

## Written evidence from Friends of the Upper Wye

# Friends of the Upper Wye

Friends of the Upper Wye (FOUW) formed in July 2020 in response to many media reports documenting the large-scale loss of protected riverine habitat to severe algal blooms occurring all along the river from the headwaters to the coast. We now have over 300 members and have trained around 100 volunteers to become citizen scientists as part of our project monitoring water quality in the catchment twice a week. See [FOUW.org.uk](http://FOUW.org.uk).

## Executive Summary (Key Points)

- Over two thirds of the phosphorus pollution in the Wye catchment comes from agriculture. Nationally, farming is also the sector thought to be responsible for most river pollution.
- There are around 20 million chickens in the Wye catchment at any one time.
- Arising manures are not well controlled, regulated or their correct disposal/application enforced.
- Enforcement of the farming regulations, where statutory, is patchy and insufficient. Most farming regulations are voluntary, and unenforceable.
- The cumulative impact of pollution arising from the sudden proliferation of intensive livestock farming in Powys, Herefordshire and surrounding counties has not been documented or researched but some 90% of the globally important *Ranunculus* habitat in the river has been lost in the last five years.
- Failure by the planning authorities involved to properly consider the cumulative effects of agricultural developments is driving the recent surge of diffuse pollution entering the river.
- Control measures for river pollution have focussed on waste water and housing development controls which contribute less than 1/3 of all river pollution into the river Wye.
- Water protection zones should be used much more widely to clamp down on diffuse sources of agricultural pollution. The regulators will need enhanced budgets and much improved coverage on the ground to enforce any new rules imposed to reduce pollution.
- Regulatory discontinuities and failure to cooperate across the England Wales border exacerbates the problem and allows potential pollutants to move around the environment untraced.

# Agricultural Pollution

The sector responsible for most water pollution in our rivers is farming.

National data collection is so poor that figures should be treated with caution.

DEFRA press office says that, in England, 40% of waters are impacted by rural diffuse pollution and 36% of waters are impacted by pollution from wastewater, Sir James Bevan's official EA figures were both higher.

In urban areas, sewage is likely to be the main polluter but in rural areas it's likely to be agricultural practice.

In the West Country, where around 80% of the land is actively farmed, intensive dairy production has caused catastrophic pollution incidents when old failing slurry tanks release hundreds of tonnes of slurry into a river causing major fish-kills. West Wales suffers from similar incidents.

Farming operations are so poorly regulated that, on average, in England, a farmer can expect a pollution inspection once every 263 years<sup>1</sup>. This situation is set to improve because in July the Environment Agency announced that they will recruit an additional 50 Agriculture Regulatory Inspection Officers but we note that these staff are only starting on 18 month contracts. We believe a far larger sustained effort will be required to effectively inspect farms across England. We fear that Wales will lag far behind.

Despite repeated breaches of the new 2018 English Farming Rules for Water, there hasn't yet been a single penalty issued. There seems to be a cultural aversion to punishing agricultural polluters. The 2021 Welsh Water: Agricultural Pollution regulations only reaching full impact in 2023 contain nitrate but no phosphate provisions and have already been challenged by the NFU.

Without effective enforcement, there is no incentive for farmers to improve their practices. Compliance costs money and puts conscientious farmers at a competitive disadvantage. Farming advice and voluntary schemes are undermined because the carrot needs a stick. Rivers Trusts feel they're operating with one hand tied behind their backs - they can give support but they need the regulators to wield the stick too.

## The Wye Catchment – a case study

The River Wye, once voted the nation's favourite river, hit national headlines in the summer of 2020 for turning the colour of pea soup due to excessive algal blooms. Suddenly nobody could ignore the ecological crisis that had been brewing in the catchment for years.

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<sup>1</sup> <https://inews.co.uk/news/environment/farmers-pollution-inspection-environment-agency-chemicals-pollutants-659701>

Algal blooms starve the river of light and oxygen smothering river ecology. The most dramatically visible effect has been the loss of Ranunculus in the river. Ranunculus (water crowfoot or water buttercup) is a beautiful white-flowering plant that has traditionally blanketed the Wye. This special habitat for fish and invertebrates is acknowledged as internationally important in the designation of the Wye as a Special Area of Conservation

All those who know the river best are reporting the same story - over 90% of the precious weed has disappeared in recent years - a frightening loss in a very short time with devastating consequences.

The causes of algal blooms are temperature, low flow, sunlight and excess nutrient. The Wye suffers from excess nutrients and phosphorus is considered to be driving the problem. Given that the temperature, flow, and sunshine conditions for algal blooms are beyond our control it is the excess nutrient concentration that we can and should control to prevent man-made algal blooms from destroying the Wye's delicate ecosystem.



*Aerial photographs taken of the same spot on the Wye, near Foy – the first showing the ranunculus in 2019 and the second showing the complete lack of the plant in 2020.*

*Credit: Angling Dreams (Adam Fisher)*

Natural Resources Wales has recently found that more than 60% of the Welsh sections of the Wye Special Area of Conservation failed phosphorus limits, stating that: “Phosphorus pollution is known to cause the process of eutrophication in rivers, a highly problematic issue that causes excessive growth of algae, which smothers and blocks out light for other aquatic plants and animals.”<sup>2</sup>

## Source of the nutrients

The majority of the phosphorus in the Wye catchment - over two thirds - comes from agricultural sources. Environment Agency modelling gives the following percentages for the sources of Phosphate load:

Upper Wye sub-catchment - 66% agriculture, 25% sewage, 9% other.

River Lugg sub-catchment - 66% agriculture, 25% sewage, 9% other.

Lower Wye sub-catchment - 61% agriculture, 33% sewage, 6% other.

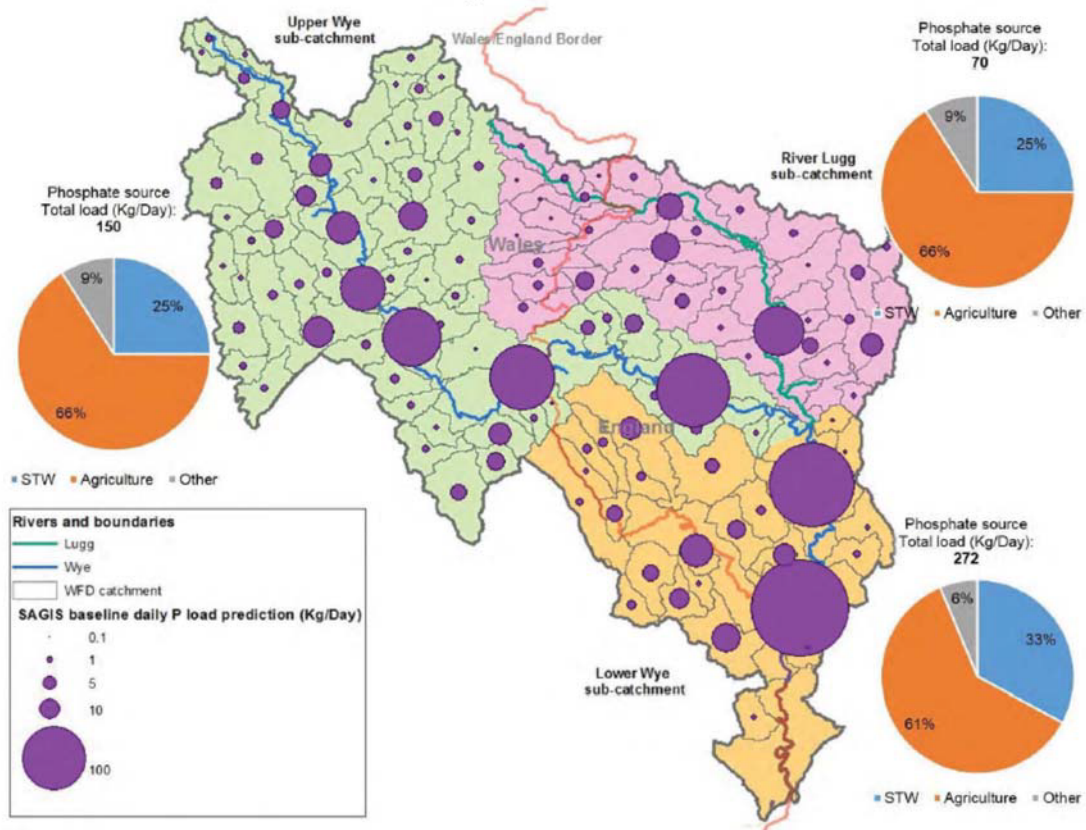
The planned phosphate-strippers for sewage treatment works in the catchment will decrease the proportion of phosphorus coming from sewage thus increase agriculture's share.

As with all modelling, “rubbish in means rubbish out” applies. We cannot comment on the reliability of the EA input data other than to note that the figures entered for intensive poultry may have been half the true number and illegal combined sewage overflows will presumably not have been included.

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<sup>2</sup> <https://naturalresources.wales/about-us/news-and-events/news/nrw-issues-new-advice-to-safeguard-the-river-wye-special-area-of-conservation/?lang=en>

Phosphate load in Wye Catchment. Load is cumulative and does not reflect phosphate concentration as river flow will be greater downstream.



*Figure 1: Illustration of the Environment Agency SAGIS modelling apportioning phosphate pollution sources across the Wye catchment, two thirds of which is attributed to agriculture by the present mode<sup>B</sup>*

The Campaign for the Protection of Rural Wales (CPRW) have been raising the alarm about the proliferation of intensive poultry units in the catchment since 2015 and have tracked the number of birds through planning applications to Powys County Council. This voluntary work has been bolstered across the border by academic Dr Alison Caffyn’s work in Herefordshire. CPRW found 10 million birds in Powys Local Planning Authority area with over 4 million in the Wye catchment and Caffyn found 17 million in Herefordshire with around 16 million in the Wye catchment. Together they estimate that there are around 20 million birds currently in the Wye catchment (not counting the Brecon Beacon National Park, Monmouthshire or Gloucestershire portions) and have mapped the units<sup>4</sup>.

<sup>3</sup> <https://www.herefordshire.gov.uk/downloads/file/20953/nutrient-management-plan-board-agenda-and-papers-july-2020>

<sup>4</sup> <https://www.brecon-and-radnor-cprw.wales/WyeCitSci/>

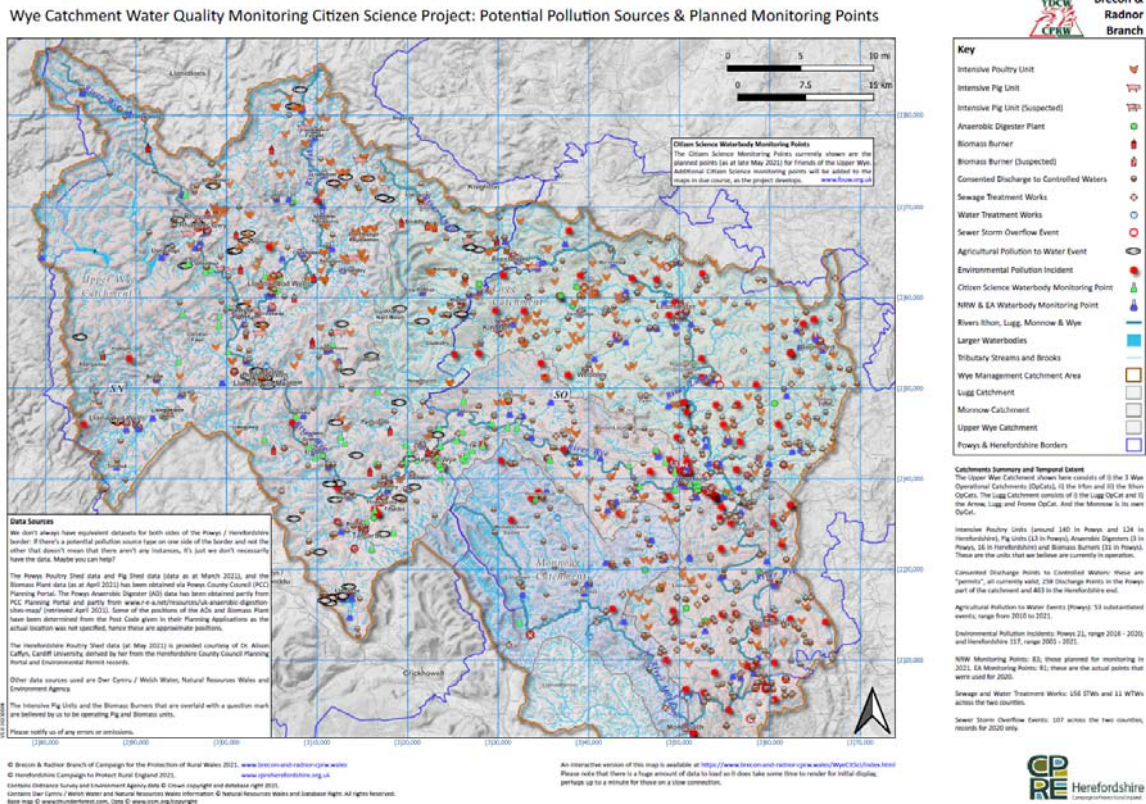


Figure 2: Map of poultry units, intensive pig units, anaerobic digesters and other points of interest such as sewage treatment works and citizen science sampling points by FOUW (as at May 2021), compiled for the entire Wye catchment from a variety of sources by CPRW and CPRE<sup>4</sup>. Interactive map in reference.

The boom in intensive livestock farming is driving the overload of phosphorus in the Wye catchment. Intensive rearing sheds are “diversification” add-ons to traditional livestock or mixed farms. The fodder for the intensive livestock units is normally all imported from outside the catchment, largely from South America, onto the farm, but the manures produced are usually spread locally on the landholding. Only a small proportion of the imported nutrients leave the farm in the form of plant crops or poultry products while the remainder eventually makes its way into the river system. This net excess is greater in areas like the Upper Wye with little arable farming. Furthermore, poultry manure is extremely high in phosphate, having some four times the P concentration of farmyard manure from cattle. This is emphatically not a circular economy.

## Cumulative impacts and planning controls

Powys County Council and Herefordshire Council are/were not keeping an accurate record of the total livestock in their counties, raising the obvious question for their planning departments with respect to the Environmental Impacts Assessment Directive legislation: how could they perform the *Cumulative* Effects Assessment required of new poultry units when assessing new applications? They tended to judge each application on its *individual* merits and leaned towards granting approvals on the basis of farm diversification. The Environment Agency and Natural

Resources Wales only hold records for permitted sites, which is those holding over 40,000 birds, and have no true sense of the overall numbers and their cumulative impact.

The statutory regulators have failed to grasp the scale of the intensive poultry industry. The magnitude of this failure is shown by the draft Action Plan (v3) to the Nutrient Management Board (NMB), written by the Technical Advisory Group to the NMB, which was presented to May 2021's NMB meeting and stated that there were 'more than 9 million birds' in the Wye catchment. The Nutrient Management Board was set up in 2014 to address the concentration of nutrients, especially phosphorus in the river Wye - and after 7 years, this betrays how woefully ill-informed even the expert advisory group is.

Recently the councils and statutory agencies have confirmed what numbers they do have and Herefordshire Council have extracted data from Defra's Animal and Plant Health Agency – now the official figures align with the estimates produced by CPRW and Caffyn<sup>5</sup>. The NMB will now state that there are an estimated 20 million birds in the catchment, vindicating the diligent work of volunteers and researchers.

The same audit must be repeated for all animals, so total livestock density and scale of manure-spreading in the catchment and its associated nutrient content is known. Proper scrutiny needs to be applied to the manure management plans of every farm. This is particularly pertinent for poultry and pig finishing units.

One characteristic behaviour we see frequently when challenging Powys County Council about current planning applications for intensive poultry units is that classic "passing of responsibility". At a NMB meeting, the Powys County Council representative stated simply that the environmental scrutiny of any application is performed by Natural Resources Wales (NRW), who will give final recommendations or conditions of the proposed development to Powys County Council planners.

Natural Resources Wales argue it is giving advice on limited issues within its planning remit; whereas the local authority is the competent decision-making Planning Authority. However, Powys CC regards NRW advice as ticking off all environmental concerns whether they are within the NRW published remit, or not.<sup>6</sup> NRW only considers the impacts of that particular proposed development, with the cumulative effect assessment to be decided by Powys CC.

In the real world, the manure management plans for new intensive poultry units are scrutinised (generally without reference to phosphorus) by NRW, who write to Powys CC saying that the conditions have been met for granting, and Powys CC then grants the planning permission without any significant further scrutiny.

For legal purposes, the Planning Authority insists it has followed the statutory agency's advice. This argument is invariably upheld by the Courts, whatever defects or omissions are in the NRW advice, making any challenge to a planning authority decision likely to fail.

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<sup>5</sup> <https://cutcher.co.uk/linklog/2021/07/15/counting-chickens>

<sup>6</sup> <https://cdn.cyfoethnaturiol.cymru/media/686847/dpas-consultation-topics-august-2018-eng.pdf?mode=pad&rnd=13220971235000000>

NRW usually requires that pollution and manure management issues be put in Planning Conditions to ensure safeguarding of the environment. In response to a CPRW EIR request, Powys County Council replied that it was not its duty to monitor manure management plans and it had never enforced against a breach but would investigate if the public brought an infringement to their attention. However, the public has no right to enter property and is unable investigate manure management on a farm.

Over 150 new intensive poultry developments have been granted planning permission in Powys in the last five years, and we are now seeing algal blooms high in the headwaters of the Wye catchment along the rivers Ithon and Irfon, unknown five years ago.

Things appear rather different in England. It seems Natural England *and* the Environment Agency sometimes respond to an intensive livestock unit planning application when consulted. In this example, approved on 10/10/18 in the Herefordshire Lugg catchment, both responded.

The Environment Agency replied “I have received consultation on a proposed free range egg production building at [...] (Willey Cottage Farm (174246)). As the proposed bird numbers are less than 40,000 (16,000 in this instance) we would not regulate the site under the Environmental Permitting Regulations (ERR) and I would have no comments to make. You are advised to seek the comments of your public protection team.”<sup>7</sup>

Natural England raised no objection noting “The application site is in close proximity to the River Wye Special Area of Conservation (SAC)” and “To meet the requirements of the Habitats Regulations, we advise you to record your decision that a likely significant effect can be ruled out. The following may provide a suitable justification for that decision: Manure management Plan.....(etc.)”<sup>7</sup>

This suggests that, as in Wales, the Manure Management Plan legitimises approval but is never enforced and we believe it is never revisited by any agency, even if another application extending the development is made, as was the case with this application.

This example also raises the question of whether there is a clear division of planning responsibilities between the EA and NE. We would expect the possibility of excess nutrients entering watercourses to be a matter for the EA.

No accepted methodologies for assessing cumulative impacts of IPU (or pig development) on rivers exist and the statutory authorities do not keep statistics. Except for ammonia -emissions where guidance on cumulative impact does exist - cumulative impact is addressed simply by the Planning Officer asserting it has been considered but that it is not a problem.

For example, a pullet-raising development in the Irfon catchment with maximum-rate manure spreading was approved with only a 10 metre buffer from various Wye tributaries known to flood. Two months after this approval, NRW published the Wye SAC compliance report featuring this location amongst the worst failing Wye waterbodies.

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<sup>7</sup> <https://councillors.herefordshire.gov.uk/documents/s50060628/174246%20-%20Willey%20Cottage%20Farm%20Willey%20Presteigne.pdf>



Various factors in the high approval rates:

- The permissive policy of NRW encouraged by the Welsh Government,
- The close socio-economic ties of local government administration to the local farming community and therefore applicants, which makes “farm diversification” trump all other factors
- The fear of legal appeal and financial imbalance between the cash-strapped Council and aggressive applicants aided by industry resources

In Powys, the public’s voice, and environmental NGOs, are silenced because the vast majority of IPU applications are decided by officers under delegated powers rather than coming before a planning committee. In contrast to all other UK authorities, Powys refuses to publish public representations made on the Powys Planning website.

## The route to rivers

Phosphorus (or phosphate,  $PO_4$ ) is an extremely reactive nutrient with complex behaviours in the environment. “Orthophosphate” is highly soluble and is leached quickly into rainwater or watercourses. Other phosphate can enter the environment in a less soluble form (chemically adsorbed onto certain minerals, for example) finding its way into rivers through soil erosion and other particulates reaching the river, where it fertilises plantlife through complex interactions with fungi and silt. The extreme solubility of orthophosphates and rapid take up by ecosystems means phosphate levels can vary significantly across short timeframes across the catchment. Soils act like sponges as phosphate stores, the higher the stored phosphate levels, the faster it leaches.

At free-range egg units, particularly prevalent on the sloping Welsh hills, birds defecate directly on the ground around the sheds and that washes directly into local watercourses when it rains. For all poultry units, the resultant manure collected from inside the sheds is spread on surrounding land, and when it rains there will be run off into soil and rivers. Some of it leaks from storage facilities and heaps.

The major issue is the overall quantity of manure in the catchment being more than the land can absorb, and more than the grassland or crops need to grow. That excess nutrient will reside in the soil and enter watercourses through leaching or soil erosion - another major problem in the Wye catchment due to poor land management. Soil is a key pathway for phosphorus entering rivers. Farms need to retain more of their precious top soil.

The RePhoKUs project<sup>8</sup> (The Role of Phosphorus in the Resilience and Sustainability of the UK Food System), a collaboration between the Universities of Lancaster and Leeds, is using the Wye as one of its study catchments. Their preliminary findings of a substance flow analysis delivered to the NMB in January 2021 estimated an **excess loading of 2000 tonnes of phosphate per annum** in the catchment, which is equivalent to 1.5 million tonnes of cattle farmyard manure or 0.5 million tonnes of poultry manure being spread *over and above* the crop and grass requirements every year - they believe that the input of phosphorus in the soil exceeds demand by 34%. There is already a huge amount of excess legacy phosphorus stored in the soil which will take years to draw down.

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<sup>8</sup> <http://wp.lancs.ac.uk/rephokus/study-catchments/>

This is significant, and we note RePhoKUs acknowledge that these are preliminary figures based on outdated agricultural census data from 2016. There is now more intensive livestock in the catchment, including millions more birds. The real situation is far worse which will be reflected when the academics use the latest data in their models.

Even based on their present calculations, RePhoKUs have said that to achieve a nutrient balance would require reducing input by either:

Stopping use of all fertiliser and half of the poultry manure

Or:

Halving the use of fertiliser, cattle manure and poultry manure

To draw down the accumulated legacy phosphorus requires reducing inputs further. This research sets out the vast scale of the challenge for achieving nutrient neutrality.

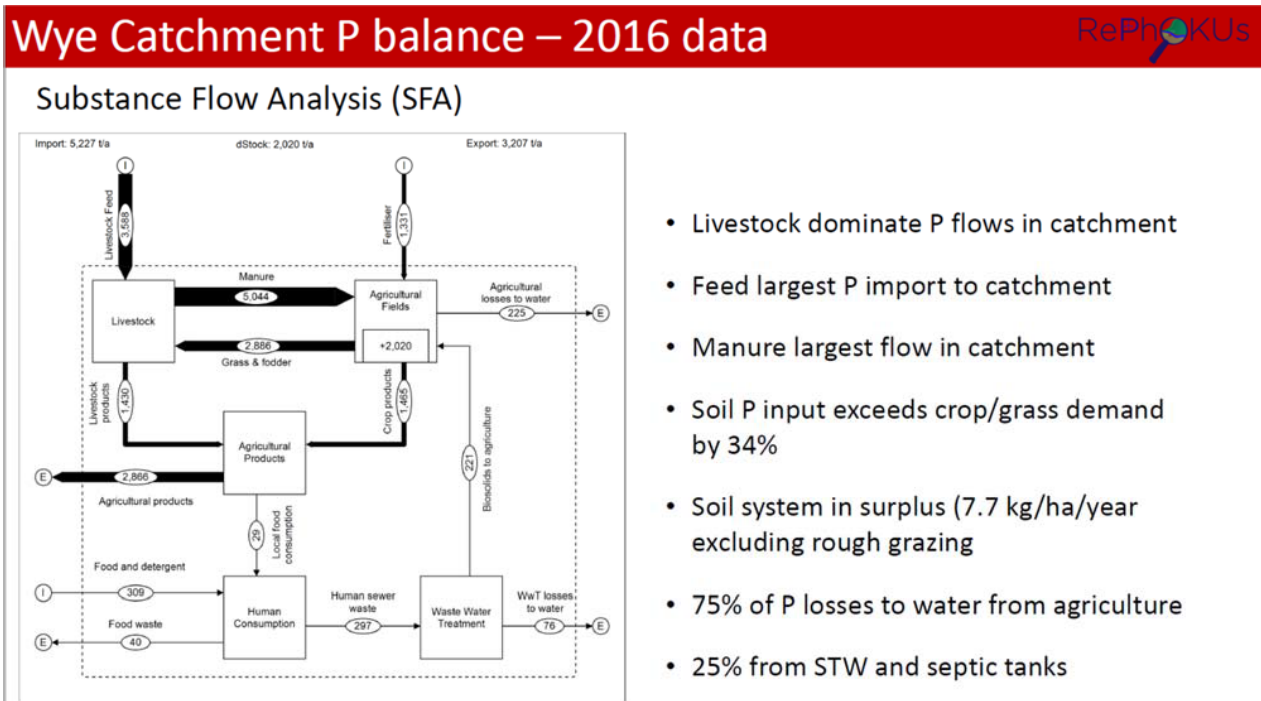


Figure 2: slide 5 of the RePhoKUs project report delivered to the NMB in January 2021, showing the substance flow analysis in the Wye catchment

## Anaerobic Digester Units

There are lots of Anaerobic Digesters in the catchment which take manure, other waste streams and specially grown crops, using them to create ‘renewable’ energy and produce digestate by-product, spread on land as a fertiliser. Digestion does nothing to address the phosphate problem, phosphate is neither created nor destroyed. Digestate spread locally holds the same phosphate as the manure feeding the digester. It is not economic for manure or digestate to be spread very far from source, so it remains in the catchment. Furthermore, these AD plants require an arable feedstock which has led to far more maize being grown in the catchment, leading to more soil erosion and run-off in its farming process, contributing to the issues of sedimentation and

phosphorus in the soil entering the river.

In spite of the AD plants being a source of phosphate nutrient within the catchment, when considered in Manure Management Plans, manure exported from the proposed development in question is not counted as part of development's pollution, nor is any consideration given to the wider cumulative effects of exporting that manure to the catchment.

What should be a valuable fertiliser is in fact treated as a waste product which requires disposal, due to its over-abundance, so should be regulated like waste. Presently, excess manure/digestate is spread on land which may have no need for the nutrients contained within, where its application to the land is controlled only by voluntary regulation which is unenforceable. FOUW's analysis of manure management plans submitted to (now granted) planning applications has shown that the phosphate spreading rate in the approved plans is around 150 kgP/ha/y, whilst even a low P index soil growing an aggressive two cuts of silage and a maize crop will only require phosphate application to the tune of 100 kgP/ha/y. For the above cropping on soils with phosphorus index of 3 or more, the phosphate requirement drops to a convenient zero. This shows that many developments recently approved for construction will be routinely over-fertilising land by using it for excess manure or digestate disposal. FOUW have never seen the results of a soil phosphate test published in a manure management plan, a pre-requisite to calculating phosphorus requirements for crops.

Sadly, despite these serious problems, there is a paucity of data. Gavin Bown, Head of Mid Wales Operations for NRW, has said, "There were concerns that phosphate levels were associated with poultry units, but we have not found a direct connection between the two elements."<sup>9</sup> Have NRW looked for a direct connection? The agencies need to monitor upstream and downstream of all potential pollution sources (including land to which arising manures will be spread) and build a smart picture of where phosphorus is entering our rivers. Instead, the agencies monitor once a month (at most) at just a few points along the main river and neglect almost all small streams and tributaries.

Monitoring needs to be smart, targeted and investigative but leadership on this has been totally lacking.

## Acute pollution incidents

Diffuse sources of phosphate pollution are accompanied by catastrophic pollution events, discharging quickly into rivers. Such an incident occurred on July 31st 2020, on the river Llynfi, a Wye tributary which joins the Wye at Glasbury, close to the England-Wales border in Powys.

A member of the public raised the alarm on a Friday afternoon when she noticed "*horrible white froth and fish thrashing around at the bottom of her garden*" at 18.30. The water was noticeably foamy and had an unusual smell. Over 10,000 fish were estimated killed over a 3 mile stretch of the river before joining the Wye at Glasbury where it was diluted by the larger Wye flow. NRW

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<sup>9</sup> <https://naturalresources.wales/about-us/news-and-events/news/nrw-issues-new-advice-to-safeguard-the-river-wye-special-area-of-conservation/?lang=en>

were unable to attend on the day of notification, when optimal evidence could have been collected, because an officer would not arrive until 21.00 when health and safety considerations would prevent collecting water samples after dark. Sunset would have been around 22.00 on that day and we believe samples could have been safely collected by the trained staff-member, by torchlight if necessary, from the reporter's garden.

Given this was a major pollution incident and fish kill, in the same location as a previous major fish kill in 2016, it is deeply disturbing that NRW failed to get anyone to take samples in a timely fashion - you would expect such an incident to merit an emergency response.

NRW attended the scene after 8am the following morning - over 13 hours after the incident was first reported. As the journalist George Monbiot commented in *Rivercide* (a documentary which featured this incident), "It's like the police turning up 13 hours late to a bank robbery and expecting the suspects to still be on the scene".

Although the incident took place near an anaerobic digester unit with a history and track record of regulatory failings<sup>10</sup>, NRW have so far been unable to determine the cause and source of the pollution, in spite of the fact that they were informed of the incident in a timely manner.

Clearly there is scope for investigation and enforcement against egregious pollution events to be strengthened and improved, with consideration given to how local intelligence and evidence gathering can speed up and improve prosecution rates.

## Cross border issues

The location of the Llynfi pollution incident, some ten miles upstream of the England-Wales border, sheds light on the regulatory chasm between England and Wales. It won't have taken long for the pollutant plume in the Llynfi to have reached the English Wye. As far as we are aware, the Environment Agency was not even informed of the incident on the day that it occurred.

The Nutrient Management Board, set up to tackle river pollution in the SAC, is led by a consortium of Herefordshire Council and Powys County Council, and advised by many groups/stakeholders such as the NFU. For seven years it has met, yet river pollution has got worse. We are now in a situation where new residential houses can not be constructed in Herefordshire unless they can demonstrate nutrient neutrality, yet new poultry units, with demonstrable pollution associated with them, are granted permission almost as a matter of course across the border in Powys.

Sections of the lower Wye where one bank (England) is subject to different pollution limits to the other bank (Wales), betray a similar theme! Naturally the river knows no borders and continues

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<sup>10</sup> In 2018, the operators of the nearby GP Biotec Anaerobic Digester Unit were fined £45,320 - £16,320 + £29,000 towards NRW costs - for polluting a 5Km stretch of the River Llynfi near Talgarth and a private drinking water supply in February 2017.

to flow, but the regulatory framework between the two sides is discontinuous, inconsistent, and there is precious little collaboration placing the river at the focus of attention of both.

FOUW had differing experiences when trying to engage with the regulators. The Environment Agency staff on the ground in Herefordshire have been very helpful and encouraging of our efforts, even providing 8000GBP seed funding for FOUW's initial pilot testing programme.

Natural Resources Wales, on the other hand, have granted us two meetings in 13 months, where a lot was said but little action was followed through. As a result FOUW believe NRW is not fit for purpose to serve as a competent regulator of the river's health; it is not even willing to engage with willing volunteers to help improve the river and prevent and monitor pollution!

Another cross border issue is that where manures arising in England are transported across the border for disposal on the land, and vice versa. Once the manure leaves the source farm, its nutrient traceability ceases.

## Citizen Science

Lack of available data, alongside the lack of initiative and curiosity from our statutory bodies, led to Friends of the Upper Wye forming a citizen science project to test a number of water quality parameters - phosphate and nitrate levels, water temperature, turbidity and conductivity.

100 volunteers, now trained to test water quality, are since June 2021 monitoring a point(s) local to where they live twice a week. We're organising our volunteers into tributary teams so that they can work together to test at key points on the smaller tributaries, upstream and downstream of possible pollution sources, and provide more granular data indicating trouble spots. We're running the programme as volunteers and look forward to seeing what the data reveals in the coming months.

Cardiff University are analysing findings and will help form part of an increased data picture, with many other groups now conducting citizen science monitoring in the catchment. We hope this new information will allow the regulators to pinpoint the major sources of agricultural pollution.

## Summary

Intensive farming has proliferated in the Wye catchment in the last 15 years, driven by the demand from a central processing unit in Hereford, Avara Foods. Fodder for the livestock is imported into the catchment, and the nutrient offtake through exports of poultry and arable crop does not match the imported nutrient quantities.

RePhoKUs estimated with 2016 data that the net annual phosphorus gain into the catchment is 2000 tonnes per annum, equivalent to approx. 500,000 tonnes poultry manure annually.

Currently that extra phosphorus is being spread on the land in the catchment as fertiliser, but the excessive quantity of phosphorus means the Wye is experiencing devastating algal blooms along

the length of the whole river, as phosphate leaches from the soils as the soil concentration of phosphate increases.

Planning permission should not have been granted for so many animals in a sensitive catchment – cumulative impacts of these developments on water quality weren't accounted for or correctly assessed. Most manure management plans focus on nitrates without mentioning phosphates and, even then, these plans weren't properly scrutinised, let alone checked for compliance after units were approved.

Excepting RePhoKUs, no serious appraisal of catchment-wide nutrient flows has yet been undertaken with recent data. Both Powys CC and Herefordshire Council should cooperate to exchange information about the cumulative impact of developments permitted in their own jurisdiction, and justify each planning decision made with reference to the impact of any imported fodder and its impact when spread on the land as manure/digestate.

Cross border controls on the movement of manure are non-existent. Cross border cooperation on the management of the catchment's water quality is managed by the NMB. Powys County Council did not even attend the last NMB meeting, and failed to provide an update as per the agenda item.

In this submission we have concentrated on poultry units. Pig-fishing units are also increasing, and owing to a convenient loophole, units with less than 2000 pigs over 30kg or 750 sows are seldom subject to Environmental Impact Assessment in the planning system.

The whole problem can be summarised thus - too much muck for too little land and disjointed authorities failing to address this chronic, persistent problem.

## Recommendations

### Monitoring and enforcement

There must be:

- Proactive and determined monitoring and enforcement by the Environment Agency and Natural Resources Wales if we are to effect real shifts in land management practice and reduce pollution.
- Increased funding for this work as budgets have been severely slashed over past decade, which has significantly reduced monitoring and enforcement activities.
- The Statutory Agencies must have the political backing to take more prosecutions of those proven to be flaunting environmental regulations.
- Annually, at least 30% more nutrient is going on to the land within the Wye Special Area of Conservation (SAC) than is required by the crop – largely grass for grazing and silage. This is happening because no-one is monitoring the manure management plans and the

plans that are submitted against planning applications are woefully lacking in detail. Soil nutrient tests, for nitrogen and phosphate must be made mandatory and caps upon the level of phosphate, not just nitrate, that can be applied to the land need to be set and actively monitored and enforced. This monitoring needs to be done by NRW or EA and not the local authorities, as is the current situation. The Nitrate Vulnerable Zones regulations should improve the monitoring against this, but the figures are easy to manipulate unless inspections are regular and in-depth, against livestock production records and receipts for bought in material.

- Closure of most polluting units, to assist in reducing livestock numbers overall

#### Planning

- The regulatory framework around planning requires a complete review to ensure that loopholes are closed and there are seamless assessments of new developments, both built and agricultural, covering every aspect of their impacts, individually and cumulatively. Within the review a system should be devised which allows all planning authorities to easily track the relevant populations of livestock within their remit, and the cumulative impact of those animals. Perhaps introduce the declaration of soil nutrient indices and fully mapped catchment - reviewed biannually.
- Until then, there should be a moratorium on any more intensive livestock units in the Wye catchment.
- Remove the exemption for agricultural sheds under the general permitted development rules so that they are all subject to planning permission.
- The cumulative effects of nutrient that must be taken into consideration in the Wye SAC, as part of the planning process, should be rolled out across all catchments in Wales.
- Extend planning moratorium in Lugg catchment across whole catchment and apply to farms, to ensure fairness and that those contributing to the pollution are all evenly affected
- Develop policies / strategies for 'end of life' units or to encourage alternative use of IPUs/Dairy sites
- Improve the institutional memory or record keeping in national planning so that the cumulative impacts of pollution sources across the catchment can be properly assessed and informed decisions taken.

#### Change in agricultural practice

- Reduce the existing number of livestock in the catchment, or else find an alternative use for the manure which could see it used outside the catchment. Maintaining the current

stocking levels and disposing of the arising manure by spreading will only make the problem worse.

- Create generous river buffers - wide corridors of riparian land which can be rewilded. River buffers offer multiple benefits. They help to prevent pollution from entering watercourses, providing a barrier against soil erosion and nutrient run-off. In that role, they can quickly be effective in reducing pollution whilst buying us more time to address the chronic causes of pollution - that of too much manure on the land. The buffers also provide shade, protecting the river from too much sun and lowering temperature, which could help to reduce the likelihood of algal blooms. They're also valuable wildlife corridors, connecting natural habitats.
- At the moment a temporary manure heap can stay in situ for 12 months. High levels of leaching and run-off occur in this time, even on flat ground. Recommend that the period is reduced to 3 months and that all heaps should be covered.
- We must address the fact that the existing legacy nutrient in the soils needs to be reduced. This can only be done by reducing nutrient import (chicken feed), potentially by closing down some of the current IPU units if a market or safe use for their manure outputs *outside of the catchment* cannot be found. Sadly the need to transport bulky manure reduces the economic opportunity considerably.
- Removal of Basic Payment, ELMS, Stewardship Grants etc for any breach of regulations. Attach ELM targets to specific P reduction activity
- Make P assessments compulsory - mitigation credits also needed
- Stop grant funding polluters - (currently it is financially advantageous to have a polluting business as subsidies are available to improve but don't ask for proof of P reduction)

#### Dealing with hazardous waste

- Manure is not a licenced waste if it can be deemed to derive an agricultural benefit i.e soil improvement for crops. Where manure needs to be taken from the immediate farm site to be spread, or where manure is sold to contractors, it should be considered a licenced waste product and tracked throughout the supply chain, like all hazardous waste.
- Records of manure spread on the land, and the source of the manure should become a mandatory requirement for the NVZ and any future regulations, or grants. This would further tighten the regulations on top of the NVZ. This includes abandoning voluntary codes of practice around the agricultural use of fertilisers, including manures and waste arisings from IPUs, digestates etc, in favour of firm regulation, for example, using Water Protection Zones
- Rural development and/or innovation funds should be made available to help develop new markets to chicken manure. Currently it is not economically viable to transport



muck more than around 8 miles from its source. With calls to ban peat rising, the nutrient within this manure should have value. Mixing manure with bracken and green waste should create rich organic, peat free, compost that there will be a ready and increasing market for. Other markets for processing waste manure into useful commodities such as fertiliser pellets and even new electrode materials for batteries<sup>11</sup> should be explored.

Dr Tom Tibbits,

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<sup>11</sup> <http://www.bestmag.co.uk/indnews/animal-faeces-derived-carbon-heart-partnership-commercialise-sodium-ion-batteries?page=1>