

**A BRIEF REPORT OF A SURVEY OF THE  
INVERTEBRATES OF HINKSEY HEIGHTS FEN**

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This report was produced for Oxfordshire Fens Project

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## SUMMARY

- Hinksey Heights Fen was sampled for invertebrates during two site visits in August and September 2019.
- Methods used were sweep netting from vegetation, hand netting of individual specimens and hand searching for ground dwelling species.
- Of the 173 invertebrate species identified, 131 (76%) are considered ‘Common’ and 37 (21%) are ‘Local’.
- None are designated Nationally Scarce, but the plant bug *Lygus pratensis* is designated RDB3 (Rare) (although this species is currently expanding its British range).
- The importance of Hinksey Heights Fen for invertebrates, which includes a mixture of characteristic woodland, wetland and open grassland species, is highlighted.
- It is recommended that additional survey work, targeting invertebrate species diversity peaks in spring and early summer, is undertaken to complement these initial (late season) observations.

## INTRODUCTION

The Oxfordshire Fens Project is undertaking habitat restoration work to re-establish alkaline fen at Hinksey Heights Fen (central grid reference SP 493 043). A baseline report of the hydro-ecology and biodiversity of the site has been prepared (Morris, 2019), which includes a brief list of historical (1991, 1993 & 2000) invertebrate records (snails, centipedes, millipedes and woodlice) and a list recorded by Judy Webb in 2018 (mainly true flies, Diptera).

This current survey was commissioned by the Oxfordshire Fens Project to update and to build upon these historical and 2018 records. The survey area includes the following units:

- Harcourt Hill Scrub Local Wildlife Site (LWS) – a mostly wooded valley.
- Field 1 – the currently undesignated field at the eastern end of the valley.
- Field 2 – the currently undesignated field in a smaller valley to the south of the LWS.

The survey area comprises about 23.6 ha in extent and is shown in Figure 1.

## METHODS

A general assessment of the invertebrates inhabiting the site was undertaken. Surveys were undertaken on sunny days with minimal wind; the first on 13<sup>th</sup> August during sunny intervals, with a slight breeze and temperature of 20°C; the second on 18<sup>th</sup> September during full sun, still conditions and temperature of 20°C. Four discrete areas were surveyed as indicated in Figure 1: Field 1 (centre point c. SP 498 044), Field 2 (c. SP 496 043), LWS East (c. SP 493 044) and LWS West (c. SP 490 043). Samples from each survey area were kept separate.

The August surveys primarily targeted hoverflies (Syrphidae) and craneflies (Tipulidae, Limoniidae, etc), spiders (Araneae), beetles (Coleoptera) and plant bugs (Heteroptera). Other invertebrate taxa were also collected if caught. These species groups were also targeted in the September survey, but in addition snails (Mollusca), woodlice (Isopoda), millipedes (Diplopoda) and centipedes (Chilopoda) were also targeted. Surveys concentrated on sampling in the wetter areas where possible, including along the central wayleave, but in reality invertebrates were collected from all habitats available on site.

General sampling of invertebrates inhabiting vegetation was undertaken by sweeping (with a robust sweep net) both low growing and taller lush wetland vegetation and the foliage of isolated bushes or overhanging scrub. In addition individual specimens were hand netted from flowers (Angelica, Hogweed, Ragwort, etc) or foliage, tree trunks, etc. Hand searches involved turning logs and stones and searching among moss and leaf-litter and among peaty/twiggy debris. The majority of specimens were collected in tubes of 70% alcohol for identification using a low power binocular microscope. Snails and woodlice were mainly identified in the field. The author undertook identification of all taxa, unless noted.

## RESULTS

A total of 173 species of invertebrate were recorded. This includes 26 species of spider & allies (Arachnida), 21 beetles (Coleoptera), 38 true flies (Diptera) and 33 true bugs (Hemiptera) (Table 1). A few specimens, mainly bees, remain unidentified. In terms of British rarity status\* 131 (76%) are designated as Common, 37 (21%) as Local. None are considered Nationally Scarce. The plant bug *Lygus pratensis* (Miridae), a species of ancient woodland rides, is officially designated RDB3 (Rare), but in recent decades it has expanded its range considerably across the UK (Bantock & Botting, 2018; Jim Flanagan, pers. comm.) and is not considered further herein.

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\***Common:** Taxa that are widespread in Britain, occurring in more than 500 hectads (10km squares) (there are about 3,000 hectads covering Britain).

**Local:** Taxa that are localised in Britain, occurring between 101 and 500 hectads.

**Nationally Scarce:** Species that occur, or could occur, in 16 to 100 hectads in Britain, which although uncommon, do not qualify as Nationally Rare (RDB).

**RDB3:** Taxa that are rare in Britain, occurring in 15 or less hectads in Britain, but which are not considered to be vulnerable or endangered.

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A complete list of the species recorded is given in Appendix II. Details of the individual species records have been entered into an excel spreadsheet.

An additional 18 species were recorded on 12<sup>th</sup> May 2019 by Judy Webb (pers. comm.), including the Local craneflies *Pedicia rivosa* and *Tipula maxima* (see Appendix III).

A full list of the invertebrates recorded prior to 2019 is included within Morris (2019, Table A2.2).

**Table 1: Number of species in each group recorded from Hinksey Heights Fen during the August and September surveys**

Class	Order	Common Name	No. species	% of Total
Gastropoda	Pulmonata	Slugs & Snails	15	8.7
Arachnida	Araneae & Opiliones	Spiders and allies	26	15.1
Chilopoda	Various orders	Centipedes	8	4.7
Diplopoda	Various orders	Millipedes	9	5.2
Malacostraca	Isopoda	Woodlice	9	5.2
Insecta	Coleoptera	Beetles	21	12.2
Insecta	Diptera	True Flies	38	21.5
Insecta	Hemiptera	True Bugs	33	19.2
Insecta	Hymenoptera	Bees, Wasps, Ants	7	4.1
Insecta	Miscellaneous orders	Various Insects	7	4.1
<b>Total number species recorded:</b>			<b>173</b>	<b>100%</b>



**Figure 1: Aerial view of Hinksey Heights Fen (red solid line); eastern section (top) and western section (bottom). The four survey areas (white dotted line) are indicated.**

## DISCUSSION

Some of the species of conservation interest recorded during this survey are briefly mentioned below.

### Invertebrates characteristic of wetland

A good selection of species recorded are characteristic of wetland habitats. The hoverfly *Neoascia tenur* and crane fly *Pedicia rivosa* (recorded in May, Appendix III) both favour lush wetland vegetation, while the hoverfly *Sphaerophoria taeniata* has a preference for wet meadows. It is of note that all three species, and the Local plant hopper *Stroggylocephalus agrestis*, were collected from the large flushed area in Field 1.

Some invertebrates recorded are associated with specific ‘wetland’ plants, such as the leaf-beetle *Chrysolina menthastri* on Water Mint, the weevil *Nanophyes marmoratus* on Purple Loosestrife, the plant bug *Chilacis typhae* on Reedmace and the sawfly *Tenthredo scrophulariae* on Water Figwort. These four species were recorded in Fields 1 and 2 where there are bodies of open water. The predatory beetle *Anthocomus rufus* is typically associated with wet areas in reedbeds, as observed during this survey.

### Invertebrates characteristic of deciduous woodland

Several Local invertebrates recorded favour deciduous woodland. The formerly rare plant bug *Lygus pratensis* is associated with ancient woodland rides (Kirby, 1992) and the Carr Slater *Ligidium hypnorum* favours ancient woodland in Oxfordshire (Gregory, 2009). Other woodland species include the centipede *Strigamia acuminata*, the woodlouse *Trichoniscoides albidus* (collected stream-side at SP49390448, Image 4 App. I) and the crane fly *Tipula maxima* (recorded in May, Appendix III); the latter two favouring wet woodland.

### Invertebrates characteristic of dry habitats

A number of Local species recorded are typical of dry grassland and open scrub. These include the flower beetle *Oedemera lurida* and the Bishop's Mitre Shieldbug *Aelia acuminata*. Of particular note are two locally rare spiders; the crab spider *Xysticus kochi* (Image 1 App. I) and the comb-footed spider *Enoplognatha latimana*, (Image 2 App. I). *X. kochi* was swept from the eastern half of the LWS. It is uncommon but widespread in the UK (Harvey, *et al.*, 2002) and known locally from (at least) the ‘Frilford area’ (pers. obsv.). *E. latimana*, which was swept from Field 1, is frequent along the East Thames corridor (*ibid*), but is expanding its British range north and west. Both spiders were only recognised following microscopic examination of collected specimens (see Images 1 & 2).

### Other invertebrates of note

The Ivy Bee *Colletes hederæ*, which first colonised the UK in the early 2000s, was seen in good numbers on Ivy flowers in full sun at various locations along the nature trail along the northern edge of the LWS (e.g. at SP49120445, Image 3 App. I). It forages solely on Ivy pollen, but typically favours dry friable soils for nesting.

The conopid fly *Conops quadrifasciatus* has larvae that are parasitic on the bumblebee *Bombus lapidarius*, while the larvae of the hoverfly *Volucella zonaria* are scavengers within the nests of wasps. The larvae of the tachinid fly *Phasia hemiptera* are internal parasites of shield bugs (Pentatomidae), such as Green Shield Bug *Palomena prasina* and Forest Bug *Pentatoma rufipes*, which were both recorded during this survey. The presence of a wide array of such species associations is a good indication of generally healthy populations, and relatively un-spoilt habitats.

## **Recommendation for additional surveys**

The wide range of invertebrates recorded simply reflects the wide range of habitats present on site, from open wetland, both dry and wet woodland, and scrubby grassland on limestone soils.

This survey represents a snap-shot of the invertebrates inhabiting Hinksey Heights Fen. The vast array of invertebrate species that could potentially occupy the site means that repeat surveys in subsequent years may well record additional species and fail to record others that have been previously noted. In addition, most invertebrate species are highly seasonal. Although a characteristic 'autumnal' suite of invertebrates is recorded herein, species occurring at other times of year will have been missed. It is apparent that there is almost no overlap between the species recorded during this survey (undertaken in August and September, Appendix II) and those recorded in May (by Judy Webb, Appendix III). Key wetland invertebrates such as Soldierflies are most prolific in June-July, spiders show peak species diversity in May-June, and other invertebrate groups will show different patterns.

In order to obtain a better understanding of the conservation value of the invertebrate fauna of Hinksey Heights Fen it is recommended that additional survey work is undertaken during spring and early summer to target species diversity peaks of potentially important invertebrate groups.

## **ACKNOWLEDGEMENTS**

I thank Judy Webb for making available her species records from Hinksey Heights Fen, including those from May 2019 which are included within this report.

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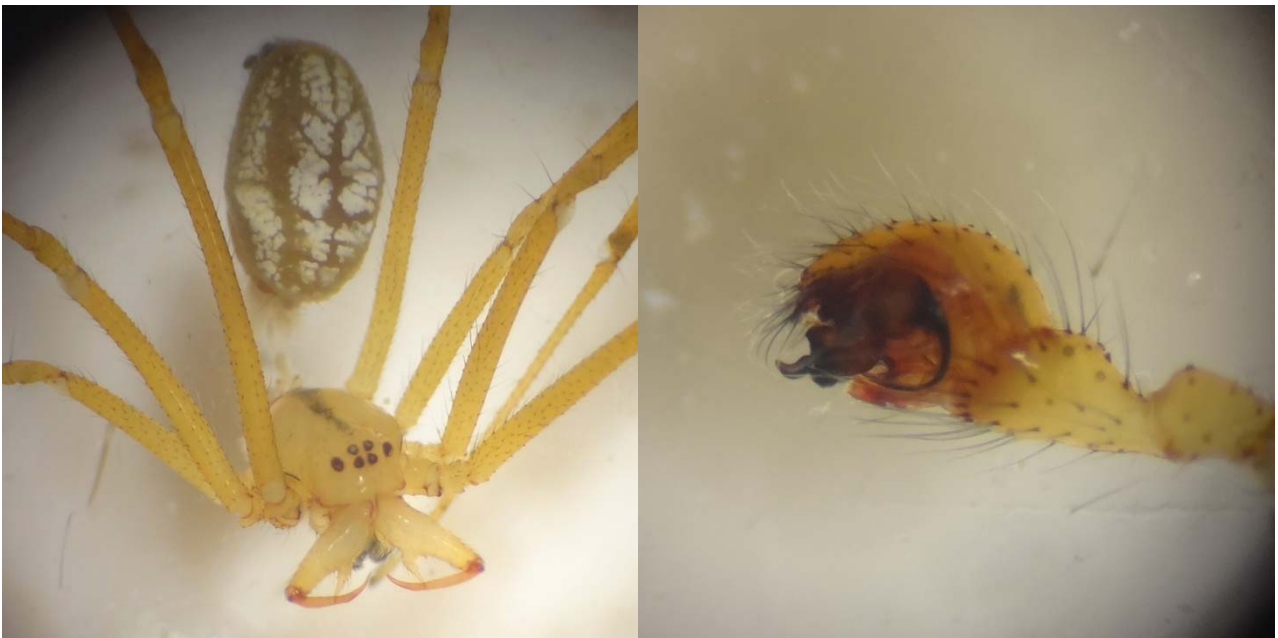
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**APPENDIX I: Images of some invertebrates from Hinksey Heights Fen**



**Image 1: *Xysticus kochi* female. A locally rare crab spider.**  
Habitus, left, and close up of diagnostic female epigyne, right.



**Image 2: *Enoplognatha latimana* male. A locally rare comb-footed spider.**  
Habitus, left, and close up of diagnostic male pedipalp, right





**Image 3: Ivy Bee *Colletes hederæ* foraging on Ivy flower. A relatively recent colonist in the UK but spreading rapidly.**



**Image 4: Typical waterside habitat for the uncommon Rough Pygmy Woodlouse *Trichoniscoides albidus*, which was found under the mossy stone at centre of image.**

## APPENDIX II: List of invertebrate species recorded from Hinksey Heights Fen in August & September 2019

Taxa 1	Family	Species	Vernacular	Nat. Status	Field 1		Field 2		LWS East		LWS West	
					Aug	Sept	Aug	Sept	Aug	Sept	Aug	Sept
<b>Snails and slugs</b>												
Pulmonata	Agriolimacidae	<i>Deroceras reticulatum</i>	Netted Field Slug	Common						seen		
Pulmonata	Arionidae	<i>Arion intermedius</i>	Hedgehog Slug	Common		seen						
Pulmonata	Arionidae	<i>Arion subfuscus</i>	Dusky Slug	Common						seen		seen
Pulmonata	Clausiliidae	<i>Clausilia bidentata</i>	Common Door Snail	Common								seen
Pulmonata	Cochlicopidae	<i>Cochlicopa lubrica</i>	Slippery Moss Snail	Common						seen		seen
Pulmonata	Discidae	<i>Discus rotundatus</i>	Rounded Snail	Common						seen		seen
Pulmonata	Helicidae	<i>Arianta arbustorum</i>	Copse Snail	Common		seen						seen
Pulmonata	Helicidae	<i>Cepaea nemoralis</i>	Brown-lipped Snail	Common				seen		seen		
Pulmonata	Hygromiidae	<i>Monacha cantiana</i>	Kentish Snail	Common						seen		
Pulmonata	Hygromiidae	<i>Trochulus hispidus</i>	Hairy Snail	Common				seen		seen		seen
Pulmonata	Hygromiidae	<i>Trochulus striolatus</i>	Strawberry Snail	Common						seen		
Pulmonata	Oxychilidae	<i>Aegopinella nitidula</i>	Smooth Glass Snail	Common						seen		seen
Pulmonata	Oxychilidae	<i>Oxychilus alliarius</i>	Garlic Snail	Common						seen		seen
Pulmonata	Pristiomatidae	<i>Vitrea crystallina</i>	Crystal Snail	Common						seen		
Pulmonata	Succineidae	<i>Succinea putris</i>	Large Amber Snail	Common				seen		seen		
<b>Centipedes</b>												
Geophilomorpha	Geophilidae	<i>Geophilus flavus</i>	an earth centipede	Common								1
Geophilomorpha	Geophilidae	<i>Geophilus truncorum</i>	an earth centipede	Common						1		1
Geophilomorpha	Geophilidae	<i>Strigamia acuminata</i>	an earth centipede	Local								1m
Geophilomorpha	Himantariidae	<i>Haplophilus subterraneus</i>	an earth centipede	Local						1		
Lithobiomorpha	Lithobiidae	<i>Lithobius forficatus</i>	a stone centipede	Common		1		1		1		1
Lithobiomorpha	Lithobiidae	<i>Lithobius melanops</i>	a stone centipede	Common						1		1
Lithobiomorpha	Lithobiidae	<i>Lithobius variegatus</i>	a stone centipede	Common						seen		seen
Scolopendromorpha	Cryptopsidae	<i>Cryptops hortensis</i>	a cryptid centipede	Common						1		
<b>Millipedes</b>												
Chordeumatida	Craspedosomatidae	<i>Nanogona polydesmoides</i>	Eyed Flat-back Millipede	Common						seen		
Glomerida	Glomeridae	<i>Glomeris marginata</i>	Pill Millipede	Common						seen		seen
Julida	Blaniulidae	<i>Proteroiulus fuscus</i>	a snake-millipede	Common						seen		seen
Julida	Julidae	<i>Cylindroiulus caeruleocinctus</i>	a snake-millipede	Local								2f
Julida	Julidae	<i>Cylindroiulus punctatus</i>	Blunt-tailed Millipede	Common						seen		seen
Julida	Julidae	<i>Ophiulus pilosus</i>	a snake-millipede	Common						1m		



Taxa 1	Family	Species	Vernacular	Nat. Status	Field 1	Field 2	LWS East	LWS West
Julida	Julidae	<i>Tachypodoiulus niger</i>	White-legged Millipede	Common			seen	
Polydesmida	Polydesmidae	<i>Brachydesmus superus</i>	a flat-backed millipede	Common			1f	1f
Polydesmida	Polydesmidae	<i>Polydesmus coriaceus</i>	a flat-backed millipede	Common			1f	1m
<b>Woodlice</b>								
Isopoda	Armadillidiidae	<i>Armadillidium vulgare</i>	Pill Woodlouse	Common				seen
Isopoda	Ligiidae	<i>Ligidium hypnorum</i>	Carr Slater	Local			1f	
Isopoda	Oniscidae	<i>Oniscus asellus</i>	Shiny Woodlouse	Common	seen	seen	seen	seen
Isopoda	Philosciidae	<i>Philoscia muscorum</i>	Striped Woodlouse	Common	seen		seen	
Isopoda	Platyarthridae	<i>Platyarthrus hoffmannseggii</i>	Ant Woodlouse	Common				seen
Isopoda	Porcellionidae	<i>Porcellio scaber</i>	Rough Woodlouse	Common	seen	seen	seen	seen
Isopoda	Trichoniscidae	<i>Haplophthalmus danicus</i>	Spurred Ridgeback	Local			2f	
Isopoda	Trichoniscidae	<i>Trichoniscoides albidus</i>	Rough Pygmy	Local			1m 1f	
Isopoda	Trichoniscidae	<i>Trichoniscus pusillus s.lato</i>	Common Pygmy	Common	seen	seen	seen	seen
<b>Spiders and allies</b>								
Araneae	Amaurobiidae	<i>Amaurobius similis</i>	a spider	Common			1f	1f
Araneae	Anyphaenidae	<i>Anyphaena accentuata</i>	a spider	Common		1 juv		
Araneae	Araneidae	<i>Agalenetea redi</i>	a spider	Local	1 subf			
Araneae	Araneidae	<i>Araneus diadematus</i>	Garden Spider	Common		1f	2f	
Araneae	Araneidae	<i>Larinioides cornutus</i>	a spider	Common	1 subf	juvs	1subf	
Araneae	Araneidae	<i>Mangora acalypha</i>	a spider	Common		2 juvs		
Araneae	Clubionidae	<i>Cheiracanthium erraticum</i>	a spider	Common		1 subf		
Araneae	Dictynidae	<i>Dictyna arundinacea</i>	a spider	Common	1 subf	1f	3 subf	
Araneae	Linyphiidae	<i>Bathyphantes gracilis</i>	a spider	Common			1f	
Araneae	Linyphiidae	<i>Erigone atra</i>	a spider	Common			1m	1m
Araneae	Linyphiidae	<i>Erigone dentipalpis</i>	a spider	Common	1m			
Araneae	Linyphiidae	<i>Linyphia triangularis</i>	a spider	Common		1 juv		
Araneae	Linyphiidae	<i>Linyphia triangularis</i>	a spider	Common	1f	1f		
Araneae	Linyphiidae	<i>Tenuiphantes tenuis</i>	a spider	Common	1m			
Araneae	Pisauridae	<i>Pisaura mirabilis</i>	a spider	Common	juvs	juvs	juvs	juvs
Araneae	Tetragnathidae	<i>Metellina merianae</i>	a spider	Local				1f
Araneae	Tetragnathidae	<i>Metellina segmentata s.str.</i>	a spider	Common		1m 1f		
Araneae	Tetragnathidae	<i>Tetragnatha extensa</i>	a spider	Common	1f +js	1f	1f +js	
Araneae	Tetragnathidae	<i>Tetragnatha montana</i>	a spider	Local	1f	juvs	2f	juvs
Araneae	Theridiidae	<i>Enoplognatha latimana</i>	a spider	Local	1m 1f			

Taxa 1	Family	Species	Vernacular	Nat. Status	Field 1	Field 2	LWS East	LWS West
Araneae	Theridiidae	<i>Enoplognatha ovata s.str.</i>	a spider	Common		1f		1f
Araneae	Thomisidae	<i>Misumena vatia</i>	a spider	Common	1f			
Araneae	Thomisidae	<i>Xysticus kochi</i>	a spider	Local			1f	
Opiliones	Leiobunidae	<i>Dicranopalpus sp.</i>	a harvest spider	unknown				1 juv
Opiliones	Leiobunidae	<i>Leiobunum rotundum</i>	a harvest spider	Common		few	few	1f few
Opiliones	Phalangidae	<i>Paroligolophus agrestis</i>	a harvest spider	Common		1f	juvs	few few
<b>Beetles</b>								
Coleoptera	Anobiidae	<i>Anobium punctatum</i>	Woodworm	Common				1m
Coleoptera	Cantharidae	<i>Rhagonycha fulva</i>	a soldier beetle	Common	seen	seen	seen	seen
Coleoptera	Carabidae	<i>Agonum emarginatum</i>	a ground beetle	Local			1	
Coleoptera	Carabidae	<i>Curtonotus aulicus</i>	a ground beetle	Common			1m 1f	
Coleoptera	Cerambycidae	<i>Agapanthia villosoviridescens</i>	a longhorn beetle	Local	1			
Coleoptera	Chrysomelidae	<i>Chrysolina menthastri</i>	Mint Leaf Beetle	Local	1m 1f			
Coleoptera	Chrysomelidae	<i>Neocrepidodera transversa</i>	a leaf beetle	Common		1		
Coleoptera	Chrysomelidae	<i>Oulema melanopus s.str.</i>	a leaf beetle	Common				1m
Coleoptera	Chrysomelidae	<i>Sphaeroderma testaceum</i>	a leaf beetle	Common		1		
Coleoptera	Coccinellidae	<i>Coccinella 7-punctata</i>	7-spot Ladybird	Common	1		1	1 1
Coleoptera	Coccinellidae	<i>Exochomus quadripustulatus</i>	Pine Ladybird	Common	1	1		1
Coleoptera	Coccinellidae	<i>Harmonia axyridis</i>	Harlequin Ladybird	Naturalised				1 1
Coleoptera	Coccinellidae	<i>Propylea 14-punctata</i>	14-spot Ladybird	Common			1	1
Coleoptera	Coccinellidae	<i>Subcoccinella 24-punctata</i>	24-spot Ladybird	Common	1	few	few	
Coleoptera	Curculionidae	<i>Sitona lineatus</i>	a weevil	Common		few	few	1 2
Coleoptera	Curculionidae	<i>Sitona suturalis</i>	a weevil	Common		2		
Coleoptera	Dryopidae	<i>Dryops luridus</i>	a water beetle	Common		1f		
Coleoptera	Malachiidae	<i>Anthocomus rufus</i>	a beetle	Local		few	few	
Coleoptera	Nanophyidae	<i>Nanophyes marmoratus</i>	Loosestrife Weevil	Common		few		
Coleoptera	Oedemeridae	<i>Oedemera lurida</i>	a beetle	Local	1f		1m 1f	
Coleoptera	Silphidae	<i>Silpha atrata</i>	a carrion beetle	Common			1	1
<b>True Flies</b>								
Diptera	Conopidae	<i>Conops quadrifasciatus</i>	a fly	Local			1f	
Diptera	Empidae	<i>Empis livida</i>	a fly	Common	1f			
Diptera	Hippoboscidae	<i>Lipoptena cervi</i>	Deer Ked	Local				2
Diptera	Muscidae	<i>Mesembrina meridiana</i>	a fly	Common				seen
Diptera	Muscidae	<i>Musca autumnalis</i>	a fly	Common				1m

Taxa 1	Family	Species	Vernacular	Nat. Status	Field 1	Field 2	LWS East	LWS West
Diptera	Opomyzidae	<i>Opomyza florum</i>	a fly	Common		1f		
Diptera	Syrphidae	<i>Cheilosia pagana</i>	a hoverfly	Common		1f		1m
Diptera	Syrphidae	<i>Cheilosia vernalis</i>	a hoverfly	Common		1f		
Diptera	Syrphidae	<i>Chrysogaster solstitialis</i>	a hoverfly	Common		1m		
Diptera	Syrphidae	<i>Chrysotoxum bicinctum</i>	a hoverfly	Local				1m
Diptera	Syrphidae	<i>Episyrphus balteatus</i>	a hoverfly	Common	few	few	few	few
Diptera	Syrphidae	<i>Eristalinus sepulchralis</i>	a hoverfly	Local		1f		
Diptera	Syrphidae	<i>Eristalis horticola</i>	a hoverfly	Common				1f
Diptera	Syrphidae	<i>Eristalis interruptus</i>	a hoverfly	Common		1m 1f	1f	
Diptera	Syrphidae	<i>Eristalis pertinax</i>	a hoverfly	Common	few	few	mf	mf
Diptera	Syrphidae	<i>Eristalis tenax</i>	a hoverfly	Common		1f		
Diptera	Syrphidae	<i>Eupeodes corollae</i>	a hoverfly	Common		1f		
Diptera	Syrphidae	<i>Helophilus pendulus</i>	a hoverfly	Common		1f	1m	
Diptera	Syrphidae	<i>Melanostoma mellinum</i>	a hoverfly	Common	1f	1m 1f	1f	
Diptera	Syrphidae	<i>Melanostoma scalare</i>	a hoverfly	Common		1m		
Diptera	Syrphidae	<i>Myathropa florea</i>	a hoverfly	Common				1f
Diptera	Syrphidae	<i>Neoascia tenur</i>	a hoverfly	Local	1m			
Diptera	Syrphidae	<i>Platycheirus albimanus</i>	a hoverfly	Common	mf	1f	1f	1m
Diptera	Syrphidae	<i>Platycheirus scutatus s.lat.</i>	a hoverfly	Common				1f
Diptera	Syrphidae	<i>Sphaerophoria scripta</i>	a hoverfly	Common	1m	1m	1m	
Diptera	Syrphidae	<i>Sphaerophoria taeniata</i>	a hoverfly	Local	1m 1f			
Diptera	Syrphidae	<i>Syritta pipiens</i>	a hoverfly	Common				1m 1f
Diptera	Syrphidae	<i>Syrphus ribesi</i>	a hoverfly	Common	few	few	few	1f
Diptera	Syrphidae	<i>Syrphus vitripennis</i>	a hoverfly	Common		1f		
Diptera	Syrphidae	<i>Volucella zonaria</i>	a hoverfly	Local			1m	
Diptera	Syrphidae	<i>Xylota segnis</i>	a hoverfly	Common			1f	
Diptera	Tabanidae	<i>Chrysops relictus</i>	a horsefly	Common		1f	1m	
Diptera	Tachinidae	<i>Eriothrix rufomaculata</i>	a parasitic fly	Common	few	few	few	few
Diptera	Tachinidae	<i>Phasia hemiptera</i>	a parasitic fly	Local				1m
Diptera	Tachinidae	<i>Tachina fera</i>	a parasitic fly	Common	1f		1m	1m 2f
Diptera	Tephritidae	<i>Anomoia purmunda</i>	a picture-wing fly	Local	1m			
Diptera	Tipulidae	<i>Tipula paludosa</i>	a crane fly	Common		1m	1m	

Taxa 1	Family	Species	Vernacular	Nat. Status	Field 1	Field 2	LWS East	LWS West
<b>True Bugs</b>								
Hemiptera	Aphrophoridae	<i>Philaenus spumarius</i>	a plant hopper	Common	few	few	few	few
Hemiptera	Cicadellidae	<i>Cicadella viridis</i>	a plant hopper	Common	1m 1f	1f	1m 1f	1f
Hemiptera	Cicadellidae	<i>Eupteryx aurata</i>	a plant hopper	Common			few	few
Hemiptera	Cicadellidae	<i>Evacanthus interruptus</i>	a plant hopper	Common	2f			
Hemiptera	Cicadellidae	<i>Lamprotettix nitidulus</i>	a plant hopper	Local				1f
Hemiptera	Cicadellidae	<i>Stroggylocephalus agrestis</i>	a plant hopper	Local				1f
Hemiptera	Delphacidae	<i>Conomelus anceps</i>	a plant hopper	Common		1f	1f	
Hemiptera	Acanthosomatidae	<i>Acanthosoma haemorrhoidale</i>	a true bug	Common		1 juv		
Hemiptera	Anthocoridae	<i>Anthocoris nemoralis</i>	a true bug	Common				1m 1f
Hemiptera	Lygaeidae	<i>Chilacis typhae</i>	a true bug	Common		few		
Hemiptera	Lygaeidae	<i>Cymus melanocephalus</i>	a true bug	Common		1f		
Hemiptera	Miridae	<i>Apolygus lucorum</i>	a true bug	Common	few	few	few	few
Hemiptera	Miridae	<i>Deraeocoris ruber</i>	a true bug	Common		1f		
Hemiptera	Miridae	<i>Dicyphus epilobii</i>	a true bug	Common				1m 1f
Hemiptera	Miridae	<i>Liocoris tripustulatus</i>	a true bug	Common	few		few	few
Hemiptera	Miridae	<i>Liocoris tripustulatus</i>	a true bug	Common			few	few
Hemiptera	Miridae	<i>Lygus pratensis</i>	a true bug	RDB3	1m 1f	2f	3f	1m 3f
Hemiptera	Miridae	<i>Notostira elongata</i>	a true bug	Common		few	1m 1f	few
Hemiptera	Miridae	<i>Orthotylus marginalis</i>	a true bug	Common				1m
Hemiptera	Miridae	<i>Phytocoris varipes</i>	a true bug	Common	1f		1f	1m 1f
Hemiptera	Miridae	<i>Plagiognathus arbustorum</i>	a true bug	Common		few	few	few
Hemiptera	Miridae	<i>Stenodema calcarata</i>	a true bug	Common	1m 1f			
Hemiptera	Miridae	<i>Stenodema laevigata</i>	a true bug	Common			1m	1m 1f
Hemiptera	Nabidae	<i>Himacerus apterus</i>	a true bug	Common	1m	1f		1m 1f
Hemiptera	Nabidae	<i>Nabis limbatus</i>	a true bug	Common			1m 1f	1m 1f
Hemiptera	Nabidae	<i>Nabis rugosus</i>	a true bug	Common	1f		1m 1f	1f
Hemiptera	Pentatomidae	<i>Aelia acuminata</i>	Bishop's Mitre Bug	Local		few		1f
Hemiptera	Pentatomidae	<i>Eurydema oleracea</i>	Crucifer Shieldbug	Local	1			1
Hemiptera	Pentatomidae	<i>Palomena prasina</i>	Common Green Shieldbug	Common				1 juv
Hemiptera	Pentatomidae	<i>Pentatoma rufipes</i>	Red-legged Shieldbug	Common	1			
Hemiptera	Pentatomidae	<i>Picromerus bidens</i>	Spiked Shieldbug	Common			1f	
Hemiptera	Rhopalidae	<i>Rhopalus subrufus</i>	a true bug	Local			1	
Hemiptera	Psyllidae	<i>Cacopsylla melanoneura</i>	Black-veined Psyllid	Common		1f		



Taxa 1	Family	Species	Vernacular	Nat. Status	Field 1	Field 2	LWS East	LWS West
<b>Bees, wasps, ants and sawflies</b>								
Hymenoptera	Colletinae	<i>Colletes hederae</i>	Ivy Bee	Local			few	few
Hymenoptera	Apinae	<i>Apis mellifera</i>	Honey Bee	Naturalised	few	few	few	few
Hymenoptera	Formicidae	<i>Lasius flavus</i>	Yellow Meadow Ant	Common		few		few
Hymenoptera	Formicidae	<i>Lasius niger s.lat.</i>	an ant	Common		few		few
Hymenoptera	Formicidae	<i>Myrmica ruginodis</i>	an ant	Common	few		few	few
Hymenoptera	Tenthredinidae	<i>Athalia rosae</i>	a sawfly	Local			1f	1f
Hymenoptera	Tenthredinidae	<i>Tenthredo scrophulariae</i>	a sawfly	Local		1m 1f		
<b>Misc. Insects</b>								
Dermaptera	Forficulidae	<i>Forficula auricularia</i>	Common Earwig	Common	seen	seen	seen	seen
Mecoptera	Panorpidae	<i>Panorpa communis</i>	a scorpion fly	Common			1m 1f	
Orthoptera	Acrididae	<i>Chorthippus parallelus</i>	Meadow Grasshopper	Common	f	f		
Orthoptera	Conocephalidae	<i>Conocephalus discolor</i>	Long-winged Conehead	Local	1f	1 subf	1f	1 subf
Orthoptera	Tetrigidae	<i>Tetrix subulata</i>	Slender Ground Hopper	Local		1		1
Orthoptera	Tettigoniidae	<i>Metrioptera roeselii</i>	Roesel's Bush Cricket	Local			1f	
Psocoptera	Stenopsocidae	<i>Stenopsocus immaculatus</i>	a bark fly	unknown				1m
<b>Taxa 1</b>	<b>Family</b>	<b>Species</b>	<b>Vernacular</b>	<b>Nat. Status</b>	<b>Field 1</b>	<b>Field 2</b>	<b>LWS East</b>	<b>LWS West</b>
		<b>Total 172 species</b>			<b>60 species</b>	<b>75 species</b>	<b>87 species</b>	<b>80 species</b>

**APPENDIX III: Miscellaneous invertebrates recorded from Hinksey Heights Fen by Judy Webb on 12<sup>th</sup> May 2019**

<b>Class</b>	<b>Order</b>	<b>Family</b>	<b>Taxon</b>	<b>Vernacular</b>	<b>Nat. Status</b>
Arachnida	Araneae	Araneidae	<i>Araniella cucurbitina s.lato</i>	an orb web spider	Common
Gastropoda	Pulmonata	Helicidae	<i>Cepaea hortensis</i>	White-lipped Snail	Common
Insecta	Coleoptera	Cantharidae	<i>Cantharis rustica</i>	a soldier beetle	Common
Insecta	Coleoptera	Coccinellidae	<i>Chilocorus renipustulatus</i>	Kidney-spot Ladybird	Common
Insecta	Coleoptera	Coccinellidae	<i>Coccinella septempunctata</i>	7-spot Ladybird	Common
Insecta	Coleoptera	Elateridae	<i>Denticollis linearis</i>	a click beetle	Common
Insecta	Coleoptera	Pyrochroidae	<i>Pyrochroa serraticornis</i>	Common Cardinal Beetle	Common
Insecta	Diptera	Pediciidae	<i>Pedicia rivosa</i>	a crane fly	Local
Insecta	Diptera	Tipulidae	<i>Tipula luna</i>	a crane fly	Common
Insecta	Diptera	Tipulidae	<i>Tipula lunata</i>	a crane fly	Common
Insecta	Diptera	Tipulidae	<i>Tipula maxima</i>	a crane fly	Local
Insecta	Hemiptera	Cercopidae	<i>Cercopis vulnerata</i>	a plant hopper	Common
Insecta	Hymenoptera	Apinae	<i>Bombus hypnorum</i>	a bumblebee	Local
Insecta	Hymenoptera	Vespidae	<i>Vespa crabro</i>	The Hornet	Local
Insecta	Lepidoptera	Erebidae	<i>Callimorpha dominula</i>	Scarlet Tiger	Local
Insecta	Lepidoptera	Nymphalidae	<i>Pararge aegeria</i>	Speckled Wood	Common
Insecta	Lepidoptera	Pieridae	<i>Gonepteryx rhamni</i>	Brimstone	Common
Insecta	Orthoptera	Tetrigidae	<i>Tetrix subulata</i>	Slender Ground Hopper	Local