MONITORING OF THE PAR RIVER AND ITS TRIBUTARIES

The monitoring group operates under the citizen science scheme run by the Westcountry Rivers Trust. Comments and opinions in this report are those of the authors only.

JULY 2024

Brian Harrisson and Simon Tagney carrying out a riverfly survey on the Treesmill Stream

CONTENT	PAGES

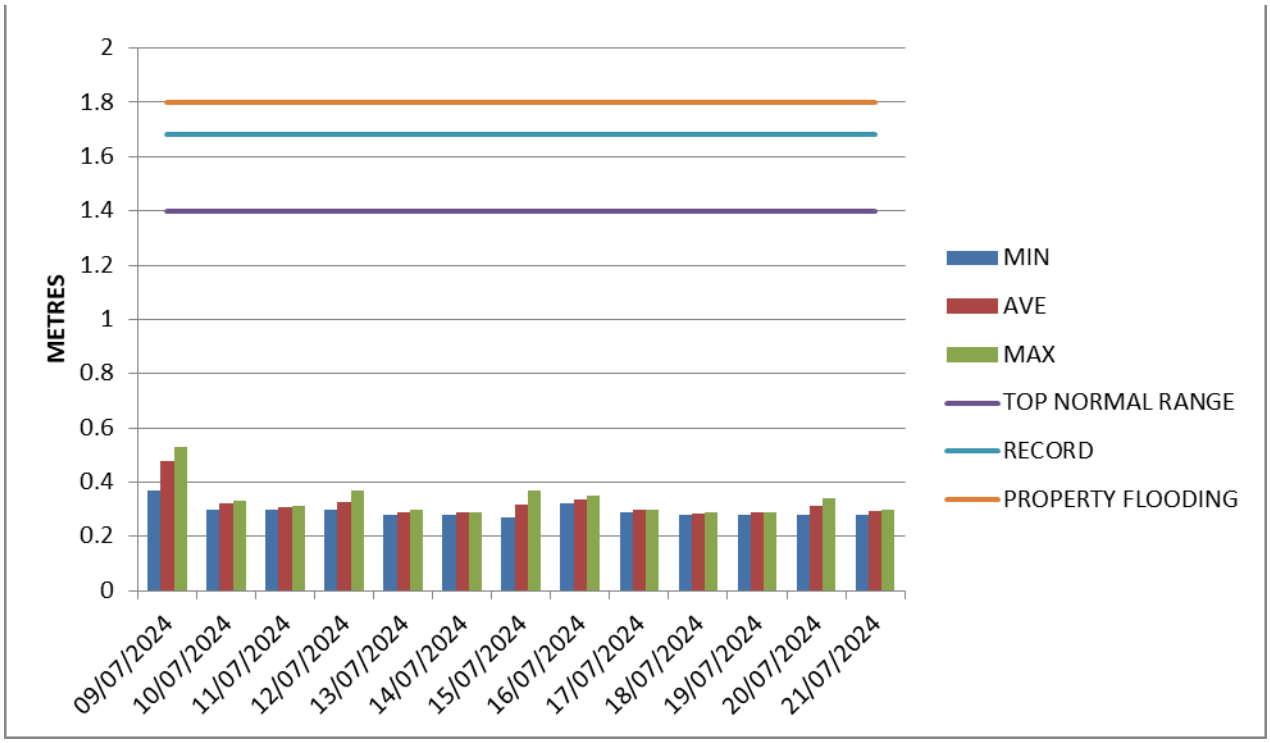
A. OUR JULY 2024 FINDINGS AT A GLANCE (SEE SECTIONS C TO I FOR FULL PICTURE)

1. We sampled at 16 locations. The red highlighting shows points of concern.

CRITERIA	UPPER PAR (UPSTREAM OF CONFLUENCE WITH BOKIDDICK STREAM NEAR BLACK HILL CAR PARK) 5 TESTING LOCATIONS	LOWER PAR (FROM CONFLUENCE WITH BOKIDDICK STREAM TO SEA) 3 TESTING LOCATIONS	TRIBUTARIES OF UPPER PAR (CARBIS STREAM, MOLINNIS STREAM, TRESKILLING STREAM, BOKIDDICK STREAM) 6 TESTING LOCATIONS	TRIBUTARY OF LOWER PAR (POLMEAR STREAM) 2 TESTING LOCATIONS
TEMPERATURE (SHOULD NOT EXCEED 18˚ CELSIUS)	Average 16.36˚ Celsius	Average 17.66˚ Celsius	Average 16.75˚ Celsius	Average 16.95˚ Celsius
TOTAL DISSOLVED SOLIDS (SHOULD NOT EXCEED 300 PPM)	93.4 PPM	198 PPM	169 PPM	154 PPM
TURBIDITY (SHOULD BE <12 ON SECCHI TUBE. FOR AVERAGING ANY READING <12 IS COUNTED AS 11)	0	5	0	37.5
PHOSPHATES (SHOULD NOT EXCEED 100 PPB)	**200 PPB**	**366.66 PPB**	0 PPB	0 PPB
RIVERFLY SCORE (TRIGGER LEVEL AT LRM SHOULD BE ≥ 6)	N/A	8	N/A	7 Treesmill upper 0 Treesmill St Andrew's Pond outlet No trigger levels yet.
WILDLIFE EVIDENCE	Butterflies, roe deer,	Otter spraint, riverfly nymphs (cased caddis, flat-bodied upwing, olives, gammarus), herring gull.	Dragonflies, chiffchaff, butterflies, buzzard, woodpigeon.	Fish, riverfly nymphs (cased caddis, mayfly, olives, gammarus).
INVASIVE PLANTS	Hemlock water dropwort, Himalayan balsam, Japanese knotweed.	Hemlock water dropwort	Hemlock water dropwort, Japanese knotweed	Hemlock water dropwort
EVIDENCE OF POLLUTION	Foam, smell	Foam	None	None

2. **Par River levels at Luxulyan preceding and during surveys.** These are available here: https://check-for-flooding.service.gov.uk/station/3159). The following graph uses data recorded at this website: https://riverlevels.uk/par-river-luxulyan .

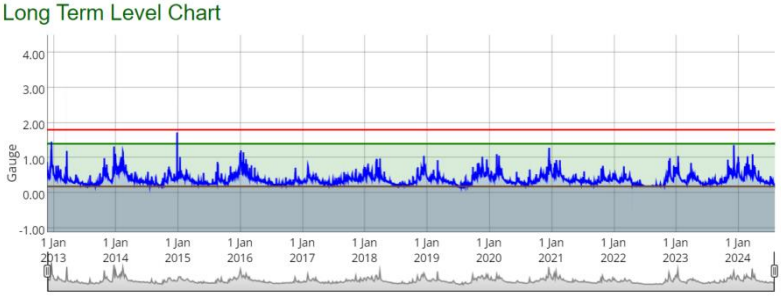
PAR RIVER LEVELS JULY 2024



How levels here could affect nearby areas

1.80m	Property flooding is possible above this level. One or more flood warnings may be issued
1.68m	Water reaches the highest level recorded at this measuring station (recorded on 19 December 1999)
1.40m	Low lying land flooding is possible above this level. One or more flood alerts may be issued
	This is the top of the normal range

Long term data taken from: https://riverlevels.uk/par-river-luxulyan :



3. Key points from July 2024:

(a) Positive signs

(i) Our work has been included in an Environment Agency document: *Par River data review. Review of Environment Agency and citizen science data in the Upper and Lower Par WFDR waterbodies (GB108048002310) and GB (108048002290), 2019 – 2023*, Davies, J. July 2024 (Analysis and Reporting, Environmental Monitoring, Cornwall and Isles of Scilly). This is a public document which can be shared under the Open Government Licence (nationalarchives.gov.uk).

While it was obvious that citizen science monitoring was not comparable to that of the EA in breadth or scientific rigour, the report noted that our results were broadly comparable and had the advantage of being collected monthly, so reflecting trends in river health, albeit at a simple level.

The conclusion was:

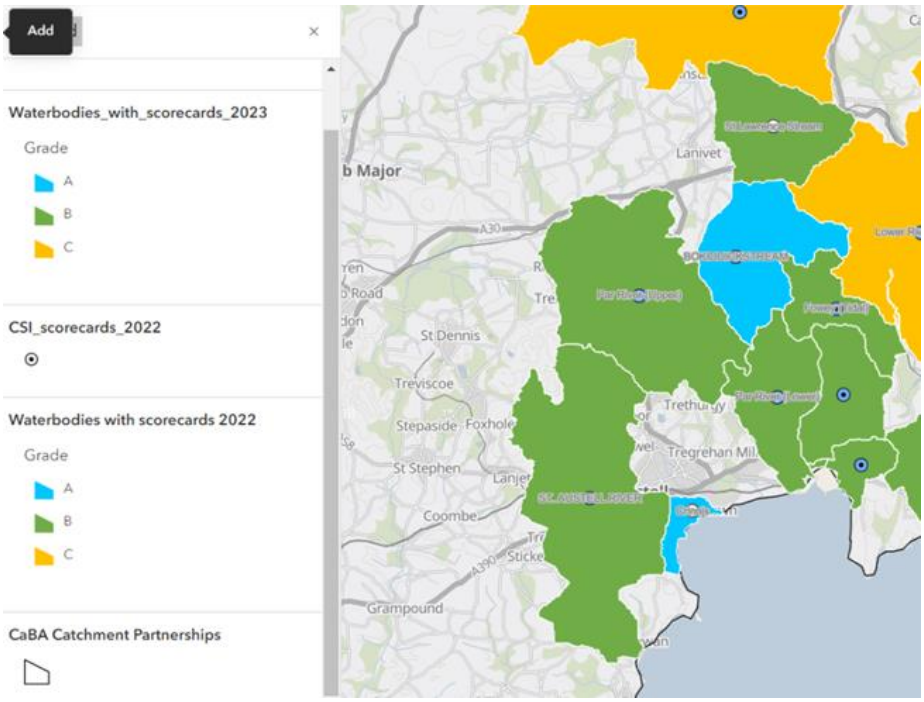
'EA and citizen science data have highlighted a number of water quality issues and concerns in the Upper and Lower Par waterbodies. These waterbodies have shown elevated nutrients, suspended solids and bacteria which may be detrimental to the river ecology and bathing water quality. These issues are associated with various catchment activities, some known, some suspected and some not yet identified. This report has identified these concerns, identified where further evidence is required and made recommendations on where to target further investigations in order to provide this.'

To have our work recognised in this way is a real honour. None of us have any illusions that we are proper scientists, but to be taken seriously by the experts, and recognised as potential contributors in gathering data that may contribute to the improvement of the Par River and its tributaries, is a big boost for us all. Thanks are due to Jenny Davies, Lisa Goodall, Leah Steward, Layla Ousley and their colleagues at the Environment Agency for their support and encouragement of our efforts.

(ii) WRT cards

None of our work would have taken place if it had not been for the creation of the CSI citizen science programme by the Westcountry Rivers Trust. The 2023 scorecards, based on our findings have been published and may be found on WRT website.

Our results, using the CSI criteria, show the Upper and Lower Par River, the Treesmill and Polmear Streams as Good and the Bokiddick Stream as Excellent. These are **not** the same criteria used by the EA in the Catchment Data Explorer which shows Moderate ecological status for the Par River and Tywardreath (aka Treesmill) Stream, and Good for the Bokiddick Stream: https://environment.data.gov.uk/catchment-planning/OperationalCatchment/3352.



To explore all the 2023 scorecards in the WRT area, go to: https://wrt.maps.arcgis.com/apps/instant/attachmentviewer/index.html?appid=d07a6f8382764c0faed87d0652d43df9.

The accumulation of data and its presentation in an easily accessible format by WRT contributes to better public understanding of our rivers and complements the higher-level surveys by the EA.

(iii) New riverfly testing sites. Simon Tagney and Brian Harrisson conducted ARMI riverfly monitoring on the Treesmill Stream near St Andrew's Pond and further upstream. There are no trigger scores as yet for either location but this monitoring will provide better data about the health of the stream.

(iv) The riverfly test score at Lady Rashleigh Mine in Luxulyan Valley exceeded the trigger level.

(v) Other positive wildlife sightings included otter spraint in Luxulyan Valley and a fish on the Polmear Stream. Less related to the river was a roe deer near Minorca Lane.

(vi) The impact of annual clearing of Himalayan Balsam by volunteers organised by Cormac Valley Ranger Jenny Heskett in Luxulyan Valley is very impressive.

(b) Points of concern

(i) Phosphate levels on the main Par River remain high. One contributor is thought to be the SWW St Austell North STW at Luxulyan. It is possible that there are other sources as well.

(ii) Total Dissolved Solids is a surrogate for conductivity, which the EA measures. Elevated conductivity indicates dissolved substances, such as pollutants. Once again, the Lower Par showed higher TDS than the Upper Par but the EA has explained that this is to be expected, 'as there is more opportunity for rivers to 'pick up' dissolved solids (natural or anthropogenic) as they flow downstream' (Davies, 2024). We have also noticed relatively high TDS on the Carbis Stream. This matches EA observations on conductivity and may reflect china clay discharges into the watercourses in the Bugle area, such as the Molinnis Stream.

(iii) A line of foam was observed once again at locations from Luxulyan allotments downstream, possibly the result of the legal discharge of treated effluent from the St Austell North STW at Luxulyan. As usual, there was an odour at Cam Bridges, which may be attributed to the turbulence of the river water tumbling over the weir.

(iv) Japanese knotweed remains a problem in places on the Molinnis and Treskilling Streams.

(v) Elevated turbidity on the Treesmill Stream (and to a lesser extent at Par Beach).

(vi) Only 4 of the 8 types of riverfly nymphs were found at Lady Rashleigh Mine, even though the trigger level was met.

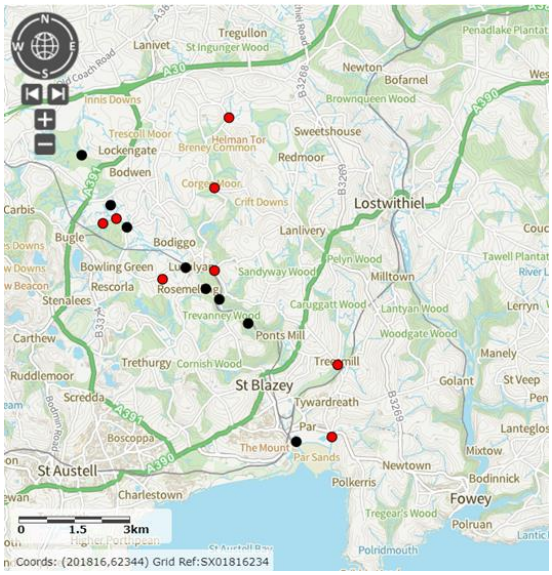
(c) Areas for further research

(i) The EA is looking at ways in which citizen scientists may be deployed more effectively to assist in their work.

(ii) A better understanding of the factors affecting the Lower Par River at Par Beach, the Treesmill and Polmear Streams would be useful.

B. JULY 2024 MONITORING POINTS

This month monitoring occurred at 16 locations. Monitoring points along the main Par River are shown in black. Those in red are on tributaries. **Source:** https://magic.defra.gov.uk/MagicMap.aspx



LOCATION	PAR/TRIBUTARY	DATE/TIME	TYPE OF CHECK	MONITORED BY
Criggan Moors, Par River, SX 01882 61133	**PAR**	17/7/2024 8.55	CSI sample & Cartographer record.	Roger Smith
South of Minorca Lane, Par River, SX02668 59747	**PAR**	17/7/2024 8:10	CSI sampling. Cartographer record.	Roger Smith
Near Forkandles farm, Molinnis Stream, SX 02460 59271	**SECONDARY TRIBUTARY (OF CARBIS STREAM)**	17/7/2024 10:00	CSI sample & Cartographer record.	Roger Smith
Carbis Stream SX 02834 59401	**TRIBUTARY**	17/7/2024 9:45	CSI sampling. Cartographer record.	Roger Smith
Lavrean, Par River SX 03134 59164	**PAR**	17/7/2024 10:25	CSI sampling. Cartographer record.	Roger Smith
Treskilling, Treskilling Stream, SX 04107 57726	**TRIBUTARY**	18/7/2024 14:40		Roger Smith
Luxulyan allotments, Par River, SX 04732 58045	**PAR**	17/7/2024 11:15	CSI sampling. Cartographer record.	Roger Smith
Cam Bridges, Par River, SX 05292 57454	**PAR**	17/7/2024 12:55	CSI sampling. Cartographer record.	Roger Smith
Trebell Green, Bokiddick Stream SX 0551960226	**TRIBUTARY**	14/7/2024 10:45	CSI sampling. Cartographer record.	Roger Smith
Corgee Moor, Bokiddick Stream SX 0593462167	**TRIBUTARY**	14/7/2024 11:30	CSI sampling. Cartographer record.	Roger Smith
Gatty's Bridge, Bokiddick Stream SX 05531 57953	**TRIBUTARY**	17/7/2024 16:35	CSI sampling. Cartographer record.	Joan Farmer, Roger Smith
Treffry Viaduct, Par River, SX 05650 57179	**PAR**	17/7/2024 16:10	CSI sampling. Cartographer record.	Joan Farmer, Roger Smith
Lady Rashleigh Mine, Par River, SX 06451 56509	**PAR**	17/7/2024 14:00	CSI sampling. Cartographer record. Riverfly.	Veronica Jones, Joan Farmer, Roger Smith
Treesmill, Tywardreath Stream, SX 08873 55385	**TRIBUTARY**	17/7/2024 12:55	CSI sampling. Cartographer record.	Maggie Tagney
Par Beach slipway, SX 0776 53261	**PAR**	17/7/2024 23:00	CSI sampling. Cartographer record.	Brian Harrisson
Polmear Stream, Ship Inn SX 08749 53417	**TRIBUTARY**	17/7/2024 16:40	CSI sampling. Cartographer record.	Simon Tagney

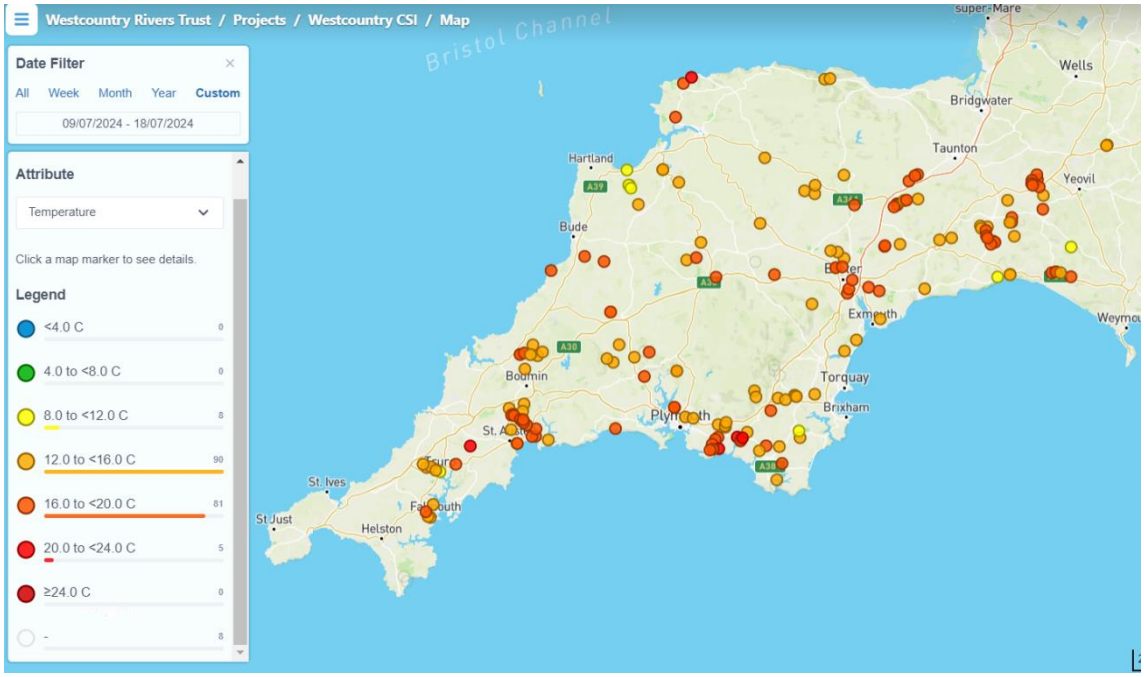
The times have been included in case that explains some of the variations in water temperature.

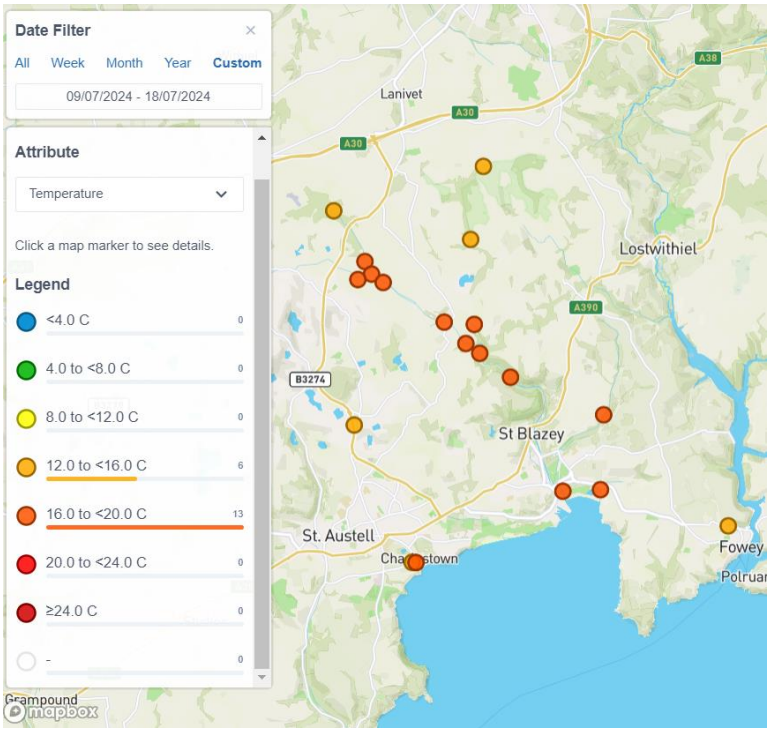
C. TEMPERATURE

1. This is the WRT's explanation of why this is monitored:

Temperature is a vital parameter within the river ecosystem. It controls many of the aquatic species life cycles. Temperature fluctuates with the seasons; however, you do get variation within that, particularly in small rivers and streams. Another important reason to measure temperature is to track the impact of our warming climate on our waterbodies.

Geographical comparison. Source: Cartographer.





3. Results July 2024

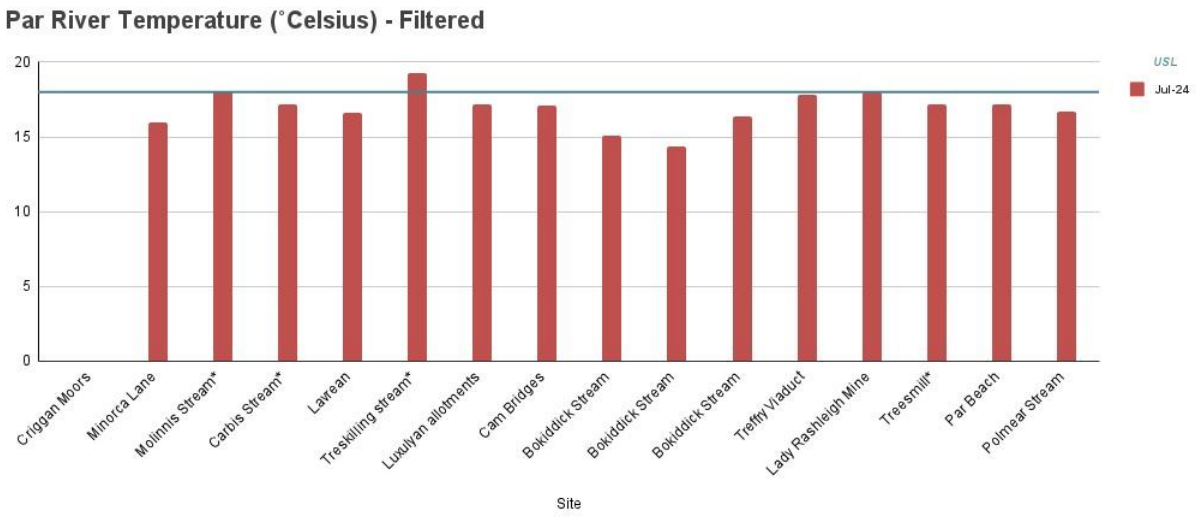
PAR RIVER/TRIBUTARY	LOCATION	Temperature ˚Celsius
Par	Criggan Moors, Par River, SX 01882 61133	14.9
Par	South of Minorca Lane, Par River, SX 02657 59788	16
Secondary tributary	Near Forkandles Farm, Molinnis Stream, SX 02460 59271	**18.1**
Tributary	Carbis Stream SX 02834 59401	17.2
Par	Lavrean, Par River SX 03134 59164	16.6
Tributary	Treskilling, Treskilling Stream, SX 04107 57726	**19.3**
Par	Luxulyan allotments, Par River, SX 04732 58045	17.2
Par	Cam Bridges, Par River, SX 05292 57454	17.1
Tributary	Trebell Green, Bokiddick Stream SX 0551960226	15.1
Tributary	Corgee Moor, Bokiddick Stream SX 0593462167	14.4
Tributary	Gatty's Bridge, Bokiddick Stream SX 05531 57953	16.4
Par	Treffry Viaduct, Par River, SX 05650 57179	17.8
Par	Lady Rashleigh Mine, Par River, SX 06451 56509	18
Tributary	Treesmill, Tywardreath Stream, SX 08873 55385	17.2
Par	Par Beach slipway, SX 0776 53261	17.2
Tributary	Polmear Stream, Ship Inn, SX 08749 53417	16.7

Results above the temperature at which fish and other organisms can function healthily will be shown in red. At present, 18 ˚Celsius is being used as the upper safe limit for fish and other creatures, although 20˚ Celsius has been suggested by WRT instead. The Yealm Estuary to Moor Project (YEM) in Devon considers that the upper safe level (USL) for temperature is 19.5 °C.

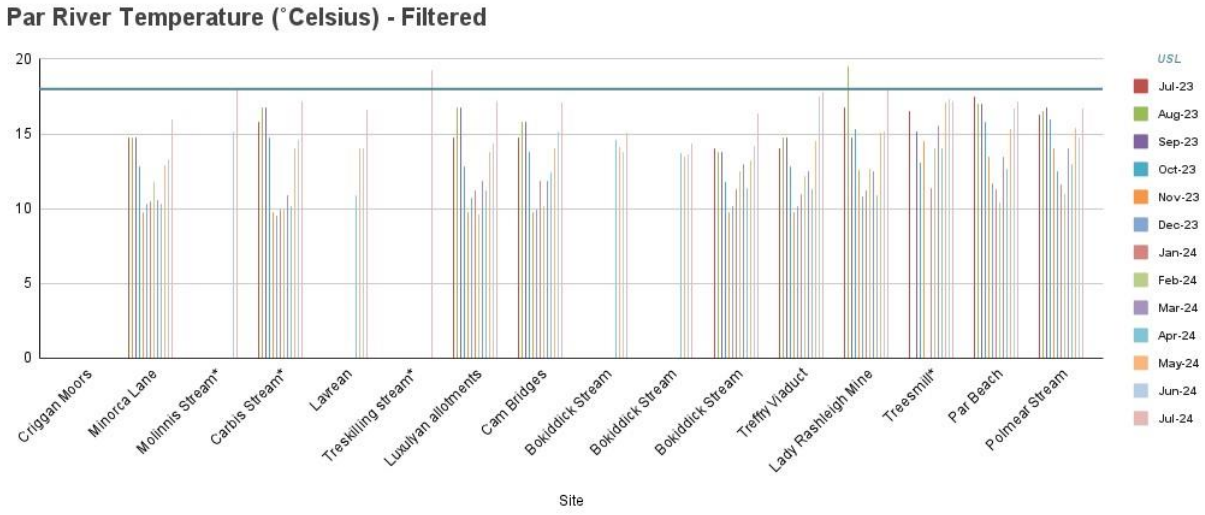
From December 2023 all readings have been taken with the new thermometer/TDS device. Previously, all Upper Par readings, except for Lady Rashleigh Mine, have been taken with the old device. There is a worrying discrepancy with the readings on the older devices.

4. Graphs

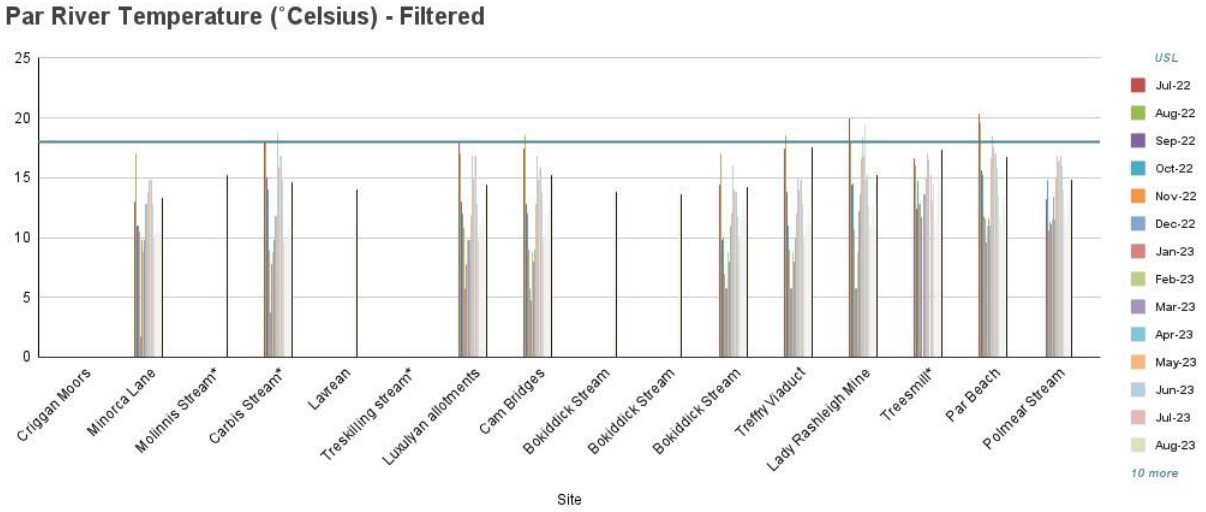
(a) This month:



(b) From 1st July 2023 until now:



(c) From 1st July 2022 until now:



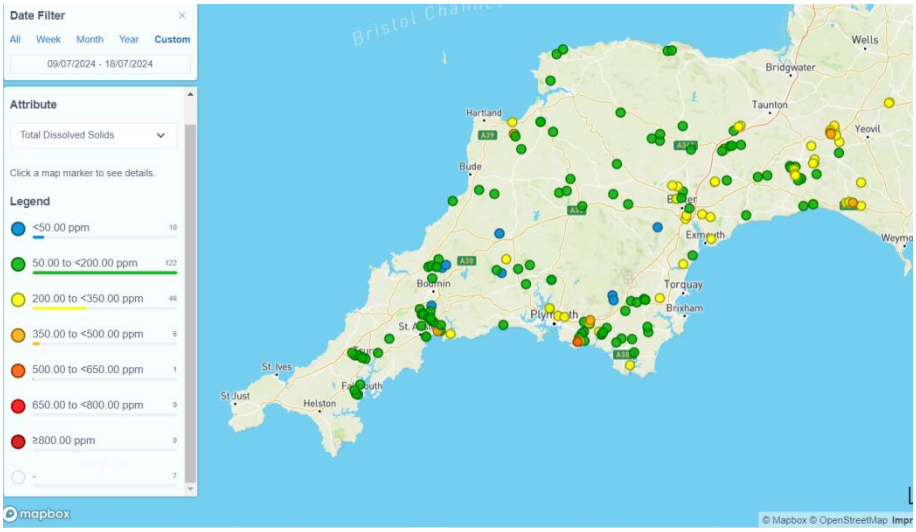
D. TOTAL DISSOLVED SOLIDS

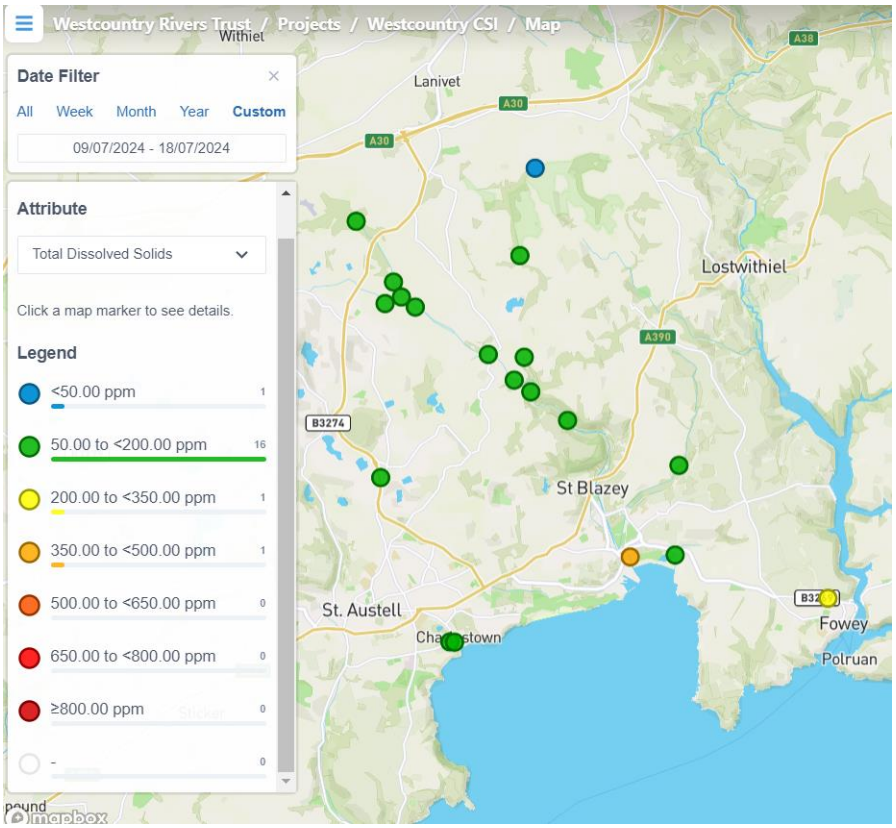
1. We measure these in ppm (parts per million). This is the WRT's explanation:

Total Dissolved Solids (TDS) is directly related to the conductivity of the water. The more minerals, salts and metals that are dissolved in the water the more conductive it gets. Low levels of dissolved solids in waters such as those on Dartmoor near to the source of the river are a result of very low levels of input from the surrounding landscape. As the river runs down to the sea it

collects material from many different inputs, some natural and some man-made such as farms, sewage plants, factories and residential areas. This typically increases the amount of solids dissolved in the water leading to a higher reading. Harmful pollution from things like sewage, slurry and factory discharge will usually elevate your TDS reading. However, some pollutants such as oil can lower conductivity; therefore it should be used as a general indicator of water quality not a specific measure of toxicity. Geology will influence the normal level of conductivity in a watercourse (e.g. Areas dominated by granite generally give a lower conductivity than those with limestone). Regular monitoring will allow the detection of changes in conductivity which can indicate pollution.

2. Geographical comparison. Source: Cartographer.



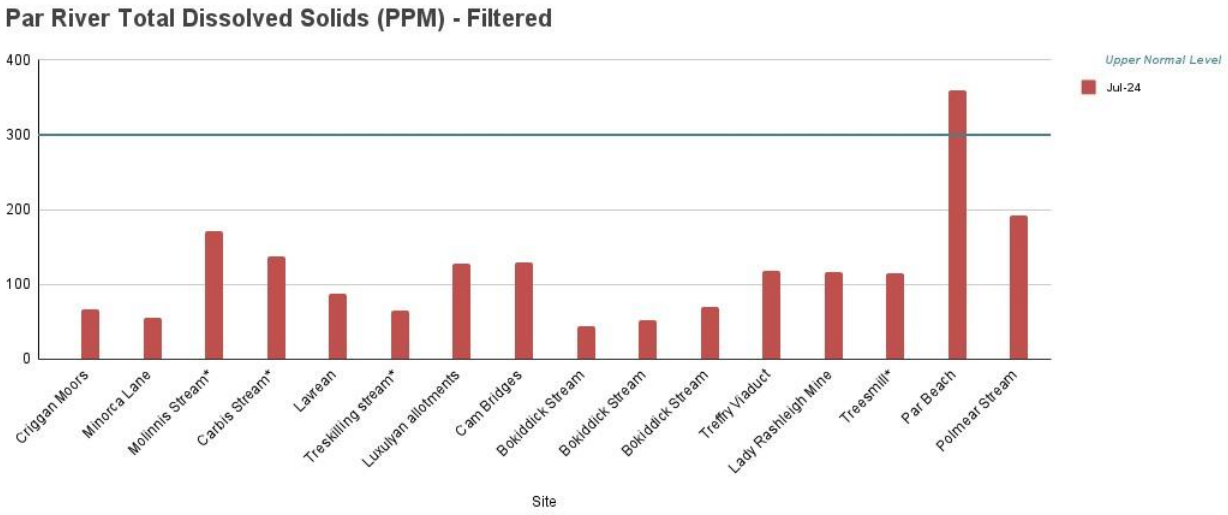


3. Results July 2024

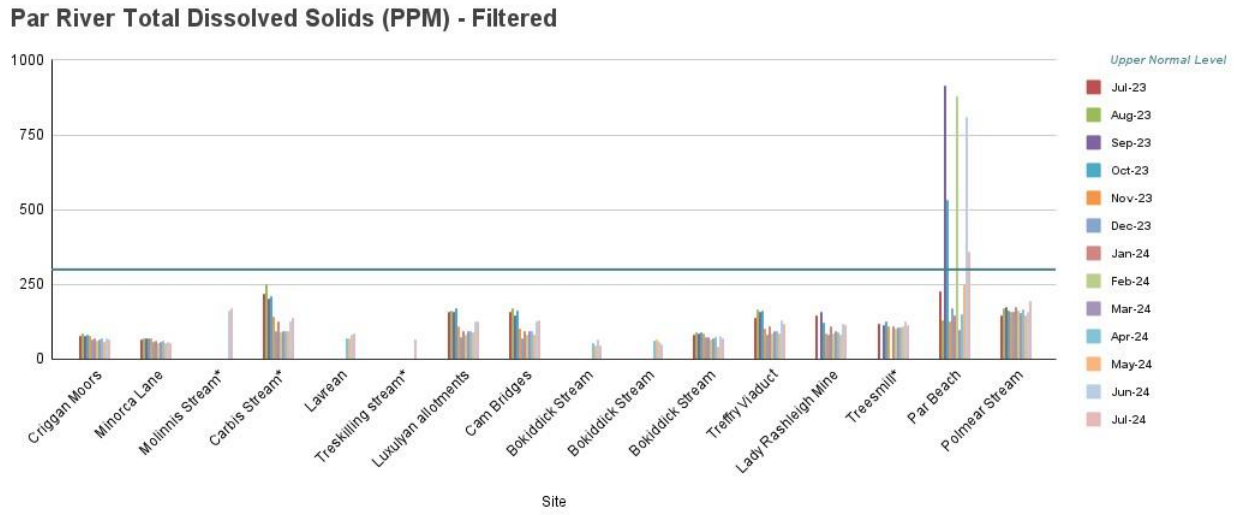
PAR RIVER/TRIBUTARY	LOCATION	Total Dissolved Solids PPM
Par	Criggan Moors, Par River, SX 01882 61133	66
Par	South of Minorca Lane, Par River, SX 02657 59788	55
Secondary tributary	Near Forkandles Farm, Molinnis Stream, SX 02460 59271	172
Tributary	Carbis Stream SX 02834 59401	138
Par	Lavrean, Par River SX 03134 59164	88
Tributary	Treskilling, Treskilling Stream, SX 04107 57726	65
Par	Luxulyan allotments, Par River, SX 04732 58045	128
Par	Cam Bridges, Par River, SX 05292 57454	130
Tributary	Trebell Green, Bokiddick Stream SX 0551960226	45
Tributary	Corgee Moor, Bokiddick Stream SX 0593462167	52
Tributary	Gatty's Bridge, Bokiddick Stream SX 05531 57953	70
Par	Treffry Viaduct, Par River, SX 05650 57179	118
Par	Lady Rashleigh Mine, Par River, SX 06451 56509	116
Tributary	Treesmill, Tywardreath Stream, SX 08873 55385	115
Par	Par Beach slipway, SX 0776 53261	**360**
Tributary	Polmear Stream, Ship Inn, SX 08749 53417	193

4. Graphs

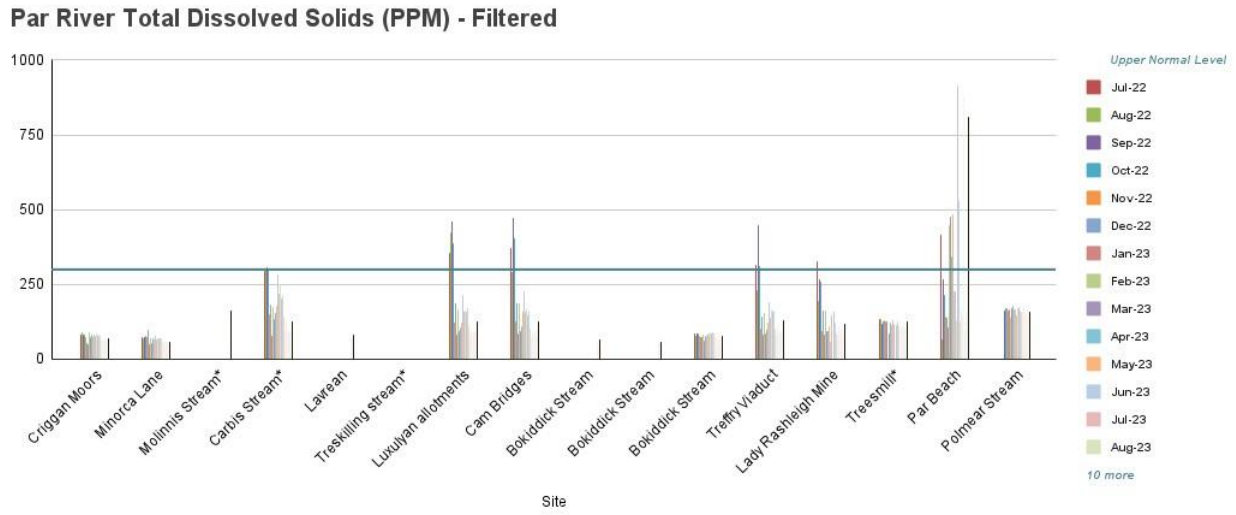
(a) This month



(b) From July 2023 until now:



(c) From July 2022 until now:



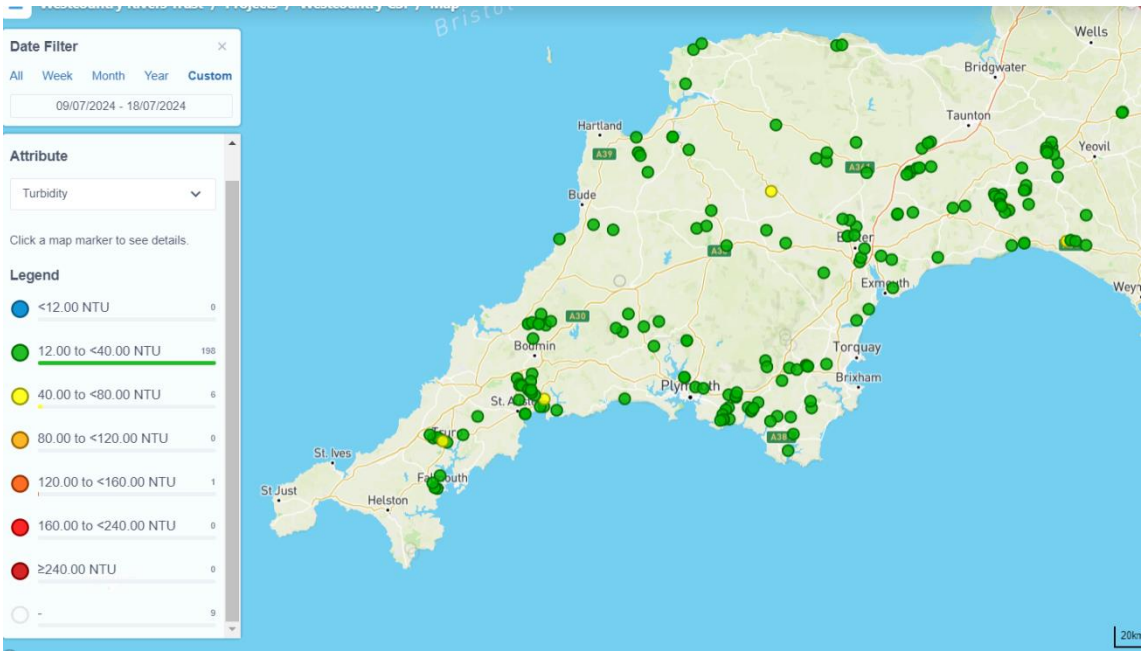
E. TURBIDITY

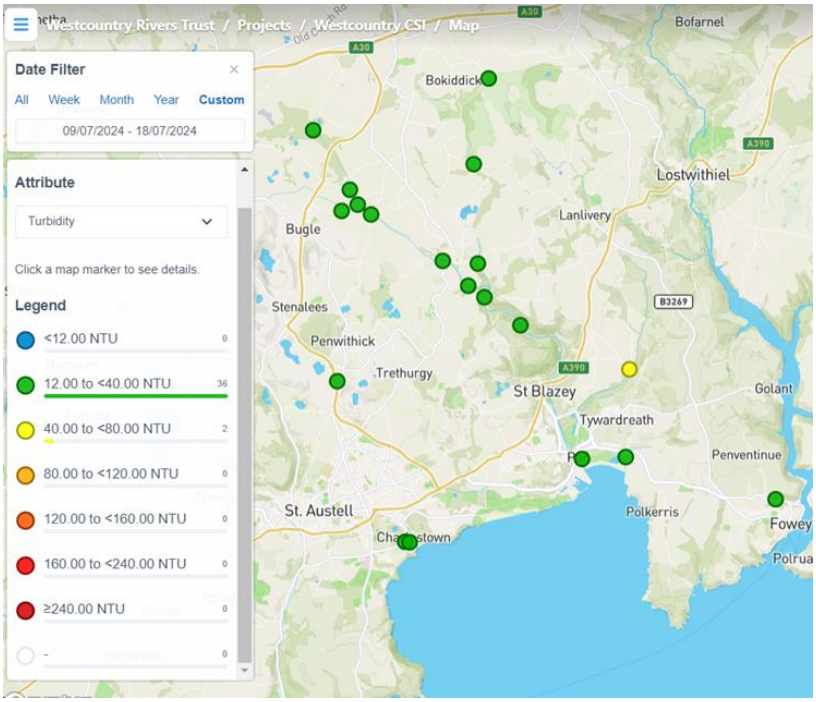
1. This is the WRT explanation of this measure:

Turbidity tube is a measure of the optical clarity of the water. The more suspended particles in the water the lower the clarity and the higher the turbidity. You will often find your waterbody gets more turbid after heavy rainfall due to soil running off the fields and sediment being mixed into the water column. This loss of topsoil is both a problem for farmer and river. It can often contain chemicals from the fertiliser and pesticides used on the land. An increase in sediment level on the substrate of the river can cause smothering of habitat by removing light and oxygen.

Aquatic wildlife such as the less mobile invertebrates and fish eggs struggle to survive in low oxygen conditions and without light, plants are unable to grow. It is a good idea to sample your river after different weather conditions to understand how it responds to rainfall or drought. The Yealm Estuary to Moor Project (YEM) in Devon considers that the upper safe level (USL) for turbidity is 75 NTU = 25 mg/l.

2. **Geographical comparison.** Where scores are shown as 0, it means that the reading using the Secchi tube was <12. **Source: Cartographer.** Most of our results should have blue dots (<12) but Cartographer shows them as 12 (green dots).



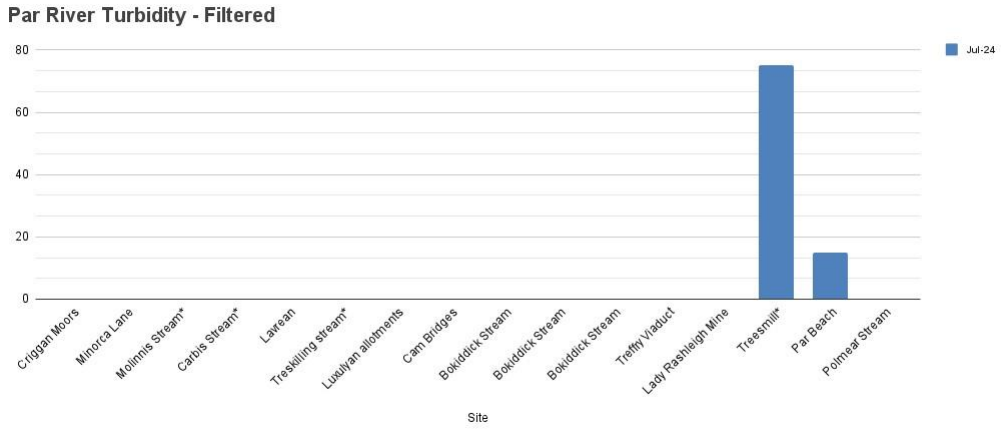


3. Results July 2024:

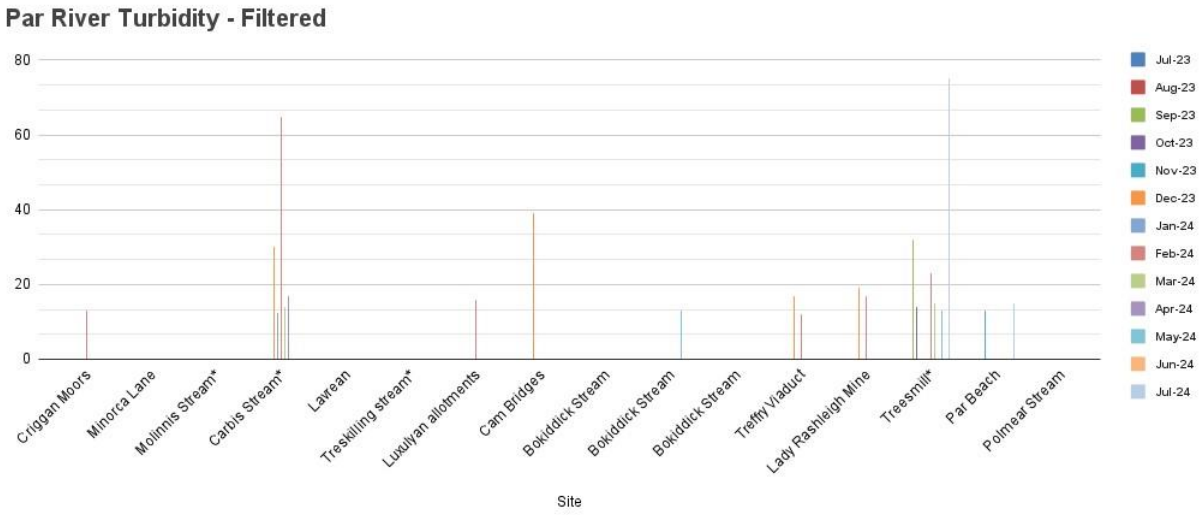
PAR RIVER/TRIBUTARY	LOCATION	Turbidity (NTU)
Par	Criggan Moors, Par River, SX 01882 61133	<12
Par	South of Minorca Lane, Par River, SX 02657 59788	<12
Secondary tributary	Near Forkandles Farm, Molinnis Stream, SX 02460 59271	<12
Tributary	Carbis Stream SX 02834 59401	<12
Par	Lavrean, Par River SX 03134 59164	<12
Tributary	Treskilling, Treskilling Stream, SX 04107 57726	<12
Par	Luxulyan allotments, Par River, SX 04732 58045	<12
Par	Cam Bridges, Par River, SX 05292 57454	<12
Tributary	Trebell Green, Bokiddick Stream SX 0551960226	<12
Tributary	Corgee Moor, Bokiddick Stream SX 0593462167	<12
Tributary	Gatty's Bridge, Bokiddick Stream SX 05531 57953	<12
Par	Treffry Viaduct, Par River, SX 05650 57179	<12
Par	Lady Rashleigh Mine, Par River, SX 06451 56509	<12
Tributary	Treesmill, Tywardreath Stream, SX 08873 55385	75
Par	Par Beach slipway, SX 0776 53261	15
Tributary	Polmear Stream, Ship Inn, SX 08749 53417	<12

4. Graphs

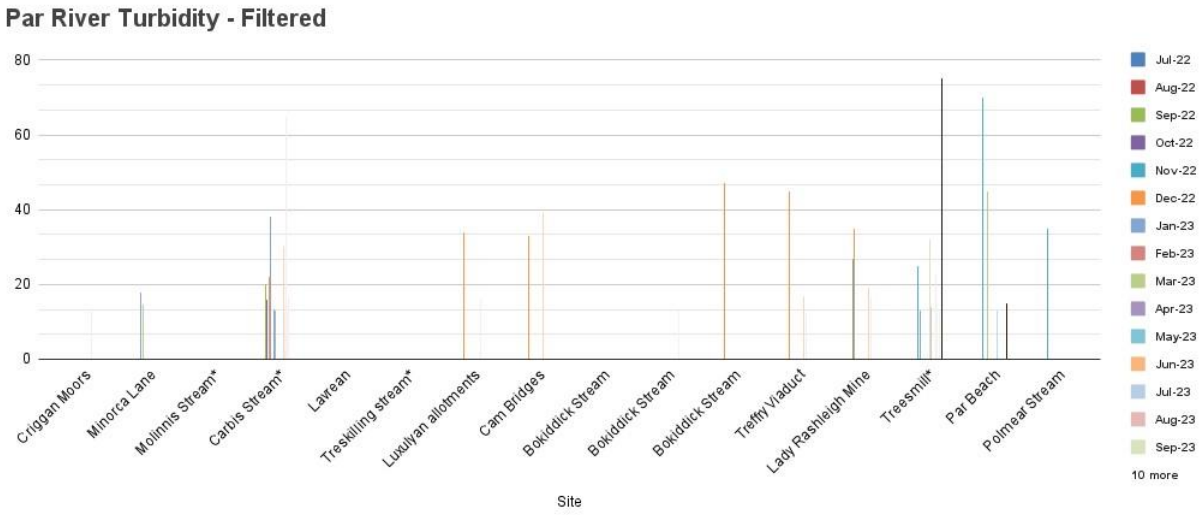
(a) This month:



(b) From July 2023 until now:



(c) From July 2022 until now:



F. PHOSPHATES

1. This is the WRT's explanation of this measure.

Phosphate occurs naturally within the river ecosystem, but in very low levels under 0.05 mg/l. Therefore, higher levels may indicate anthropogenic input. Phosphate is found in animal and human waste, cleaning chemicals, industrial runoff and fertiliser so this can be a good indicator of pollution. Having raised levels of phosphate can lead to increases in plant growth within the watercourse. This leads to a depletion of oxygen due to the plant's aerobic respiration during the night. Without oxygen aquatic species cannot survive and the river ecosystem collapses. (It is important to note that phosphate is taken up by plants. You may get a low reading but high plant growth, indicating eutrophication.)

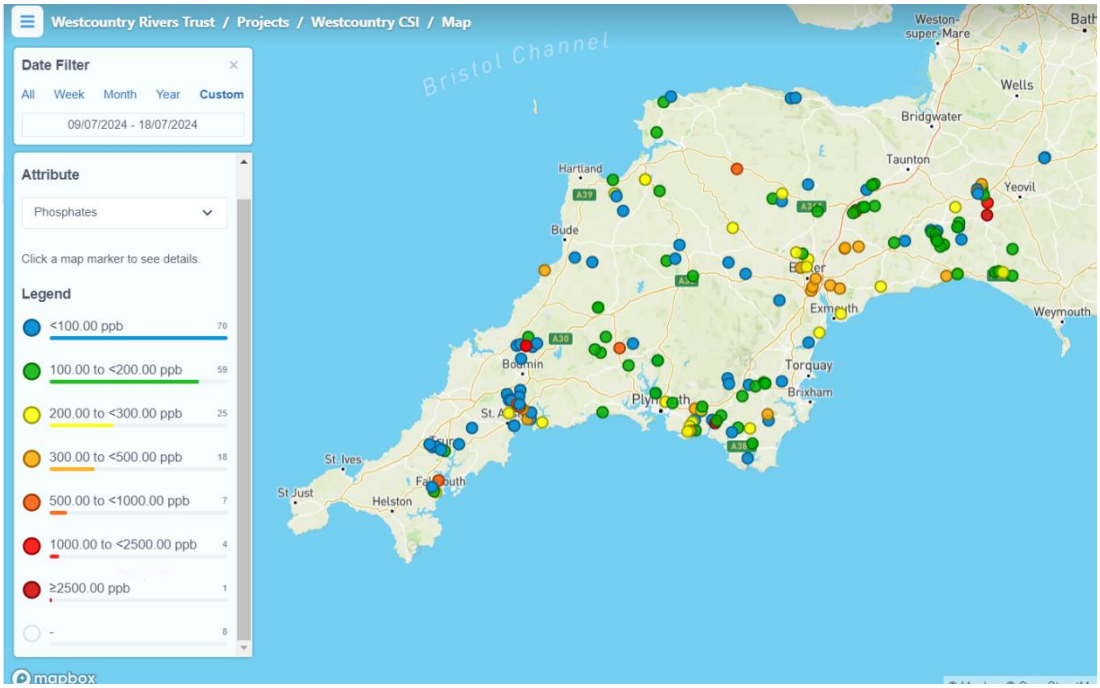
Ranges on phosphate diagnostic colour chart:

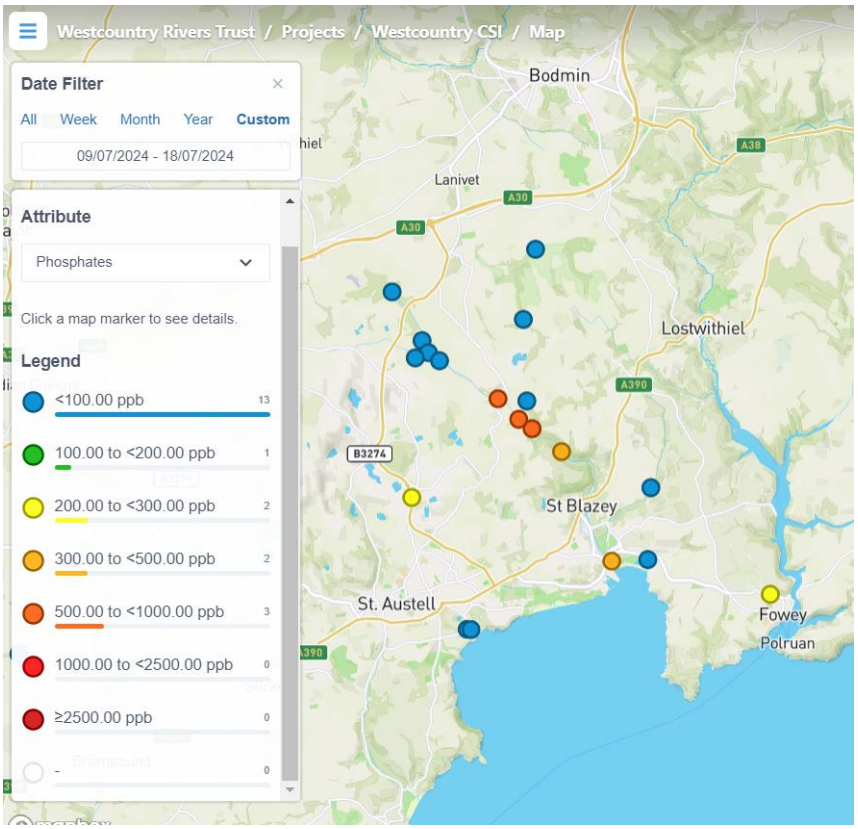
0 – 100 OK

200 – 300 HIGH

500 – 2500 – TOO HIGH

2. **Geographical comparison.** Source: Cartographer





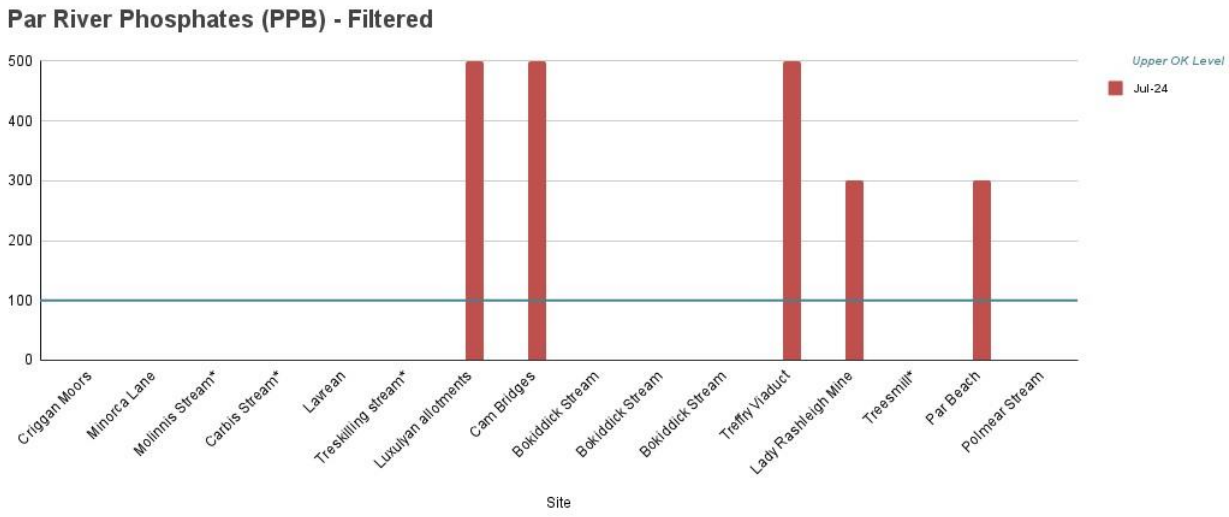
3. Results July 2024

Results in red show phosphate levels that are classified as 'High' (above the upper safe level). WRT advice is that this is 100 Parts per Billion (0.1 mg/l).

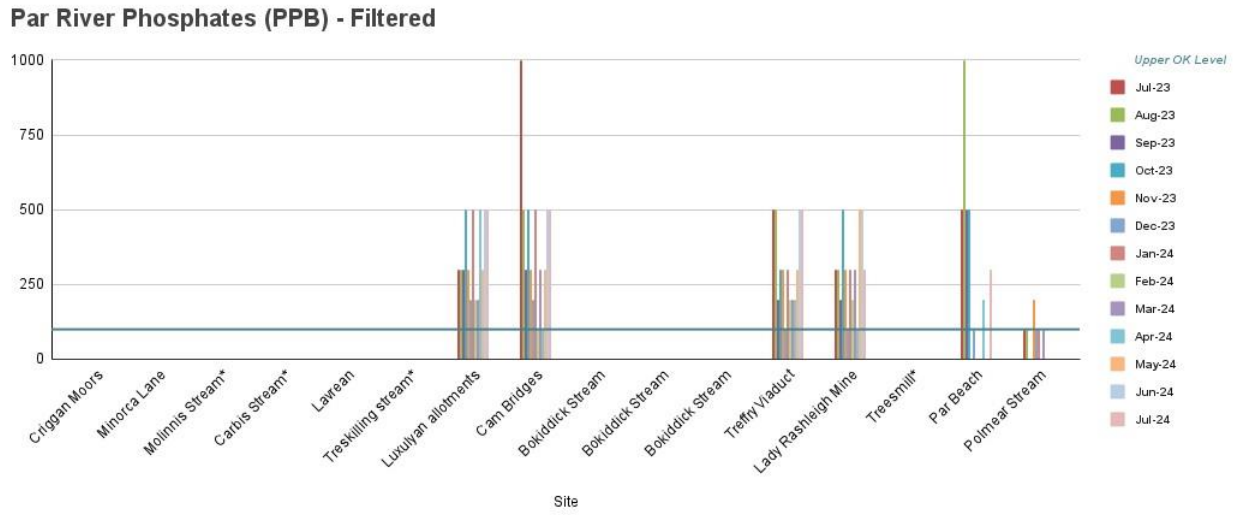
PAR RIVER/TRIBUTARY	LOCATION	Phosphates PPB
Par	Criggan Moors, Par River, SX 01882 61133	0
Par	South of Minorca Lane, Par River, SX 02657 59788	0
Secondary tributary	Near Forkandles Farm, Molinnis Stream, SX 02460 59271	0
Tributary	Carbis Stream SX 02834 59401	0
Par	Lavrean, Par River SX 03134 59164	0
Tributary	Treskilling, Treskilling Stream, SX 04107 57726	0
Par	Luxulyan allotments, Par River, SX 04732 58045	**500**
Par	Cam Bridges, Par River, SX 05292 57454	**500**
Tributary	Trebell Green, Bokiddick Stream SX 0551960226	0
Tributary	Corgee Moor, Bokiddick Stream SX 0593462167	0
Tributary	Gatty's Bridge, Bokiddick Stream SX 05531 57953	0
Par	Treffry Viaduct, Par River, SX 05650 57179	**500**
Par	Lady Rashleigh Mine, Par River, SX 06451 56509	**300**
Tributary	Treesmill, Tywardreath Stream, SX 08873 55385	0
Par	Par Beach slipway, SX 0776 53261	**300**
Tributary	Polmear Stream, Ship Inn, SX 08749 53417	0

4. Graphs

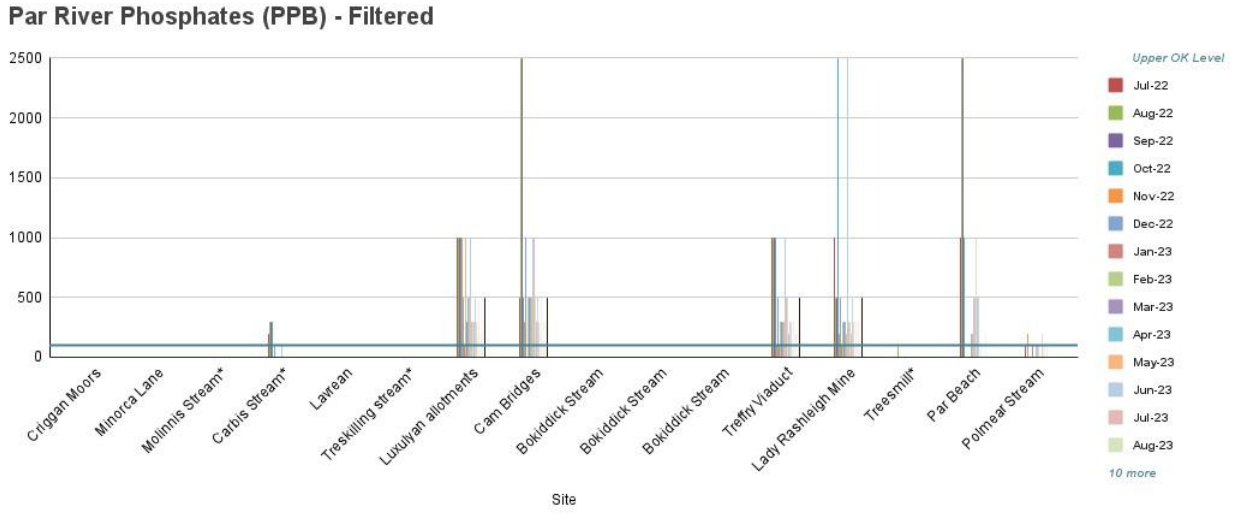
(a) This month:



(b) From July 2023 until now:



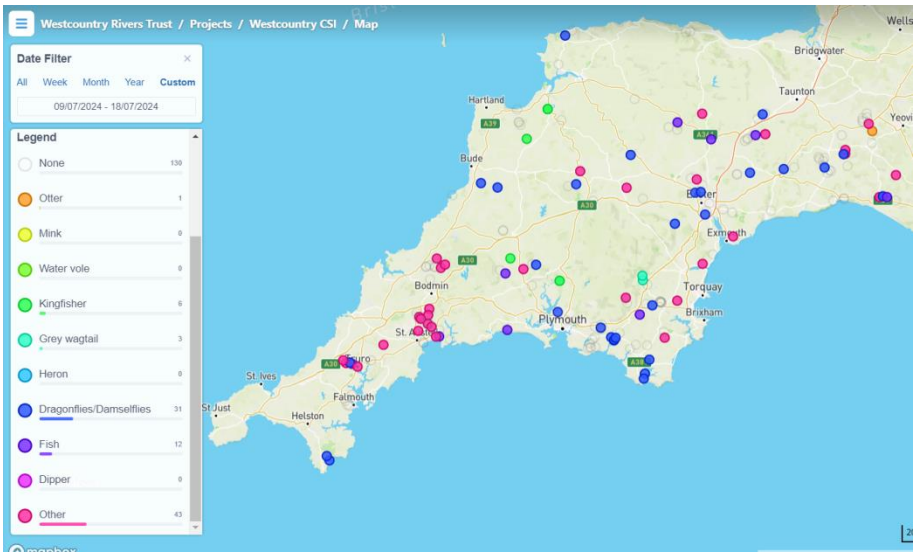
(c) From July 2022 until now:

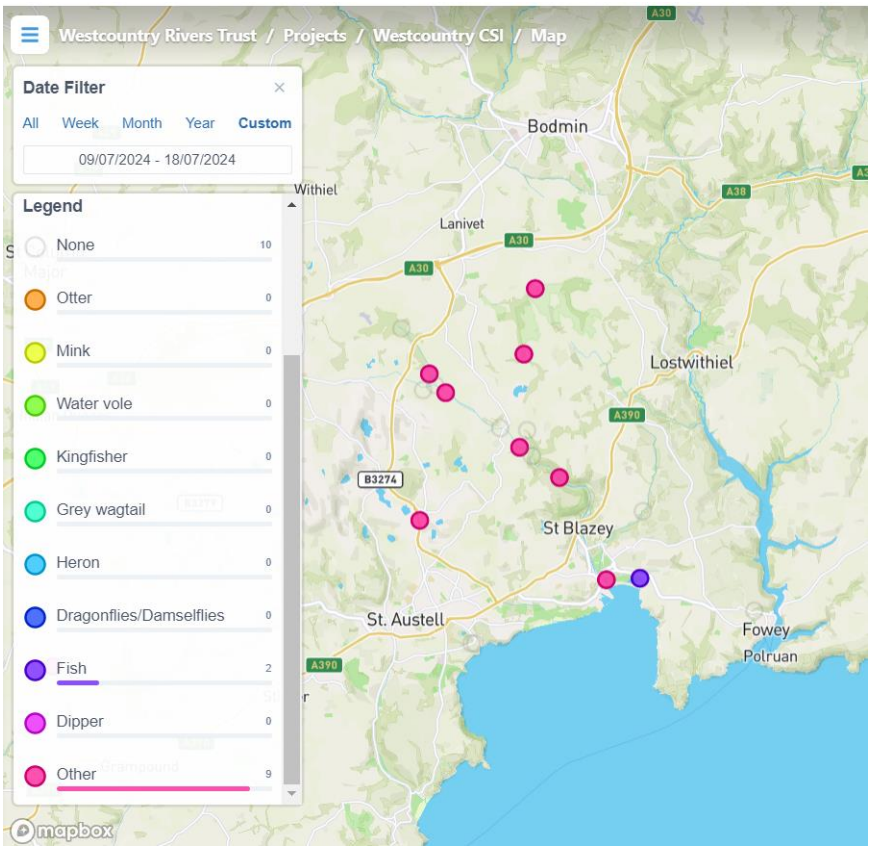


G. WILDLIFE & INVASIVE PLANTS

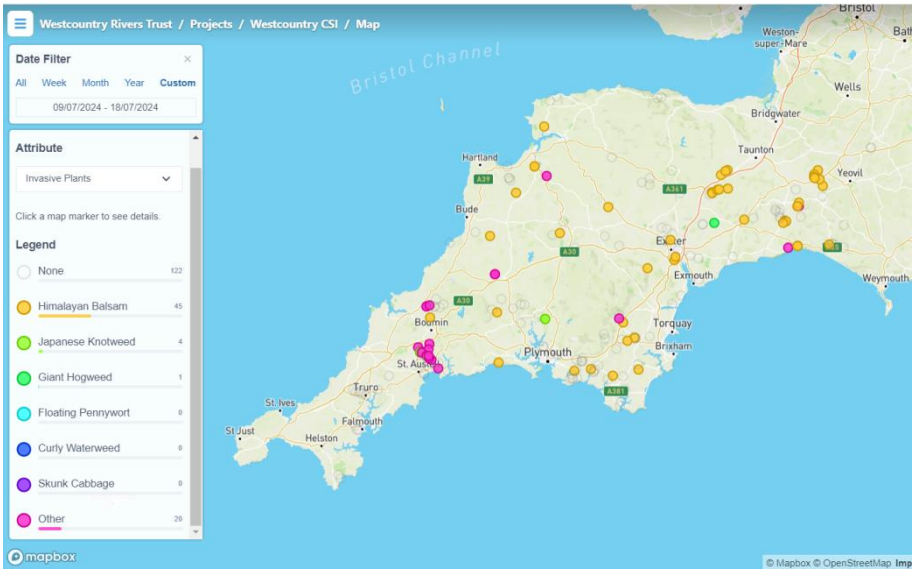
(a) Wildlife maps

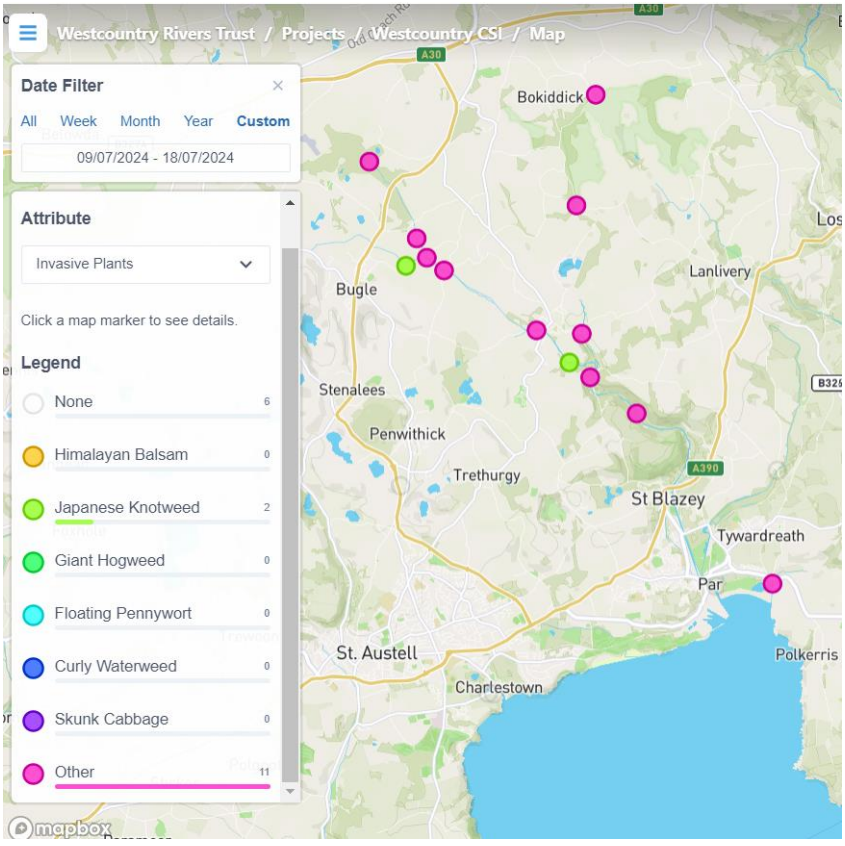
Evidence of otters is found nearly every month, but frequently it is not found at our monitoring points and when it is it will be entered under 'Other' because live sightings are extremely rare.





(b) Invasive plants maps





(c) Wildlife & Invasive Plants sightings at the monitoring points included:

LOCATION	WILDLIFE NOTED	INVASIVE PLANTS NOTED
Criggan Moors, SX 01882 61133	None	Hemlock Water Dropwort
South of Minorca Lane, Par River, SX 02657 59788	Butterfly, roe deer	Hemlock Water Dropwort
Forkandles Farm, Molinnis Stream, SX 02460 59271	None	Hemlock Water Dropwort, Japanese Knotweed
Carbis Stream SX 02834 59401	None	Hemlock Water Dropwort
Lavrean, Par River SX 03134 59164	Butterfly	Hemlock Water Dropwort
Treskilling, Treskilling Stream, SX 04107 57726	Dragonflies	None
Luxulyan allotments, Par River, SX 04732 58045	Dipper, recent otter spraint	Hemlock Water Dropwort
Cam Bridges, Par River, SX 05292 57454	Butterfly	Hemlock Water Dropwort, Japanese Knotweed
Trebell Green, Bokiddick Stream SX 0551960226	Butterfly, chiffchaff	Hemlock Water Dropwort
Corgee Moor, Bokiddick Stream SX 0593462167	Butterfly, buzzard, woodpigeon	Hemlock Water Dropwort
Gatty's Bridge, Bokiddick Stream SX 05531 57953	None	Hemlock Water Dropwort
Treffry Viaduct, Par River, SX 05650 57179	None	Hemlock Water Dropwort
Lady Rashleigh Mine, Par River, SX 06451 56509	Otter spraint, riverflies (Cased Caddis, Flat-bodied Upwing, Olives, Gammarus)	Hemlock Water Dropwort
Treesmill, Tywardreath Stream, SX 08873 55385	None	None
Par Beach slipway, SX 0776 53261	Herring gulls	None
Polmear Stream, Ship Inn, SX 08749 53417	Fish	Hemlock Water Dropwort

(d) Wildlife sightings elsewhere in the Par Catchment but not at CSI monitoring sites:

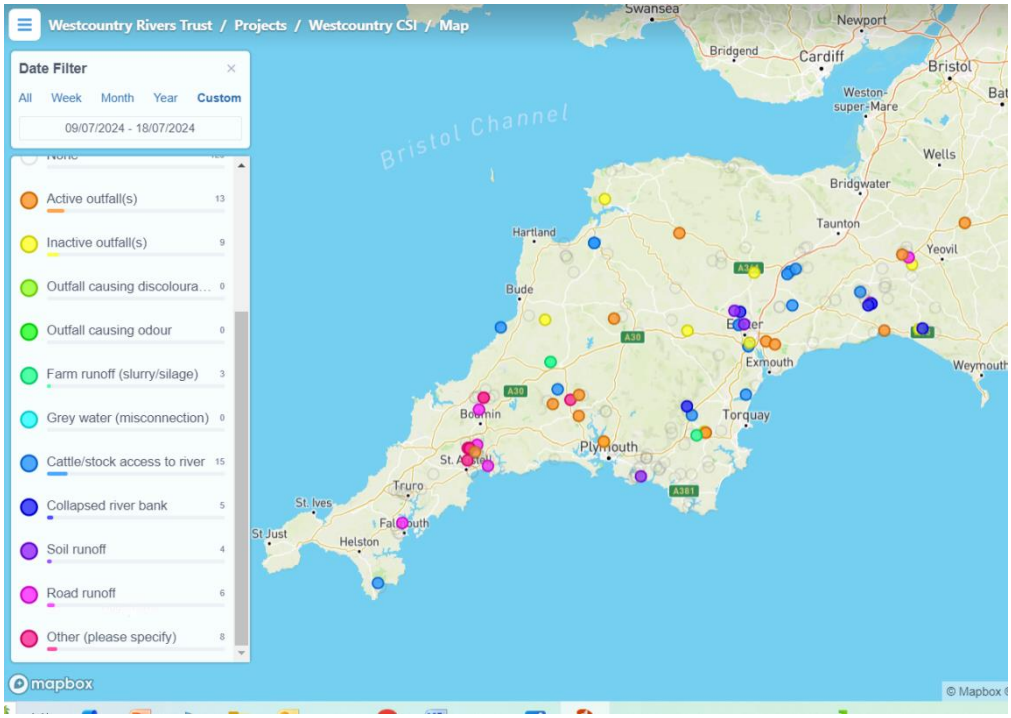
LOCATION	WILDLIFE	REPORTED BY	DATE
Boulder downstream from Lady Rashleigh Mine SX 06471 56497	Otter spraint - recent	Roger Smith	17/07/2024

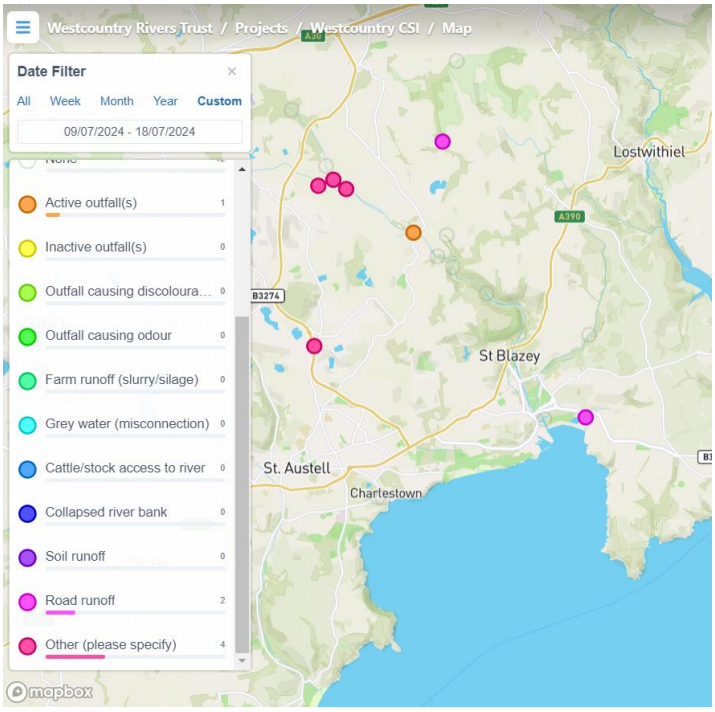
Recent otter spraint with fish bones visible, boulder downstream from Lady Rashleigh Mine SX 06471 56497

Dragonfly on the Treskilling Stream near Treskilling. Possibly a male Beautiful Demoiselle but this can be checked at: https://british-dragonflies.org.uk/species/beautiful-demoiselle/ .

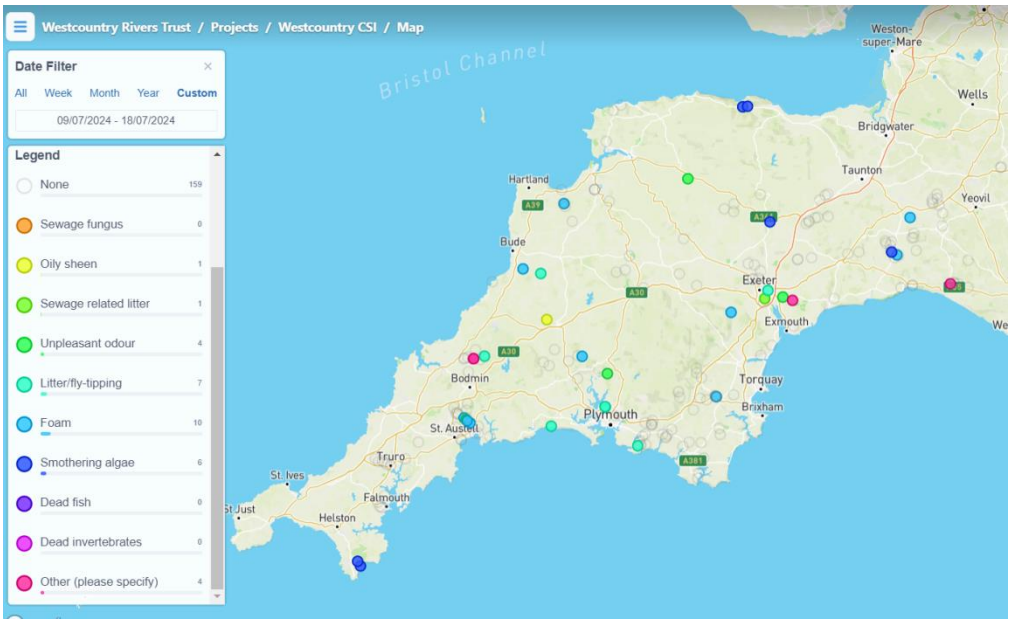
H. POLLUTION SOURCES AND EVIDENCE

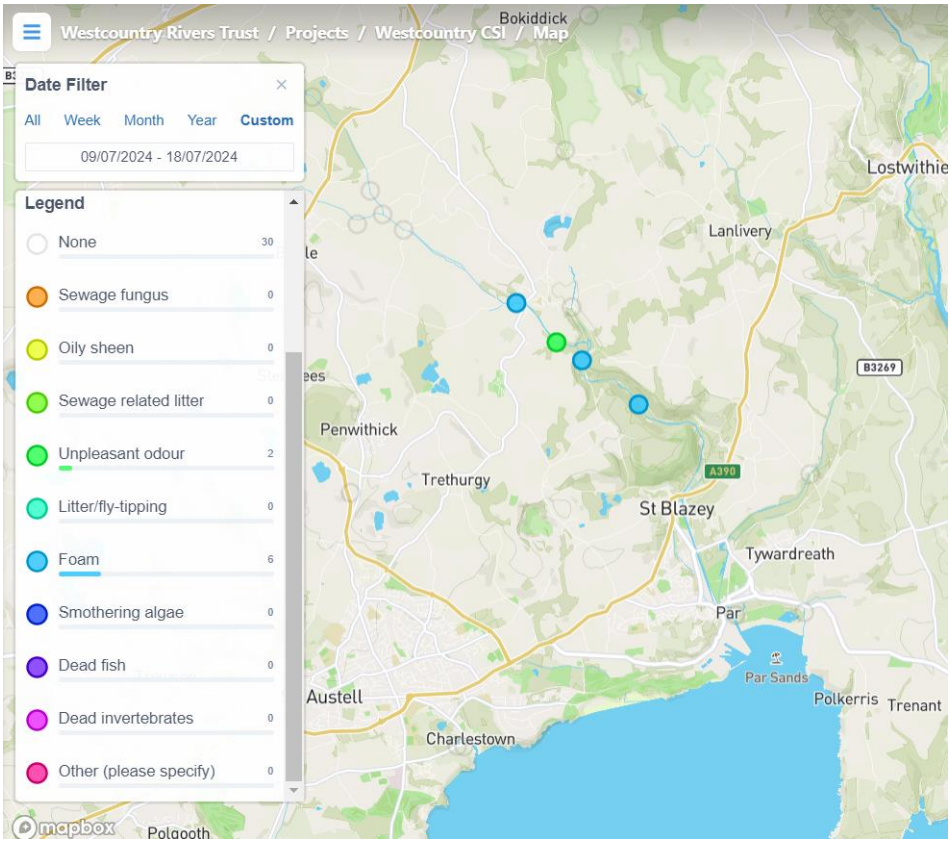
1. Pollution sources





2. Recent evidence of pollution





I. ARMI RIVERFLY SURVEY

Four of the group (Joan Farmer, Veronica Jones, Roger Smith, and Simon Tagney) have undertaken the training to carry out Riverfly Surveys under the Anglers' Riverfly Monitoring Initiative (https://www.riverflies.org/rp-riverfly-monitoring-initiative). In short, sampling for 8 riverfly groups is carried out using standardised methods with scores calculated for their abundance. Information is passed to ARMI and the ORKS database. If the score does not reach a trigger level (in our case trigger level was raised from 5 to 6 in May 2022), the Environment Agency must be informed immediately since it is highly likely to indicate that the water is polluted. Our group received approval to sample at two sites: Luxulyan allotments (SX 04743 58054) and Lady Rashleigh Mine (SX 06453 56500). We have decided, for the time being, to concentrate on the latter, but from May 2024 have moved the kick-sampling site a few metres downstream of the bridge where conditions are safer and easier. This amended site will be known as Lady Rashleigh 2 in the ARMI/ORKS record. Recently, Simon and Brian have started to look at 2 locations on the Treesmill Stream, one upstream at SX SX0887055340 and the other near the outlet from St Andrew's Pond at SX SX0768054310.

It is impossible to count every invertebrate so this counting method is used:

Abundance	Score	Estimated Number
1-9	1	Quick count
10-99	2	Nearest 10
100-999	3	Nearest 100
>1000	4	Nearest 1000

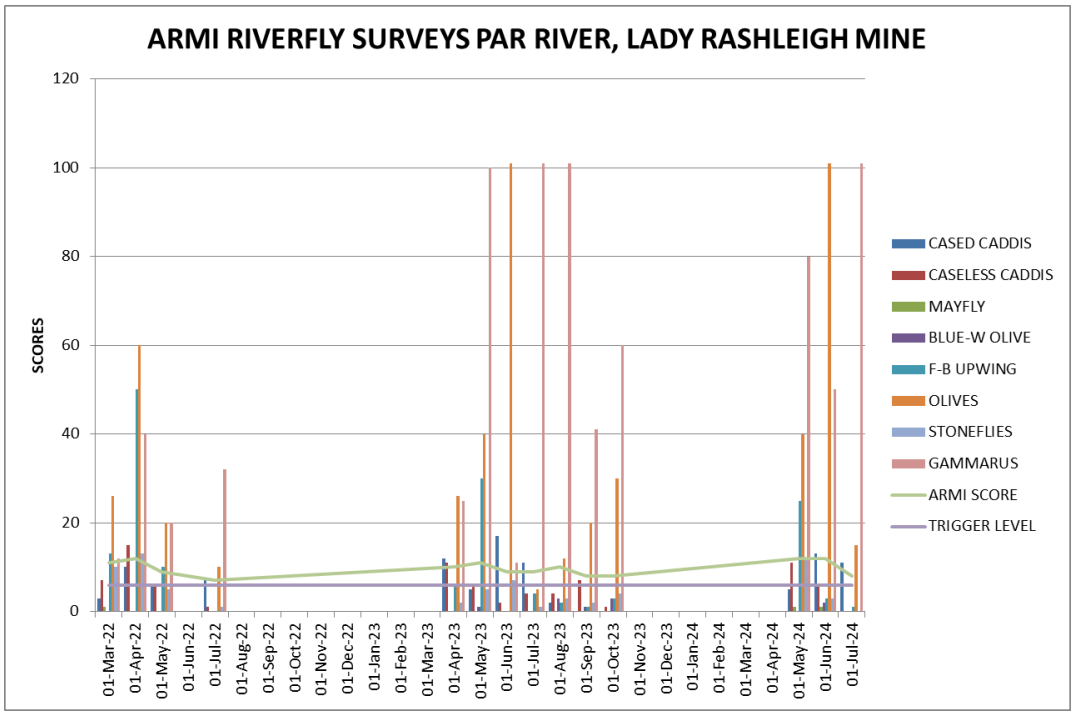
Results of survey at Lady Rashleigh Mine (SX 06451 56509) carried out by Joan Farmer, Veronica Jones and Roger Smith on 17th July 2024:

	SPECIES	NUMBER	CATEGORY
Trichoptera			
1	Cased Caddisfly	11	2
2	Caseless Caddisfly	0	0
Ephemeroptera 3 tails			
3	Mayfly (Ephemeridae)	0	0
4	Blue-winged olive (Ephemerellidae)	0	0
5	Flat-bodied up-wings (Heptageniidae)	1	1
6	Olives (Baetidae)	15	2
Plecoptera 2 tails			
7	Stoneflies	0	0
Gammaridae			
8	Freshwater Shrimp	101	3
			8

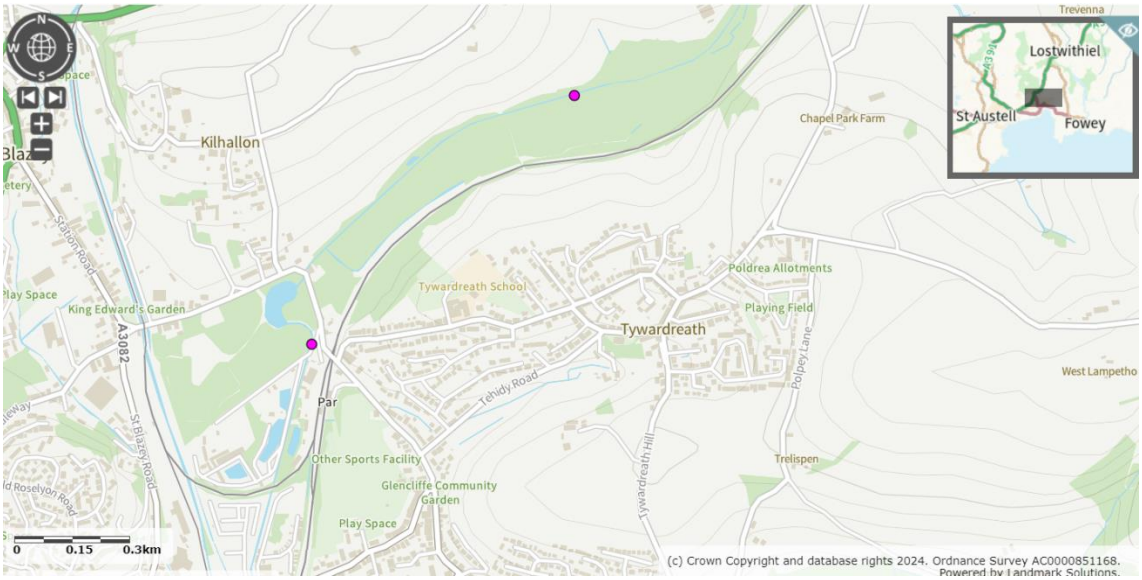
CATEGORY TOTAL	**8**
TRIGGER LEVEL	**6**

N.B. From May 2024 sampling has been done at Lady Rashleigh 2, downstream from the bridge.

Our surveys only occur during summer months, hence the months where there are no scores.



Simon Tagney and Brian Harrisson conducted riverfly surveys at 2 locations on the Treesmill Stream on 19th July 2024 at the suggestion of the EA. The approximate locations are shown below:



Site 1: Downstream from St Andrew's Pond

This was a difficult location for kick-sampling because of the thick silt on the stream bed. None of the 8 types of riverfly nymphs were found. There were 4 water boatmen, a bloodworm and 1 leech.

Site 2: Upstream on the Treesmill Stream

	SPECIES	NUMBER	CATEGORY
Trichoptera			
1	**Cased Caddisfly**	**2**	**1**
2	**Caseless Caddisfly**	**0**	**0**
Ephemeroptera 3 tails			
3	**Mayfly (Ephemeridae)**	**3**	**1**
4	**Blue-winged olive (Ephemerellidae)**	**0**	**0**
5	**Flat-bodied up-wings (Heptageniidae)**	**0**	**0**
6	**Olives (Baetidae)**	**10+**	**2**
Plecoptera 2 tails			
7	**Stoneflies**	**0**	**0**
Gammaridae			
8	**Freshwater Shrimp**	**101**	**3**
			7

CATEGORY TOTAL	**7**
TRIGGER LEVEL	**n/a**

At this stage it is not possible to comment on the significance of these scores.

Simon and Brian conducting their survey near St Andrew's Pond.

J. OUR GROUP AND SUPPORTERS

Monitoring is part of the Citizen Science programme run by the West Country Rivers Trust (WCRT) and is carried out monthly by volunteers, including Joan Farmer; Veronica Jones; Roger Smith; Simon Tagney; Maggie Tagney; and Brian Harrisson. They have received training from Lydia Ashworth, Junior Evidence and Engagement Officer of the West Country Rivers Trust (https://wrt.org.uk/project/become-a-citizen-scientist/). Results are logged on the Cartographer website. The support and advice given by Ross Tonkin, Lloyd Paynter, Chloe Lake, David Edwards, Claire and Gary Phillips, Jenny Heskett, Nick Taylor, Jeremy Roberts, Mat Bateman, Colin Pringle, Matt Healey, Simon Browning, Lydia Deacon, Jack Middleton, Anna Seal, Anna Crane, Jade Neville, Lauren Jasper and Callum Lewis is greatly appreciated. The work carried out by the late Dave Burrell both in the field and in checking reports will not be forgotten. The interest and encouragement offered by Environment Agency officers, especially Lisa Best, Lisa Goodall, Layla Ousley, Jenny Davies, Leah Steward, Nicola Rogers and Peter Scobie, have been invaluable.

Par River at Lady Rashleigh Mine – a beautiful spot on a summer's day. Photo: Veronica Jones

Report compiled by Joan Farmer and Roger Smith, August 2024