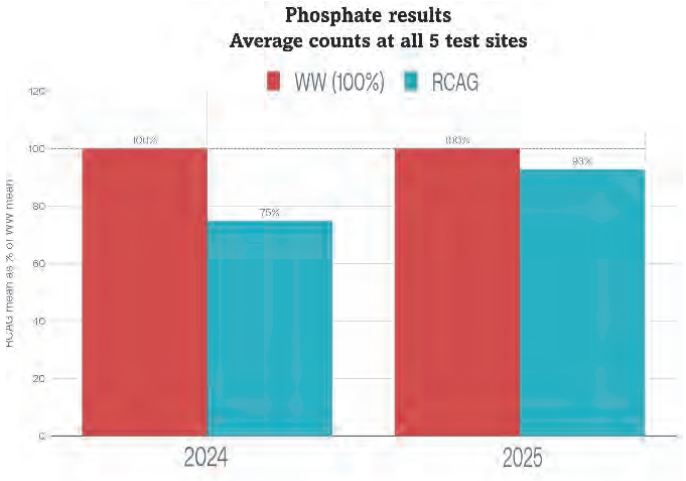


Figure 3: Our phosphate counts compared to Wessex Water's

Because of the reliability of our bacterial (*E. coli*) tests, and because of the risks to human health caused by high levels of *E. coli* and because *E. coli* is a good indicator of pollution entering the river from farms and septic tanks, we will continue to focus our pollution testing on *E. coli* in 2026.

E. coli and human health

Charmouth Lagoon

High levels of *E. coli* bacteria in river water are primarily an indicator of risks to human health (although almost all wildlife will be damaged if farm slurry lagoons are emptied – accidentally or deliberately – into the river).

We measure *E. coli* levels at five sites on the river, but the main risk to human health is at the Lagoon (the river mouth just before Charmouth Beach). We test the water from the footbridge.

In spite of a warning sign erected by Charmouth Parish Council, the Lagoon is often used in the summer for canoeing, paddle-boarding and swimming, and children regularly jump off the footbridge.

Historical data

The Environment Agency last monitored at the Lagoon in 2018-19, when *E. coli* levels showed wide variation (measured in colony forming units (CFUs) per 100 ml.). Several pollution spikes were seen, with *E. coli* levels at 18,000 CFUs in Sept. 2018. In 2024 our testing showed that this pattern continued. The agreed safe level for river bathing is 1,000 CFUs per 100 ml[15]. In the 2024 bathing season (May-Sept), that level was exceeded on 64% (7 out of 11) of the days when we tested water quality at the Lagoon.

2025 data

The picture was similar in 2025. In the bathing season (May-Sept), the safe level was exceeded on 8 out of 16 of the days when we tested at the Lagoon. The maximum reading was 18,200 CFUs.

Fig. 4 shows *E. coli* readings at the Lagoon in 2025. The dotted line shows the accepted safe level. We have used a logarithmic scale for clarity. These are alarming figures and we have notified the Environment Agency and Dorset Council.

Our tests confirm that it is frequently unsafe to swim or play in the Lagoon at Charmouth.

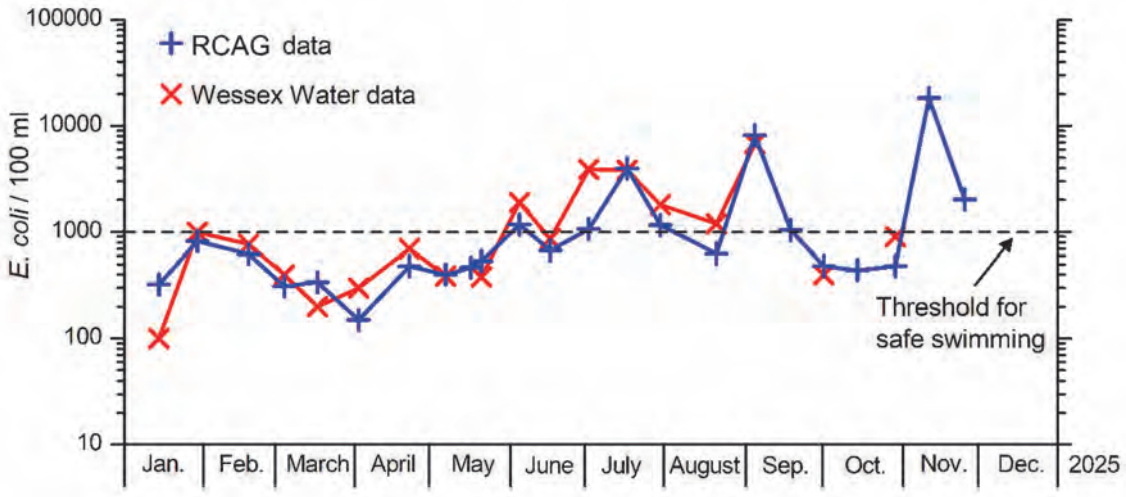


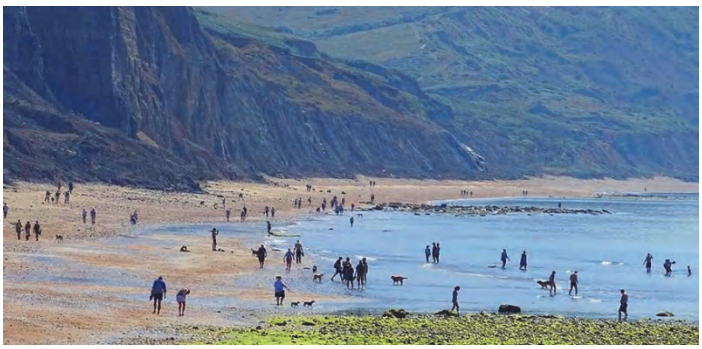
Figure 4: E. coli *levels at Charmouth Lagoon, 2025.*

Pollution sources

In 2025, on most dates when both were sampled, *E. coli* levels at the Lagoon exceeded those at the Sewage Treatment Works, confirming that the lower river and beach area are routinely more contaminated than the main-river site above the A35 and above the confluence with the Monkton Wyld Stream[16]. This suggests that when the Lagoon is unsafe, the extra contamination is being added between the STW and the river mouth.

Charmouth Beach

Charmouth's West Beach (in front of the concrete steps by the Heritage Coast Centre) is a registered bathing water and continued to achieve 'Excellent' Bathing Water status in 2025[17]. This confirms that there is a minimal risk to health from swimming there.



Last year we promised to start testing the sea water ***east*** of the river mouth (where more people swim and play in the water during the summer months). We were able to buy additional equipment and started doing this in November.

Our first test showed alarmingly high levels of *E. coli* bacteria in the sea (15,100 CFUs) – EU standards require less than 250 CFUs for 'Excellent' status in seawater.[18]

Subsequent test results have been 'Excellent' We need to do a lot more testing to find out whether the first result is repeated and to understand whether the seawater east of the river mouth is affected by effluent from the Long Sea Outfall (LSO) ¾ mile off Charmouth Beach, or whether this is the result of polluted river water flowing into the sea.

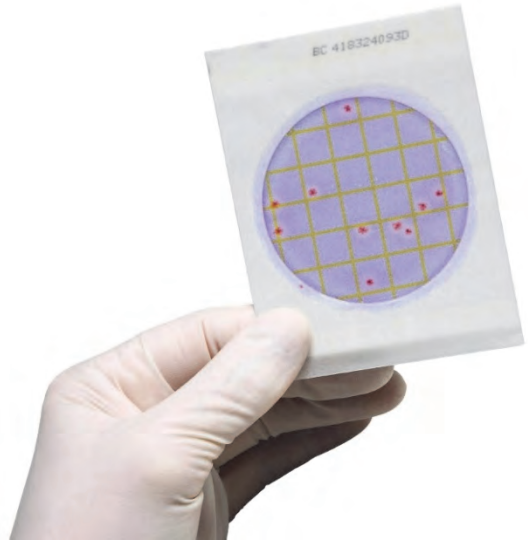
Public Health warnings

One of the difficulties with *E. coli* testing is the time it takes to grow the Colony Forming Units in laboratory conditions (usually 24 hours). This means that, at best, we – and the authorities – can only tell you whether it was safe to swim yesterday.

New testing technologies are constantly being developed and we are trying them. In May 2025 Wessex Water generously lent us a device called the Fluidion Alert, which we were able to use for 6 weeks. This can give a result in a few hours (and was used to test water quality in the Seine during the Paris Olympics).

We are also testing another technology called Petrifilm, which is considerably easier to use.

Fluidion Alert



Petrifilm

Our Vision:

- **Continue to test the River Char and Charmouth East Beach for *E. coli* in 2026.**
- **Identify and tackle the main pollution risks and 'hotspots' along the length of the river, with a particular focus on pollution affecting the Lagoon.**
- **Find funding to buy equipment to test the Lagoon daily in summer – then make the results public immediately, so people can make informed decisions about whether it's safe to swim.**

If you can help with funding or conducting the necessary tests this year, please get in touch: rivercharmonitoring@gmail.com

Chemicals and ecological health

During 2025 we ran our own fortnightly tests for levels of Ammonia and Phosphorus. Wessex Water tested the same samples and supplied data for a range of chemicals, metals and other pollutants. Results can be seen in our online spreadsheet[19].

Phosphorus and ammonia are good indicators of pollution from farming, treated sewage effluent, and commercial and domestic septic tanks (although phosphorus inputs from washing powder have fallen sharply, they are still used in dishwasher detergents).[20]

Phosphate

The Environment Agency sets a different threshold for each of our five sites. On the River Char, almost all samples downstream lie within the Excellent, Good or Moderate ranges[21], with no results in the 'Bad' category. Upstream, Stockham and Becklands Bridge show the highest phosphate levels. This suggests the main sources of phosphate pollution are agricultural.

Phosphate levels in the Monkton Wyld Stream (at Manor Farm) are also low. 14 out of 16 results in 2025 were 'Excellent' or 'Good', giving consistently better water quality than on the main river.

At the Lagoon, all 18 samples in 2025 were Excellent or Good.

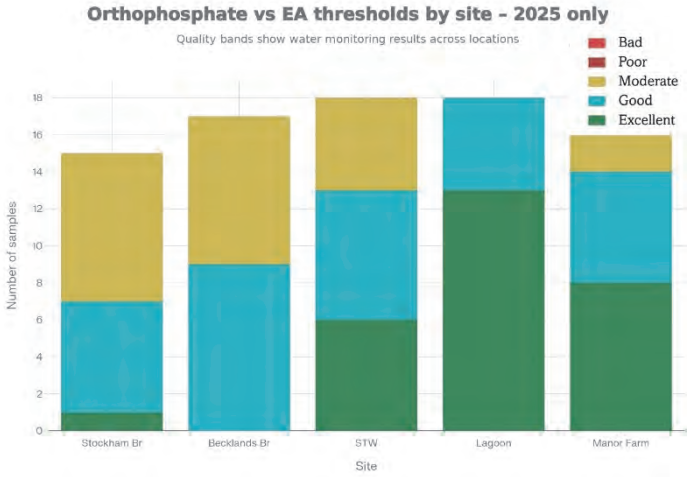


Figure 5: 2025 Orthophosphate levels on the R. Char

Ammonia

Across all five sites on the River Char, ammonia levels are generally low and stable. Most results fall between 0.01 and 0.08 mg/L, even during wetter periods – well below the 0.3 mg/L 'good status' benchmark often used for lowland rivers and the 0.6 mg/L level associated with clear ecological risk to fish and invertebrates.[22]

There are a few short-lived peaks (around 0.2-0.3 mg/L on isolated dates and sites), typically linked to very high rainfall. The 0.3 mg/L threshold was breached only once in 2025 at the Lagoon. Taken together, the data show that ammonia is not currently a major pressure on the River Char.

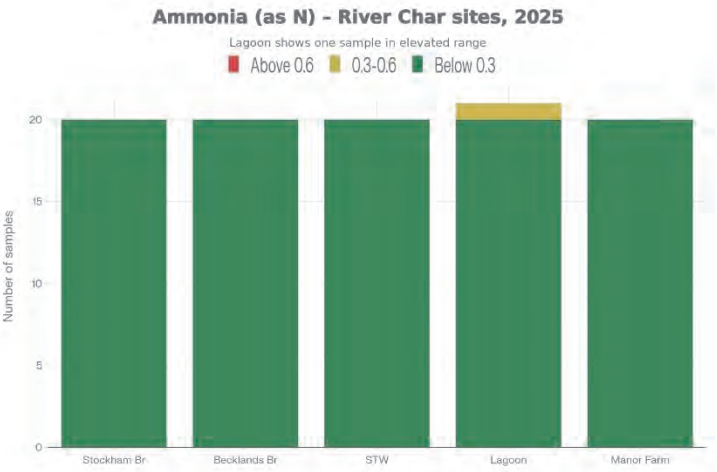


Figure 6: 2025 Ammonia levels on the River Char

Toxic Chemicals

Overall, levels of ammonia and phosphate in the river are encouraging. But both the River Char and the Monkton Wyld Stream are classified as **'Fail'** for chemical status because of 'priority hazardous substances', especially PBDEs and mercury.

PBDEs are flame-retardant chemicals used in furniture foam, plastics, textiles and electronics. They build up in sediment, wildlife and humans and are cause endocrine disruption and developmental and neurological damage.

Previous tests also showed that the toxic chemicals **Glyphosate** (the active ingredient in 'Roundup', and used in agriculture, horticulture and gardening) and **Cypermethrin** (a pesticide used to kill insects in crops and livestock and also used in household insecticides) are present in the river. These kill river insects with serious knock-on effects on birds and animals that feed on those insects.

There's little we can do about PBDEs, but we will work to encourage gardeners, pet-owners and farmers to reduce the toxic chemicals they use.

Our Vision:

- **To build on the Char Valley Lifelines Project and start to reduce the levels of chemical pesticides and herbicides being used by all of us in the Char Valley and entering the river.**

The year on the River Char…

Riverfly Monitoring

Riverfly Monitoring (or. kicktesting) is a non-destructive way for us to count insect populations, monitor water quality trends, spot local anomalies and understand river health over a much longer period than is possible with a water chemistry sample.

13 survey leaders are trained and entering data on the Cartographer system which contains the UK Riverfly database. We surveyed 14 sites each month in March-Oct 2025 (up from 7 sites in 2024).

The extra 7 sites are helping us create a reliable statistical record of invertebrate life in our river. This will grow in the years ahead. We should also gain wider insights and be able to draw conclusions from our data with more confidence.

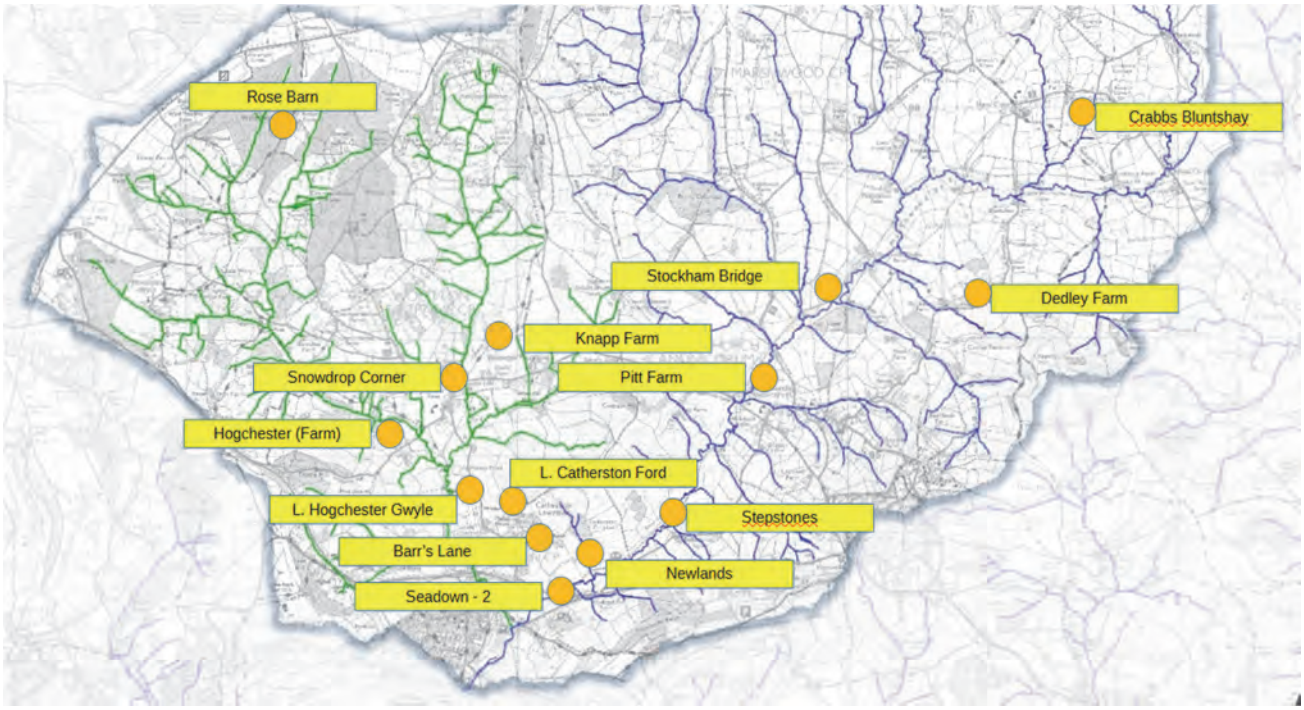
In late 2025 we added Champernhayes Mill, which is not included in the Report data. We may also add a site at Mid Hogchester Gwyle and others upstream towards Fishpond and Bettiscombe.

We encourage volunteers and surveyors to join surveys at any site each month. This helps standardise results by sharing knowledge. In 2026 we're asking surveyors to capture more data:

- Citizen Science Chemical (CSC) analysis – turbidity, temperature and phosphates
- Other aquatic animals using the '33-group' Riverfly survey as a template
- Problem plants: Himalayan Balsam, Hemlock Water Dropwort, Giant Hogweed, Japanese Knotweed
- Fish, key mammals and birds: Otter, Water Vole, Dipper, Kingfisher, Heron, Grey Wagtail.

These data will help us understand the organism of the river and its environment. Anyone is welcome to join our Riverfly and CSC surveys. We also welcome information on plants, fish birds and other animals from anyone who has a favourite stretch of river they would like to record.

If you would like to help, please get in touch: riverflymonitoring@gmail.com



Riverfly Report

Comparing the 7 sites surveyed in 2024 with the 14 surveyed in 2025 we can say with some confidence that the number of invertebrates found in surveys has not fallen, despite the long dry summer in 2025.

Fig. 7 shows the average number of species found in each year – vertical bars show the statistical uncertainty in the averages. These bars offer little evidence of change: in 2025 they're generally shorter (due to extra sites), giving higher confidence in the result.

We also measured 'effective diversity' using an index (the ISDI) that allows for the different abundance of different Riverfly species. Figure 8 plots the results. Once again, year-on-year results are similar.

However, by taking into account high numbers of a single species when measuring diversity, the ISDI suggests that species diversity in the Char is less good than we suggested in our 2024 report and that the Char has relatively poor diversity (3-4 out of 8).

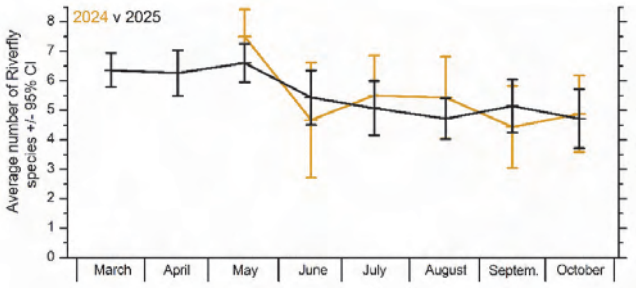


Figure 7: Average numbers of Riverfly species (2024 vs 2025).

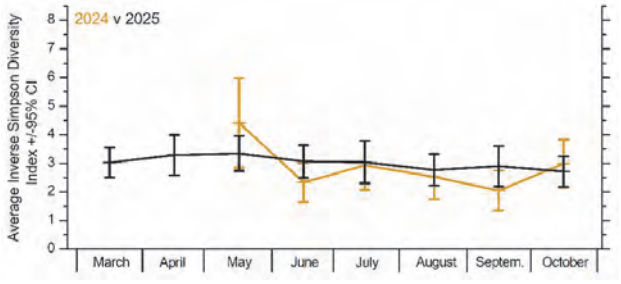


Figure 8: Average effective Riverfly diversity (2024 vs 2025)

It's difficult to compare the numbers of invertebrates surveyed between the years because of the doubling of the number of sites surveyed, however we find no real evidence of deterioration in numbers in 2025. (Counts for all surveys are shown in the Technical Report.)

Comparing the Monkton Wyld Stream and River Char

2025 is the first year we've had enough data to indicate a difference in water quality between the two branches of the river. The results in Fig. 9 show similar numbers of invertebrate larvae for both branches until Aug/Sept when numbers fall away. The reasons aren't clear but may be related to breeding habits (as the pattern is broadly similar) or to effects of rainfall after the dry period on the Char.

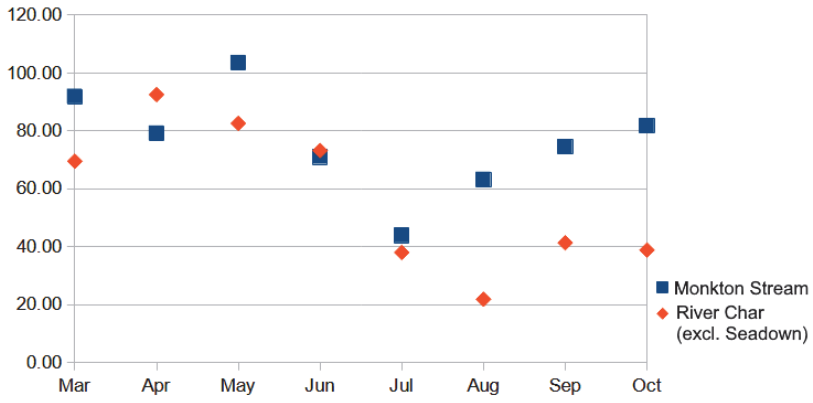


Figure 9: Invertebrates per month (2025) - Monkton Wyld Stream vs River Char (excl. Seadown)

We analysed two larvae most susceptible to poor water quality – Stoneflies and Flat-Bodied Stone Clingers. Fig. 10 shows no great difference between the rivers. The 'dip' in Stone Clinger presence is likely because a larger proportion breed each year and are present mostly as eggs in July/August.

.

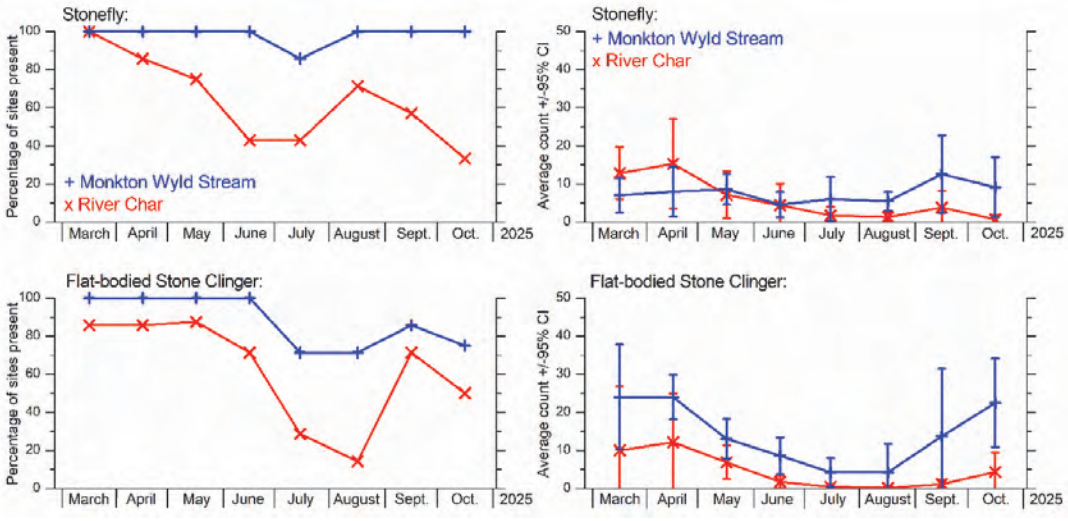
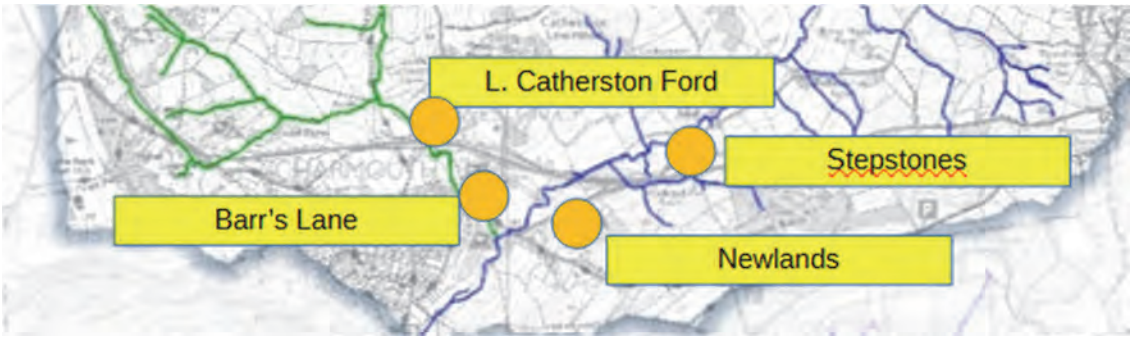


Figure 10: Distribution of Stonefly and b) Flat-Bodied Stone Clingers in 2025

These differences could be caused by a number of factors and results from future years will be necessary to help us understand what is happening.

Indications from analysis directly upstream and downstream of the A35



In 2025, we began testing at sites above and below the A35 to assess the impact of run-off on the river.

The overall averages give an unclear result. There is usually a higher count at the sites (shown in blue) upstream of the A35. (In April, this pattern was reversed.) But the difference is not usually significant and might be caused by the presence of run-off from the A35 or several other factors.

Figure 11 shows total invertebrates on both the Monkton Wyld Stream and on the River Char, upstream and downstream of the A35.

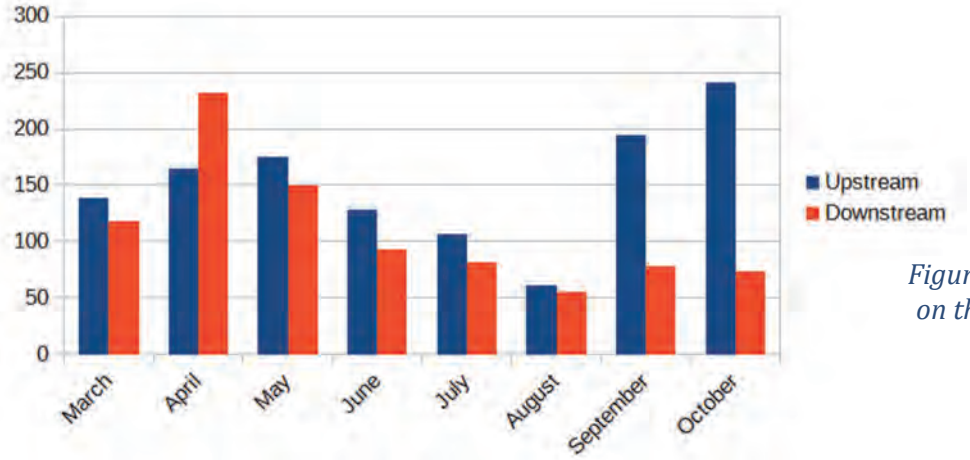
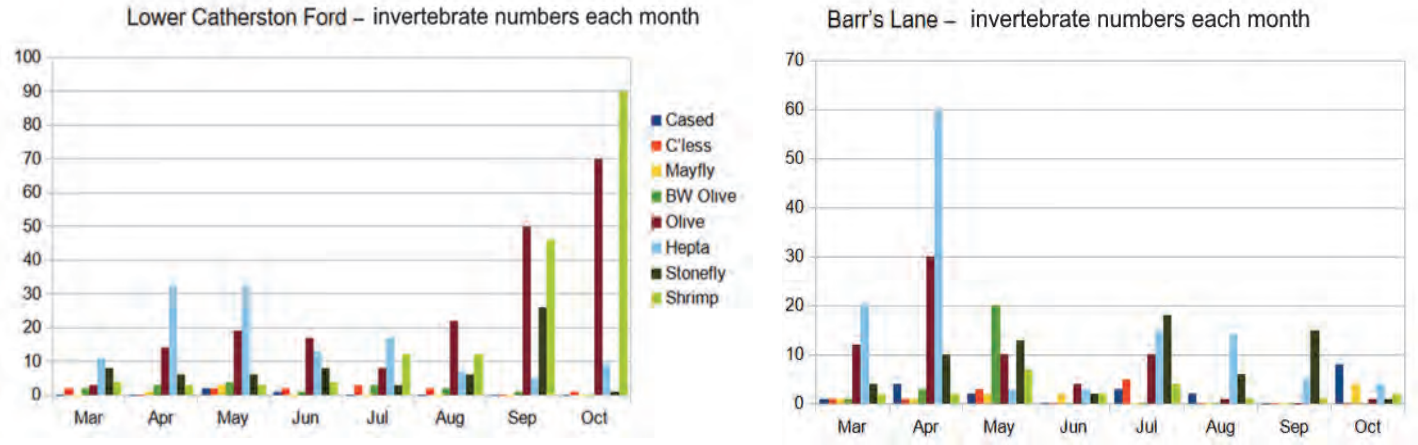


Figure 11: Total invertebrates on the Monkton Wyld Stream and River Char

Analysis of invertebrates found at Lower Catherston Ford and Barr's Lane (Figures 12 and 13) up and down stream of the A35 seems to suggest an upstream abundance as much as a winnowing of downstream life:



Figures 12 and 13: Total invertebrates at Lower Catherston Ford (above A35) and Barr's Lane (below)

The August surveys on the Monkton Wyld Stream were done 6 days apart. In between, there was 8 mm of rain which might have washed run-off into the stream. But there are other factors to consider: for example, how quickly do the effects of run-off disappear in a fast-flowing stream after rain? and what is the effect of the close proximity of the sea, which is less than half a mile away?

In 2026 it will be interesting to see what additional results chemical monitoring (CSC) produces.

Update on Green Drake Mayfly

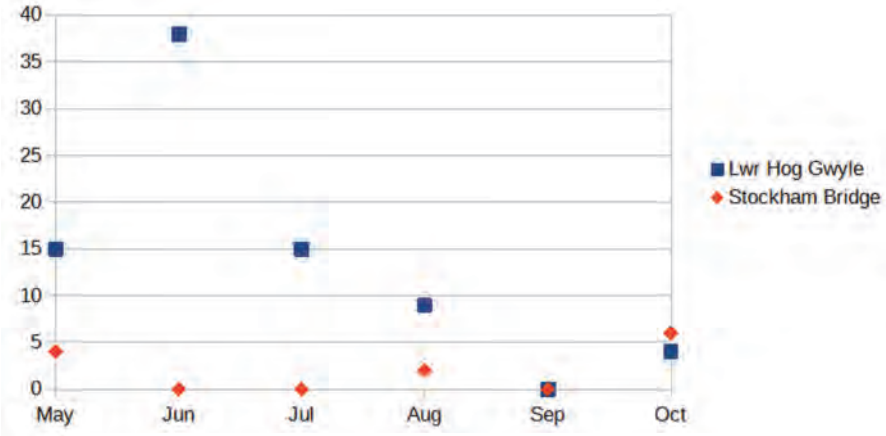


Figure 14: 2024: Green Drake Mayfly counts at top 2 sites

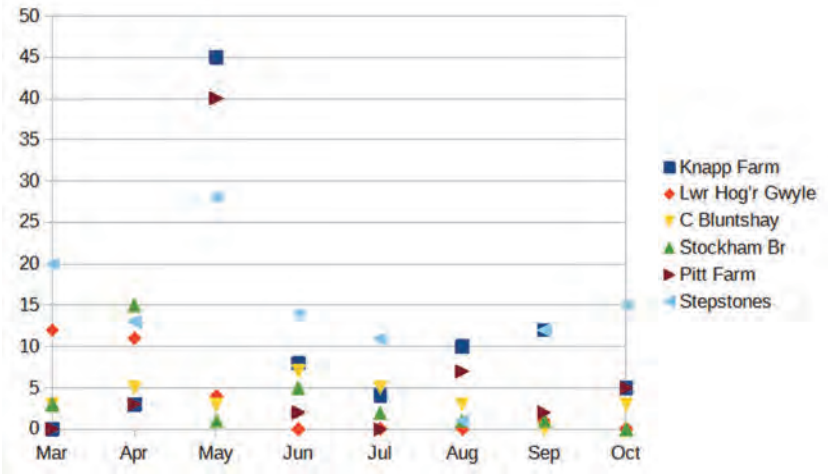


Figure 15: 2025: Green Drake Mayfly counts at top 6 sites

In 2024, the Lower Hogchester Gwyle was pre-eminent among our survey sites in producing Green Drake Mayfly larvae, with peak levels, predictably, in the early summer, peak mating months[23].

We noted the proximity of silt / sand banks upstream of the Gwyle test site.

In 2025 we saw more sites and captures outside the mating months. Perhaps the 'gentler surveying' encouraged by low water levels in the Gwyle accounts for the drop-off in June and July. Or surveys may have disturbed the silt in which the larvae feed. There are many possible explanations.

We hope to discover more about the river and its invertebrates and find new projects in addition to the first 'Leaky Dams' (see page 9), one of which is shown below, gently over-topping with a pleasing patch of Drake-friendly silt downstream.

Our Vision:

- **Maintain and extend our tests and add chemical monitoring at each site.**
- **Pair invertebrate data with targeted chemistry at a subset of sites to improve understanding of how pollution and flow changes affect aquatic life.**
- **Measure and understand the impact of leaky dams.**

To help with our Riverfly & chemical monitoring, please email: rivercharmonitoring@gmail.com

10 Key Findings

1. **The River Char is heavily polluted with faecal bacteria but retains ecological resilience.**
   E. coli levels at many sites, especially the Lagoon, frequently exceed 'safe to swim' thresholds and pose a clear risk to **human health**. At the same time, Riverfly surveys show no overall decline in key invertebrate groups between 2024 and 2025, suggesting that the river's **ecological health** is stable and could start to recover with our support.

2. **Storms drive the worst bacterial and sediment pollution.**
   High river levels are strongly associated with sharp increases in *E. coli* and turbidity at multiple sites, showing that heavy rainfall, farm and road runoff and septic tank overflows are probable triggers of short-term pollution episodes.

3. **Phosphate is a pressure in the upper river.**
   Phosphate concentrations at Stockham Bridge and Becklands Bridge are typically in the Environment Agency's "Good–Moderate" bands, with occasional "Poor" results, pointing strongly to nutrient inputs from land use upstream. By the time the river reaches the Lagoon most samples are in the "Excellent–Good" bands.

4. **Ammonia levels are generally low and not a current stressor.**
   Ammonia test results show that the vast majority of samples lie well below commonly used ecological concern thresholds, with only rare, short-lived peaks. So ammonia does not appear to be a driver of ecological damage in the Char compared with bacteria and phosphate.

5. **Citizen-science monitoring on the Char now produces decision-grade data.**
   In 2025, our test results for *E. coli* and orthophosphate were consistently very close to Wessex Water's. This means that we can now provide robust evidence for trend analysis, site comparisons, public-health messaging and engagement with the EA.

6. **The Monkton Wyld Stream is consistently healthier than the main river.**
   Both chemistry and Riverfly data indicate that the Monkton Wyld Stream usually has lower nutrient concentrations and richer invertebrate communities than the main river. This makes it an important ecological refuge and a benchmark for what the main River Char could look like.

7. **Collaborative action reduces pollution.**
   The 2025 engineering works at Newlands Bridge reduced spills from 20 in 2024 to 5 in 2025, with only one spill after the works were completed. They also cut spills at the Sewage Treatment Works – showing that targeted interventions can quickly and significantly improve water quality.

8. **Collaborative action reduces flooding.**
   Landowner-led Natural Flood Management work, in the form of leaky dams and hedge planting, is continuing. This helps slow the flow of flood waters and reduce the impact of flooding downstream. A co-ordinated programme across the headwaters of the River Char would help considerably.

9. **Cultural change is gathering pace, but we need the law to change.**
   The River Charter and Declaration of Rights, the Dragon Festival and other initiatives show that many local people see the Char as a living entity, not just as a drain or capital asset. But, in the UK, the law fails to protect the rights of rivers or prevent pollution. Many other countries *do* recognise . the rights of nature in law, so we need to build momentum for that to happen here.

10. **Invasive plant species and plastic pollution remain a big problem along the whole river.**
    Biobead and nurdle pollution continue at the beach and river mouth, in spite of clean-up efforts. Meanwhile, Himalayan Balsam, in particular, presents an increasing risk of erosion along the length of the river. As the river bed gets more deeply gouged, flood waters are less likely to spill safely onto water meadows upstream and more likely to flood roads and homes downstream

10 Next Steps

In 2026 we intend to:

1. **Protect people at the Lagoon.**
    - Maintain fortnightly *E. coli* monitoring at the Lagoon through the 2026 bathing season.
    - Find funding to buy an *E. coli* monitoring device to allow us to test the water at the Lagoon daily during the summer and make the results public immediately.
2. **Investigate pollution at Charmouth's east beach.**
    - Maintain *E. coli* monitoring at the east beach to identify any risks to the public.
3. **Target storm-related faecal pollution.**
    - Use the demonstrated link between high river level, turbidity and *E. coli* to continue to identify key problem sites and outfalls along the length of the river.
4. **Work to reduce faecal pollution.**
    - Continue to share *E. coli* findings confidentially with farmers, landowners and residents to help clean up pollution hotspots.
5. **Plan a Headwaters Project for the River Char.**
    - Take the first steps towards a coordinated Natural Flood Management programme of leaky dams across the Char Valley.
6. **Extend Riverfly surveillance.**
    - Maintain and, where possible, extend Riverfly sites, especially on tributaries feeding the main river towards Fishpond, Marshwood and Bettiscombe.
    - Pair invertebrate data with targeted chemistry at a subset of sites to improve understanding of how pollution and flow changes affect aquatic life.
    - Measure and begin to understand the impact of leaky dams.
7. **Build on the Newlands Bridge success to reduce other spills and runoff.**
    - Work with Wessex Water to identify other holiday parks, schools and commercial sites locally where stormwater could be separated out.
8. **Strengthen community engagement.**
    - Plan the next Charmouth Dragon River Festival (2027) and work towards a big 'Rivers of Dorset' Festival thereafter.
9. **Tackle the problem of chemical pollution.**
    - Build public awareness to help reduce the levels of chemical pesticides and herbicides being used by all of us in the Char Valley and entering the river.
10. **Strengthen our rights-of-nature advocacy.**
    - Work with other groups to help build momentum for a Charter for all the Rivers of Dorset.

All these steps need funding, project management and volunteer support. If you would like to help in any way, please get in touch: riverflymonitoring@gmail.com

Notes

[1] https://www.charvalleyparishcouncil.gov.uk/our-community/river-char-project/

[2] https://www.riverchar.org/

[3] Read the full report at: https://www.riverchar.org/report2021

[4] Read the full report at: https://www.riverchar.org/2024report

[5] The Riverfly Partnership: https://www.riverflies.org

[6] Clean Rivers of West Dorset: https://www.dorsetcrowd.com

[7] https://philipstrange.wordpress.com/2025/03/04/charmouth-beach-in-west-dorset-the-story-of-how-south-west-water-and-the-plastics-industry-polluted-this-previously-pristine-environment/#comments

[8] https://www.sas.org.uk/updates/tracing-the-truth-a-communitys-decade-long-fight-over-bio-bead-pollution/

[9] https://www.facebook.com/p/Marshwood-Vale-Farmers-Cluster-100089901810132/

[10] Read the Technical Report at: https://www.riverchar.org/2025report

[11] The chart shows a simple comparison of annual means (in 2024 Wessex Water's mean *E. coli* measurement at all 5 sites was 3,872 CFU/100 ml against RCAG's 1,930 CFU/100 ml. In 2025 Wessex Water's mean was 1,057 and RCAG's was 1,100 CFU/100 ml.) On a $\log_{10}$ scale, 94.4% of 2025 paired results sit within 0.5 log units and 100% within 1.0 log, compared with 55.6% and 87.0% in 2024, indicating that RCAG and Wessex Water now almost always classify samples in the same risk band even if their exact counts differ slightly.

[12] In 2024, 50 paired measurements of ammonia (mg/L as N) were taken across five monitoring sites (Stockham Br, Becklands Br, STW, Lagoon, Manor Farm). In 2025: 55 paired measurements were taken at the same five sites. In 2024, RCAG's mean ammonia level was 2.4 times higher than WW's (0.1254 vs 0.0522 mg/L; P = 0.0009), indicating systematic disagreement. In 2025, the difference narrowed dramatically: RCAG 0.0866 vs WW 0.0747 mg/L (P = 0.5).

[13] The comparison of paired data for orthophosphate was as follows:

In 2024, the WW mean was 0.169 mg/L as *P*; the median was 0.12 mg/L.

In 2024, the RCAG mean was 0.126 mg/L; the median was 0.105 mg/L. (RCAG about 25% lower on average.)

In 2025, the WW mean was 0.111 mg/L; the median was 0.11 mg/L.

In 2025, the RCAG mean was.103 mg/L; the median was 0.085 mg/L. (RCAG about 7% lower on average.)

[14] Read the Technical Report at: https://www.riverchar.org/2025report

[15] https://environment.data.gov.uk/bwq/profiles/help-understanding-data.html

[16] See the separate Technical Report for full details of these results.

[17] https://environment.data.gov.uk/bwq/profiles/profile.html?site=ukk2205-21300

[18] https://environment.data.gov.uk/bwq/profiles/profile.html?site=ukk2205-21300

[19] Link to spreadsheet online

[20] The EU Detergents Regulation (2004), amended in 2012 to restrict phosphates in consumer laundry and dishwasher detergents means that, in Western Europe, the use of phosphates in laundry detergents has been largely phased out. But dishwasher detergents still largely rely on phosphates.

[21] https://www.riverchar.org/uploads/1/4/0/0/14002490/uktag-river-phosphorus-standards-calculator_char_sites__2_.xls

[22] Water Framework Directive thresholds again are annual averages and are site- and water body-specific. There is no agreed 'safe' threshold for ammonia so we have used UK Technical Advisory Group guidelines which suggest that levels above 0.3 mg/L might indicate poor water quality.

[23] (cf *Mayfly larvae (ephemeroptera) of Britain and Ireland*, J M Elliott and U H Humphries)

Acknowledgements

We are indebted to Char Valley Parish Council for initiating the River Char Community Project and to it and Charmouth Parish Council for their continuing financial and administrative support.

The work of Ian Rees at Dorset National Landscape and Nick Gray at Dorset Wildlife Trust has been at the core of everything that has been achieved along the River Char in recent years.

Hundreds of hours of work by passionate local volunteers and dedicated professional colleagues have contributed to the efforts of our project. Citizen Science river testing and monitoring work has been led by John Kenward, Keith Miller, Julie Leah and Andrew Carey. Keith Miller has led the Himalayan Balsam clearance programme. Others who organised or helped with the River Charter, the Charmouth Dragon River Festival and other events include, but are not limited to: Tracy Bell-Reeves, Melanie Harvey, Chris Lakeman Fraser, Julie Leah, Stephen Oatham, Val Oatham and Sandra Reeve. For the statistical work on this report we are indebted to Richard Porter and particularly to Graham Weedon.

Local staff at Wessex Water – notably, Andy Mears, Julian Okoye, Will Kirby, Jess Uren, and the team at its Saltford Laboratory – have helped us at every stage. Our work would have been impossible without them.

Farmers and other landowners who have given us access across their land to take samples from the river include Sue Johnston (Cardsmill Farm), John Calder, Robin Loosemore (Manor Farm) and Mark Osborne (Seadown Holiday Park) – their help is vital and greatly appreciated.

We have worked closely with CROWD (Clean Rivers of West Dorset), Ali Ferris and Eden Thomson at Charmouth Heritage Coast Centre, West Dorset Wilding, Litter Free Dorset, Clean Jurassic Coast, Nurdle and Edward Morello, MP and are grateful for their commitment, dedication and support.

Simon Browning of The Rivers Trust and staff at the Environment Agency including Jim Flory, Fiona White and Yasmin Guler have all given invaluable support over the year.

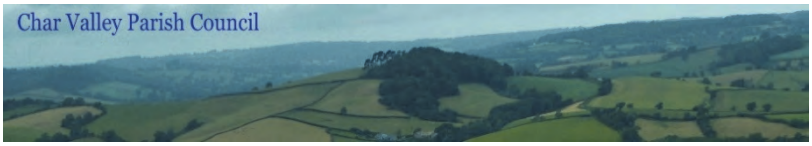
We have received funding from Jeremy Gane of Gane & Marshall, Dorset Community Foundation, Dorset National Landscape and Wessex Water, as well as donations from many members of the public and would not be able to continue without this support.

River Char Action Group

This report, and the work it covers, were made possible and generously funded by:

Dorset National Landscape

Wessex Water a YTL company



Gane & Marshall TAILOR-MADE DESTINATIONS

CROWD: Clean Rivers Of West Dorset