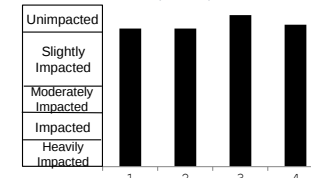
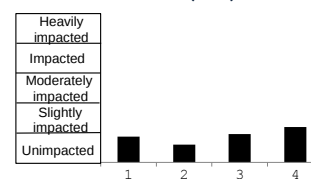
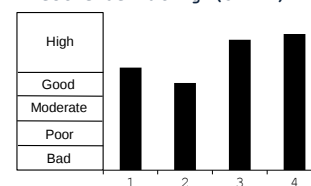


AQUASCIENCE
CONSULTANCY LTD

Taxon	1	2	3	4
<i>Agapetus</i>				1
<i>Agapetus ochripes</i>	6		19	
<i>Ancylus fluviatilis</i>			5	1
<i>Baetis rhodani/atlanticus</i>	3	36		26
<i>Baetis scambus/fuscatus</i>			6	
<i>Caenis luctuosa</i>				3
Chironominae			3	1
<i>Chloroperla torrentium</i>			5	
Clinocera				1
Dicranota	9			
<i>Dixa</i>		1	3	1
<i>Ecdyonurus</i>			3	6
<i>Elmis aenea</i>				5
<i>Ephemera danica</i>			2	21
<i>Gammarus pulex</i>	746	477	251	347
<i>Glossiphonia complanata</i>		1		
<i>Glyptotaelius pellucidus</i>	3		9	1
<i>Hydraena gracilis</i>			6	
<i>Hydropsyche pellucidula</i>	23	8		13
<i>Isoperla grammatica</i>		1	4	5
<i>Leuctra</i>				58
<i>Leuctra</i>			32	
<i>Leuctra nigra</i>			3	
<i>Limnephilus lunatus</i>	6	3	1	
<i>Limnius volckmari</i>		1		3
<i>Lipsothrix</i>	2			
<i>Lype reducta</i>	2		1	
<i>Nemoura avicularis</i>				19
<i>Odontocerum albicorne</i>			4	
<i>Orectochilus villosus</i>			1	
Orthocladiinae			7	2
<i>Pedicia</i>			9	7
<i>Pilaria</i>	3	3	3	
<i>Pisidium</i>			8	
<i>Plectrocnemia conspersa</i>			3	
<i>Potamophylax latipennis</i>	7	1		
<i>Prodiamesa olivacea</i>	12			
Ptychoptera			3	9
<i>Rhithrogena</i>	11	1	22	71
<i>Rhyacophila dorsalis</i>		1	7	6
<i>Scirtes</i>	13	21		11
<i>Sericostoma personatum</i>	8	5	6	6
<i>Silo pallipes</i>		1	16	5
<i>Simulium</i>		5	27	
<i>Stenophylax permistus</i>	1			
Tanyptodiinae		1		
<i>Tanytarsini</i>	1			

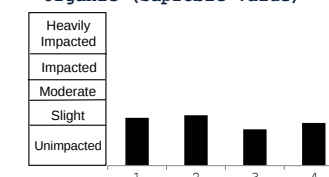
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4 - Sher Brook D/S - Alder Carr - 17/11/23



Heavily impacted	
Impacted	
Moderately impacted	
Slightly impacted	
Unimpacted	

Impact Level	1	2	3	4
Heavily impacted	10%	0%	0%	0%
Impacted	10%	0%	0%	0%
Moderately impacted	10%	10%	0%	0%
Slightly impacted	10%	10%	10%	0%
Unimpacted	10%	10%	10%	10%



Sites	5	6	7	8
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[illegible]

Autumn 2023

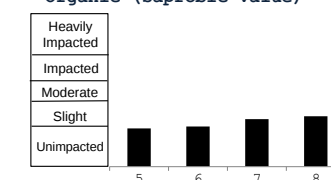
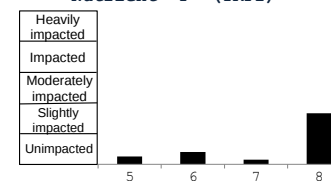
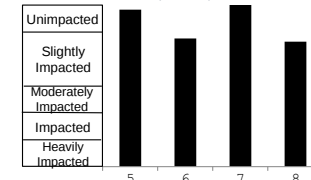
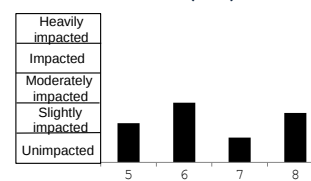
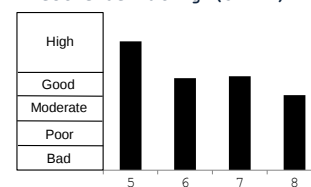
6 - Stafford Brook - Bevin's Birches - 10/11/23

7 - Stafford Brook - SSSI - 1/11/23

8 - Rising Brook - Furnace Coppice - 31/10/23



	5	6	7	8
BMWP	106	88	97	90
ASPT	6.63	6.29	6.06	6.00
WHPT	132.8	124	121.7	90.6
WHPT ASPT	6.99	6.89	6.41	6.04
Number of Taxa	16	14	16	15
Riverfly - species	14	9	10	9
Riverfly - numbers	107	39	116	40
CCI	19.13	9.00	5.10	5.20
LIFE	8.42	7.88	8.56	7.82
PSI	73.68	60.00	83.33	66.67
SPEAR	57.11	40.77	41.68	33.26
TRPI	95.00	92.00	97.00	66.67
Saprobic	1.75	1.79	1.94	1.95



Sites	9	10	11	12
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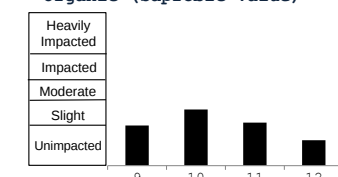
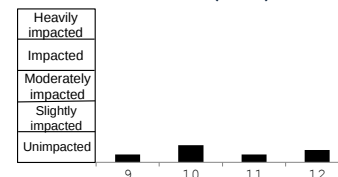
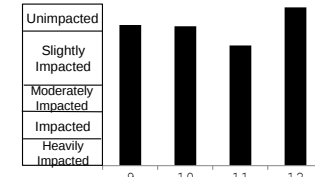
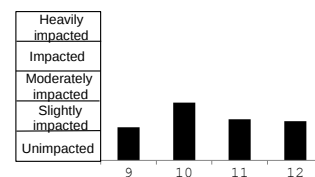
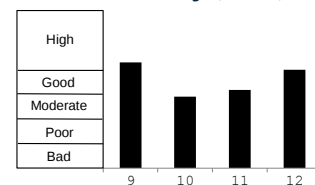
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Autumn 2023

10 - Rising Brook - Slitting Mill - 31/10/23

11 - Fallow Stream - Seven Springs - 31/10/23

12 - Stoney Brook - Fair Oak - 11/11/23



Sites	13	14	15	16
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Staffordshire Wildlife Trust - CCh

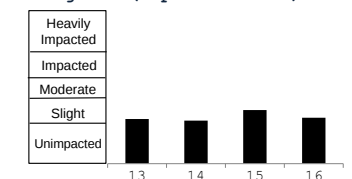
Autumn 2023

13 - Stony Brook - Birches Valley - 11/11/23

14 - Brereton Brook - 14/11/23

15 - Shropshire Brook - Beaudesert Old Park - 11/11/23

16 - Shropshire Brook - Hare's Hill - 11/11/23

Pesticide Rating (SPEAR)

Sites	17	18		
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River Invertebrate Fingerprinting Report

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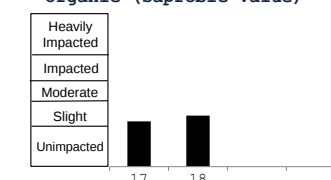
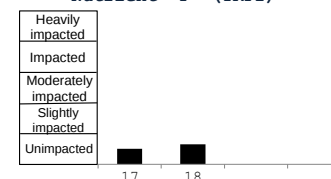
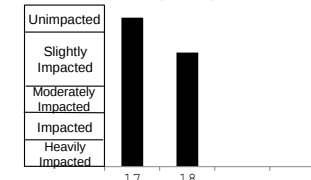
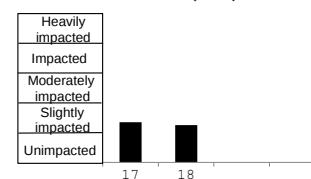
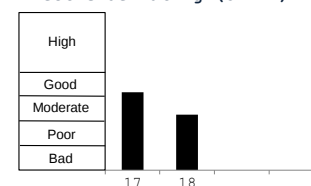
Staffordshire Wildlife Trust - CCh

Autumn 2023

17 - Ben Brook (Trib) - Piggot's Bottom - 10/11/23

18 - Redmoor Brook - Gentleshaw Common - 10/11/23

	17	18	
BMWP	62	47	
ASPT	6.20	5.22	
WHPT	81.5	51.7	
WHPT ASPT	6.79	5.74	
Number of Taxa	10	9	
Riverfly - species	7	4	
Riverfly - numbers	226	60	
CCI	11.88	8.57	
LIFE	8.27	7.63	
PSI	73.08	75.00	
SPEAR	34.51	24.64	
TRPI	90.00	87.00	
Saprobic	1.89	2.00	



River Invertebrate Fingerprinting Report

Staffordshire Wildlife Trust - CCh

Autumn 2023



Comments

Nationally Scarce and rarer species are highlighted in pink. Woody debris associated species are highlighted in green.

Note that Site 15 - (Upper) Shropshire Brook - Beaudesert Old Park had a marked complex chemical (SPEAR) signature which raises question of discharges or pesticide usage or herbicide/pesticide usage e.g. Glyphosate? Site 18 - Redmoor Brook - Gentleshaw Common was also heading in that parish for potential chemical impacts.

* Surveyed by Nick Mott, Staffordshire Wildlife Trust. Species identification determined by Dr Nick Everall, Aquascience Consultancy.

* Project funded 2023-24 by Cannock Chase National Landscape <https://www.cannock-chase.co.uk/>

* The main aims of the Forest Streams project is to assess the health of the main watercourses at Cannock Chase, benchmark against previous surveys carried out 2014-22, to generate further records of macroinvertebrates, to identify rare and scarce species, to complete analysis of pressures (silt burdens, pesticides, nutrient loading, low flows, etc.) through biometric fingerprinting, to assess the impacts of any habitat management works undertaken at these sites and to recommend priorities for the future management of these watercourses.

* The 18 survey sites will be re-visited in April 2024.

Analysis

Notes about the metrics used:-

Saprobic Index, PSI, LIFE and CCI use a combination of trait based characteristics at species, genus and family level with assigned scores, which are weighted by abundance (actual or logarithmic scales), and use particular mathematical calculations which have been tested against measured parameters.

The Saprobic Index is an estimate of the level of organic pollution using values assigned to each of the organisms detected in the habitat. A figure below 1.8 indicates very low levels of organic load with corresponding low biological oxygen demand (BOD).

PSI is the proportion of sediment sensitive invertebrates and a figure of over 80 indicates that the riverbed is naturally sedimented or unsedimented.

LIFE is the Lotic-invertebrate Index for Flow Evaluation. As current velocity increases, so do LIFE scores. LIFE values greater than 7.5 indicate very fast flows.

CCI is the community conservation index and scores above 10 indicate a high invertebrate diversity.

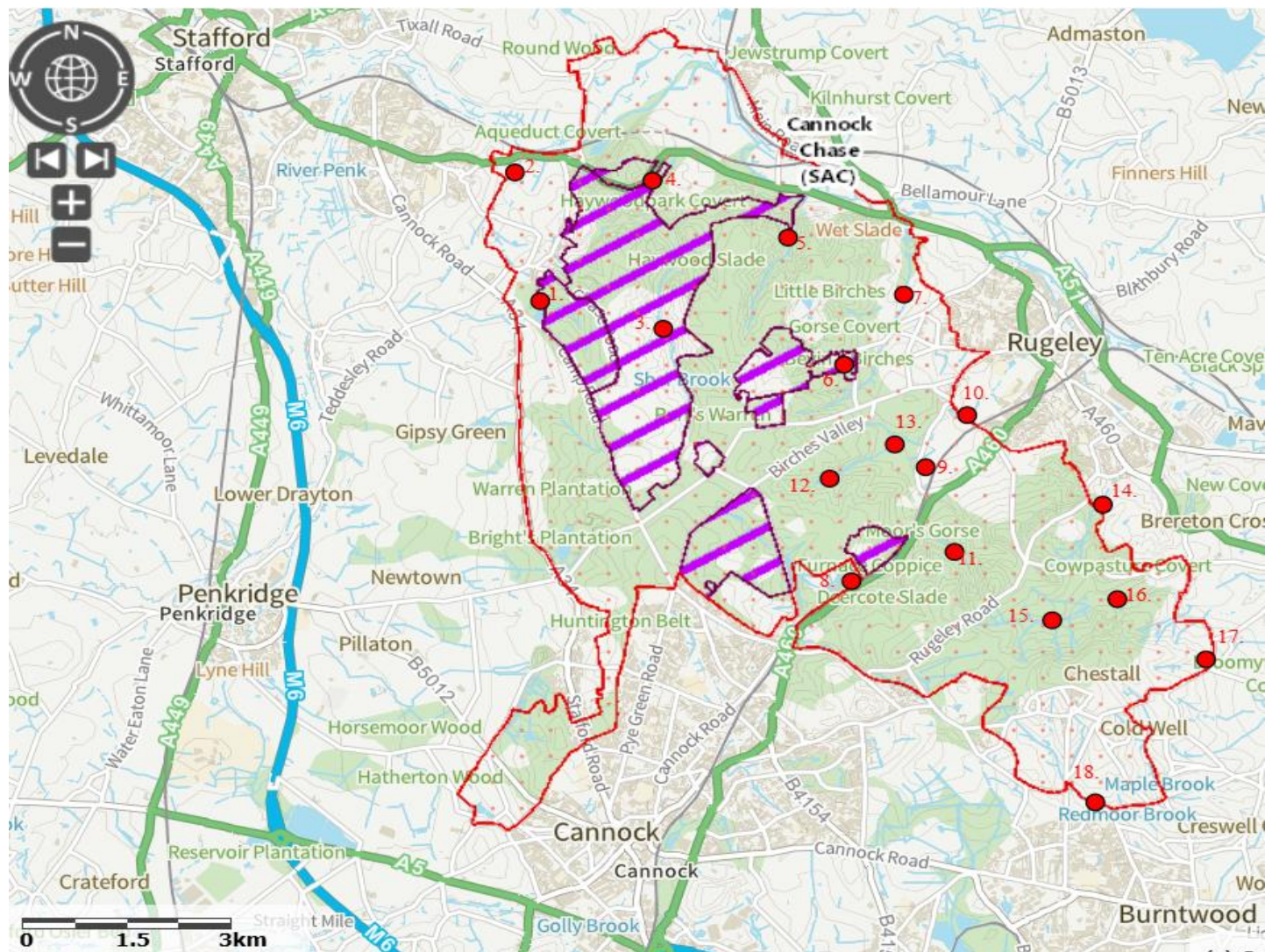
BMWP is the Biological Monitoring Working Party Score. Scores are assigned to invertebrate families depending on their tolerance of organic pollution. The individual family scores are added together. A score over 100 indicates very good conditions, which are unpolluted and unimpacted.

ASPT is the Average Score Per Taxon, which is the total BMWP score divided by the number of BMWP scoring taxa and is therefore independent of sample size. ASPT scores above 6 indicate excellent quality.

WHPT is a modified BMWP score which takes into account abundances of various groups and these figures indicate excellent quality.

SPEAR detects the impacts of pesticide signatures.

Site Number	Site	Watercourse	Grid Ref	Survey Date	Notes
CCh1	Brocton	Oldacre Burn	SJ 96990 18880	17/11/2023	
CCh2	Milford Hall	(Oldacre Burn) Cressel Brook	SJ 96526 20955	14/11/2023	
CCh3	Cherry Slade	Upper Sher Brook	SJ 98703 18408	25/10/2023	Brook Lamprey Ammocoetes
CCh4	Alder Carr	Lower Sher Brook	SJ 98560 20860	17/11/2023	
CCh5	Abraham's Valley	Old Brook	SK 00551 19942	01/11/2023	Bullhead
CCh6	Bevin's Birches	Upper Stafford Brook	SK 01450 17820	10/01/2023	
CCh7	Stafford Brook SSSI	Lower Stafford Brook	SK 02226 19043	31/10/2023	Brook Lamprey Ammocoete
CCh8	Furnace Coppice	Upper Rising Brook	SK 01440 14310	01/11/2023	Bullhead
CCh9	Sheepwash Farm	Central Rising Brook	SK 02500 16120	31/10/2023	Brown Trout, Bullhead
CCh10	Slitting Mill	Lower Rising Brook	SK 03150 17070	31/10/2023	White-clawed Crayfish removed from sample
CCh11	Seven Springs	Upper Fallow Stream	SK 03051 14740	31/10/2023	
CCh12	Fairoak	Upper Stony Brook	SK 01120 15980	11/11/2023	
CCh13	Birches Valley	Lower Stony Brook	SK 02053 16557	11/11/2023	White-clawed Crayfish removed
CCh14	Brereton	Brereton Brook	SK 05160 15670	14/11/2023	
CCh15	Beaudesert Old Park	Upper Shropshire Brook	SK 04480 13700	11/11/2023	White-clawed Crayfish removed
CCh16	Hare's Hill	Lower Shropshire Brook	SK 05419 14014	11/11/2023	
CCh17	Piggot's Bottom	Ben Brook tributary	SK 06620 13070	10/11/2023	
CCh18	Gentleshaw Common	Redmoor Brook	SK 05100 10710	10/11/2023	



Location Map for the 18 Survey Sites at Cannock Chase National Landscape, 2023-24. The SAC is labelled.

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CCh1 Brocton Oldacre Burn



CCh2 Milford Hall, Oldacre Burn / Cressel Brook



CCh3 Cherry Slade, Upper Sher Brook



CCh4 Alder Carr. Lower Sher Brook



CCh5 Abraham's Valley, Old Brook



CCh6 Bevin's Birches, Upper Stafford Brook



CCh7 Stafford Brook SSSI



CCH8 Furnace Coppice, Upper Rising Brook



CCh9 Sheepwash Farm, Central Rising Brook



CCh10 Slitting Mill, Lower Rising Brook



CCh11 Seven Springs, Fallow Stream



CCh12 Fair Oak, Upper Stony Brook



CCh13 Birches Valley, Central Stony Brook



CCh14 Brereton, Brereton Brook



CCh15 Beaudesert Old Park, Upper Shropshire Brook



CCh16 Hare's Hill, Central Shropshire Brook



CCh17 Piggot's Bottom, Ben Brook trib.



CCh18 Gentleshaw Common, Redmoor Brook

