

SafeAvon Nutrient Testing Report: Tewkesbury

SafeAvon Sites By Waterway

Avon River

- . Tewkesbury – Abbey Mill
- . Tewkesbury – Black Bear Pub
- . Tewkesbury – Lower Lode Ln

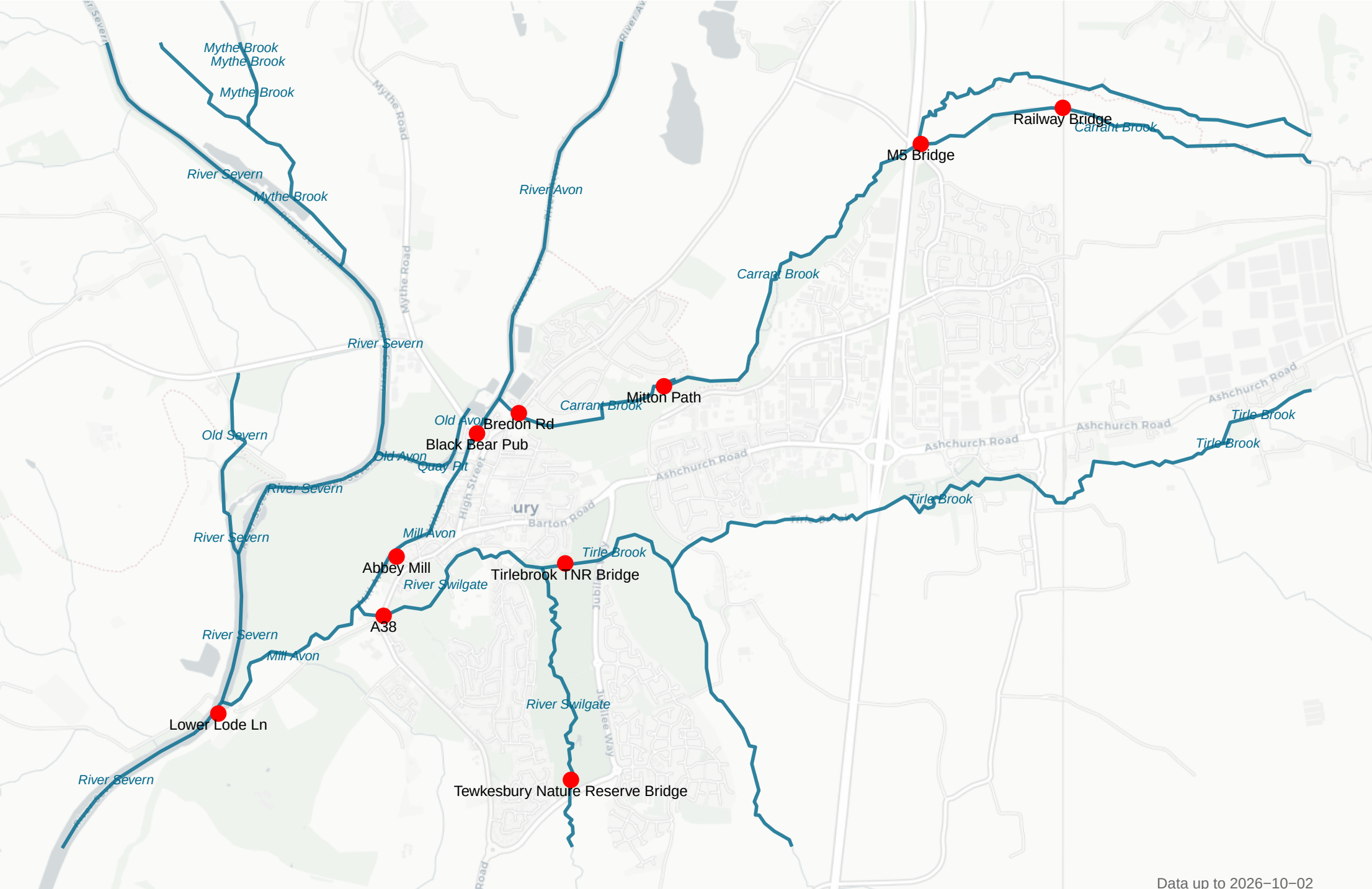
Carrant Brook

- . Tewkesbury – Bredon Rd
- . Tewkesbury – M5 Bridge
- . Tewkesbury – Mitton Path
- . Tewkesbury – Railway Bridge

Swilgate River

- . Tewkesbury – A38
- . Tewkesbury – Tewkesbury Nature Reserve Bridge
- . Tewkesbury – Tirlbrook TNR Bridge

SafeAvon Locations in Tewkesbury

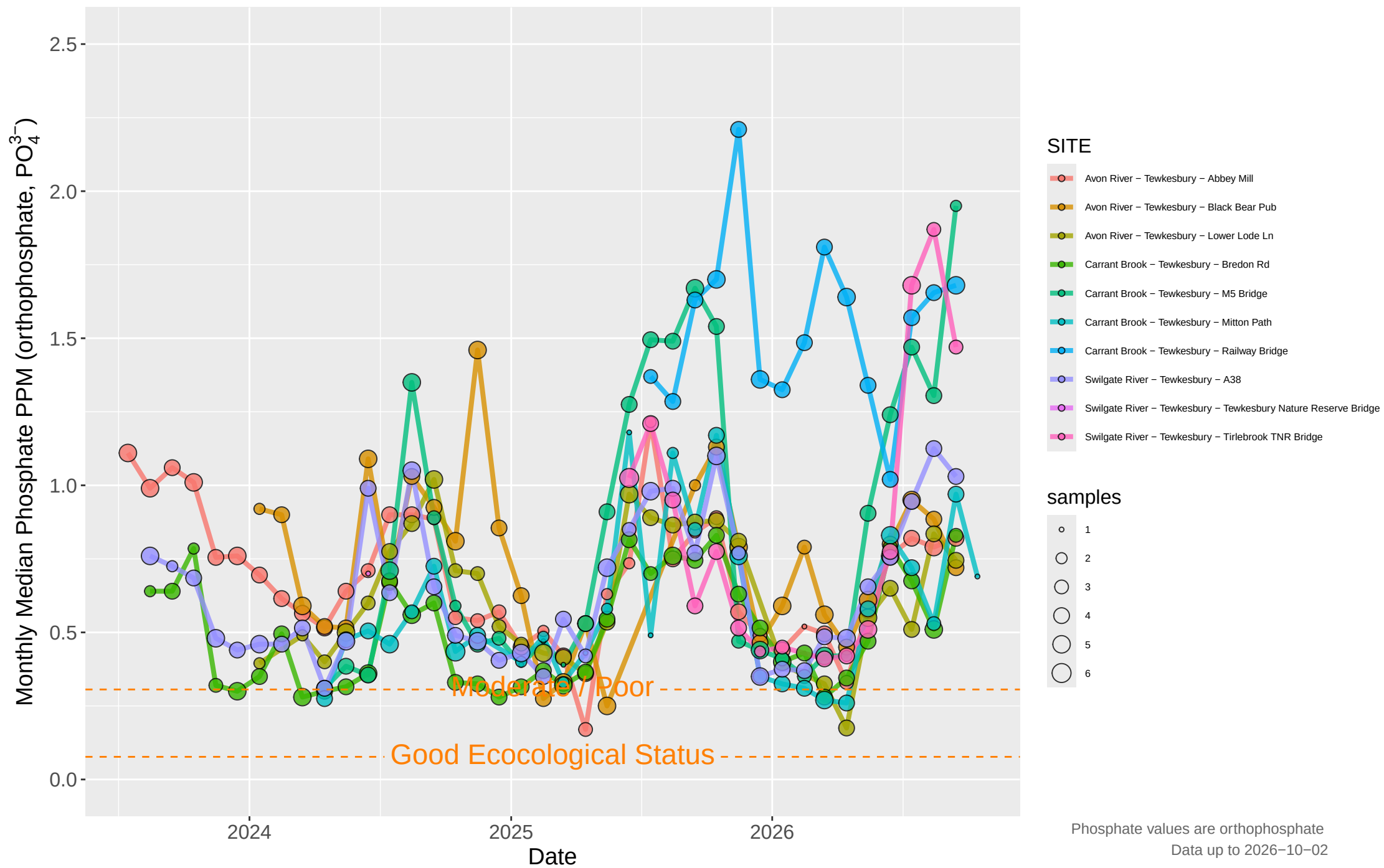


Summary for sites in Tewkesbury

SITE	Start	Most Recent	Samples	Distinct Volunteers	Median Phosphates PPM	Median Nitrates PPM
Carrant Brook – Tewkesbury – Mitton Path	2024-04-11	2026-10-01	100	3	0.51	5
Carrant Brook – Tewkesbury – Railway Bridge	2025-07-07	2026-09-30	63	2	1.59	5
Avon River – Tewkesbury – Abbey Mill	2023-07-05	2026-09-28	139	2	0.70	5
Avon River – Tewkesbury – Black Bear Pub	2024-01-21	2026-09-27	126	2	0.76	10
Avon River – Tewkesbury – Lower Lode Ln	2024-01-19	2026-09-27	112	2	0.65	10
Swilgate River – Tewkesbury – Tirlbrook TNR Bridge	2025-06-01	2026-09-27	59	3	0.72	2
Carrant Brook – Tewkesbury – Bredon Rd	2023-08-12	2026-09-25	152	2	0.43	5
Swilgate River – Tewkesbury – A38	2023-08-10	2026-09-24	160	1	0.55	5
Carrant Brook – Tewkesbury – M5 Bridge	2024-04-11	2026-09-21	105	4	0.68	5
Swilgate River – Tewkesbury – Tewkesbury Nature Reserve Bridge	2024-06-07	2024-06-07	1	1	0.70	10

SafeAvon Phosphates – By Month

Tewkesbury



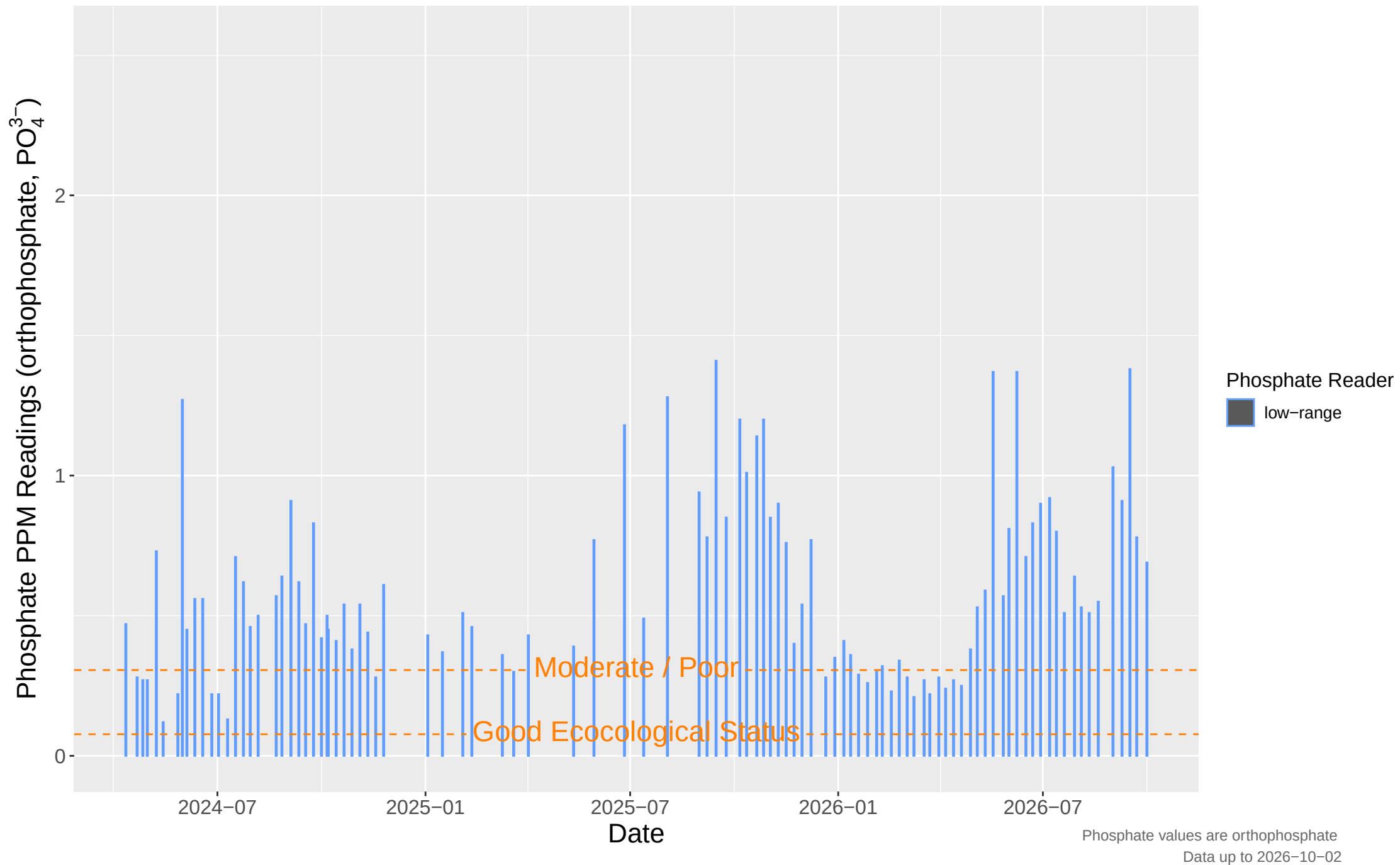
Site: Carrant Brook – Tewkesbury – Mitton Path

Start Date: 2024-04-11 | Most Recent: 2026-10-01 | Total Samples: 100 | Distinct Volunteers: 3

Season	Count		Phos Min	Phos Med	Phos Max		Nitr Min	Nitr Med	Nitr Max		EC Min	EC Med	EC Max		Temp Min	Temp Med	Temp Max
Spring 24	8		0.12	0.28	1.27		5.0	7.5	10		525	694	728		12.3	14.6	16.0
Summer 24	12		0.13	0.53	0.71		5.0	5.0	10		635	673	721		14.5	17.6	20.4
Autumn 24	14		0.28	0.48	0.91		2.0	2.0	10		464	5245	7730		10.3	13.5	16.5
Winter 24-25	4		0.37	0.44	0.51		2.0	2.0	2		6420	7405	8050		6.5	7.6	8.5
Spring 25	5		0.30	0.39	0.77		5.0	5.0	10		5920	6360	7050		11.4	12.7	19.7
Summer 25	4		0.49	1.06	1.28		5.0	5.0	10		598	694	6720		17.8	19.7	23.4
Autumn 25	12		0.40	0.88	1.41		2.0	5.0	50		337	754	940		9.3	13.0	19.8
Winter 25-26	11		0.23	0.32	0.77		5.0	10.0	20		574	722	843		4.5	9.5	12.4
Spring 26	13		0.21	0.28	1.37		2.0	5.0	10		624	704	717		11.2	13.0	22.1
Summer 26	12		0.51	0.76	1.37		0.5	2.0	2		493	624	670		16.0	19.9	23.1
Autumn 26	5		0.69	0.91	1.38		2.0	2.0	5		585	737	764		15.8	17.0	17.7

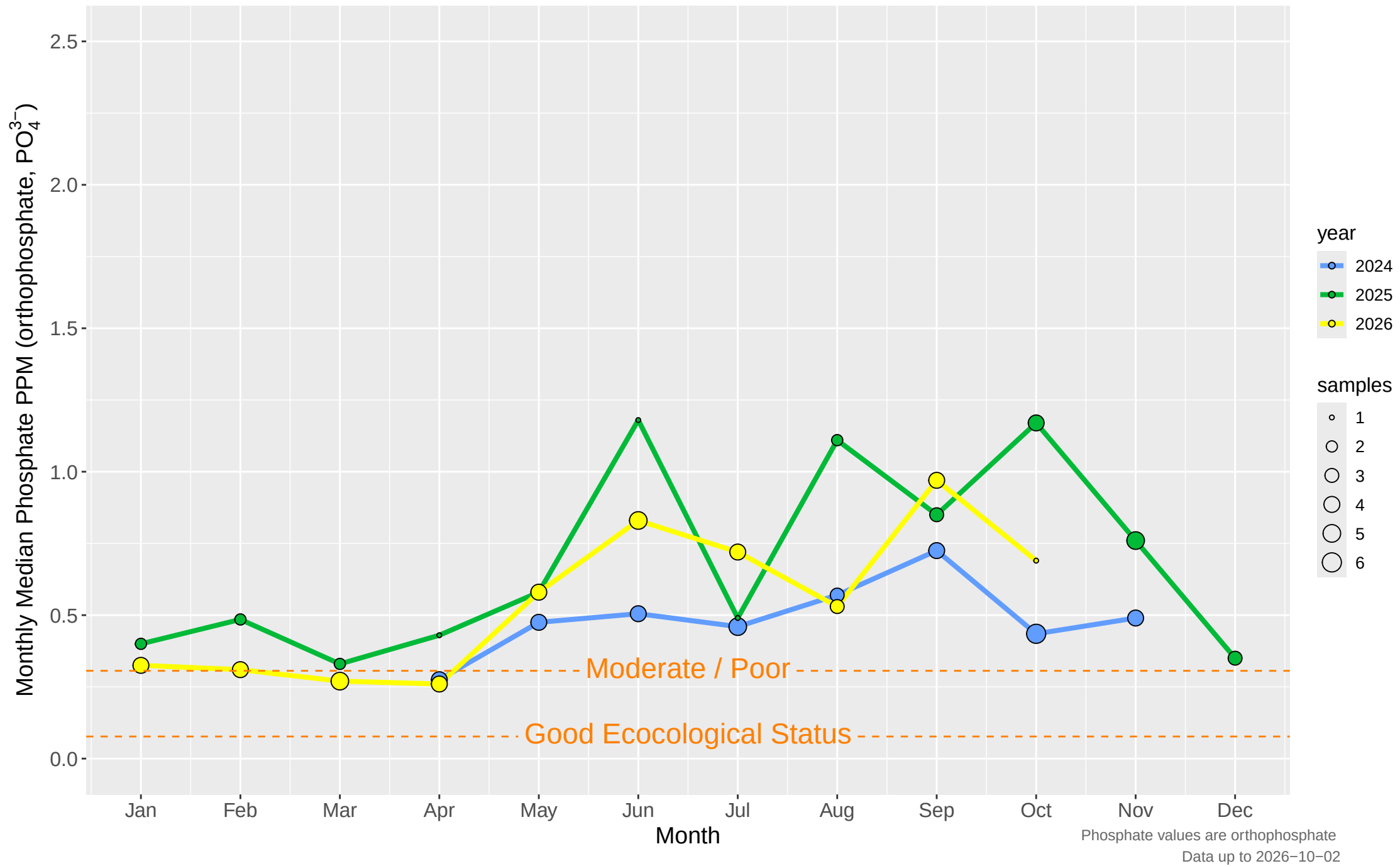
SafeAvon Phosphates – Individual Readings

Carrant Brook – Tewkesbury – Mitton Path



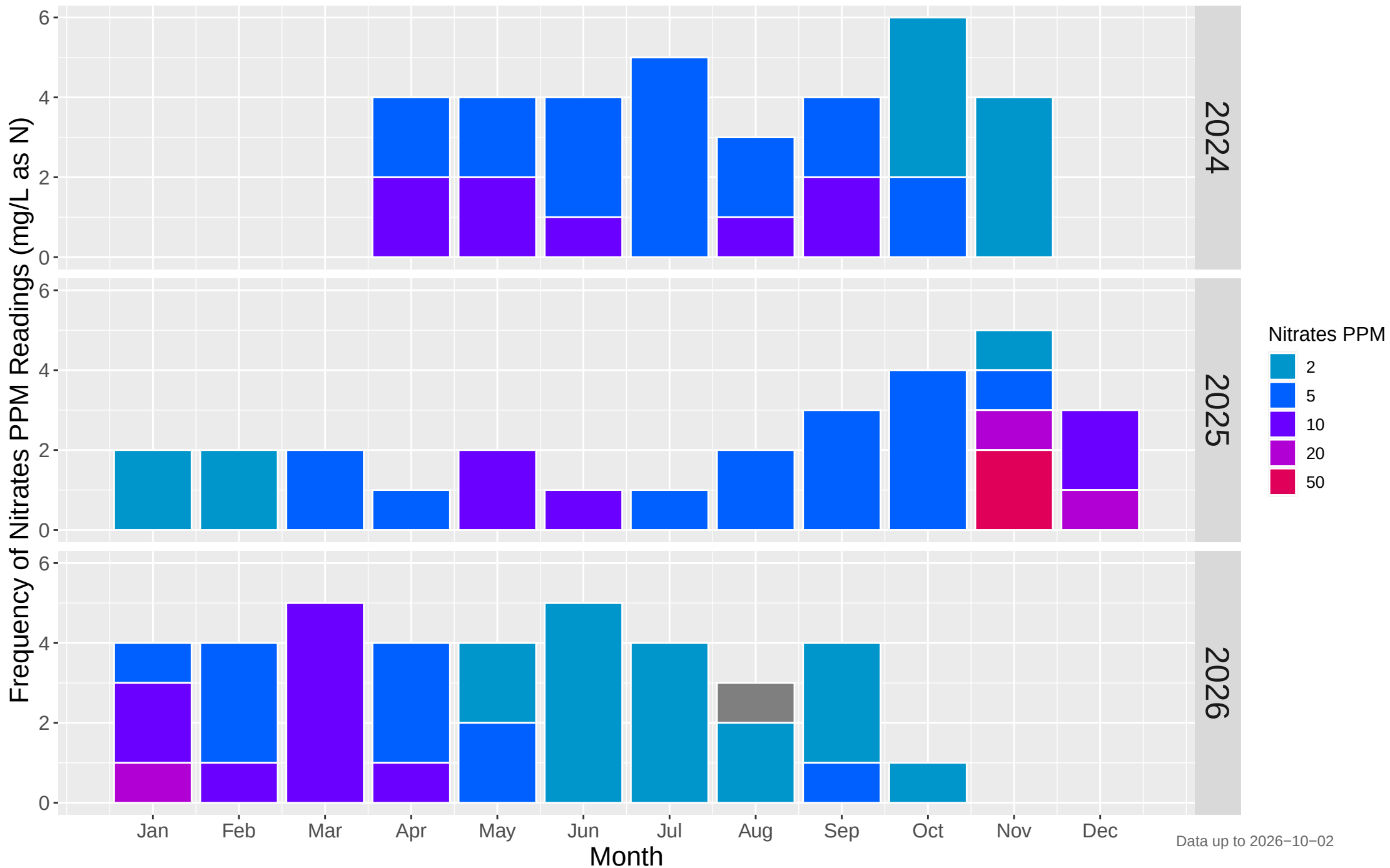
SafeAvon Phosphates – By Month

Carrant Brook – Tewkesbury – Mitton Path



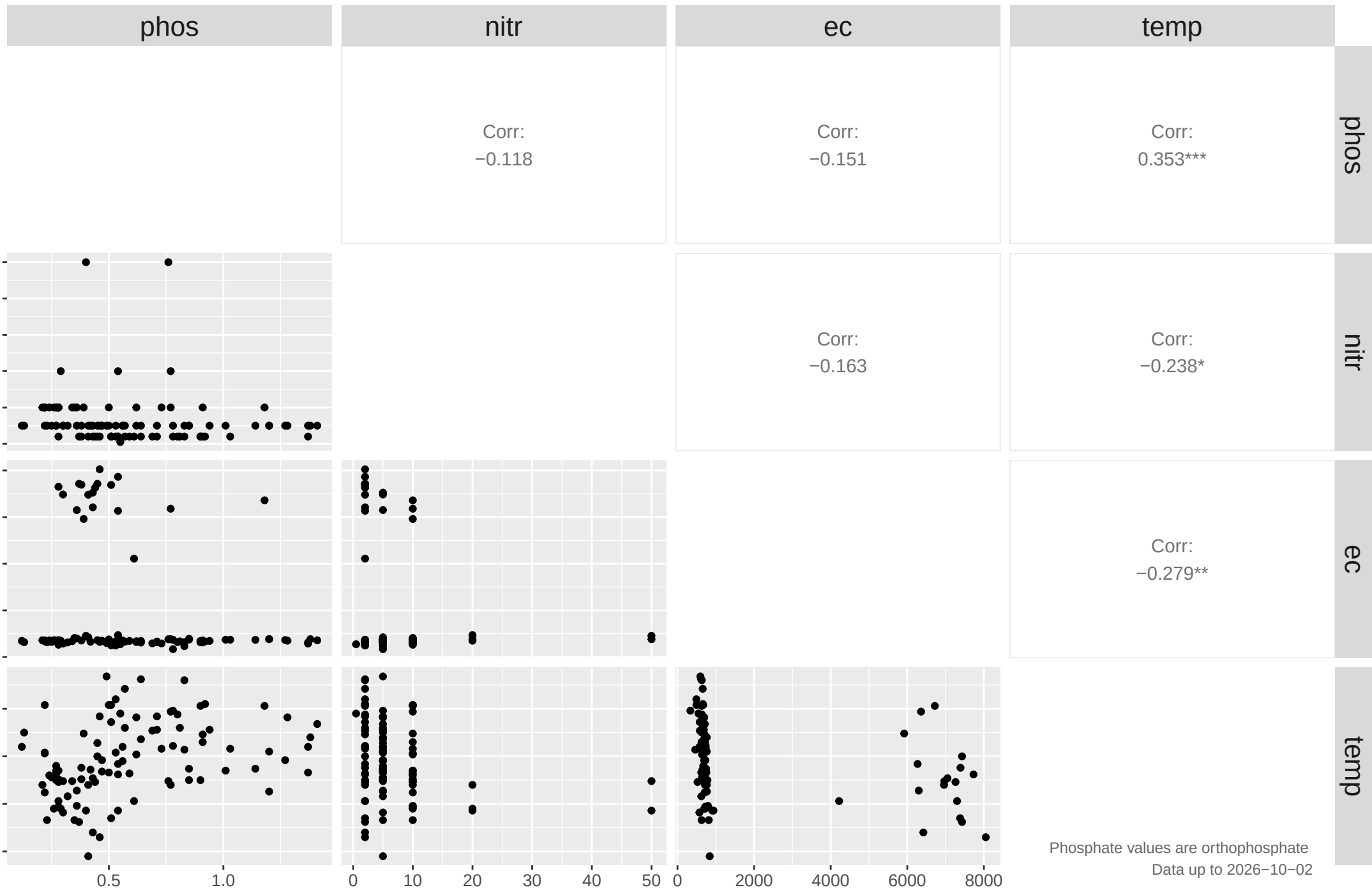
SafeAvon Nitrates By Month

Carrant Brook – Tewkesbury – Mitton Path



Pairwise Testing Variables Relationships

Carrant Brook – Tewkesbury – Mitton Path



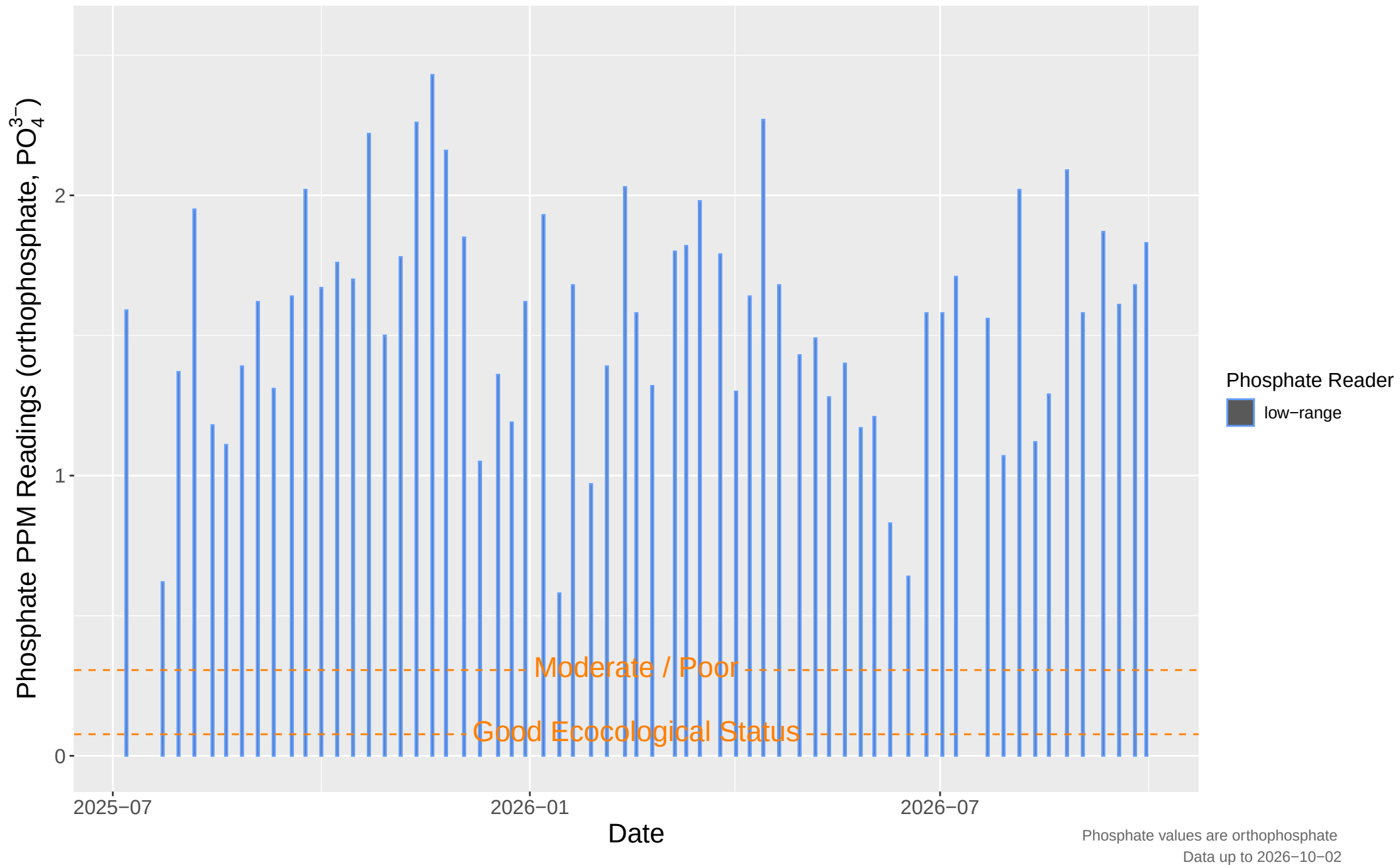
Site: Carrant Brook – Tewkesbury – Railway Bridge

Start Date: 2025-07-07 | Most Recent: 2026-09-30 | Total Samples: 63 | Distinct Volunteers: 2

Season	Count		Phos Min	Phos Med	Phos Max		Nitr Min	Nitr Med	Nitr Max		EC Min	EC Med	EC Max		Temp Min	Temp Med	Temp Max
Summer 25	7		0.62	1.37	1.95		2.0	5	5		737	787	873		17.1	18.3	22.7
Autumn 25	13		1.31	1.76	2.43		5.0	5	20		549	723	829		7.8	13.6	17.7
Winter 25-26	13		0.58	1.39	2.03		5.0	10	20		392	615	749		6.7	9.5	11.7
Spring 26	13		1.17	1.64	2.27		2.0	5	10		562	668	706		9.3	12.4	20.9
Summer 26	12		0.64	1.43	2.09		0.5	5	10		631	748	849		15.3	19.1	24.8
Autumn 26	5		1.58	1.68	1.87		5.0	5	10		732	768	773		15.6	16.4	18.0

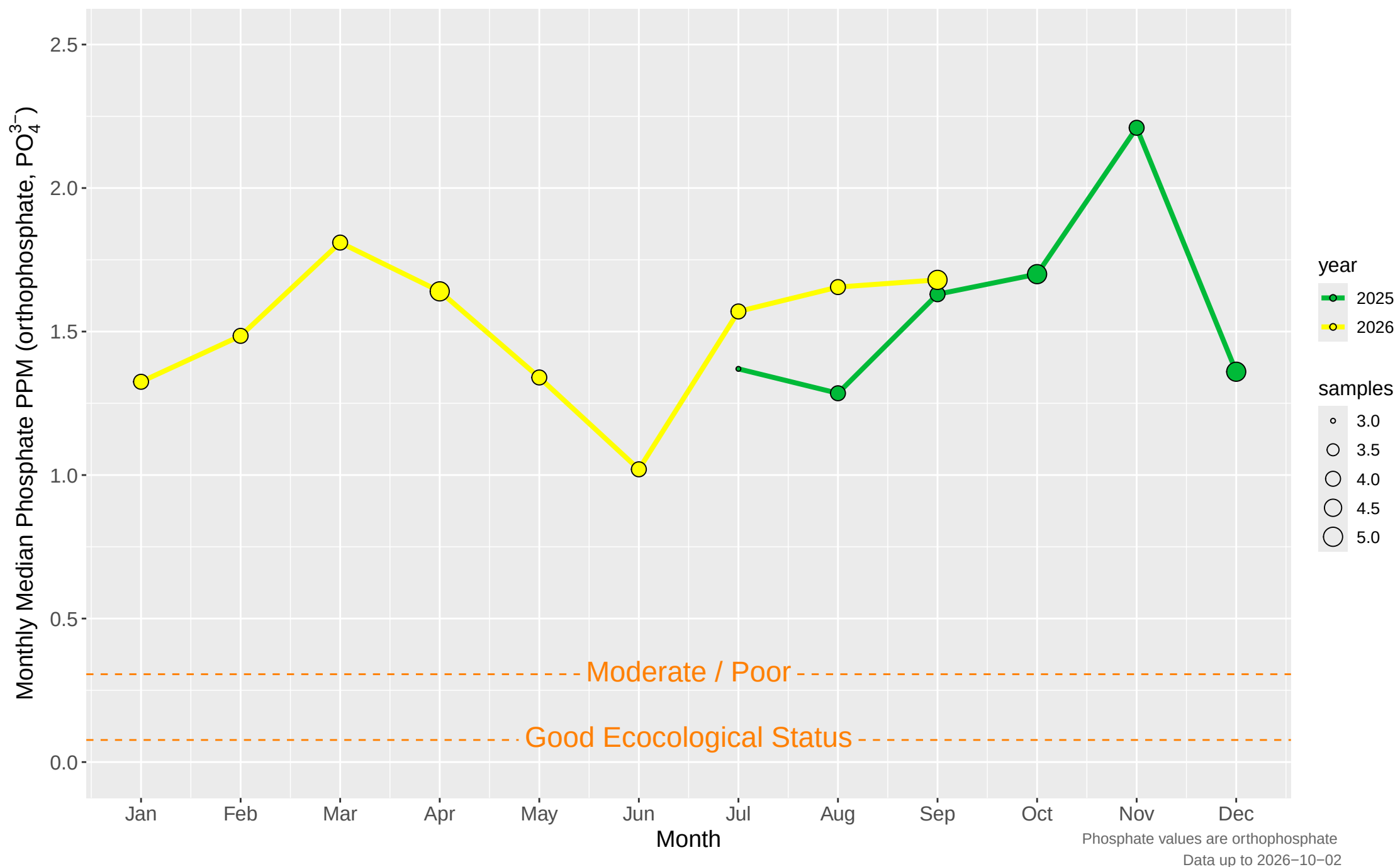
SafeAvon Phosphates – Individual Readings

Carrant Brook – Tewkesbury – Railway Bridge



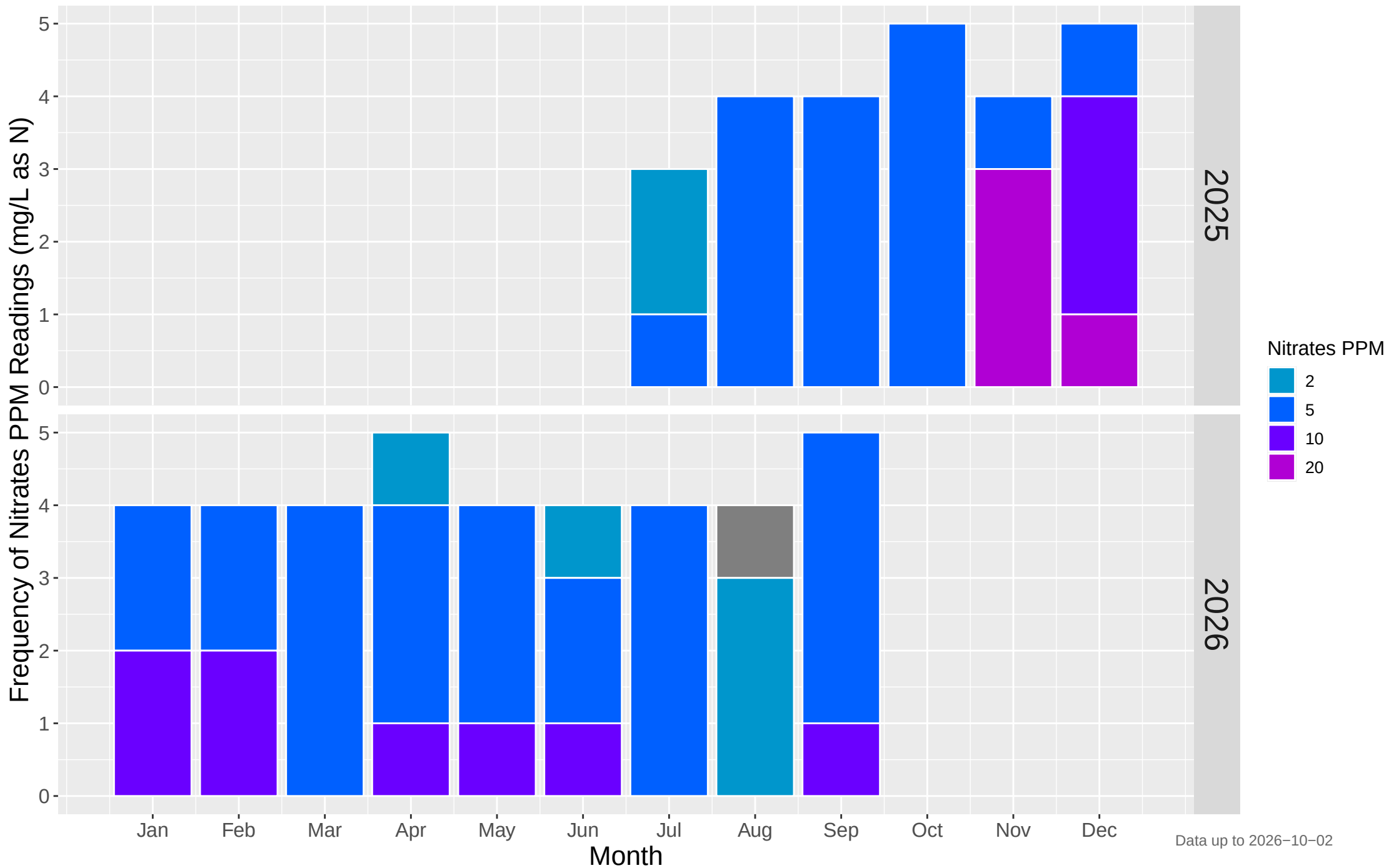
SafeAvon Phosphates – By Month

Carrant Brook – Tewkesbury – Railway Bridge



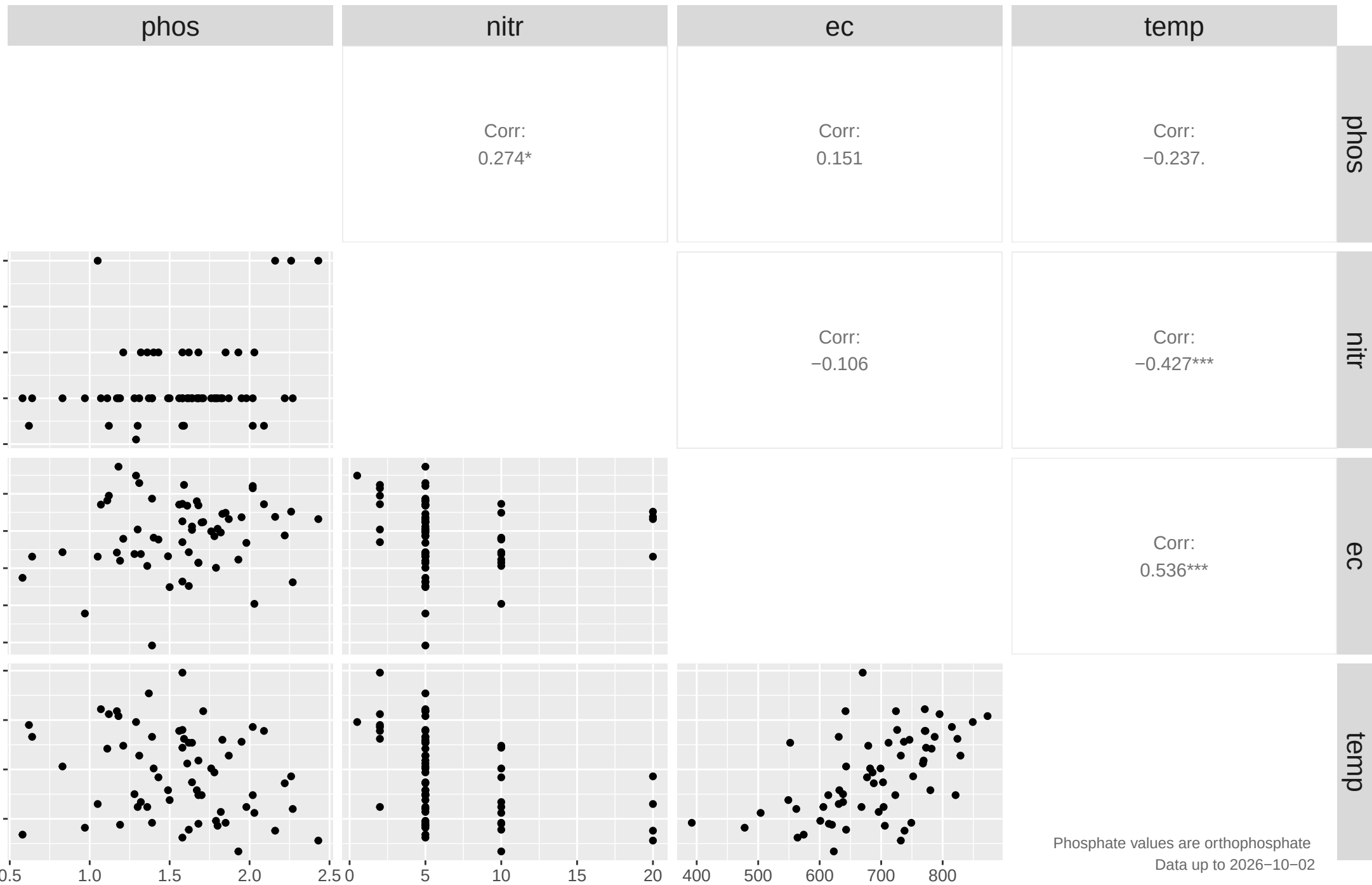
SafeAvon Nitrates By Month

Carrant Brook – Tewkesbury – Railway Bridge



Pairwise Testing Variables Relationships

Carrant Brook – Tewkesbury – Railway Bridge



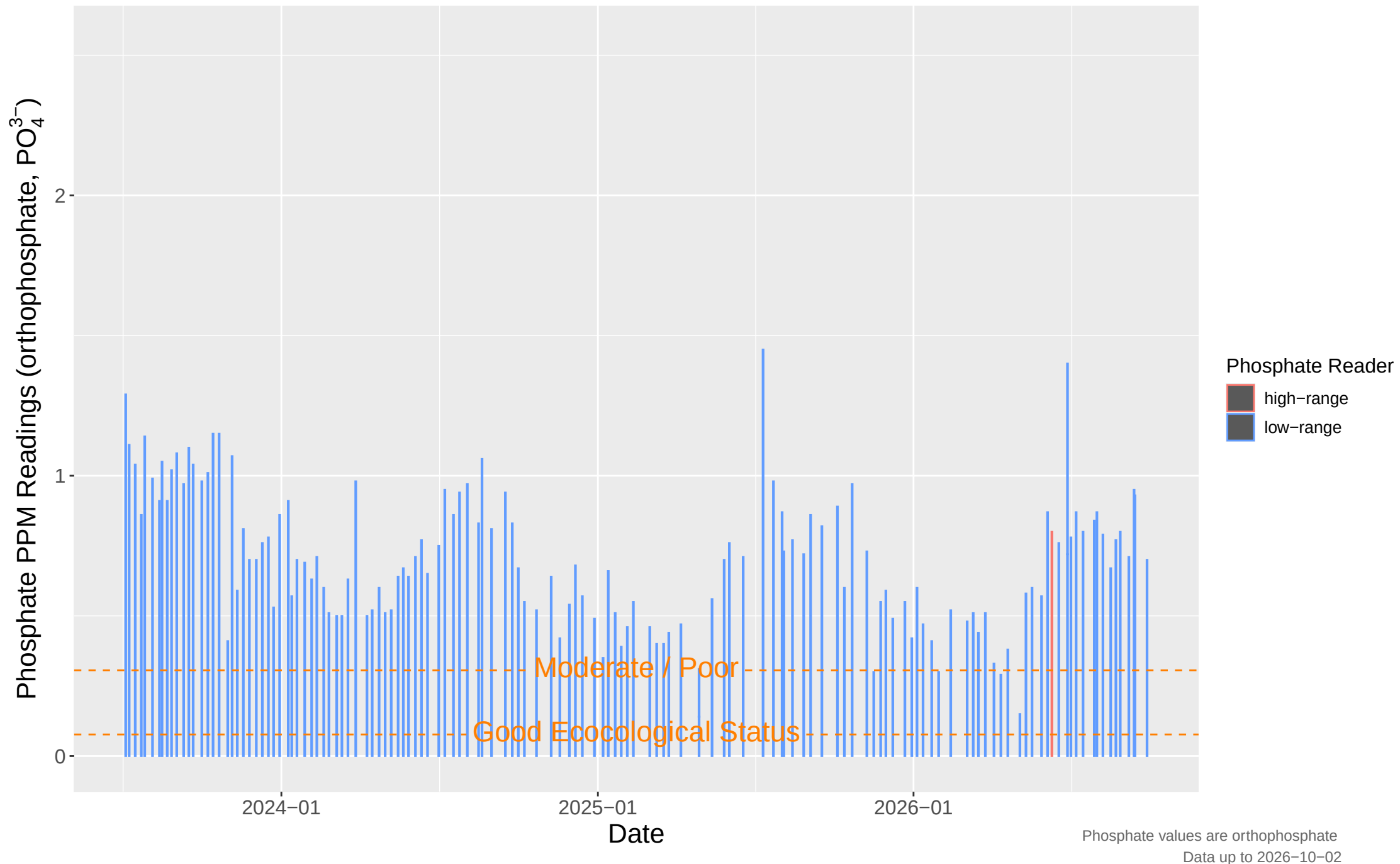
Site: Avon River – Tewkesbury – Abbey Mill

Start Date: 2023-07-05 | Most Recent: 2026-09-28 | Total Samples: 139 | Distinct Volunteers: 2

Season	Count		Phos Min	Phos Med	Phos Max		Nitr Min	Nitr Med	Nitr Max		EC Min	EC Med	EC Max		Temp Min	Temp Med	Temp Max
Summer 23	10		0.86	1.03	1.29		5	10.0	10		819	944	997		18.4	19.4	21.2
Autumn 23	13		0.41	1.01	1.15		5	10.0	10		105	746	1020		9.7	15.6	23.3
Winter 23-24	13		0.51	0.70	0.91		5	5.0	10		430	653	906		6.0	9.7	12.0
Spring 24	12		0.50	0.56	0.98		5	5.0	10		547	768	977		8.4	12.7	18.5
Summer 24	11		0.65	0.83	1.06		5	10.0	20		103	979	1060		16.5	18.6	22.7
Autumn 24	8		0.42	0.60	0.94		5	10.0	10		103	632	983		8.5	13.8	17.3
Winter 24-25	9		0.35	0.51	0.68		2	5.0	5		464	748	851		4.8	7.8	9.8
Spring 25	9		0.14	0.44	0.70		0	5.0	20		702	963	1100		10.1	15.0	18.7
Summer 25	8		0.71	0.76	1.45		5	15.0	20		109	950	1170		19.0	21.3	27.4
Autumn 25	9		0.30	0.73	0.97		0	5.0	20		552	1040	1117		9.3	14.3	18.5
Winter 25-26	8		0.30	0.48	0.60		0	1.0	2		539	655	880		7.0	9.8	11.1
Spring 26	11		0.15	0.48	0.60		2	10.0	10		604	973	1090		10.4	12.8	22.7
Summer 26	14		0.67	0.80	0.87		2	7.5	10		118	591	1110		17.4	22.6	25.1
Autumn 26	4		0.70	0.82	0.95		2	5.0	10		911	987	1920		17.4	19.6	20.4

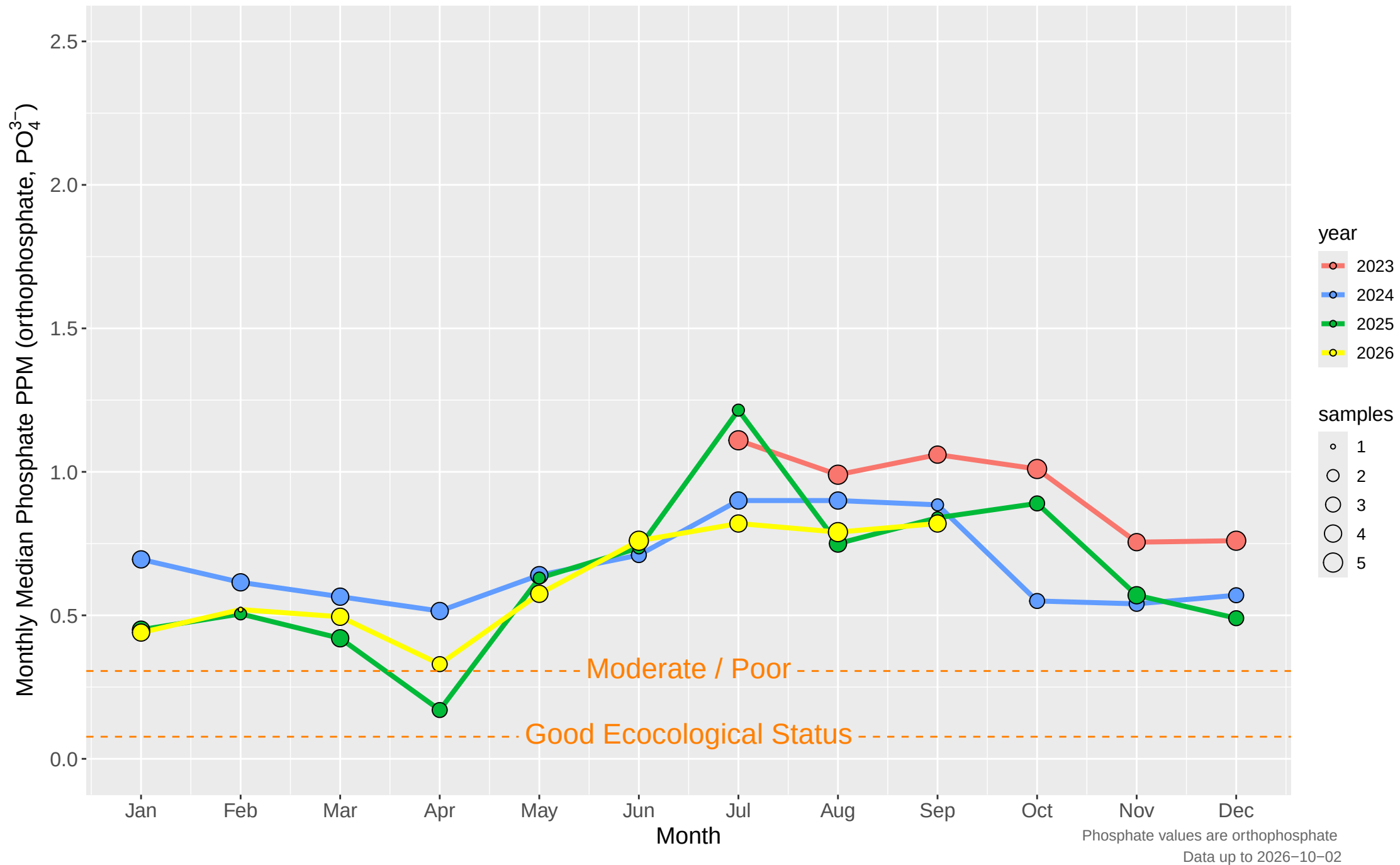
SafeAvon Phosphates – Individual Readings

Avon River – Tewkesbury – Abbey Mill



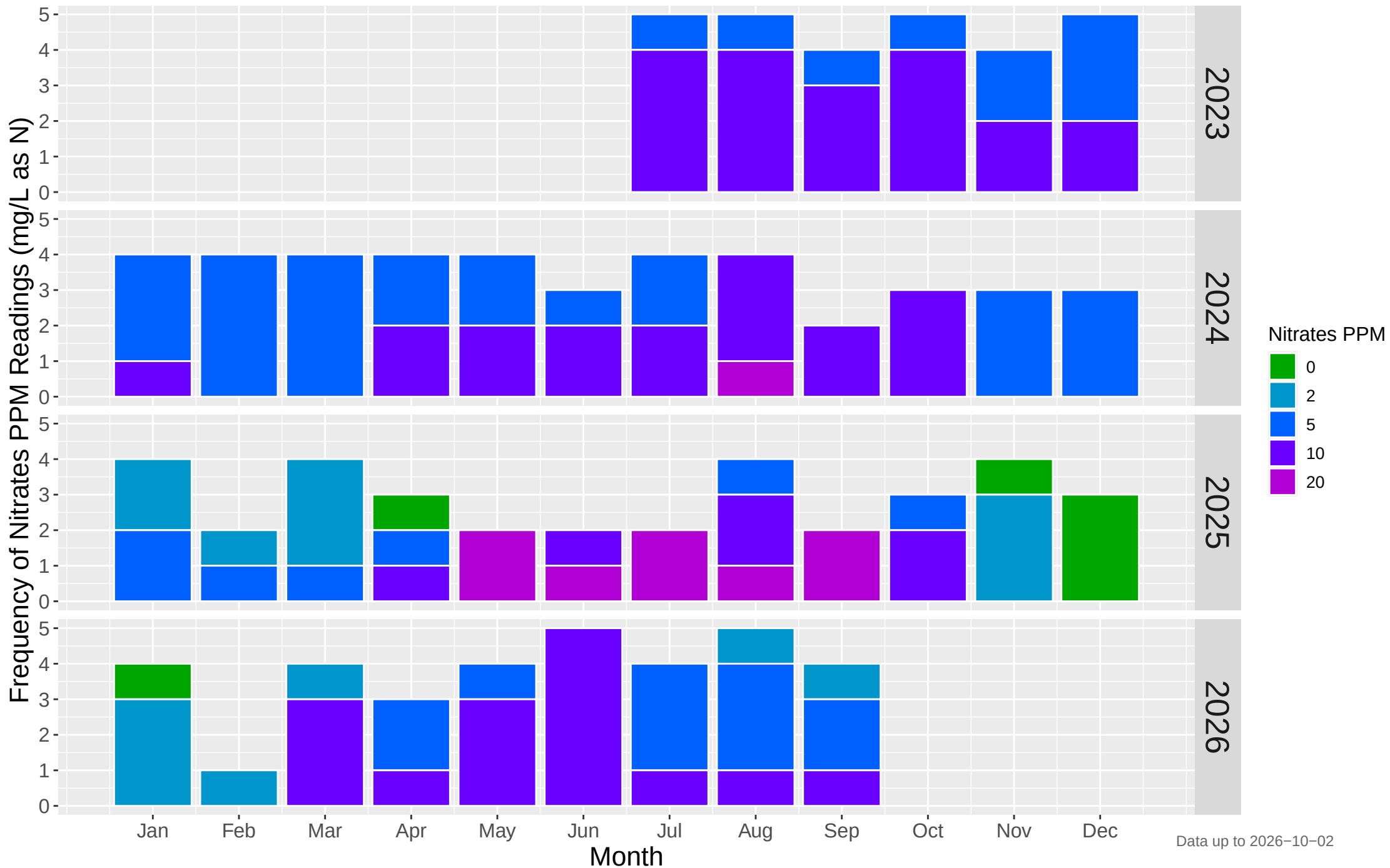
SafeAvon Phosphates – By Month

Avon River – Tewkesbury – Abbey Mill



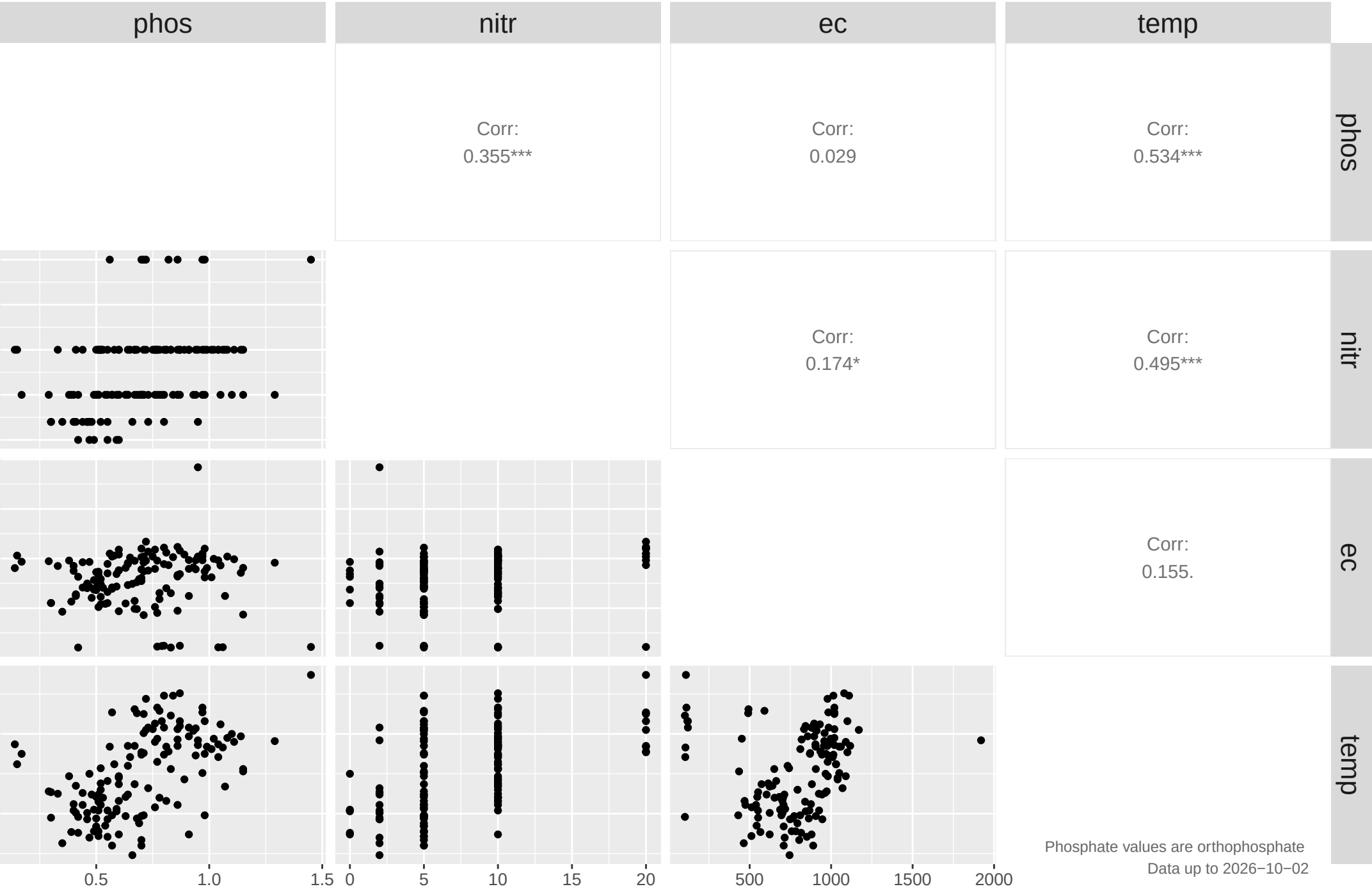
SafeAvon Nitrates By Month

Avon River – Tewkesbury – Abbey Mill



Pairwise Testing Variables Relationships

Avon River – Tewkesbury – Abbey Mill



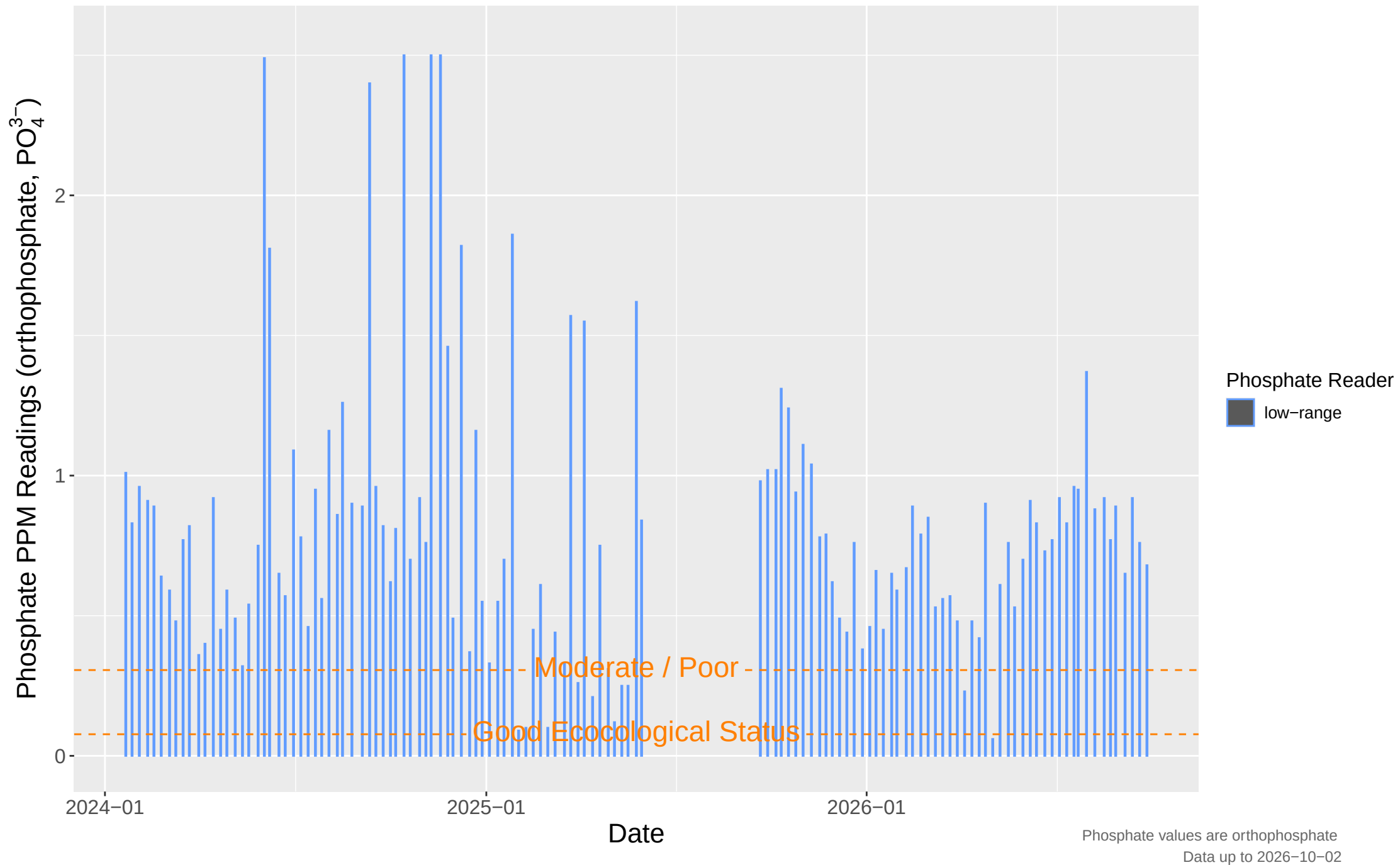
Site: Avon River – Tewkesbury – Black Bear Pub

Start Date: 2024-01-21 | Most Recent: 2026-09-27 | Total Samples: 126 | Distinct Volunteers: 2

Season	Count		Phos Min	Phos Med	Phos Max		Nitr Min	Nitr Med	Nitr Max		EC Min	EC Med	EC Max		Temp Min	Temp Med	Temp Max
Winter 23-24	6		0.64	0.90	1.01		5	5.0	10		408	669	841		6.8	9.2	12.7
Spring 24	13		0.32	0.54	0.92		2	5.0	10		571	708	917		9.4	14.6	22.6
Summer 24	13		0.46	0.90	2.49		10	10.0	10		100	922	988		17.6	20.5	23.4
Autumn 24	14		0.49	0.90	2.50		5	10.0	20		104	638	945		9.6	13.6	19.4
Winter 24-25	12		0.09	0.55	1.86		5	5.0	10		562	774	888		5.4	8.1	10.7
Spring 25	14		0.10	0.32	1.62		5	10.0	10		103	845	985		9.2	14.6	19.8
Autumn 25	11		0.62	1.02	1.31		5	10.0	20		103	845	984		8.1	13.2	16.5
Winter 25-26	12		0.38	0.62	0.89		5	7.5	10		217	620	904		4.8	9.2	10.7
Spring 26	14		0.06	0.54	0.90		2	5.0	10		215	451	511		10.0	12.6	21.4
Summer 26	13		0.73	0.89	1.37		2	5.0	10		114	498	580		18.2	22.2	27.1
Autumn 26	4		0.65	0.72	0.92		2	5.0	10		960	991	1090		16.5	18.9	20.0

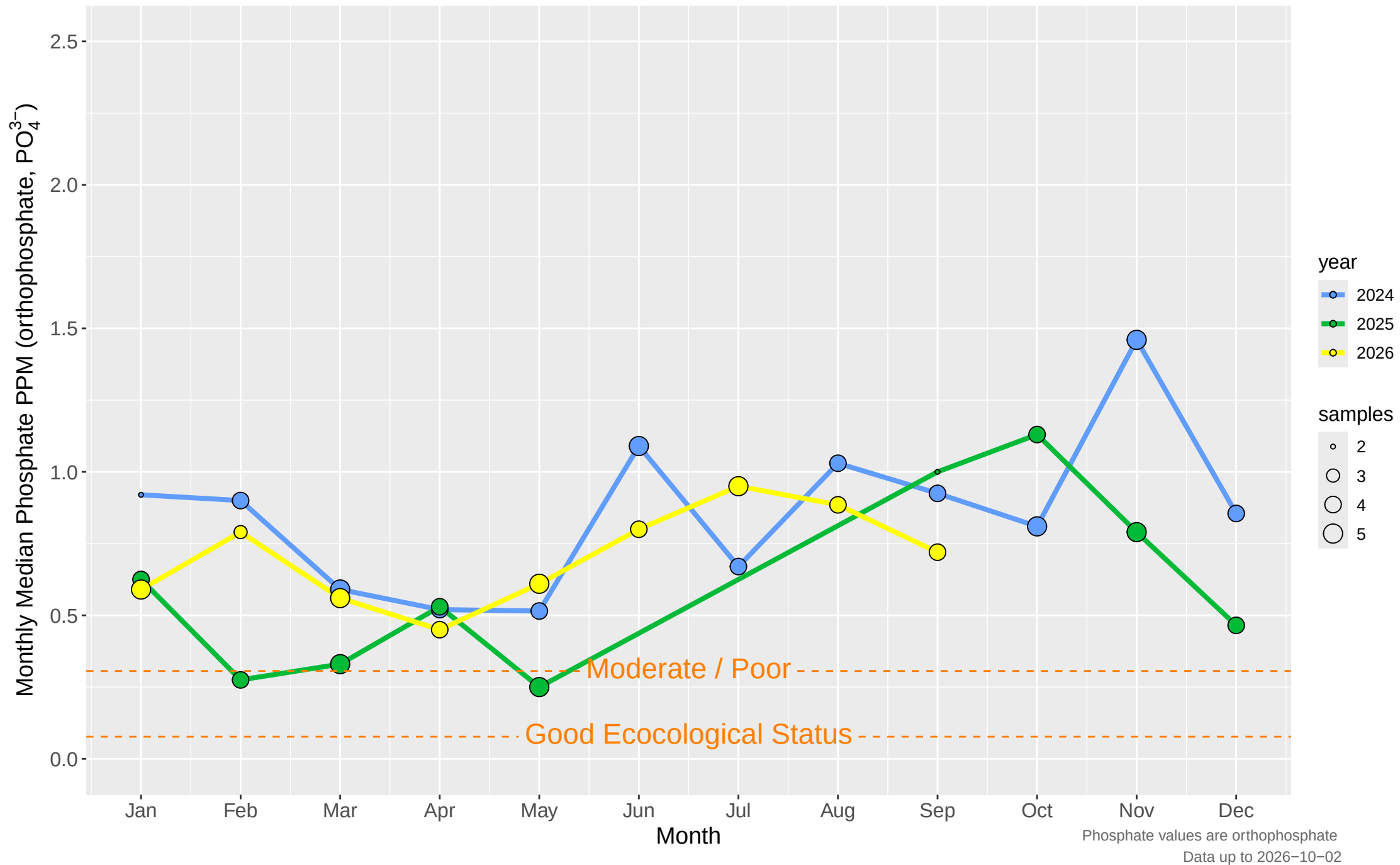
SafeAvon Phosphates – Individual Readings

Avon River – Tewkesbury – Black Bear Pub



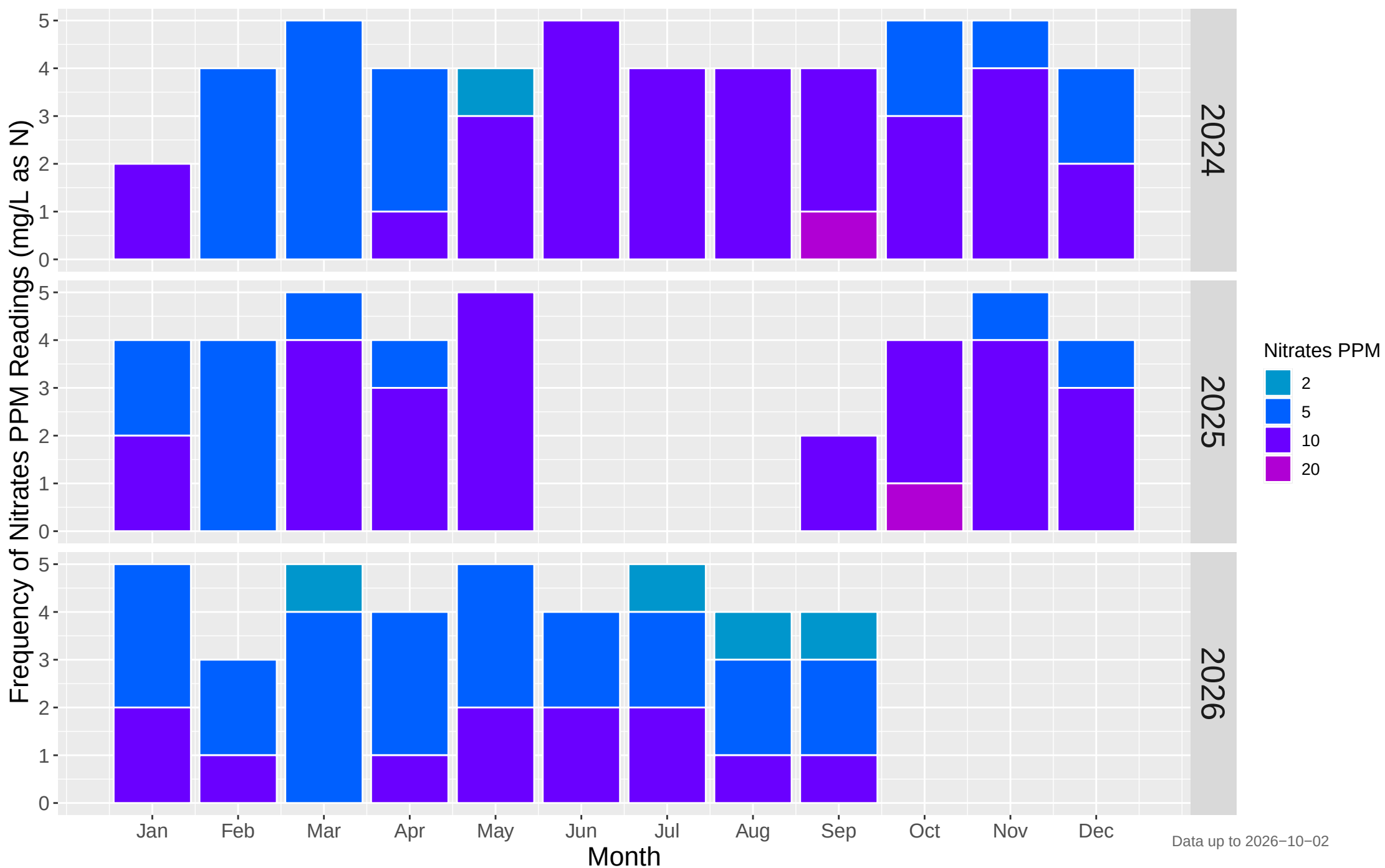
SafeAvon Phosphates – By Month

Avon River – Tewkesbury – Black Bear Pub



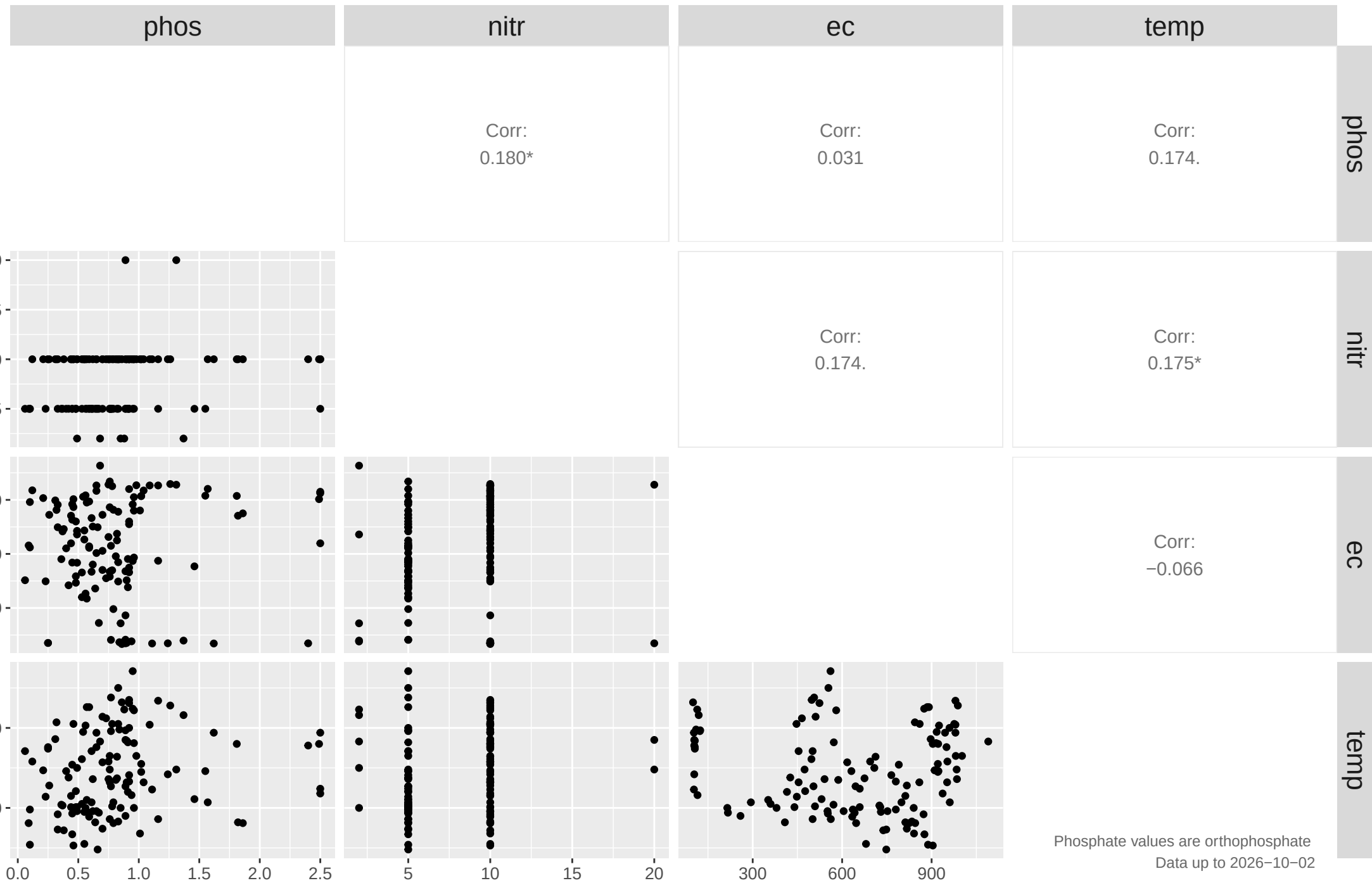
SafeAvon Nitrates By Month

Avon River – Tewkesbury – Black Bear Pub



Pairwise Testing Variables Relationships

Avon River – Tewkesbury – Black Bear Pub



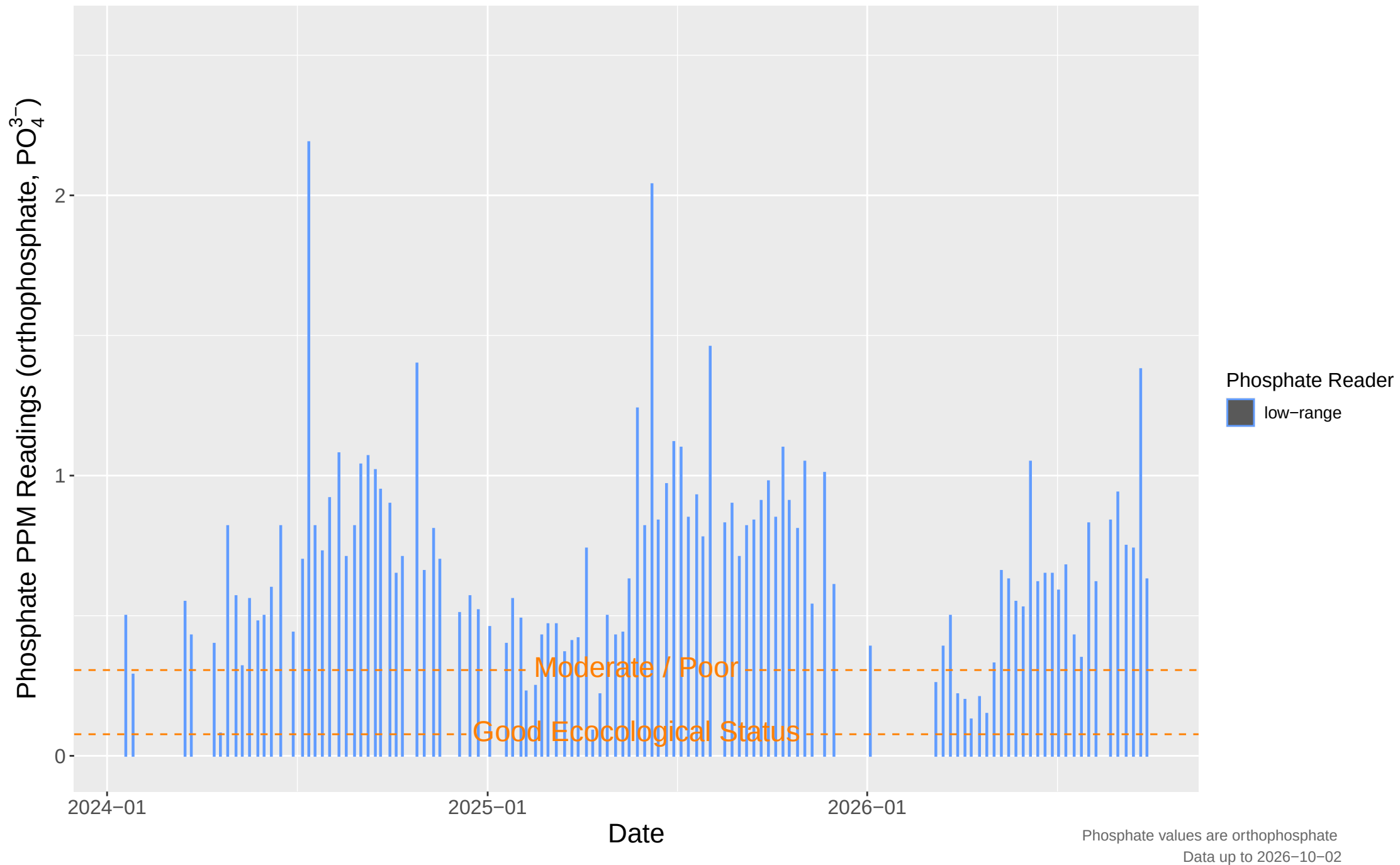
Site: Avon River – Tewkesbury – Lower Lode Ln

Start Date: 2024-01-19 | Most Recent: 2026-09-27 | Total Samples: 112 | Distinct Volunteers: 2

Season	Count		Phos Min	Phos Med	Phos Max		Nitr Min	Nitr Med	Nitr Max		EC Min	EC Med	EC Max		Temp Min	Temp Med	Temp Max
Winter 23-24	2		0.29	0.40	0.50		10	10	10		822	844	867		5.7	7.3	9.0
Spring 24	10		0.08	0.49	0.82		10	10	20		1020	7185	9000		11.5	14.4	17.7
Summer 24	11		0.44	0.82	2.19		10	10	10		1030	8150	9510		16.7	18.7	22.7
Autumn 24	11		0.65	0.90	1.40		5	10	20		1020	8200	9850		11.5	14.8	20.0
Winter 24-25	11		0.23	0.47	0.57		2	10	10		6100	8410	9450		7.0	9.5	12.8
Spring 25	12		0.09	0.44	1.24		5	10	20		1040	1085	9880		8.4	14.1	17.8
Summer 25	13		0.71	0.90	2.04		10	20	20		1040	1120	9910		17.0	21.1	23.6
Autumn 25	12		0.54	0.88	1.10		10	10	20		1010	8925	9980		8.7	14.5	19.6
Winter 25-26	1		0.39	0.39	0.39		20	20	20		1070	1070	1070		11.5	11.5	11.5
Spring 26	13		0.13	0.33	0.66		5	10	20		1000	1090	9960		10.6	14.6	19.6
Summer 26	12		0.35	0.65	1.05		10	10	20		1030	1180	9830		18.0	21.2	22.6
Autumn 26	4		0.63	0.74	1.38		5	10	10		1020	4835	9980		17.4	19.4	23.5

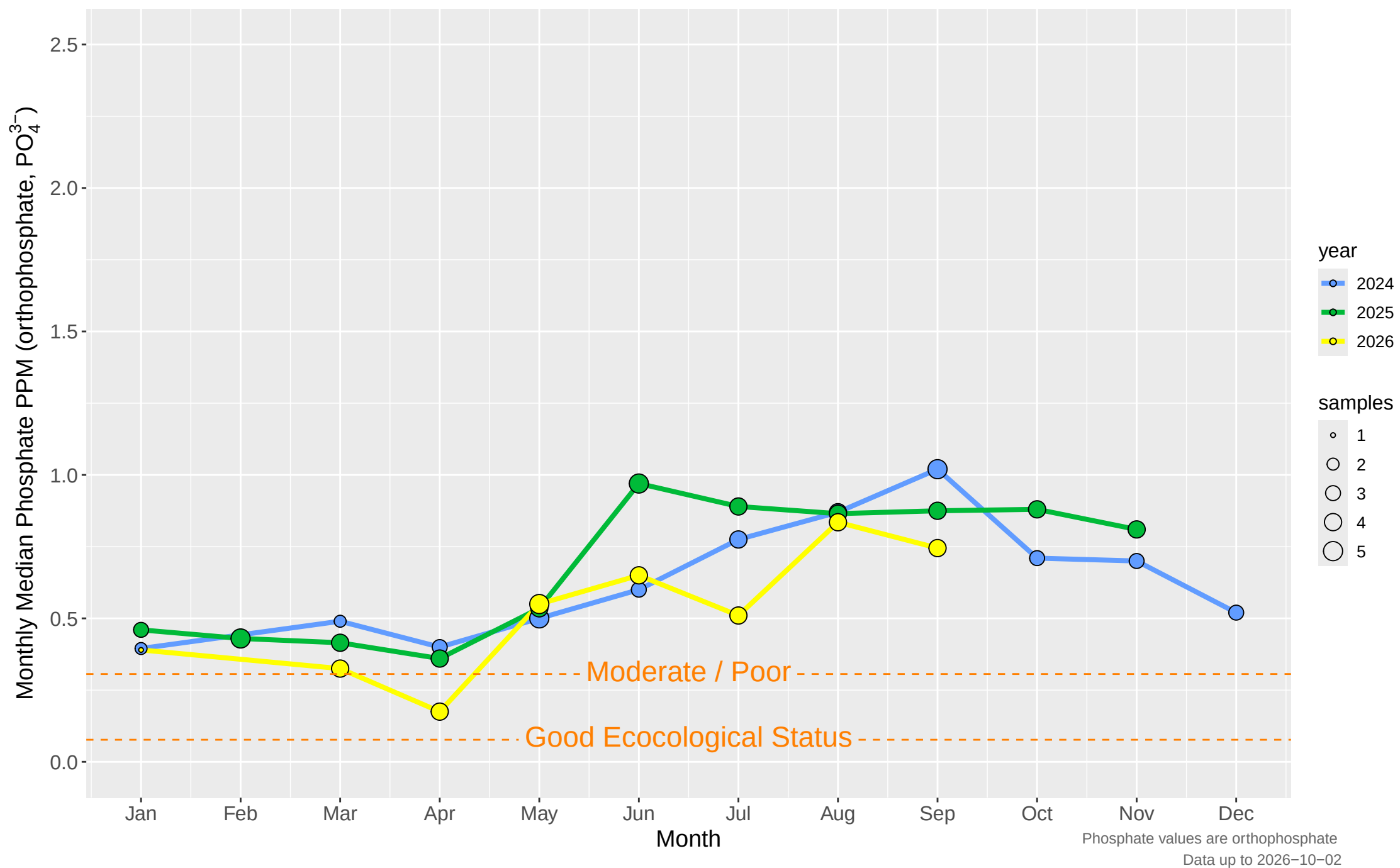
SafeAvon Phosphates – Individual Readings

Avon River – Tewkesbury – Lower Lode Ln



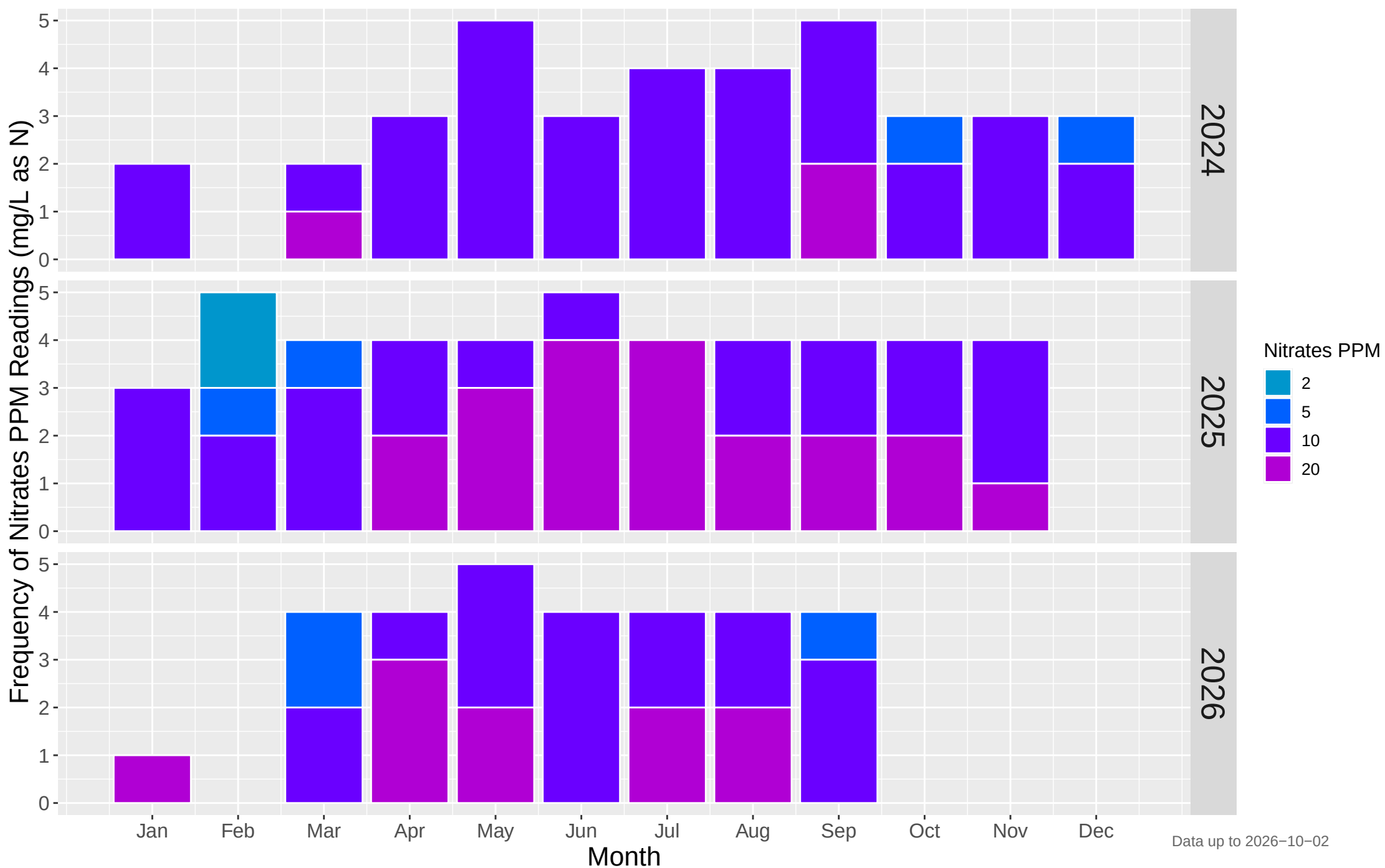
SafeAvon Phosphates – By Month

Avon River – Tewkesbury – Lower Lode Ln



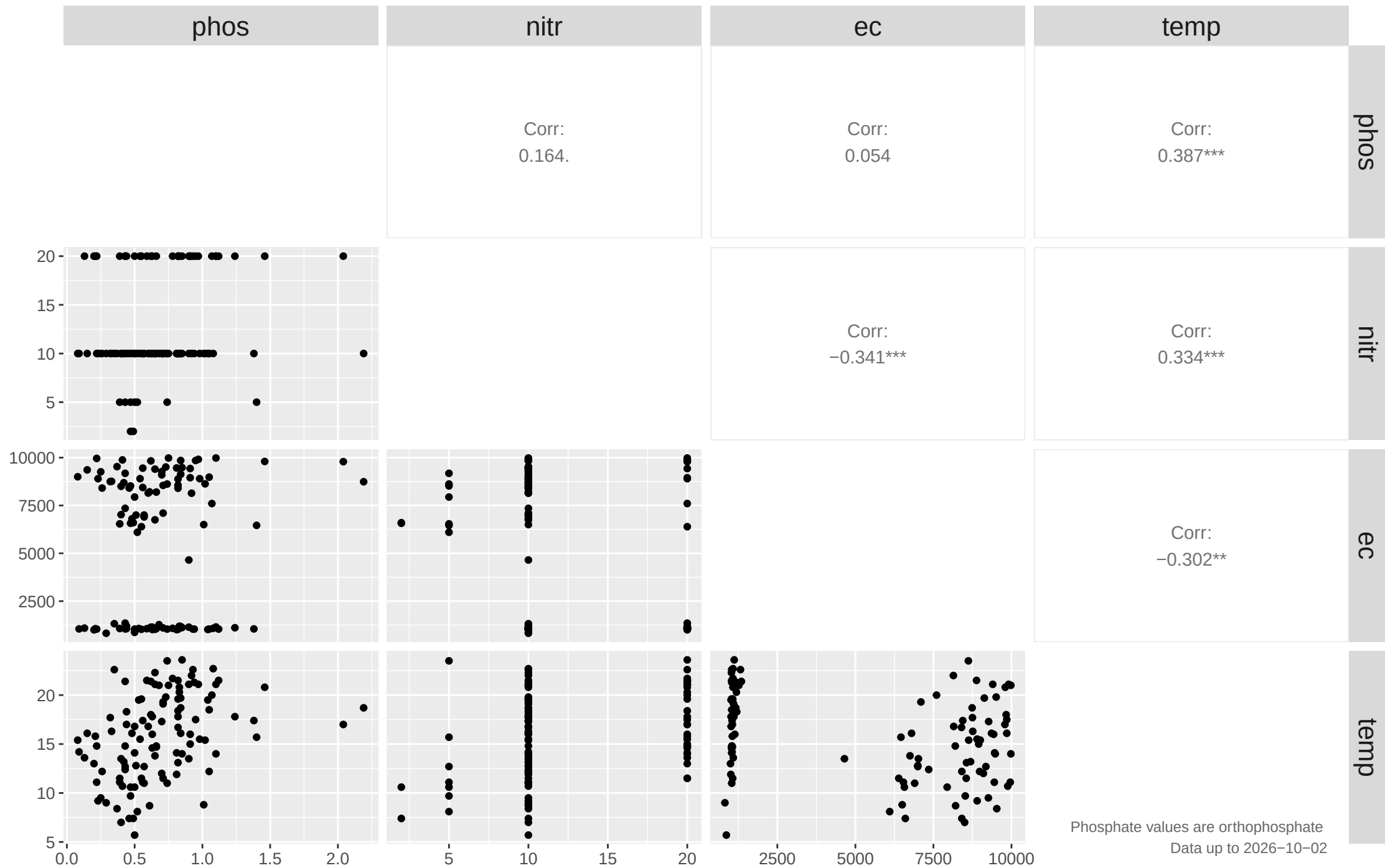
SafeAvon Nitrates By Month

Avon River – Tewkesbury – Lower Lode Ln



Pairwise Testing Variables Relationships

Avon River – Tewkesbury – Lower Lode Ln



Site: Swilgate River – Tewkesbury – Tirlbrook TNR Bridge

Start Date: 2025-06-01 | Most Recent: 2026-09-27 | Total Samples: 59 | Distinct Volunteers: 3

Season	Count		Phos Min	Phos Med	Phos Max		Nitr Min	Nitr Med	Nitr Max		EC Min	EC Med	EC Max		Temp Min	Temp Med	Temp Max
Summer 25	14		0.56	1.10	1.51		2.0	3.5	5		102	928	9500		15.7	19.4	24.1
Autumn 25	12		0.21	0.57	1.10		2.0	2.0	20		109	780	9250		9.7	13.6	17.2
Winter 25-26	5		0.32	0.45	0.55		5.0	10.0	20		108	564	763		4.5	7.7	10.6
Spring 26	13		0.27	0.43	0.92		0.5	2.0	5		391	438	476		8.1	11.2	17.1
Summer 26	12		0.65	1.46	2.10		0.5	1.2	10		109	542	606		14.7	18.2	22.5
Autumn 26	3		0.59	1.47	1.74		0.5	10.0	10		577	848	1120		14.2	16.6	19.3

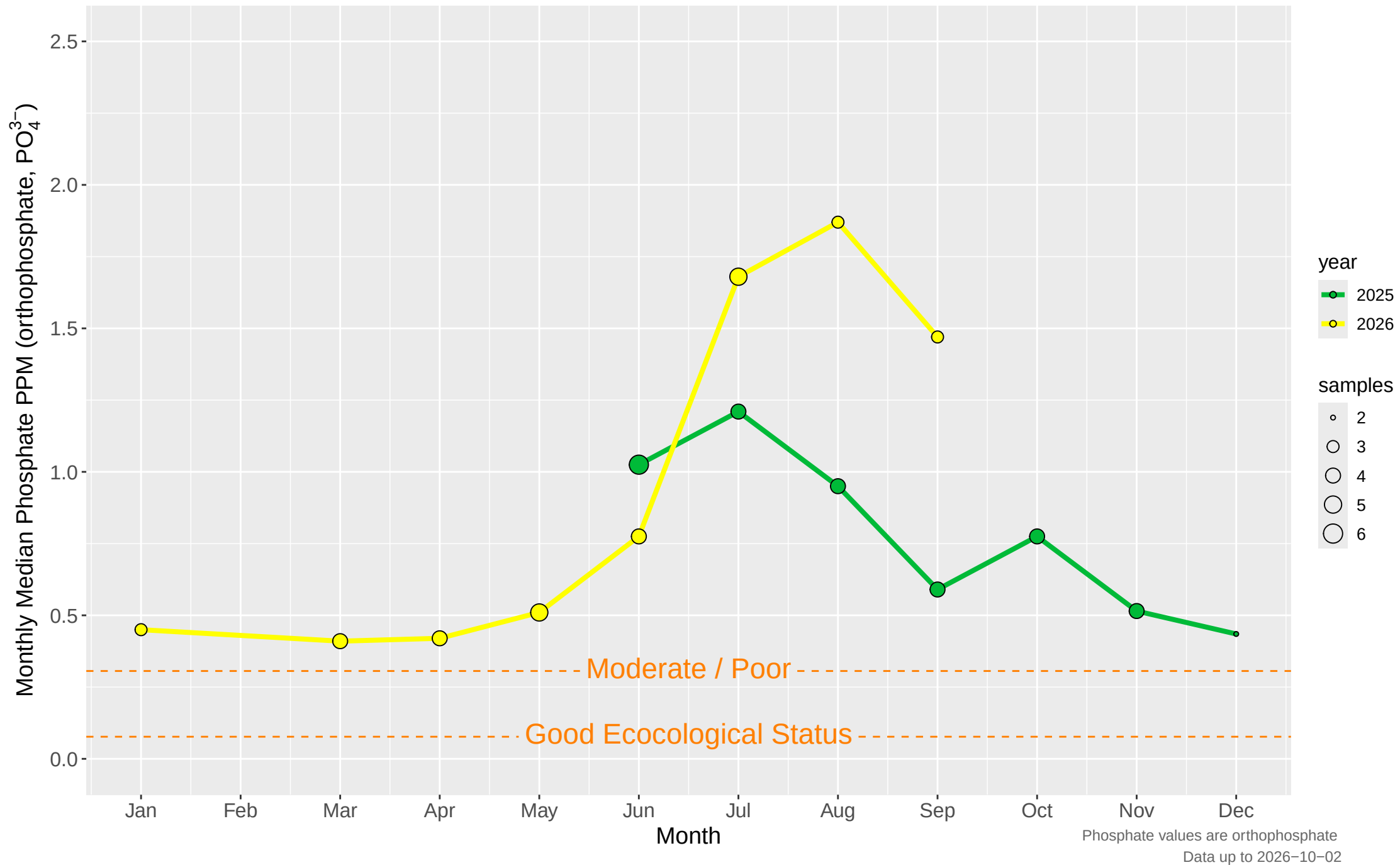
The chart displays the number of species per 100m² for 100 different species. The y-axis represents the count, ranging from 0 to 10. Two horizontal dashed orange lines indicate the 'Moderate / Poor' status (at y=2) and the 'Good Ecological Status' (at y=4). The data shows a distribution of species counts, with many species having counts between 2 and 4, and a few species having counts above 4.

 low-range

Phosphate values are orthophosphate
Data up to 2026-10-02

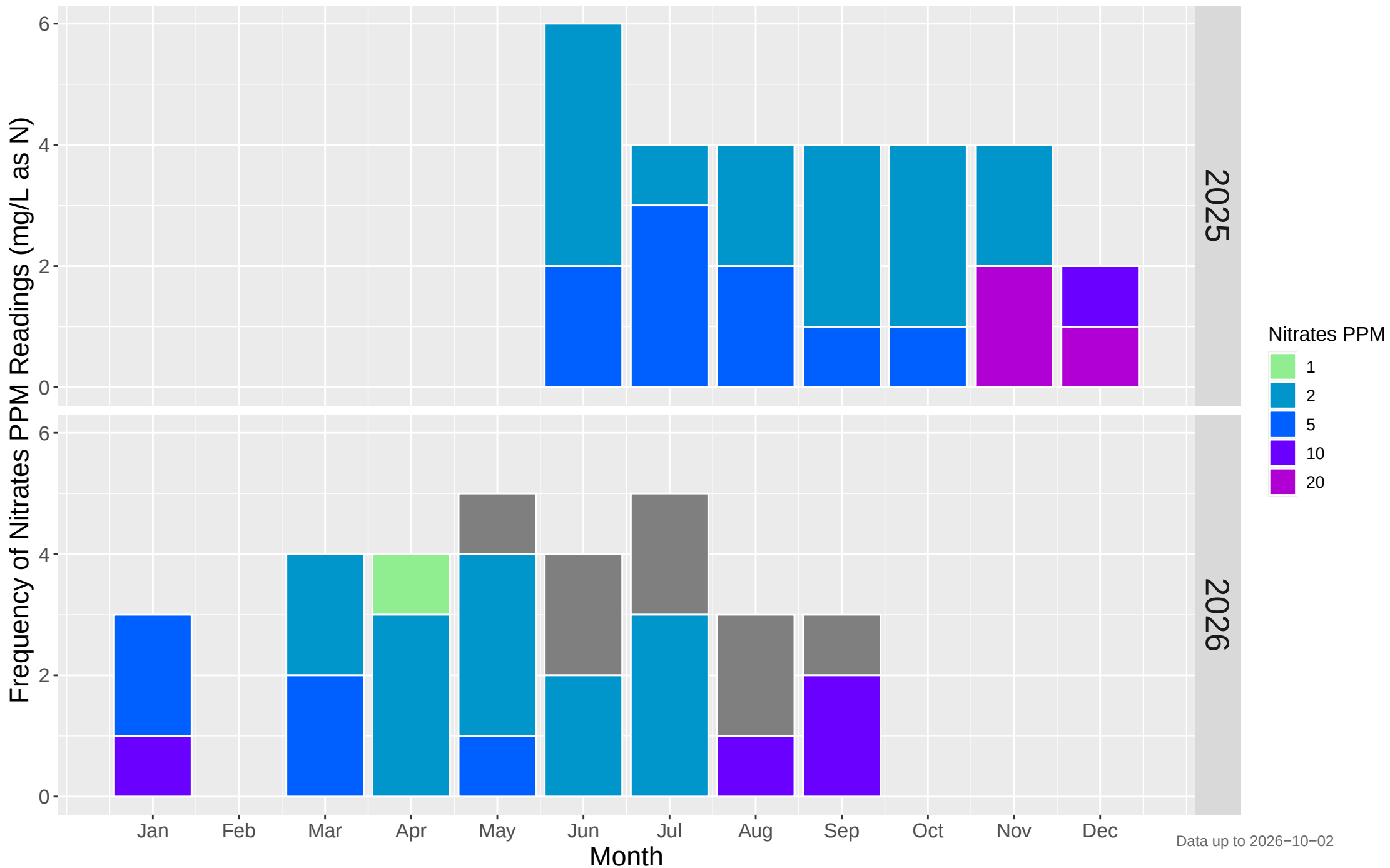
SafeAvon Phosphates – By Month

Swilgate River – Tewkesbury – Tirlbrook TNR Bridge



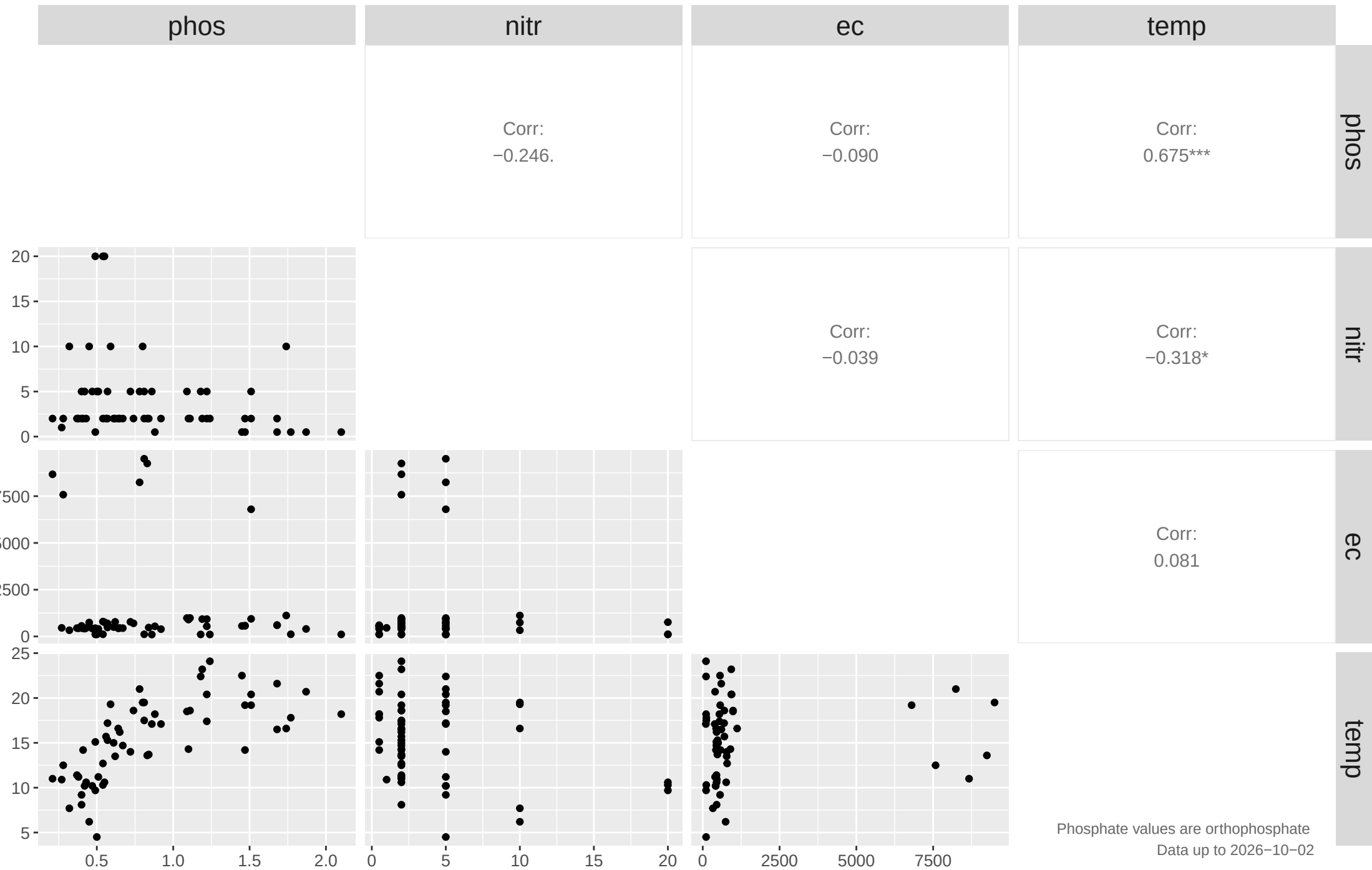
SafeAvon Nitrates By Month

Swilgate River – Tewkesbury – Tirlbrook TNR Bridge



Pairwise Testing Variables Relationships

Swilgate River – Tewkesbury – Tirlbrook TNR Bridge



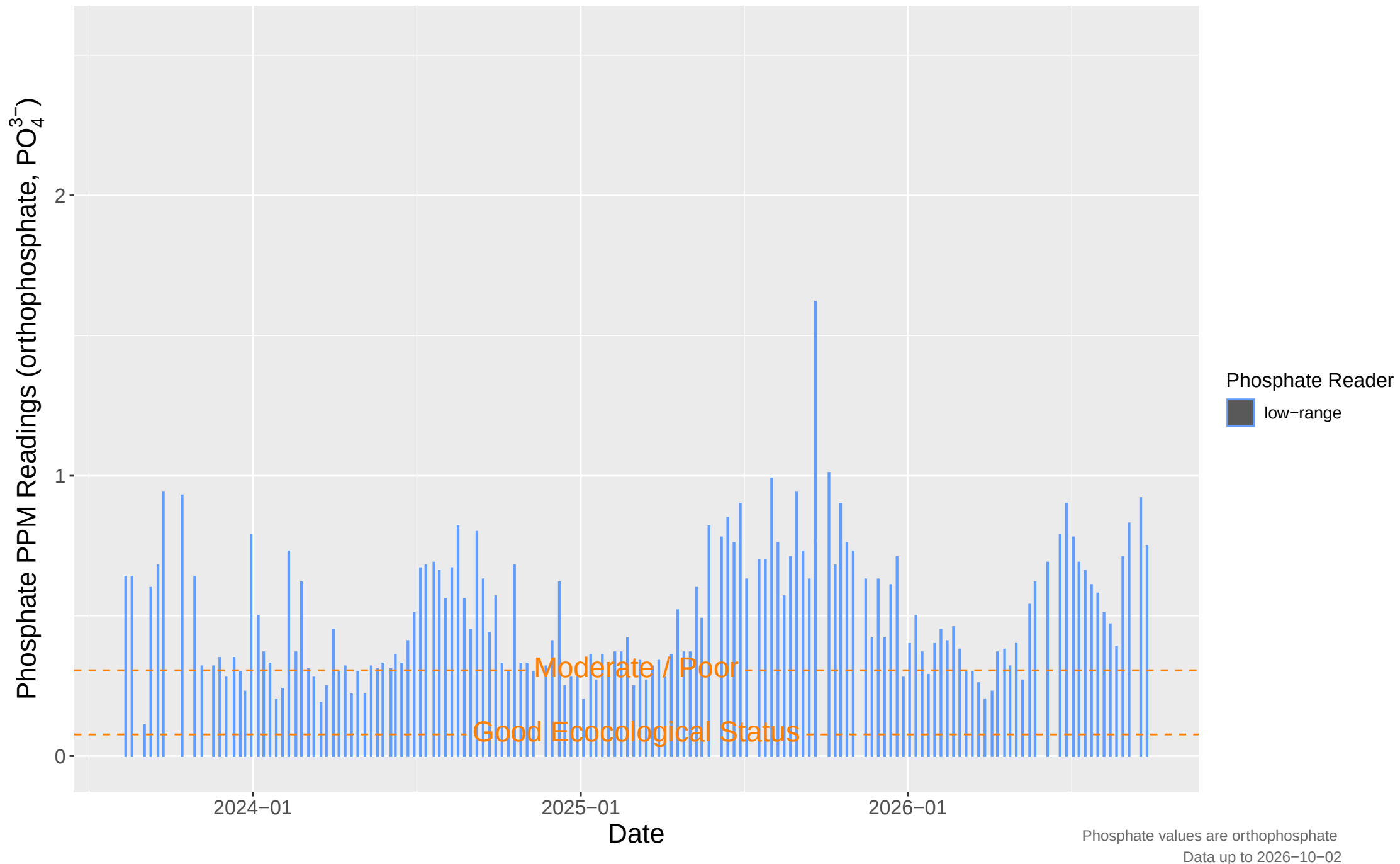
Site: Carrant Brook – Tewkesbury – Bredon Rd

Start Date: 2023-08-12 | Most Recent: 2026-09-25 | Total Samples: 152 | Distinct Volunteers: 2

Season	Count		Phos Min	Phos Med	Phos Max		Nitr Min	Nitr Med	Nitr Max		EC Min	EC Med	EC Max		Temp Min	Temp Med	Temp Max
Summer 23	2		0.64	0.64	0.64		5	5	5		632	658	684		19.4	19.4	19.4
Autumn 23	9		0.11	0.60	0.94		5	5	10		635	661	738		8.5	13.4	21.3
Winter 23-24	13		0.20	0.35	0.79		2	5	5		437	628	802		5.1	9.4	13.4
Spring 24	13		0.19	0.30	0.45		5	5	10		535	736	780		7.8	12.4	16.6
Summer 24	14		0.31	0.56	0.82		5	5	5		414	725	749		14.5	17.0	19.6
Autumn 24	12		0.30	0.37	0.80		5	5	5		468	732	878		9.4	13.3	17.8
Winter 24-25	12		0.20	0.32	0.62		2	5	5		629	748	826		6.3	8.2	10.7
Spring 25	13		0.25	0.36	0.82		2	5	5		712	753	791		7.7	13.1	16.3
Summer 25	12		0.57	0.76	0.99		2	5	5		578	668	733		15.6	18.8	22.1
Autumn 25	12		0.42	0.73	1.01		2	5	10		621	722	909		9.1	13.4	17.8
Winter 25-26	13		0.28	0.41	0.71		5	10	10		466	675	875		4.3	9.0	10.6
Spring 26	12		0.20	0.31	0.62		5	5	10		620	697	724		9.4	12.2	17.8
Summer 26	12		0.39	0.68	0.90		2	5	10		531	656	793		15.6	19.6	23.4
Autumn 26	3		0.75	0.83	0.92		10	10	10		616	680	709		16.1	16.8	17.6

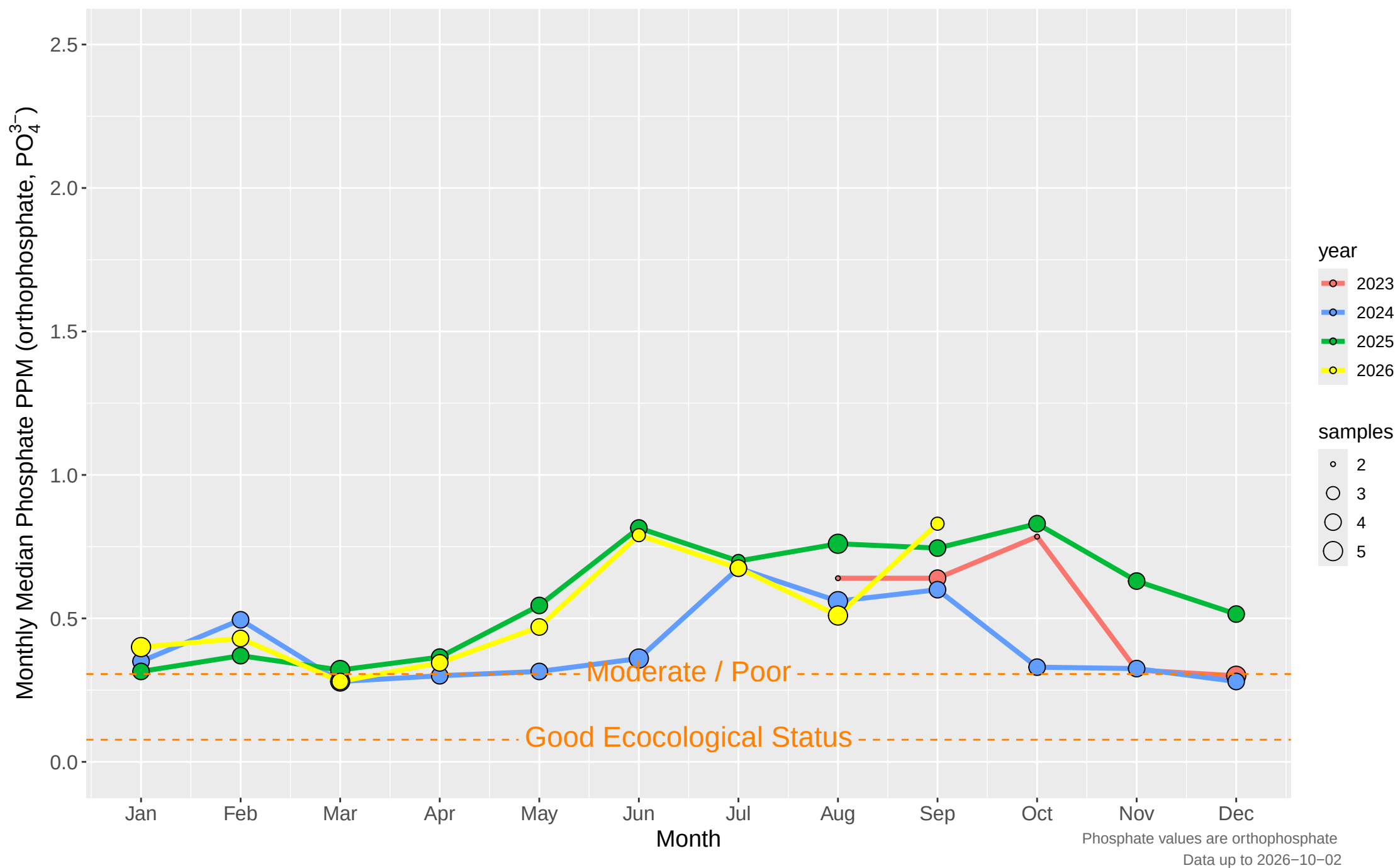
SafeAvon Phosphates – Individual Readings

Carrant Brook – Tewkesbury – Bredon Rd



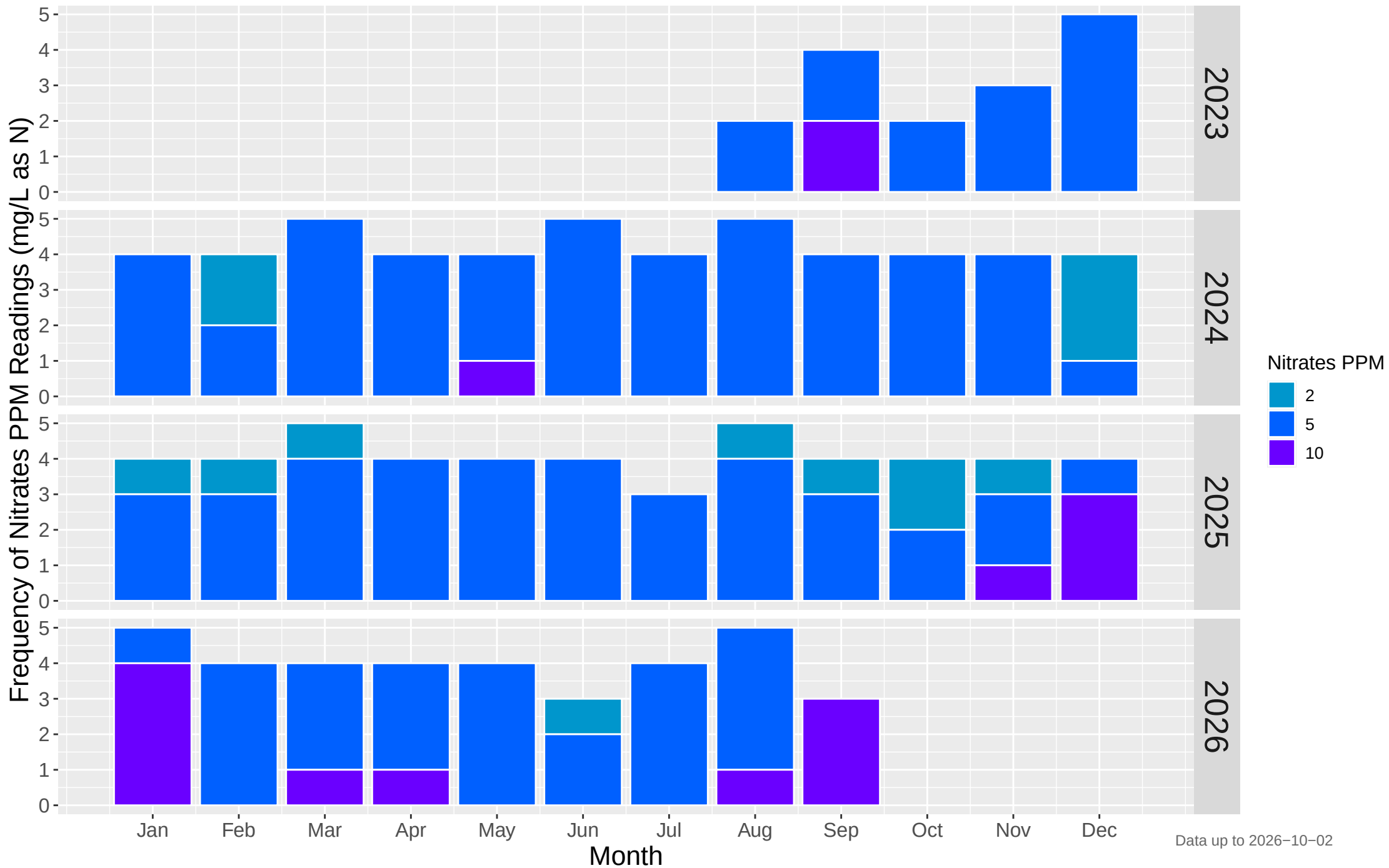
SafeAvon Phosphates – By Month

Carrant Brook – Tewkesbury – Bredon Rd



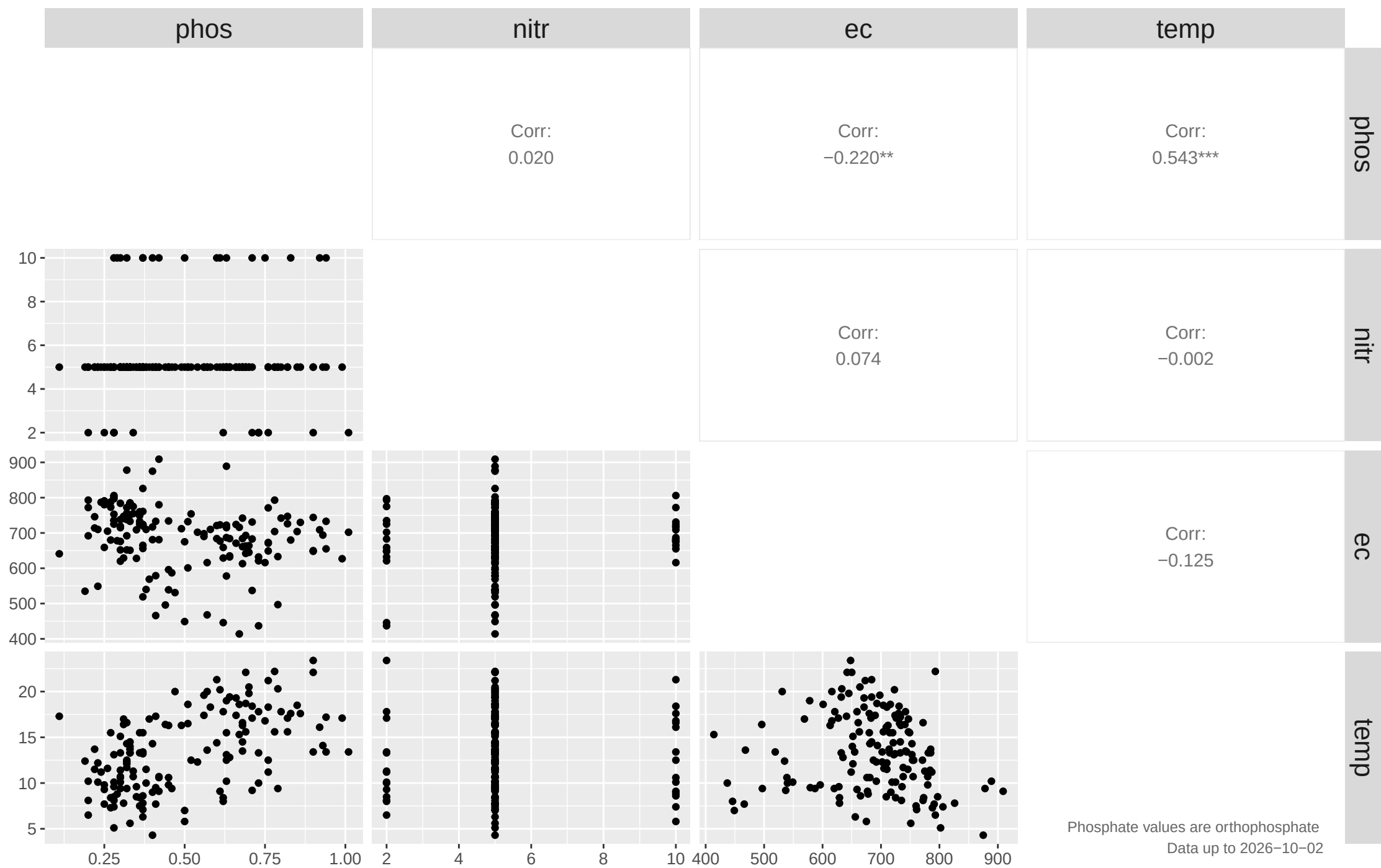
SafeAvon Nitrates By Month

Carrant Brook – Tewkesbury – Bredon Rd



Pairwise Testing Variables Relationships

Carrant Brook – Tewkesbury – Bredon Rd



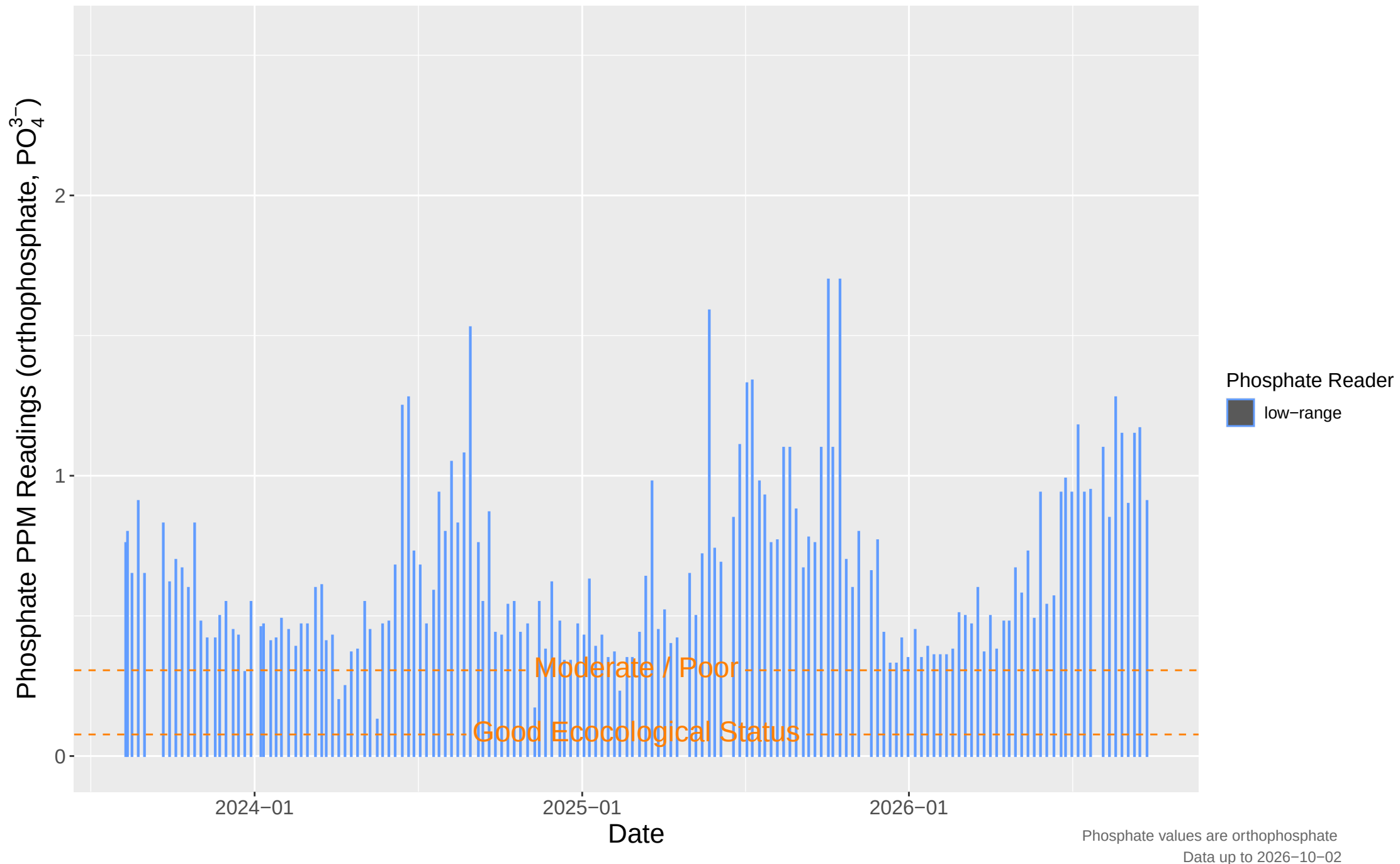
Site: Swilgate River – Tewkesbury – A38

Start Date: 2023-08-10 | Most Recent: 2026-09-24 | Total Samples: 160 | Distinct Volunteers: 1

Season	Count		Phos Min	Phos Med	Phos Max		Nitr Min	Nitr Med	Nitr Max		EC Min	EC Med	EC Max		Temp Min	Temp Med	Temp Max
Summer 23	5		0.65	0.76	0.91		5	10.0	10		806	890	989		15.7	18.5	19.5
Autumn 23	12		0.42	0.60	0.83		2	5.0	10		111	824	1006		7.4	14.6	20.2
Winter 23-24	13		0.30	0.45	0.55		2	2.0	5		105	769	999		2.6	9.5	13.6
Spring 24	13		0.13	0.43	0.61		2	5.0	5		416	831	954		8.8	12.1	16.6
Summer 24	13		0.47	0.83	1.53		5	5.0	5		101	918	1116		14.0	17.2	22.8
Autumn 24	13		0.17	0.54	0.87		2	2.0	5		101	772	1000		7.0	12.5	18.0
Winter 24-25	13		0.23	0.37	0.63		2	2.0	5		101	875	996		4.0	7.2	9.6
Spring 25	12		0.40	0.58	1.59		5	5.0	20		101	113	1210		6.5	10.8	20.6
Summer 25	12		0.69	0.96	1.34		5	10.0	50		107	118	942		15.7	19.5	22.0
Autumn 25	12		0.60	0.78	1.70		2	7.5	20		285	478	615		4.8	12.9	18.0
Winter 25-26	13		0.33	0.36	0.51		0	5.0	10		272	343	488		5.0	8.5	19.1
Spring 26	13		0.37	0.50	0.94		5	10.0	20		389	446	512		7.8	11.5	19.3
Summer 26	12		0.54	0.94	1.28		2	10.0	10		284	576	694		15.7	18.5	22.6
Autumn 26	4		0.90	1.03	1.17		5	10.0	10		473	500	592		14.4	16.0	17.7

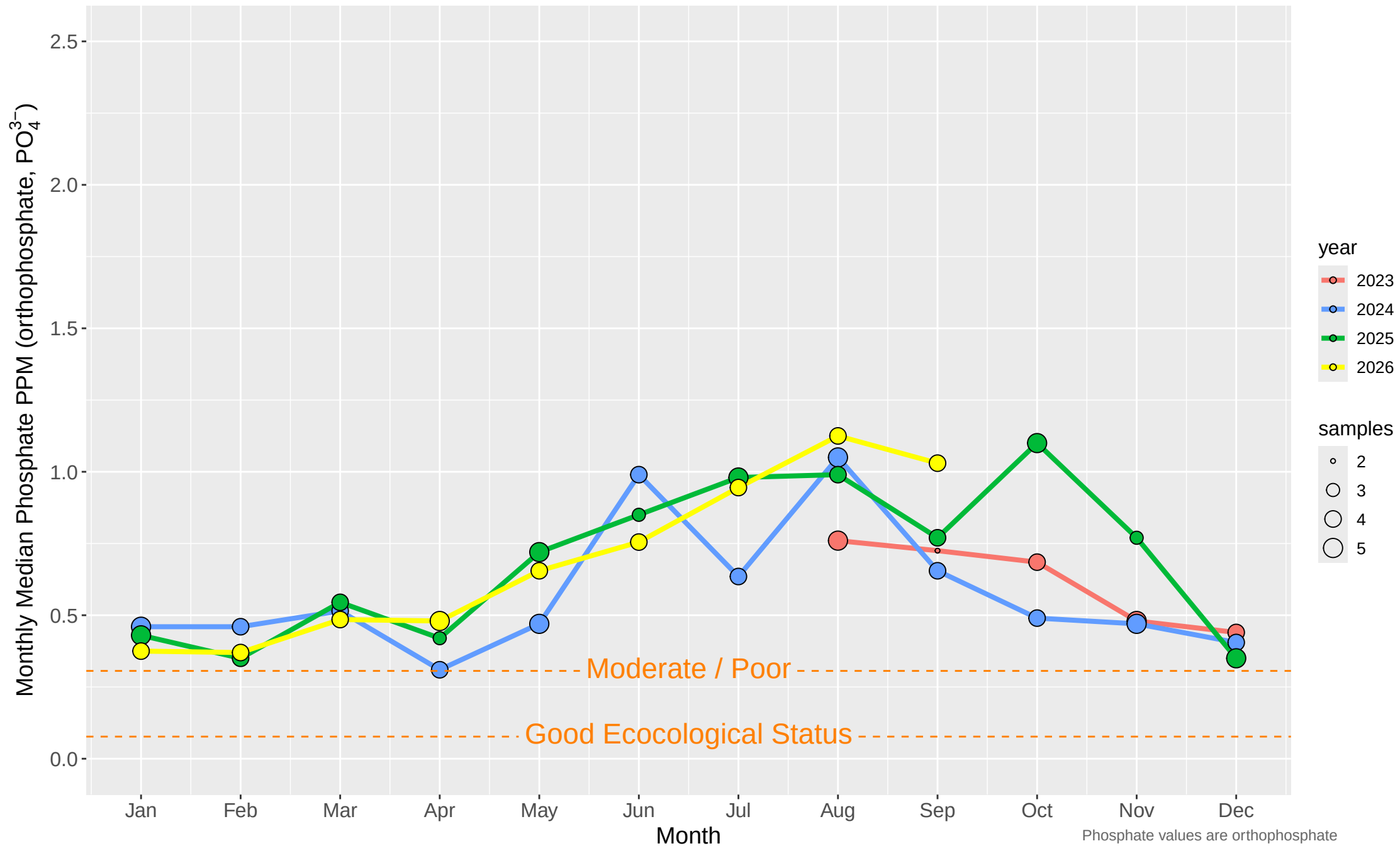
SafeAvon Phosphates – Individual Readings

Swilgate River – Tewkesbury – A38



SafeAvon Phosphates – By Month

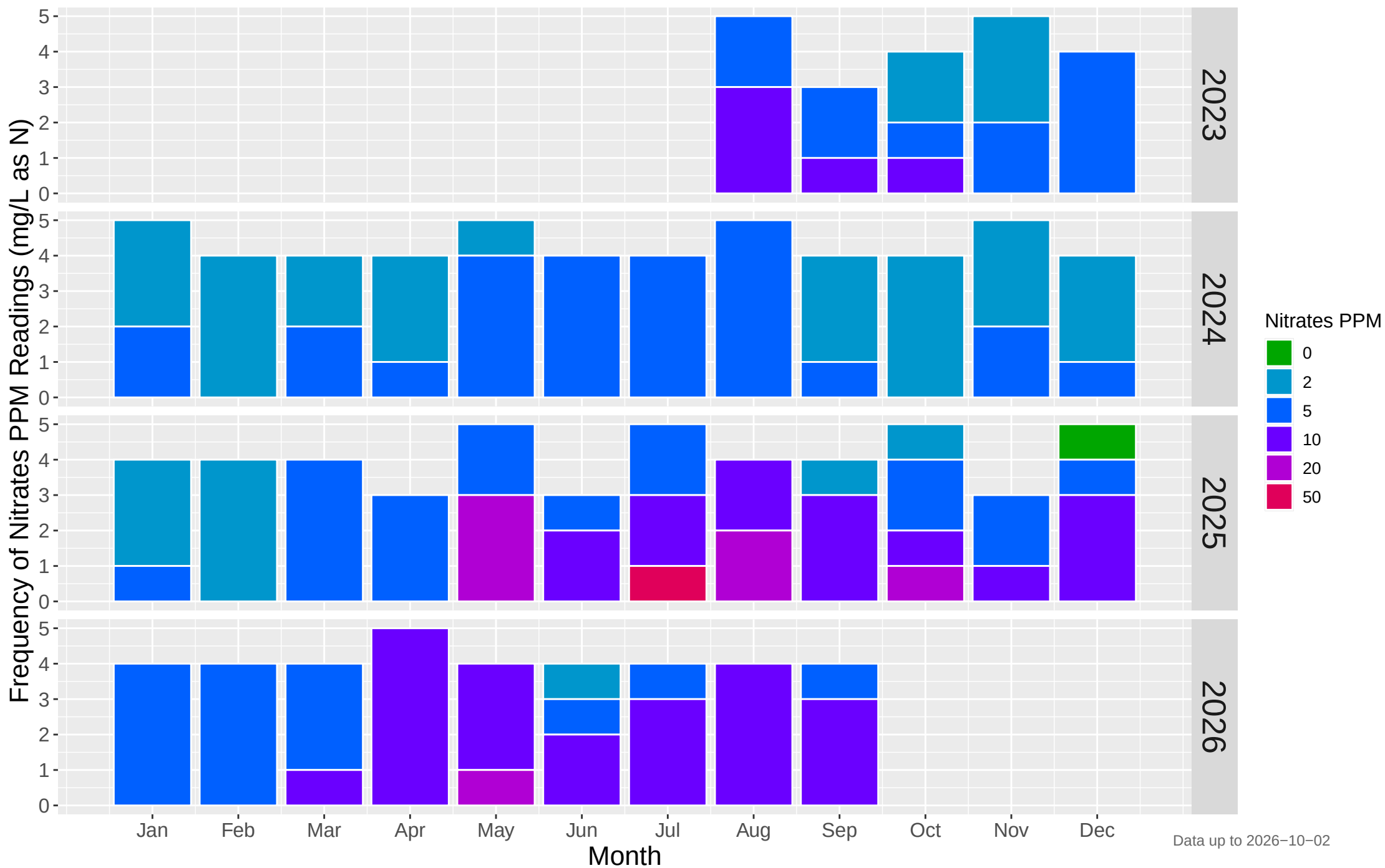
Swilgate River – Tewkesbury – A38



Phosphate values are orthophosphate
Data up to 2026-10-02

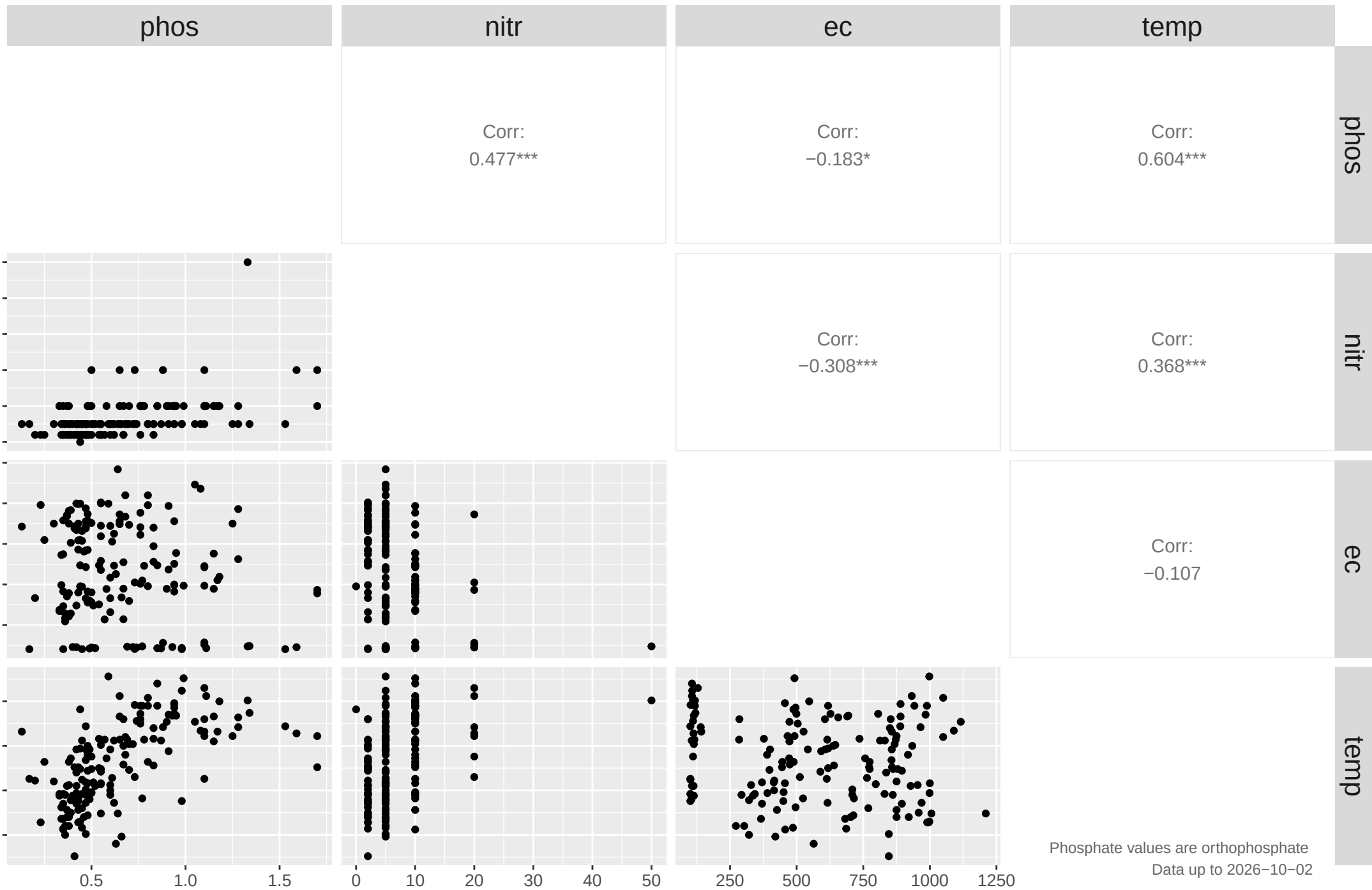
SafeAvon Nitrates By Month

Swilgate River – Tewkesbury – A38



Pairwise Testing Variables Relationships

Swilgate River – Tewkesbury – A38



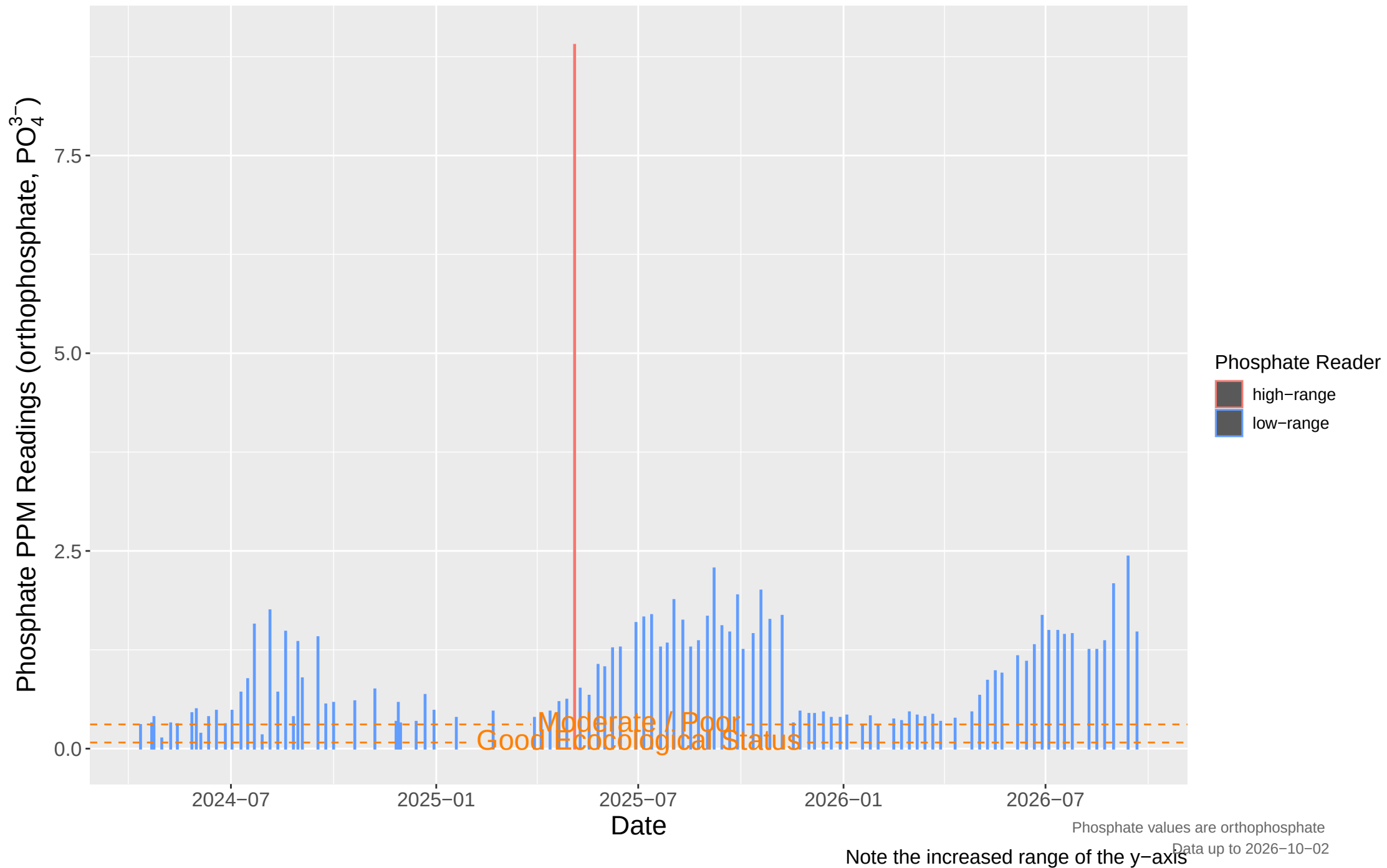
Site: Carrant Brook – Tewkesbury – M5 Bridge

Start Date: 2024-04-11 | Most Recent: 2026-09-21 | Total Samples: 105 | Distinct Volunteers: 4

Season	Count		Phos Min	Phos Med	Phos Max		Nitr Min	Nitr Med	Nitr Max		EC Min	EC Med	EC Max		Temp Min	Temp Med	Temp Max
Spring 24	8		0.13	0.32	0.50		5.0	5.0	10		648	740	783		11.1	14.9	16.2
Summer 24	14		0.17	0.60	1.75		5.0	5.0	10		504	756	857		13.7	17.4	22.8
Autumn 24	9		0.32	0.58	1.41		2.0	5.0	10		440	627	1200		8.5	13.8	19.5
Winter 24-25	5		0.34	0.47	0.68		2.0	2.0	5		693	713	748		6.4	9.3	11.1
Spring 25	9		0.39	0.62	8.90		5.0	5.0	10		740	774	782		11.4	13.4	15.3
Summer 25	12		1.03	1.35	1.88		2.0	5.0	10		774	822	8020		15.0	18.4	21.7
Autumn 25	12		0.32	1.59	2.28		2.0	5.0	5		440	824	950		8.7	13.1	17.1
Winter 25-26	11		0.29	0.39	0.46		5.0	10.0	20		560	676	855		4.1	8.5	10.7
Spring 26	11		0.34	0.46	0.98		5.0	5.0	10		296	739	775		8.4	11.3	19.3
Summer 26	12		1.10	1.40	2.08		0.0	2.0	5		741	885	966		15.4	18.8	22.1
Autumn 26	2		1.47	1.95	2.43		0.5	1.2	2		916	920	924		15.2	16.3	17.4

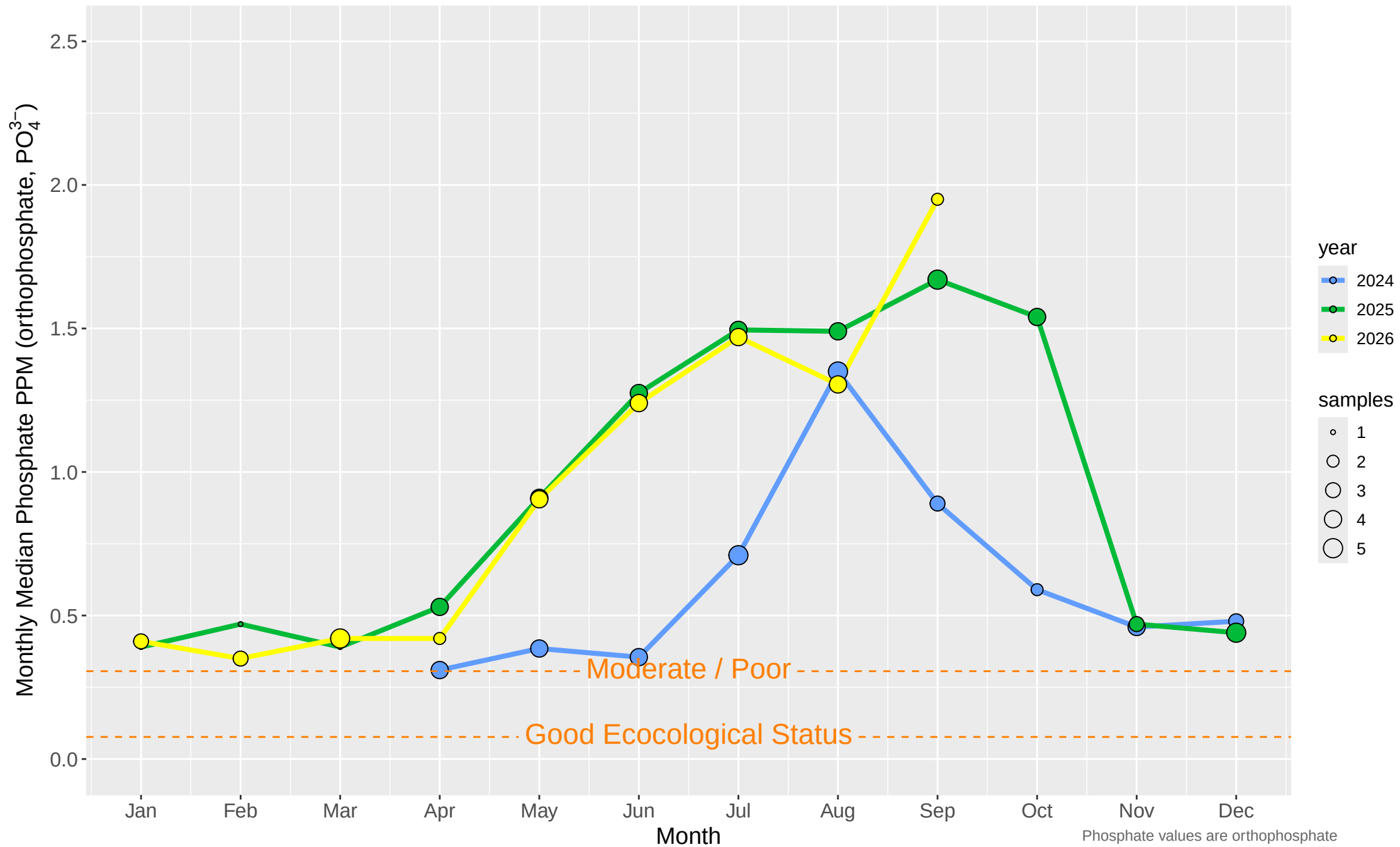
SafeAvon Phosphates – Individual Readings

Carrant Brook – Tewkesbury – M5 Bridge



SafeAvon Phosphates – By Month

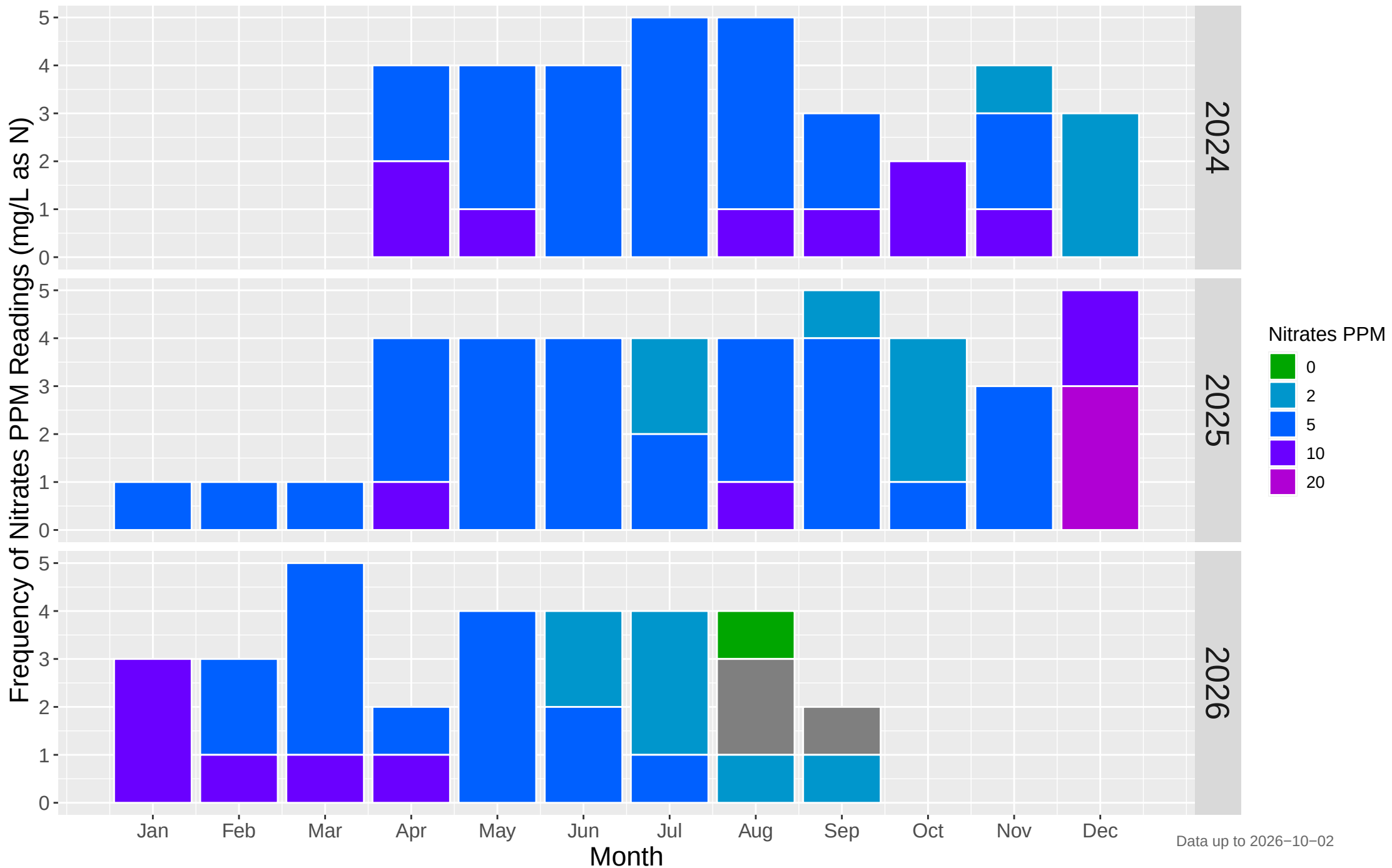
Carrant Brook – Tewkesbury – M5 Bridge



Phosphate values are orthophosphate
Data up to 2026-10-02
Note the increased range of the y-axis

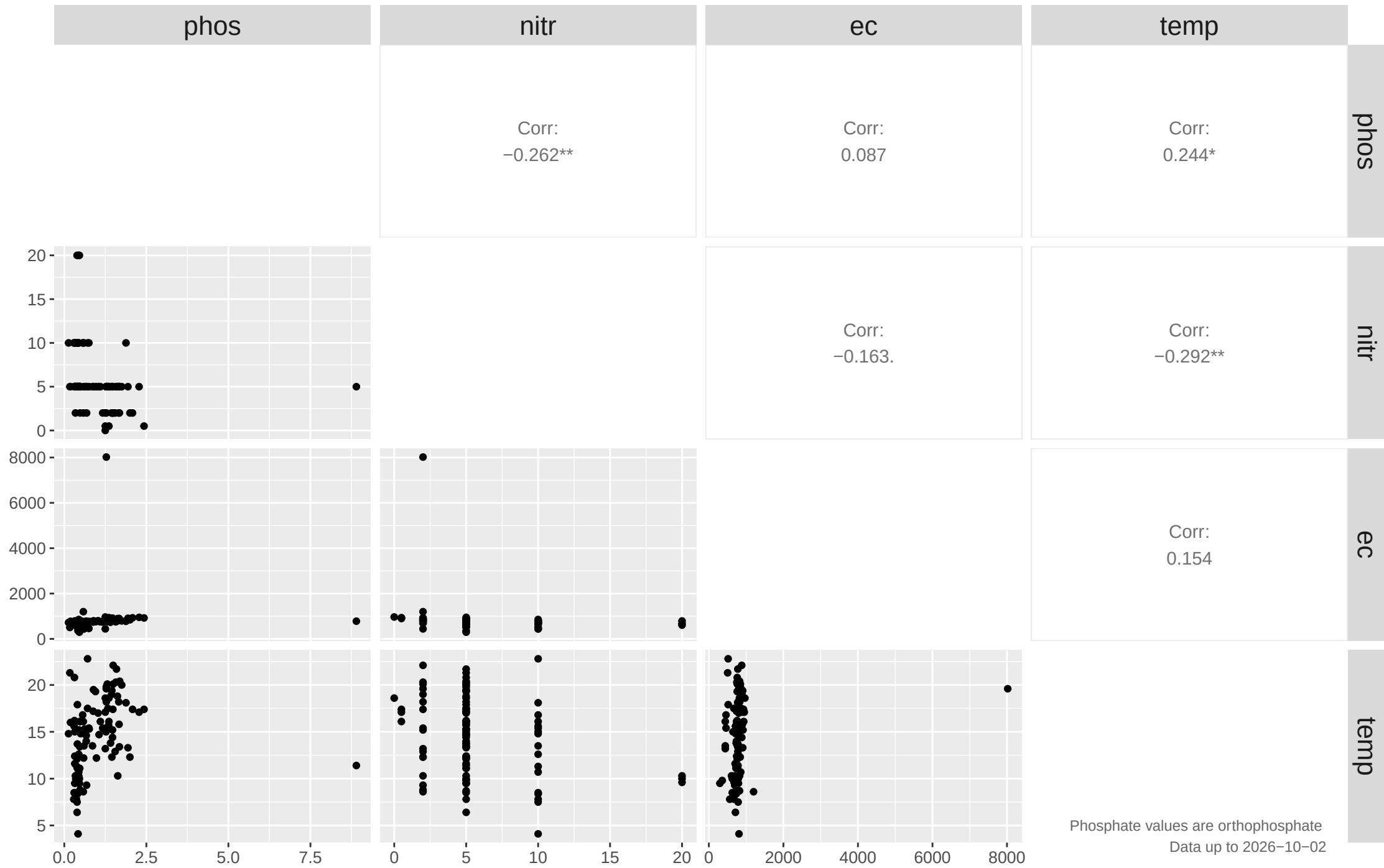
SafeAvon Nitrates By Month

Carrant Brook – Tewkesbury – M5 Bridge



Pairwise Testing Variables Relationships

Carrant Brook – Tewkesbury – M5 Bridge



Report Glossary & Interpretation Guide

Understanding the Charts

Pairwise Correlation Matrices

- . Valuation Scale (–1 to +1): Quantifies correlation between variables.
- (+1) Perfect Positive Correlation: Variables track each other; if one scales up, the other increases.
- (0) No Correlation: Variable movements appear independent.
- (–1) Perfect Negative Correlation: Variables track inversely; when one scales up, the other drops.
- . Practical Application: If a pair of variables have a correlation approaching 1, it demonstrates that typically on any given sample, these values are likely to be strongly correlated. This indicates they may share similar sources and/or similar ways of exiting out into the watercourse.

Ecological Threshold Frameworks

Phosphate Status (Orthophosphate, PO₄^{3–})

- Monitored using Hanna pocket checker:
- . High Status: $x < 0.077$ PPM
 - . Good Ecological Status: $0.077 \leq x \leq 0.306$ PPM
 - . Moderate / Poor Ecological Status: $x > 0.306$ PPM

Nitrate Levels (Nitrate-as-N)

- Monitored using WaterWorks/Hach Nitrate kit:
- . Natural Levels: $x < 1.0$ PPM
 - . Elevated Levels: $1.0 \leq x < 5.0$ PPM
 - . Excessive Levels: $x \geq 5.0$ PPM

Data Access

Data pulled from EpiCollect API.
Full dataset accessible via SafeAvon website
which has links to EpiCollect and the Google Sheet.
URL: https://safeavon.org.uk/?page_id=151