



Introduction

A 'BioBlitz' was undertaken at the Oakham Canal from Burley Road (SK 86502 11026) south to the dam (SK 86317 10672), on 23rd July 2022. The canal at this section is preserved in much of its original condition and rich in wildlife. There is a wide body of water and a public right of way along the towpath. The section is leased to Oakham Angling Society and there are a number of fishing pegs along the route. Much of the water's surface is covered in macrophytes and this stretch is dominated by Yellow Water Lily (*Nuphur lutea*) along with Coloured Water Lily (*Nymphaea marliacea*) and Canadian Waterweed (*Elodea Canadensis*). A large area of Mare's Tail (*Hippuris vulgaris*) was noted in the middle of the section. The Water-Lily Leaf Beetle (*Gallerucella nymphaeae*) was noted in huge number, feeding on the leaves of the water lilies. Although widespread and common across much of Britain, this is only the second record of this species in Leicestershire and Rutland.

As part of the BioBlitz, a survey of aquatic invertebrates was undertaken from one of the fishing pegs at the bridge on the Burley/ Barleythorpe boundary at SK 86320 10692.

Method

The Biological Monitoring Working Party (BMWP) sampling method was used to conduct the aquatic invertebrate survey. The BMWP is a scoring system where macroinvertebrates are used to analyse and monitor the health of freshwater bodies (typically rivers, canals and streams) based on their varying tolerances to different stressors, such as pollution (i.e. nutrient enrichment that can affect the availability of dissolved oxygen).



Water Lily Beetle (*Gallerucella nymphaeae*)

Each family of macroinvertebrate is assigned a score from 1- 10 based on their sensitivity to pollution. The higher the score, the less tolerant (more sensitive) the macroinvertebrate is to organic pollution. For example, invertebrates that are only tolerant of the cleanest water bodies will be given a tolerance score of 10, and those tolerant of more polluted water bodies will be given a lower BMWP score. In addition, the ASPT (Average Score per Taxon) and the Ntaxa (Number of taxa contributing to the assessment) are calculated.

The standard method to collect specimens for BMWP consists of a 3-minute pond/sweep net along with an extra 1-minute hand search to ensure the maximum number of taxa have been found – this will be mostly surface dwelling invertebrates.

The macroinvertebrates from each sample were then sorted and recorded to family level on site, using a field microscope for any tricky

taxa. In addition to recording family groups through BMWP, specimens of some taxonomic groups were taken for identification to species level (mostly beetles).

Results

In all, 21 families were recorded through the BMWP survey with a combined score of 110. A summary of the families recorded and their score can be found in Table 1.

Order	Family	Score
Beetles	Dytiscidae	5
	Haliplidae	5
Bugs	Gerridae	5
	Mesoveliidae	5
	Naucoridae	5
	Nepidae	5
	Notonectidae	5
	Pleidae	5
Caddisflies	Limnephilidae	7
Damsel flies	Lestidae	8
	Coenagrionidae	6
Dragonflies	Aeshnidae	8
	Libellulidae	8
Fly Larvae	Chironimidae	2
Leeches	Glossiphoniidae	3
	Hirundinidae	3
Mayflies	Baetidae	4
Shrimps	Gammaridae	6
Snails	Viviparidae	6
	Lymnaeidae	3
	Planorbidae	3
Water Slater	Asellidae	3
	Total:	110

Table 1 – Families recorded and BMWP score

A number of families were expected (due to their tolerance of most water conditions and which are locally common), but were not encountered during the survey. These include

Hydrophilidae (water scavenger beetles), Gyrinidae (Whirligig Beetles), Unionidae (Large Freshwater Mussels), Sphaeriidae (Pea Mussels), Corixidae (Lesser Water Boatmen) and Physidae (Bladder Snails). These, along with other families of Caddisflies would massively increase the overall score.

BMWP score	Category	Interpretation
0-10	Very Poor	Heavily polluted
11-40	Poor	Polluted or impacted
41-70	Moderate	M o d e r a t e l y impacted
71-100	Good	Clean but slightly impacted
>100	Very good	U n p o l l u t e d , unimpacted

Table 2 – Interpretation of BMWP scores

Based on species richness (i.e. the number of families present) the score gives the canal a rating of 'Very Good' – Unpolluted unimpacted. An interpretation of BMWP scores can be found in Table 2.

Additional metrics for the BMWP sample are included in table 3.

Metric	Score
Total Number of Taxa	21
Total BMWP Score	110
Average Score Per Taxa	5.5
Number of Alderfly, Dragonfly and Damselfly Families	4
Number of Beetle Families	2

Table 3 – Additional metrics for BMWP

Average score per taxa (ASPT) can vary from 0.00 (grossly polluted) to 6.00+ (excellent quality). The ASPT score for the canal is 5.5 and considered 'Very Good'.



Ilybius fenestratus (a species of diving beetle recorded from the survey)

Saturday July 23rd 2022

Species recorded

Oakham Canal

Odonata

Emperor dragonfly *Anax imperator* M+F F seen ovipositing

Brown hawkler *Aeshna grandis*

Southern Hawker *Aeshna cyanea*

Ruddy darter *Sympetrum sanguineum*

Willow emerald damselfly *Chalcolestes viridis*

Common blue damselfly *Enallagma cyathigerum*

Azure damselfly *Coenagrion puella*

Red eyed damselfly *Erythromma najas*

Blue-tailed damselfly *Ischnura elegans*

Other Invertebrates

Common carder Bee *Bombus pascuorum*

Marmalade hoverfly *Episyrphus balteatus*

Pirate Water Spider *Pirata piraticus*

Semaphore Fly *Poecilobothrus nobilitatus*

Pond Skater *Gerridae*

Football Hoverfly *Heliophylus pendulen(sp?)*

Common Froghopper. (?Viridis)

Water Slater/Hoglouse *Asellidae*

Ram's-horn snail. *Planorbidae*

Snail *Lymnaeidae*

Backswimmers *Notonectidae*

Cucumber Spider *Bactrocera cucumis*

Diving Beetle *Dytiscidae*

Saucerbug *Naucoridae*

Leech *Hirudinea*

Birds Ornithology

Blutits *Cyanistes cyruleus*

Great tits *Parus major*

Goldfinch *Carduelis carduelis*

Dunnock *Prunella modularis*

Robin *Erithacus rubecula*

Green woodpecker *Picus viridis*

Swan *Cygnus cygnus*

Blackcap *Sylvia atricapilla*

Moorhen *Gallinula chloropus*

Kingfisher *Alcaedo atthis*

Wren *Troglodytes troglodytes*

Long tailed Tit *Aegithalus caudatus*

Bullfinch *Pyrrhula pyrrhula*

Buzzard *Buteo buteo*

Swallow *Hirundo rustica*

Blackbird *Turdus merula*

Starling *Sturnus vulgaris*

House martin *Delichon urbicum*

Butterflies and moths Lepidoptera

Large white *Pieris brassicae*
Small white *Pieris rapae*
Ringlet *Aphantopus hyperantus*
Green veined white *Pieris napae*
Blue- probably common blue
Gatekeeper *Pyronia tithonus*
Red Admiral *Vanessa atalanta*

Fish

Roach *Rutilus rutilus*
Perch *Perca fluviatilis*

Vascular plants

Greater willowherb *Epilobium hirsutum*
Meadowsweet *Filipendula ulmaria*
Hedge woundwort *Stachys sylvatica*
Skullcap *Scutellaria galericulata*
Parrots feather? *Myriophyllum*
Water horsetail *Equisetum fluviatile*
Water plantain *Alisma plantago-aquatica*
Ivey leaved duckweed *Lemna trisulca*
Gypsywort *Lycopus europaeus*
Pale water veneer *Donacaula forficella*
Yellow water lily *Nuphar lutea*
White water lily *Nymphaea alba*
Water figwort *Scrophularia aquatica*
Soft rush *Juncus effusus*
Meadow vetchling *Lathyrus pratensis*
Branched burr reed *Sparganium erectum*
Nettle *Urtica dioica*
Red bartsia *Odontites vernus*

Common Birds foot trefoil *Lotus corniculatus*

Mammals

Soprano pipistrelle *Pipistrellus pygmaeus*