

**DIPTERA SURVEY OF
THE LITTLE OUSE HEADWATERS RESERVES,
SUFFOLK/NORFOLK: 2011**

Report to Little Ouse Headwaters Project

Report: May 2012

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SUMMARY

The Little Ouse Headwaters Project (LOHP) requested a Diptera survey of selected reserves within their management in 2011. The reserves form a complex of adjoining sites within the upper part of the River Little Ouse and straddle the Norfolk and Suffolk border. The survey initially centred on the recently restored fens at Parker's Piece and Bleswyck Bank. Hinderclay Fen is also being considered for re-notification as an SSSI and survey work focused on this site later on in an attempt to gather information that may be useful.

The results of survey work undertaken in July, August and September 2011 using a variety of methods are presented. A total of 370 terrestrial invertebrate species were recorded and these include three Red Data Book and eleven Nationally Scarce Diptera species as well as one Red Data Book moth, two Nationally Scarce beetles and three Nationally Scarce aculeate Hymenoptera.

Overall, all the reserves proved to be of interest and clearly support a number of broadland as well as Breckland specialities as well as more general fenland taxa. Collectively, and with the nearby Redgrave and Lopham Fen they form a very valuable area for native wetland invertebrates.

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INTRODUCTION

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METHODS

The main survey methods were sweep-netting and active searching. The former involved using a 40cm diameter net supplied by B & S Entomological Supplies (formerly Marris House Nets, Brighton) mounted on a metre long angling pole. The net was passed over bare ground and through low vegetation. Material was removed selectively with a pooter (aspirator). Direct searching included searching under stones and other debris, searching flower-heads, recording butterflies and other obvious insects in flight and recording plant galls and leaf-mines.

The initial survey was conducted on 23rd & 24th June 2011 in excellent weather conditions. A return visit was made to Hinderclay Fen on 26th August 2011 in wet weather which meant that mainly plant galls and leafmines were recorded although two Malaise traps (one in fen, the other in scrub at the edge of a fen) and two water traps (one in *Molinia* within heathland, the other at the edge of *Calluna* heath) were also put out. The Malaise traps and water traps were emptied on 22nd September 2011.

Identification of the swept material has concentrated on certain target groups that are known to be of value in site assessment. The contents of the fen Malaise trap and the water trap placed amongst *Molinia* have been assessed for this report; the material from the second Malaise trap and water trap will be retained by the surveyor and examined if time becomes available. As well as Diptera, other terrestrial invertebrates were recorded providing that they could be identified without too much difficulty and that they provided useful habitat information.

Definitions of Red Data Book and Nationally Scarce (formerly known as Notable) statuses are provided in Appendix 2.

RESULTS AND DISCUSSION

SPECIES ASSESSMENT

A total of 370 terrestrial invertebrate species were recorded and these are listed in Appendix 1. These include three Red Data Book and eleven Nationally Scarce Diptera species as well as one Red Data Book moth, two Nationally Scarce beetles and three Nationally Scarce aculeate Hymenoptera. These are listed and briefly discussed below.

Red Data Book 3

| | | |
|-------------------------------|-------------|-------------|
| <i>Archanara algae</i> | Lepidoptera | Noctuidae |
| <i>Homoneura mediospinosa</i> | Diptera | Lauxaniidae |

| | | |
|--------------------------|---------|-------------|
| <i>Meonura neglecta</i> | Diptera | Carnidae |
| <i>Ochthera manicata</i> | Diptera | Ephydriidae |

Nationally Scarce (= Notable)

| | | |
|------------------------------------|-------------|---------------|
| <i>Demetrias imperialis</i> | Coleoptera | Carabidae |
| <i>Adonia variegata</i> | Coleoptera | Coccinellidae |
| <i>Neoascia geniculata</i> | Diptera | Syrphidae |
| <i>Triglyphus primus</i> | Diptera | Syrphidae |
| <i>Aulogastromyia anisodactyla</i> | Diptera | Lauxaniidae |
| <i>Homoneura christophi</i> | Diptera | Lauxaniidae |
| <i>Homoneura tesquae</i> s.l. | Diptera | Lauxaniidae |
| <i>Anagnota bicolor</i> | Diptera | Anthomyzidae |
| <i>Elachiptera pubescens</i> | Diptera | Chloropidae |
| <i>Eribolus nana</i> | Diptera | Chloropidae |
| <i>Speccafrons halophila</i> | Diptera | Chloropidae |
| <i>Siphonella oscinina</i> | Diptera | Chloropidae |
| <i>Mintho rufiventris</i> | Diptera | Tachinidae |
| <i>Anoplius caviventris</i> | Hymenoptera | Pompilidae |
| <i>Crossocerus palmipes</i> | Hymenoptera | Sphecidae |
| <i>Hylaeus pictipes</i> | Hymenoptera | Colletidae |

A single example of what appears to be a rush wainscot *Archanara algae* was recorded in the Malaise trap on Hinderclay Fen. This resident rarity flies in August and September and is associated with broadland, freshwater ponds and old water-filled gravel-pits. This very local species is found not uncommonly in the Norfolk Broads and in a few small lakes in mid-Sussex. The caterpillar feeds in the stems of common club-rush, common reed, bulrush and yellow iris. The specimen should be sent to an experienced lepidopterist for confirmation of the identification.

Three Red Data Book Diptera were recorded on the survey. The lauxaniid *Homoneura mediospinosa* was only recently separated from the Red Data Book *Homoneura interstincta* (Merz 2003). The ecological and distribution differences between the two species need to be worked out but *mediospinosa* appears to be the more frequent of the two. The larvae are likely to develop in decaying pliant material such as leaf litter. The minute carniid *Meonura neglecta* has only been recorded six times in the UK according to Falk and Ismay (in prep.). Three of these records are from Suffolk, namely, Lakenheath Warren (1980), Moulton (1894) and Barton Mills (1935). This species probably inhabits heathland or associated broadleaved woodland. This family is neglected and it is possible that the species is more widespread. The distinctive brine-fly *Ochthera manicata* has only been recorded from Norfolk and Suffolk with the exception of a single (1987) record from Carmarthenshire, South Wales. This species is associated with areas of bare peat. This species is highly restricted although not infrequent in the Norfolk Broads. The surveyor has recorded it from Thompson Common NNR.

Two Nationally Scarce Coleoptera were recorded on the survey. The small but distinctive ground beetle *Demetrias imperialis* has been recorded from southern England and the Midlands (Hyman and Parsons 1992). This species is associated with fens, broads, marshes, ponds, gravel pits, brackish marshes and tidal rivers. It is usually found in reed beds and amongst bulrushes and also in flood litter. The adonis ladybird *Adonia variegata* has been recorded throughout England and Wales and has increased its range and abundance in recent years. It is normally associated with pioneer habitats such as heathland, grassland, parkland,

sand dunes, riverbanks and wasteground (Hyman and Parsons 1992). It can no longer be considered scarce and its status should be relegated to Local (based on the surveyor's experience).

Two Nationally Scarce hoverflies were recorded on the survey. The small *Neoascia geniculata* is usually swept from lush emergent vegetation such as reed sweet grass around ponds and ditches. The small, semi-aquatic larva has been found in decaying vegetation around the margin of ponds. Further information and an up-to-date map are provided by Ball and Morris (2011). The small black hoverfly *Triglyphus primus* is found in a range of sunny and exposed habitats such as heathland, brownfield sites and dry grassland where its larvae feed on mugwort.

Several female lauxaniids belonging to the genus *Homoneura* were recorded in the samples and these could only be identified as *H. tesquae sensu lato*. This 'species' has been recorded widely in southern England with isolated records in Yorkshire and Merionethshire. This enigmatic yellow fly has caused much confusion in recent years. There has been some opinion that British specimens are referable to *H. christophi* and this has led to both names being placed on the British list. However, there is no good evidence that more there is more than one species in Britain and there is no doubt over the validity of *H. christophi*. Interestingly, a single male clearly referable to *H. christophi* was recorded in the samples. Another Nationally Scarce lauxaniid *Aulogastromyia anisodactyla* was also recorded in the samples. This species is associated with woodland edge, rides, clearings and open structured scrub. As mentioned above, the larvae of lauxaniids are generally believed to develop in decaying vegetable matter.

The minute anthomyzid *Anagnota bicolor* was recorded in the Malaise trap at Hinderclay Fen. This species has been recorded widely throughout Britain and in the surveyor's experience, it is usually found in associated with sedge or grass tussocks in wetlands. Falk and Ismay (in prep) state that it is usually associated with *Phragmites* in marshes and coastal levels but this does not appear correct. Four Nationally Scarce chloropids were recorded in the samples. *Elachiptera pubescens* is, according to Falk and Ismay (in prep) a coastal species of southern England where it is mainly associated with brackish coastal levels and, to a lesser extent, with damp heathland, gravel pits and marshes. In the surveyor's experience, this species is not particularly coastal and is not particularly associated with *Phragmites* beds. The minute *Eribolus nana* appears to be a northern and western species but with occasional records for Norfolk and other counties (the surveyor has recorded it from Thompson Common). The habitat appears to be the reedbeds and sedge-beds on the margins of streams and lakes. *Speccafrons halophila* has been recorded from a range of wetlands including fens and coastal marshes throughout the southern half of Britain. It has been reared from a spider's egg cocoon in Oxfordshire and it appears that reedbed inhabiting spiders may be used. *Siphonella oscinina* has been recorded throughout England and more rarely in Wales and Scotland. It is normally associated with pioneer habitats and there are reports that the larvae develop in grasshopper egg pods or are associated with scale insects in grasses.

The parasite fly *Mintho rufiventris* is normally associated with grasslands and woodlands and may often be found resting on walls near buildings. It can also occur regularly, but sparsely in gardens.

The spider-hunting wasp *Anoplius caviventris* has largely been recorded from southern England with one record for Wales. It is associated with bushy and coarsely vegetated places

especially riversides and reedbeds. Nesting occurs in dead hollow stems of plants such as thistles, Angelica, bramble and common reed. The solitary wasp *Crossocerus palmipes* has been widely recorded throughout Britain and is associated with open sandy habitats especially heathland and disturbed situations such as sandpits and coastal landslips. The yellow-faced bee *Hylaeus pictipes* has been recorded widely throughout southern England with a record for Wales. The habitat preferences for this species are unclear but records include wooded situations, fen, coastal dunes and occasionally gardens.

A number of species recently added to the British list were also recorded on the survey. These include *Xanthochlorus galbanus*, *Palloptera anderssoni* and *Phasia barbifrons*. Some of these may merit Red Data Book or Nationally Scarce status. The yellow-veined darter *Sympetrum flaveolum* was also recorded. This dragonfly is normally regarded as a vagrant but in recent years has become a regular breeder and appears now to be resident.

SITE ASSESSMENT

General

The distribution of the Red Data Book and Nationally Scarce species throughout the reserves is summarised in Table 1.

Betty's Fen

Four Nationally Scarce species were recorded, namely the adonis ladybird *Adonia variegata*, the lauxaniid *Homoneura tesquae s.l.*, the chloropid *Eribolus nana* and the yellow-faced bee *Hylaeus pictipes*.

Bleswyck Bank

Two Nationally Scarce species were recorded namely the chloropids *Elachiptera pubescens* and *Speccafrons halophila*.

Blo Norton Fen

Six Nationally Scarce species were recorded namely the adonis ladybird *Adonia variegata*, the hoverfly *Triglyphus primus*, the lauxaniid *Homoneura christophi*, the parasite *Mintho rufiventris*, the solitary wasp *Crossocerus palmipes* and the yellow-faced bee *Hylaeus pictipes*.

Hinderclay Fen

Sweeping and direct searching took place throughout the entire site. The water trap in *Molinia* was located in grassland heath and the Malaise trap was located in *Phragmites* fen.

Two Red Data Book Diptera, (the lauxaniid *Homoneura mediospinosa* and the carniid *Meonura neglecta*) and two Nationally Scarce species (the lauxaniid *Aulogastromyia anisodactyla* and the chloropid *Siphonella oscanina*) were swept on the 27th July 2011. The Nationally Scarce spider-hunting wasp *Anoplius caviventris* was recorded in the water trap placed amongst *Molinia* grassland in September 2011. The Malaise trap placed in *Phragmites* fen produced the Red Data Book rush wainscot *Archanara algae* as well as the Nationally Scarce hoverfly *Neoascia geniculata* and the anthomyzid *Anagnota bicolor*.

Parker's Piece

For recording purposes, this reserve was split into three sites, the main site, scrub along the southern edge and along the banks of the River Little Ouse.

One Red Data Book dipteran was recorded, namely, the ephydrid *Ochthera manicata*, along with two Nationally Scarce beetles (*Demetrius imperialis*, *Adonia variegata*) and five Nationally Scarce Diptera (*Homoneura christophi*, *Homoneura tesquae* s.l., *Elachiptera pubescens*, *Speccafrons halophila* and *Siphonella oscinina*).

Overall site assessment

Bleswyck Bank produced the least number (2) of high profile species which may be an indication of the recent disturbance and paucity of established fen vegetation. Conversely, Parker's Piece produced eight species of enhanced nature conservation value and this site is also restored fen. The greater number of rare and uncommon species may be a reflection of the greater variety of habitats available as well as the increased amount of time spent surveying this site (because it was divided into three compartments, it received effectively three times as much sampling effort as Bleswyck Bank). Blo' Norton Fen and Hinderclay Fen clearly also support several species of high nature conservation value each, although it should be borne in mind that the latter received more survey effort than the former. Overall, all the reserves proved to be of interest and clearly support a number of broadland as well as Breckland specialities as well as more general fenland taxa. Collectively, and with the nearby Redgrave and Lopham Fen they form a very valuable area for native wetland invertebrates.

CONCLUSIONS

The results of a Diptera survey on various Little Ouse Headwaters Project reserves are presented. A total of 370 terrestrial invertebrate species were recorded and these include three Red Data Book and eleven Nationally Scarce Diptera species as well as one Red Data Book moth, two Nationally Scarce beetles and three Nationally Scarce aculeate Hymenoptera.

Overall, all the reserves proved to be of interest and clearly support a number of broadland as well as Breckland specialities as well as more general fenland taxa. Collectively, and with the nearby Redgrave and Lopham Fen they form a very valuable area for native wetland invertebrates.

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TABLE 1: RED DATA BOOK AND ANTIONALLY SCARCE DIPTERA AND OTHER INVERTEBRATES RECORDED ACCORDING TO RESERVE

| | Bleswyck Bank | Parker's Piece | Betty's Fen | Blo' Norton Fen | Hinderclay Fen (swept) | Hinderclay Fen (w/t in Molinia) | Hinderclay Fen (Malaise trap in fen) |
|------------------------------------|---------------|----------------|-------------|-----------------|------------------------|---------------------------------|--------------------------------------|
| <i>Archanara algae</i> | | | | | | | + |
| <i>Homoneura mediospinosa</i> | | | | | + | | |
| <i>Meonura neglecta</i> | | | | | + | | |
| <i>Ochthera manicata</i> | | + | | | | | |
| <i>Demetrias imperialis</i> | | + | | | | | |
| <i>Adonia variegata</i> | | + | + | + | | | |
| <i>Neoascia geniculata</i> | | | | | | | + |
| <i>Triglyphus primus</i> | | | | + | | | |
| <i>Aulogastromyia anisodactyla</i> | | | | | + | | |
| <i>Homoneura christophi</i> | | + | | + | | | |
| <i>Homoneura tesquae</i> s.l. | | + | + | | | | |
| <i>Anagnota bicolor</i> | | | | | | | + |
| <i>Elachiptera pubescens</i> | + | + | | | | | |
| <i>Eribolus nana</i> | | | + | | | | |
| <i>Speccafrons halophila</i> | + | + | | | | | |
| <i>Siphonella oscinina</i> | | + | | | + | | |
| <i>Mintho rufiventris</i> | | | | + | | | |
| <i>Anoplus caviventris</i> | | | | | | + | |
| <i>Crossocerus palmipes</i> | | | | + | | | |
| <i>Hylaeus pictipes</i> | | | + | + | | | |
| | 2 | 8 | 4 | 6 | 4 | 1 | 3 |

**APPENDIX 1: DIPTERA AND OTHER INVERTEBRATES RECORDED FROM
LITTLE OUSE HEADWATERS RESERVES: 2011**

Abundances in the spreadsheet refer to numbers taken or observed in the field

Red Data Book and Nationally Scarce species have been emboldened in the spreadsheet

APPENDIX 2: INVERTEBRATE STATUS CATEGORIES

[This document is reproduced from an English Nature document. Full details of the references given are given in the original document].

For the purposes of evaluating invertebrate faunas and priorities for conservation action, invertebrates are attributed various rarity status categories, the meanings of which are given below. Criteria for the selection of species into Red Data Book categories one to five follow Shirt (1987), with minor modifications derived from Hyman & Parsons (1992) and Parsons (1993).

Categories RDBI (Indeterminate) and RDBK (Insufficiently Known) are based on the criteria used by Wells, Pyle and Collins (1983). Criteria for the selection of Nationally Scarce species follow Eversham (1983) and Ball (1986).

Red Data Book Category 1. RDB1 - ENDANGERED

Definition. Taxa in danger of extinction in Great Britain and whose survival is unlikely if the causal factors continue operating.

Included are taxa whose numbers have been reduced to a critical level or whose habitats have been so dramatically reduced that they are deemed to be in immediate danger of extinction. Also included are some taxa that are possibly extinct.

Criteria. Species, which are known or believed, to occur as only a single population within one 10km square of the National Grid.

Species, which only occur in habitats known to be especially vulnerable.

Species, which have shown a rapid and continuous decline over the last twenty years and are now estimated to exist in five or fewer 10km squares.

Species which are possibly extinct but have been recorded this century but which if rediscovered would need protection.

Red Data Book Category 2. RDB2 - VULNERABLE

Definition. Taxa believed likely to move into the Endangered category in the near future if the causal factors continue operating.

Included are taxa of which most or all of the populations are decreasing because of over-exploitation, extensive destruction of habitat or other environmental disturbance; taxa with populations that have been seriously depleted and whose ultimate security is not yet assured; and taxa with populations that are still abundant but are under threat from serious adverse factors throughout their range.

Criteria. Species declining throughout their range.

Species in vulnerable habitats.

Red Data Book Category 3. RDB3 - RARE

Definition. Taxa with small populations in Great Britain that are not at present Endangered or Vulnerable, but are at risk.

These taxa are usually localized within restricted geographical areas or habitats or are thinly scattered over a more extensive range.

Criteria. Species, which are estimated to exist in only 15 or fewer 10km squares. This criterion may be relaxed where populations are likely to exist in over 15 10km squares but occupy small areas of especially vulnerable habitat.

Red Data Book Category 4. RDB4 - OUT OF DANGER

Definition. Taxa formerly meeting the criteria of one of the aforementioned categories but which are now considered relatively secure because effective conservation measures have been taken or the previous threat to their survival in Great Britain has been removed.

Red Data Book Category 5. RDB5 - ENDEMIC

Definition. Taxa, which are not known to occur naturally outside Great Britain. Taxa within this category may also be in any of the other RDB categories or not threatened at all.

There are few truly endemic species in Great Britain. Most that have been identified are in fairly obscure groups, which are relatively poorly known, and the species may well eventually be discovered elsewhere in Europe.

Red Data Book Appendix. RDBApp. - EXTINCT

Definition. Taxa which formerly had breeding populations in Great Britain but which are now believed to have died out. (Taxa not recorded since 1900)

Red Data Book Category I. RDB I - INDETERMINATE

Definition. Taxa considered being Endangered, Vulnerable or Rare, but where there is not enough information to say which of the three categories (RDB1 to 3) is appropriate.

Red Data Book Category K. RDBK - INSUFFICIENTLY KNOWN

Definition. Taxa that are suspected, but not definitely known, to belong to any of the

aforementioned categories, because of lack of information.

Criteria. Taxa recently discovered or recognised in Great Britain, which may prove to be more widespread in the future (although some recent discoveries may be placed in other categories if the group to which they belong is thought not to be under- recorded).

Taxa with very few or perhaps only a single known locality but which belong to poorly recorded or taxonomically difficult or unstable groups.

Species with very few or perhaps only a single known locality, inhabiting inaccessible or infrequently sampled but widespread habitats, such as some northern moorland species, species associated with some agricultural situations and species which are adult only during the winter.

Species with very few or perhaps only a single known locality and of questionable native status, but not clearly falling into the category of recent colonist, vagrant or introduction.

| | | | | | | | | | | |
|----------------------------|---|---|---|--|---|---|---|---|----|---|
| Leiobunum rotundum | | | | | | | | | 12 | 3 |
| Enoplognatha ovata | | | | | 1 | | | | | |
| Eriophyes laevis inangulis | | | | | 1 | 1 | | 1 | | |
| Eriophyes macrochelus | | | | | | | | 1 | | |
| Eriophyes macrorhynchus | | | | | | | | 1 | | |
| Eriophyes similis | | | | | | | 1 | 1 | | |
| Phyllocoptes populi | | | | | | | 1 | | | |
| Chorthippus brunneus | | | | | | | 1 | | 1 | |
| Chorthippus parallelus | | | | | | | | | 1 | |
| Conocephalus sp (nymphs) | | | 1 | | | | | | | |
| Myrmeleotettix maculatus | | | | | | | 1 | | | |
| Stenobothrus lineatus | | | | | | | | | 3 | |
| Leptophyes punctatissima | | | | | 1 | 1 | | | | |
| Meconema thalassinum | 1 | | | | | | | | | |
| Pholidoptera griseoaptera | | 1 | | | 1 | | | | | |
| Tetrix undulata | | 1 | 3 | | | | | | | |

| | | | | | | | | | | |
|-----------------------|---|---|---|---|---|---|----|--|----|---|
| Forficula auricularia | | | 1 | 1 | 1 | 1 | 1 | | 30 | 1 |
| Coenagrion puella | | 1 | 1 | | | | | | | |
| Ischnura elegans | | 5 | | 1 | | | | | | |
| Sympetrum flaveolum | | | | | | | | | 1 | |
| Sympetrum striolatum | | | | | | | | | 9 | |
| Chrysopa carnea | 1 | 2 | 2 | 5 | 2 | 5 | 2 | | | |
| Chrysopa perla | | | | | | | 15 | | | |
| Aphrophora alnivora | | | | | 1 | | | | | |
| Aphrophora major | | | | | | 7 | | | | |
| Cicadella viridis | | 2 | | | | | | | | |
| Delphax pulchellus | | | | | | | | | | 9 |
| Neophilaenus lineatus | | 1 | | | | 1 | | | | |
| Philaenus spumarius | 3 | 2 | 2 | | 2 | 1 | 1 | | | |
| Aelia acuminata | | | | | | | | | 1 | 1 |
| Deraeocoris olivaceus | | | | | | 1 | | | | |
| Deraeocoris ruber | | | | | 1 | 1 | 1 | | | |

| | | | | | | | | | |
|------------------------------|--|---|---|----------|---|---|----|--|---|
| Heterotoma merioptera | | | 2 | | 2 | | | | |
| Kleidocerys resedae | | | | | | | 11 | | |
| Liocoris tripustulatus | | | | | 1 | | | | |
| Palomena prasina | | | | | | | 1 | | |
| Pentatoma rufipes | | 1 | | | | 1 | | | |
| Rhopalus subrufus | | | | | | | | | 1 |
| Stenodema calcaratum | | | | | 3 | 6 | 2 | | 1 |
| Glyptotaelius pellucidulus | | | | 1 | 1 | | | | |
| Grammotaulius nigropunctatus | | | | | | | 2 | | |
| Limnophilus flavicornis | | | | 1 | | | | | |
| Limnophilus incisus | | | | | | 1 | | | |
| Limnophilus lunatus | | | | | | 2 | | | |
| Mystacides nigra | | 1 | | | | | | | |
| Demetrias imperialis | | | | 1 | | | | | |
| Paedurus fuscipes | | | | | | | | | 1 |
| Adalia 2-punctata | | | | 1 | | 1 | | | |

| | | | | | | | | | | |
|---------------------------|---|---|---|----------|----------|----------|---|---|---|---|
| Adonia variegata | | | | 2 | 1 | 1 | | | | |
| Calvia 14-guttata | | | 1 | | 1 | | | | | |
| Chilocorus renipustulatus | 1 | | | | | | | | | |
| Coccinella 7-punctata | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 6 | 2 |
| Harmonia axyridis | 1 | | | 2 | 10 | 10 | | | | |
| Propylea 14-punctata | 1 | | 2 | | 1 | 1 | 1 | | | |
| Tytthaspis 16-punctata | | | 1 | | | | | | | |
| Librodor hortensis | | | | | 1 | | | | 1 | |
| Denticollis linearis | 1 | | | | | | | | | |
| Lagria hirta | | | | | 1 | | | | | |
| Oedemera nobilis | | | | | | 2 | | | | |
| Oulema melanopa s.s. | | | | | | | | | 3 | 9 |
| Oulema melanopa s.l. | | | | | 2 | 2 | | | | |
| Nannophyes marmoratus | | | | | 3 | | | | | |
| Gonapteryx rhamni | | | | | | 1 | | | | |
| Pieris napi | | 1 | | | | 1 | | 1 | 1 | |

| | | | | | | | | | |
|------------------------|---|---|--|---|---|---|---|---|----------|
| Pieris rapae | | 1 | | | 1 | | | 1 | |
| Inachis io | 1 | | | | | | | | |
| Polygonia c-album | | | | | 1 | | | | 2 |
| Vanessa atalanta | | 1 | | | 1 | 1 | | 1 | |
| Aphantopus hyperanthus | | 1 | | | | | | | |
| Maniola jurtina | | 1 | | | | 1 | | | |
| Pararge aegeria | | | | | 1 | 1 | | 3 | 2 |
| Pyronia tithonus | | | | | | | 1 | | |
| Lycaena phlaeas | | | | | | | | 2 | |
| Polyommatus icarus | | | | | | 1 | | | |
| Ochlodes venatus | | | | | | | 1 | | |
| Thymelicus sylvestris | | | | | | 1 | | | |
| Archanara algae | | | | | | | | | 1 |
| Nephrotoma flavescens | | | | 2 | | | | | |
| Nephrotoma flavipalpis | | | | | | | 1 | | |
| Nephrotoma quadrifaria | | | | | 1 | | | | |

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|---------------------------|---|---|---|---|---|---|--|---|---|
| Nephrotoma scurra | | | | | | 1 | | | |
| Tipula fascipennis | | | 1 | | | | | | |
| Tipula lateralis | | 2 | | | | | | | |
| Tipula nigra | | | 1 | | | | | | |
| Tipula paludosa | 1 | | | | | | | | |
| Cheilotrichia cinerescens | | | 1 | | | | | | 1 |
| Gonomyia tenella | | | | 1 | | | | | |
| Limonia chorea | | | | | 1 | | | | |
| Limonia modesta | | | | | | | | | 1 |
| Limonia nubeculosa | | | 1 | | | 1 | | 1 | 1 |
| Molophilus appendiculatus | | | | | 1 | | | | |
| Molophilus bifidus | | | | | | 1 | | | |
| Molophilus griseus | 1 | | | | | 1 | | | 5 |
| Molophilus medius | | | | | 1 | 2 | | | |
| Molophilus obscurus | | | | | | 1 | | | |
| Molophilus ochraceus | | | 2 | | | | | | |

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|---------------------------|---|--|---|---|---|---|---|---|---|----|
| Molophilus pleuralis | | | | | | | | | | 6 |
| Neolimnophila adjuncta | | | | | | 1 | | | | 1 |
| Phylidorea ferruginea | | | | | | | | | | 13 |
| Rhipidia duplicata | 2 | | | | | | | | | |
| Symplecta stictica | | | | | 1 | | | | | |
| Tricyphona immaculata | | | | | | | | | | 6 |
| Ptychoptera albimana | | | | | | | | | | 4 |
| Ptychoptera minuta | | | | | | | | | | 18 |
| Boreoclytocerus ocellatus | 2 | | | | | | 1 | | | |
| Dasineura urticae | 1 | | | 1 | 1 | | | 1 | | |
| Iteomyia capreae | | | | | | 1 | | | | |
| Iteomyia major | | | | | | 1 | | | | |
| Dilophus febrilis | | | | 1 | | | | | | |
| Schwenkfeldina carbonaria | | | | | | | | | 2 | |
| Sylvicola punctatus | 2 | | | | | 1 | | | 2 | |
| Beris vallata | | | 1 | 3 | | | | | | |

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|-------------------------|---|---|----|----|---|---|----|--|--|--|
| Chloromyia formosa | 1 | | 1 | 1 | 1 | | | | | |
| Chorisops tibialis | 3 | 1 | 1 | 7 | | | 19 | | | |
| Microchrysa polita | | | 1 | 1 | | | | | | |
| Nemotelus nigrinus | | | 1 | | | | | | | |
| Oxycera nigricornis | 3 | | 1 | 1 | 1 | 2 | | | | |
| Oxycera trilineata | 1 | | | 1 | | 1 | | | | |
| Pachygaster atra | 3 | | 2 | 21 | 6 | 2 | | | | |
| Pachygaster leachii | 4 | | 1 | 10 | 2 | | 1 | | | |
| Chrysops viduatus | | | | | | 2 | | | | |
| Haematopota pluvialis | | | 1 | 1 | 2 | 3 | 3 | | | |
| Chrysopilus asiliformis | | 2 | 14 | 1 | 2 | | | | | |
| Chrysopilus cristatus | | | 1 | | 3 | 2 | | | | |
| Rhagio lineola | | | | 1 | | 4 | 2 | | | |
| Rhagio tringarius | | | 1 | | | | | | | |
| Thereva nobilitata | 2 | | 4 | 4 | | | 1 | | | |
| Dioctria linearis | | | | | | 1 | | | | |

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|-------------------------------|---|---|---|---|---|----|---|--|----|----|
| Machimus atricapillus | | | | | | | | | 18 | 1 |
| Machimus cingulatus | | | | | | | 1 | | | |
| Crossopalpus nigrیتella | | | 1 | 1 | 5 | 11 | | | | |
| Drapetis assimilis | | | | | | 1 | | | | |
| Drapetis ehippiata | 4 | | 3 | 3 | 2 | 1 | | | | |
| Platypalpus minuta s.l. | | 1 | | | 6 | | | | | |
| Tachypeza nubila | | | | | | | | | | 12 |
| Hybos culiciformis | | | | 2 | 2 | 1 | | | | |
| Hybos femoratus | | | 1 | 1 | 5 | | | | | |
| Ocydromia glabricula | 1 | | 1 | 1 | | | | | | |
| Empis livida | | | | 1 | | | | | | |
| Microphor anomalus | | | 5 | | 3 | 1 | | | | |
| Dolichocephala oblongoguttata | | | | | | | | | | 2 |
| Achalcus cinereus | | | | | | | | | | 1 |
| Campsicnemus curvipes | | | 1 | | 1 | | | | | |
| Chrysotimus molliculus | 1 | | 1 | 1 | | 1 | | | | 2 |

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|----------------------------|----|---|---|---|----|---|---|--|---|--|
| Chrysotus blepharosceles | | 1 | 2 | | | | | | | |
| Chrysotus gramineus | 5 | | 7 | 1 | 7 | 1 | | | | |
| Chrysotus neglectus | 10 | 2 | 1 | 4 | 33 | 7 | 7 | | 1 | |
| Dolichopus latelimbatus | | | 1 | | 2 | | | | | |
| Dolichopus picipes | | 5 | | | | | | | | |
| Hercostomus gracilis | | | | 1 | 2 | | | | | |
| Hercostomus metallicus | | | | | | 3 | | | | |
| Hercostomus nigriplantis | | | | | | | 1 | | | |
| Hydrophorus balticus | 1 | 1 | | | | | | | | |
| Poecilobothrus principalis | | | 1 | | | | | | | |
| Rhaphium caliginosum | | | 1 | | | | | | | |
| Sciapus longulus | | | | | 1 | 1 | | | | |
| Sympycnus desoutteri | | 6 | 1 | | | | | | | |
| Sympycnus spiculatus | | | | | | 1 | | | | |
| Teucophorus spinigerellus | | | 2 | | | 2 | | | | |
| Xanthochlorus galbanus | | | | | 2 | | | | | |

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|---------------------------|---|---|---|---|---|----------|---|---|---|---|
| Neoascia tenur | 2 | 1 | 1 | 2 | 7 | 15 | 1 | | | |
| Parasyrphus punctulatus | | | | 1 | | | | | | |
| Pipizella viduata | | | | | | 1 | | | | |
| Platycheirus albimanus | 1 | | 2 | 2 | | 3 | 1 | | | |
| Platycheirus clypeatus | | 5 | 4 | 1 | 2 | 6 | 2 | | | |
| Platycheirus fulviventris | | | | | | | | | | 3 |
| Platycheirus occultus | | 3 | 1 | | 1 | 4 | 1 | | | |
| Platycheirus peltatus | | | | | 1 | | | | | |
| Platycheirus ramsarensis | 1 | | | | | 1 | | | | |
| Scaeva pyrastris | | | 1 | | | | | | | |
| Sericomyia silentis | | | | | | | | 1 | | 2 |
| Sphaerophoria scripta | | 1 | 1 | | 1 | 1 | 5 | | 1 | |
| Syritta pipiens | 1 | 2 | 1 | 1 | | | 2 | | | |
| Syrphus vitripennis | 2 | | | 1 | 2 | | 3 | | | |
| Trichopsomyia flavitarsis | | | 1 | | | | | | | |
| Triglyphus primus | | | | | | 1 | | | | |

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|-------------------------|---|---|---|---|---|---|---|--|---|---|
| Xylota segnis | | | | | | | | | 2 | 1 |
| Xylota sylvarum | | | | | | | | | | 1 |
| Conops quadrifasciatus | | | | | | 1 | | | | |
| Sicus ferrugineus | | | | | 1 | | | | | |
| Anomoia purmunda | | | | | | 1 | | | | |
| Cerajocera tussilaginis | | | 1 | 2 | | | | | | |
| Euleia heraclei | | | | 1 | | 1 | | | | |
| Myoleja caesio | | | | | | 3 | | | | |
| Tephritis cometa | 1 | | | | | | | | | |
| Tephritis conura | 1 | | | | | | | | | |
| Tephritis formosa | 1 | | | 1 | | | 1 | | | |
| Terrellia ruficauda | 1 | | 1 | | | 3 | | | | |
| Trypeta zoe | | | | | | | | | | 1 |
| Urophora cardui (galls) | | 1 | | | | | | | | |
| Urophora stylata | | | 2 | 1 | | | | | | |
| Xyphosia miliaria | | | 3 | | 1 | | | | | |

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|------------------------------------|---|---|---|----|---|---|---|--|---|
| Palloptera anderssoni | | | | | 1 | 1 | | | |
| Palloptera ustulata s.l. | | | | | 2 | | | | |
| Palloptera muliebris | | | | | | | | | 1 |
| Melieria crassipennis | | | | | 1 | | | | |
| Melieria omissa | | 3 | | | | | | | |
| Physiphora demandata | | | | | | | 5 | | |
| Seioptera vibrans | | | | | | 1 | | | |
| Loxocera albiseta | | | 1 | | | | | | |
| Aulogastromyia anisodactyla | | | | | | | 2 | | |
| Calliopum aeneum | 3 | | 1 | 15 | 3 | 5 | 5 | | 1 |
| Calliopum simillimum | 2 | | 1 | 2 | 3 | 6 | 1 | | |
| Homoneura christophi | | | | 1 | | 1 | | | |
| Homoneura mediospinosa | | | | | | | 1 | | |
| Homoneura notata | | | | 1 | | | | | |
| Homoneura tesquae s.l. | 1 | | | | 1 | | | | |
| Meiosimyza affinis | | | | | | 1 | | | |

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|-------------------------|--|---|---|--|---|---|--|--|----------|
| Euthycera fumigata | | | 1 | | | | | | |
| Hydromya dorsalis | | | 1 | | 1 | | | | |
| Ilione albiseta | | | | | | | | | 1 |
| Pherbellia cinerella | | 1 | | | | | | | |
| Pherbellia schoenherri | | | 1 | | | | | | |
| Pherbina coryleti | | | 2 | | | | | | 8 |
| Renocera pallida | | | | | | | | | 2 |
| Sepedon spinipes | | | | | | 1 | | | |
| Tetanocera arrogans | | | | | | | | | 1 |
| Tetanocera elata | | | | | | | | | 6 |
| Tetanocera ferruginea | | 1 | | | | 1 | | | 1 |
| Tetanocera fuscinervis | | | 1 | | | | | | 1 |
| Tetanocera hyalipennis | | | | | | | | | 1 |
| Sepsis cynipsea | | 3 | | | | | | | |
| Anagnota bicolor | | | | | | | | | 1 |
| Anthomyza gracilis | | | 2 | | 2 | 2 | | | |

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|------------------------------|----------|-----------|----------|----------|----------|----|----------|---|---|----|
| Cerodontha denticornis | 2 | 5 | 7 | 9 | 4 | | 2 | | | |
| Phytomyza lappae | 1 | | 1 | | 1 | 1 | | 1 | | |
| Phytomyza cirsii | 1 | 1 | | | 1 | | | | | |
| Aphanotrigonum trilineatum | | | | | 1 | | 14 | | 2 | |
| Camarota curvipennis | | | | | | | | | | 10 |
| Elachiptera cornuta | 7 | 4 | | 3 | 4 | | | | | 1 |
| Elachiptera pubescens | 5 | 11 | 1 | 2 | | | | | | |
| Eribolus hungaricus | | 2 | | | | | | | | |
| Eribolus nana | | | | | 5 | | | | | |
| Platycephala planifrons | | | | | | 4 | | | | |
| Rhopalopterum anthracina | 2 | | | | | | | | | |
| Speccafrons halophila | 1 | 6 | | | | | 1 | | | |
| Siphonella oscinina | | | | | 4 | | | | | |
| Thaumatomyia glabra | 1 | | | | 1 | | 1 | | | |
| Thaumatomyia hallandica | | | | 1 | | | | | | |
| Thaumatomyia notata | 12 | 6 | 28 | 137 | 23 | 38 | 46 | | | 11 |

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|--------------------------|----|---|---|---|---|----------|--|---|---|
| Tricimba cincta | | | | | | 5 | | | |
| Asteia amoena | | | 1 | 4 | | 1 | | | 1 |
| Chyromyza flava | | | | | | 1 | | | |
| Clusiodes albimana | | | | | | | | | 3 |
| Heteromyza rotundicornis | | | | | | 1 | | | |
| Meonura neglecta | | | | | | 1 | | | |
| Madiza glabra | | | | | | 1 | | | |
| Trixoscelis frontalis | | | | 1 | | 1 | | | |
| Campichoeta punctum | | | 3 | | | | | | |
| Diastata adusta | 1 | 6 | 2 | | | | | | |
| Scaptomyza pallida | 13 | | | 4 | 3 | 4 | | 1 | |
| Coenia palustris | | | | | | | | | 1 |
| Discomyza incurva | | | | | 1 | | | | |
| Hyadina humeralis | | 1 | | | | | | | |
| Notiphila cinerea | | 5 | | | | | | | |
| Notiphila riparia | 9 | | | 4 | | | | | |

| Ochthera manicata | | 1 | 2 | | | | | | | |
|--------------------------|---|----------|----------|----|---|---|---|--|--|---|
| Parydra aquila | 1 | 15 | | | | | | | | |
| Parydra coarctata | 1 | 32 | | | | | | | | |
| Parydra fossarum | | 46 | | | | | | | | |
| Parydra littoralis | | 1 | | | | | | | | |
| Scatella tenuicosta | | | | | 1 | | | | | |
| Lotophila atra | 5 | 3 | 5 | 11 | | | | | | |
| Cleigastra apicalis | | | | | | | | | | 7 |
| Cordilura albipes | | | | | | | 1 | | | 6 |
| Cordilura ciliata | | | | | | | | | | 1 |
| Pogonota barbata | | 1 | | | | | | | | |
| Scathophaga stercoraria | 1 | 3 | 1 | | | 1 | 1 | | | |
| Scathophaga suillia | | | | 1 | | | | | | |
| Trichopalpus fraterna | | 1 | | | | | | | | |
| Melanomya nana | 2 | | | 10 | | | | | | |
| Sarcophaga incisilobata | | | | | | | 1 | | | |

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|-----------------------|---|---|---|----|---|---|---|---|---|
| Sarcophaga variegata | | | | | 1 | | | | |
| Fannia armata | | | | | 3 | 4 | 1 | | 1 |
| Hylemyia variata | 1 | 1 | 2 | 16 | | | | | |
| Caricea erythrocerata | 4 | 8 | | | | 1 | | | |
| Coenosia agromyzina | | | 1 | | | | | | |
| Coenosia bilineella | | | | 1 | | 1 | | | |
| Coenosia mollicula | | | | | | | | | 1 |
| Coenosia tigrina | 2 | 1 | 2 | 2 | 1 | | | 1 | |
| Graphomya maculata | 1 | | 1 | | | 1 | | | 1 |
| Morellia simplex | | | | | 1 | 1 | | | |
| Musca autumnalis | | | | | 2 | | | | 1 |
| Myospila meditabunda | | | | 1 | | | | | |
| Neomyia cornicina | 1 | 1 | | | | | | | |
| Neomyia videscens | 1 | | | | | | | | |
| Ophyra leucostoma | 1 | | | | 1 | | 2 | | |
| Schoenomyza litorella | | 1 | | | | | 1 | | |

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| Arachnospila anceps | | | | | | | | | 10 | |
| Episyron rufipes | | | | | | | | | 1 | |
| Omalus aeneus | 1 | | | | | | | | | |
| Formica fusca | | | | | | 1 | 3 | 4 | 3 | |
| Lasius niger | | | | | | | | 1 | | |
| Vespula germanica | | | | | | | | | 1 | |
| Vespula rufa | | | | | | | | | | 1 |
| Vespula vulgaris | | | | | | | | | 1 | |
| Ammophila sabulosa | | | | | | | 1 | | | |
| Cerceris rybyensis | | | 1 | | | | | | | |
| Crossocerus annulipes | | | | | | 1 | | | | |
| Crossocerus palmipes | | | | | | 2 | | | | |
| Ectemnius continuus | | | | | | | | | 1 | 1 |
| Mellinus arvensis | | | | | | | | | 2 | 1 |
| Passaloecus sp | | | | | | 1 | | | | |
| Pemphredon lugubris | | | | | | 4 | | | | |

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| Psenulus pallipes | | | | | | 1 | | | | |
| Rhopalum clavipes | | | | | | 2 | | | | |
| Tiphia femorata | | | | | | | | | 1 | |
| Trypoxylon attenuatum | | | | | | 9 | | | | 12 |
| Hylaeus pictipes | | | | | 1 | 1 | | | | |
| Bombus lapidarius | 2 | | | 1 | | 1 | | | | |
| Bombus lucorum | | | | | 1 | 1 | | | | |
| Bombus pascuorum | | 1 | | 1 | 1 | 1 | | 1 | 4 | |
| Bombus terrestris | | 1 | | 1 | | | | | 1 | |