



Salmon & Trout Conservation
Riverfly Census

CONCLUSIONS : Data Pack



HAMPSHIRE AVON

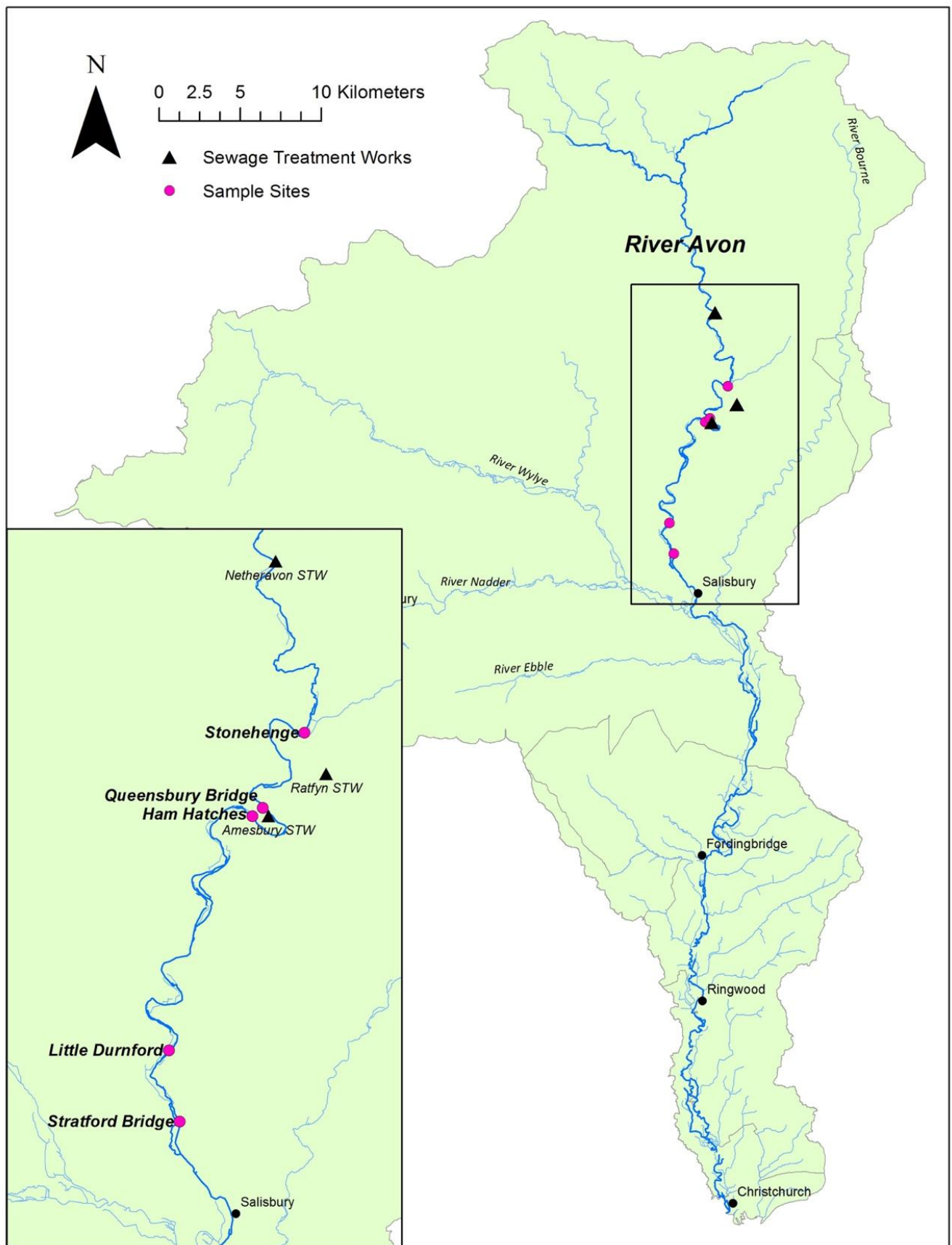


Figure 1: Map of Hampshire Avon catchment showing area evaluated in this report with S&TC sample sites and significant sewage treatment works

Caddisflies	2015	2016	2017	2018
<i>Silo nigricornis</i>	1	0	0	
<i>Cheumatopsyche lepida</i>	0	25	5	
<i>Athripsodes bilineatus</i>	0	2	0	
<i>Athripsodes cinereus</i>	0	1	0	
<i>Mystacides nigra</i>	0	0	1	
<i>Mystacides azurea</i>	5	0	1	
<i>Sericostoma personatum</i>	34	26	29	
<i>Limnephilus lunatus</i>	0	1	5	
<i>Lepidostoma hirtum</i>	6	12	2	
<i>Hydroptila</i>	3	0	17	
<i>Agapetus fuscipes</i>	7	0	1	
<i>Drusus annulatus</i>	6	4	3	
<i>Chaetopteryx villosa</i>	2	1	0	
<i>Potamophylax latipennis</i>	0	1	0	
<i>Potamophylax cingulatus</i>	0	2	0	
<i>Anabolia nervosa</i>	26	0	1	
<i>Hydropsyche</i>	15	0	0	
<i>Hydropsyche siltalai</i>	26	22	5	
<i>Rhyacophila dorsalis</i>	17	8	2	
<i>Hydropsyche pellucidula</i>	0	10	16	

Damselfly	2015	2016	2017	2018
<i>Calopteryx virgo</i>	0	2	0	
<i>Calopteryx splendens</i>	1	0	1	

Beetles & Bugs	2015	2016	2017	2018
<i>Elmis aenea</i>	268	16	56	
<i>Limnius volckmari</i>	96	11	61	
<i>Riolus subviolaceus</i>	1	0	8	
<i>Nebrioporus elegans</i>	0	1	0	
<i>Aphelocheirus aestivalis</i>	5	0	0	
<i>Orectochilus villosus</i>	1	0	2	
<i>Dytiscidae</i>	0	0	0	
<i>Hydracarina</i>	0	0	1	
<i>Sialis lutaria</i>	1	0	0	

Crustaceans	2015	2016	2017	2018
<i>Gammarus pulex</i>	1931	338	535	
<i>Asellus aquaticus</i>	4	3	1	

Leeches	2015	2016	2017	2018
<i>Glossiphonia complanata</i>	0	0	3	
<i>Helobdella stagnalis</i>	0	0	6	
<i>Theromyzon tessulatum</i>	1	0	0	
<i>Erpobdella octoculata</i>	4	2	0	

Mayflies	2015	2016	2017	2018
<i>Ephemera danica</i>	29	22	16	
<i>Baetis</i>	847	0	4	
<i>Baetis rhodani</i>	0	6	0	
<i>Caenis rivulorum</i>	5	0	0	
<i>Caenis luctuosa</i>	4	0	0	
<i>Caenis horaria</i>	2	0	0	
<i>Serratella ignita</i>	284	49	2	
<i>Ecdyonurus dispar</i>	8	0	0	
<i>Heptagenia sulphurea</i>	42	2	0	

Stoneflies	2015	2016	2017	2018
<i>Leuctra fusca</i>	2	0	0	

Molluscs	2015	2016	2017	2018
<i>Theodoxus fluviatilis</i>	5	12	2	
<i>Bithynia tentaculata</i>	9	5	5	
<i>Lymanea peregrina</i>	0	6	5	
<i>Anisus vortex</i>	2	2	3	
<i>Sphaeriidae</i>	0	4	0	
<i>Pisidium</i>	43	0	0	
<i>Ancylus fluviatilis</i>	7	0	0	

True Flies	2015	2016	2017	2018
<i>Simulium ornatum</i>	245	67	1	
<i>Chironomidae</i>	37	16	8	
<i>Tanytarsini</i>	0	8	2	
<i>Tanytarsinae</i>	0	4	0	
<i>Dicranota</i>	3	0	0	
<i>Antocha</i>	0	0	6	
<i>Tabanidae</i>	1	0	0	
<i>Oxycera pygmaea</i>	0	1	0	

Worms	2015	2016	2017	2018
<i>Oligochaeta</i>	1	0	0	



River Avon - Beat 3
Spring 2015 - 2018

	2015	2016	2017	2018	RICT
BMWP	197	145	136		135.42
ASPT	6.16	6.04	5.91		5.50
WHPT	212	146	152		152.21
ASPT	6.42	5.83	6.09		5.55
Number of Taxa	32	24	23		27.27
Riverfly - species	20	18	16		
Riverfly - numbers	1379	196	110		
CCI	14.44	13.77	8.75		
LIFE	7.97	7.94	7.60		7.15
PSI	66.67	67.8	58.49	.....	52.56
SPEAR	55.28	38.34	38.35	.....	
TRPI	4	73.08	68.42	71.43	.....
Saprobic	1.98	1.94	1.86		

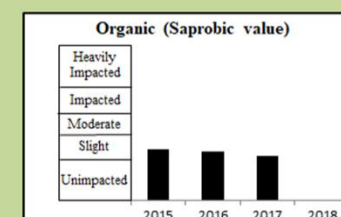
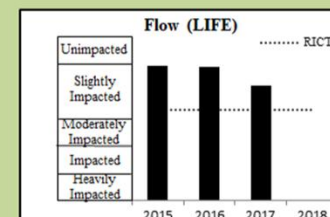
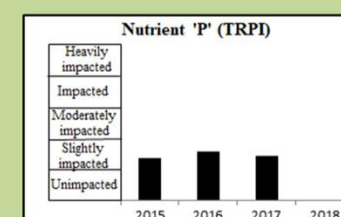
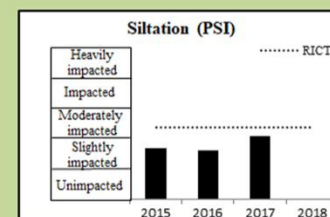
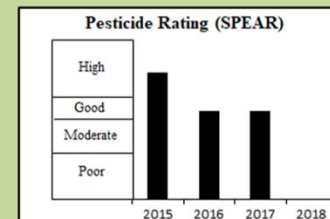


Figure 2: Spring Invertebrate Benchmark data for Stratford Bridge

Caddisflies	2015	2016	2017	2018
<i>Silo nigricornis</i>	8	4	0	
<i>Goera pilosa</i>	2	0	0	
<i>Cheumatopsyche lepida</i>	0	73	1	
<i>Athripsodes cinereus</i>	0	5	0	
<i>Mystacides nigra</i>	0	7	0	
<i>Mystacides azurea</i>	0	28	0	
<i>Sericostoma personatum</i>	16	8	3	
<i>Limnephilus lunatus</i>	0	1	0	
<i>Lepidostoma hirtum</i>	1	0	0	
<i>Hydroptila</i>	2	0	0	
<i>Ithytrichia lamellaris</i>	0	16	0	
<i>Drusus amulatus</i>	1	0	0	
<i>Hydropsyche</i>	45	0	0	
<i>Hydropsyche siltalai</i>	2	0	0	
<i>Rhyacophila dorsalis</i>	2	4	0	
<i>Hydropsyche pellucidula</i>	0	49	13	
<i>Polycentropus flavomaculatus</i>	12	5	0	

Damselfly	2015	2016	2017	2018
<i>Calopteryx</i>	3	0	4	

Beetles & Bugs	2015	2016	2017	2018
<i>Elmis aenea</i>	550	118	35	
<i>Limnius volckmari</i>	186	45	46	
<i>Riolus subviolaceus</i>	2	13	0	
<i>Brychius elevatus</i>	0	0	2	
<i>Aphelocheirus aestivalis</i>	1	4	0	
<i>Orectochilus villosus</i>	0	6	1	
Dytiscidae	6	2	1	

Crustaceans	2015	2016	2017	2018
<i>Gammarus pulex</i>	1334	210	183	
<i>Asellus aquaticus</i>	3	11	0	

Leeches	2015	2016	2017	2018
<i>Glossiphonia complanata</i>	1	3	1	
<i>Piscicola geometra</i>	1	0	0	
<i>Theromyzon tessulatum</i>	1	0	1	
<i>Erythronecta tetralix</i>	0	0	1	

Mayflies	2015	2016	2017	2018
<i>Ephemera danica</i>	1	5	0	
<i>Baetis</i>	565	0	39	
<i>Baetis scambus</i>	28	0	0	
<i>Baetis rhodani</i>	0	37	0	
<i>Centroptilum luteolum</i>	0	3	0	
<i>Serratella ignita</i>	5	0	0	
<i>Paraleptophlebia submarginata</i>	0	2	0	
<i>Heptagenia sulphurea</i>	3	0	0	

Stoneflies	2015	2016	2017	2018
<i>Leuctra fusca</i>	7	0	1	

Molluscs	2015	2016	2017	2018
<i>Theodoxus fluviatilis</i>	6	12	10	
<i>Bithynia tentaculata</i>	2	5	1	
<i>Lymnaea peregra</i>	0	4	1	
<i>Lymnaea palustris</i>	0	0	1	
<i>Valvata piscinalis</i>	0	3	0	
<i>Gyraulus albus</i>	0	0	14	
<i>Anisus vortex</i>	4	18	11	
<i>Sphaeriidae</i>	39	46	7	
<i>Potamopyrgus antipodarium</i>	0	0	2	
<i>Physa fontinalis</i>	1	4	0	

True Flies	2015	2016	2017	2018
<i>Simulium ornatum</i>	9	45	76	
Chironomidae	35	108	7	
<i>Tanytarsini</i>	0	15	0	
<i>Dicranota</i>	24	12	0	
<i>Antocha</i>	0	5	0	

Worms	2015	2016	2017	2018
Oligochaeta	0	0	0	



River Avon - Beat 3
Autumn 2015 - 2018

	2015	2016	2017	2018	RICT
BMWP	180	159	97		137.57
ASPT	6.21	5.68	4.85		5.36
WHPT	182	162	108		152.65
ASPT	6.26	5.78	5.12		5.41
Number of Taxa	29	28	20		28.09
Riverfly - species	16	15	5		
Riverfly - numbers	700	247	57		
CCI	14.78	15.93	5.17		
LIFE	8.03	7.66	7.24		7.06
PSI	71.21	54.69	44.68		49.17
SPEAR	46.24	28.16	17.14		
TRPI	4	75.00	81.82		
Saprobic	1.98	1.93	1.88		

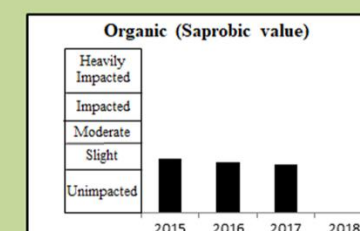
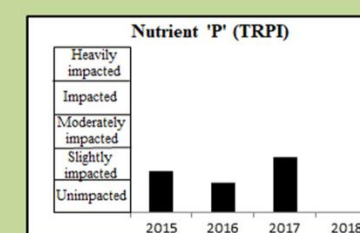
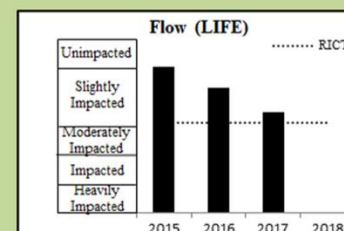
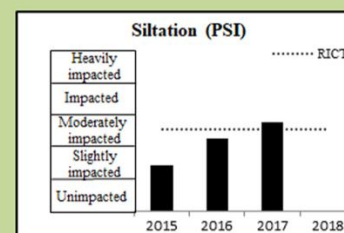
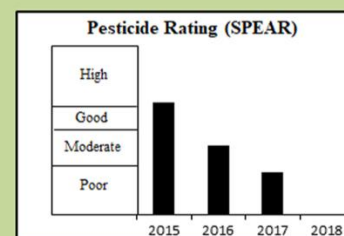


Figure 3: Autumn Invertebrate Benchmark data for Stratford Bridge

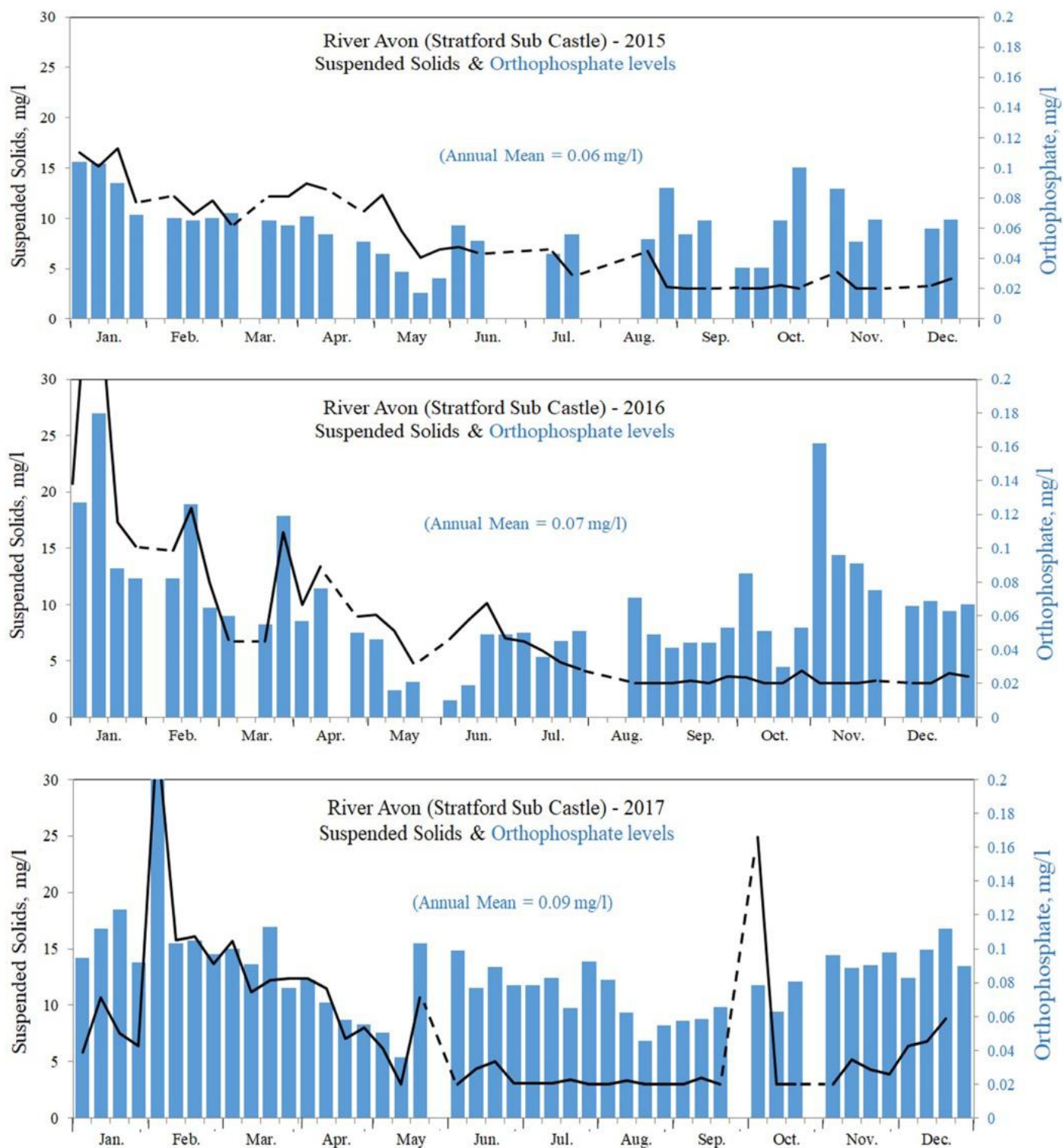


Figure 4: River Avon at Stratford Sub Castle – Suspended Solids & Phosphate Levels

Caddisflies	2015	2016	2017	2018
<i>Silo nigricornis</i>	9	0	2	
<i>Lepidostoma hirtum</i>	26	51	8	
<i>Cheumatopsyche lepida</i>	0	0	28	
<i>Athripsodes cinereus</i>	0	5	8	
<i>Athripsodes bilineatus</i>	0	13	0	
<i>Mystacides azurea</i>	1	2	0	
<i>Sericostoma personatum</i>	32	36	24	
<i>Agapetus fuscipes</i>	5	0	34	
<i>Halesus digitatus</i>	0	13	0	
<i>Anabolia nervosa</i>	0	0	4	
<i>Hydroptila</i>	4	6	28	
<i>Limnephilus</i>	1	0	0	
<i>Limnephilus lunatus</i>	0	3	0	
<i>Drusus annulatus</i>	1	5	4	
<i>Potamophylax latipennis</i>	0	1	0	
<i>Chaetopteryx villosa</i>	7	5	0	
<i>Hydropsyche</i>	54	0	0	
<i>Hydropsyche siltalai</i>	146	162	0	
<i>Rhyacophila dorsalis</i>	1	7	6	
<i>Hydropsyche pellucidula</i>	0	42	30	

Damselfly	2015	2016	2017	2018
<i>Calopteryx splendens</i>	2	0	2	
<i>Calopteryx virgo</i>	0	3	0	

Beetles & Bugs	2015	2016	2017	2018
<i>Elmis aenea</i>	197	175	154	
<i>Limnius volckari</i>	64	43	164	
<i>Riolus subviolaceus</i>	0	0	8	
<i>Orectochilus villosus</i>	1	1	8	

Crustaceans	2015	2016	2017	2018
<i>Gammarus pulex</i>	2214	2854	1434	
<i>Asellus aquaticus</i>	1	2	0	

Leeches & Flatworms	2015	2016	2017	2018
<i>Eupobdella octoculata</i>	0	0	4	
<i>Glossiphonia complanata</i>	0	1	0	

Mayflies	2015	2016	2017	2018
<i>Ephemera danica</i>	68	48	34	
<i>Baetis</i>	416	0	16	
<i>Baetis rhodani</i>	0	311	0	
<i>Baetis scambus</i>	0	76	0	
<i>Serratella ignita</i>	84	195	0	
<i>Heptagenia sulphurea</i>	79	19	4	
<i>Ecdyonurus dispar</i>	23	0	0	
<i>Paraleptophlebia submarginata</i>	0	0	2	
<i>Caenis rivulorum</i>	8	10	2	
<i>Caenis luctuosa</i>	1	0	2	

Stoneflies	2015	2016	2017	2018
<i>Leuctra fusca</i>	7	0	0	
<i>Leuctra geniculata</i>	0	3	0	

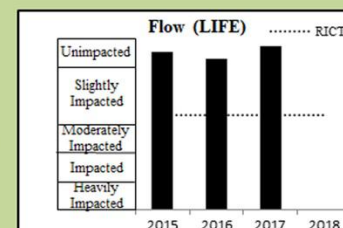
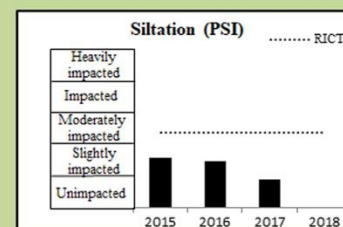
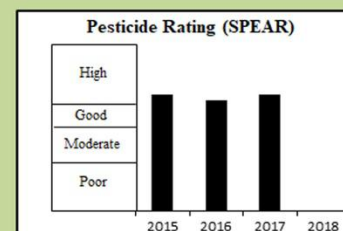
Molluscs	2015	2016	2017	2018
<i>Theodoxus fluviatilis</i>	33	0	0	
<i>Bithynia tentaculata</i>	8	11	0	
<i>Lymnaea peregra</i>	3	33	0	
<i>Planorbis</i>	1	1	0	
<i>Pisidium</i>	41	22	0	
<i>Ancylus fluviatilis</i>	1	2	4	
<i>Potamopyrgus antipodarium</i>	0	0	4	

True Flies	2015	2016	2017	2018
<i>Chironomidae</i>	6	15	0	
<i>Tanytarsini</i>	0	3	0	
<i>Dicranota</i>	2	5	0	
<i>Simulium ornatum</i>	565	691	14	
<i>Antocha</i>	0	0	16	
<i>Sigara</i>	0	0	4	

Worms	2015	2016	2017	2018
<i>Oligochaeta</i>	2	0	0	



River Avon - Little Durnford
Spring 2015 - 2018



	2015	2016	2017	2018	RICT
BMWP	180	166	157		135.42
ASPT	6.21	6.15	6.83		5.50
WHPT	194.3	171	165		152.21
ASPT	6.48	6.34	6.88		5.55
Number of Taxa	29	27	23		27.27
Riverfly - species	20	20	16		
Riverfly - numbers	973	1000	234		
CCI	13.46	14	15.75		
LIFE	8.27	8.15	8.37		7.15
PSI	68.42	70.51	82.00	.....	52.56
SPEAR	48.58	46.14	48.53		
TRPI	4	73.08	67.86	73.33	.....
Saprobic	2	2.02	1.83		

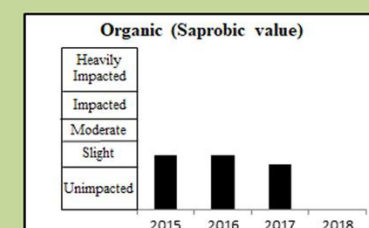
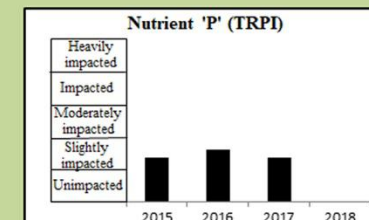


Figure 5: Spring Invertebrate Benchmark data for Little Durnford

Caddisflies	2015	2016	2017	2018
<i>Silo nigricornis</i>	15	16	0	
<i>Goera pilosa</i>	2	0	0	
<i>Cheumatopsyche lepidia</i>	0	32	38	
<i>Athripsodes cinereus</i>	1	0	2	
<i>Mystacides longicornis</i>	0	1	0	
<i>Mystacides azurea</i>	0	0	2	
<i>Sericostoma personatum</i>	53	29	2	
<i>Agapetus fuscipes</i>	4	77	20	
<i>Halesus digitatus</i>	1	0	0	
<i>Hydroptila</i>	4	0	8	
<i>Drusus annulatus</i>	3	0	0	
<i>Hydropsyche</i>	56	0	0	
<i>Hydropsyche siltalai</i>	1	56	102	
<i>Rhyacophila dorsalis</i>	9	3	6	
<i>Hydropsyche pellucidula</i>	53	28	30	
<i>Polycentropus flavomaculatus</i>	16	10	14	

Damselfly	2015	2016	2017	2018
<i>Calopteryx virgo</i>	1	0	0	
<i>Calopteryx splendens</i>	0	0	1	

Beetles & Bugs	2015	2016	2017	2018
<i>Elmis aenea</i>	556	48	36	
<i>Limnius volckmari</i>	108	31	42	
<i>Riolus subviolaceus</i>	6	9	6	
<i>Oulimnius</i>	0	0	16	
<i>Halipus</i>	6	0	0	
<i>Orectochilus villosus</i>	1	11	4	
<i>Dytiscidae</i>	7	0	0	
<i>Corixa</i>	1	0	0	

Crustaceans	2015	2016	2017	2018
<i>Gammarus pulex</i>	3570	594	508	
<i>Asellus aquaticus</i>	3	14	4	

Leeches & Flatworms	2015	2016	2017	2018
<i>Erpobdella octoculata</i>		1		
<i>Polycelis felina</i>		3		

Mayflies	2015	2016	2017	2018
<i>Ephemera danica</i>	7	5	6	
<i>Baetis</i>	135	0	64	
<i>Baetis rhodani</i>	2	85	0	
<i>Baetis fuscatus</i>	58	0	0	
<i>Baetis muticus</i>	0	13	0	
<i>Serratella ignita</i>	15	0	0	
<i>Heptagenia sulphurea</i>	2	13	0	

Stoneflies	2015	2016	2017	2018
<i>Leuctra fusca</i>	23	0	2	
<i>Leuctra geniculata</i>	7	7	0	

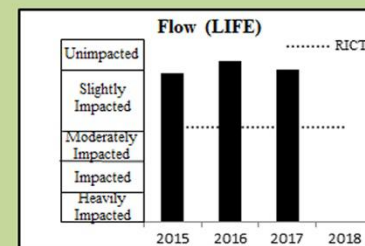
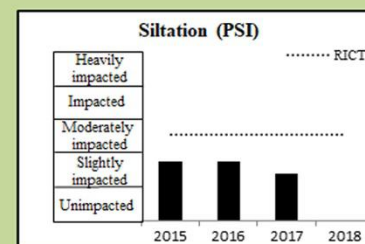
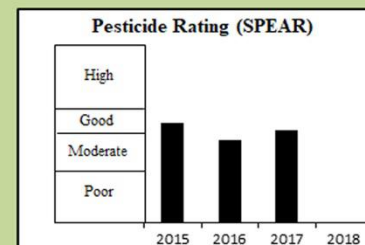
Molluscs	2015	2016	2017	2018
<i>Theodoxus fluviatilis</i>	21	18	0	
<i>Bithynia tentaculata</i>	22	6	0	
<i>Lymnaea peregra</i>	7	10	4	
<i>Valvata piscinalis</i>	2	0	0	
<i>Anisus vortex</i>	26	8	12	
<i>Sphaeriidae</i>	0	13	0	
<i>Pisidium</i>	23	0	0	
<i>Potamopyrgus antipodarum</i>	11	17	6	
<i>Physa fontinalis</i>	11	0	0	
<i>Ancylus fluviatilis</i>	0	7	2	

True Flies	2015	2016	2017	2018
<i>Simulium ornatum</i>	0	0	6	
<i>Chironomidae</i>	40	0	16	
<i>Limnophora</i>	0	0	2	
<i>Dicranota</i>	5	1	0	
<i>Tipula</i>	2	0	0	

Worms	2015	2016	2017	2018
<i>Oligochaeta</i>	0	4	0	



River Avon - Little Durnford
Autumn 2015 - 2018



	2015	2016	2017	2018	RICT
BMWP	179	140	118		137.57
ASPT	5.97	5.83	5.90		5.36
WHPT	190	160	135		152.65
ASPT	5.94	6.15	6.12		5.41
Number of Taxa	30	24	20		28.09
Riverfly - species	21	14	13		
Riverfly - numbers	467	375	296		
CCI	14.97	14.81	7.50		
LIFE	7.95	8.14	8.00		7.06
PSI	65.12	65.22	72.00		49.17
SPEAR	38.82	32.32	36.18		
TRPI	4	75.00	75		
Saprobic	1.91	1.72	1.86		

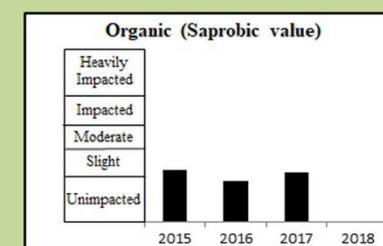
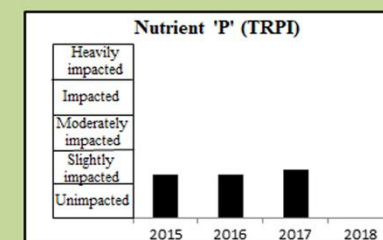


Figure 6: Autumn Invertebrate Benchmark data for Little Durnford

Caddisflies	2015	2016	2017	2018
<i>Silo nigricornis</i>	70	0	10	
<i>Goera pilosa</i>	4	0	0	
<i>Leptostoma hirtum</i>	43	62	26	
<i>Athripsodes cinereus</i>	14	3	4	
<i>Athripsodes bilineatus</i>	0	16	0	
<i>Mystacides azurea</i>	1	1	10	
<i>Sericostoma personatum</i>	72	44	14	
<i>Agapetus fuscipes</i>	13	23	30	
<i>Limnephilus lunatus</i>	0	0	2	
<i>Potamophylax latipennis</i>	6	5	6	
<i>Chaetopteryx villosa</i>	3	4	0	
<i>Hydroptila</i>	45	32	88	
<i>Anabolia nervosa</i>	0	0	4	
<i>Drusus annulatus</i>	14	20	14	
<i>Hydropsyche siltalai</i>	35	35	42	
<i>Rhyacophila dorsalis</i>	1	3	0	

Damselflies	2015	2016	2017	2018
<i>Calopteryx splendens</i>	1	2	0	

Beetles & Bugs	2015	2016	2017	2018
<i>Elmis aenea</i>	138	121	136	
<i>Limnius volckmari</i>	58	63	100	
<i>Riolus subviolaceus</i>	0	0	18	
<i>Oreodytes sanmarkii</i>	0	0	4	

Crustaceans	2015	2016	2017	2018
<i>Gammarus pulex</i>	1145	3643	698	
<i>Asellus aquaticus</i>	1	1	4	

Leeches	2015	2016	2017	2018
<i>Helobdella stagnalis</i>	0	0	10	
<i>Glossiphonia complanata</i>	0	1	4	
<i>Theromyzon tessellatum</i>				
<i>Erythrobella octoculata</i>				

Mayflies	2015	2016	2017	2018
<i>Ephemera danica</i>	54	46	22	
<i>Baetis</i>	1154	955	6	
<i>Baetis scambus</i>	0	296	0	
<i>Baetis muticus</i>	0	37	0	
<i>Serratella ignita</i>	22	242	0	
<i>Heptagenia sulphurea</i>	51	28	0	
<i>Caenis rivulorum</i>	108	66	12	
<i>Paraleptophlebia submarginata</i>	7	4	0	

Stoneflies	2015	2016	2017	2018
<i>Leuctra fusca</i>	1	2	0	
<i>Isoperla grammica</i>	0	1	0	

Molluscs	2015	2016	2017	2018
<i>Theodoxus fluviatilis</i>	7	8	14	
<i>Bithynia tentaculata</i>	15	13	2	
<i>Lymnaea pereger</i>	4	8	4	
<i>Gyraulus albus</i>	0	0	10	
<i>Anisus vortex</i>	17	11	26	
<i>Sphaeriidae</i>	0	0	2	
<i>Pisidium</i>	21	17	0	
<i>Physa fontinalis</i>	1	2	0	
<i>Ancylus fluviatilis</i>	0	1	0	

True Flies	2015	2016	2017	2018
<i>Simulium</i>	0	0	14	
<i>Chironomidae</i>	35	49	22	
<i>Tanytarsini</i>	3	0	0	
<i>Dicranota</i>	1	1	0	
<i>Oxycera pygmaea</i>	0	1	0	

Worms	2015	2016	2017	2018
<i>Oligochaeta</i>	14	5	6	



River Avon - Ham Hatches
Spring 2015 - 2018

	2015	2016	2017	2018	RICT
BMWP	177	186	134		141.29
ASPT	6.32	6.2	5.58		5.52
WHPT	185.5	202	145		157.67
ASPT	6.4	6.31	5.78		5.56
Number of Taxa	28	30	24		28.17
Riverfly - species	20	22	13		
Riverfly - numbers	1718	1925	270		
CCI	13.44	14.72	12.67		
LIFE	8.35	8.26	7.63		7.16
PSI	62.5	67.06	48.39	.....	52.47
SPEAR	61.21	60.28	43.66	.....	
TRPI	4	65.52	70.97	53.85	.....
Saprobic	1.92	1.95	1.78		

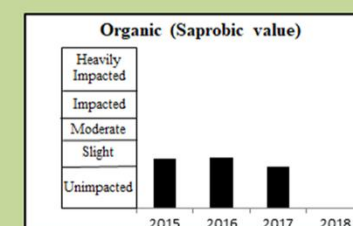
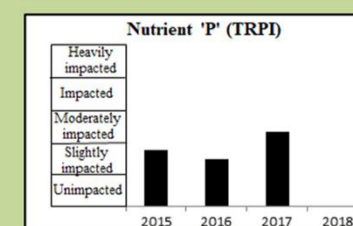
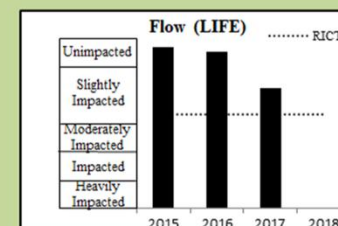
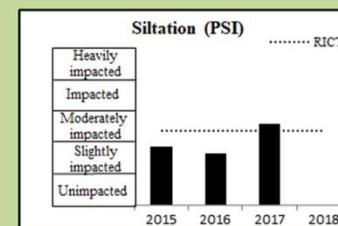
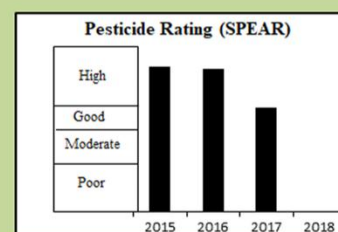


Figure 7: Spring Invertebrate Benchmark data for Ham Hatches

Caddisflies	2015	2016	2017	2018
<i>Silo nigricornis</i>	11	16	0	
<i>Goera pilosa</i>	64	0	0	
<i>Athripsodes aterrimus</i>	0	8	0	
<i>Athripsodes cinereus</i>	0	6	0	
<i>Mystacides nigra</i>	0	5	0	
<i>Mystacides azurea</i>	1	11	0	
<i>Sericostoma personatum</i>	37	0	1	
<i>Agapetus</i>	3	63	0	
<i>Limnephilus rhombicus</i>	1	0	0	
<i>Molanna angustata</i>	2	0	0	
<i>Hydroptila</i>	4	12	0	
<i>Ithytrichia lamellaris</i>	0	8	0	
<i>Brachycentrus subnubilis</i>	0	1	10	
<i>Drusus annulatus</i>	3	0	0	
<i>Hydropsyche</i>	46	0	0	
<i>Hydropsyche instabilis</i>	0	0	1	
<i>Hydropsyche siltalai</i>	0	0	2	
<i>Rhyacophila dorsalis</i>	38	6	2	
<i>Hydropsyche pellucidula</i>	109	37	0	
<i>Polycentropus flavomaculatus</i>	2	7	0	

Damselfly	2015	2016	2017	2018
<i>Calopteryx</i>	0	1	1	

Beetles & Bugs	2015	2016	2017	2018
<i>Elmis aenea</i>	765	77	32	
<i>Limnius volckmari</i>	182	89	105	
<i>Riolus subviolaceus</i>	1	0	7	
<i>Sigara</i>	0	1	0	
<i>Orectochilus villosus</i>	1	0	0	
<i>Haliplidae</i>	1	7	0	
<i>Dytiscidae</i>	13	0	0	

Crustaceans	2015	2016	2017	2018
<i>Gammarus pulex</i>	8220	96	339	
<i>Asellus aquaticus</i>	1	18	12	

Leeches	2015	2016	2017	2018
<i>Helobdella stagnalis</i>	0	3	5	
<i>Glossiphonia complanata</i>	23	11	5	
<i>Theromyzon tessellatum</i>	2	0	0	
<i>Erpobdella octoculata</i>	0	4	0	

Mayflies	2015	2016	2017	2018
<i>Ephemera danica</i>	77	17	0	
<i>Baetis</i>	1154	0	3	
<i>Baetis scambus</i>	26	14	0	
<i>Baetis fuscatus</i>	10	0	0	
<i>Baetis rhodani</i>	0	21	0	
<i>Serratella ignita</i>	34	3	1	
<i>Heptagenia sulphurea</i>	2	5	0	

Stoneflies	2015	2016	2017	2018
<i>Leuctra fusca</i>	3	0	2	

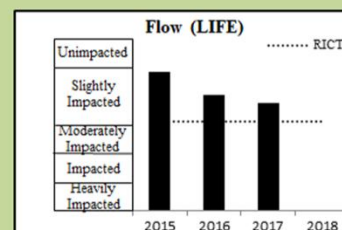
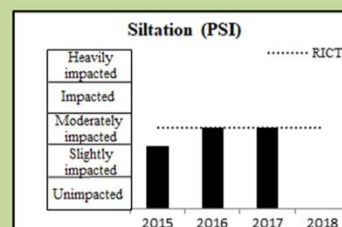
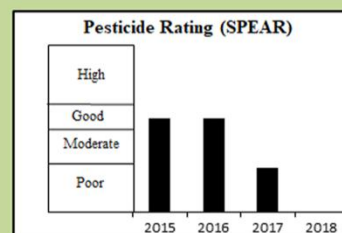
Molluscs	2015	2016	2017	2018
<i>Theodoxus fluviatilis</i>	13	19	9	
<i>Bithynia tentaculata</i>	28	5	1	
<i>Lymnaea peregra</i>	36	0	0	
<i>Lymnaea glabra</i>	0	1	0	
<i>Lymnaea palustris</i>	0	0	1	
<i>Gyraulus albus</i>	0	0	1	
<i>Anisus vortex</i>	12	19	22	
<i>Sphaeriidae</i>	85	31	0	
<i>Valvata piscinalis</i>	0	0	1	
<i>Physa</i>	0	1	0	
<i>Ancylus fluviatilis</i>	11	0	0	
<i>Sphaerium</i>	0	0	1	

True Flies	2015	2016	2017	2018
<i>Simulium</i>	0	113	13	
<i>Chironomidae</i>	100	79	19	
<i>Dicranota</i>	45	10	0	
<i>Limnophora</i>	0	4	0	
<i>Stratiomyidae</i>	0	0	1	

Worms	2015	2016	2017	2018
<i>Oligochaeta</i>	7	0	1	



River Avon - Ham Hatches
Autumn 2015 - 2018



	2015	2016	2017	2018	RICT
BMWP	184	165	118		140.45
ASPT	5.94	5.69	5.13		5.35
WHPT	196.3	178	127		154.65
ASPT	5.95	5.55	5.08		5.40
Number of Taxa	31	29	23		28.53
Riverfly - species	20	18	8		
Riverfly - numbers	1033	243	22		
CCI	14.7	14.72	8.61		
LIFE	7.92	7.53	7.39		7.06
PSI	60.64	48.68	49.09		49.17
SPEAR	39.11	38.86	18.53		
TRPI	4	92.31	66.67		
Saprobic	1.95	1.74	1.86		

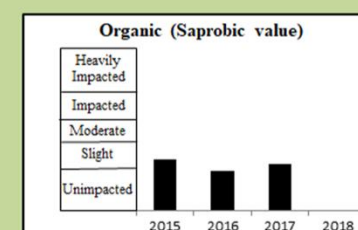
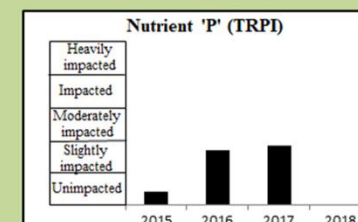


Figure 8: Autumn Invertebrate Benchmark data for Ham Hatches

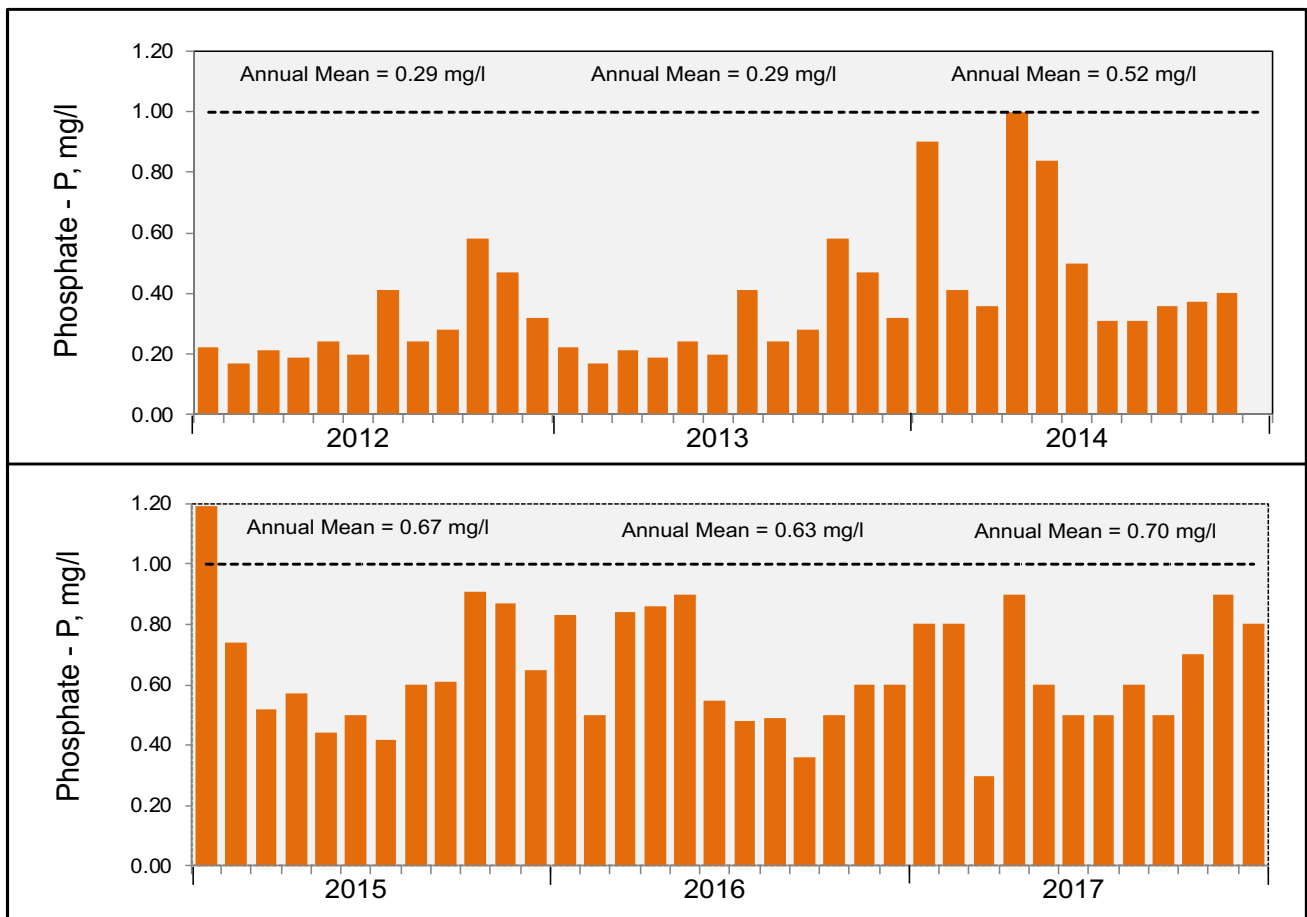


Figure 10: Phosphate levels in Amesbury STW final effluent 2012-2017 (mg/l)

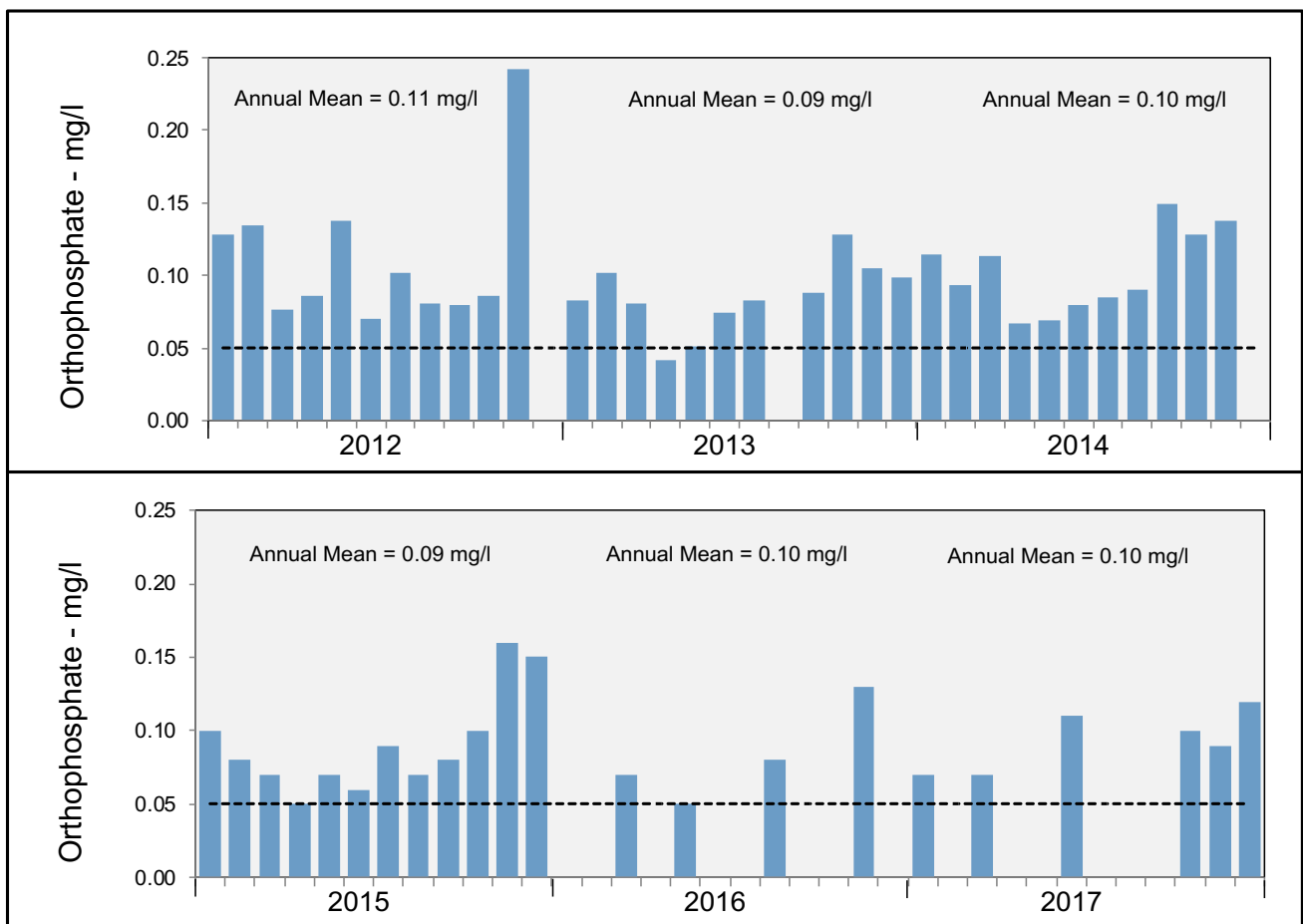


Figure 9: In river orthophosphate concentrations from 2012-2017 at EA monitoring site upstream of Ham Hatches (mg/l)

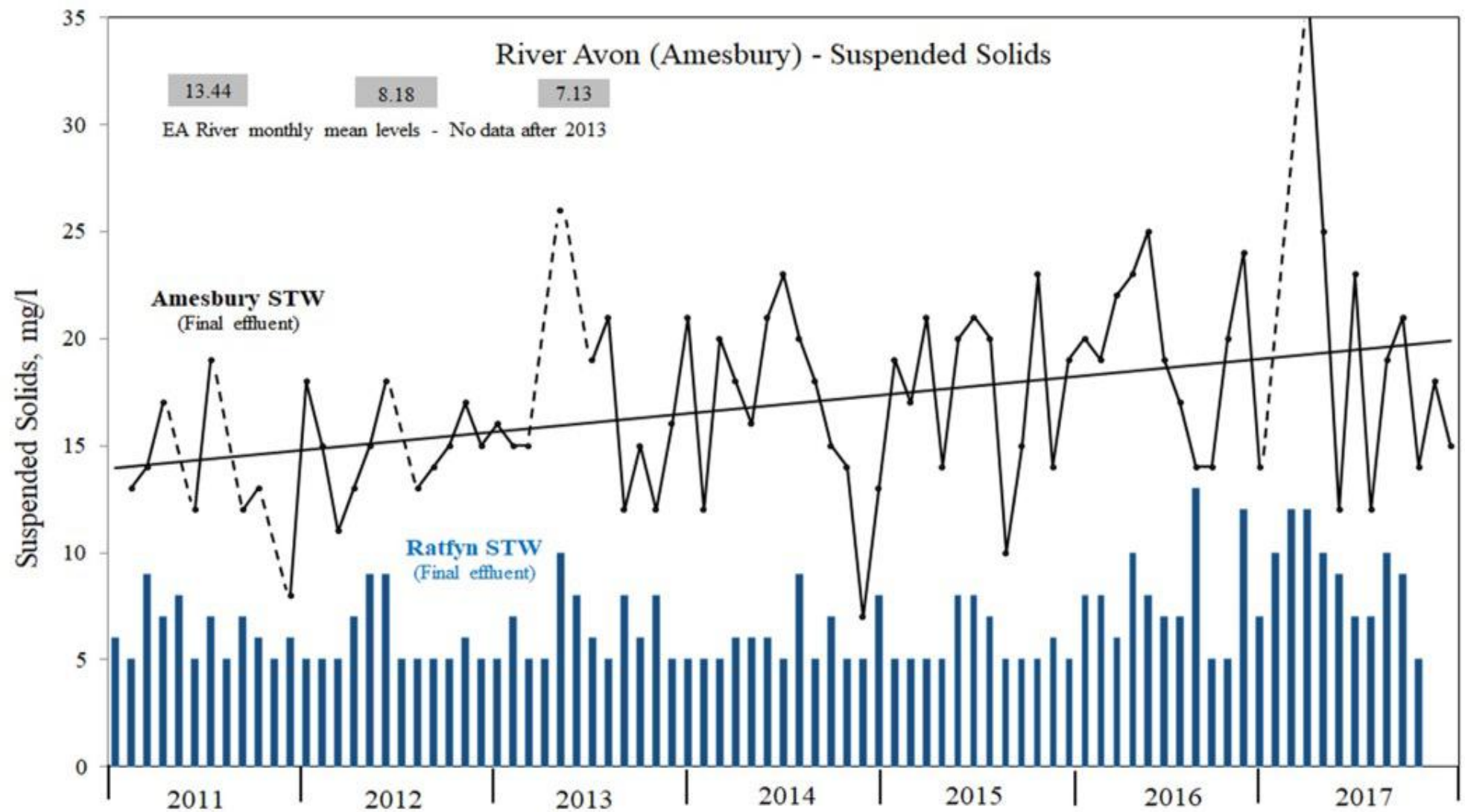


Figure 11: Suspended solid concentration comparison between Amesbury and Ratfyn STW

Caddisflies	2015	2016	2017	2018
<i>Silo nigricornis</i>	8	2	6	
<i>Goera pilosa</i>	3	0	0	
<i>Leptostoma hirtum</i>	86	172	108	
<i>Athripsodes cinereus</i>	0	1	0	
<i>Athripsodes bilineatus</i>	0	1	0	
<i>Mystacides azurea</i>	3	0	6	
<i>Sericostoma personatum</i>	36	18	12	
<i>Agapetus fuscipes</i>	1	0	16	
<i>Chaetopteryx villosa</i>	3	0	0	
<i>Potamophylax latipennis</i>	0	1	0	
<i>Anabolia nervosa</i>	6	0	0	
<i>Limnephilus lunatus</i>	0	1	0	
<i>Hydroptila</i>	146	6	136	
<i>Ithytrichia lamellaris</i>	12	0	0	
<i>Drusus annulatus</i>	3	1	4	
<i>Oxyethira</i>	0	0	2	
<i>Hydropsyche siltalai</i>	11	7	10	
<i>Rhyacophila dorsalis</i>	6	2	0	
<i>Hydropsyche pellucidula</i>	4	4	10	
<i>Polycentropus flavomaculatus</i>	0	1	2	

Damselfly	2015	2016	2017	2018
<i>Calopteryx splendens</i>	1			

Beetles & Bugs	2015	2016	2017	2018
<i>Elmis aenea</i>	185	12	246	
<i>Limnius volckmari</i>	9	7	26	
<i>Hygrobia hermanni</i>	2	0	0	
<i>Oulimnius tuberculatus</i>	3	0	6	
<i>Orectochilus villosus</i>	3	2	4	
<i>Coxidae</i>	0	0	2	

Crustaceans	2015	2016	2017	2018
<i>Gammarus pulex</i>	929	125	164	
<i>Asellus aquaticus</i>	1	1	0	

Leeches & Flatworms	2015	2016	2017	2018
<i>Eryobdella octoculata</i>	2	0	2	
<i>Helobdella stagnalis</i>	1	0	0	
<i>Glossiphonia complanata</i>	1	2	0	

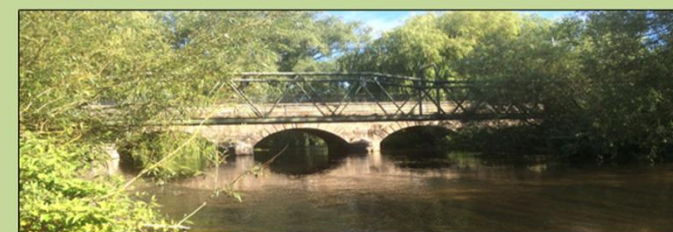
Mayflies	2015	2016	2017	2018
<i>Ephemera danica</i>	28	30	36	
<i>Baetis</i>	537	0	14	
<i>Baetis rhodani</i>	0	7	0	
<i>Caenis rivulorum</i>	225	11	48	
<i>Paraleptophlebia submarginata</i>	8	0	6	
<i>Serratella ignita</i>	7	3	14	
<i>Heptagenia sulphurea</i>	17	0	8	

Stoneflies	2015	2016	2017	2018
<i>Leuctra fusca</i>	6	0	0	
<i>Leuctra geniculata</i>	0	18	0	

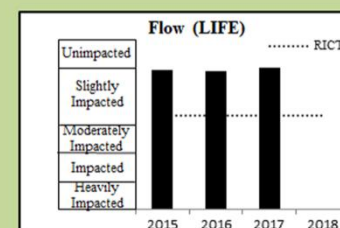
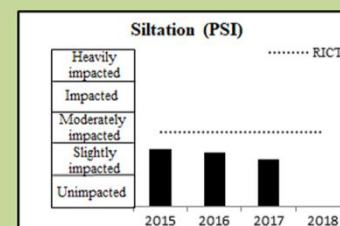
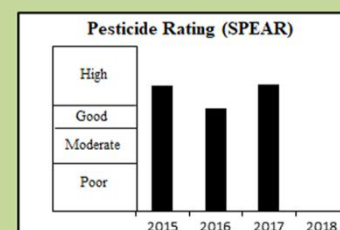
Molluscs	2015	2016	2017	2018
<i>Theodoxus fluviatilis</i>	6	3	2	
<i>Bithynia tentaculata</i>	3	1	0	
<i>Lymnaea pereger</i>	1	5	14	
<i>Valvata piscinalis</i>	4	13	0	
<i>Anisus vortex</i>	5	5	4	
<i>Gyraulus albus</i>	0	0	12	
<i>Sphaerium</i>	0	1	0	
<i>Pisidium</i>	9	0	0	
<i>Potamopyrgus antipodarum</i>	0	18	6	
<i>Ancylus fluviatilis</i>	23	0	4	

True Flies	2015	2016	2017	2018
<i>Simulium ornatum</i>	551	147	32	
<i>Chironomidae</i>	51	8	32	
<i>Chironomus</i>	0	25	0	
<i>Tanytarsini</i>	0	2	0	
<i>Tanytarsinae</i>	0	0	6	
<i>Dicranota</i>	10	5	2	
<i>Antocha</i>	0	0	4	
<i>Hemerodromia</i>	0	0	2	

Worms	2015	2016	2017	2018
<i>Oligochaeta</i>	4	0	0	



River Avon - Queensbury Bridge
Spring 2015 - 2018



	2015	2016	2017	2018	RICT
BMWP	204	168	180		141.29
ASPT	6	6.00	6.43		5.52
WHPT	220	177	188		157.67
ASPT	6.29	6.09	6.47		5.56
Number of Taxa	34	28	28		28.17
Riverfly - species	20	18	19		
Riverfly - numbers	1144	310	452		
CCI	18.79	13.22	30.24		
LIFE	7.97	7.94	8.00		7.16
PSI	63.16	65.57	69.84		52.47
SPEAR	52.9	43.46	53.33		
TRPI	4	67	70	81	
Saprobic	2.04	1.84	1.72		

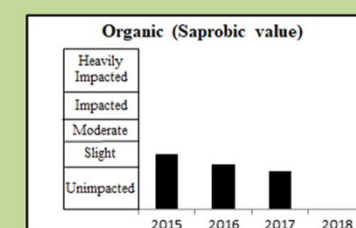
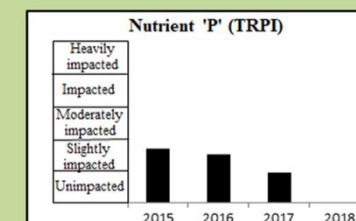


Figure 12: Spring Invertebrate Benchmark data for Queensbury Bridge

Caddisflies	2015	2016	2017	2018
<i>Silo nigricornis</i>	5	3	1	
<i>Goera pilosa</i>	9	0	0	
<i>Brachycentrus subnubilis</i>	0	2	0	
<i>Athripsodes cinereus</i>	53	10	5	
<i>Mystacides azurea</i>	0	29	1	
<i>Sericostoma personatum</i>	16	4	2	
<i>Agapetus fuscipes</i>	1	0	0	
<i>Halesus radiatus</i>	1	0	0	
Leptoceridae	0	0	1	
<i>Hydroptila</i>	7	6	0	
<i>Drusus annulatus</i>	0	1	0	
<i>Hydropsyche</i>	0	0	0	
<i>Hydropsyche siltalai</i>	0	7	0	
<i>Rhyacophila dorsalis</i>	8	3	1	
<i>Hydropsyche pellucidula</i>	68	48	5	
<i>Polycentropus flavomaculatus</i>	2	1	0	

Damselfly	2015	2016	2017	2018

Beetles & Bugs	2015	2016	2017	2018
<i>Elmis aenea</i>	249	81	45	
<i>Limnius volckmari</i>	160	14	20	
<i>Nebrioporus</i>	0	5	0	
<i>Oulimnius tuberculatus</i>	0	11	3	
<i>Halipus</i>	2	0	0	
Dytiscidae	2	0	0	
<i>Sigara</i>	0	4	0	
<i>Sialis lutaria</i>	0	3	0	

Crustaceans	2015	2016	2017	2018
<i>Gammarus pulex</i>	584	86	45	
<i>Asellus aquaticus</i>	0	0	0	

Leeches & Flatworms	2015	2016	2017	2018
<i>Erythodella octoculata</i>	0	0	0	
<i>Pisicicola geometra</i>	1	0	0	
<i>Theromyzon tessulatum</i>	11	3	1	
<i>Helobdella stagnalis</i>	1	5	1	
<i>Glossiphonia complanata</i>	12	7	0	
<i>Polycelis felina</i>				

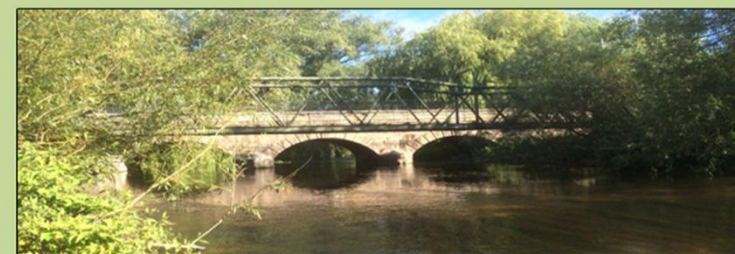
Mayflies	2015	2016	2017	2018
<i>Ephemera danica</i>	78	74	7	
<i>Baetis</i>	688	0	9	
<i>Baetis rhodani</i>	0	50	0	
<i>Baetis fuscatus</i>	3	0	0	
<i>Baetis scambus</i>	23	0	12	
<i>Serratella ignita</i>	111	3	21	

Stoneflies	2015	2016	2017	2018
<i>Leuctra fusca</i>	37	5	10	
<i>Leuctra geniculata</i>	6	0	1	

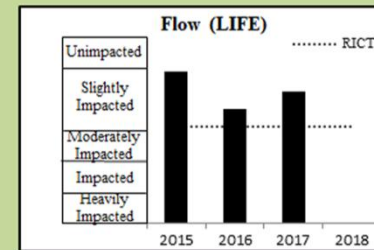
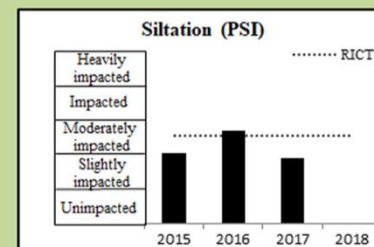
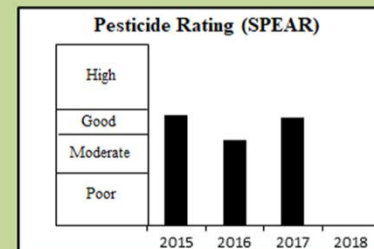
Molluscs	2015	2016	2017	2018
<i>Theodoxus fluviatilis</i>	5	6	2	
<i>Bithynia tentaculata</i>	22	3	3	
<i>Lymnaea peregra</i>	39	16	3	
<i>Valvata piscinalis</i>	0	7	0	
<i>Anisus vortex</i>	110	25	5	
<i>Gyraulus albus</i>	0	0	3	
Sphaeriidae	0	12	0	
<i>Pisidium</i>	78	0	3	
<i>Potamopyrgus antipodarum</i>	15	0	0	
<i>Physa fontinalis</i>	1	5	1	
<i>Ancylus fluviatilis</i>	10	8	0	

True Flies	2015	2016	2017	2018
<i>Simulium ornatum</i>	316	5	44	
Chironomidae	115	13	25	
<i>Chironomus</i>	0	11	0	
<i>Tanytarsini</i>	0	92	0	
<i>Tanytarsinae</i>	0	32	0	
<i>Dicranota</i>	5	9	0	
Tabanidae	0	1	0	
<i>Procladius olivacea</i>	0	17	0	

Worms	2015	2016	2017	2018
Oligochaeta	2	0	0	
<i>Haplotaxis gordioides</i>	0	2	0	



River Avon - Queensbury Bridge
Autumn 2015 - 2018



	2015	2016	2017	2018	RICT
BMWP	164	164	128		140.45
ASPT	5.66	5.66	6.10		5.35
WHPT	178	169	128		154.65
ASPT	5.73	5.63	6.09		5.40
Number of Taxa	29	29	21		28.53
Riverfly - species	17	13	14		
Riverfly - numbers	1116	239	79		
CCI	12.96	12.92	10.00		
LIFE	7.94	7.34	7.63		7.06
PSI	59.26	46.15	62.00	.....	49.17
SPEAR	42.43	32.72	41.29		
TRPI	4	100	100	.....	
Saprobic	1.99	1.88	1.92		

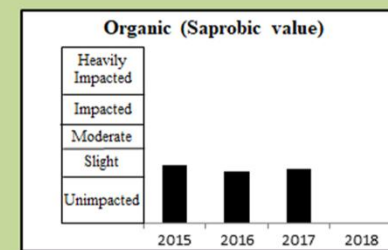
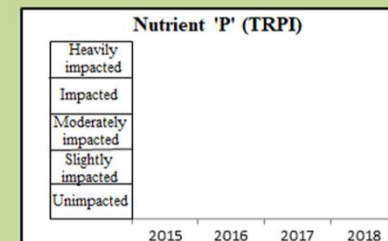


Figure 13: Autumn Invertebrate Benchmark data for Queensbury Bridge

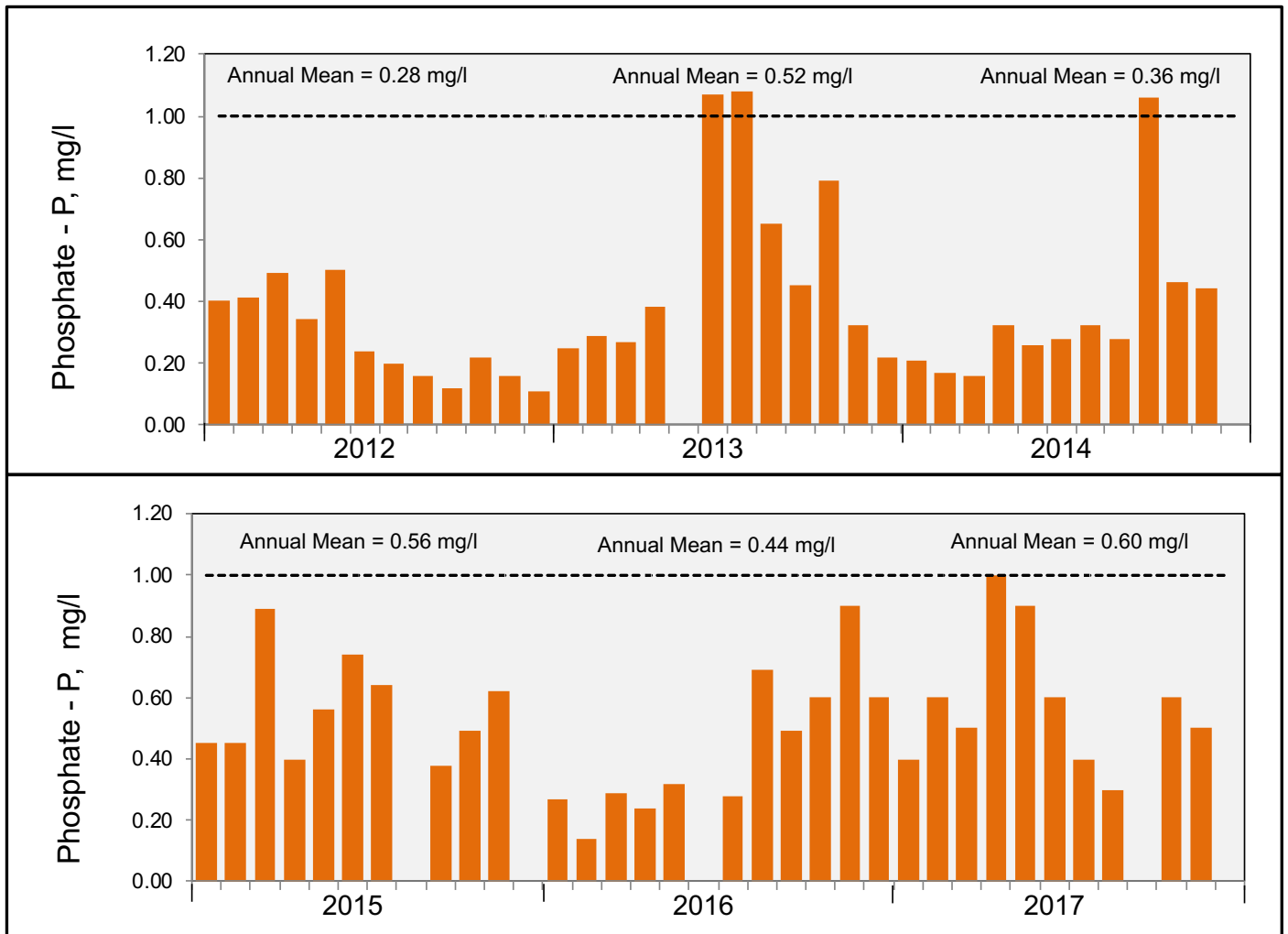


Figure 14: Phosphate levels in Ratfyn STW final effluent 2012-2017 (mg/l)

Caddisflies	2015	2016	2017	2018
<i>Silo nigricornis</i>	2	8	0	
<i>Potamophylax latipennis</i>	7	0	0	
<i>Potamophylax cingulatus</i>	0	5	0	
<i>Athripsodes bilineatus</i>	0	7	33	
<i>Odontocerum albicorne</i>	14	2	0	
<i>Mystacides azurea</i>	6	0	0	
<i>Sericostoma personatum</i>	86	53	21	
<i>Agapetus fuscipes</i>	5	4	24	
<i>Chaetopteryx villosa</i>	8	0	0	
<i>Limnephilus lunatus</i>	0	2	0	
<i>Lepidostoma hirtum</i>	7	0	0	
<i>Hydroptila</i>	6	0	18	
<i>Ithytrichia lamellaris</i>	0	0	15	
<i>Anabolia nervosa</i>	2	0	0	
<i>Drusus annulatus</i>	2	0	0	
<i>Rhyacophila dorsalis</i>	3	2	3	
<i>Hydropsyche pellucidula</i>	7	12	21	
<i>Hydropsyche siltalai</i>	10	0	0	
<i>Lype reducta</i>	0	2	0	

Damselflies	2015	2016	2017	2018
<i>Calopteryx</i>				

Beetles & Bugs	2015	2016	2017	2018
<i>Elmis aenea</i>	97	16	255	
<i>Oulimnius tuberculatus</i>	0	1	36	
<i>Limnius volckmari</i>	29	17	132	
<i>Riolus subviolaceus</i>	0	0	0	
<i>Orectochilus villosus</i>	0	4	3	
<i>Scirtes</i>	0	0	3	
<i>Brychius elevatus</i>	0	0	3	
<i>Sialis lutaria</i>	0	0	3	

Crustaceans	2015	2016	2017	2018
<i>Gammarus pulex</i>	1723	710		
<i>Asellus aquaticus</i>		1		

Leeches & Flatworms	2015	2016	2017	2018
<i>Helobdella stagnalis</i>	0	1	0	
<i>Glossiphonia complanata</i>	1	1	0	
<i>Theromyzon tessellatum</i>	1	0	0	
<i>Erpobdella octoculata</i>	0	1	0	

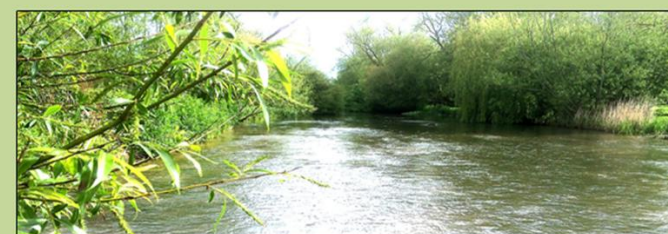
Mayflies	2015	2016	2017	2018
<i>Ephemera danica</i>	92	26	69	
<i>Baetis</i>	1093	0	9	
<i>Baetis rhodani</i>	0	8	0	
<i>Serratella ignita</i>	42	8	0	
<i>Heptagenia sulphurea</i>	20	4	3	
<i>Ecdyonurus dispar</i>	8	0	3	
<i>Caenis rivulorum</i>	223	8	0	
<i>Caenis luctuosa</i>	0	0	9	

Stoneflies	2015	2016	2017	2018
<i>Leuctra fusca</i>	1	0	0	
<i>Nemoura cinerea</i>	0	0	3	

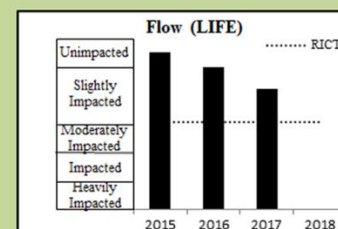
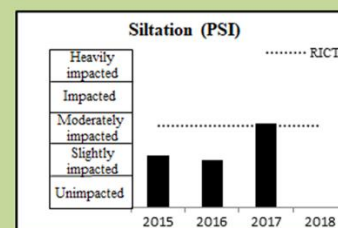
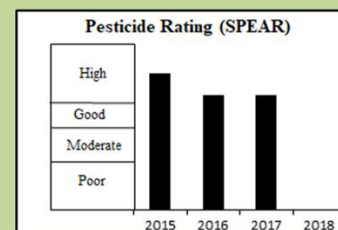
Molluscs	2015	2016	2017	2018
<i>Theodoxus fluviatilis</i>	1	0	15	
<i>Lymnaea pereger</i>	2	5	3	
<i>Potamopyrgus antipodarum</i>	1	0	24	
<i>Gyraulus albus</i>	0	0	21	
<i>Anisus vortex</i>	6	0	78	
<i>Physa fontinalis</i>	1	0	0	
<i>Ancylus fluviatilis</i>	1	0	0	
<i>Sphaerium</i>	0	0	6	
<i>Pisidium</i>	6	0	0	

True Flies	2015	2016	2017	2018
<i>Simulium ornatum</i>	391	38	60	
Chironomidae	9	32	15	
Dicranota	8	6	0	
Tanytarsini	0	3	39	
Tanypodinae	0	9	3	
<i>Oxycera pygmaea</i>	0	1	0	
Stratiomyidae	0	0	3	

Worms	2015	2016	2017	2018
Oligochaeta	16	10	0	



River Avon - Stonehenge (Upper)
Spring 2015 - 2018



	2015	2016	2017	2018	RICT
BMWP	180	149	141		143.94
ASPT	6.21	6.21	5.64		5.30
WHPT	193	161	155		156.68
ASPT	6.42	6.17	5.75		5.35
Number of Taxa	29	24	25		29.16
Riverfly - species	21	16	16		
Riverfly - numbers	1644	154	302		
CCI	13.25	15.30	7.75		
LIFE	8.26	8	7.63		7.04
PSI	67.12	70	46.67	.....	48.39
SPEAR	57.19	47.99	47.93	.....	
TRPI	4	78.26	76.92	66.67	.....
Saprobic	2.01	1.91	1.76		

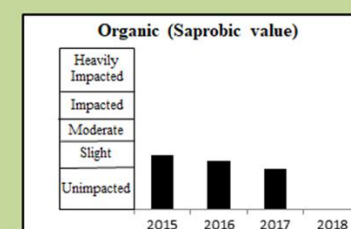
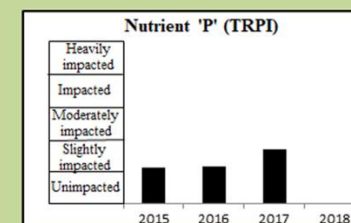


Figure 15: Spring Invertebrate Benchmark data for Stonehenge

Caddisflies	2015	2016	2017	2018
<i>Silo nigricornis</i>	9	5	0	
<i>Goera pilosa</i>	17	0	0	
<i>Potamophylax</i>	0	0	2	
<i>Athripsodes cinereus</i>	2	6	5	
<i>Odontocerum albicorne</i>	12	7	0	
<i>Mystacides azurea</i>	0	32	0	
<i>Sericostoma personatum</i>	33	27	5	
<i>Agapetus fuscipes</i>	9	73	0	
Limnephilidae	0	2	0	
<i>Limnephilus rhombicus</i>	1	0	0	
<i>Lepidostoma hirtum</i>	1	0	0	
<i>Hydroptila</i>	0	8	0	
<i>Ithytrichia lamellaris</i>	0	11	0	
<i>Brachycentrus subnubilis</i>	3	3	2	
<i>Drusus annulatus</i>	1	0	0	
<i>Rhyacophila dorsalis</i>	1	0	0	
<i>Hydropsyche pellucidula</i>	40	61	53	
<i>Polycentropus flavomaculatus</i>	3	0	0	

Damselfly	2015	2016	2017	2018
<i>Calopteryx</i>	2	0	1	

Beetles & Bugs	2015	2016	2017	2018
<i>Elmis aenea</i>	244	79	75	
<i>Oulimnius tuberculatus</i>	0	0	7	
<i>Limnius volckmari</i>	117	51	43	
<i>Riolus subviolaceus</i>	0	13	0	
<i>Orectochilus villosus</i>	8	0	3	
Halipidae	2	2	0	
Dytiscidae	5	0	0	
<i>Brychius elevatus</i>	0	3	0	
<i>Sialis lutaria</i>	0	5	0	

Crustaceans	2015	2016	2017	2018
<i>Gammarus pulex</i>	2176	180	249	
<i>Asellus aquaticus</i>	1	0	8	

Leeches & Flatworms	2015	2016	2017	2018
<i>Helobdella stagnalis</i>	4	0	12	
<i>Glossiphonia complanata</i>	7	5	17	
<i>Theromyzon tessilatum</i>	2	0	0	
<i>Piscicola geometra</i>	4	0	0	
<i>Polycelis</i>	0	4	3	

Mayflies	2015	2016	2017	2018
<i>Ephemera danica</i>	62	48	15	
<i>Baetis</i>	601	0	0	
<i>Baetis scambus</i>	8	0	0	
<i>Baetis rhodani</i>	0	149	21	
<i>Serratella ignita</i>	15	14	4	
<i>Heptagenia sulphurea</i>	22	0	0	

Stoneflies	2015	2016	2017	2018
<i>Leuctra fusca</i>	1	2	9	

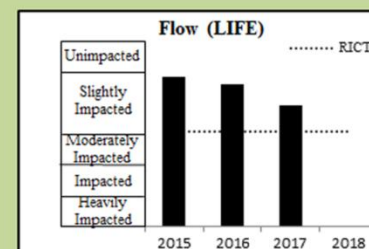
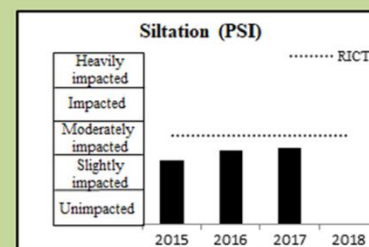
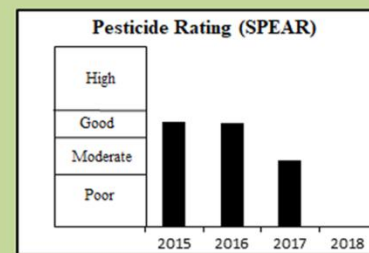
Molluscs	2015	2016	2017	2018
<i>Theodoxus fluviatilis</i>	2	0	5	
<i>Bithymia tentaculata</i>	1	7	0	
<i>Lymnaea peregra</i>	1	13	0	
<i>Potamopyrgus antipodarium</i>	139	55	15	
<i>Gyraulus albus</i>	0	0	4	
<i>Anisus vortex</i>	36	37	18	
<i>Valvata piscinalis</i>	2	5	0	
<i>Physa fontinalis</i>	5	19	0	
<i>Ancylus fluviatilis</i>	5	3	0	
<i>Sphaerium</i>	0	0	3	
<i>Pisidium</i>	39	0	0	

True Flies	2015	2016	2017	2018
<i>Simulium</i>	246	38	4	
Chironomidae	49	36	5	
<i>Dicranota</i>	38	7	3	
<i>Tanytarsini</i>	0	0	13	

Worms	2015	2016	2017	2018
Oligochaeta	5	3	0	



River Avon - Stonehenge (Upper)
Autumn 2015 - 2018



	2015	2016	2017	2018	RICT
BMWP	217	171	138		143.94
ASPT	6.03	5.9	6.00		5.30
WHPT	236	176	139		156.68
ASPT	6.21	5.88	6.02		5.35
Number of Taxa	36	29	23		29.16
Riverfly - species	19	15	9		
Riverfly - numbers	841	448	116		
CCI	19.7	13.72	8.25		
LIFE	7.93	7.81	7.46		7.04
PSI	62.5	56.72	55.32		48.39
SPEAR	40.61	40	25.57		
TRPI	4	76.92	100		
Saprobic	1.98	1.71	1.91		

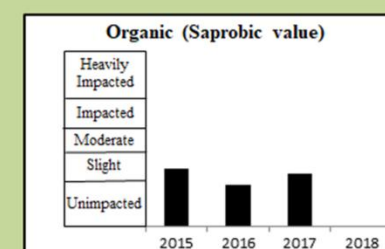
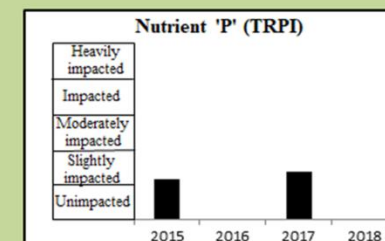


Figure 16: Autumn Invertebrate Benchmark data for Stonehenge

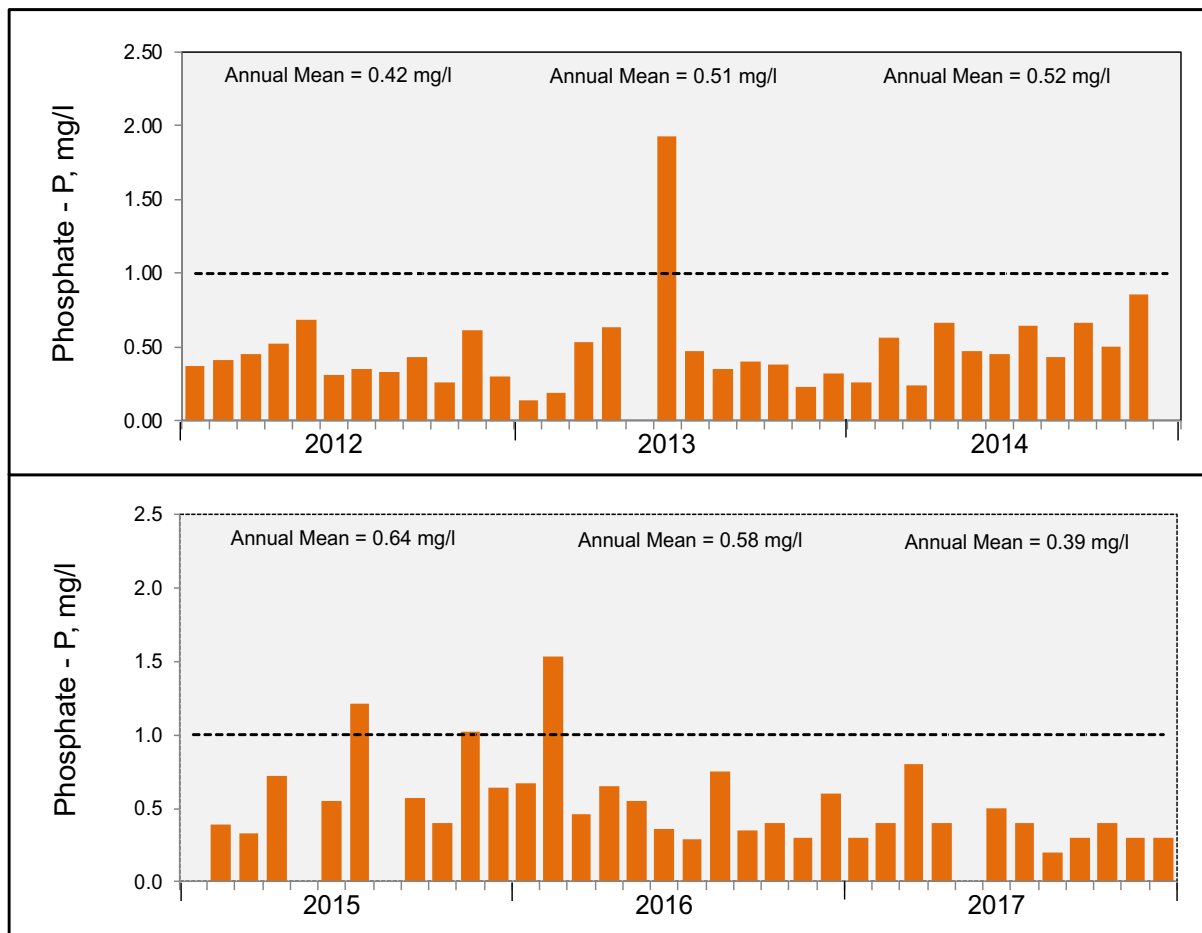


Figure 17: Phosphate levels in Netheravon STW final effluent 2012-2017 (mg/l)

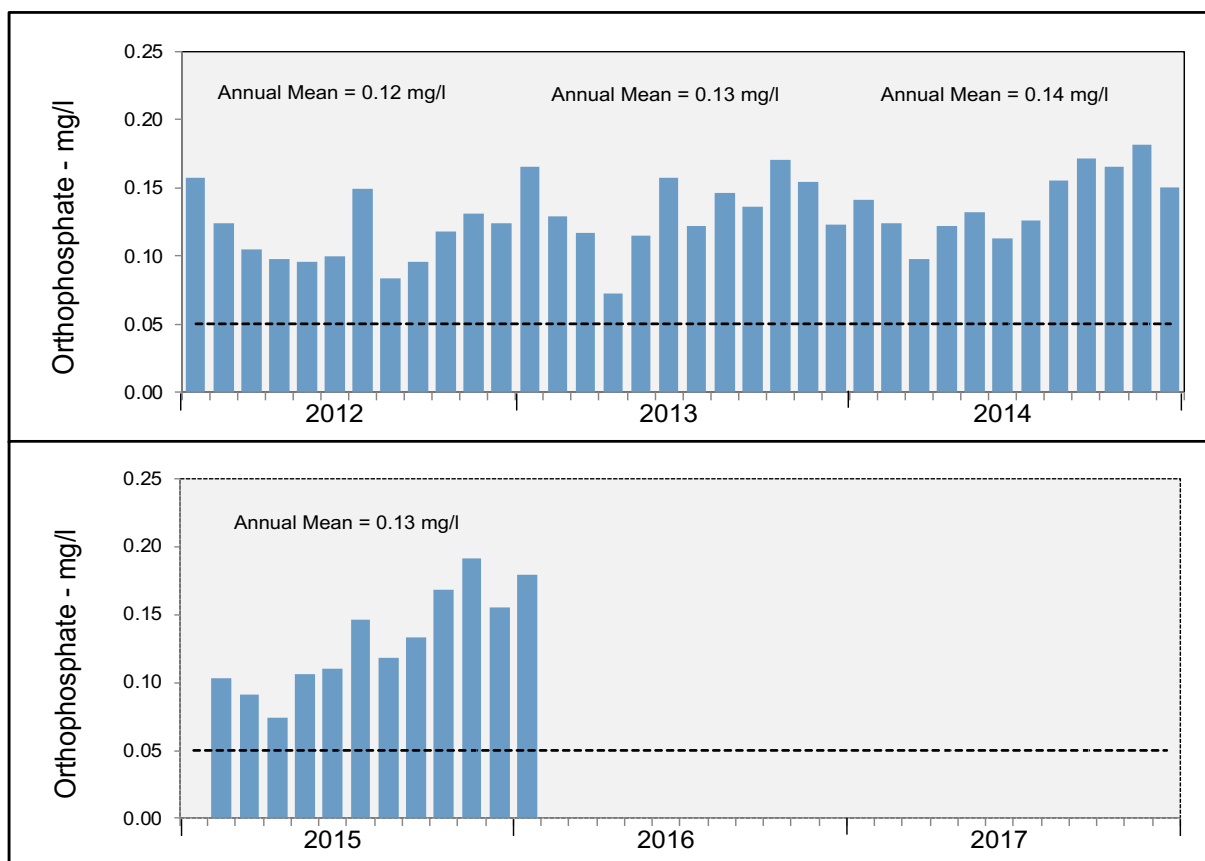


Figure 18: In river orthophosphate concentrations from 2012-2017 at EA monitoring site downstream of Netheravon STW (mg/l)

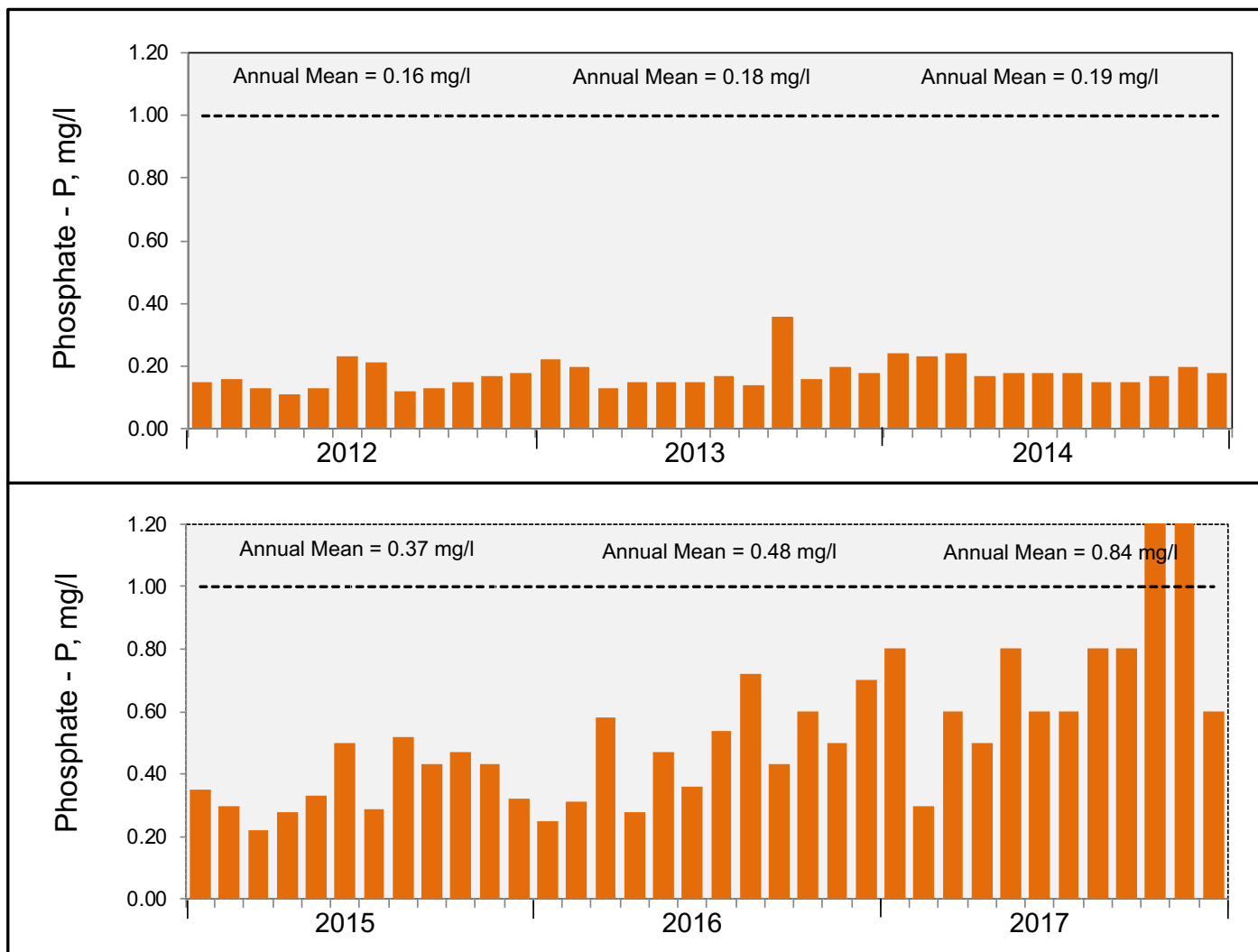


Figure 19: Phosphate levels in Upavon STW final effluent 2012-2017 (mg/l)

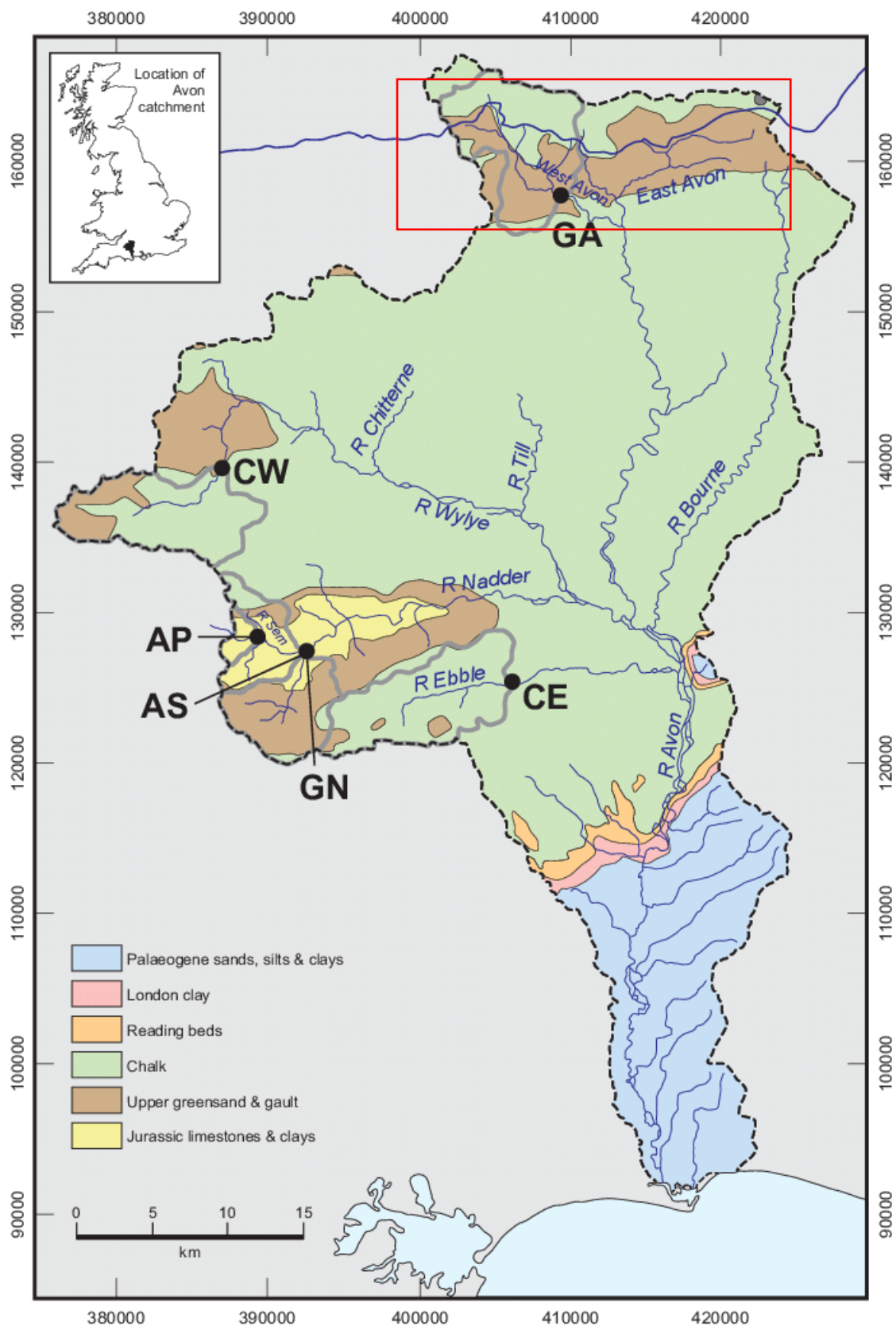


Figure 20: Hampshire Avon catchment geology, red box indicates location of East and West arms with upper greensand aquifer (Heppell et al. 2017)

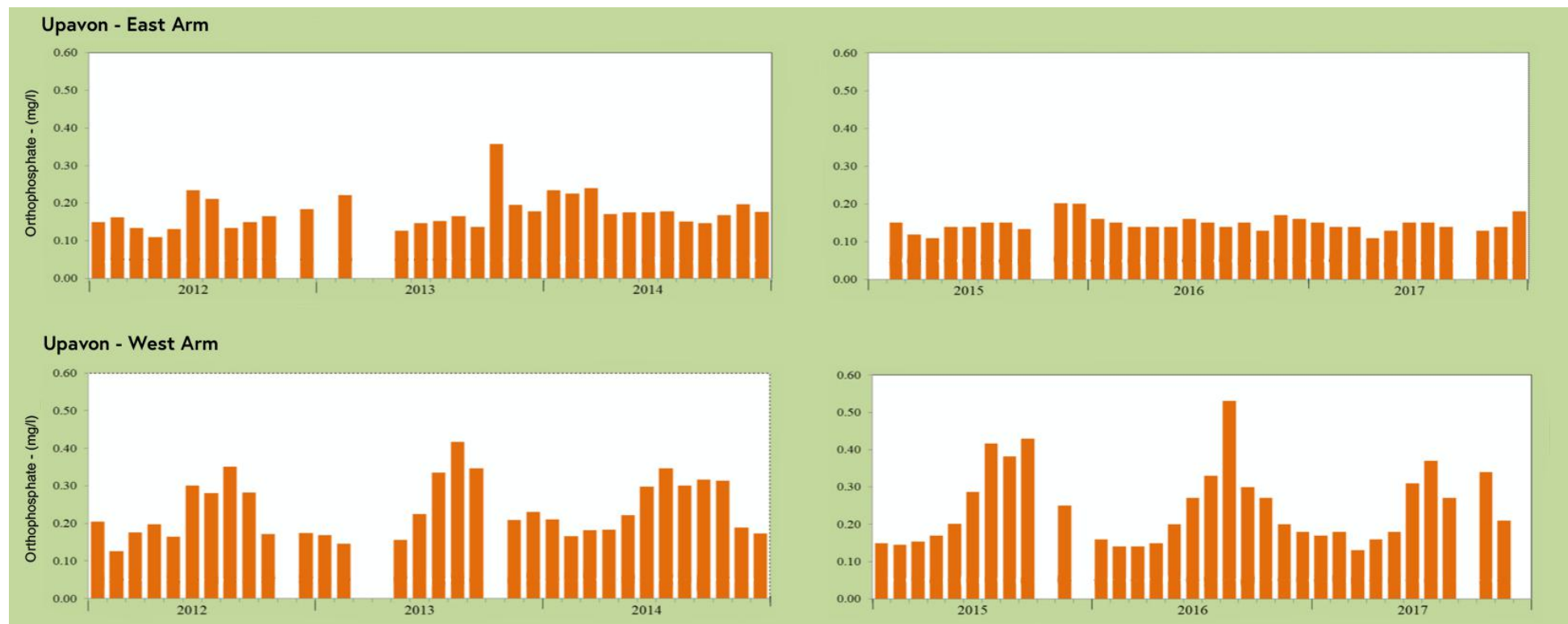


Figure 21: In river orthophosphate concentrations from 2012-2017 at EA monitoring sites on the East and West branches of the Avon, upstream of Upavon STW (mg/

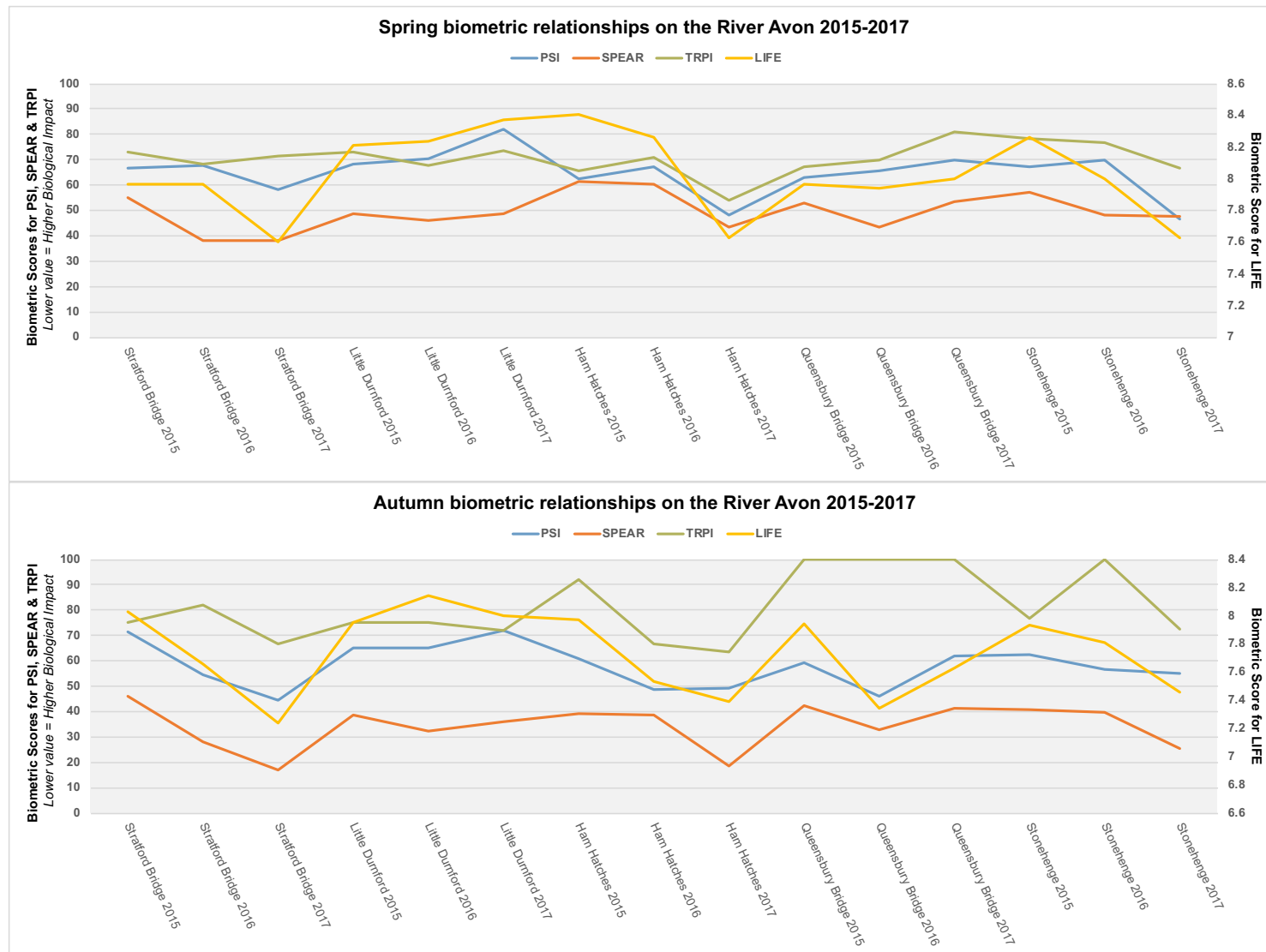


Figure 22: Relationships between stress biometrics for flow, sediment, pesticides-herbicides and phosphorus in spring and autumn at all survey sites on the River Avon (2015-2017)

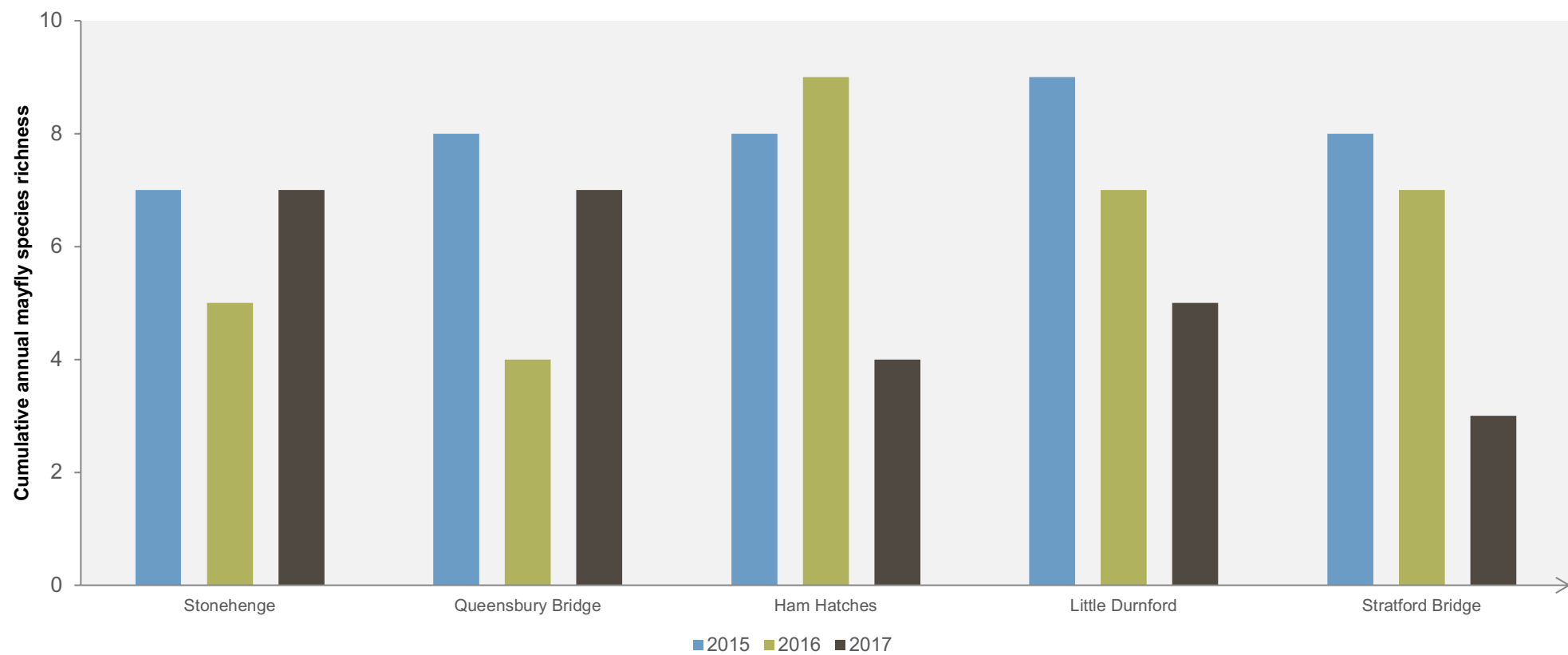


Figure 23: Cumulative annual mayfly species richness in the Upper Avon (2015-2017)

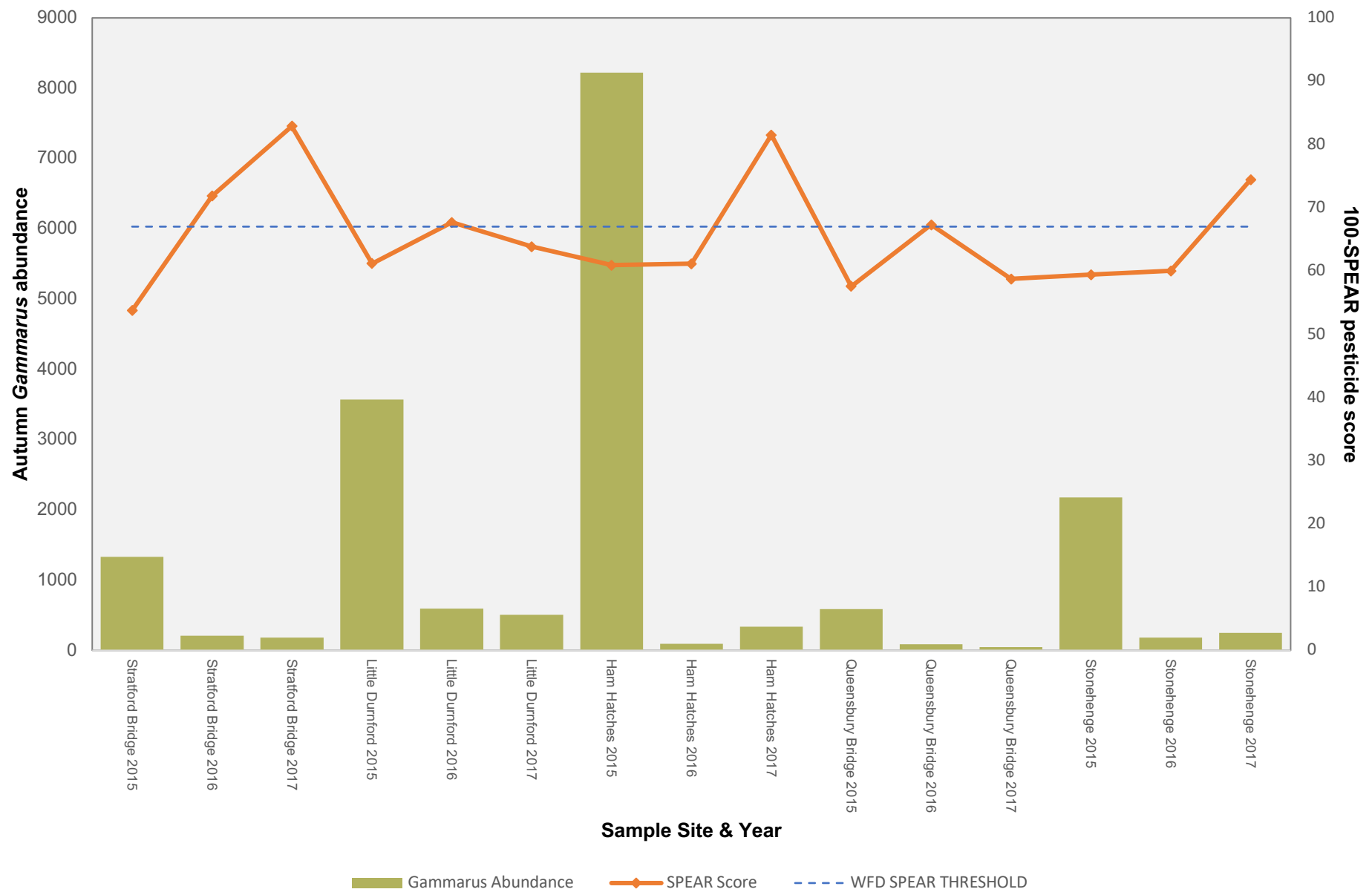


Figure 24: Relationship between Gammarus abundance and pesticide scores in the Upper Avon (2015-2017)