

"Water Quality Measurement Network" (WQMN) recordings on the Warwickshire Avon at Jubilee Bridge Fladbury

WQMN Records				WQMN Observations							WQMN Measurements				GirlingAS Notes	
Sample Date	Operator / Representing	Location	Time	River Level	Flow	Weather	Rain in last 24hrs	Algal Bloom	Signs of Pollution	Additional Notes for WQMN	Water Temp. (Deg.C)	Electrical Conductivity (uS/cm) micro Siemens per centimeter	Phosphate (mg/l) milli-grams per litre	Nitrate (ppm) parts per million		
Key		?	Greater than the recommended level Satisfactory													
		?														
												Metrics Explained				
												Ideal is 100/ 200 Typical River <1000 Considered High >1000	Ideal is 0.03/0.05mg/l. Gov. g/lines max. 0.1mg/l EA typical value at Fladbury is 0.1mg/l	<40 ppm is safe for fish to thrive		
Nov. 2021	Glyn Marshall	Jubilee Br. Wark's Avon											0.86		Phosphate data supplied by Glyn Marshall pre WQMN / No fish caught in Matches during November 2021	
Dec. 2021	Glyn Marshall	Jubilee Br. Wark's Avon											0.91		Phosphate data supplied by Glyn Marshall pre WQMN / No fish caught in Matches during November / December 2021	
22/05/2022	Andy/Dave/Frank	GirlingAS 1	Jubilee Br. Wark's Avon	10.30am	Low	Normal	Cool / Dry	No	No	Foam in weir pool	Low River	19.4	978	0.91	20	First GirlingAS WQMN measurement confirming earlier Phosphate results
04/06/2022	Andy Hammerton	GirlingAS 2	Jubilee Br. Wark's Avon	10.08am	Low	Below av.	Cloudy	No	No	No fish topping	No fry visible	16.6	1080	0.87	20	Second GirlingAS WQMN measurement confirming earlier GirlingAS data set
26/6/2022	Andy Hammerton	GirlingAS 3	Jubilee Br. Wark's Avon	12.02am	Low	Below av.	Overcast	Yes	No	Foam in weir pool	Water Clear	19.7	1030	1.06	10	The fishing Season has begun & in the first two matches in June 2022 Barbel, Chub, Roach and Dace were caught despite the highest Phosphate level recorded so far.
9/7/2022	Andy Hammerton	GirlingAS 4	Jubilee Br. Wark's Avon		Low	Below av.	Sunny	No	No	Foam in weir pool	Water Clear	19.8	1060	1.02	20	Water Quality appears to be stable and constantly poor over the last 9 month period
16/7/2022	Glyn Marshall	Angling Trust	Jubilee Br. Wark's Avon	4.15pm	Low	Below av.	Hot	No	No	Green Tinge	Water very Low and Clear	24	1060	1.34	10	Glyn Marshall representing the Angling Trust obtained similar results to previous GirlingAS results although measured the highest Phosphate level so far.
23/7/2022	Andy Hammerton	GirlingAS 5	Simultaneous sampling at Jubilee Br. Wark's Avon	10.08	Low	Below av.	Dull and Overcast	No	No	Green Tinge	Water very Low and Clear	21.5	1100	1.06	20	Simultaneous sampling has approved the GirlingAS process and as a result when making reference to these results you can be assured of their accuracy. Following confirmation, the Angling Trust plan to complete a full Laboratory Test at Fladbury. The river at the moment is alarmingly low and with the hot spell of weather is less than ideal for good water quality.
	Glyn Marshall	Angling Trust										21.8	1100	1.06	20	
12/8/2022	Stuart Hill	Severn Trent	Above & below Wood Norton Hall		Low	Below av.		No	No		Very Low & clear			1.18 / 1.18		Severn Trent measured above and below Wood Norton Hall for Phosphate (0.18mg/l) and Ammonia (>0.5mg/l) and found similar results, the influx was clear and approx. 3 ltr/sec.
20/8/2022	Andy Hammerton	GirlingAS 6	Jubilee Br. Wark's Avon	4.45pm	Low	Below av.	warm	No	No	No	Very Low & clear	22.2	955	1.00	10	Phosphate remains high but reduced by 25% compared to the July peak. Electrical Conductivity back below the threshold.
7/10/2022	Andy Hammerton	GirlingAS 7	Jubilee Br. Wark's Avon	5-43pm	Low	Below av.	Overcast	Yes	No	No	Very Low & clear	14.8	1030	0.90	20	Phosphate and Electrical Conductivity remain high
23/10/2022	Andy Hammerton	GirlingAS 8	Jubilee Br. Wark's Avon	5-23pm	High/ rising	Above av.	Overcast	Yes	No	No	Rising River	15.4	873	0.70	10	Measurements reflect the rising river & influx of rainwater
3/12/2022	Andy Hammerton	GirlingAS 9	Jubilee Br. Wark's Avon	3pm	High	Above av.		No	No	No	Falling River	8	928	0.51	5	Falling pacy river, Phosphate and Nitrate clearly improved following a flush through. Very poor match returns similar to November 2021
19/1/2023	Andy Hammerton	GirlingAS 10	Jubilee Br. Wark's Avon	2.33pm	High	Above av.		Yes	No	No	Falling River	4.7	803	0.45	10	Falling mucky river, Phosphate reading lowest for over a year following a flush through.
18/3/2023	Andy Hammerton	GirlingAS 11	Jubilee Br. Wark's Avon	4.22pm	High	Fast	overcast	Yes	No	Yes	Foam	11.2	770	0.21	0	Rising & coloured river, Phosphate lowest reading for 16 months (sample repeated)
10/4/2023	Andy Hammerton	GirlingAS 12	Jubilee Br. Wark's Avon	11.43am	High	Fast	overcast	Yes	No	No		13.1	872	0.43	0	Rising & Pacey river, Phosphate >prev. reading.
16/5/2023	Andy Hammerton	GirlingAS 13	Jubilee Br. Wark's Avon	18.42am	Normal	Above ave.	Sunny	No	No	No		15.4	862	0.63	0	River returned to normal level, Phosphate >prev. reading.
13/6/2023	Andy Hammerton	GirlingAS 14	Jubilee Br. Wark's Avon	20.20pm	Normal	Average	Sunny	Yes	No	No		22.3	964	0.93	1	River fining down after slight rise, Phosphate >prev. reading.
7/7/2023	Andy Hammerton	GirlingAS 15	Jubilee Br. Wark's Avon	19.15pm	Normal	Above ave.	Sunny	Yes	No	No		19.5	1040	0.97	1	Similar to last months result
13/8/2023	Andy Hammerton	GirlingAS 16	Jubilee Br. Wark's Avon	08.39am	Low	Normal	Rain	Yes	No	No		18.3	925	0.93	2	Similar to last months result
25/9/2023	Andy Hammerton	GirlingAS 17	Jubilee Br. Wark's Avon	12.32	Low	Normal	overcast	No	No	No		16.8	804	0.83	20	Cooler conditions
28/10/2023	Andy Hammerton	GirlingAS 18	Jubilee Br. Wark's Avon	14.35	Normal	Normal	overcast	Yes	No	No		13.1	832	0.61	10	Back down after a flood

Phosphate peaked in July 2022 to 13.4 times the norm of 0.1mg/l regularly measured by the Environmental Agency at Jubilee Bridge

Analysis / Conclusions / News:-

Phosphate Unacceptably high since October 2021 peaking at 1.34 mg/l, typical Environmental Agency pre pollution recordings averaging 0.1 mg/l at Jubilee Bridge, the trend remaining alarmingly high.

Electrical Cond. Measurements are generally slightly below or higher than the conductivity threshold (>1000 uS/cm) indicating the continuous presence of dissolved solids, the metric appears very consistent.

Nitrate All measurements taken so far have been safely below the threshold of 40 ppm, ideal for fish to thrive.

- Conclusions**
- 1) There were no fish caught in matches during the period of November/ December 2021 and again November/ December 2022. In each case the fish returned for the start of the season in June. Strangely, during these periods there appears to be no significant change in any of the metrics.
 - 2) Clearly there has been no improvement in water quality since measurements began in November 2021.
 - 3) The Angling Trust WQMN summary (1/7/2022) indicated that Electrical Conductivity and Phosphate levels measured at Fladbury were the highest their data base had received.
 - 4) Confirmation by the Angling Trust of the GirlingAS process proves that the water quality at Fladbury is of a very real concern and when making reference to these results you can be assured of their accuracy.
 - 5) Severn Trent have concluded that the problem is "a catchment issue", there is poor water quality as far upstream as Stratford upon Avon.
 - 6) After completion of the treatment plant at Wood Norton Hall Severn trent found similar levels of Phosphate and Ammonia above and below the outfall.

News The Angling Trust have confirmed the Society's process by obtaining similar results and completed a full laboratory test on the water quality at Fladbury which raised no further concerns

Email from Glyn Marshall 24/11/22 after consulting with an Environmental Scientist at the Rivers Trust

E.Coli "In regards to your E.coli count (158MPN/100ml) that is a good and safe level and what I would expect to find in a normal healthy river, you will never get a zero count in natural rivers for E.coli because you have inputs from avian and mammalian wildlife and I would say a typical level for background bacteria is anywhere between 150-500 MPN(cfu)/100 ml if you start to record levels above 500 then I would start to be concerned and look for other inputs such as agricultural and of course human derived sewage inputs. I have been heavily involved in a number of Bathing water projects across the UK including the Oxford application that was successfully awarded earlier this year."