

# River Wye Catchment

# Nutrient Management Board

29<sup>th</sup> June 2022

## Statutory Partner Updates

In future, each Statutory Partner on the Technical Advisory Group will provide a written update of their work in support of the plan. This will reduce the amount of time taken to give updates and provide Board members with more opportunity to ask questions on progressing the Nutrient Management Plan

***Note! Through no fault of their own. As the decision was taken shortly before papers were due to be released not all partners have been able to provide written updates this time.***

## Natural England

### Farm Advice

**Our Catchment Sensitive Farming Officers have been extremely busy on the Wye:**

In 2022 159 farm holdings have made contact with our CSF programme

This has comprised of:

- 41 Capital Grant applications
- 22 requests for advice
- 96 mid-tier applications

Our team are currently working through these applications, as well as working alongside the Wye and Usk foundation.

We have participated in a number of joint events and discussions, including the Farm Herefordshire “Muck, phosphate and Water” event and the recent discussions with Avara.

## **Wye Targets and condition:**

Targets covered by separate item

We continue to work through the details and evidence around the current condition of the Wye and Lugg. We are working closely with EA to ensure we are utilizing their evidence in this process, we will keep the Board updated.

## **Recruitment**

The above work is taking longer than we would like, due to ongoing skills shortage regarding freshwater expertise. We have a number of vacancies, which we have been attempting to fill for over 9 months. Our current recruitment round closes on the 1<sup>st</sup> August. We are targeting specific Universities, and using social media to reach a broad audience. We are aware the skills shortage is not unique to Natural England.

# Environment Agency

## Advice and guidance led enforcement

- We're **on track for the number of visits** across farms, anaerobic digestion plants and dairy farms.
- We are finding there is generally good compliance and willingness to comply. The **trends** we are picking up on compliance issues are: lack of paperwork, lack of nutrient management plans, unreliable soil testing, and low farmer awareness of the plans and what should be included.
- We continue to offer advice-led regulatory guidance and issue formal warning letters/ take enforcement action should we need to
- Anecdotally we're finding increased presence and our approach is having a positive impact with an increase demand in support for nutrient management planning and EA advice
- We speculate that due to the drier weather we had over winter more farms have been able to **establish cover crops**

## Projects

- We are continuing to support citizen science work into 22/23 financial year.
- We supported WUF on their ELMS Landscape Recovery Application.
- Our main partnership projects in 22/23 are:
  - Wye Project P is a WEIF funded project that we are partnering Wye and Usk Foundation in 2022/23 and other organisations and partners including Citizen Science groups and Farm Herefordshire. There are various activities from supply chain engagement, farmer education to land drain studies and NFM delivery all with a focus of reducing diffuse pollution and reducing P in the catchment.
  - We are delivering Herefordshire Trees project with Mowley Valley and Wye and Usk Foundation
  - Working with Herefordshire Council delivering NFM through a FCRM project.
  - We have led opportunity mapping in the Arrow catchment and has recently delivered the Wye Storage Study that has analysed the data from the Herefordshire Council led NFM pilot study.
- We are continuing to pilot and innovate in the catchment. Our confirmed innovative projects are:
  - Increasing the use of satellite and drone imaging in combination with LIDAR and crop data to identify sites where agricultural diffuse pollution may be occurring.
  - Ongoing project studying poultry sector and associated land spreading activity – Project TARA

We are scoping the following:

- GIS spatial mapping of agricultural regulatory activity (inspections), data, regulatory breaches and where farm improvements have taken place. The ambition is to use this in collaboration with NE and CSF.
  - Analysis of phosphate bound in river sediment.
  - Mapping of soil P indices and land use change trend analysis over the past decade.
- We continue to work with Herefordshire Council, WUF, Herefordshire Wildlife Trust, and Wye Valley AONB to deliver and explore future projects, including natural flood management, across the catchment.

## Partnership working

- We continue to have strong relationships with partners across the Wye catchment, which includes organisations in England and Wales.
- We are working constructively, as a collective, with Herefordshire Council, Powys Council, Natural Resources Wales, and Natural England on strengthening the Nutrient Management Board and focusing on key areas such as improving evidence.
- We are working closely with Natural Resources Wales - aligning our monitoring programmes and consistent analysis and use of citizen science data.
- We continue to work with delivery partners such as Citizen Science groups, Herefordshire Wildlife Trust, Wye and Usk Foundation and Wye Valley AONB and are active members of Farm Herefordshire.

## Resources:

- We have five agricultural regulatory officers for the Wye catchment. With this permanent resource we can continue to increase the number of farm visits and tackle the areas at highest risk.
- We are working with specialist teams across the EA to bid for more resources and funding for the Wye. This will include a range of skills from analysis, enforcement, and engagement.
- We continue to be stretched on our resources and are doing the best we can with the resources we have available

## Increased monitoring and analysis

We have now produced two **quarterly data analysis reports** for the River Wye. We have created the reports to bring together the variety of data and information we have on water quality so it contributes to a shared understanding amongst stakeholders. We're excited by this piece of work – the scale of the data being captured in the Wye catchment is increasing with more continuous monitoring sondes, autosamplers, remote sensing and citizen scientists are deployed, and we want to share the findings and analysis externally.

The four questions and answers the report addresses are:

1. What are the main variables contributing to algal blooms in the Wye?
  - Significant algal growth occurs during the summer.
  - Excessively high summer water temperatures are a major contributing factor to this algal growth.
  - Water column phosphate concentrations appear to increase temporarily prior to this algal growth, following summer rainfall events, while river flows are relatively low.
  - Water column nitrogen concentrations are excessive throughout the catchment, but nitrogen is not the most important nutrient causing algal blooms.
2. What other ecological and water quality issues does the data show?
  - Salmonid fish populations have declined over the last 10 years.
  - Invertebrate populations currently appear to be generally healthy.

- Macrophyte communities sampled in 2021 show evidence of eutrophication across the whole catchment.
  - Nutrients within the water column are a bigger problem in tributaries than the main Wye.
  - There have been short-term water quality improvements in some parts of the catchment.
  - Rainfall events correlate with increases in phosphate and turbidity across the whole Wye Management Catchment.
3. Which locations, sectors and activities were responsible for the ecological and water quality issues identified in the data?
- Analysis of Citizen Science data collected since the start of 2021, and new incidents reported since October 2021, supports and enhances the analysis of Environment Agency data.
  - Arable agriculture, particularly maize and autumn sown crops like winter wheat on permeable soils or those prone to surface-run-off contribute significantly to orthophosphate concentrations.
  - There has been a significant increase in the proportion of land managed as arable since 2016, particularly maize and potato crops, which are more susceptible to soil loss.
  - Sewage treatment works (STW) discharge rates are significant contributing factors to orthophosphate concentrations.
  - The number of poultry units in a catchment shows a positive but very weak correlation with orthophosphate levels and appears to show a stronger link with nitrogen levels and total phosphorus.
  - Sewage discharge and agriculture account for the largest share of environmental incidents reported to the Environment Agency in the Wye Management Catchment between 01/11/2020 and 31/03/2022.
4. What recommendations can be made for regulatory, partnership and industry sector actions to prevent the reoccurrence of ecological and water quality issues identified in the data?
- Taking a catchment-based approach all contributing partners in the Wye Management Catchment could target investigations, analysis and remedial actions in key the five focus areas.
  - These five areas have been identified as upstream parts of the catchment with high phosphate concentrations relative to the wider catchment.
  - Significant reduction in nutrient input from all sources is required across the whole catchment to contribute to the recovery of river quality including macrophytes.
  - Reducing run-off and leaching of nutrients from land during summer rainfall events when dilution is low, and temperatures are high is an important element of this remedial activity.
  - Further investigations in partnership should include understanding the pathways and impacts of manures and wastes that are spread to land and a comprehensive appraisal of options to mitigate the impacts of poor water quality.

- Where Citizen Scientists can support the efforts of land managers and discharge operators to reduce the impact of their operations by targeted monitoring and evaluation in response to identified high nutrient events.

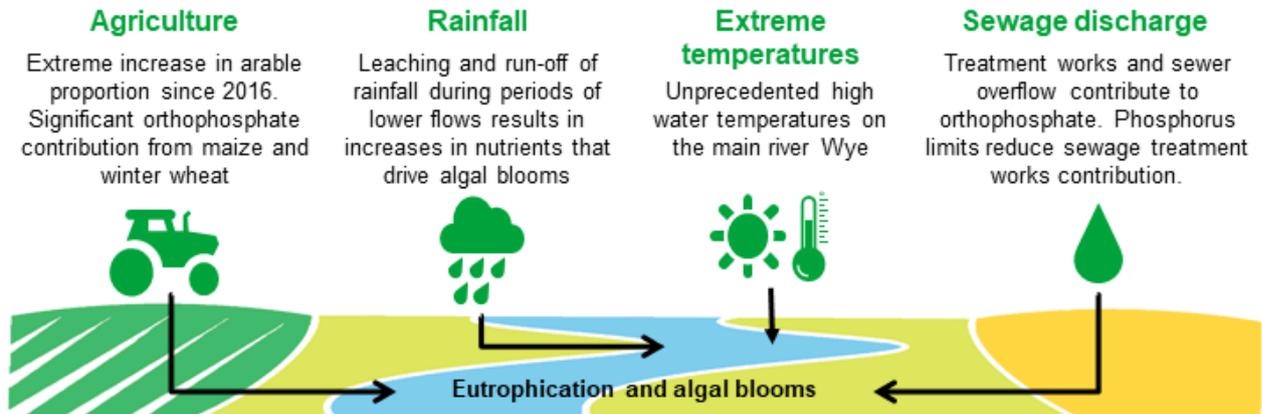
Please see infographic below for a visual summary. If you have questions or queries, or you would like to provide feedback to us on any of the information above, you can get in touch with us at [enquiries\\_westmids@environment-agency.gov.uk](mailto:enquiries_westmids@environment-agency.gov.uk).

# River Wye Report – May 2022 – Visual summary

This is a simplified visual summary of the River Wye Management Catchment Integrated Data Analysis Report. Please refer to the full report to understand the detail and areas of uncertainty. For this report, the Environment Agency analysed data made available to us up to the cut-off date of 31st March 2022.

The issues facing the river Wye are complex and require urgent action across the whole catchment by all contributing sectors. A co-ordinated, catchment based approach is needed.

## What is contributing to algal blooms in the Wye?



## Report findings

**Water quality issues**

- N** Nitrogen concentrations are increasing throughout the catchment (since 2010).
- P** Phosphate concentrations are increasing in tributaries of the main Wye. The Arrow, Lugg and Frome Catchments are the biggest contributors. Most peaks in phosphate occur after rainfall.

**Wye Management Catchment in England**

- Wye SAC
- Rivers and tributaries
- England/Wales border
- Wye management catchment

**Ecological issues**

- Decline in salmon and trout fish populations
- Macrophyte communities impacted by eutrophication
- Algal blooms

## Recommendations for regulatory, partnership and industry actions

- Reduce nutrient input across the whole catchment. Particularly diffuse sources during rainfall events.**
- Collect more detailed data including more sondes, algal samples and sediment nutrients.**
- Citizen Scientists can keep improving sampling frequency consistency and seasonal coverage.**
- All contributing partners target upstream sub-catchments.**
- Investigate the pathways and impacts of manures and wastes that are spread to land.**
- Appraise options to mitigate the impacts of poor water quality, including tree planting, and water resources management.**
- Understand detailed time series data on volumes spilled by sewer overflows.**
- Citizen Scientists can support land managers and discharge operators with targeted monitoring and evaluation.**

**Incident hotline: 0800 807060 (24 hours)**

The Environment Agency have also developed an early warning system to assess the river temperature and water quality. We have scaled up our monitoring, incident planning and response, and will inform stakeholders if there are high water temperatures and/or possible algal blooms.

Additionally, we have been successful in securing £100,000 for the Wye and Lugg catchments to supply monitoring equipment that will capture real-time, high-resolution data over the catchments. The equipment comprises of ten sondes and six auto-samplers that will be positioned across the rivers Wye, Lugg and Arrow.

### **Improving transparency and visibility of the EA's work:**

We launched [a website](#) which explains the Environment Agency's actions to improve water quality, reduce excess nutrients, and help improve environments in the Rivers Wye and Lugg. It shares the EA's data, analysis, activities and plans. It'll explain what we've done in the last 12 months, what we're planning to do, and will contain reports, data and signpost to further information and partners' websites.

We're doing this to improve our transparency of data and plans. It won't be perfect straight away, but will evolve and be added to over time.

# Herefordshire Council

## **Constructed Integrated Wetlands**

In July 2019, the Council concluded that to protect the Lugg Special Area of Conservation (SAC), it was not possible to permit any development on the Lugg, Frome or Arrow catchments that did not demonstrate 'nutrient neutrality' - there being no likely significant effects on the Lugg SAC. This immediately prevented most development proposals across the north of the county from proceeding.

The Integrated Wetlands project was designed to enable Nutrient Neutral Development in the River Lugg SAC and providing a net river betterment.

The Council subsequently purchased a site close to the Dwr Cymru Welsh Water (DCWW) plant at Luston and obtained planning permission to create an Integrated Wetland. A legal agreement is being entered into to receive waste water from the Luston Plant into the integrated Wetland. Bentley, a specialist environmental construction company, have been commissioned to build the wetland chambers and plant the wetland with a mixture of plants which have been selected to maximise the uptake of phosphates.

An application has been made to the Environment Agency for the necessary Waste Permit, which will need to be in place before planting begins.

Cabinet noted the progress being made to create Integrated Wetlands and to determine Nutrient Certainty, and committed to receiving a further report as soon as all reasonable due diligence has been completed to consider whether Nutrient Certainty has been achieved.

## **Phosphate Credits**

Cabinet also agreed the allocation policy, process and procedure for the introduction of Phosphate Credits for development in the Lugg catchment.

The Phosphate Credit Allocation Process is a staged process setting out how Phosphate credits that are generated by Herefordshire Council Integrated Wetlands can be secured by developers to offset the phosphate load of their development.

Cabinet gave the green light for Council officers to continue preparing for the commencement of trading of credits but not to proceed with the sale of credits until a further report has been provided to Cabinet updating on Nutrient Certainty of the integrated wetlands.

A further report will be presented to July Cabinet finally signing off on the validation process allowing Phosphate Credit trading to commence.

## The First Integrated Wetland Site at Luston just before site commencement.



## Trading in Credits

Herefordshire's new Nutrient Management and Credit Trading website went live last week

[Nutrient management – Herefordshire Council](#)

A screenshot of the website header for Herefordshire.gov.uk. The header features a dark background with a river image. On the left, there is a yellow 'Menu' button. The main title 'Herefordshire.gov.uk' is in white. Below it, the page title 'Nutrient management' is displayed. On the right, there are two green buttons: 'My Neighbourhood' and 'My Account'. A search bar with a magnifying glass icon is also present. At the bottom of the header, a breadcrumb trail reads: 'Home &gt; Planning and building control &gt; Nutrient management'.

Four yellow navigation buttons with white text and right-pointing arrows. From left to right, they are: 'Latest updates and guidance - Lugg', 'Nutrient levels in watercourses', 'Guidance for developers', and 'Phosphate credits'.

Two white content boxes with a green header bar and a right-pointing arrow. The left box is titled 'Development in River Lugg catchment' and contains links for 'Lugg catchment area map', 'Nutrient budget calculator - Lugg', 'Phosphate credits - Lugg catchment', and 'Nutrient monitoring dashboard'. The right box is titled 'Development in River Clun catchment' and contains links for 'Clun catchment area map', 'Nutrient budget calculator - Clun', 'Nutrient mitigation advice', and 'Natural England - advice and guidance'.

Four underlined navigation links in a row. From left to right: 'Integrated wetlands scheme', 'Nutrient Management Plan', 'Phosphate credits FAQs', and 'Wye Catchment Nutrient Management Board'.

## **Agricultural Supplementary Planning Document**

The Agricultural Development SPD is at this meeting as prelude to consultation.

### **Partnership Development- Scrutiny Task and Finish Group – Restoring the Wye**

Work on the Phosphate Commission has moved a stage forward to a Scrutiny Task and Finish Group with a tighter remit looking at strategic system wide issues and will complement TAGs important practitioner focus. Potential themes include:-

#### Phase 1

- Reviewing current evidence base and change readiness
- Point source pollution (light touch)

#### Phase 2

- Farming and Agriculture 1- Poultry
- Farming and Agriculture 2- Manure Management

#### Phase 3

- Planning and Regulation
- Education and Enforcement

#### Phase 4

- Partnership Structures and Cross Border Working
- Wider Opportunities for River Restoration

Natural England, the Environment Agency and Natural Resources Wales have agreed to explore with Herefordshire Council how this initiative could make a significant additional contribution to restoring the Wye.

### **Pressing For Change**

Since the last meeting dialogue has taken place with DEFRA policy leads, the Local Government Association, the Planning Advisory Service, the Homebuilders Federation and leaders from the agricultural and environmental sectors.

### **Supporting the Nutrient Management Board**

**In addition to providing committee support the meetings of the board have now migrated to the mod.gov platform. In future, people interested in the work of the Nutrient Management Board will be able to register for automatic notifications as the meeting pages are updated.**