May 30th 2023

By e-mail

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Dear Stakeholder

River Wye and Lugg SAC/SSSI assessment of indicative site condition using CSMG. Natural England March 2023

We are writing to inform you of a recent indicative site condition assessment of the River Wye and Lugg Sites of Scientific Special Interest (SSSI).

The River Wye (and part of the River Lugg) is designated SSSI and Special Areas of Conservation (SAC), giving it the highest level of protection in the UK. This means making sure that it can support the life that depends on it, the business that depend on it and is healthy and thriving to provide enjoyment for generations to come

There is much work currently being undertaken by multiple stakeholders to support this work. We at Natural England work closely with the Environment Agency, using monitoring data and evidence collected by the EA to understand the health of the rivers and identify where best to make interventions.

Assessment

Natural England categorises the conditions of SSSI's based on condition assessments undertaken in line with Common Standards Monitoring Guidance (CSMG). These assessments are published on the Natural England Designated Site Viewer, which can be viewed here > Designated Site Viewer. For full details on condition assessments please see Appendix 2.

The River Wye and Lugg designated sites have a relatively complex set of aquatic plant and animal life, aka interest features, and conducting a full condition assessment of every feature of the river is a significant operation.

A full two-year assessment is planned to commence in 2024, but in the interim, ther Area Team has conducted a small-scale assessment, looking at four specific indicators to create an indicative assessment of the site as a whole.

Using CSMG with data and evidence from the Environment Agency, our assessment reviewed:

- Atlantic salmon
- Macrophytes
- Native white-clawed crayfish
- Water quality

The attribute that has received the most attention is water quality, as it is fundamental to the health of the river and in light of the "nutrient neutrality advice" in place for rivers failing water quality targets. Natural England regularly reviews the water quality targets, and the data is available here > environment.data.gov.uk/water-quality .

Assessment findings: summary
In summary, the river was largely previously classed as 'unfavourable - recovering'. As per CSMG if any one of the features is classed as either 'unfavourable', 'unfavourable - no change' or 'unfavourable - declining', the whole unit of the river is classed as such, irrespective of the status of the other interest features.

As at least one feature in both the Wye and the Lugg are showing declines, and we cannot be assured that all necessary management is currently in place, despite the significant efforts of many stakeholders, we have updated the SSSI condition status for the Wye and Lugg as 'unfavourable – declining', as shown in Table 1. For an explanation of the categories please see Table 2.

Assessment findings: River Lugg
Our recent assessment has identified that the River Lugg is showing declines in Atlantic salmon, and white Clawed Crayfish.

The Lugg is failing its water quality targets and the water quality in the Lugg is declining. Nutrient Neutrality advice remains in place for the Lugg.

Assessment findings: River Wye
In the River Wye we can see declines in macrophytes, salmon and white-clawed crayfish.

The Wye is not currently failing its water quality targets. Although the River Wye is close to its phosphate targets on some of the monitoring points, the latest evidence indicates levels have been stable. Nutrient Neutrality advice does not apply to the Wye as it is not failing its water quality targets.

For a more detailed review of the evidence used to determine condition, please read Appendix 1. For full details on condition assessments please see Appendix 2.

Action to address the issues
Clearly this change of condition is of concern for all with an interest in the Rivers. However, in light of the recent media coverage on the Wye and the health of UK rivers generally, we feel it is important to communicate this change transparently and provide an assurance as to what this means.

Our recent findings do not suggest a sudden decline in the Wye and Lugg SSSIs, and instead reflects the overall decline in health which we are all working collaboratively to halt, and to restore the health of the rivers.

We and other partners do not yet fully understand all the reasons for these declines, so further investigations are being conducted by the Environment Agency and other partners to build greater understanding. Meanwhile there is much activity by multiple partners to improve the health of the river and the outcomes for the species that depend on it.

Improving the condition of the river and reversing declines in species such as salmon and white-clawed crayfish is complex and challenging but are issues we must address.

Reducing phosphates in the river Wye SAC is also a complex issue, but one which we know is fundamental to the health of the river. Both the Environment Agency and Natural England together with our stakeholders are committed to reducing phosphate levels. The Nutrient Management Plan Board oversees the delivery of the Nutrient Management Action Plan to deliver reductions in phosphate. This is an iterative plan with further actions required to tackle this challenging issue. We are working with Herefordshire Council and Partners to improve the operations of the NMB board. Both the Environment Agency and Natural England continue to work with stakeholders to deliver the environmental improvements required to reverse the declining condition of this wonderful river.

Table 1: Change in Condition for River Wye and Lugg

Unit	River	Reach	Previous Condition on CMSi	Updated Condition on CSMi
1	River Wye	Tidal river - Estuary to Brockweir Bridge	Favourable	Unfavourable - Declining
2	River Wye	Brockweir Bridge to Monmouth	Unfavourable - Recovering	Unfavourable - Declining
3	River Wye	Monmouth to Ross	Unfavourable - Recovering	Unfavourable - Declining
4a	River Wye	Ross to Lugg Confluence	Unfavourable - Recovering	Unfavourable - Declining
4b	River Wye	Lugg Confluence to Hereford	Unfavourable - Recovering	Unfavourable - Declining
5	River Wye	Hereford to Bredwardine Bridge	Unfavourable - Recovering	Unfavourable - Declining
6	River Wye	Bredwardine Bridge to Whitney Toll	Unfavourable - Recovering	Unfavourable - Declining
7	River Wye	Whitney Toll to Hay	Unfavourable - Recovering	Unfavourable - Declining
1	River Lugg	Bodenham Weir to Confluence with Wye	Unfavourable - Recovering	Unfavourable - Declining

2	River Lugg	Bodenham Weir to Leominster	Unfavourable - Recovering	Unfavourable - Declining
3	River Lugg	Leominster to Mortimers Cross	Unfavourable - Declining	Unfavourable - Declining
4	River Lugg	Mortimers Cross to Presteigne		Unfavourable - Declining

Table 2: The following table explains the condition categories.

SSSI Condition categories	
Condition status	**Explanation**
Favourable condition	The designated feature is being adequately conserved and the results from monitoring demonstrate that the feature is meeting all the mandatory site-specific monitoring targets set out in the Favourable Condition Tables (FCT). The FCT sets the minimum standard for favourable condition for the designated feature and there may be scope for the further (voluntary) enhancement of the feature.
Unfavourable recovering condition	Often known simply as 'recovering'. The Feature is not yet fully conserved, but all the necessary management measures are in place. Provided that the recovery work is sustained, the feature will reach favourable condition in time. At least one of the designated features mandatory attributes is not meeting their targets (as set out in the site specific FCT).
Unfavourable no-change condition	The feature is not being conserved, and will not reach favourable condition, unless there are changes to the management or external pressures and this is reflected in the results of monitoring over time; with at least one of the mandatory attributes not meeting its target (as set out in the site specific FCT) with the results not moving towards the desired state. The longer the feature remains in this poor condition, the more difficult it will be, in general, to achieve recovery.
Unfavourable declining condition	The feature is not being conserved and will not reach favourable condition unless there are changes to management or external pressures. The feature condition is becoming progressively worse, and this is reflected in the results of monitoring over time, with at least one of the designated features mandatory attributes not meeting its target (as set out in the site specific FCT) with the results moving further away from the desired state. The longer the feature remains in this poor condition, the more difficult it will be, in general, to achieve recovery.

Part destroyed condition	Lasting damage has occurred to part of a designated feature, such that it has been irretrievably lost and will never recover (no amount of management will allow the feature to ever reach favourable condition).
Destroyed condition	Lasting damage has occurred to an entire designated feature such that the feature has been irretrievably lost (no amount of management will bring this feature back). This feature will never recover e.g., a finite mineralogical feature has been totally removed from its surroundings without consent and is therefore lost forever.

Yours faithfully

Emma Johnson
Area Manager - West Midlands Team, Natural England

Appendix 1: Detailed Evidence Summary Wye and Lugg SSSI

Natural England November 2022

This document summarises the key evidence used to undertake an interim assessment of the condition of some of the features on both the River Wye and River Lugg Sites of Special Scientific Interest (SSSIs). Further detailed information on the attributes/targets used is available in the Monitoring Specifications for the River Wye and River Lugg SSSIs. If you would like a copy of the Monitoring Specifications, please e-mail west.mindlands.enquiries@naturalengland.org.uk

Macrophytes, Diatoms and Macroinvertebrates

Macrophytes, Diatoms and Macroinvertebrates form a mandatory part of the condition assessment for the interest feature 'rivers and streams' (The River Wye is a H3260 Ranunculion type river).

The target status for macrophytes, diatoms and macroinvertebrates is High Ecological Status (HES).

All of WFD waterbodies within the Wye/Lugg SAC are classified as either moderate or good WFD status for macrophytes and phytopbenthos (combined) and therefore fail to meet the designated site target. Units 2 and 3 declined in status from Good to Moderate between 2014 and 2015. Units 4 saw a class improvement between 2016 and 2019 from moderate status to good. Units 5 and 6 have remained at moderate status since reporting in 2014.

Macroinvertebrates fail to meet the target in part or all of units 4, 5 and 6.

Table 1. Classification of macrophytes and macroinvertebrates as displayed on Catchment Data Explorer https://environment.data.gov.uk/catchment-planning/ManagementCatchment/3117

Unit		WFD WBID	Plant community	Macro-invertebrates
			SAC/SSSI Target is HES	SAC/SSSI Target is HES
2	Brockweir Bridge to Monmouth	GB109055037111	Moderate*	
3	Monmouth to Ross	GB109055037111	Moderate*	
		GB109055037112	Good**	
4	Ross to Lugg Confluence	GB109055037112	Good**	High
	Lugg Confluence to Hereford	GB109055037112	Good**	High
		GB109055037113	Moderate	Good*
5	Hereford to Bredwardine Bridge	GB109055037113	Moderate	Good*
6	Bredwardine Bridge to Whitney Toll	GB109055037113	Moderate	Good*
		GB109055037116	Unknown as NRW	

7	Whitney Toll to Hay	GB109055037116	Unknown as NRW	
1	R Lugg (Wye SAC) Wye Confluence to Bodenham Weir	GB109055036790	Moderate	
		GB109055042030	Moderate	
2	Bodenham Weir to Leominster	GB109055042030	Moderate	
3	Leominster to Mortimers Cross	GB109055042030	Moderate	
4	Mortimers Cross to Presteigne	GB109055042030	Moderate	

* Indicates evidence that the situation is declining
** Indicates evidence that the situation is improving

Atlantic salmon

Both rivers are deemed to be iconic for their salmon population. Salmon are a notified feature of the River Wye SSSI and SAC, and a feature component of clay river health in the Lugg. The salmon population of the River Wye is at a critical state, with the salmon run estimated at around 2000 to 3000 down from 50,000 a year, with angling catches down 94% from their peak in 1967 (River Wye Salmon Action Plan 2019).

Fundamental to the assessment of stock is the site Conservation Limit. The Conservation Limit (CL) defines the minimum number of fish we want to see spawning in the river. The CL for each river is set at a stock size (defined in terms of eggs deposited) below this limit further reductions in spawner numbers are likely to result in significant reductions in the number of juvenile fish produced in the next generation. The conservation objective for the River Wye & Lugg is to meet or exceed its CL in at least four years out of five.

NRW & the EA published their **Proposed new salmon and sea trout rod fishing byelaws for the Wye in England 2021,** the report states

"*…. evidence emerging from the salmon stock assessments indicates* ***a continued decline in the status of salmon in the River Wye****, with substantial deficits in the number of spawning adults apparent in the Wye and neighbouring rivers such as the rivers Severn and Usk*."

Table 3 and figure 1 provides a summary of the Wye Salmon stock assessment. The Wye stock assessment covers the whole catchment including the River Lugg.

Since 2015 there has been a decline in fry across the catchment. Recruitment was especially poor in 2016. The poor fry numbers have been reflected in low parr numbers in 2017 (Figure 2).

Table 2. CSMG targets for Atlantic salmon from

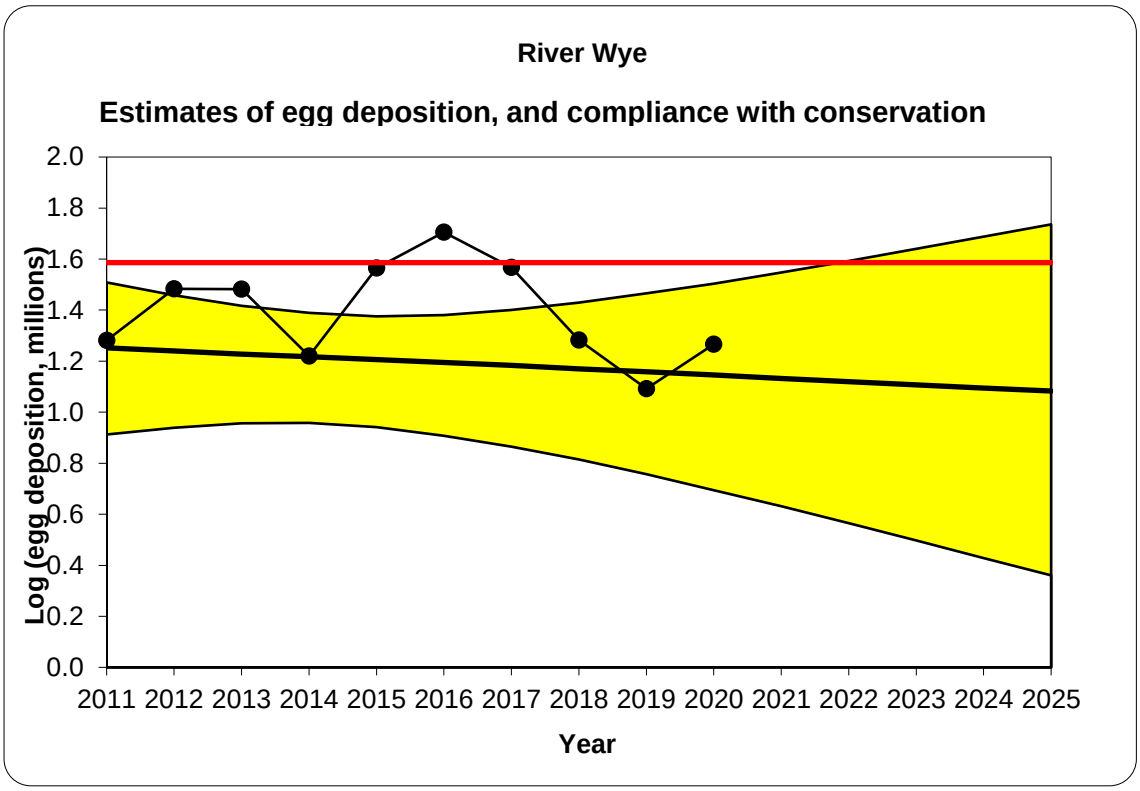
https://hub.jncc.gov.uk/assets/9b80b827-b44b-4965-be8e-ff3b6cb39c8e

Favourable Condition Table 5 – Atlantic salmon (*Salmo salar*)

Details of the standard method for population assessment can be found in the monitoring protocol for Atlantic salmon.

Attribute *=discretionary	Target	Method of Assessment	Comments
POPULATION			
a. Spatial extent	Should reflect distribution under near-natural conditions.	Electrofishing	Juvenile Atlantic salmon should be present in all areas of the catchment to which they have natural access. This does not include areas above naturally impassable barriers, but areas where access has been limited by man-made obstructions should be identified. See the associated monitoring protocol for further details.
b. Population density: juveniles	These should not differ significantly from those expected for the river type/reach under conditions of high physical and chemical quality.	Quantitative, semi-quantitative and timed electrofishing	Juvenile densities vary naturally between rivers and between survey sites on rivers, depending on the productivity and natural habitat character of the system. Observed densities therefore need to be assessed in relation to the expectation for each river and each river reach. See the associated monitoring protocol for further details.
c. Population density: adult run size	Total run size at least matching an agreed reference level, including a seasonal pattern of migration characteristic of the river and maintenance of the multi-sea-winter component.	Fish counters where available Rod catch data	The numbers of returning salmon should be sufficient to ensure that all naturally available spawning and nursery habitat is utilised. Different rivers have different seasonal patterns of adult migration associated with the environmental characteristics of the catchment and river system. Multi-sea winter fish are an important component of a natural salmon run and have declined considerably in recent years. The data available to assess this attribute vary widely across the UK. See the associated monitoring protocol for further details.

Figure 1 River Wye salmon spawning compliance assessment 2020



Key to graphs	
	20th percentile trend line (in a 10 year period around 2 annual egg deposition values would be expected to fall below this line)
	Annual egg deposition estimates
	Conservation Limit
	Upper and lower boundaries of the Bayesian Credible Interval.

Table 3 summary of salmon stock status on the Rivers Wye: provisional assessment results for 2020[1]

Salmon stock status on the Rivers Wye	
Current compliance status (2020)	At Risk
Predicted (+5yr) compliance status (2025)	Probably at Risk
Trend*	Declining (-)
Conservation Limit	38.57 million eggs
Management Target	48.69 million eggs
Egg deficit on MT**	24.52 million eggs
Spawner deficit***	8,175

* *Declining trend: Slight (-); Moderate(--); Steep (---)*

** *Egg deficit based on 5-year mean 2016-2020*

** *Spawner deficit expressed as 8lb fish equivalents; where average fecundity = 3,000 eggs per fish*

White Clawed Crayfish (Atlantic Crayfish)

Native white clawed crayfish are a notified feature of the River Wye and an indicator of the health of the clay river feature in the River Lugg. Surveys were undertaken in 2013 by Hills ecology on Units 3-7 of the River Wye and Units 1-4 of the River Lugg.

The result of this survey indicate that the species is in 'unfavourable' condition for units 1-4 of the River Lugg, and either unfavourable or part destroyed for units 3-7 of the River Wye due to either the absence of white clawed crayfish, and/or the presence of non-native signal crayfish. Further investigation into habitat availability and historic survey data may be required to determine whether the status is unfavourable-declining, or part destroyed (https://www.therrc.co.uk/sites/default/files/files/Designated_Rivers/wyedrafttechnicalreport.pdf).

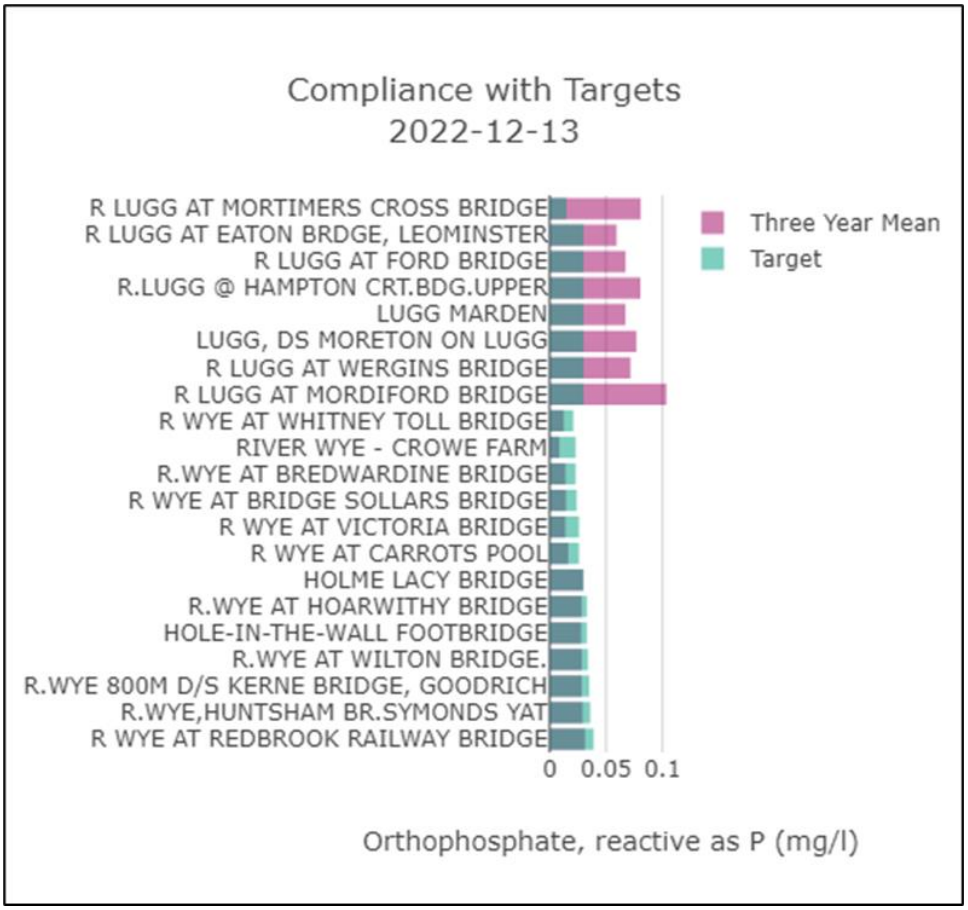
[1] Source NRW Technical Case 2021

Water Quality Analysis – River Wye & Lugg

Water quality is not a notified feature of the SSSIs, it is one of the attributes assessed to indicate the health of the Rivers. Water quality targets are set out in the Monitoring Specifications for both the River Lugg SSSI and the River Wye SSSI.

Figure 2. River Wye & Lugg Ortho-P Current Compliance with Targets.

Figure 2 illustrates that for each monitoring location on the River Lugg, the Ortho-P target for the three-year mean target is currently being exceeded. The water quality data presented for the River Wye illustrates for each monitoring location that water quality is not currently exceeding the three year mean target.



EA WFD Classification – Phosphate (up to 2019)

The water body - **Lugg - conf Norton Bk to conf R Arrow** – deteriorated from High to Moderate status for Phosphorus between the 2015 – 2019 classification.

The river Wye remain, increased or stayed at high or good throughout this period.

Table 4. EA Phosphate classification for the Wye & Lugg main river sections.

Catchment	Water Body	Physico-chemical element	2015	2016	2019
River Lugg	Lugg - conf Norton Bk to conf R Arrow Water Body	Phosphate	High	Good	Moderate

River Lugg	Lugg - conf R Arrow to conf R Wye Water Body	Phosphate	Good	Good	Good
River Wye	Wye - Bredwardine Br to Hampton Bishop Water Body	Phosphate	High	Good	High
River Wye	Wye - Hampton Bishop to conf Kerne Br Water Body	Phosphate	High	High	Good
River Wye	Wye - conf Walford Bk to Bigsweir Br Water Body	Phosphate	Good	High	High

Water Quality Trends

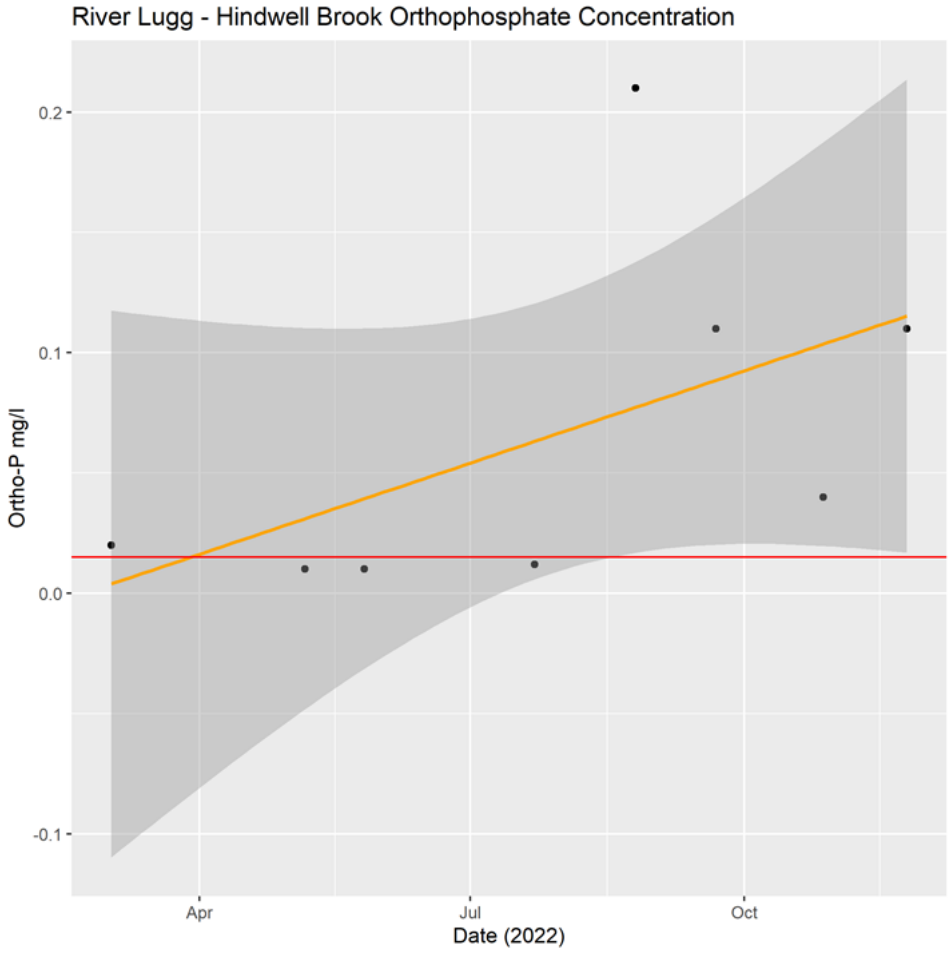
The following graphs illustrate the trend in water quality over the past 20 years in the Wye and Lugg catchments. The monitoring locations are ordered upstream to downstream.

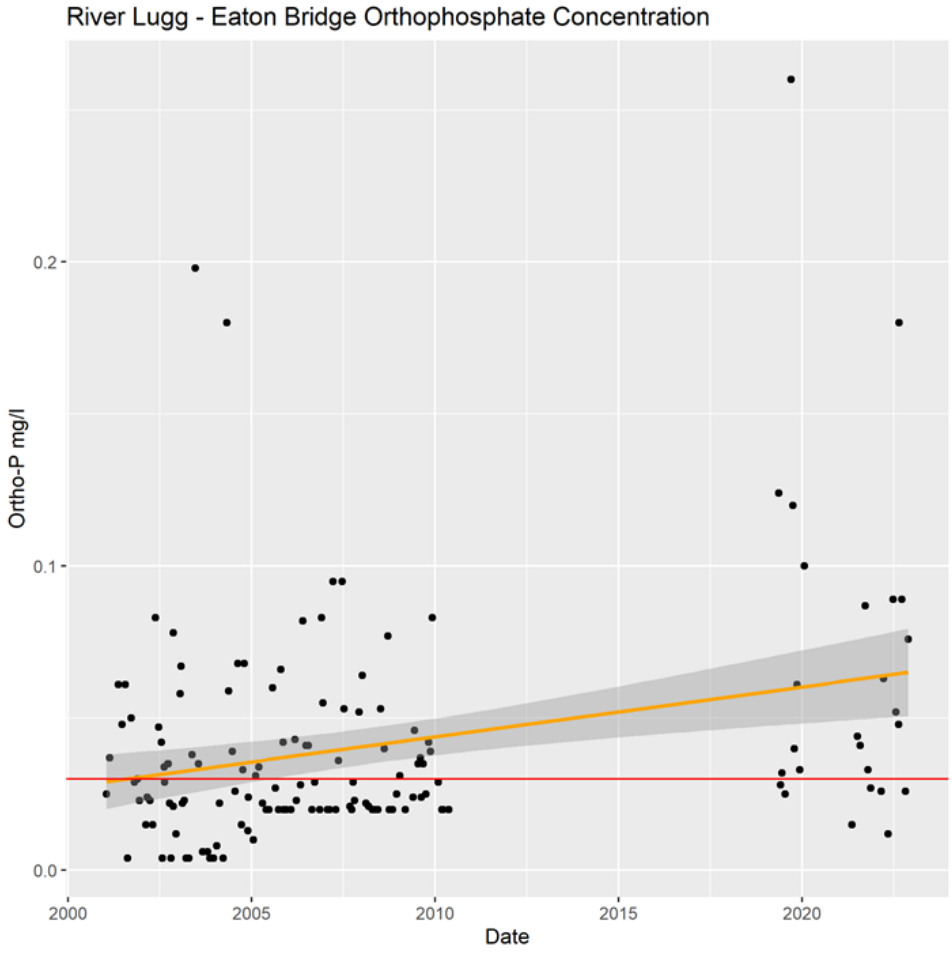
The **red line** is the site target for Ortho-P

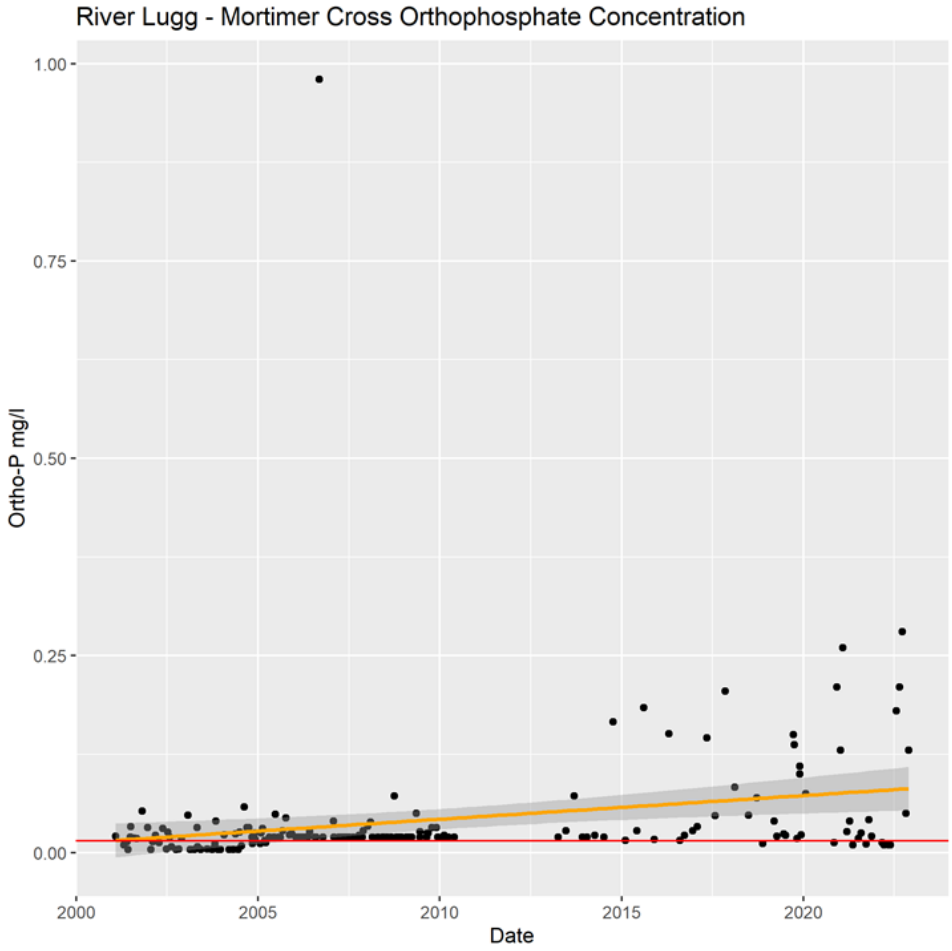
The **orange line** plots a linear regression line with 95% Confidence Interval (CI)

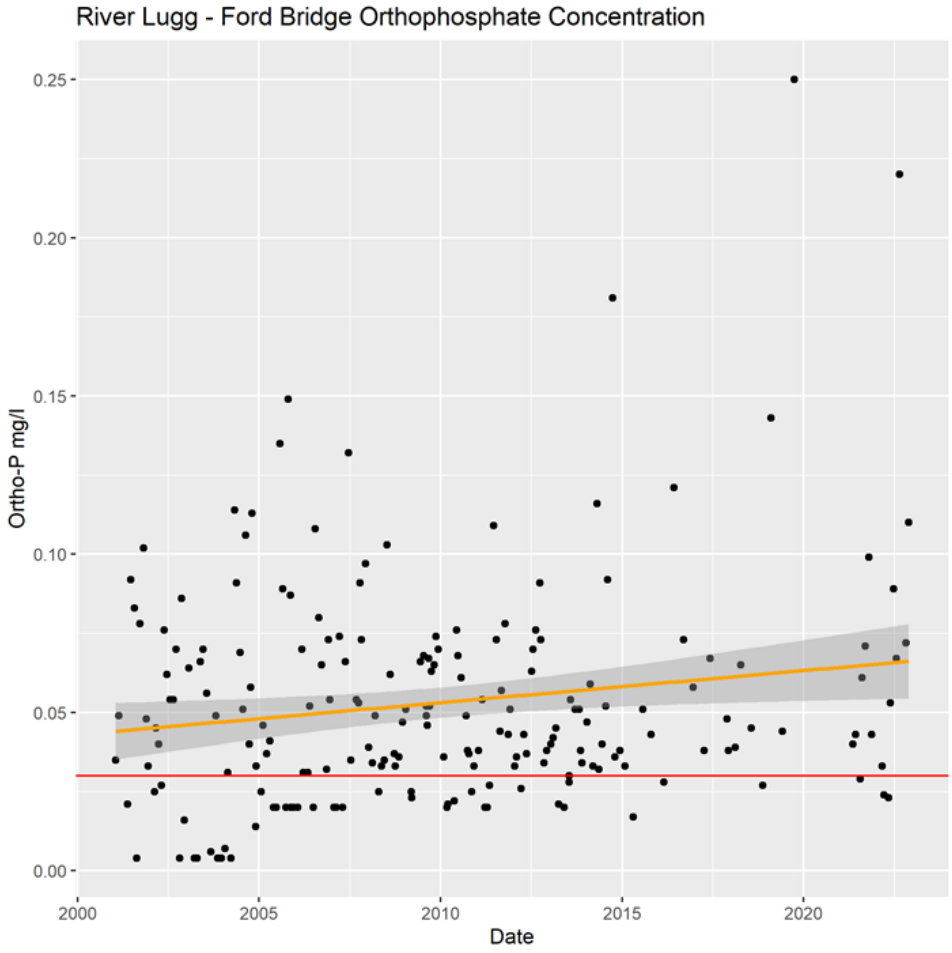
River Lugg

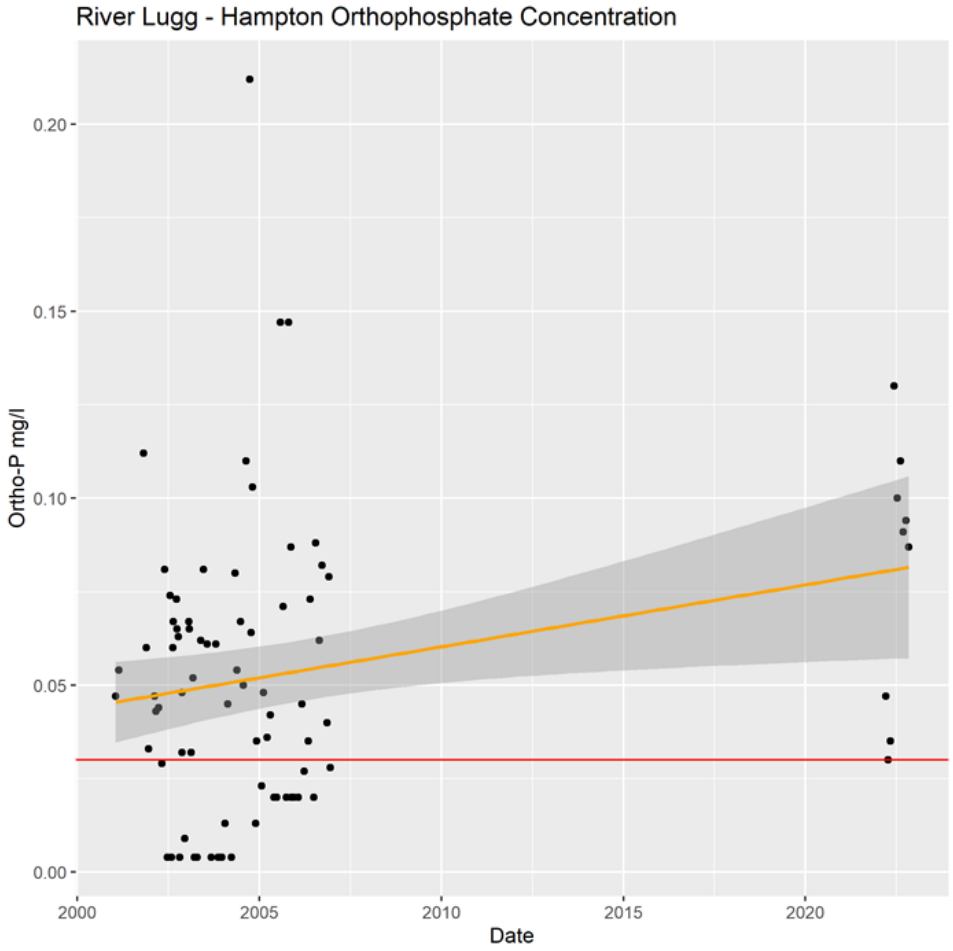
Each of the plots for the monitoring locations along the River Lugg (u/s à d/s) show Ortho-P concentrations either increasing or stable over the past 20+ years – demonstrated by the positive or neutral linear regression lines.

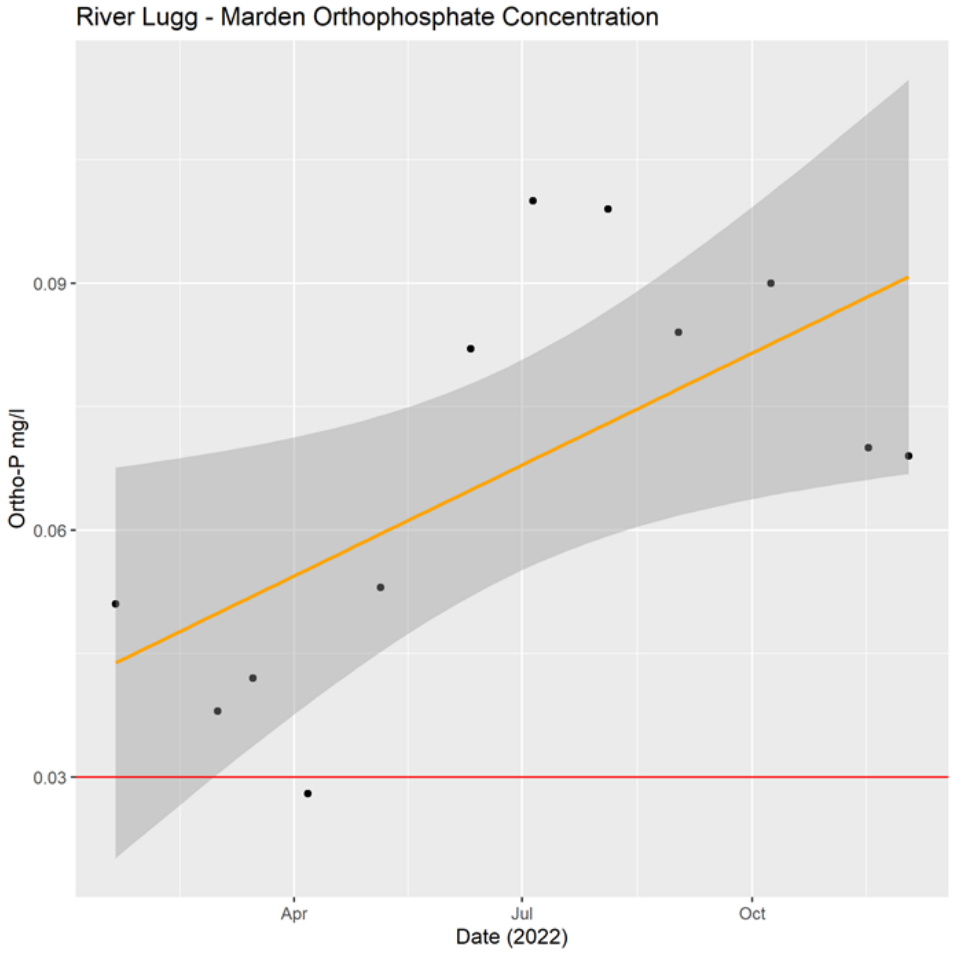

River Lugg - Hindwell Brook Orthophosphate Concentration
0.2
0.1
0.0
-0.1
Ortho-P mg/l
Apr
Jul
Oct
Date (2022)

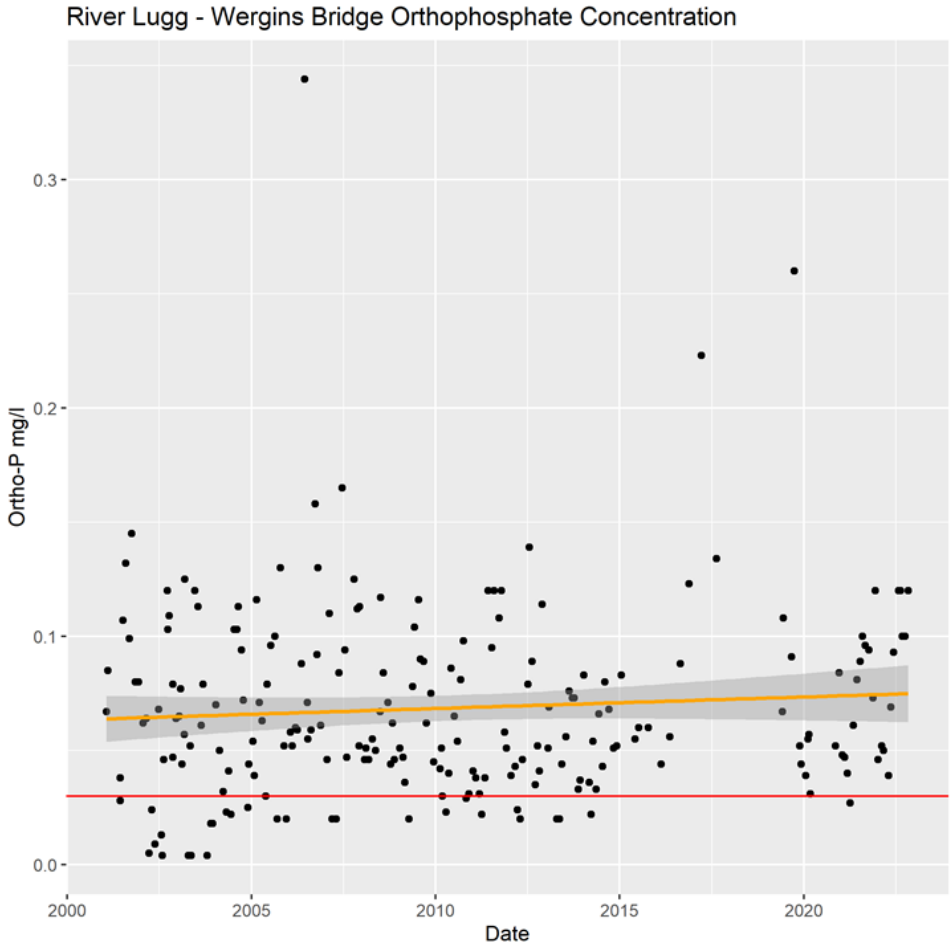

River Lugg - Eaton Bridge Orthophosphate Concentration
0.2
0.1
0.0
Ortho-P mg/l
2000
2005
2010
2015
2020
Date

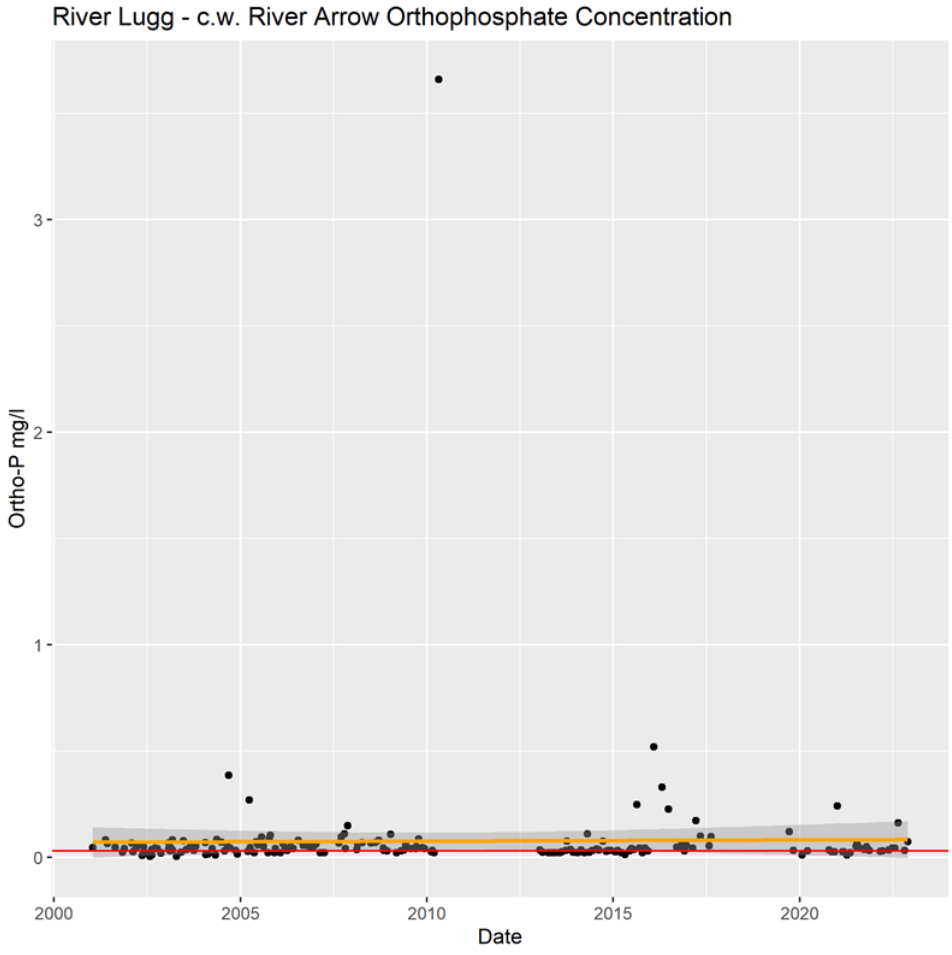

River Lugg - Mortimer Cross Orthophosphate Concentration
1.00
0.75
0.50
0.25
0.00
Ortho-P mg/l
2000
2005
2010
2015
2020
Date


River Lugg - Ford Bridge Orthophosphate Concentration
0.25
0.20
0.15
0.10
0.05
0.00
Ortho-P mg/l
2000
2005
2010
2015
2020
Date


River Lugg - Hampton Orthophosphate Concentration
Ortho-P mg/l
0.20
0.15
0.10
0.05
0.00
2000
2005
2010
2015
2020
Date

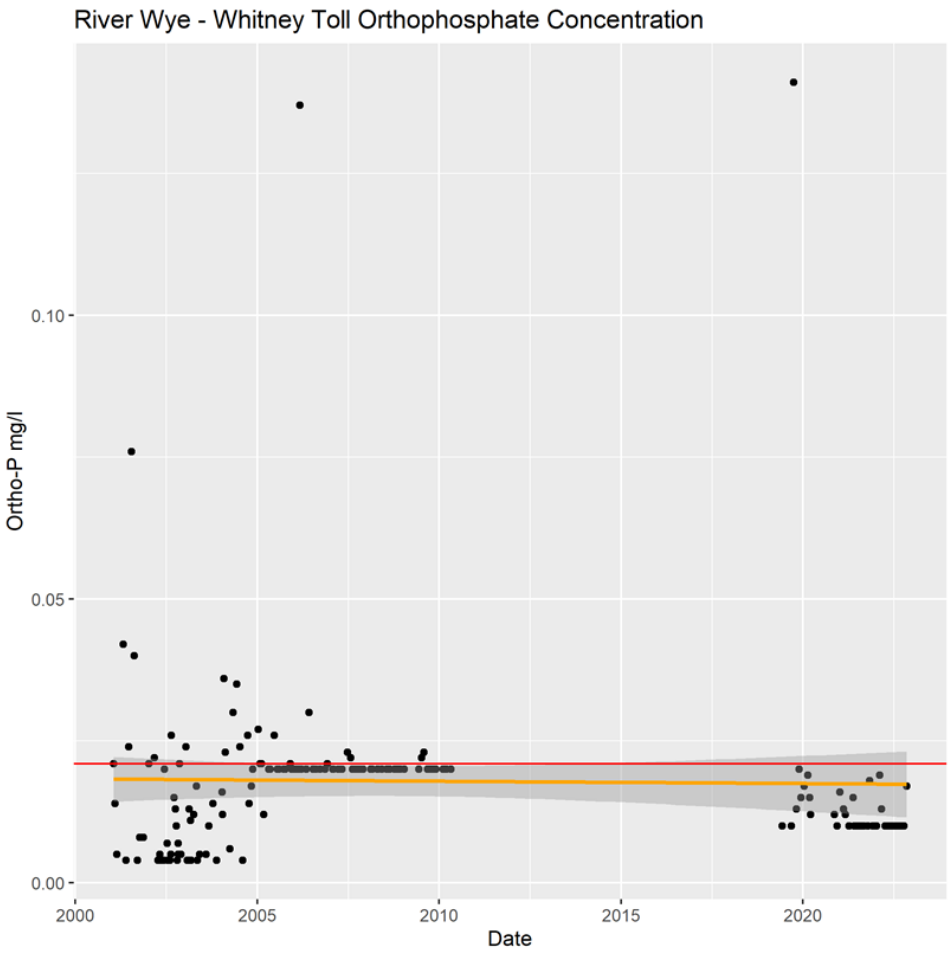

River Lugg - Marden Orthophosphate Concentration
Ortho-P mg/l
0.09
0.06
0.03
Apr
Jul
Oct
Date (2022)

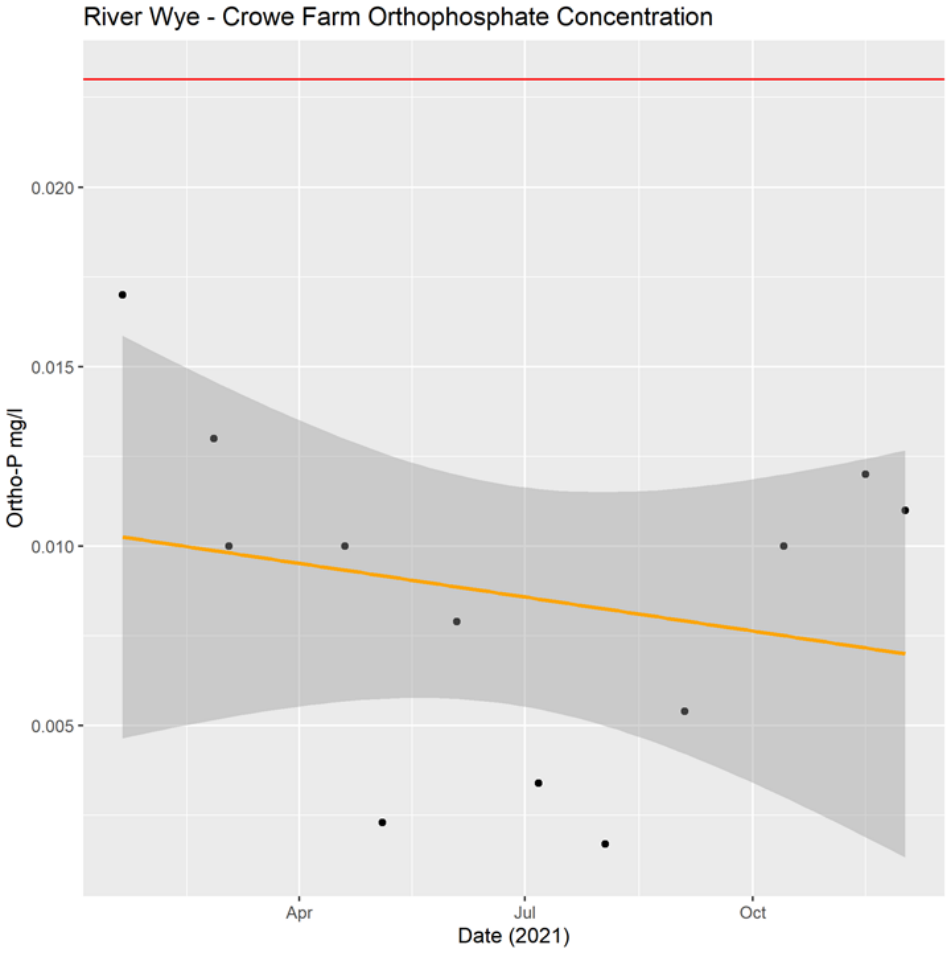

River Lugg - Wergins Bridge Orthophosphate Concentration
Ortho-P mg/l
0.3
0.2
0.1
0.0
2000
2005
2010
2015
2020
Date

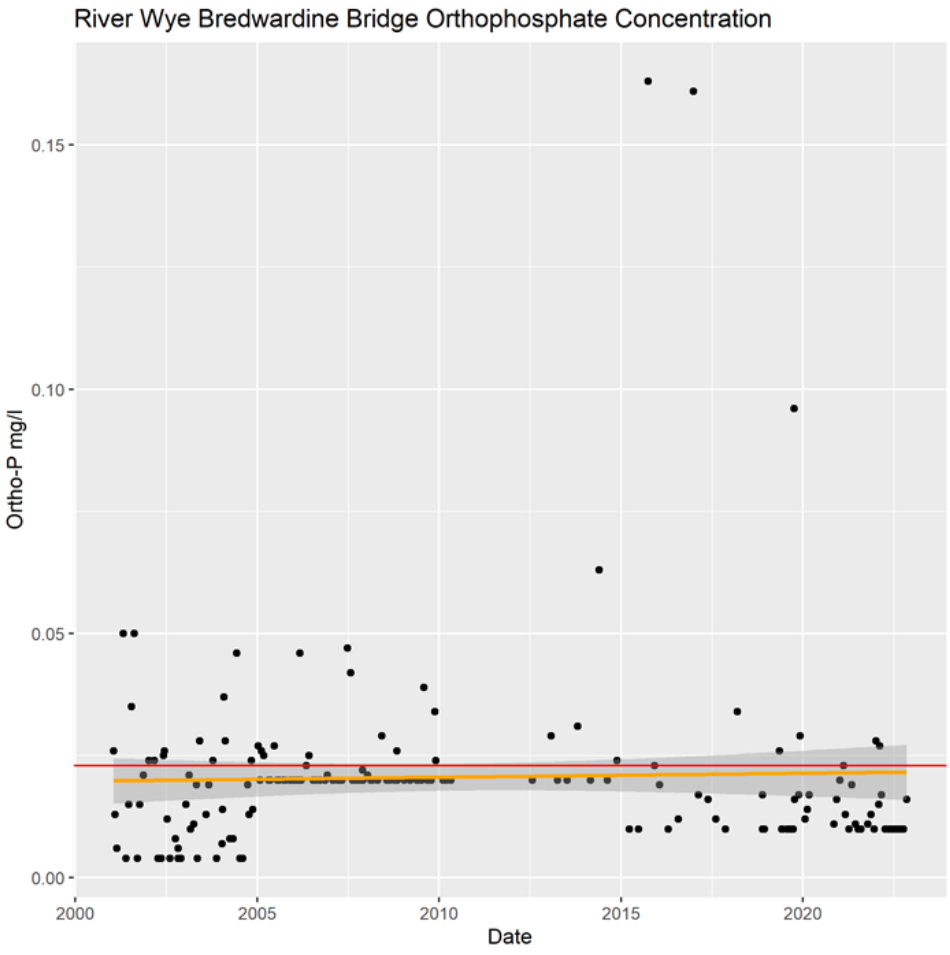

River Lugg - c.w. River Arrow Orthophosphate Concentration
Ortho-P mg/l
3
2
1
0
2000
2005
2010
2015
2020
Date

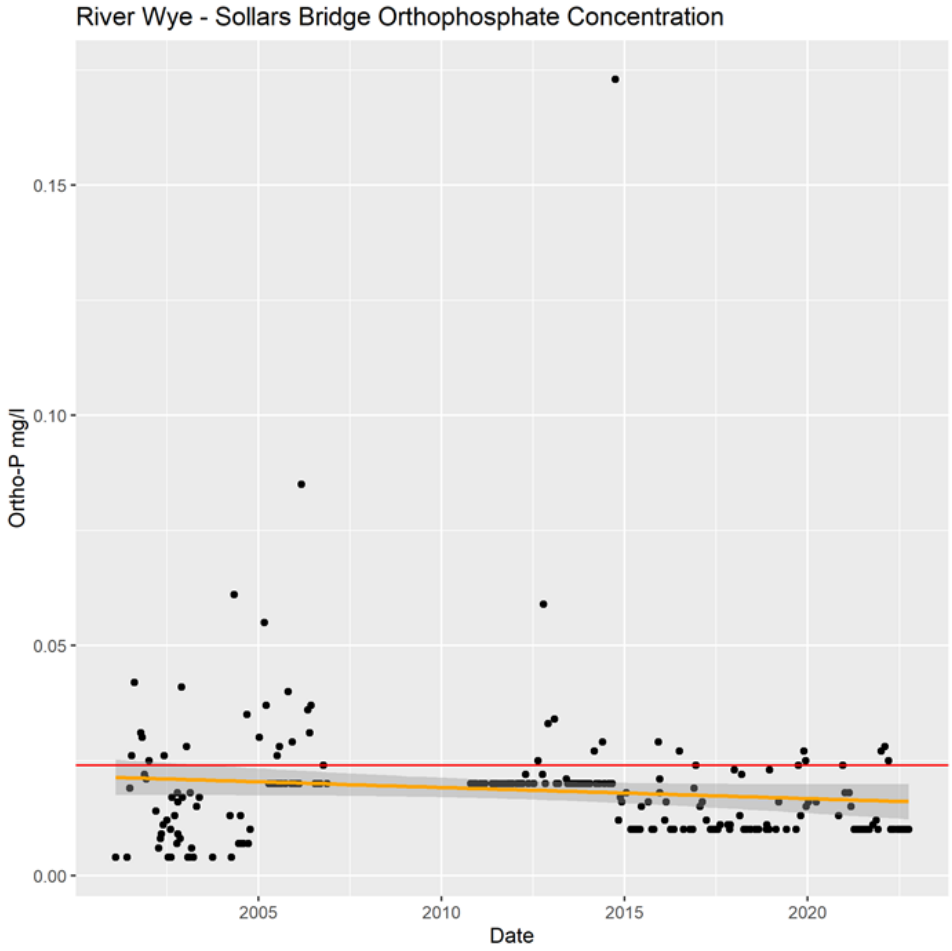
River Wye

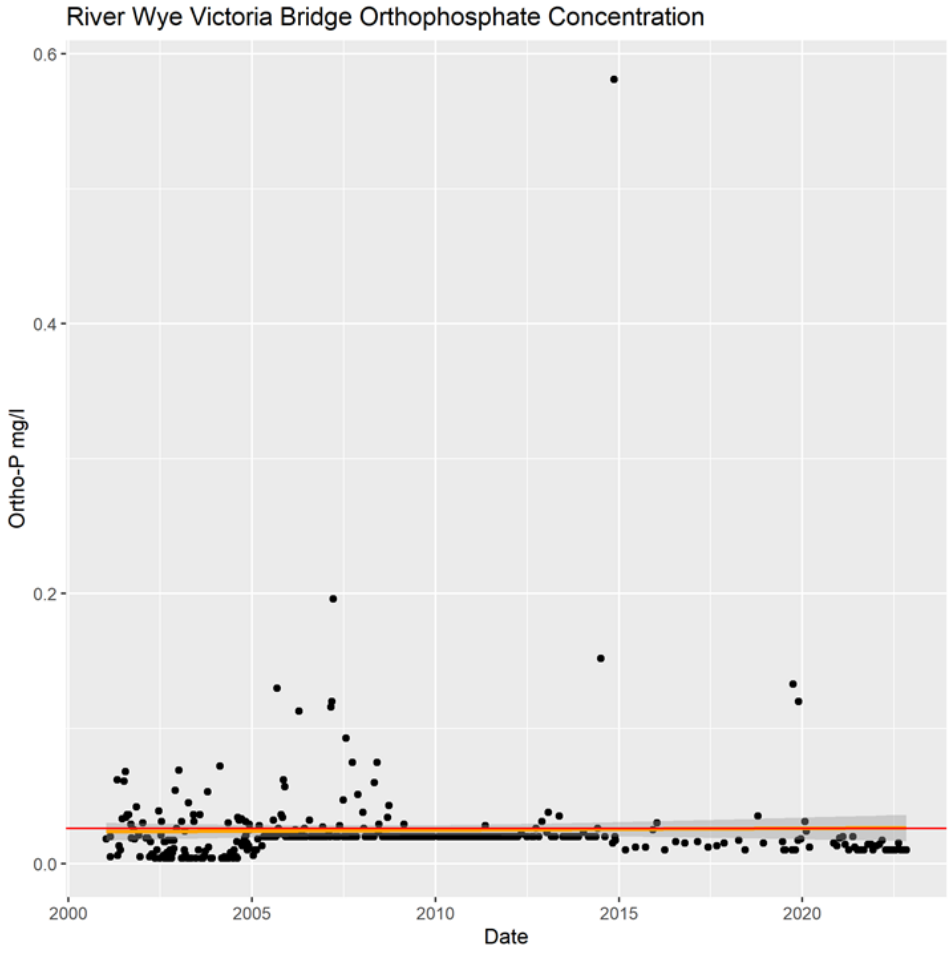
Each of the plots for the monitoring locations along the River Wye (u/s à d/s) show Ortho-P concentrations generally either stable or slightly declining over the past 20+ years – demonstrated by the neutral or negative linear regression lines.

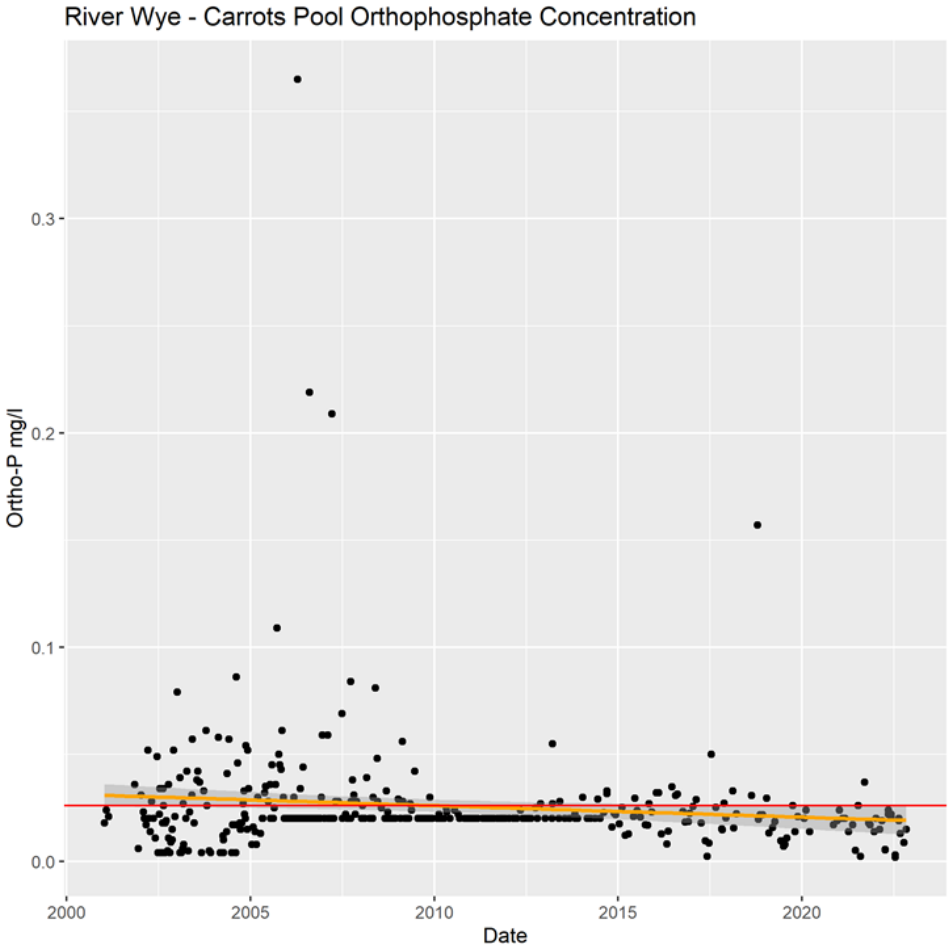


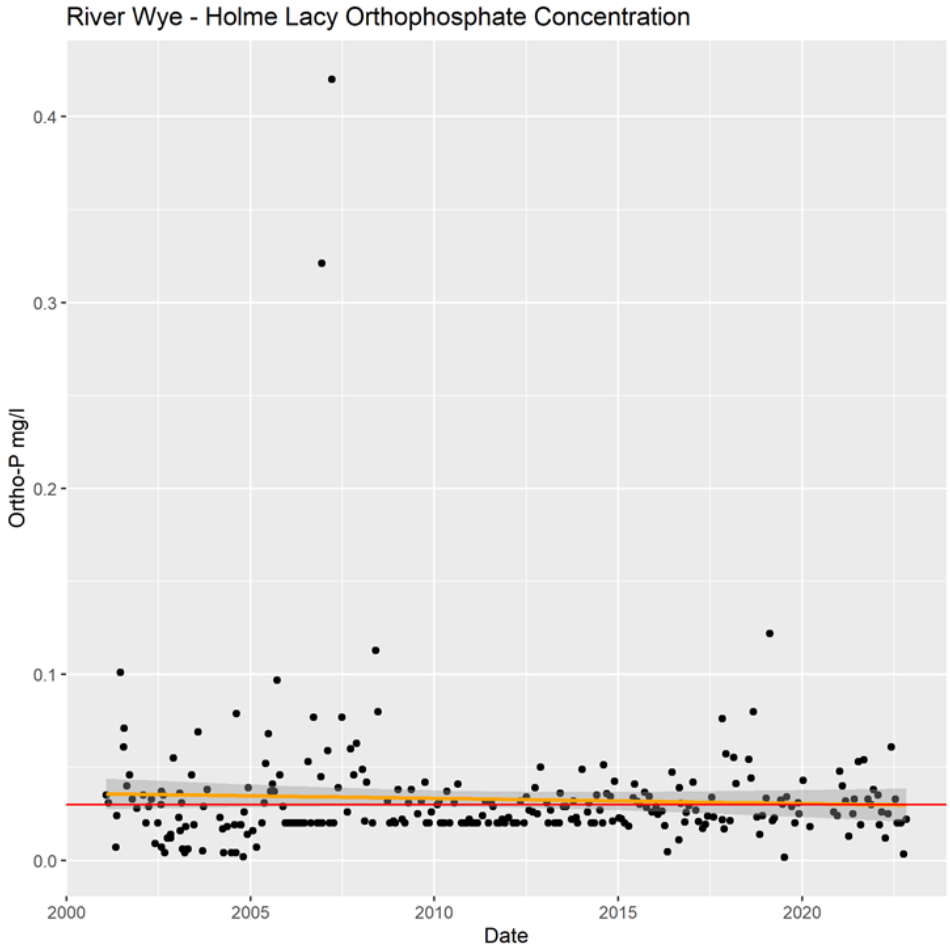

River Wye - Crowe Farm Orthophosphate Concentration
0.020
0.015
0.010
0.005
Ortho-P mg/l
Apr
Jul
Oct
Date (2021)

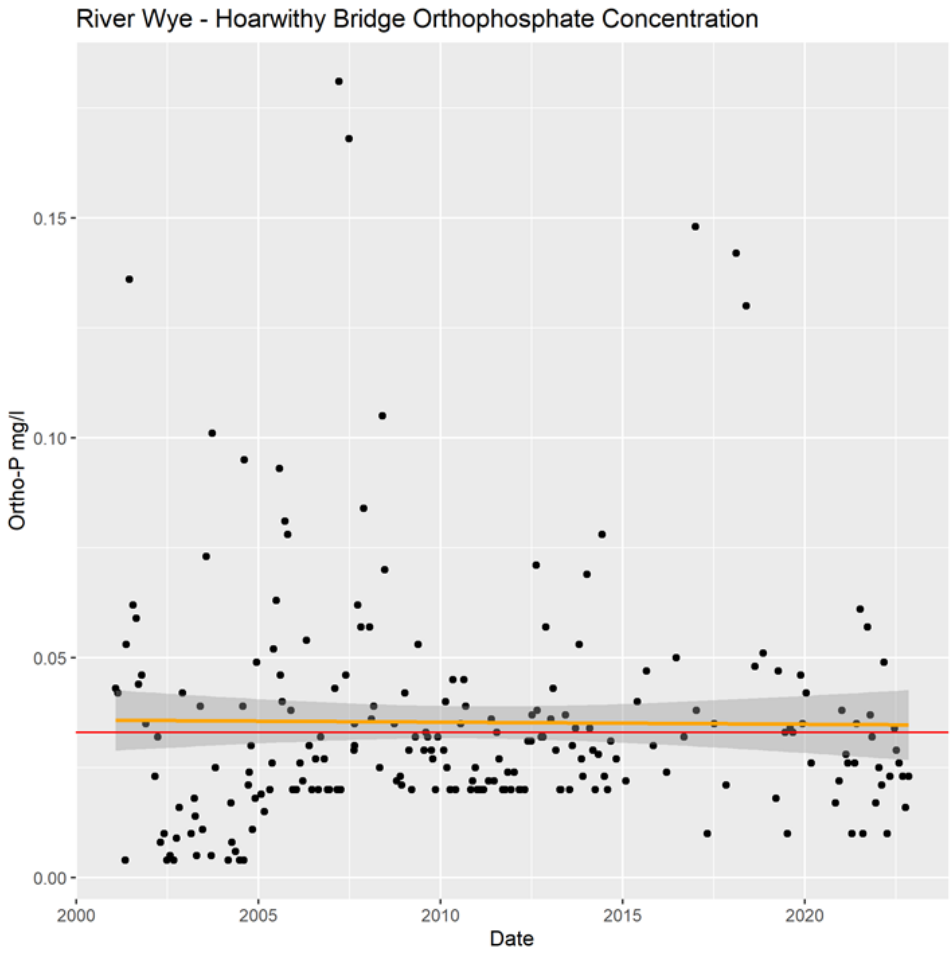

River Wye Bredwardine Bridge Orthophosphate Concentration
0.15
0.10
0.05
0.00
Ortho-P mg/l
2000
2005
2010
2015
2020
Date

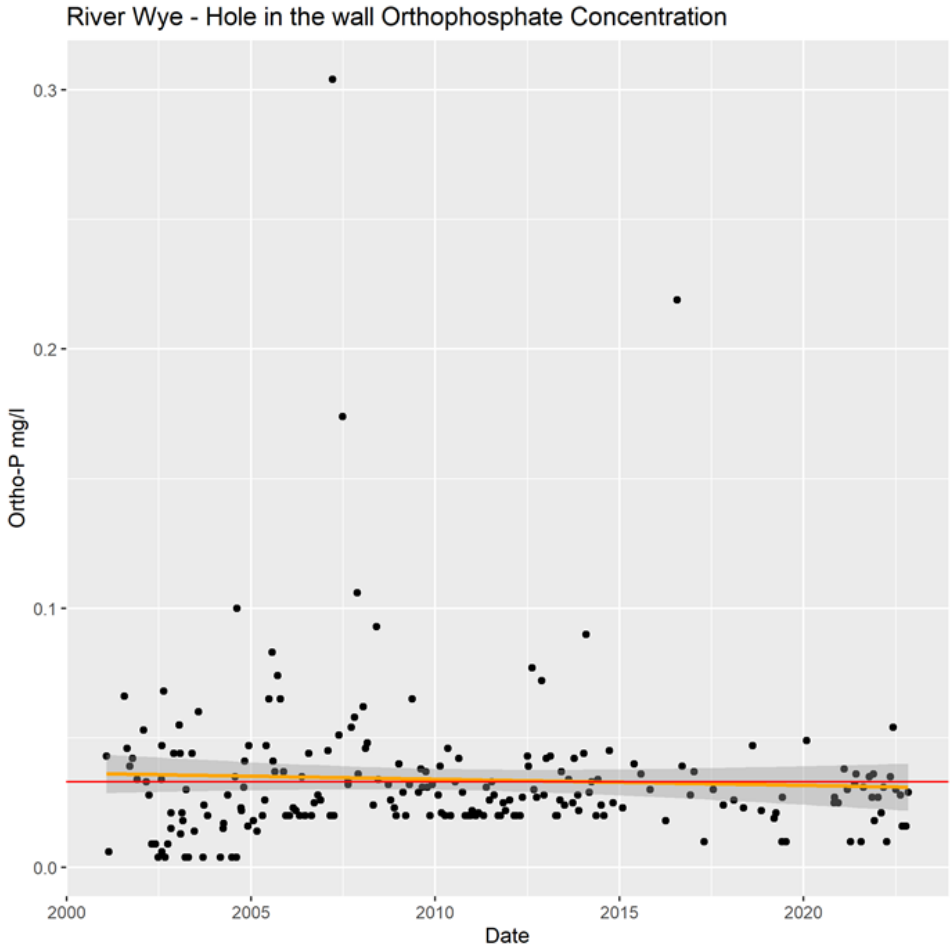

River Wye - Sollars Bridge Orthophosphate Concentration
Ortho-P mg/l
0.15
0.10
0.05
0.00
2005
2010
2015
2020
Date

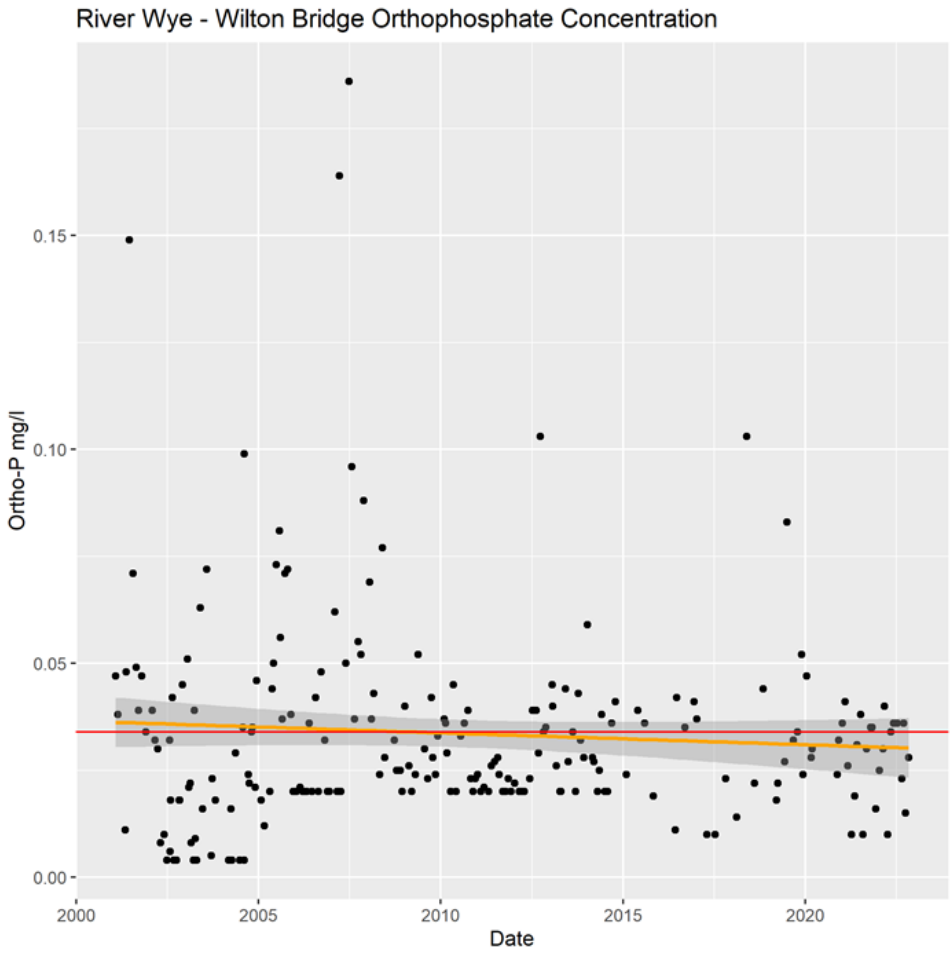

River Wye Victoria Bridge Orthophosphate Concentration
Ortho-P mg/l
0.6
0.4
0.2
0.0
2000
2005
2010
2015
2020
Date

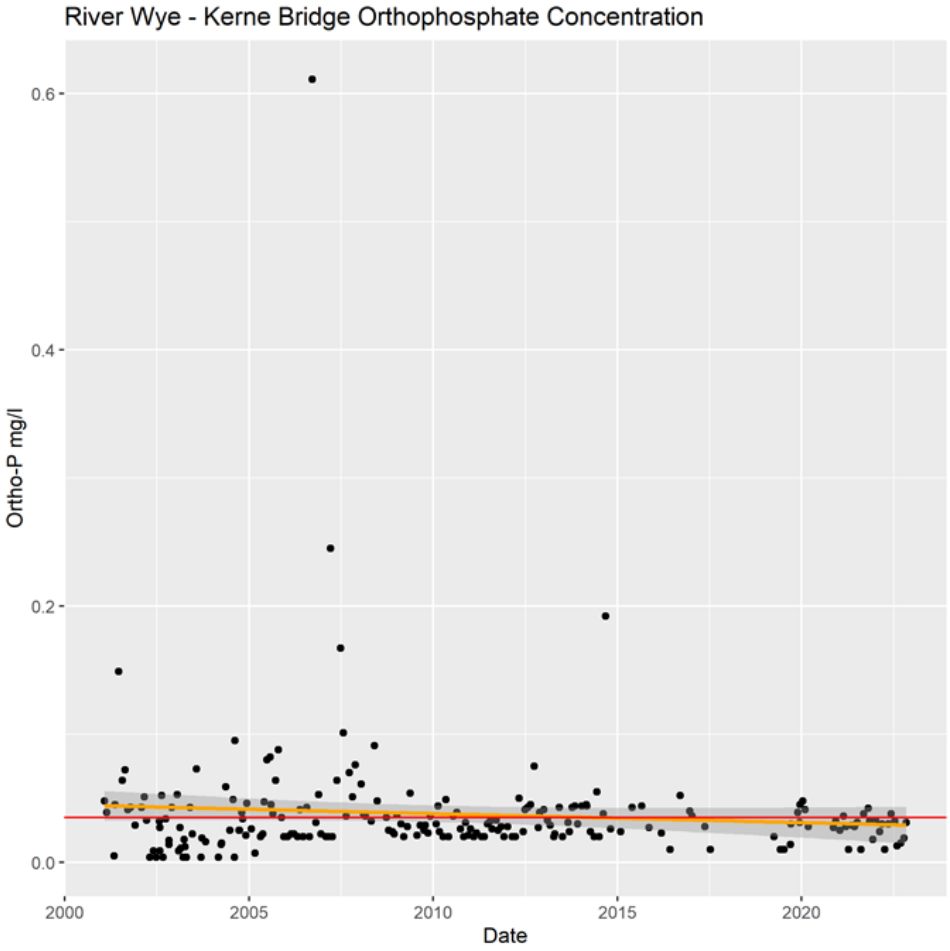

River Wye - Carrots Pool Orthophosphate Concentration
Ortho-P mg/l
0.3
0.2
0.1
0.0
2000
2005
2010
2015
2020
Date

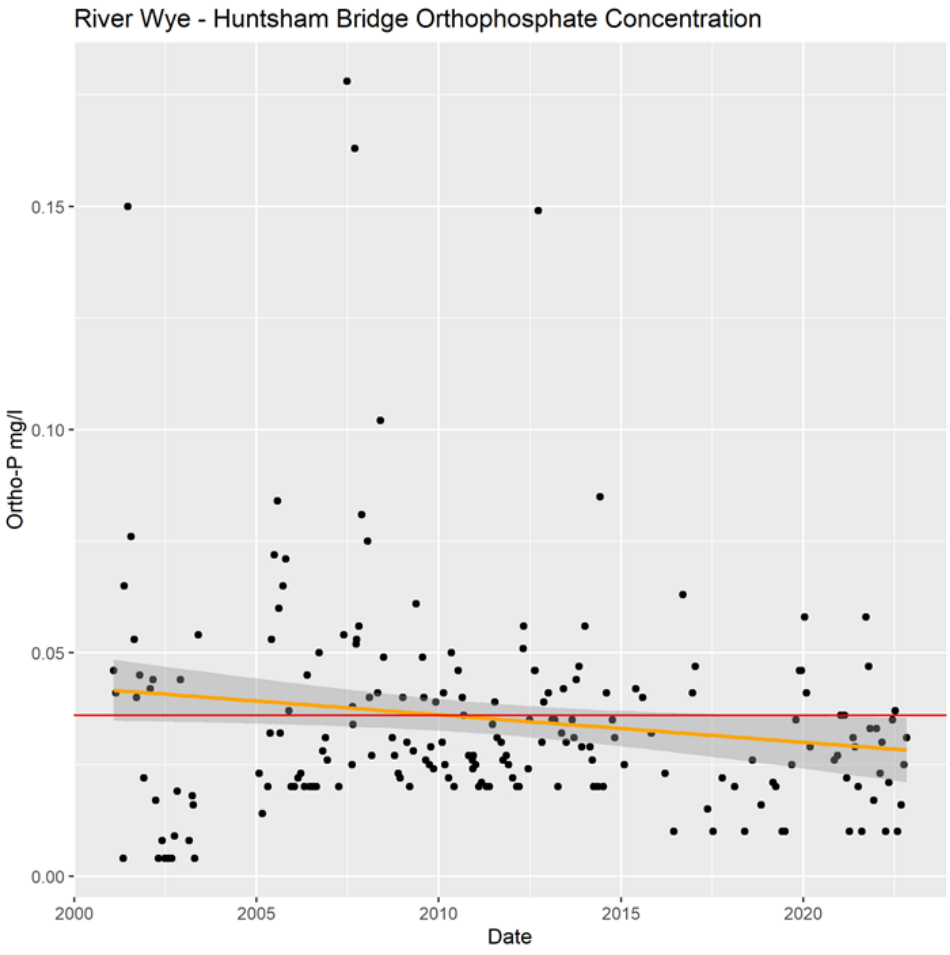

River Wye - Holme Lacy Orthophosphate Concentration
Ortho-P mg/l
0.4
0.3
0.2
0.1
0.0
2000
2005
2010
2015
2020
Date

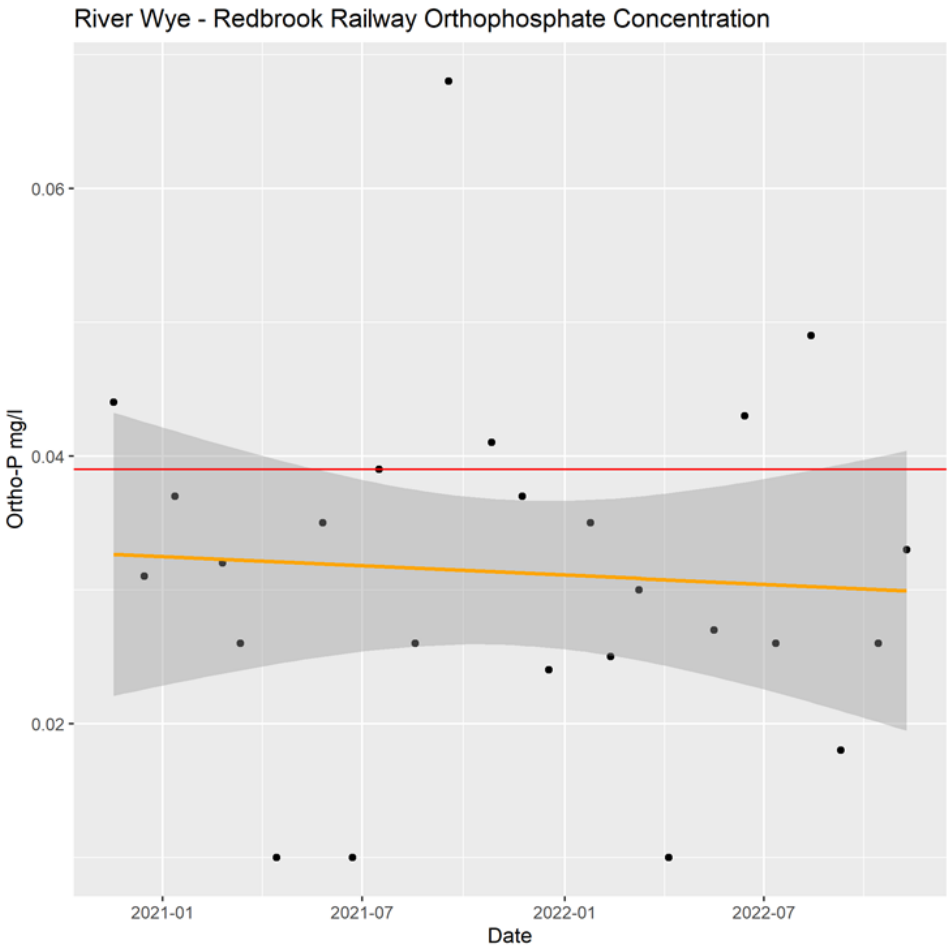

River Wye - Hoarwithy Bridge Orthophosphate Concentration
Ortho-P mg/l
0.15
0.10
0.05
0.00
2000
2005
2010
2015
2020
Date


River Wye - Hole in the wall Orthophosphate Concentration
Ortho-P mg/l
0.3
0.2
0.1
0.0
2000
2005
2010
2015
2020
Date


River Wye - Wilton Bridge Orthophosphate Concentration
Ortho-P mg/l
0.15
0.10
0.05
0.00
2000
2005
2010
2015
2020
Date


River Wye - Kerne Bridge Orthophosphate Concentration
Ortho-P mg/l
0.6
0.4
0.2
0.0
2000
2005
2010
2015
2020
Date


River Wye - Huntsham Bridge Orthophosphate Concentration
Ortho-P mg/l
0.15
0.10
0.05
0.00
2000
2005
2010
2015
2020
Date



Consideration of changes to site condition.

There is evidence of failing condition on every unit of the River Wye and River Lugg (see table 4 and 5 below). Phosphate targets are exceeded on every unit of the river Lugg and the evidence shows phosphate levels to be increasing, demonstrating declining water quality. The River Wye is meeting its phosphate targets but is showing clear symptoms of eutrophication, despite stable phosphate levels, exacerbated by elevated water temperatures. This is supported by the moderate status of macrophytes & phytobenthos (this also encompasses algae trends).

White Clawed Crayfish have declined in both the Wye and Lugg.

The evidence from the assessment of Wye catchment salmon stocks (including the Lugg) suggests the number of Atlantic salmon returning to the catchment is in decline such that they are below the Conservation Limit and as a result Bylaws have been introduced.

Although there is much being done to try and address declines in both salmon and white clawed crayfish, there remains some uncertainty around the causes of the declines and therefore we cannot be assured that all necessary management is currently in place to deem the site to be recovering.

Regarding the decline in water quality on the Lugg, again despite significant efforts to address the issue by multiple stakeholders, given the continued declines we cannot be certain that the current measures in place will reverse this decline and further investigation is required.

Based on the evidence above, the site condition has been changed from Unfavourable Recovering to Unfavourable Declining based on CSMG as per the table below:

Table 5: Change in Condition for River Wye and River Lugg SSSIs monitoring units

Unit	SSSI	Reach	Condition prior to 30 May 2023	Updated condition from May 2023
1	River Wye	Tidal river - Estuary to Brockweir Bridge	Favourable	Unfavourable - Declining
2	River Wye	Brockweir Bridge to Monmouth	Unfavourable - Recovering	Unfavourable - Declining
3	River Wye	Monmouth to Ross	Unfavourable - Recovering	Unfavourable - Declining
4	River Wye	Ross to Hereford	Unfavourable - Recovering	Unfavourable - Declining
5	River Wye	Hereford to Bredwardine Bridge	Unfavourable - Recovering	Unfavourable - Declining
6	River Wye	Bredwardine Bridge to Whitney Toll	Unfavourable - Recovering	Unfavourable - Declining
7	River Wye	Whitney Toll to Hay	Unfavourable - Recovering	Unfavourable - Declining
1	River Lugg	Bodenham Weir to Confluence with Wye	Unfavourable - Recovering	Unfavourable - Declining
2	River Lugg	Bodenham Weir to Leominster	Unfavourable - Recovering	Unfavourable - Declining
3	River Lugg	Leominster to Mortimers Cross	Unfavourable - Declining	Unfavourable - Declining
4	River Lugg	Mortimers Cross to Presteigne	Unfavourable - Recovering	Unfavourable - Declining

Table 6. Summary of evidence and changes to condition by feature for the Wye SSSI

The following tables show a summary of the features assessed, condition and evidence used.

SSSI Notified Feature [#]	Monitored (Reportable) Feature	Designation (SSSI/SAC)	Unit No							Evidence
			1	2	3	4	5	6	7	
Atlantic stream crayfish	S1092 White-clawed (or Atlantic stream) crayfish Austropotamobius pallipes	SSSI, SAC								Crayfish survey (2013).
Sea lamprey	S1095 Sea lamprey, Petromyzon marinus	SSSI, SAC	*	*	*	*	*	*	*	
Brook lamprey	S1096 Brook lamprey, Lampetra planeri	SSSI, SAC	*	*	*	*	*	*	*	
River lamprey	S1099 River lamprey, Lampetra fluviatilis	SSSI, SAC	*	*	*	*	*	*	*	
Allis shad	S1102 Allis shad, Alosa alosa	SSSI, SAC	*	*	*	*	*	*	*	
Twaite shad	S1103 Twaite shad, Alosa fallax	SSSI, SAC	*	*	*	*	*	*	*	
Atlantic salmon	S1106 Atlantic salmon, Salmo salar	SSSI, SAC								Not achieving conservation limits, 2019 showed declining figures & overall declining trend.
Bullhead	S1163 Bullhead, Cottus gobio	SSSI, SAC		*		*	*	*	*	
Common otter	S1355 Otter, Lutra lutra	SSSI, SAC		*	*	*	*	*	*	
Invertebrates associated with riffles, river shingles and saltmarsh	Invert. assemblage W111 shingle bank	SSSI	*	*	*	*	*	*	*	
Invertebrates associated with river deadwood	Invert. assemblage W114 stream & river margin	SSSI	*	*	*	*	*	*	*	
Invertebrates associated with bankside vegetation.	Invert. assemblage W122 riparian sand	SSSI	*	*	*	*	*	*	*	

Aquatic plant communities - rivers on sandstone, mudstone and hard limestone Aquatic plant communities - clay rivers Aquatic plant communities - lowland rivers with minimal gradient Certain flowering plants and bryophytes Beds of water crowfoot (Ranunculus spp.)	Rivers and Streams	SSSI	*							Evidence base used WFD macrophyte, phytobenthos & invertebrate classification data
	H3260 Water courses of plain to montane levels with R. fluitantis	SAC			*	*	*	*	*	

Table 7. Summary of evidence and changes to condition by feature for the Lugg SSSI

SSSI Notified Feature [#]	Monitored (Reportable) Feature	Designation (SSSI/SAC)	Unit No				Evidence
			1	2	3	4	
Clay river displaying a transition from nutrient poor to naturally nutrient rich water chemistry	Rivers and streams	SSSI					Evidence base used EA water quality monitoring data (reactive phosphorus – WFD no deterioration – failure report) & WFD macrophyte reporting.
River plant communities	H3260 Water courses of plain to montane levels with Ranunculion fluitantis and Callitricho-Batrachion vegetation	SAC					Evidence base used EA water quality monitoring data (reactive phosphorus – WFD no deterioration – failure report). & WFD macrophyte reporting
Clay river displaying a transition from nutrient poor to naturally nutrient rich water chemistry	River Lamprey	SAC	*				
	Sea Lamprey	SAC	*				
	Brook Lamprey	SAC	*	*	*	*	
	Allis Shad	SAC	*				

	Twaite Shad	SAC	*	*	*	*	
	Atlantic Salmon	SAC					Not achieving conservation limits, 2019 showed declining figures & overall declining trend.
	Bullhead	SAC	*	*	*	*	
	Invertebrate assemblage W1 flowing water	SAC	*	*	*	*	
	White Clawed Crayfish	SAC					Crayfish survey (2013).
Common otter	Otter	SSSI/SAC	*	*	*	*	

[#] List of notified features as confirmed by Natural England's Citation Review project in May 2023. This project establishes a robust and consistent approach to interpreting the notified features described on every SSSI Citation. Work is ongoing to update Monitoring Specifications (formerly SSSI Favourable Condition Tables) and the information on Designated Site Viewer to reflect the refined list of notified features and how these relate to what is monitored 'in the field' (monitored (reportable) features). These changes do not impact the evidence and conclusions reached in November 2022 and captured in this document**.**

* Not assessed

= Declining condition

When undertaking a condition assessment, the unit status should reflect the status of the feature with the lowest condition score.

Vicki Howden - West Midlands Senior Freshwater advisor (June 2022)

Daisy Burris - West Midlands Freshwater Adviser (November 2022)

Claire Minett – Operations Manager (November 2022)

Jonathan Blowers – Operations Manager (updated May 2023) to reflect Natural England's revised approach to interpreting and naming notified features resulting from an ongoing review of SSSI Citations.

Appendix 2: Understanding the terminology of the condition of a SAC river- using the example of the River Wye and Lugg SAC

Natural England May 2023

The terminology and meaning of describing and understanding the condition of a river and what certain phrases mean can be very confusing, especially when discussing alongside Nutrient Neutrality, which is itself complex. This note is a simple guide to understanding the current condition of a river using the Wye and Lugg as an example.

The different designations involved

The River Wye and the River Lugg are designated as two separate Sites of Special Scientific Interest (SSSI). They are the two component SSSIs that underpin the River Wye Special Area of Conservation (SAC) in England. Although only the stretch of the River Lugg SSSI between Leominster and its confluence with the Wye is part of the River Wye SAC. The biological features that make the River Wye SAC important, also form part of the underpinning SSSI designations. The River Wye SAC, also known as the Afon Gwy SAC, extends into Wales. Natural Resources Wales provide advice for the Welsh stretch.

SSSI monitoring specifications

When assessing the condition of a SAC, it is the biological features of the underpinning SSSIs that Natural England assess and record. Condition is 'judged' against each SSSI's monitoring specification, known as the site's Monitoring Specification. Monitoring Specifications are based on UK Common Standards Monitoring guidance published by the Joint Nature Conservation Committee. To request a copy of the monitoring specification please e-mail west.midlands.enquiries@naturalengland.org.uk.

SAC Conservation Objectives

Every SAC has Conservation Objectives identifying the site's designated features. This is supported by detailed Supplementary Advice on conserving and restoring site's features. Together these documents, and any case specific advice given by Natural England, should be used when developing, proposing, or assessing an activity, plan or project that may affect the site.

The SAC documents capture what is necessary to ensure the integrity of the site is maintained or restored so that it contributes to achieving the Favourable Conservation Status of its designated (qualifying) features. Specific targets or characteristics to achieve this, such as targets for phosphate levels for the River Wye SAC, are described in the underpinning SSSI's FCT as well as the SAC's Conservation Objective. This cross referencing provides a link between assessing the condition of SSSI features and the favourable conservation status of the SAC features.

Phosphate targets and levels in the Lugg and Wye

The River Lugg section of the SAC is currently exceeding the phosphate target for the river habitat feature identified in both the Wye SAC's Conservation Objectives and the underpinning River Lugg SSSI's FCT. This means the river habitat feature in this stretch is in unfavourable condition and failing its Conservation Objectives. This also means that this stretch is not contributing to achieving Favourable Conservation Status for this river habitat, and that other designated (qualifying) features in the SAC dependent on the river habitat are also unlikely to contribute to their Favourable Conservation Status.

The River Wye (between Hay -on -Wye and the River Lugg confluence) is currently just meeting its phosphate target in some monitoring locations and is, therefore, at risk of also failing the SAC's Conservation Objectives if phosphate levels increase.

The Phosphate target is just one element of the River Wye SAC's Conservation Objectives, but a very important one in terms of health of the river. In relation to Nutrient Neutrality the fact the Lugg stretch is exceeding the water quality targets has specific implications with regards how the Habitat Regulations are applied due to the Dutch Judgement.

River Lugg and River Wye SSSI Condition

The River Wye and Lugg designated site has a relatively complex set of interest features (those features for which the river is designated) and as such undertaking a full condition assessment is a significant undertaking. Natural England is seeking to undertake a full assessment in 2023/4 In the interim, the Area Team has reviewed a number of specific components of the interest features using Common Standard Monitoring Guidance (CSMG) to review the current condition stat. us. For full details of the features assessed please see Appendix 1.

Natural England's assessment is that the River Wye SSSI and the River Lugg SSSI are in unfavourable declining condition. Our interim assessment focused on Macrophytes, , Salmon and White-Clawed Crayfish.

SSSIs are divided into monitoring units (as per Table 1). A unit's condition reflects the lowest condition category of any designated feature present in that unit. If a unit is in unfavourable condition, then at least one feature present in that unit is assessed as unfavourable.

The recent assessment demonstrated that in every unit at least one of the assessed components of the interest features (Macrophytes, Salmon and White-Clawed Crayfish) was in unfavourable condition and was declining. Therefore the current condition is detailed below. This does not impact on the water quality target, and therefore makes no change to the "Nutrient Neutrality" status of both rivers, as this is based solely on water quality. The Lugg is failing its water quality targets, the Wye is not failing its water quality targets.

Table 1. Revised condition of River Wye and Lugg SSSI/SAC

Unit	River	Reach	Designation	Suggested Condition on CMSi
1	River Wye	Tidal river - Estuary to Brockweir Bridge	SSSI/SAC	Unfavourable - Declining
2	River Wye	Brockweir Bridge to Monmouth	SSSI/SAC	Unfavourable - Declining
3	River Wye	Monmouth to Ross	SSSI/SAC	Unfavourable - Declining
4a	River Wye	Ross to Lugg Confluence	SSSI/SAC	Unfavourable - Declining
4b	River Wye	Lugg Confluence to Hereford	SSSI/SAC	Unfavourable - Declining
5	River Wye	Hereford to Bredwardine Bridge	SSSI/SAC	Unfavourable - Declining
6	River Wye	Bredwardine Bridge to Whitney Toll	SSSI/SAC	Unfavourable - Declining
7	River Wye	Whitney Toll to Hay	SSSI/SAC	Unfavourable - Declining
1	River Lugg	Bodenham Weir to Confluence with Wye	SSSI/SAC	Unfavourable - Declining
2	River Lugg	Bodenham Weir to Leominster	SSSI	Unfavourable - Declining
3	River Lugg	Leominster to Mortimers Cross	SSSI	Unfavourable - Declining
4	River Lugg	Mortimers Cross to Presteigne	SSSI	Unfavourable - Declining

Table 2: The following table explains the condition categories.

SSSI Condition categories	
Condition status	**Explanation**
Favourable condition	The designated feature is being adequately conserved and the results from monitoring demonstrate that the feature is meeting all the mandatory site-specific monitoring targets set out in the Favourable Condition Tables (FCT). The FCT sets the minimum standard for favourable condition for the designated feature and there may be scope for the further (voluntary) enhancement of the feature.
Unfavourable recovering condition	Often known simply as 'recovering'. The Feature is not yet fully conserved, but all the necessary management measures are in place. Provided that the recovery work is sustained, the feature will reach favourable condition in time. At least one of the designated features mandatory attributes is not meeting their targets (as set out in the site specific FCT).

Unfavourable no-change condition	The feature is not being conserved, and will not reach favourable condition, unless there are changes to the management or external pressures and this is reflected in the results of monitoring over time; with at least one of the mandatory attributes not meeting its target (as set out in the site specific FCT) with the results not moving towards the desired state. The longer the feature remains in this poor condition, the more difficult it will be, in general, to achieve recovery.
Unfavourable declining condition	The feature is not being conserved and will not reach favourable condition unless there are changes to management or external pressures. The feature condition is becoming progressively worse, and this is reflected in the results of monitoring over time, with at least one of the designated features mandatory attributes not meeting its target (as set out in the site specific FCT) with the results moving further away from the desired state. The longer the feature remains in this poor condition, the more difficult it will be, in general, to achieve recovery.
Part destroyed condition	Lasting damage has occurred to part of a designated feature, such that it has been irretrievably lost and will never recover (no amount of management will allow the feature to ever reach favourable condition).
Destroyed condition	Lasting damage has occurred to an entire designated feature such that the feature has been irretrievably lost (no amount of management will bring this feature back). This feature will never recover e.g., a finite mineralogical feature has been totally removed from its surroundings without consent and is therefore lost forever.

What does Unfavourable-declining condition mean on the Wye & Lugg?

Where a feature/unit is recorded as unfavourable-declining, it is Natural England's judgement that there is evidence of continued decline against the feature's monitoring targets, and the management measures in place are insufficient to allow the feature to attain its monitoring targets in the future. Changes in site management and/or changes to external pressures are required to achieve favourable condition.

There is a significant amount of effort on both the Wye and Lugg to improve this situation, including a Nutrient Management Plan which outlines the actions required with regard to phosphates. Some of the reasons for decline may be outside the catchment, and further work is required to fully understand the reasons.

For details of pressures affecting the condition of the Wye and Lugg SSSis (River Wye) please visit the Designated Site Viewer. search for the site.