



WSA Water Quality Monitoring

Update 10 Dec 2020

It is now nearly 6 months since we began sampling Phosphate (P) levels in the Wye in the river. To date we have taken some 259 samples at 14 locations in the river & tributaries. Our team of volunteers has grown to 11 with the addition of monitoring the main river at Fawley. When lockdown and river levels permit we will install a water temperature monitor as part of our ongoing Temperature Monitoring programme at the same location. Whilst we are observing some interesting data on P levels it remains inappropriate to draw firm conclusions until we gather a more substantive volume of data from a range of conditions throughout the year. However, there are some initial interesting results that encourage more detailed investigations. I have attached our spreadsheet for information. If you wish a full 'excel' file for your personal study and analysis please email me at enquiries@wyesalmon.com

Some of our data is being analysed by an undergraduate at Cardiff University, himself an angler. Beginning with basic mapping of the sites he will follow on to study temporal trends in phosphate and river levels. At first look he is beginning to observe trends between water colour and phosphate level which seems likely rainfall linked. He will use various techniques to produce visual representations of the spatial and temporal variations in water chemistry. More at our next update.

In tandem with the usual phosphate checks for WSA, and in the aftermath of the most recent fish kill on the Llynfi, Gwent AS has invested in an ammonia checker which records NH₃-N. Ammoniacal nitrogen (NH₃-N) is a measure for the amount of ammonia, a toxic pollutant often found in landfill leachate (a liquid that has dissolved or entrained environmentally harmful substances that may then enter the environment) and in waste products, such as sewage, liquid manure and other liquid organic waste products. It can also be used as a measure of the health of water in natural bodies such as rivers or lakes. We are unsure what level of NH₃-N is deemed normal or acceptable and whilst a better understanding of the subject is sought, data is being gathered to establish a baseline. We have requested NRW provide us with what it considers acceptable levels for NH₃-N?

Whilst our 'citizen scientists' regularly monitor water quality across the Wye catchment tracing sources of poor water quality events, the quality and range of the data collected is limited by their tools. As a result, our data risks not been widely accepted by decision makers with authority to act to improve water quality in the river for local people.

WSA are supporting, as primary stakeholders, a Collaborative Research Project, submitted for funding to NERC Wales, by Cardiff University, School of Earth, and Environmental Sciences. This will work to enhance citizen science activities across the Wye catchment. Project funding will enable advanced water quality monitoring equipment to be purchased. After six months of monitoring, data will be shared at a forum with a wider group of local stakeholders, including regulatory bodies. Future opportunities to further enhance community monitoring will also be explored.

We are working together with environmental groups such as Friends of the Upper Wye [FUW], Campaign for the Protection of Rural Wales (CPRW) and a number of other organisations sharing information to understand better methods of monitoring and the impact on water quality.

The Ithon, a suspect villain, continues to be monitored at three locations and shows a range of results including very high spikes at Llanbister. The Hardwicke Brook at Hay also shows some

seriously high figures, as do a number of streams including in particular those feeding the Llynfi, itself a persistent source of high recordings. However, monitoring throughout the year and especially in the particularly active period for P of March to August will give us a more realistic picture. Phosphate is dynamic as it travels down the river, taken up biologically and mineralogically on its journey, so collecting on the riverbed to be stirred and activated later.

WUF are also seriously concerned with poor water quality and have installed a continuous monitoring phosphate sonde (a device that automatically gathers and transmits information about the river) in the Ithon, near to its confluence with the Wye. Information from WUF suggests first month results are expected in a week or so. WSA believe our data collection on the Ithon will add to the understanding of that gathered by this sonde. WUF also report the EA are in the final stages of putting together the paperwork for another sonde, which WUF hope to deploy in Herefordshire on the Frome, a tributary of the Lugg, by end of Jan. It is hoped this will help the understanding of the problem of legacy Phosphate in the Wye.

Salmon & Trout Conservation UK (S&TC-UK) are planning a 'river fly census', as part of their UK Smart Rivers programme on the river Ithon. Sampling and analysing invertebrate life to understand the water quality issues that need tackling.

In a recent email to the Deputy Chair of NRW and their Principal Fisheries Officer, on the matter of water pollution, in particular that exemplified by the increase in algal bloom, we expressed concern over the perceived inability of NRW to detect issues in the waterbody and indeed measure the beneficial effects of any changes implemented. We referenced our 'citizens science' project, believing our data collection was beginning to provide pointers that might be used by NRW to investigate sources. We offered our tabulated dataset of circa 250 lines for their consideration whilst we continue the activity through to next summer to cover the seasonal changes in results.

NRW confirmed they approve of citizen science, stating it would be helpful in due course to exchange appropriate evidence. NRW Principle Fisheries Officer will ask colleagues whether and when they would like to receive our data.

We pointed by way of example to the river Llynfi, recently impacted severely by pollution incidents. Our data showing levels of phosphates consistently higher than the levels set out in environmental legislation. We also noted similar levels in tributaries of the Llynfi, such as the Felindre Brook, Llynfi Dulas and Ennig. Eutrophication (excessive richness of nutrients in a lake or other body of water, frequently due to run-off from the land, which causes a dense growth of plant life), resulting from the Llynfi source at Llangorse Lake seems to have been a commonly held view for many years. However, data indicating as it does high P levels in Llynfi tributaries not fed directly by Llangorse Lake might indicate still other problems apparently not being investigated. We are seeking a response as to why this issue has not been addressed and resolved sooner. NRW have agreed to investigate and report back.

Our efforts have not been limited to the Wye in Wales and many of our volunteers are monitoring locations on the English stretches of the river. Our data recording suggests several points on the main stem between Hereford and Llandogo worthy of investigation. There are also tributaries, notably the Hardwick Brook at Hay on Wye and the Pentaloë Brook at Mordiford both showing consistently high P readings. Information we will share with the EA.

At a recent meeting of the Wye Local Fishery Group NRW reported they are now doing work on Phosphate pollution and likely to be advising against further development in Powys. Subsequent communications stated an evidence review paper in support of this change was with the Welsh Minister and scheduled for approval early December. We have sought confirmation of this and an explanation on its route to full operation. We understand this policy to be advisory and in no way places a statutory requirement on planning authorities to practice

the precautional approach as defined in the EU Habitat Directive (Adopted in 1992 Council Directive 92/43/EEC, the Habitat Directive ensures the conservation of a wide range of rare, threatened or endemic animal and plant species.

We are seeking to understand 'If a planning authority declines to take full heed of this policy what options NRW might consider appropriate to deliver compliance'?

More in our next update in the spring.

Happy Christmas to all our members.

Keep safe

Stuart Smith
WSA

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WSA Water Quality (Phosphate) Monitoring Data

Note! * = temp at time of sample measuring

Date	Time (24Hrs)	Data Recorder	County	River	Location	Map Ref	Phosphate mg/l	Water Colour	NRW Water Gauge	Water Height (m)	Water Temp °C	Weather	Livestock Present	Comments
03/07/20		DC	Powys	Llynfi	Three Cocks	SO 169380	0.14	Clear	Three Cocks	0.20	n/a	Overcast	No	
03/07/20		DC	Powys	Wye	Glasbury	SO 177390	0.00	Clear	Glasbury	0.76	15.7	Overcast	No	Temp at WUF Llanstephan gauge
04/07/20		DC	Powys	Llynfi	Three Cocks	SO 169380	0.17	Clear	Three Cocks	0.20		Overcast	No	
04/07/20		DC	Powys	Wye	Glasbury	SO 177390	0.00	Clear	Glasbury	0.84		Overcast	No	River rising. All new Wye and Irfon water, not lthon
05/07/20		DC	Powys	Llynfi	Three Cocks	SO 169380	0.19	Clear	Three Cocks	0.20	15.0	Overcast	No	Temp in situ
05/07/20		DC	Powys	Wye	Glasbury	SO 177390	0.00	Murky	Glasbury	1.17	14.0	Overcast	No	Temp in situ
08/07/20		GM	Powys	Wye	Llowes	SO 200415	0.05		Hay on Wye	0.56			No	
09/07/20		DC	Powys	Llynfi	Three Cocks	SO 169380	0.18	Coloured	Three Cocks	0.24		Overcast	No	
09/07/20		DC	Powys	Wye	Glasbury	SO 177390	0.00	Coloured	Glasbury	1.50		Overcast	No	River rising. All new Wye and Irfon water, not lthon
10/07/20		GM	Powys	Wye	Llowes	SO 200415	1.91	Dirty	Hay on Wye	0.69		Cloudy	No	
11/07/20		GM	Powys	Wye	Llowes	SO 200415	0.00	Murky	Hay on Wye	0.53		Sunny	No	
12/07/20		GM	Powys	Wye	Llowes	SO 200415	0.02	Murky	Hay on Wye	0.46		Sunny	No	
13/07/20		GM	Powys	Wye	Llowes	SO 200415	0.00	Murky	Hay on Wye	0.42		Cloudy	No	
14/07/20		CH	Monmouthshire	Wye	Bigswier Station	SO 537050	0.06	Clear	Bigswier	6.48		Overcast	No	
14/07/20		GM	Powys	Wye	Llowes	SO 200415	0.04	Clear	Hay on Wye	0.44		Cloudy	No	
15/07/20		PC	Powys	Ithon	Crossgates	SO 116640	0.00		Llanddewi	0.11	14.6			
15/07/20		PC	Powys	Ithon	Llanbadarn	SO 099777	0.00		Llanddewi	0.11	12.5			
15/07/20		PC	Powys	Ithon	Llanbister	SO 102727	0.00		Llanddewi	0.11	13.2			
15/07/20		DC	Powys	Llynfi	Three Cocks	SO 169380	0.11	Clear	Three Cocks	0.19	14.0	Overcast	No	Temp in situ
15/07/20		DC	Powys	Llynfi	Three Cocks	SO150347	0.16	Clear	Three Cocks	0.19		Overcast	No	Above sewage works below Ennig confluence
15/07/20		DC	Powys	Llynfi	Three Cocks	SO149342	0.29	Clear	Three Cocks	0.19		Overcast	No	Above Dulas confluence
15/07/20		DC	Powys	Wye	Glasbury	SO 177390	0.00	Clear	Glasbury	0.80	14.0	Overcast	No	Temp in situ
17/07/20		GM	Powys	Wye	Llowes	SO 200415	0.00	Clear	Hay on Wye	0.37		Cloudy	No	
20/07/20		GM	Powys	Wye	Llowes	SO 200415	0.00	Clear	Hay on Wye	0.34		Sunny	No	
21/07/20		CH	Monmouthshire	Wye	Bigswier Station	SO 537050	0.00	Clear	Bigswier	6.35		Sunny	No	
21/07/20	18.00	TH	Herefordshire	Wye	Hom Green	SO 574226	0.09	Clear	Ross	0.30		Overcast	No	
22/07/20		PC	Powys	Ithon	Crossgates	SO 116640	0.00		Llanddewi	0.13	14.5			
22/07/20		PC	Powys	Ithon	Llanbadarn	SO 099777	0.00		Llanddewi	0.13	13.7			
22/07/20		PC	Powys	Ithon	Llanbister	SO 102727	0.00		Llanddewi	0.13	13.7			
24/07/20		DC	Powys	Ennig	Three Cocks	SO151344	0.22	Clear	Three Cocks	0.17		Overcast	No	Ennig above Llynfi confluence
24/07/20		DC	Powys	Llynfi	Three Cocks	SO 169380	0.09	Clear	Three Cocks	0.17	15.0	Overcast	No	Temp in situ
24/07/20		DC	Powys	Llynfi	Three Cocks	SO149342	0.27	Clear	Three Cocks	0.17		Overcast	No	Llynfi above Dulas confluence
24/07/20		DC	Powys	Llynfi Dulas	Three Cocks	SO119339	0.15	Clear	Three Cocks	0.17		Overcast	No	Llynfi Dulas at Pony y Bat Bridge
24/07/20		DC	Powys	Wye	Glasbury	SO 177390	0.00	Clear	Glasbury	0.66		Overcast	No	
25/07/20		GM	Powys	Wye	Llowes	SO 200415	0.00	Clear	Hay on Wye	0.30		Cloudy	No	
28/07/20		CH	Monmouthshire	Wye	Bigswier Station	SO 537050	0.02	Clear	Bigswier	6.32		Sunny	No	
28/07/20	12.00	TH	Herefordshire	Wye	Hom Green	SO 574226	0.00	Some Colour	Ross	0.26		Overcast	No	
29/07/20		PC	Powys	Ithon	Crossgates	SO 116640	0.00		Llanddewi	0.12	14.8			
29/07/20		PC	Powys	Ithon	Llanbadarn	SO 099777	0.00		Llanddewi	0.12	13.5			
29/07/20		PC	Powys	Ithon	Llanbister	SO 102727	0.00		Llanddewi	0.12	14.8			
31/07/20		GM	Powys	Wye	Llowes	SO 200415	0.00	Clear	Hay on Wye	0.31		Cloudy	No	
01/08/20	n/a	DH	Powys	Wye	Rhayader	SN975675	0.00	Clear	Ddol Farm	1.16	n/a	Overcast	Yes	Above STW and Below Town
02/08/20		DC	Powys	Llynfi	Three Cocks	SO 169380	0.23	Clear	Three Cocks	0.17		Sunny	No	
02/08/20		DC	Powys	Llynfi	Three Cocks	Pipton Gate 1	0.00	Turbid	Three Cocks	0.17		Sunny	No	During pollution incident!
02/08/20		DC	Powys	Llynfi	Three Cocks	Pipton Gate 4	0.15	clear	Three Cocks	0.17		Sunny	No	
02/08/20		DC	Powys	Wye	Glasbury	SO 177390	0.00	Clear	Glasbury	0.66	19.0	Sunny	No	Temp in situ
02/08/20		GM	Powys	Wye	Llowes	SO 200415	0.00	Clear	Hay on Wye	0.28		Cloudy	No	
04/08/20	10.00	GM	Powys	Lynfi	Pipton	SO 168380	0.50	clear	Three Cocks	v.low		n/a	No	warm
04/08/20		CH	Powys	Wye	Bigswier Station	SO 537050	0.02	Clear	Bigswier	6.25		Overcast	No	
04/08/20	14.00	TH	Herefordshire	Wye	Hom Green	SO 574226	0.03	Clear	Ross	0.18		Overcast	No	
05/08/20	n/a	DH	Powys	Wye	Rhayader	SN975675	0.00	Clear	Ddol Farm	0.91	n/a	Overcast	Yes	Above STW and Below Town
06/08/20		PC	Powys	Ithon	Crossgates	SO 116640	0.00		Llanddewi	0.11	14.2			
06/08/20		PC	Powys	Ithon	Llanbadarn	SO 099777	0.00		Llanddewi	0.11	13.7			
06/08/20		PC	Powys	Ithon	Llanbister	SO 102727	0.00		Llanddewi	0.11	14.1			
08/08/20		DC	Powys	Llynfi	Three Cocks	SO 169380	0.20	Clear	Three Cocks	0.17		Sunny	No	
08/08/20		DC	Powys	Wye	Glasbury	SO 177390	0.00	Clear	Glasbury	0.62		Sunny	No	
08/08/20		GM	Powys	Wye	Llowes	SO 200415	0.00	Clear	Hay on Wye	0.28		Sunny	No	
11/08/20		CH	Monmouthshire	Wye	Bigswier Station	SO 537050	0.03	Clear	Bigswier	6.20		Sunny	No	
11/08/20	12.00	TH	Herefordshire	Wye	Hom Green	SO 574226	0.23	Clear	Ross	0.15		Sunny	No	
12/08/20	n/a	DH	Powys	Wye	Rhayader	SN975675	0.00	Clear	Ddol Farm	0.91	n/a	Bright	Yes	Above STW and Below Town
13/08/20	0.44	FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO 253443	0.49	cloudy with brown particles	Hay on Wye	0.43	23.0*	Rained in Prev 24hrs	No	
13/08/20		PC	Powys	Ithon	Crossgates	SO 116640	0.00		Llanddewi	0.11	18.8			
13/08/20		PC	Powys	Ithon	Llanbadarn	SO 099777	0.04		Llanddewi	0.11	19.4			
13/08/20		PC	Powys	Ithon	Llanbister	SO 102727	0.00		Llanddewi	0.11	19.2			

WSA Water Quality (Phosphate) Monitoring Data

Note! * = temp at time of sample measuring

Date	Time (24Hrs)	Data Recorder	County	River	Location	Map Ref	Phosphate mg/l	Water Colour	NRW Water Gauge	Water Height (m)	Water Temp °C	Weather	Livestock Present	Comments
13/08/20	0.43	FoUW	Herefordshire	Wye	Whitney Bridge	SO 257474	0.00	v slightly cloudy	Hay on Wye	0.43	23.0*	Rained in Prev 24hrs	No	taken from edge of river where flow low and not mixing well
14/08/20	0.48	FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443	0.40	slightly brown	Hay on Wye	0.36	20.0*	Rained in Prev 24hrs	No	Taken from bridge
14/08/20		DC	Powys	Llynfi	Three Cocks	SO 169380	0.29	Clear	Three Cocks	0.18	17.0	Overcast	No	in situ
14/08/20		DC	Powys	Wye	Glasbury	SO 177390	0.00	Coloured	Glasbury	0.75		Overcast	No	River dropping
14/08/20	0.47	FoUW	Herefordshire	Wye	Whitney Bridge	SO258474	0.00	v slightly cloudy	Hay on Wye	0.36	20.0*	Rained in Prev 24hrs	No	
15/08/20	0.55	FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443	0.38	slightly brown	Hay on Wye	0.32	20.0*	Rained in Prev 24hrs	No	Taken from bridge
15/08/20	n/a	DH	Powys	Wye	Rhayader	SN975675	0.06	Murky	Ddol Farm	1.22	n/a	Bright	Yes	Above STW and Below Town
16/08/20	0.48	FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443	0.30	v slightly cloudy	Hay on Wye	0.32	21.5*	Rained in Prev 24hrs	No	Taken from bridge
17/08/20	0.58	FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443	0.22	v slightly cloudy	Hay on Wye	0.54	21.0*	Rained in Prev 24hrs	No	Taken from bridge
17/08/20		GM	Powys	Wye	Llowes	SO 200415	0.00	Dirty	Hay on Wye	0.56		Cloudy	No	
18/08/20	0.65	FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443	0.25	v slightly cloudy	Hay on Wye	0.67	19.5*	Rained in Prev 24hrs	No	Taken from bridge
18/08/20	0.66	FoUW	Herefordshire	Hardwicke Brook	Road Bridge	SO262438	0.16	v slightly cloudy	Hay on Wye	0.67	19.5*	Rained in Prev 24hrs	No	road bridge
18/08/20		CH	Monmouthshire	Wye	Bigswier Station	SO 537050	0.02	Clear	Bigswier	6.40		Overcast	No	
18/08/20	12.00	TH	Herefordshire	Wye	Hom Green	SO 574226	0.19	Coloured	Ross	0.67		Sunny Intervals	No	
19/08/20	0.69	FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443	0.17	v slightly cloudy	Hay on Wye	0.60	20.0*	Rained in Prev 24hrs	No	Taken from bridge. River running higher than recently
19/08/20	n/a	DH	Powys	Wye	Rhayader	SN975675	0.06	Murky	Ddol Farm	1.07	n/a	Dull	Yes	Above STW and Below Town
20/08/20		FoUW	Herefordshire	Hardwicke Brook	Mill Cottage	SO265427	0.16		Hay on Wye	0.62			No	average of 6 readings of same sample
20/08/20	0.46	FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443	0.21	v slightly cloudy	Hay on Wye	0.62	20.0*	Rained in Prev 24hrs	No	Taken from bridge
20/08/20		PC	Powys	Ithon	Crossgates	SO 116640	n/a	coloured	Llanddewi	0.22	16.7			
20/08/20		PC	Powys	Ithon	Llanbadarn	SO 099777	0.10		Llanddewi	0.22	12.9			
20/08/20		PC	Powys	Ithon	Llanbister	SO 102727	n/a	coloured	Llanddewi	0.22	14.0			
20/08/20		FoUW	Herefordshire	Wye	Clifford Common	SO244459	0.04		Hay on Wye	0.62			No	average of 6 readings of same sample
21/08/20		FoUW	Herefordshire	Hardwicke Brook	Mill Cottage	SO265427	0.07		Hay on Wye	0.61			No	
21/08/20	0.61	FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443	0.23	murky, brown	Hay on Wye	0.61	19.5*	Rained in Prev 24hrs	No	Taken from bridge
21/08/20		FoUW	Herefordshire	Wye	Whitney Bridge	SO258474	0.00		Hay on Wye	0.61			No	
22/08/20	0.64	FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443	0.17	slightly cloudy,	Hay on Wye	0.75	19.0*	Rained in Prev 24hrs	No	Taken from bridge. average of 6 readings of same sample
23/08/20	0.50	FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443	0.17	v slightly cloudy,	Hay on Wye	0.68	19.0*		No	Taken from bridge. average of 6 readings of same sample
23/08/20	n/a	DH	Powys	Wye	Rhayader	SN975675	0.00	Murky	Ddol Farm	1.83	n/a	Dull	Yes	Above STW and Below Town
24/08/20	0.47	FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443	0.16	v slightly cloudy,	Hay on Wye	0.59	19.0*		No	Taken from bridge. average of 6 readings of same sample
24/08/20		DC	Powys	Llynfi	Three Cocks	SO 169380	0.24	Turbid	Three Cocks	0.29	14.5	Sunny	No	in situ
24/08/20		FoUW	Herefordshire	Wye	Clifford Common	SO244459	0.07		Hay on Wye	0.59			No	average of 6 readings of same sample
24/08/20		DC	Powys	Wye	Glasbury	SO 177390	0.00	Coloured	Glasbury	1.11	17.0	Sunny	No	River dropping/Temp in situ
24/08/20		GM	Powys	Wye	Llowes	SO 200415	0.00	Dirty	Hay on Wye	0.70		Cloudy	No	
25/08/20		FoUW	Powys	Bachowy	Bachowy	SO107427	0.04		Erwood	2.24			No	average of 6 readings of same sample
25/08/20		FoUW	Powys	Edw	Edw	SO 077470	0.00		Builth Wells	2.41			No	
25/08/20	0.51	FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443	0.25	v slightly cloudy,	Hay on Wye	1.23	19.0*	Rained in Prev 24hrs	No	Taken from bridge. average of 6 readings of same sample
25/08/20		FoUW	Powys	Llynfi	Three Cocks	SO 169380	0.15		Three Cocks	0.39			No	average of 6 readings of same sample
25/08/20		CH	Monmouthshire	Wye	Bigswier Station	SO 537050	0.00	Murky	Bigswier	6.91		Overcast	No	High Water
26/08/20	0.68	FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443	0.14	v slightly cloudy,	Hay on Wye	1.16	19.0*		No	Taken from bridge. average of 6 readings of same sample
26/08/20	18.00	TH	Herefordshire	Wye	Hom Green	SO 574226	0.18	Coloured	Ross	0.50		Cloudy	No	
26/08/20	n/a	DH	Powys	Wye	Rhayader	SN975675	0.00	Murky	Ddol Farm	2.29	n/a	Bright	Yes	Above STW and Below Town
27/08/20		FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443	0.12	v slightly cloudy,	Hay on Wye	0.82	19.0*		No	Taken from bridge. average of 6 readings of same sample
28/08/20	0.54	FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443	0.21	v slightly cloudy	Hay on Wye	0.88	18.0*		No	Taken from bridge. average of 6 readings of same sample
28/08/20		PC	Powys	Ithon	Crossgates	SO 116640	n/a	coloured	Llanddewi	0.12	12.8			
28/08/20		PC	Powys	Ithon	Llanbadarn	SO 099777	0.13		Llanddewi	0.12	11.6			
28/08/20		PC	Powys	Ithon	Llanbister	SO 102727	n/a	coloured	Llanddewi	0.12	12.2			
29/08/20	n/a	DH	Powys	Wye	Rhayader	SN975675	0.00	Murky	Ddol Farm	2.90	n/a	Bright	Yes	Above STW and Below Town
01/09/20	0.71	FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443	0.14		Hay on Wye	0.53	18.0*		No	Taken from bridge. average of 6 readings of same sample
01/09/20		CH	Monmouthshire	Wye	Bigswier Station	SO 537050	0.00	Murky	Bigswier	6.96		Sunny	No	High Water
01/09/20	15.00	TH	Herefordshire	Wye	Hom Green	SO 574226	0.12	Some Colour	Ross	0.70		Sunny Intervals	No	
02/09/20	0.78	FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443		clear running	Hay on Wye	0.49		Rained in Prev 24hrs	No	average of 6 readings of same sample
02/09/20		GM	Powys	Wye	Llowes	SO 200415	0.00	Clear	Hay on Wye	0.49		Cloudy	No	Cold
02/09/20	n/a	DH	Powys	Wye	Rhayader	SN975675	0.00	Cleae	Ddol Farm	2.29	n/a	Dull	Yes	Above STW and Below Town
03/09/20	12.00	SRS	Powys	Felindre Brook	Felindre	SO 187363	0.10	Coloured	Three Cocks	0.32		Cloudy	No	Above Felindre Village
03/09/20		DC	Powys	Felindre Brook	Three Cocks	SO 166376	0.20	Turbid	Three Cocks	0.34		Overcast	No	Velindre Brook above Llynfi confluence
03/09/20		DC	Powys	Llynfi	Three Cocks	SO 169380	0.20		Three Cocks	0.34		Overcast	No	
03/09/20		DC	Powys	Wye	Glasbury	SO 177390	0.00	Coloured	Glasbury	0.97		Overcast	No	River rising
04/09/20		PC	Powys	Ithon	Crossgates	SO 116640	n/a	coloured	Llanddewi	0.11	12.6			
04/09/20		PC	Powys	Ithon	Llanbadarn	SO 099777	0.20		Llanddewi	0.11	11.2			
04/09/20		PC	Powys	Ithon	Llanbister	SO 102727	n/a	coloured	Llanddewi	0.11	12.6			
05/09/20	11.00	SRS	Powys	Felindre Brook	Felindre	SO 187363	0.12	Coloured	Three Cocks	0.30		Sunny	No	Above Felindre Village
05/09/20		FoUW	Herefordshire	Hardwicke Brook	Above IPU Archenfield	SO263421	0.00		Hay on Wye	0.52			No	average of 6 readings of same sample
05/09/20		FoUW	Herefordshire	Hardwicke Brook	Mill Cottage	SO265427	0.08		Hay on Wye	0.52			No	average of 6 readings of same sample
05/09/20		FoUW	Herefordshire	Hardwicke Brook	Pontvaen Bridge	SO235437	0.10		Hay on Wye	0.52			No	Quite heavy rain for previous 12 hours

WSA Water Quality (Phosphate) Monitoring Data

Note! * = temp at time of sample measuring

Date	Time (24Hrs)	Data Recorder	County	River	Location	Map Ref	Phosphate mg/l	Water Colour	NRW Water Gauge	Water Height (m)	Water Temp °C	Weather	Livestock Present	Comments
05/09/20		FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443	0.10		Hay on Wye	0.52			No	
05/09/20	n/a	DH	Powys	Wye	Rhayader	SN975675	0.00	Murky	Ddol Farm	1.77	n/a	Bright	Yes	Above STW and Below Town
07/09/20	11.00	SRS	Powys	Felindre Brook	Felindre	SO 187363	0.07	Clear	Three Cocks	0.29		Cloudy	No	Above Felindre Village
07/09/20	4.15	PC	Powys	Ithon	Crossgates	SO 116640	0.13		Llanddewi	0.12	12.4			
07/09/20	3.00	PC	Powys	Ithon	Llanbadarn	SO 099777	0.07		Llanddewi	0.12	11.3			
07/09/20	3.30	PC	Powys	Ithon	Llanbister	SO 102727	0.32		Llanddewi	0.12	12.0			
08/09/20	12.00	SRS	Powys	Felindre Brook	Felindre	SO 187363	0.11	Clear	Three Cocks	0.28		Cloudy	No	Above Felindre Village
08/09/20		FoUW	Herefordshire	Hardwicke Brook	Above IPU Archenfield	SO263421	0.00		Hay on Wye	0.50			No	
08/09/20		FoUW	Herefordshire	Hardwicke Brook	Mill Cottage	SO265427	0.09		Hay on Wye	0.50			No	
08/09/20		FoUW	Herefordshire	Hardwicke Brook	Pontvaen Bridge	SO235437	0.13		Hay on Wye	0.50			No	
08/09/20		FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443	0.12		Hay on Wye	0.50			No	
08/09/20		CH	Monmouthshire	Wye	Bigswier Station	SO 537050	0.08	Murky	Bigswier	6.55		Overcast	No	
09/09/20	12.00	TH	Herefordshire	Wye	Hom Green	SO 574226	0.06	Some Colour	Ross	0.52		Sunny Intervals	No	Still a brown tinge to the water
09/09/20	n/a	DH	Powys	Wye	Rhayader	SN975675	0.02	Clear	Ddol Farm	1.83	n/a	Bright	Yes	Above STW and Below Town
10/09/20		GM	Powys	Wye	Llowes	SO 200415	0.00	Clear	Hay on Wye	0.48		Cloudy	No	cool
12/09/20	n/a	DH	Powys	Wye	Rhayader	SN975675	0.00	Murky	Ddol Farm	2.13	n/a	Bright	Yes	Above STW and Below Town
13/09/20		DC	Powys	Llynfi	Three Cocks	SO 169380	0.24	Clear	Three Cocks	0.25	13.0	Sunny	No	
13/09/20		DC	Powys	Wye	Glasbury	SO 177390	0.00	Clear	Glasbury	0.79	17.0	Sunny	No	
15/09/20		CH	Monmouthshire	Wye	Bigswier Station	SO 537050	0.06	Clear	Bigswier	6.40		Cloudy	No	
16/09/20	11.00	TH	Herefordshire	Wye	Ross	SO 574226	0.00	Clear	Ross	0.30		Sunny	No	
17/09/20	n/a	DH	Powys	Wye	Rhayader	SN975675	0.04	Clear	Ddol Farm	1.77	n/a	Bright	Yes	Above STW and Below Town
18/09/20	4.15	PC	Powys	Ithon	Crossgates	SO 116640	0.10	clearing	Llanddewi	0.15	12.1	part cloud	No	
18/09/20	4.00	PC	Powys	Ithon	Llanbadarn	SO 099777	0.05	clearing	Llanddewi	0.15	11.0	sunny	No	
18/09/20	3.50	PC	Powys	Ithon	Llanbister	SO 102727	0.07	clearing	Llanddewi	0.15	11.7	part cloud	No	
18/09/20	12.00	GM	Powys	Wye	Llowes	SO 200415	0.00	clear	Hay on Wye	1.30		Cloudy	No	warm
20/09/20	10.45	DC	Powys	Llynfi	Three Cocks	SO 169380	0.19	Clear	Three Cocks	0.23	11.0	Overcast	No	
20/09/20	12.00	TM	Herefordshire	Pentaloe Brook	Mordiford	SO 574373	0.02	Clear	Lugwardine	0.35		Overcast	No	
20/09/20	10.15	DC	Powys	Wye	Glasbury	SO 177390	0.00	Clear	Glasbury	0.67	14.0	Overcast	No	
20/09/20	n/a	DH	Powys	Wye	Rhayader	SN975675	0.00	Clear	Ddol Farm	1.52	n/a	Bright	Yes	Above STW and Below Town
22/09/20		CH	Monmouthshire	Wye	Bigswier Station	SO 537050	0.00	Clear	Bigswier	6.30		Overcast	No	Misty
22/09/20	13.00	TH	Herefordshire	Wye	Ross	SO 574226	0.01	Clear	Ross	0.25	17.0	Sunny	No	
23/09/20	0.46	FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443	0.14	clear running	Hay on Wye	0.32	17.0*		No	Taken from bridge
23/09/20	n/a	DH	Powys	Wye	Rhayader	SN975675	0.02	Clear	Ddol Farm	0.91	n/a	Bright	Yes	Above STW and Below Town
24/09/20	0.48	FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443	0.11	clear running	Hay on Wye	0.32	17.0*	Rained in Prev 24hrs	No	Taken from bridge
24/09/20	4.20	PC	Powys	Ithon	Crossgates	SO 116640	0.16	clear	Llanddewi	0.15	9.4	clear	No	
24/09/20	4.00	PC	Powys	Ithon	Llanbadarn	SO 099777	0.09	clear	Llanddewi	0.15	8.7	clear	No	
24/09/20	3.50	PC	Powys	Ithon	Llanbister	SO 102727	0.06	clear	Llanddewi	0.15	8.9	clear	No	
24/09/20	12.00	TM	Herefordshire	Wye	Ballingham	SO 565328	0.00	Clear	Mordiford	0.48	14.6	Showers	No	
25/09/20	0.48	FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443	0.13	clear running	Hay on Wye	0.36	17.0*		No	Taken from bridge
25/09/20	11.11	DC	Powys	Llynfi	Three Cocks	SO 169380	0.20	Clear	Three Cocks	0.25	9.0	Sunny	No	
25/09/20	11.30	DC	Powys	Wye	Glasbury	SO 177390	0.00	Clear	Glasbury	0.74	11.0	Sunny	No	
26/09/20	0.48	FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443	0.12	clear running	Hay on Wye	0.32	16.0*		No	Taken from bridge
26/09/20	n/a	DH	Powys	Wye	Rhayader	SN975675	0.00	Clear	Ddol Farm	0.98	n/a	Bright	Yes	Above STW and Below Town
27/09/20	12.00	TM	Herefordshire	Pentaloe Brook	Mordiford	SO 574373	0.00	Clear	Lugwardine	0.35		Sunny	No	
28/09/20	0.48	FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443	0.13	clear running	Hay on Wye	0.31	18.0*		No	Taken from bridge
28/09/20	11.00	GM	Powys	Wye	Llowes	SO 200415	0.00	clear	Hay on Wye	0.32		Cloudy	No	cool
29/09/20	0.54	FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443	0.11	clear running	Hay on Wye	0.29	18.0*		No	Taken from bridge
29/09/20		CH	Monmouthshire	Wye	Bigswier Station	SO 537050	0.11	Clear	Bigswier	6.27		Cloudy	No	
29/09/20	10.00	TH	Herefordshire	Wye	Ross	SO 574226	0.00	Clear	Ross	0.22	13.0	Sunny	No	
30/09/20	0.46	FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443	0.15	clear running	Hay on Wye	0.29	18.0*	Rained in Prev 24hrs	No	Taken from bridge
30/09/20	n/a	DH	Powys	Wye	Rhayader	SN975675	0.00	Clear	Ddol Farm	1.07	n/a	Dull	Yes	Above STW and Below Town
01/10/20	0.79	FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443	0.11	clear running	Hay on Wye	0.48	18.0*		No	Taken from bridge
01/10/20	12.00	TM	Herefordshire	Wye	Ballingham	SO 565328	0.04	Clear	Mordiford	0.47		Overcast	No	200+Canada Geese
01/10/20	17.00	GM	Powys	Wye	Llowes	SO 200415	0.00	dirty	Hay on Wye	0.48		Cloudy	No	
02/10/20	0.54	FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443	0.14	brown hue	Hay on Wye	0.48	19.0*	Rained in Prev 24hrs	No	
03/10/20		FoUW	Herefordshire	Hardwicke Brook	Above IPU Archenfield	SO263421	0.00		Hay on Wye	0.75			No	
03/10/20		FoUW	Herefordshire	Hardwicke Brook	Mill Cottage	SO265427	0.08		Hay on Wye	0.75			No	
03/10/20		FoUW	Herefordshire	Hardwicke Brook	Pontvaen Bridge	SO235437	0.10		Hay on Wye	0.75			No	
03/10/20		FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443	0.09		Hay on Wye	0.75			No	
03/10/20	n/a	DH	Powys	Wye	Rhayader	SN975675	0.00	Clear	Ddol Farm	1.22	n/a	Dull	Yes	Above STW and Below Town
04/10/20		FoUW	Herefordshire	Hardwicke Brook	Above IPU Archenfield	SO263421	0.32		Hay on Wye	1.22		Rained in Prev 24hrs	No	
04/10/20		FoUW	Herefordshire	Hardwicke Brook	Mill Cottage	SO265427	0.43		Hay on Wye	1.22		Rained in Prev 24hrs	No	
04/10/20		FoUW	Herefordshire	Hardwicke Brook	Pontvaen Bridge	SO235437	0.71		Hay on Wye	1.22		Rained in Prev 24hrs	No	
04/10/20		FoUW	Herefordshire	Hardwicke Brook	Priory Farm	SO253443	0.56		Hay on Wye	1.22		Rained in Prev 24hrs	No	

WSA Water Quality (Phosphate) Monitoring Data

Note! * = temp at time of sample measuring

Date	Time (24Hrs)	Data Recorder	County	River	Location	Map Ref	Phosphate mg/l	Water Colour	NRW Water Gauge	Water Height (m)	Water Temp °C	Weather	Livestock Present	Comments
04/10/20	12.00	TH	Herefordshire	Pentaloe Brook	Mordiford	SO 574373	0.32	Dirty	Lugwardine	1.04		Raining	No	Brook in flood
05/10/20	14.00	DC	Powys	Llynfi	Three Cocks	SO 169380	0.16	Dirty	Three Cocks	0.59	n/a	Cloudy	No	Measured turbid. River going down
05/10/20	14.00	DC	Powys	Llynfi	Three Cocks	SO 169380	0.15	Dirty	Three Cocks	0.59	n/a	Cloudy	No	Measured once settled (+36h)
05/10/20	13.30	DC	Powys	Wye	Glasbury	SO 177390	0.00	Dirty	Glasbury	1.50	n/a	Overcast	No	River going down. Measured turbid
05/10/20	13.30	DC	Powys	Wye	Glasbury	SO 177390	0.00	Dirty	Glasbury	1.50	n/a	Overcast	No	Measured once settled (+36h)
06/10/20	4.00	PC	Powys	Ithon	Crossgates	SO 116640	0.19	coloured	Llanddewi	0.46	9.6	rain	No	
06/10/20	3.00	PC	Powys	Ithon	Llanbadarn	SO 099777	0.07	coloured	Llanddewi	0.46	9.2	rain	No	
06/10/20	3.45	PC	Powys	Ithon	Llanbister	SO 102727	0.14	coloured	Llanddewi	0.46	9.1	rain	No	
06/10/20	10.00	TH	Herefordshire	Wye	Ross	SO 574226	0.18	Dirty	Ross	1.49	10.0	Overcast	No	River dropping after flood.
07/10/20	n/a	DH	Powys	Wye	Rhayader	SN975675	0.00	Murky	Ddol Farm	1.83	n/a	Dull	Yes	Above STW and Below Town
10/10/20	11.50	DC	Powys	Llynfi	Three Cocks	SO 169380	0.09	turbid	Three Cocks	0.52	n/a	Cloudy	No	River going down from 0.75m 8 Oct
10/10/20	11.50	DC	Powys	Llynfi	Three Cocks	SO 169380	0.10		Three Cocks	0.46	n/a		No	Measured once settled (+36h)
10/10/20	11.10	DC	Powys	Llynfi	Trefecca Bridge	SO 144330	0.22		Three Cocks	0.46	n/a	Cloudy	No	River going down from 0.75m 8 Oct
10/10/20	12.10	DC	Powys	Wye	Glasbury	SO 177390	0.00	Coloured	Glasbury	1.42	n/a	Overcast	No	Going down from 2.3m 8 October
10/10/20	12.10	DC	Powys	Wye	Glasbury	SO 177390	0.00		Glasbury	1.21	n/a		No	Measured once settled (+36h)
10/10/20	n/a	DH	Powys	Wye	Rhayader	SN975675	0.00	Murky	Ddol Farm	2.74	n/a	Bright	Yes	Above STW and Below Town
13/10/20	10.00	TH	Herefordshire	Wye	Ross	SO 595241	0.15	Clear	Ross	0.95	10.0	Sunny	No	
15/10/20	9.00	TM	Herefordshire	Wye	Ballingham	SO 565328	0.02	Clear	Mordiford	1.20	9.9	Overcast	No	
15/10/20	16.00	GM	Powys	Wye	Llowes	SO 200415	0.00	clear	Hay on Wye	0.65			No	
15/10/20	n/a	DH	Powys	Wye	Rhayader	SN975675	0.06	Clear	Ddol Farm	2.74	n/a	Bright	Yes	Above STW and Below Town
16/10/20	11.15	DC	Powys	Llynfi	Three Cocks	SO 169380	0.14	Clear	Three Cocks	0.43	n/a	Cloudy	No	
16/10/20	11.15	DC	Powys	Wye	Glasbury	SO 177390	0.05	Dirty	Glasbury	1.610		Overcast		River beginning to drop
16/10/20	11.45	DC	Powys	Wye	Glasbury	SO 177390	0.05	Clear	Glasbury	1.12	n/a	Overcast	No	The highest reading since July. Why? Reading checked and confirmed
18/10/20	4.00	PC	Powys	Ithon	Crossgates	SO 116640	0.12	clearing	Llanddewi	0.16	8.7	sunny	No	
18/10/20	3.00	PC	Powys	Ithon	Llanbadarn	SO 099777	0.06	clearing	Llanddewi	0.16	8.3	sunny	No	peaty stain
18/10/20	3.45	PC	Powys	Ithon	Llanbister	SO 102727	0.10	clearing	Llanddewi	0.16	8.3	sunny	No	
18/10/20	2.00	TM	Herefordshire	Pentaloe Brook	Mordiford	SO 574373	0.43	Clear	Lugwardine	1.10		Overcast	No	
18/10/20	n/a	DH	Powys	Wye	Rhayader	SN975675	0.18	Clear	Ddol Farm	1.83	n/a	Dull	Yes	Above STW and Below Town
20/10/20		CH	Monmouthshire	Wye	Bigswier Station	SO 537050	0.00	Clear	Bigswier	6.58		Overcast	No	
20/10/20	11.00	TH	Herefordshire	Wye	Ross	SO 595241	0.11	Clear	Ross	0.53	10.0	Overcast	No	Asked numerous times what I'm doing!
22/10/20	n/a	DH	Powys	Wye	Rhayader	SN975675	0.00	Clear	Ddol Farm	1.52	n/a	Bright	Yes	Above STW and Below Town
24/10/20	2.00	TM	Herefordshire	Pentaloe Brook	Mordiford	SO 574373	0.25	Clear	Lugwardine	0.743		Raining		
29/10/20	3.40	PC	Powys	Ithon	Crossgates Bridge	SO 116640	0.10	clearing	Llanddewi	0.449	7.4	cloudy		
29/10/20	3.30	PC	Powys	Ithon	Llanbadarn Bridge	SO 099777	0.01	clearing	Llanddewi	0.449	7.0	cloudy		
29/10/20	3.20	PC	Powys	Ithon	Llanbister	SO 102727	0.05	clearing	Llanddewi	0.449	7.2	cloudy		
29/10/20	10.00	TM	Herefordshire	Wye	Ballingham	SO 565328	0.10	Clear	Mordiford	1.602		Raining	No	
30/10/20	16.00	GM	Powys	Wye	Llowes	SO 200415	0.00	dirty	Hay on Wye	1.260				
03/11/20	4.00	TM	Herefordshire	Pentaloe Brook	Mordiford	SO 574373	0.59	Murky	Lugwardine	1.798		Overcast		Average of 2 readings
08/11/20	11.00	TM	Herefordshire	Wye	Ballingham	SO 565328	0.07	Clear	Mordiford	1.245		Overcast	No	
10/11/20	12.00	CH	Monmouthshire	Wye	Bigswier Station	SO 537050	0.00	Murky	Bigswier	6.91		Overcast	No	
12/11/20	3.40	PC	Powys	Ithon	Crossgates Bridge	SO 116640	0.12	clearing	Llanddewi	0.335	7.0	cloudy		
12/11/20	3.30	PC	Powys	Ithon	Llanbadarn Bridge	SO 099777	0.06	clearing	Llanddewi	0.335	6.8	mist		
12/11/20	3.20	PC	Powys	Ithon	Llanbister	SO 102727	0.10	clearing	Llanddewi	0.335	7.0	cloudy		
12/11/20	13.00	GM	Powys	Wye	Llowes	SO 200415	0.00	cloudy	Hay on Wye	0.710				
13/11/20	11.00	TM	Herefordshire	Pentaloe Brook	Mordiford	SO 574373	0.23	Clear	Lugwardine	1.228		Overcast		
16/11/20	10.40	DC	Powys	Llynfi	Three Cocks	SO 169380	0.21	coloured	Three Cocks	0.630				Measured turbid. River going down
17/11/20	16.00	GM	Powys	Wye	Llowes	SO 200415	0.02	dirty	Hay on Wye	1.310				
19/11/20	11.00	DC	Powys	Llynfi	Three Cocks	SO 169380	0.15	Clearing	Three Cocks	0.590		Sunny		
24/11/20	12.00	CH	Monmouthshire	Wye	Bigswier Station	SO 537050	0.00	Murky	Bigswier	6.80		Overcast	No	
25/11/20	2.00	TM	Herefordshire	Wye	Ballingham	SO 565328	0.16	Clear	Mordiford	1.316		Overcast	No	
27/11/20	3.40	PC	Powys	Ithon	Crossgates Bridge	SO 116640	0.12	clearing	Llanddewi	0.228	7.3	cloudy		
27/11/20	3.30	PC	Powys	Ithon	Llanbadarn Bridge	SO 099777	0.02	clearing	Llanddewi	0.228	6.9	rain		
27/11/20	3.20	PC	Powys	Ithon	Llanbister	SO 102727	0.06	clearing	Llanddewi	0.228	7.1	mist		
27/11/20	15.30	DC	Powys	Llynfi	Three Cocks	SO 169380	0.13	Clear	Three Cocks	0.480	4.0	sunny		
27/11/20	3.00	TM	Herefordshire	Pentaloe Brook	Mordiford	SO 574373	0.16	Clear	Lugwardine	1.251		Overcast		
27/11/20	15.45	DC	Powys	Wye	Glasbury	SO 177390	0.00	Clear	Glasbury	1.070	4.0	sunny		
27/11/20	12.00	GM	Powys	Wye	Llowes	SO 200415	0.00	clear	Hay on Wye	0.570				
30/11/20	11.50	DC	Powys	Llynfi	Three Cocks	SO 169380	0.13	Clear	Three Cocks	0.480	4.0	Cloudy		
30/11/20	12.00	DC	Powys	Llynfi	Three Cocks	SO150347	0.11	Clear	Three Cocks	0.480	6.0	Cloudy		above sewage works
30/11/20	11.20	DC	Powys	Wye	Glasbury	SO 177390	0.00	Clear	Glasbury	1.000	6.0	Overcast		
06/12/20	3.40	PC	Powys	Ithon	Crossgates Bridge	SO 116640	0.11	coloured	Llanddewi	0.347	5.4	sunny		snow water?
06/12/20	3.30	PC	Powys	Ithon	Llanbadarn Bridge	SO 099777	0.09	clearing	Llanddewi	0.347	6.0	cloudy		
06/12/20	3.20	PC	Powys	Ithon	Llanbister	SO 102727	0.17	coloured	Llanddewi	0.347	6.5	cloudy		