



AQUATIC
INVERTEBRATE SURVEY
OF
PONDS AT BRADLEY
GREEN, CHESHIRE

2016

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1.0 INTRODUCTION

Andy Harmer Limited was commissioned in 2016 to undertake aquatic invertebrate surveys of six ponds at Bradley Green, Cheshire. This was undertaken in August.

The aim of the survey was to assess the invertebrate diversity of the ponds, and offer advice on management.

It was agreed that the results would be displayed in tabulated form with a brief section on management guidance.

2.0 METHODOLOGY

Pond Survey Methodology

Survey using a GB long-handled pond net with 1mm mesh.

Survey all accessible aquatic habitats until nothing new is being found.

Remove invertebrates for laboratory identification if necessary.

Check for the presence of nationally scarce or protected species.

Record the following groups to species level where possible:

Tricladida	flatworms (<i>Polycelis nigra/tenuis</i> and <i>Dugesia lugubris/polychroa</i> are treated as aggregates)
Hirudinea	leeches
Mollusca	snails and mussels (Identification of <i>Pisidium</i> species not attempted)
Malacostraca	shrimps and hoglice
Ephemeroptera	mayflies
Plecoptera	stoneflies
Odonata	dragonflies and damselflies
Hemiptera	aquatic bugs
Coleoptera	water beetles
Megaloptera	alderflies
Trichoptera	caddis flies

Give an indication of the numbers of individuals of each species using the following system:

1	= r	Rare
2-10	= o	Occasional
11-50	= f	Frequent (Locally)
51 plus	= a	Abundant (Locally)

Where species are only recorded from the pond environs, e.g. odonata in flight, give an indication of the sex, life stage (e.g. adult, teneral, exuvia), and the behaviour (e.g. ovipositing, copulating) as well as the abundance.

Provide incidental records of amphibians, birds, mammals and fish that are encountered during the survey

3. MANAGEMENT GUIDANCE

Pond 1 is dominated by *Typha latifolia*. The three large Ash trees around the pond cast shade and leaf litter accumulates in the typha-bed and open water. Whereas the pond may benefit from less shading and a reduction in leaf detritus the Ash trees undoubtedly support many terrestrial invertebrates which in turn is beneficial to bats and birds so removal of trees is not considered appropriate. It was noted that though fencing is present, a small amount of livestock-poaching had occurred, possibly by an animal that had broken the fence. A small amount of poaching would be beneficial to this pond so if this is an option, parts of the fence should be removed.

Pond 2, though possibly joined to Pond 1 historically has much better diversity of invertebrates, probably due to the limited shade, plant cover, and annual leaf-litter inundation. The same prescription that would benefit Pond 1 would apply here too; some fences should be removed to allow livestock access; this would create a gentle grade to the edges, keeping vegetation in check through browsing and trampling, resulting in a mosaic of open water, mud, and patchwork vegetation of different species.

Pond 3 has a good cross-section of habitats that will support amphibians, birds, plants and invertebrates. The fen area to the south of the pool is particularly important and unique in the cluster and must be maintained in its current state. Management must aim to keep the habitats in a similar condition to the current state, maintaining a stable water level and assessing annually the colonisation of scrub in areas where they don't yet have a hold. Scrub should be removed when located in the fen area or around the northeast of the pond.

Pond 4 has recently been subjected to management and must now have a period of stabilisation. Scrub near the shoreline should be removed as and when it occurs.

Pond 5 provides a hidden water with substantial marginal vegetation that will benefit the more confiding birds – Reed Bunting was noted carrying food into the vegetation for the duration of the survey. This pond should be left unmanaged for now.

Pond 6 is suffering from a proliferation of *Azolla filiculoides*; a non-native fern that can cause havoc with the pond causing shading as the blanket of plants thicken. This tends to disappear from the pond if there is a prolonged cold spell in winter. Raking of the fern and composting should only be undertaken in winter.

Efforts were made to find evidence of *Hydrochara caraboides* but the only pond that had any suitability was blighted by *Azolla filiculoides*, an alien invasive species making the pond unsuitable for the beetle. Pond 4 may become suitable within time.

Great Crested Newt breeds in four of the ponds. These are protected species and the Freshwater Habitats Trust should be notified prior to any pond management being undertaken.

RESULTS

Location	Pond 1	Pond 2	Pond 3	Pond 4	Pond 5	Pond 6
YEAR:	2016	2016	2016	2016	2016	2016
Grid Reference	SJ 5093245845	SJ 5095445839	SJ 5090545716	SJ 5090445564	SJ 5085945509	SJ 5097645340
TOTAL SPECIES FOUND	20	37	35	35	24	19
TRICLADIDA:						
<i>Polycelis tenuis/nigra</i>		o	o	f		
Total Tricladida:	1	1	1	1	0	0
HIRUDINEA:						
<i>Helobdella stagnalis</i>					r	
<i>Theromyzon tessulatum</i>				r		r
Total Hirudinea:	0	0	0	1	1	1
MOLLUSCA:						
<i>Deroceras laeve</i>		r	r			
<i>Acroloxus lacustris</i>		o	o			
<i>Potamopyrgus jenkinsi</i>					o	
<i>Radix balthica</i>				o	f	
<i>Physa fontinalis</i>					o	r
<i>Anisus leucostoma</i>						o
<i>Anisus vortex</i>						o
<i>Gyraulus albus L</i>				o		
<i>Hippeutis complanatus L</i>					o	
<i>Planorbarius corneus</i>				f	o	
<i>Sphaerium corneum</i>		o	r	o		
<i>Sphaerium lacustre</i>					o	o
<i>Oxyloma pfeifferi</i>		r	o	o	o	o
<i>Pisidium spp.</i>		o	o	f		o
Total Mollusca	0	5	5	6	7	6
EPHEMEROPTERA:						
<i>Cloeon dipterum</i>		f	o	f	o	
Total Ephemeroptera	0	1	1	1	1	0
ODONATA:						
<i>Anax imperator</i>				Ad R		
<i>Aeshna cyanea</i>	exuvia r	exuvia r	exuvia r		Ad ovipositing	
<i>Aeshna grandis</i>				Ad R	Ad r	
<i>Sympetrum sanguineum</i>	Ad o	Ad r	Ad r	Ad o		r
<i>Sympetrum striolatum N</i>				Ad O ovi	Ad o	
<i>Coenagrion puella</i>		o	o	Ad r		
<i>Ischnura elegans N</i>					Ad o	
<i>Enallagma cyathigerum N</i>				r		

<i>Pyrrhosoma nymphula</i>				o		
<i>Lestes sponsa</i>	Ad o					
Total Odonata:	3	3	3	7	4	1
MALACOSTRACA:						
<i>Crangonyx pseudogracilis</i>	a	f	f	o	f	o
<i>Asellus aquaticus</i>		f	f		a	
<i>Asellus meridianus</i>		o	o			
Total Malacostraca	1	3	3	1	2	1
HEMIPTERA:						
<i>Corixa punctata</i>		f	o	o	o	o
<i>Hesperocorixa sahlbergi</i>	f	o	f		f	
<i>Sigara dorsalis</i>		r		r		
<i>Gerris lacustris</i>		o	o	o	o	o
<i>Gerris odontogaster</i>		r	r	o		
<i>Hydrometra stagnorum</i>		r	o	r	o	
<i>Nepa cinerea</i>	o	r	r			
<i>Notonecta glauca</i>	o	o	o	o	o	o
<i>Notonecta maculata</i>					r	
<i>Microvelia reticulata</i>		o	o			
Total Hemiptera:	3	9	8	6	6	3
TRICHOPTERA:						
<i>Limnephilus flavicornis</i> agg.	o			o		
<i>Glyptotaelius pellucidus</i>	r					
Total Trichoptera:	2	0	0	1	0	0
COLEOPTERA:						
<i>Haliphus ruficollis</i>				o		
<i>Hygrobia hermanni</i> L				o		
<i>Noterus clavicornis</i> L				o		
<i>Agabus nebulosus</i>			r			
<i>Agabus sturmii</i>	o					o
<i>Ilybius ater</i>				r	r	
<i>Ilybius fuliginosus</i>				r		
<i>Haliphus ruficollis</i>				o		
<i>Hygrobia hermanni</i> L				o		
<i>Noterus clavicornis</i> L		o	o	o	o	o
<i>Acilius sulcatus</i>	r	r	r			
<i>Agabus bipustulatus</i>	o					f
<i>Agabus nebulosus</i>		o				
<i>Agabus sturmii</i>	r	o	r			
<i>Laccophilus minutus</i> L				o		
<i>Hydroporus angustatus</i>		r	o			
<i>Hydroporus palustris</i>	o					
<i>Hydroporus planus</i>		r	o			
<i>Hygrotus inaequalis</i>		o	r			

<i>Hygrotus nigrolineatus</i>						
<i>Hyphydrus ovatus</i>	o	r	o	r		r
<i>Anacaena globulus</i>	r	o	o			
<i>Anacaena limbata</i>				r	r	
<i>Cymbiodyta marginella</i>		r	o			
<i>Enochrus coarctatus</i> L		r	r	r		o
<i>Enochrus testaceus</i> L		r	r			
<i>Helochares lividus</i> Nb	r					
<i>Helophorus brevipalpis</i>	o					
<i>Helophorus grandis</i>				r		r
<i>Hydrobius fuscipes</i>		r	o			f
<i>Laccobius bipunctatus</i>	o	o	o			
<i>Scirtes hemisphaericus</i> L		r	o			
<i>Anisosticta 19-punctata</i> L				o		
Total Coleoptera:	10	15	14	11	3	7
Smooth Newt (putative)	larvae	larvae o	larvae o	larvae o		larvae
Great Crested Newt	larvae	larvae o		larvae o		Adult + larvae
Reed Bunting feeding young					x	