

## WYE WATER QUALITY UPDATE

### ***Purpose***

To provide an update on the River Wye water quality situation.

FOR INFORMATION

### ***Key Issues***

- The Environment Agency and Natural Resources Wales provided a joint presentation at the previous meeting on the situation with water quality in the River Wye.
- Through July 2021 the 'Walking With the Wye' pilgrimage took place along the length of the River Wye to raise awareness of the environmental crisis in the Wye.
- RIVERCIDE - George Monbiot's live documentary on the state of the UK's rivers was broadcast on 14<sup>th</sup> July further raising the profile of the pollution impacts on the Wye.
- In late July/early August another severe algal bloom extended down the Wye from Hoarwithy to below Monmouth, smothering most of the Water Crowfoot beds.
- Citizens Science projects monitoring phosphate levels in the Wye and its tributaries have been initiated by Friends of the Upper Wye, Friends of the Lugg, CPRW and Herefordshire CPRW. A Friends of the Lower Wye group has also been formed.
- The Wye Nutrient Management Board met on 27<sup>th</sup> September to further debate the issues, including the Wye Phosphate Action Plan being finalised for publication.
- Avara Foods acknowledged at the Nutrient Management Board that they were "part of the problem" in polluting the Wye and so are looking at opportunities to be "part of the solution" through initiatives to remove its chicken manure from the catchment.
- DEFRA have increased funding for Environment Agency (EA) and Natural England (NE) to enhance resources for advice, monitoring and enforcement.
- The AONB Unit continues to manage projects and initiatives including with EA, Natural Resources Wales (NRW) and the Wye & Usk Foundation, to advise farmers in mitigating soil erosion and reducing agricultural run-off into the river.
- The AONB Farming in Protected Landscapes programme may be applicable to farm wetland enhancement schemes upstream of the AONB.
- Lobbying of both governments by public, private and 3<sup>rd</sup> sector interests continues for adequate resources to reduce phosphate levels across the Wye catchment.
- The Environment Agency has launched a 6 month consultation on the Severn River Basin Management Plan which includes the Wye catchment.

### ***Reasons***

Phosphate run-off in the Wye catchment, when combined with low river flows and elevated heat, create algal blooms that spread down the River Wye. Excessive growth of algae can decrease the level of dissolved oxygen in river water and also carpet the gravel beds where

fish normally lay their eggs, cutting off their oxygen supply. The majority of the phosphates come from agricultural and sewerage sources.

### ***Implications***

The Wye Valley AONB covers the lower reaches of the Wye, downstream from the confluence with the Lugg. Most of the phosphates and contributing conditions for the algal blooms originate upstream of the AONB.

In late July/early August the Wye turned green from Hoarwithy down to below Monmouth with another severe algal bloom. At this time of year the river should be clear but visibility was down to about 40cm and most of the Water Crowfoot was smothered, which normally support diverse populations of water life. This is also damaging for the local economy, affecting tourism and recreation.

Throughout the year lobbying and campaigning has grown in support of tackling the causes of pollution in the Wye. Both Westminster and Welsh Governments have been lobbied by a wide range of public, private and 3rd sector interests, with a consistent message that sufficient resources need to be invested into reducing phosphate levels across the Wye catchment. A number of grassroots community groups have formed to protect and champion the Wye including Friends of the Upper Wye, Friends of the Lugg and Friends of the Lower Wye.

In July the 'Walking With the Wye' pilgrimage took place following the Wye from its source in mid-Wales to its mouth on the Severn estuary. The aim was to bring communities together to defend and celebrate our beautiful river, to raise public awareness of the current threats and to inspire action. Each day's walk was about five miles, with most of the journey on foot, but canoeists and swimmers were also involved, as well as artists, poets, and filmmakers. There were handover events at key places on the route, including at Ross, Lydbrook, Redbrook and Chepstow. The journey ended at Chepstow on 31<sup>st</sup> July.

RIVERCIDE with George Monbiot, the world's first live investigative documentary, was broadcast from the banks of the Wye on 14<sup>th</sup> July. He set off to find out "who is polluting our rivers, and why we're not stopping them". The live broadcast further raised the profile of the plight of the Wye. The documentary proposed an 'Emergency Rescue Plan' with '5 things Government must do' and '5 things you can do'.

A co-ordinated Citizens Science project has been initiated by Friends of the Upper Wye, Friends of the Lugg, CPRW, Herefordshire CPRE and Cardiff University School of Earth and Environmental Sciences. The Environment Agency has provided funding to enable groups (in England) to buy monitoring kit. Cardiff University provide advice, training and support. The Wye and Usk Foundation, Herefordshire Wildlife Trust, Radnorshire Wildlife Trust, Wye Salmon Association and Natural Resources Wales have also been involved in supporting this work. Over 400 people have volunteered their time to help monitor nutrient levels and water quality. They take and test water samples from agreed locations, recording observations about the water samples, and upload the data. Over 120 sites are now being monitored, creating valuable mapping of the catchment to help identify pollution hotspots. The information is collated and shared with Environment Agency and Natural Resources Wales to help inform, target and drive change in cleaning up the river.

The Wye Nutrient Management Board met on 27<sup>th</sup> September to further debate the issues, including the draft Wye Phosphate Action Plan. The Board includes representatives from the river catchment's Local Planning Authorities; the farming community; Natural England, the Environment Agency & Natural Resources Wales; the construction industry; the Wye & Usk Foundation and many of the NGOs across the catchment. Avara Foods made the announcement at the Nutrient Management Board that they were "part of the problem" with regards to pollution in the Wye and they are looking at opportunities to remove chicken manure from their operations in the catchment to become "part of the solution". Avara Foods are one of the UK's leading poultry suppliers and supply poultry products to all the major UK supermarkets and restaurant chains from their Hereford processing plant. Avara are a £1.2 billion agri-business and the biggest employer in Herefordshire. Avara's supply chain is responsible for about 14 million of the 20 million chickens believed to be produced across the Wye catchment. Avara estimate their chickens produce around 150,000 tons of manure per year which mostly gets spread across farmland in the catchment. The company is currently evaluating a range of initiatives to remove its chicken manure from the catchment. These included using it as a fuel source for generating renewable energy, incinerating it into ash and biochar that can be easily transported to other parts of the country that need phosphate-based fertiliser for arable farming, and treating it via new anaerobic digester-based technology. The company also indicated that it was looking at ways of importing less phosphate into the catchment within its chicken feed in the first place. Avara confirmed that if these initiatives went ahead, then all its chicken manure could be exported and removed from inputting into the catchment.

Meanwhile, DEFRA have increased funding for Environment Agency and Natural England nearly trebling resources for farm advice, monitoring and enforcement in the catchment. The Wye Phosphate Action Plan is being finalised for publication by EA and NE and is intended to be reviewed annually. The Environment Agency have also launched a 6 month consultation on their draft river basin management plans (to co-ordinate with consultation on the draft flood risk management plans). The Severn River Basin Management Plan includes the Wye catchment. The consultation is available here:

<https://consult.environment-agency.gov.uk/environment-and-business/draft-river-basin-management-plans/consultation/intro/> and the documentation here: <https://www.gov.uk/government/collections/draft-river-basin-management-plans-2021#severn-rbd>

Wye Valley AONB Unit manages several projects that attempt to address some of the contributing factors to poor water quality in the Wye, such as reducing soil erosion and agricultural run-off into the river in the AONB:

- Natural Flood Management (NFM) projects in tributaries and sub-catchments of the Wye in Monmouthshire and Gloucestershire have AONB staff supported by Wye & Usk Foundation (WUF) Catchment Advisors, working with farmers and giving advice and grants for land management and NFM improvements.
- as part of the Restoring Our Amazing River (ROAR) with WUF, Herefordshire Wildlife Trust and the Herefordshire Rural Hub, WUF Catchment Advisors have continued advising farmers and preparing Farm Plans to help secure other grants to improve land management practices across Herefordshire. Unfortunately the project funding ends in December.
- the AONB Farming in Protected Landscapes grant programme is available for farmers and land managers in the English part of the AONB to deliver bigger and better outcomes for the environment under the 4 themes of Climate; Nature; People & Place. The AONB Unit have identified with Wye & Usk Foundation that farm wetland enhancement sites upstream

of the AONB may be eligible for a proportionate amount from the Farming in Protected Landscapes programme, subject to their positive impact on water quality downstream in the AONB.

The Wye & Usk Foundation and Catchment Sensitive Farming advisors continue with their farm visits and are working with the supply chain to investigate alternative disposal methods for manure. Herefordshire Council has commissioned integrated wetlands and a phosphate trading platform. Dwr Cymru Welsh Water continue with their planned £50M programme of improvements.

The understanding of the problem is growing all the time, particularly about the role of legacy phosphate, thanks to the work of Leeds and Lancaster Uni RePhokus group (see <http://wp.lancs.ac.uk/rephokus/>). The Wye Nutrient Management Board partners are looking for ways to support on farm demonstration of regenerative farming and zero tillage techniques. There are multiple activities being undertaken by individuals and organisations to be part of the solution to this complex problem.

### ***Background***

Recent research identifies that the Wye has mostly stayed within the permitted levels of phosphate under the EU Habitats Directive and Water Framework Directive. However the Lugg has been continuously over the permitted phosphate levels. The concentration of pollutants, including phosphates, in the Wye and Lugg is exacerbated by any reduction in the volume of water. So any prolonged dry periods will produce low flows in the river with potentially higher levels of pollutants – reducing water quantity leading to reduced water quality. Similarly prolonged periods of hot and sunny weather will increase the temperature of the water in the river, and less water will heat up more quickly. Algae thrive in the warmer water fed by the sunlight and the phosphates, which act as a fertilizer. A recognised impact of Climate Change in England and Wales is more prolonged summer heatwaves. Without reducing either the sunlight or the phosphates, there will be more algae blooms on the Wye. This is an example of the ‘perfect storm’ of the implications of both the Climate and an Ecological Emergency. The natural beauty of the area will suffer as a consequence.

The Wye is not unique in that the majority of English and Welsh rivers are polluted beyond legal limits by human, agricultural and/or industrial waste.