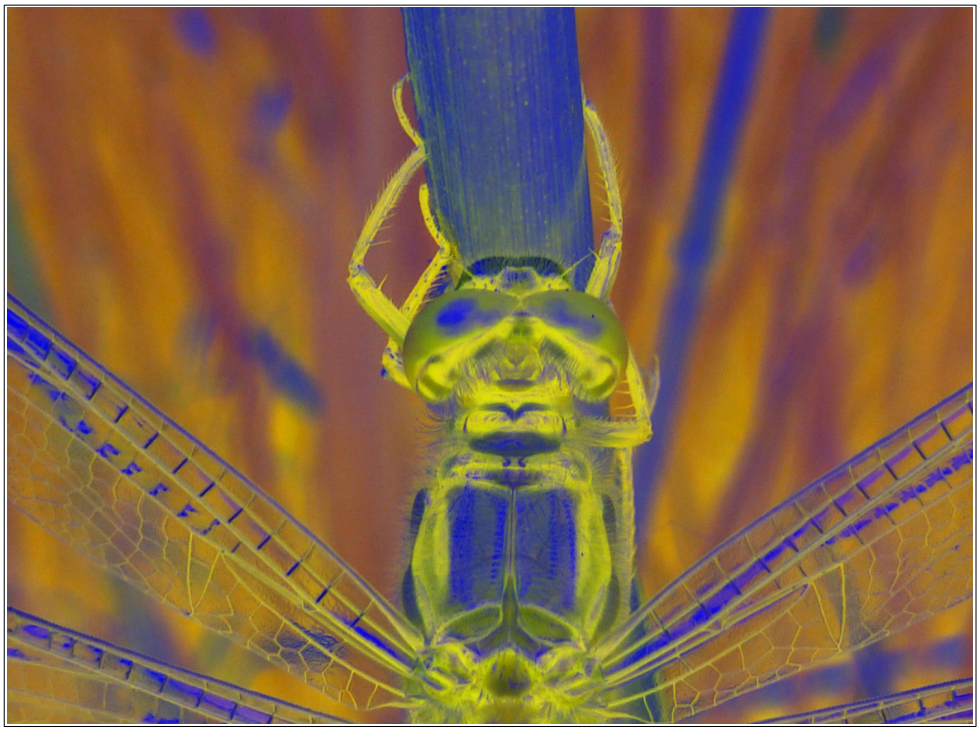
Invertebrate Survey Report
LOHP 2023

The Lows, The Frith and Little Fen



Prepared by Steve Lane for
Little Ouse Headwaters Project

October 2023

Contents

1 Summary

- A baseline survey of invertebrates was carried out at the LOHP sites The Lows, Little Fen and The Frith, during 13 visits, between January and September 2023. The results of this survey were combined with data from previous year's visits by the lead surveyor.

- 3,372 records were collated, representing 1,318 distinct invertebrate species. Thirteen of these species are designated as Nationally Rare (NR, Red Data Book) and 86 are designated as Nationally Scarce (NS, Notable).

- Twelve species qualify with an IUCN Threat status of 'Vulnerable' or 'Near Threatened'. Those in the former category are Small Heath butterfly *Coenonympha pamphilus,* the wood borer spider beetle *Ptinus palliatus,* Short Daggertail *Xyela julii,* Narrow-mouthed Whorl Snail *Vertigo angustior* and the variegated mud-loving beetle *Heterocerus fusculus.* In the latter category are the aquatic beetles *Enochrus nigritus, E. quadripunctatus, Hydrochus elongatus, Laccornis oblongus* and *Agabus uliginosus* and the moths Blackneck *Lygephila pastinum,* Large Nutmeg *Apamea anceps* and Latticed Heath *Chiasmia clathrata.* The IUCN 'Vulnerable' beetle *Heterocerus fusculus* is in need of re-evaluation due to overlooked inland populations.

- Two NERC (Natural Environment and Rural Communities Act 2006) Section 41 species were recorded. These are the Small Heath butterfly and Narrow-mouthed Whorl Snail. The NERC legislation requires that 'the presence of these species needs to be taken into consideration by a public body when performing any of its functions with a view to conserving biodiversity'.

- Narrow-mouthed Whorl Snail, recorded at The Lows, is further listed under Annex II of the European Union Habitats and Species (EUHS) Directive. This Directive requires EU States to designate Special Areas of Conservation (SACs) and to maintain 'at a favourable conservation status' those species listed in Annex II.

- No **fully** legally-protected species were found during the survey.

- The survey demonstrates the importance of wetland habitat at The Lows, dead wood habitat at The Frith, and to a lesser extent, the breck grassland habitat, also at the latter site. These are shown in the analyses to support significant invertebrate assemblages.

- Brief recommendations are given for habitat creation and also management of existing habitats, with the aim of potentially enhancing the value of this important habitat mosaic complex for its invertebrate assemblages.

2 Scope of Survey

This survey was commissioned by The Little Ouse Headwaters Project (LOHP), 'a local Charity dedicated to the restoration, conservation and promotion of enjoyment of the wildlife and landscape of the Little Ouse valley on the Suffolk/Norfolk borders'.

The contract remit was to carry out a baseline survey, to identify and report on terrestrial and aquatic invertebrate species across three sites managed by the organisation. The sites lie within close proximity of each other and form part of a broader fen-habitat restoration scheme. The present survey is the last in a series of four baseline surveys of all of the current LOHP reserves. Previous surveys on other sites owned or leased and managed by the Charity, were carried out in 2019, 2021 and 2022 (Lane, 2019; 2021; 2022).

Results of the survey were used to evaluate the quality of the sites, and to offer recommendations for management that focus on the creation of new habitat and the preservation and maintenance of significant habitat and related insect assemblages.

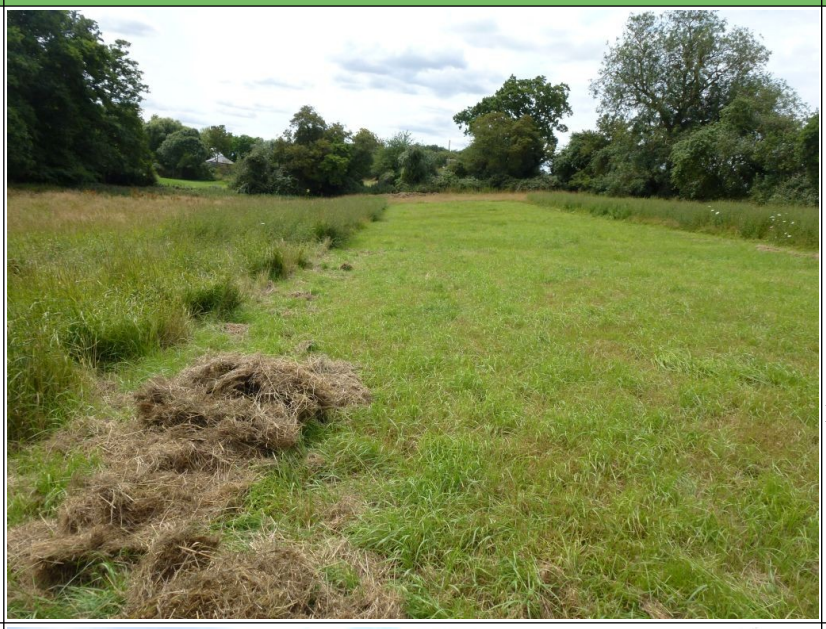
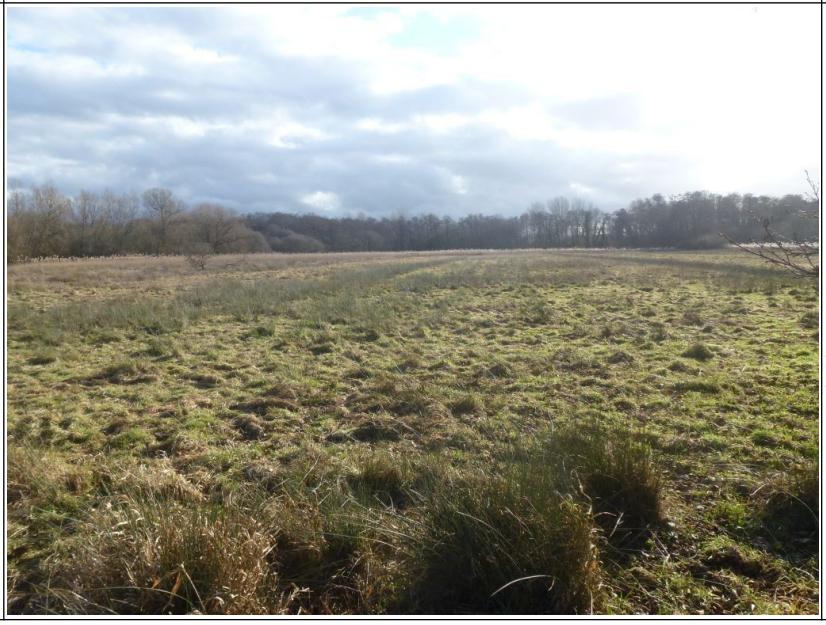
This report summarises the results of thirteen site survey visits between January 9 and September 10, 2023. In addition, the report also includes data from casual survey visits to The Frith and The Lows on single dates in July and December 2017.

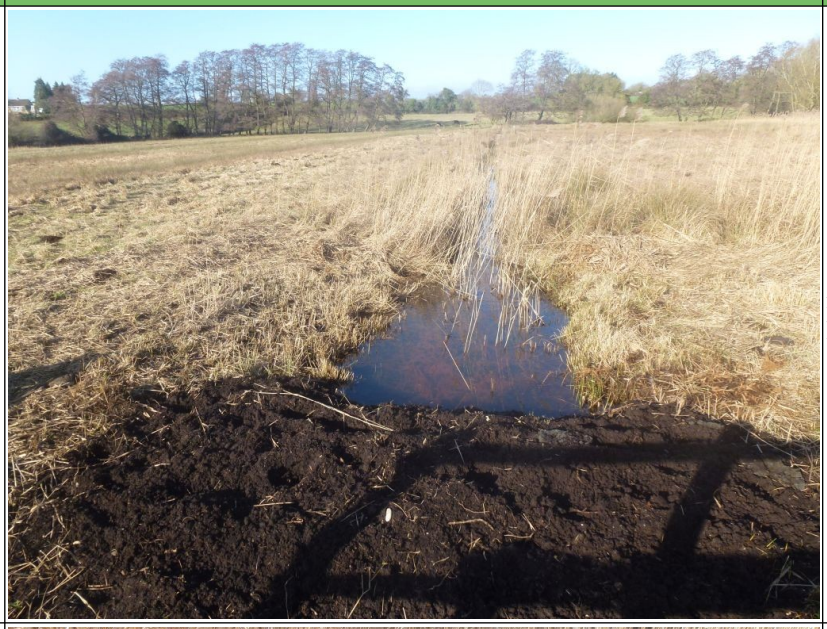
3 Introduction

The following Table gives the site code letter and name, and photographs of aspects and habitat types at each site. Also see **Fig. 1** below.

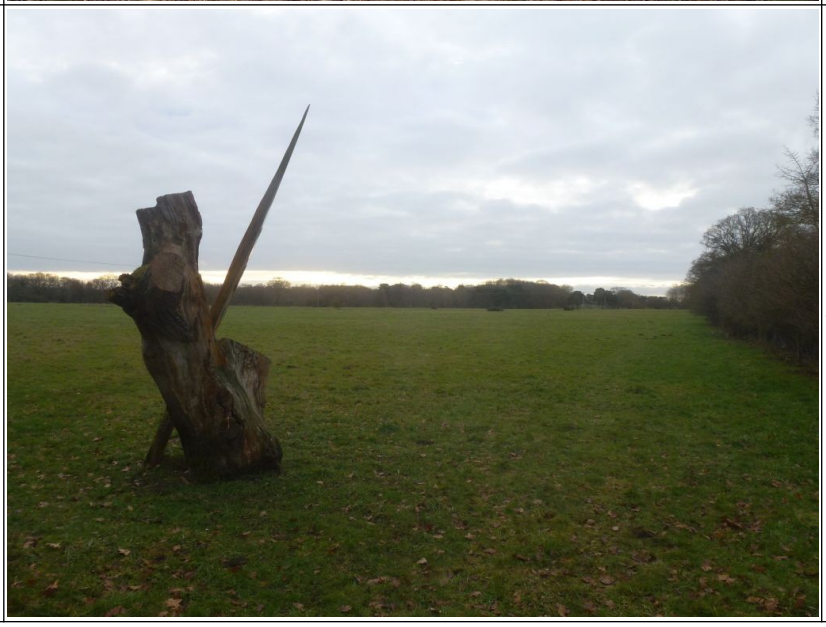
Table 1 – **Examples of target survey areas** (all photographs taken in 2023)

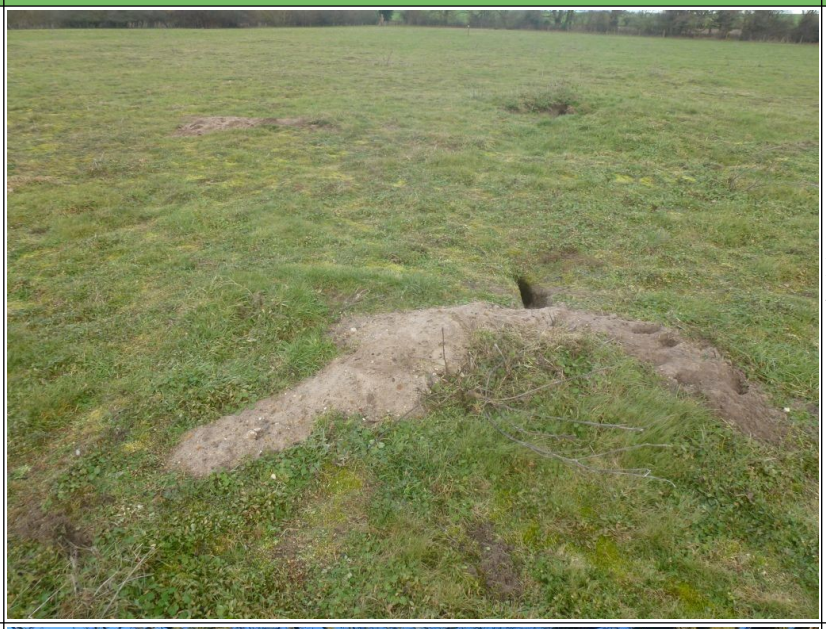
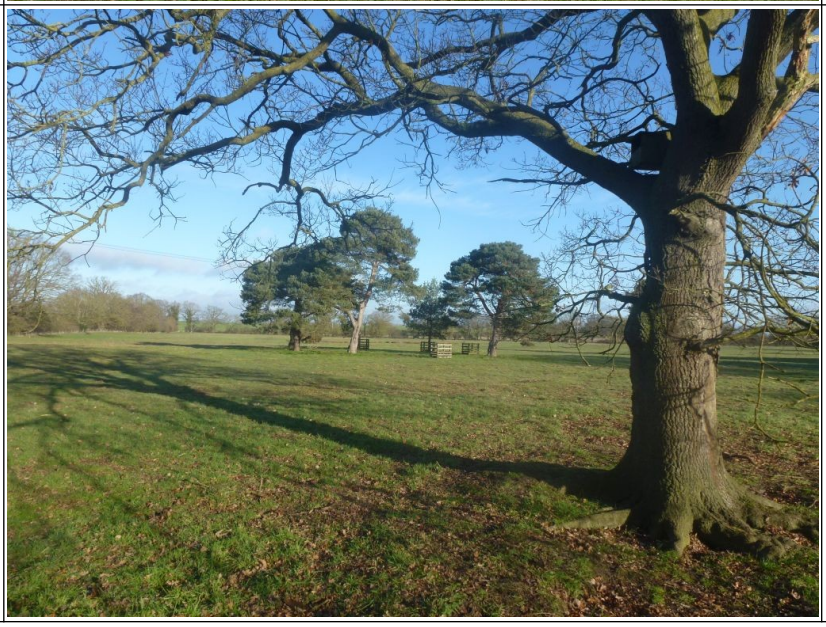
Site Code	Photograph	Name
A		The Lows north pasture, facing north. The hedgerow in the distance forms the north perimeter of the site and contains various species including oak, hawthorn, field maple and ash. A small number of redpoll cattle grazed the site during 2023.

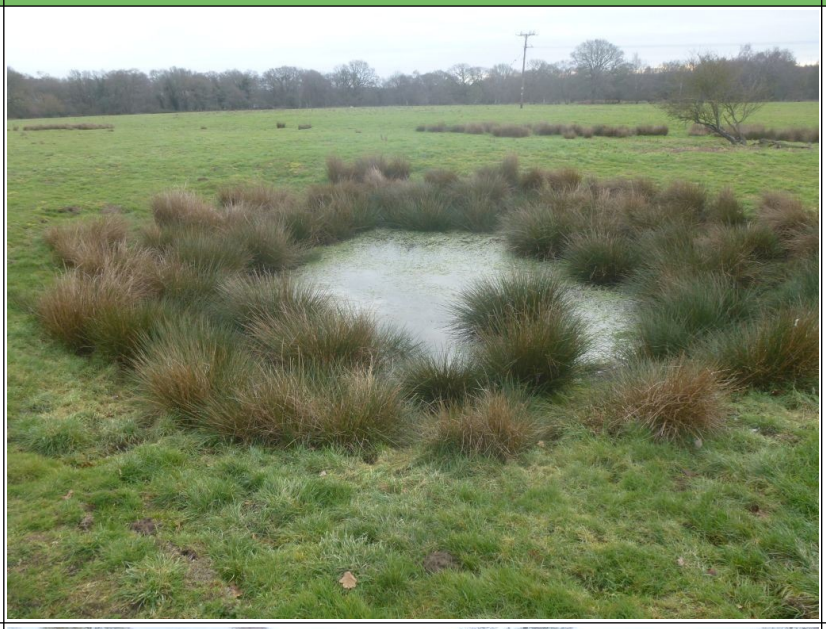
Site Code	Photograph	Name
A		The Lows north pasture in late summer (post-grazing) facing west, showing cut sward and arisings, forming heaps which are used as refugia by invertebrates. A large more permanent heap can be seen in the distance at the base of the west perimeter hedge-line.
A		The Lows, lower wetland pasture, facing south. A *Phragmites* bed is present in the distance on the left. At least two small ditches and one large ditch run longitudinally north-south across the meadow. The distant hedgerow forms the southern site boundary and consists largely of alder and willow.

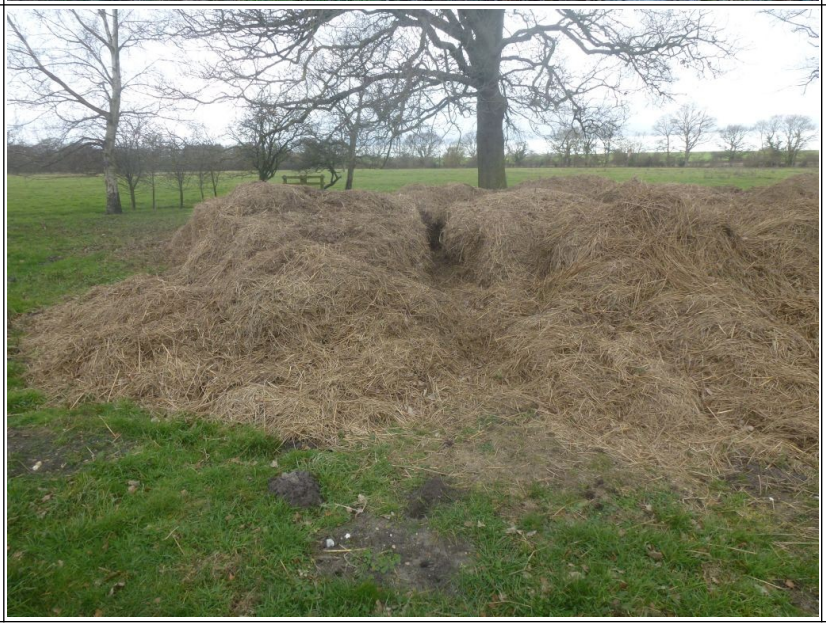
Site Code	Photograph	Name
A		The Lows, fen area in lower fields facing north. The main ditch in the foreground has a north-south alignment and more-or-less runs the course of the lower field.
A		The Lows. Detail of a fen area ditch running in an east-west alignment through dense stands of *Phragmites*.

Site Code	Photograph	Name
B		Little Fen, south end of site, facing north. The habitat here and centrally, comprises wet alder carr woodland with willows and birches, swampy inundations and a tussocky ground layer on peaty substrate.
B		Little Fen wet alder carr/birch woodland.

Site Code	Photograph	Name
B		Little Fen. A broad margin of dry oak and birch woodland flanks the east and north edges of the site. The ground flora here is largely impoverished.
C		The Frith. Sheep-grazed breck-type grassland dominates the site, here viewed from the north-east entrance gate, facing south.

Site Code	Photograph	Name
C		The Frith. Detail of rabbit *Oryctolagus cuniculus* earthworks on the 'heath'. Rabbit activity is important in breaking up the turf structure and creating patches of bare ground that are associated with invertebrate assemblages of high insolation habitats.
C		The Frith, close to the south-west corner of the site facing north, with an isolated oak, and in the near distance, a pine clump.

Site Code	Photograph	Name
C		The Frith. Field pond, north site, surrounded by *Juncus.* The pond is subject to seasonal fluctuation and dried out in summer 2023.
C		The Frith. Ditch system south-east site, close to south perimeter of site, facing north. The larger ditches here are relatively deep and are flanked by *Deschampsia* and *Juncus.* To the right of this ditch is a large *Phragmites* bed which occupies much of the south-eastern corner of the site.

Site Code	Photograph	Name
C		The Frith. Dry woodland block along the southern edge of the site, containing birch and pines and tall sward, un-grazed grassland.
C		The Frith. Large heap of straw in south section of the site. This was found to contain many Coleoptera species, most of which are specifically associated with such 'patch' habitats.

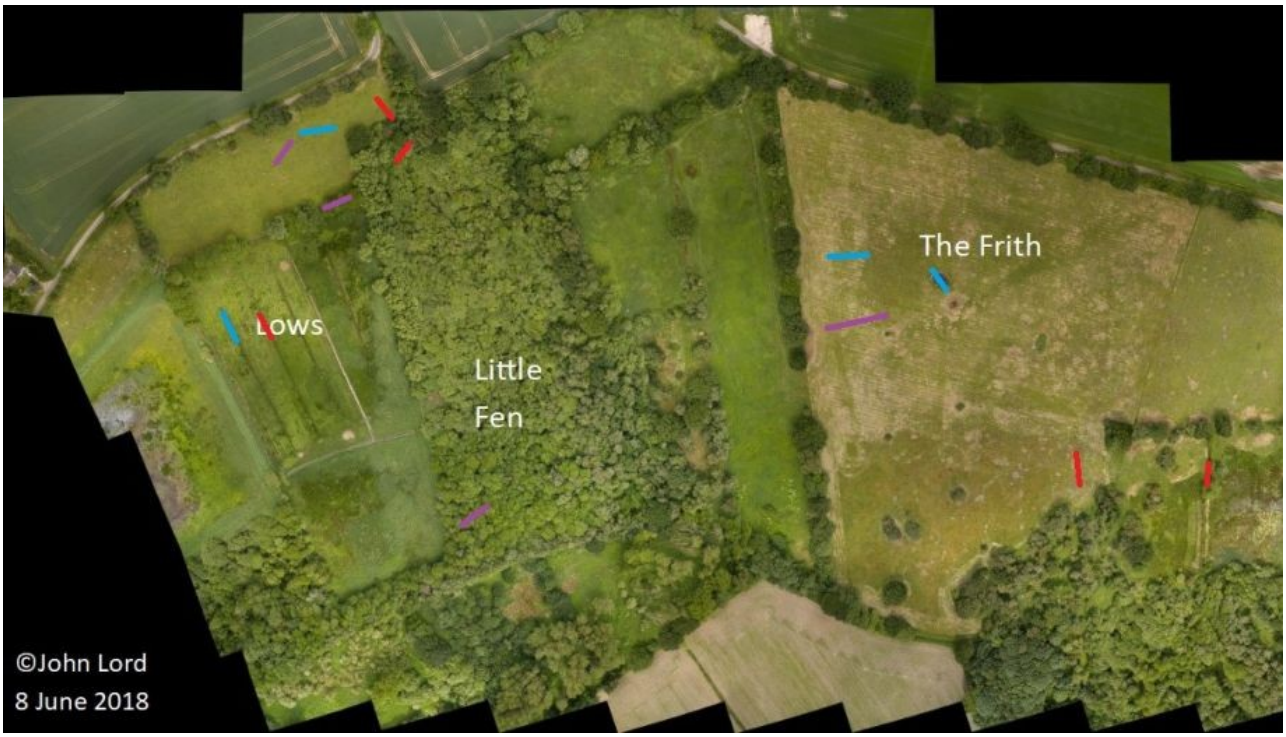


Fig. 1 LOHP The Lows, Little Fen and The Frith; pitfall trap lines – May (red), June (blue) and September (purple). (Photo: John Lord)

4 Methodology

4.1 Field Survey

The following insect groups were targeted during the survey:

- Coleoptera (beetles; all families)
- Dermaptera (earwigs)
- Diptera (flies; larger Brachycera, Scathophagidae (part), Sciomyzidae, Syrphidae, Tephritidae and Tipulidae, Limoniidae and allies)
- Hemiptera (true bugs including Auchenorrhyncha and aquatic species, but very few psyllids or aphids)
- Hymenoptera (mainly sawflies, but also some ants, bees and wasps)
- Lepidoptera (butterflies and moths)
- Neuroptera (lacewings and their allies)
- Mecoptera (scorpionflies)
- Odonata (dragonflies and damselflies)
- Orthoptera (bush crickets, ground-hoppers and grasshoppers)
- Plecoptera (stoneflies; adults)
- Trichoptera (caddisflies; adults)

The following non-insect groups were targeted during the survey:

- Araneae (spiders)
- Mollusca (aquatic and terrestrial gastropods only, casually recorded)
- Isopoda (woodlice)

The lead surveyor specialises in British beetles (Coleoptera) and true bugs (Hemiptera) so these groups dominate the resulting samples. The lead surveyor was accompanied on many visits in 2023 by Andy Brown, and with an additional supporting visit by James Symonds on June 15/16. Steve Lane (lead surveyor) surveyed mainly for Coleoptera,

Hemiptera and Araneae (spiders) and Andy Brown surveyed primarily for Diptera and Hymenoptera. All other groups were recorded by both surveyors.

A variety of field techniques were used in the survey. Sweep-netting was conducted by sweeping vegetation with a large heavy-duty net on a metal frame. Beating employed the use of a collapsible sheet, on a frame of wood and plastic, held by the surveyor who used a pole to beat branches and dislodge arboreal invertebrates from tree and scrub foliage onto the sheet below. Particular attention was paid to beating standing dead or dying wood such as old dead boughs as these can support scarce and threatened saproxylic species (those that require dead wood as a medium in which to develop).

A lightweight butterfly net was used to catch aerial and flower-visiting Diptera and Hymenoptera, and also day-flying moths.

Grubbing (lifting moss, dung, plant 'litter' and decaying vegetation, usually at ground level) and sieving this vegetation using a bowl and standard 1cm mesh plastic garden sieve, was regularly employed across the site on most visits. This method is most useful as a means of sampling invertebrates in decaying vegetation and vegetation heaps in and close to wetland habitats, and also those inhabiting fungi, moss, cattle dung (at The Lows) and sheep dung (at The Frith). Natural refugia such as large stones and logs, were lifted and the area beneath them inspected for invertebrates.

Close observation was used as a recording technique. This involved studying small areas of exposed or sparsely-vegetated ground for invertebrates, observing and collecting invertebrates from draw-down zone wet mud, and looking closely at vegetation and blossom to find invertebrates resting or feeding.

Aquatic sampling was carried out using a standard heavy duty fine-mesh water net. This was used both in a sweeping motion through submerged vegetation and also as a skimming device to retrieve floating water beetles from the water surface immediately following their displacement by the use of trampling and puddling activity in shallow water.

Photographs were taken of habitats during the survey.

Moth-trapping was carried out using a combination of two 125 watt Mercury Vapour Robinson Traps, two 15 watt actinic Skinner Traps and one LED Heath Trap across The Lows on the evening of June 15, into the early hours of June 16.

Tufted Hair-grass *(Deschampsia cespitosa*) and rush *(Juncus sp*) tussocks were sampled in January and February at The Lows, and in January at The Frith. Tussocks were also sampled prior to the 2023 survey; at The Frith in December 2017. The dense root mats of grass and rush tussocks are commonly used as hibernating sites for overwintering arthropods. The tussocks are best sampled by cutting through the root-mat such that the tussock is still preserved intact, and by then inverting the plant over a sieve and bowl before delivering a series of sharp taps to the root-mat base, which dislodge invertebrates from within. These fall through the sieve into the bowl where they can be selectively collected and identified. The plant is returned upright to the ground where it will usually re-root from its rootstock if there is sufficient moisture. In the south meadow of The Lows, *Deschampsia* is occasional, and partially grazed-out. At The Frith, it was only noted along the ditch system in the se corner of the site. *Juncus* is prolific at both sites, but much harder to sample due to its much stronger and tougher root system.

Pitfall trapping is a particularly useful sampling methodology in sparsely-vegetated short sward grassland and on draw-down zones at the edges of standing water. The technique utilises plastic beakers sunk into the ground, flush with the ground surface, to passively collect diurnal and nocturnal ground-active species such as ground beetles, rove beetles, ground bugs and ground-active spiders. The beaker holes are dug with a bulb-corer and the beakers dropped neatly into the holes. The beakers are then charged with saturated salt solution or monopropylene glycol (a harmless semi-viscous food additive) and a coarse-mesh gauze is placed over the opening to prevent reptiles, amphibians and small mammals from falling in. The beakers are then left in situ and serviced by emptying the contents after a period of normally between one and four weeks.

Fig. 1 above shows the locations of pitfall-trapping during the survey. Targeted areas at The Lows were the top meadow pasture grassland and the ditch systems in the lower fen meadows. At The Frith, the breck grassland was the main target area, but the ditch system was also sampled using pitfall traps, as was the field pond. At Little Fen, pitfall traps were used in wet carr woodland at two locations.

Traps were installed during three periods of the year; in spring, from May 4 to May 9 (all sites), in early summer, from June 15 to June 22 (The Lows and The Frith) and in late summer/early autumn, from September 4 to September 10 (all sites). Twenty-five traps were used at each site in the first two trapping periods and a total of twenty-five across the three sites in the third.

A certain amount of identification was carried out in the field, but where positive identification required the use of microscopic examination and identification literature ('identification keys'), specimens were collected and removed from the site. Most specimens were identified this way. The bio-catches from each site were retained as separate samples. Representatives of Nationally Scarce and Nationally Rare species have been retained as vouchers in the surveyor's personal reference collections. These vouchers are accounted for in the **Appendix**.

The result of any site survey depends both on the amount of effort put into recording at that location and the inherent ecological status of the site which is influenced by its size, geographical location, surrounding landscape and habitat biodiversity. For comparison within and between sites to be most accurate, all locations within a site would have to be surveyed with the same measured effort, using standardised sampling techniques. A strictly timed standardised methodology can miss these scarce species and produce a generalised list of nothing but common species when a survey is carried out over a short period of time. The preferred methodology adopted for the LOHP baseline surveys is for the surveyors to intuitively spend more time on habitats and micro-habitats that have the potential to support rare species or assemblages. The surveyors divided time up more or less equally between the two main sites, with a lesser time afforded to the smaller and more uniform habitat block of Little Fen.

Table 2 below lists the survey sites visited on each date and the people who surveyed. The weather conditions on each date were generally optimal for invertebrate survey and have not been recorded, but see '**5 Limitations'** section below.

Table 2. Survey dates, sites visited and surveyors

Date	Sites Visited	Personnel
July 7, 2017	The Lows, The Frith	SL (Steve Lane)
December 4, 2017	The Frith	SL
January 9, 2023	All three sites	SL, AB (Andy Brown)
January 31, 2022	All three sites	SL
February 20, 2023	The Lows, The Frith	SL
May 4, 2023	All three sites	SL, AB
May 9, 2023	All three sites	SL
May 16, 2023	The Frith	SL,
May 19, 2023	The Lows, Little Fen	SL, AB
June 15, 2023	The Lows, Little Fen	SL, AB, JS (James Symonds)
June 22, 2023	The Lows, The Frith	SL
July 18, 2023	The Lows, Little Fen	SL
July 20, 2023	The Frith	SL, AB
September 4, 2023	All three sites	SL, AB
September 10, 2023	All three sites	SL

4.2 Analysis Methodology

4.2.1 Pantheon Analysis & Interpretation

The software 'ISIS' (Invertebrate Species-habitat Information System) was developed largely by Natural England in 2006 for the purpose of analysing species composition of a surveyed locality, and interpreting this data in terms of habitat/species associations and species richness. Shortfalls in this database tool resulted in the development of a

successor ‘Pantheon’, in 2018. This was created by The Centre for Ecology & Hydrology in association with Natural England and improves on the ISIS process by adding, amongst other criteria, associated habitats and resources and habitat fidelity scores, against each taxon in a survey list. The Pantheon database which is available as an online tool, deals with around 11,000 invertebrate species, including all of the most familiar and widely surveyed insect Orders. It is the most commonly used statistical application for invertebrate surveyors.

In common with ISIS, the Pantheon programme is most effectively used where standardised sampling techniques have been employed in survey work. It enables comparison of resulting data from a fixed frequency of site visits over a fixed time period and could indicate whether the ecological status of a site in terms of its invertebrate fauna, is either improving or deteriorating. This interpretation tool is much less useful for the present survey and most surveys carried out by invertebrate surveyors which are based on 'snapshot' samples taken over a relatively short period or surveys that are biased towards finding the scarcer invertebrates that the site supports. Even so, it can still be a useful tool for producing a hierarchy of significance in terms of species habitat associations and assemblages at any given site and in particular for comparing habitats or site compartments which are surveyed at approximately the same time of the year as each other, using approximately the same techniques and with approximately the same amount of effort.

The scoring systems in Pantheon use species richness, threat status, British rarity and characteristic species for each broad biotope, habitat and resource. The two Pantheon generated scores used to interpret the survey findings in terms of the habitats and associated invertebrate assemblages, are ‘Conservation Status’ and the ‘SQI’ (Species Quality Index) status which themselves are defined as:

Conservation Status: threat and rarity status from published reviews (see **section 4.2.2** below). The conservation status is also used to generate the Species Quality Index. Statuses in square brackets indicate that these statuses are considered out of date and should be used with caution.

SQI (Species Quality Index): each species recorded from a site list is scored according to its conservation status and the SQI is calculated by dividing this score by the number of species in the sample and multiplying by 100. SQI’s for species lists with 15 or fewer species are considered unreliable. Generally speaking, on condition that the ‘No. of species’ is 15 or more, then the higher the SQI figure, the higher the quality of the site for invertebrate assemblages in that habitat bracket. Pantheon works best where standardised sampling is employed at a site because in that situation, the statistical comparison between sites is at its most reliable.

Pantheon, like ISIS, can identify whether a site is in a favourable or unfavourable condition. Thus if a site is considered ‘favourable’ in the analysis, then it can be loosely construed that the state of the habitat analysed is favourable for the indicator species which are present and for the assemblage for that habitat-type as a whole. The term can also indicate if the conservation management at a site is favourable for that particular habitat and is particularly useful when recording, for example, SSSI localities, to assess whether the habitat condition is improving or declining over a period of time. Once again, **it is worth noting that this value is really only reliable when a site survey is carried out using strict standardised sampling techniques**.

In this survey, data were collected and collated for each of the three sites and each site analysed independently using Pantheon.

4.2.2 Conservation Status Definitions

Nationally Rare and Nationally Scarce Species
Invertebrate surveys conducted between the late 1980s and 2010 relied in their interpretation of species recorded, on information in published Red Data Books and lists of scarce and threatened species. These created British-specific rarity statuses for individual taxa, based on restricted distribution rather than population threat or extinction risk. At the time, the term ‘Nationally Scarce’, originally coined for plants, was applied to invertebrate species that were known to occur in 16 to 100 10km squares (hectads) of the National Ordnance Survey grid.

Early assessments of invertebrate taxa used the term ‘Nationally Notable’ for these Nationally Scarce species and, for some taxa, this category was further split into ‘Notable A’ (Na) for species occurring in 16 to 30 hectads of the National Grid and ‘Notable B’ (Nb) for those occurring in 31 to 100 hectads. A further category used was ‘Red Data Book’ which equates to ‘Nationally Rare’. This category was used for species that occurred in 15 or fewer hectads in Britain. It was further subdivided depending on the perceived or actual degree of rarity, e.g. ‘RDB3’ as Rare, ‘RDB2’ as Vulnerable,

‘RDB1’ as Endangered, ‘RDBI’ as ‘Red Data Book Indeterminate’ and ‘RDBK’ as ‘Red Data Book Insufficiently Known’.

Recently, since 2010, IUCN Reviews have been produced for many invertebrate groups and these are continuing to be written. These Reviews deal primarily with threat status, but they also re-evaluate existing British Rarity (restricted distribution) statuses to bring these up-to-date. In the recent IUCN Reviews, the restricted distribution categories have now been standardised to ‘Nationally Rare’ (NR) and ‘Nationally Scarce’ (NS) without further subdivision.

Thus, the British system of assessing rarity based solely on distribution is used alongside IUCN criteria which, although they also use measures of geographical extent, are primarily concerned with assessing National and International Threat in terms of decline of species populations.

In this report, for the taxa found at the site, I have used the newly-adopted British Rarity categories 'NS' (Nationally Scarce) and ‘NR’ (Nationally Rare) where these appear in IUCN Reviews. Otherwise, where no such IUCN reviews yet exist for the species recorded, I have resorted to the older categorisations of Nationally Scarce 'Notable A', 'Notable B' and 'Notable' and for Red Data Book species, the older 'RDB’ categories. The situation is currently complex, but it will eventually become more simple as further invertebrate groups are assessed for IUCN Reviews and the terminology becomes standardised.

N.B. (Caveat). It should be noted that many of the conservation status definitions (British Rarity values) used by Pantheon are out of date and no longer valid. This renders Pantheon analyses that depend upon conservation value, somewhat unreliable.

IUCN Nationally Threatened Species
The main categories in the IUCN Reviews which deal with Threat status are, in order of increasing threat status; ‘Least Concern (LC)’, ‘Near Threatened (NT)’, ‘Data Deficient (DD)’ ‘Vulnerable (VU)’, ‘Endangered (EN)’, ‘Critically Endangered (CR)’ and ‘Regionally Extinct (RE)’. Analysis for each species is based on the area that it occupies and/or population statistics with an emphasis on trends of decline and the magnitude of such trends.

Designation in the IUCN ‘Near Threatened’ category indicates that after all available data has been evaluated for a species, it currently fails to qualify as threatened (with extinction), but only narrowly so. Were the British populations to deteriorate further in future years, the species may qualify as being for example ‘Vulnerable’ or even ‘Endangered’.

4.2.3 Colin Plant Associates Guidelines
The Table below outlines guidelines used for assessing site significance in terms of invertebrate habitats and species supported using guidance produced by Colin Plant Associates (now withdrawn, but in the absence of adequate alternatives is considered appropriate in this evaluation).

Table 3 Guidelines produced by Colin Plant Associates for site significance evaluation

Significance	Description	Minimum qualifying criteria
International	European important site	Internationally important invertebrate populations present **or** containing any species protected under European legislation **or** containing habitats that are threatened or rare at the European level (including, but not exclusively so, habitats listed on the EU Habitats & Species Directive)

Significance	Description	Minimum qualifying criteria
National	UK important site	Achieving SSSI invertebrate criteria (NCC, 1989) **or** supporting sustainable populations of species that are listed as Critically Endangered **or** supporting sustainable populations of species listed in the European Union Habitats and Species Directive **or** supporting sustainable populations of species listed in and generally held to fairly belong within Red Data Book category 1 (Endangered) **or** supporting sustainable populations of any species protected under the UK Wildlife and Countryside Act, as amended **or** containing important invertebrate habitats that are actively threatened nationally (Great Britain)
Regional (for border sites, both regions must be taken into account)	Site with populations of invertebrates or invertebrate habitats considered scarce, rare or threatened in the region	Habitat that is scarce or threatened in the region, or which is well-represented in the region but is absent outside the region, and which has, or is reasonably expected to have, an assemblage of invertebrates that includes a combination of Nationally Rare Red Data book category 3) and Nationally Scarce (former Nationally Notable categories) species amounting to at least ten such species in total **or** supporting sustainable populations of at least six Species of Principal Importance (SPIs) (excluding “research only” moths)
County (for border sites, both counties must be taken into account)	Site with populations of invertebrates or with invertebrate habitats considered scarce, rare or threatened in the county in question	Habitat that is scarce or threatened in the county **and either** contains or is reasonably expected to contain an assemblage of invertebrates including a combination of Nationally Rare Red Data book category 3) and Nationally Scarce (former Nationally Notable categories) species amounting to at least five such species in total provided that these species warrant now that status which was allocated several years earlier. **or** which has viable populations of at least five species regarded as Regionally Scarce by the county records centres and/or field club **or** which has viable populations of at least five SPIs.
District (e.g., Unitary Authority, City, or Borough)	Site with populations of invertebrates or invertebrate habitats considered scarce or rare or threatened in the administrative District	A rather vague definition of habitats falling below county significance level, but which may be of greater significance than merely Local. They include sites for which Nationally Scarce species in the range from 1 to 4 examples are reasonably expected, but not yet necessarily recorded, sites that have 1 to 4 SPIs and sites that have an outstanding assemblage of “research only” Section 41 moths.
Local	Site with populations of invertebrates or invertebrate habitats considered scarce or rare or threatened in the affected and neighbouring Parishes (except Scotland, where the local area may best be defined as being within a radius of 5 kilometres	Habitats or species unique or of some other significance within the local area

Significance	Description	Minimum qualifying criteria
Low significance	-	Although almost no area is completely without significance these are the areas with nothing more than expected “background” populations of common species and the occasional Nationally Scarce.

Source: Colin Plant Associates

5 Limitations

Natural England published guidelines for conducting invertebrate surveys (Drake *et. al.,* 2007) in which they suggest that 'a reasonably thorough survey of a terrestrial habitat can be made through seven visits at monthly intervals between April and October', but that 'four or five visits over this period will capture most species'. The timing and frequency of the 2023 survey visits of the LOHP sites were ideal for sampling terrestrial species (as well as aquatic species) through all seasons as they have provided visits during the months of January, February, May, June, July and September, and by at least two surveyors on six of the thirteen visits in the year.

In recent years, the abundance and diversity of Diptera (and possibly also aculeate Hymenoptera) have been noticeably poor in southern and eastern England (surveyor’s experience and Steve Falk *pers comm*, 2019.). There is no specific research known to the surveyor that fully explains the causative factors behind this phenomenon although it may be associated with climate change, particularly with extreme daytime temperatures and also perhaps a direct impact from pesticide use in agriculture. It has been observed recently that there have been huge geographical population shifts in, for example, hoverfly species, due presumably to climate change. *Rhingia campestris* an otherwise common hoverfly around pasture in East Anglia has practically disappeared from this and other England regions in the last few years. Roger Morris, the National recorder for hoverflies notes (*pers* comm) that the population of this hoverfly, along with others, has shifted geographically from southern to northern England and Scotland in a relatively short time frame.

The drought conditions experienced in summer 2022 along with persistently high temperatures caused the short sward habitats at the survey sites to ‘burn out’ resulting in a dearth of invertebrates at ground level. The lead surveyor is familiar with this phenomenon and has in Cambridgeshire for example, noticed that some normally ground-dwelling invertebrates on arable margins during periods of drought, were to be found in abnormal (for them) arboreal situations, possibly seeking micro-climates of increased humidity and reduced temperature. Fortunately, weather conditions in 2023 resulted in much more precipitation than experienced in the previous survey year, and the sites’ habitats were less affected, but it would be naive to expect that the invertebrate populations will remain unaffected by the weather patterns in previous recent years and by ongoing climate change generally.

Pitfall-trapping was affected by unprecedented heavy and prolonged rainfall in early May 2023. This caused most of the ditch system traps at The Lows and The Frith to have lifted with the increased water levels. Some traps were still intact in the ground, but completely submerged. Miraculously, despite the circumstances, most traps contained invertebrates. The June pitfall-trapping sessions were marred at The Frith by the vegetation in the now mainly-dry field pond having been flattened and trampled by sheep. Three of the beakers in this 10-trap series couldn’t be located and one gauze remains unnacounted for. Little Fen wasn’t trapped during this period due to the high nuisance level of the resident population of mosquitoes here. Finally, in the September trapping session, four of the 10 traps in the Frith breck grassland series were found out of the ground, having been lifted, probably by corvids, or perhaps by rabbits, and the contents of these were largely lost.

6 Results and Interpretation

6.1 Overview

A total of 3,372 records were amassed from the 2023 survey and also from the lead surveyor’s collated previous data for The Lows and The Frith. Altogether, these records represent 1,318 invertebrate species (not including aggregates of species and indeterminate species), most of which were recorded during the 2023 survey. This total includes 652 Coleoptera (beetles), 202 Hemiptera (true bugs), 139 Diptera (flies), 117 Lepidoptera (moths and butterflies) and 78 Araneae (spiders). A full species list is given in the Table in the **Appendix** of this report.

No species that are afforded full protection under UK or International legislation were recorded during the survey. However, Small Heath butterfly *Coenonympha pamphilius*, recently designated as IUCN Vulnerable and also an NERC s.41 species, was recorded at The Lows and The Frith. The NERC Act legislation requires that the presence of section 41 'species of principal importance' at a locality, needs to be taken into consideration by a public body (e.g. the planning authority) when performing any of its functions (e.g. determining the impact of planning applications) with a view to conserving biodiversity. The Narrow-mouthed Whorl Snail *Vertigo angustior* recorded at The Lows, is listed as IUCN Vulnerable and is also an NERC s.41 species and is further listed under Annex II of the European Union Habitats and Species Directive. This Directive requires EU States to designate Special Areas of Conservation (SACs) and to maintain 'at a favourable conservation status' those species listed in Annex II. Our departure from the EU means that the future of this particular layer of protective legislation is uncertain, but hopefully it will be retained.

A total of 13 Nationally Rare (NR) species were recorded during and prior to the survey along with 86 species of Nationally Scarce (NS) status. The Nationally Rare and Scarce species are listed in Table 4 below.

From the 2023 LOHP survey, **twelve species are identified as having IUCN Threat designation of 'Near Threatened' or, 'Vulnerable' status.** The IUCN Threat status are listed in Table 4 below. Designation in the IUCN 'Near Threatened' category indicates that after all available data has been evaluated for a species, it currently fails to qualify as threatened (with extinction), but only narrowly so. Were the British populations to deteriorate further in future years, the species may qualify as being for example 'Vulnerable' or even 'Endangered'.

Table 4 below lists the 104 species with conservation status recorded during and prior to the 2023 survey.

The common or 'vernacular' names have been taken from a number of different literature and internet sources, as well as from 'MapMate'.

Site Code Key:
'A' = The Lows
'B' = Little Fen
'C' = The Frith

Months - number refers to number of month e.g. '5' = May, '12' = December

Habitat Codes indicating the following species assemblages:
'C' = carr, usually alder carr, occasionally willow carr
'G' = grassland/grassland verge habitats generally
'H' = breck heath and short turf grassland: habitat characterised by sparsely-vegetated short sward high insolation grassland and disturbed and bare ground
'P' = aquatic; water
'S' = hedgerow and scrub habitat, including dead wood
'W' = wetland (terrestrial habitat)
'W/P' = where a species exists at different life stages in both truly aquatic and terrestrial wetland habitats (e.g. dragonflies)

The 'Association' column lists main plant associations where these are known and are few, and also fungi where these are reliable associations for that species, plus generic associations of 'carrion' and 'dung'.

Conservation 'Status' is 'British Rarity Status'/'IUCN Threat Status'; 'NR' = Nationally Rare species, 'NS', Nationally Scarce and the IUCN statuses are 'NT' – Near Threatened and 'VU' – Vulnerable. 'LC' = Least Concern under IUCN evaluation. For definitions of British Rarity codes, see **section 4.2.2** or for further interpretation of IUCN evaluation see *e.g.* Lane (2019).

Codes in brackets indicate that the evaluation of status for that species needs to be revised.

An asterisk after the species name indicates that the species is recorded for the first time at the LOHP site complex, during the 2023 survey.

Table 4 The 104 taxa recorded at LOHP The Lows, Little Fen and The Frith that have British Rarity status of Nationally Scarce ('Notable' or 'NS') or Nationally Rare ('Red Data Book' or 'NR') designation and/or IUCN Threat Status (including Near Threatened). Square brackets indicates a taxon in need of status re-evaluation due to recent range expansion or which was formerly under-recorded.

Order	Family	Taxon	Vernacular	Habitat Code	Association	Site Code	Months	Status
Araneae	Dictynidae – Meshweb spiders	Argenna subnigra		H		A	5	NS/LC
Araneae	Lycosidae	Alopecosa cuneata		H		AC	5	NS/LC
Araneae	Lycosidae	Pardosa tenuipes		W		A	5	NS/LC
Araneae	Lycosidae	Trochosa spinipalpis		W		AB	5	NS/LC
Coleoptera	Anthribidae – Fungus weevils	Anthribus fasciatus*		S		C	7	NS/-
Coleoptera	Apionidae	Apion rubiginosum		H	sheep's sorrel	C	9	NR/-
Coleoptera	Apionidae	Catapion pubescens*		G	clovers	C	7	[NS]/-
Coleoptera	Apionidae	Melanapion minimum		C	willow	B	6	NR/-
Coleoptera	Cantharidae	Rhagonycha lutea		S		B	6	NS/LC
Coleoptera	Carabidae	Amara lucida		H		C	5,9	NS/LC
Coleoptera	Carabidae	Anthracus consputus		W		C	1,6	NS/LC
Coleoptera	Carabidae	Oodes helopioides		W		A	5,6	NS/LC
Coleoptera	Carabidae	Pterostichus anthracinus*		W		AB	5,6,9	NS/LC
Coleoptera	Carabidae	Pterostichus gracilis		W		ABC	1,5,6	NS/LC
Coleoptera	Carabidae	Syntomus truncatellus		G		AC	1,5,6,7	NS/LC
Coleoptera	Chrysomelidae	Cassida prasina		G	yarrow	A	7	NS/LC
Coleoptera	Chrysomelidae	Longitarsus ballotae*		S	black horehound	A	5	[NS]/LC
Coleoptera	Coccinellidae	Hippodamia variegata	Adonis' Ladybird	H		C	7	[Nb]/-
Coleoptera	Coccinellidae	Platynaspis luteorubra	Ant-nest Ladybird	H		C	6	NS/-
Coleoptera	Corylophidae	Orthoperus nigrescens		S	dead wood	C	7	[Nb]/-
Coleoptera	Curculionidae	Acalyptus carpini		C	willows	AB	7	NS/-
Coleoptera	Curculionidae	Attactagenus plumbeus		H/G		C	6	NS/-
Coleoptera	Curculionidae	Coeliodes ruber		S	oaks	C	5,6	NS/-
Coleoptera	Curculionidae	Curculio betulae*		C	alders	A	7	NS/-
Coleoptera	Curculionidae	Glocianus punctiger		G	dandelion	A	5	[NS]/-
Coleoptera	Curculionidae	Gymnetron rostellum		G	speedwells?	C	6	NS/-
Coleoptera	Curculionidae	Hypera diversipunctata*		G/H	Caryophyllaceae	C	7	NR/-

Order	Family	Taxon	Vernacular	Habitat Code	Association	Site Code	Months	Status
Coleoptera	Curculionidae	Larinus carlinae*		G	creeping thistle usually	A	9	[Nb]/-
Coleoptera	Curculionidae	Magdalis cerasi		S	hawthorn and other Rosaceae	C	5	[Nb]/-
Coleoptera	Curculionidae	Rhinocyllus conicus		G	thistles	A	6,7	[Na]/-
Coleoptera	Dytiscidae	Agabus uliginosus		P		C	2,5	NS/NT
Coleoptera	Dytiscidae	Hydaticus seminiger		P		C	5	NS/LC
Coleoptera	Dytiscidae	Laccornis oblongus		P		C	6	NS/NT
Coleoptera	Erirhinidae	Grypus equiseti	Horsetail Weevil	W/G	horsetails	A	2,6	[Nb]/-
Coleoptera	Helophoridae	Helophorus strigifrons		P		C	7	NS/LC
Coleoptera	Heteroceridae	Heterocerus fusculus		W/P		A	5	[NR]/ [VU]
Coleoptera	Histeridae	Saprinus aeneus	Bronze Mirror Clown	H	carrion and dung	C	7	NS/LC
Coleoptera	Hydrochidae	Hydrochus elongatus		P		A	5	NS/NT
Coleoptera	Hydrophilidae	Cercyon bifenestratus		W		A	6	NS/LC
Coleoptera	Hydrophilidae	Cercyon granarius		W		A	5,6	NS/LC
Coleoptera	Hydrophilidae	Enochrus nigritus		P		AC	1,5	NS/NT
Coleoptera	Hydrophilidae	Enochrus quadripunctatus		P		AC	5,6	NS/LC
Coleoptera	Latridiidae	Enicmus brevicornis		S	fungoid wood (usually sycamore)	AC	7	NS/-
Coleoptera	Leiodidae	Catopidius depressus*		G/H	mammal burrows	C	1	NS/-
Coleoptera	Melandryidae	Abdera biflexuosa		S	dead wood, usually off oak boughs	BC	7	NS/LC
Coleoptera	Melandryidae	Anisoxya fuscula*		S	dead wood, usually off oak boughs	AC	7	NS/LC
Coleoptera	Mordellidae	Mordellistena neuwaldeggiana		S	dead wood	A	7	NS/LC
Coleoptera	Mordellidae	Mordellistena variegata		S	dead wood	C	6	NS/LC
Coleoptera	Mycetophagidae	Pseudotriphyllus suturalis*		S	fungi, often brackets	C	9	NS/LC
Coleoptera	Ptinidae	Dorcatoma flavicornis*		S	fungoid dead wood, usually oak	C	7	NS/LC
Coleoptera	Ptinidae	Hemicoelus canaliculatus*		S	dead branches of broad-leaved trees	A	7	NR/LC
Coleoptera	Ptinidae	Ptinus palliatus		S	dead rotten wood of oaks usually	C	5	NR/VU
Coleoptera	Salpingidae	Lissodema cursor*		S	dead wood of ash	A	7	NR/LC
Coleoptera	Salpingidae	Lissodema denticollis		S	dead wood, often ash	AC	6,7	NS/LC
Coleoptera	Salpingidae	Rabocerus gabrieli*		S	dead wood and	B	5	NS/LC

Order	Family	Taxon	Vernacular	Habitat Code	Association	Site Code	Months	Status
					under bark			
Coleoptera	Scarabaeidae	Agrilinus constans*		G	dung	A	2	NS/LC
Coleoptera	Scirtidae	Contacyphon pubescens		W/P		AC	1,5,6,9	NS/LC
Coleoptera	Scraptiidae	Anaspis thoracica		S	dead wood	B	6,7	NS/LC
Coleoptera	Silphidae	Dendroxena quadrimaculata*	Caterpillar-hunter	S	moth larvae on trees	C	5	NS/LC
Coleoptera	Staphylinidae	Aleochara brevipennis		G		A	6	[NS]/-
Coleoptera	Staphylinidae	Alevonota gracilenta*		H		C	5	NR/-
Coleoptera	Staphylinidae	Carpelimus lindrothi		W		A	5	NS/LC
Coleoptera	Staphylinidae	Carpelimus obesus		W		A	5	NS/LC
Coleoptera	Staphylinidae	Cypha discoidea		W		A	5	NS/-
Coleoptera	Staphylinidae	Dacrila fallax		W		A	1	NS/-
Coleoptera	Staphylinidae	Dropephylla gracilicornis*		S	dead boughs, under bark etc, usually oak	C	5	NS/LC
Coleoptera	Staphylinidae	Lathrobium impressum*		W		A	2	NS/LC
Coleoptera	Staphylinidae	Leptacinus intermedius*			decaying vegetation heaps	A	7	NS/LC
Coleoptera	Staphylinidae	Ocypus nitens		H?		B	5	NS/LC
Coleoptera	Staphylinidae	Philonthus mannerheimi*		W		A	6	NS/LC
Coleoptera	Staphylinidae	Schistoglossa gemina		W		A	1,6	NS/-
Coleoptera	Staphylinidae	Scopaeus laevigatus		W		B	5	NS/LC
Coleoptera	Staphylinidae	Stenus palustris		W		AC	1,2,12	NS/-
Coleoptera	Staphylinidae	Tachinus flavolimbatus			decaying vegetation heaps	AC	1,2,5	NS/LC
Coleoptera	Tenebrionidae	Diaperis boleti		S	fungi on trees, usually birch polypore	BC	5	NS/LC
Coleoptera	Tenebrionidae	Gonodera luperus		S	flowering hawthorn (mainly)	ABC	5,6	NS/LC
Diptera	Asilidae	Eutolmus rufibarbis*	Golden-tabbed Robberfly	H		C	7	NS/LC
Diptera	Limoniidae	Molophilus bihamatus*	Yellow-legged Black Mol	C	alder carr	B	5	NS/-
Diptera	Scathophagidae	Cordilura aemula*	Broadlands Cordilura	W		C	5	NR/-
Diptera	Scathophagidae	Norellia spinipes*	Daffodil Dung Fly			B	1	[NS]/-
Diptera	Syrphidae	Chrysotoxum elegans*	Variable Spearhorn			C	9	NS/LC
Diptera	Tachinidae	Cistogaster globosa		H/G	*Aelia acuminata*	C	7	[NR]/-
Hemiptera	Delphacidae	Asiraca clavicornis*		G		AC	5,9	NS/-

Order	Family	Taxon	Vernacular	Habitat Code	Association	Site Code	Months	Status
Hemiptera	Lygaeidae	Drymus pumilio*		W		A	2	NS/-
Hemiptera	Lygaeidae	Megalonotus praetextatus		H		AC	7	NS/-
Hemiptera	Lygaeidae	Megalonotus sabulicola		H		AC	6,7	NS/-
Hemiptera	Lygaeidae	Ortholomus punctipennis*		H		C	7	NR/-
Hemiptera	Lygaeidae	Raglius alboacuminatus*			black horehound	A	5	NS/-
Hemiptera	Miridae	Capsus wagneri		W	reed canary grass etc	A	7	NS/-
Hemiptera	Rhopalidae	Rhopalus parumpunctatus		G/H		C	7,9	NS/LC
Hemiptera	Thyreocoridae	Thyreocoris scarabaeoides	Scarab Shieldbug	G/H	violets?	C	7	NS/LC
Hymenoptera	Apidae	Nomada fucata*	Painted Nomad Bee			C	5	NS/-
Hymenoptera	Chrysididae	Chrysis illigeri		H		C	6	NS/-
Hymenoptera	Chrysididae	Hedychrum niemelai		H		A	7	[NR]/-
Hymenoptera	Formicidae	Lasius brunneus	Brown Tree Ant	S		ABC	5,6,7,9	[NS]/-
Hymenoptera	Tenthredinidae	Tenthredo baetica	Crucifer Tenthredo		Brassicaceae	A	5	NS/LC
Hymenoptera	Xyelidae	Xyela julii*	Short Daggertail	S	pines	BC	5	none/ VU
Lepidoptera	Erebidae	Lygephila pastinum	Blackneck	W/G	tufted vetch	A	6	none/NT
Lepidoptera	Geometridae	Chiasmia clathrata	Latticed Heath	G	Fabaceae	A	6	none/NT
Lepidoptera	Geometridae	Macaria brunneata*	Rannoch Looper		bilberry	A	6	NS/LC
Lepidoptera	Noctuidae	Apamea anceps*	Large Nutmeg	G	Poaceae	A	6	none/NT
Lepidoptera	Nymphalidae	Coenonympha pamphilus	Small Heath	G	Poaceae	AC	6,9	none/ VU
Plecoptera	Nemouridae	Nemoura dubitans		P/W		C	5	NR/LC
Pulmonata	Vertiginidae	Vertigo angustior	Narrow-mouthed Whorl Snail	W		A	1,2	NS/VU

6.2 The Species Accounts

Individual accounts are provided below for each Nationally Scarce, Nationally Rare and IUCN Threatened, Near Threatened and Vulnerable species recorded during and prior to the 2023 survey.

6.2.1 Wetland Aquatic/Semi-aquatic Species

Agabus uliginosus – a diving beetle
Status: Nationally Rare (NR), IUCN Near Threatened
This convex brownish diving beetle with pale thoracic margins is associated with highly temporary waters such as those in fluctuating marshes and fens. It is found more-or-less throughout Britain although absent from the central midlands, the extreme south-east and south-west of England and large parts of Wales and Scotland. The majority of records are from eastern England, from East Anglia up into Yorkshire. Adults can be found in all months of the year. In Norfolk, it is relatively frequently recorded. On the 2023 survey, an individual was netted from the field pond at The Frith on

February 20 and another specimen was recovered from pitfall traps on May 9 in the ditch at the south-east corner of the site.

Cercyon bifenestratus - a water scavenger beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This is a small rotund and convex beetle which has black wing cases with pale apices. It requires flooded and exposed substrates; usually sand or mud with a small amount of organic debris, and it can be found in a variety of habitats including gravel pits and quarries. The species is recorded throughout much of south and central England, but with a marked bias for central and eastern parts of the country. On the 2023 survey, two flew to actinic light traps at The Lows on June 15.

Cercyon granarius – a water scavenger beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This small rotund and convex black species is associated with floating vegetation in fens, but also occasionally in other aquatic habitats. Adults have been recorded in most months of the year. The species is widespread but highly localised with scattered records across southern and midland England and Wales. On the 2023 survey, four specimens were recovered from pitfall traps in the lower field ditches at The Lows on May 9 and June 22.

Enochrus nigritus – a water scavenger beetle
Status: Nationally Scarce (NS), IUCN Near Threatened
This is a small brownish water beetle with a very narrow dark longitudinal stripe along the elytral suture. It occurs in mesotrophic and base-rich fens in lowlands. An egg-case is produced, sometimes under water, and larval development may last between one and two months. Adults feed on algae and decaying plants whereas the larvae are predators. Adults are found throughout the year but are most numerous in April, July and September. *E. nigritus* has been recorded since 1980 from Hampshire, Sussex, Berkshire, Oxfordshire, Suffolk, Norfolk, Cambridgeshire, Huntingdonshire, Herefordshire, Anglesey and Cheshire. The species is particularly well-represented in East Anglian fens and at the LOHP site complex. On the 2023 survey, a singleton was netted from the ditch in the south-east corner of The Frith on May 9 and on the same date, three specimens were netted from the main ditch in the lower field of The Lows, with a singleton recorded earlier at this site on January 9.

Enochrus quadripunctatus – a water scavenger beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This is a slightly larger species than the last, but identical in form. It has a characteristic dark patterning on the thorax consisting of a large central dark area with four small satellite spots. The beetle occurs in lowland, base-rich stagnant water with some exposed mineral substrate and also in mesotrophic fens. An egg-case is produced, sometimes under water, and larval development may last between one and two months. Adults feed on algae and decaying plants whereas the larvae are predators. This species has expanded its range recently. It is found mainly in eastern Britain, in most counties from East Sussex northwards to two sites in Scotland, with most records centred around London and East Anglia. It is also found in Wales. On the 2023 survey, four were netted from the field pond at The Frith on May 9, on which date four were also netted from the main ditch at The Lows. Additionally, one flew to a light trap at The Lows on June 15.

Helophorus strigifrons – a water scavenger beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This small helophorid beetle is most often associated with fluctuating water levels and inundations, where there is plenty of sedge and rush litter. Adults feed on decaying organic plant matter whereas the larvae are predatory. The adults can be found throughout the year but are most numerous in April and September. The species is widely distributed throughout Britain. Prior to the 2023 survey, a singleton was sieved out of vegetation at the base of *Juncus* in the south-east corner of The Frith on July 7, 2017.

Hydaticus seminiger – a diving beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This moderately large predatory diving beetle has very distinctive yellow banding on the elytral margins and on the otherwise dark pronotum. The size and patterning make it readily identifiable in the field. It is typically found in permanent ponds and dykes that are usually densely vegetated and at least partly shaded. Adults are active in most months of the year, but peak numbers are found in May and September. The main region of distribution of the species in Britain is east of an imaginary line drawn from the coast of west Dorset to the Wash, with a second region located mainly in Cheshire and Shropshire. There are a few scattered records outside of these two regions, which include

populations in the Somerset Levels and some records from Wales and Scotland. On the 2023 survey, a singleton was netted from the ditch system in the south-east corner of The Frith on May 9.

Hydrochus elongatus – a hydrochid beetle
Status: Nationally Scarce (NS), IUCN Near Threatened
This small elongate water beetle has been recorded very locally in England and Wales where it can be found in lowland fens and marshes, in shallow well-vegetated water. There is possibly a strong association with reed-bed habitats. Adults apparently feed on algae. On the 2023 survey, four were netted from the wetland ditch system at The Lows on May 9.

Laccornis oblongus – a diving beetle
Status: Nationally Rare (NR), IUCN Near Threatened
This small elongate, predatory diving beetle is found in relic fenland habitats. Its distribution is wide, across much of England, into Wales and north into Scotland, but it is perhaps most frequently found in the East Anglian pingos and fens. Adults have been recorded in all months of the year. On the 2023 survey a singleton was found in the field pond pitfall traps at The Frith on June 22.

Nemoura dubitans – a stonefly
Status: Nationally Rare (NR), IUCN Least Concern
This species develops in seepages flowing through well-vegetated wetland habitat. Macadam (2015) upgraded the species' British Rarity status from Nationally Scarce to Nationally Rare on the basis of there being only fourteen modern records, although NBN appears to show more than this and the lead surveyor is familiar with the species from a number of sites. It is distributed very locally in England and has also been recorded from Wales and Scotland. On the 2023 survey, the species was swept from vegetation at The Frith on May 4.

6.2.2 Wetland Terrestrial Species

Acalyptus carpini – a weevil
Status: Nationally Scarce (Notable B), IUCN status not yet evaluated
This small grey weevil is a phytophage on *Salix* and is associated almost exclusively with fen sites across East Anglia, its main area of distribution. It has also been recorded elsewhere in southern England (e.g. south coast, south and east midlands) and Wales, but it is scarce in these regions. Adults overwinter and have been recorded in most months of the year. Prior to the 2023 survey, the species was recorded at The Lows on July 7, 2017. On the 2023 survey, singletons were beaten off willows at The Lows and Little Fen on July 18.

Anthracus consputus – a ground beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This is a small elongate pale brown ground beetle associated with sparsely vegetated soft mud near water. It predates smaller invertebrates in this habitat. The species is widely distributed in England and Wales, south of an imaginary line drawn from the Humber to the Bristol Channel. Within this range, it is relatively scarce in the south-west and much of Wales. On the 2023 survey, a singleton was sieved from *Juncus* tussocks next to the ditch channels at The Frith on January 31 and two were recovered from field pond pitfall traps at the site on June 22.

Capsus wagneri – a capsid or plant bug
Status: Nationally Scarce (Notable B), IUCN not yet evaluated
This is a small black bug with a rounded outline and slightly enlarged antennal segments. It is best identified by dissection of the male genitalia. The species is known from high quality fen sites in Somerset, Cambridgeshire, Norfolk, Northamptonshire, Gloucestershire, Huntingdonshire, Lincolnshire, Yorkshire and Sussex. This is a wetland species associated with various grasses including *Calamagrostis sp* and also *Phalaris arundinacea* (Reed Canary Grass). All sites from which it has been recorded are long-established wetlands. Adults are mostly recorded in the second half of June and in July. There is one generation a year, with the overwintering stage presumably an egg. Prior to the 2023 survey, the species was recorded from the wetland habitat at The Lows on July 7, 2017.

Carpelimus lindrothi – a rove beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This relatively recent addition to the British fauna was first recorded in Britain, from Norfolk in 1976. It has since colonised East Anglia and the Midlands regions into southern England, where it is found on mud in damp or marshy habitats, particularly those where draw-down zone is an annual seasonal occurrence. Adults have been recorded in most months of the year. On the 2023 survey, five were sieved from wetland vegetation at The Lows on May 19.

Carpelimus obesus – a rove beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This small black elongate beetle is found on mud draw-down zones beside streams, rivers and ponds. It was first recorded in Britain in 1948 and is slowly expanding its range. Currently, it is distributed across southern England north to Yorkshire, although within this range it is very localised. Adults have been recorded between April and September. On the 2023 survey, a singleton was recorded on May 19, by sieving wetland litter at The Lows.

Contacyphon pubescens – a marsh beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This small pale brown, soft-bodied beetle is associated with ponds, bogs and other wetland habitats. Adults occur amongst herbage and have been recorded in most months of the year, hibernating in the adult stage. The larvae are semi-aquatic, living in saturated vegetation in the field ground layer. The species is widely but locally distributed in England and Wales with a range that extends northwards to Easterness in Scotland. On the 2023 survey, single adults were recorded at The Frith on January 31 (sieved from *Juncus* tussocks next to the south-east corner ditch) and May 4, and from The Lows on May 4, June 15 and September 4.

Cordilura aemula – Broadlands Cordilura
Status: Nationally Rare (RDB3), IUCN status not yet evaluated
This is a fly of fenland habitats, which is most regularly encountered in East Anglia and can be numerous at Norfolk Broads and pingo sites. Outside of this stronghold, it is known from Crymlyn Bog in Wales, from Herefordshire, at Askham Bog in Yorkshire and in western Scotland, so it has a wide distribution in Britain. Adults have been found in May and June. On the 2023 survey, an adult was swept at The Frith, in wetland habitat, on May 4.

Cypha discoidea – an aleocharine rove beetle
Status: Nationally Scarce (Notable B), IUCN status not yet evaluated.
This minute rove beetle is typical of wetland habitats such as fens and marshes, where it is perhaps most commonly encountered by sieving wet reed and sedge ‘litter’ or wet decaying heaps of cut vegetation. Adults are found in most months of the year. It is distributed locally in England and has also been recorded in Wales. On the 2023 survey, a singleton was recorded from wetland habitat at The Lows on May 19.

Dacrila fallax – an aleocharine rove beetle
Status: Nationally Scarce (Notable), IUCN status not yet evaluated
This small brown rove beetle is associated with wetland habitats where it is most often recorded in wet reed-bed litter. It has a wide distribution which extends from southern England north to Yorkshire. It has also been recorded from Wales. On the 2023 survey, a singleton was sieved from a *Deschampsia* tussock in the lower fen area at The Lows on January 9.

Drymus pumilio – a groundbug
Status: Nationally Scarce (Notable B), IUCN status not yet evaluated
This is a small dark brown bug, that in the lead surveyor’s experience, is associated with wetland sites such as fens and wet, tussocky floodplain grassland, although older literature also cites chalk grassland as a habitat that supports the species. Its distribution extends across much of southern and central England into south Wales. Adults have been recorded in all months of the year. On the 2023 survey, two adults were sieved from *Deschampsia* tussocks in the fen area of The Lows on February 20.

Heterocerus fusculus – a variegated mud-loving beetle
Status: [Nationally Rare (NR), IUCN Vulnerable]
Like the other members of this genus, the present species is most easily observed in the field by splashing water onto bare muddy margins of pools, at which point the beetles rapidly emerge from their burrows in the mud and usually take flight. This particular species was until recently, believed to be restricted to the seepages at the base of coastal cliffs on the Isle of Wight until this author and a colleague noticed that they were finding the species in inland counties at actinic light traps. Thus the distribution of the species has been greatly misunderstood and inland records have undoubtedly been passed off by many, as aberrant dark-legged examples of the related *H. fenestratus*. Both the British Rarity and IUCN statuses of *H. fusculus* are therefore in need of re-evaluation and are very likely to be removed. On the 2023 survey, a singleton was recorded from wetland habitat at The Lows on May 19.

Lathrobium impressum – a rove beetle

Status: Nationally Scarce (NS), IUCN Least Concern
This small elongate, black beetle is associated with fluctuating wetland habitats such as floodplain fens and reservoir margins, where it is a predator of small invertebrates in the ground 'litter' layer. It is very locally distributed across England and Wales, north as far as Yorkshire. Adults have been recorded in all months of the year. On the 2023 survey, a single adult was sieved from a *Deschampsia* tussock in the lower fen area at The Lows on February 20.

Lygephila pastinum - Blackneck
Status: no British Rarity status, IUCN Near Threatened
This species flies in June and July and is distributed very locally throughout England and Wales, north to Yorkshire. It is typically found in wetland habitats including damp grassland where the larvae feed on plants in the Fabaceae, particularly Tufted Vetch *Vicia cracca*. The species is widely distributed and not infrequent in Norfolk. On the 2023 survey, the moth was recorded from light traps at The Lows on June 15.

Melanapion minimum – Sallow Guest Weevil
Status: Nationally Rare (Red Data Book RDB3), IUCN status not yet evaluated
This small black phytophagous weevil is associated with *Salix* species, both broad and narrow-leaved types, in wetland and fen habitats. The larvae are inquilines in the galls of sawflies of the genus *Pontania,* hence the vernacular name. The weevil is widely distributed but very highly localised in England and Wales. The majority of records are clustered in the fen regions of East Anglia where it can be found with some reliability. On the 2023, a singleton was swept in Little Fen on June 15.

Molophilus bihamatus – Yellow-legged Black Mol
Status: Nationally Scarce (Notable), IUCN status not yet evaluated
This is a small and non-descript cranefly typically associated with alder carr, ideally where there is seasonal draw-down zone created by fluctuating water levels. It also has some affinity for reed-beds where peaty substrate is similarly exposed in summer. The species is distributed throughout Britain north to south-east Sutherland, but within this range, it is scarce. On the 2023 survey, a female was swept in alder carr habitat at Little Fen on May 4.

Oodes helopioides – a ground beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This is an unmistakeable ground beetle, resembling *Amara* in its ovoid shape, but having a more depressed and purely black appearance. It is unique amongst ground beetles in having an amphibious habit. The adult beetles can forage underwater and are thus semi-aquatic, yet they are most often observed by the recorder through sieving waterside vegetation and tussocks and by pitfall-trapping. As a wetland inhabitant, the beetle is most frequently associated with fens, grazing marshes, wet heaths, water meadows and pingos. The species is widespread but very locally distributed in England and Wales, with reports also from Scotland. Adults have been recorded throughout the year. On the 2023 survey, two were in lower field ditch pitfall traps at The Lows on May 9, a singleton was recorded here on May 19 and another two were recovered from pitfall traps in a lower field ditch on May 19.

Pardosa tenuipes (previously proxima) **–** A wolf spider
Status: Nationally Scarce (NS), IUCN Least Concern
This highly active ground-dwelling predator, is associated with damp habitats and wetland localities, typically at the margins of streams. Many of its known sites in England, Wales and south-west Scotland are coastal. Adults are most often encountered in the field between May and July. On the 2023 survey, an adult male was recorded from pitfall traps in the lower south-west field ditch at The Lows on May 9.

Philonthus mannerheimi – a rove beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This rove beetle is associated with wetland habitats including fens, marshes, pond edges and riverbanks. It is ground-dwelling, inhabiting the litter layer, and is predatory on small invertebrates. Adults have been recorded in most months of the year. The species is distributed thinly throughout England, Wales and Scotland and is very scarce in Norfolk. On the 2023 survey, an adult was recovered from a pitfall trap in the lower field ditch system at The Lows on June 22.

Pterostichus anthracinus - a ground beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This medium-sized black ground beetle is found in water edge habitats such as flood meadows and pool margins, where it predates small invertebrates. The species is mainly found from Yorkshire southwards and predominantly in England, with a few records also from south Wales and southern Scotland. It is well-represented in East Anglia. In Norfolk, it is

known from at least 12 hectads. On the 2023 survey, the species was pitfall-trapped at Little Fen, north section where one was present on May 9 and also at The Lows, where 9 adults were trapped in the south-west wetland ditch of the lower field on May 9 and 26 individuals were recovered from lower field ditch traps on June 22.

Pterostichus gracilis – a ground beetle
Status: Nationally Scarce (NS), IUCN Least Concern
In appearance this predator is unexceptional, representing a typical black ground beetle of the *Pterostichus* genus. It is found in damp, lush vegetation at the margins of lakes, ponds, reservoirs, riverbanks and other wetland habitats. The beetle is widely distributed but decidedly local in England and Wales, northwards to Lancashire with scattered outlier populations in Scotland. On the 2023 survey, the species was recorded at all three sites. At The Lows, one was netted from the ditch margin in the lower field on May 9, on which date one was also recovered from a pitfall trap in the lower field south-west ditch. At Little Fen, two were in pitfall traps at the north end of the site on May 9, and at The Frith, a singleton was sieved from *Juncus* tussocks next to the south-east corner ditch on January 31, with another in pitfall traps in this ditch system on May 9, and finally, three were in pitfall traps in the field pond on June 22.

Schistoglossa gemina – a rove beetle
Status: Nationally Scarce (Notable), IUCN status not yet evaluated
This diminutive non-descript black aleocharine rove beetle occurs in fens and marshes and is most often encountered in *Juncus* and *Deschampsia* tussocks near water bodies, inundations or saturated ground. Fen litter is also a source of records. Adults have been found from November through to July. The species is widely but locally distributed throughout England and has also been recorded very sparsely in Wales and Scotland. On the 2023 survey, a series of specimens was recorded from the Lows as follows: a male and a female were sieved from *Deschampsia* tussocks in the lower fen area on January 9, a singleton was sieved from tussocks here on January 31, and a male and female were swept from vegetation here on June 15.

Scopaeus laevigatus – a rove beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This is an elongate predatory rove beetle that has been found at coastal sites on landslips and cliff seepages and inland on damp sand and peat near water and at a reservoir edge. Adults have been recorded between April and October. Records are few and come from South Devon, Dorset, East Sussex, Surrey, Leicestershire, Norfolk, Suffolk and several sites in Wales. It appears to be expanding its range as predicted by Lott & Anderson (2011). On the 2023 survey, an adult was sieved from wet litter in the south-west corner of Little Fen on May 9.

Stenus palustris – a rove beetle
Status: Nationally Scarce (Notable B), IUCN status not yet evaluated
This is a small elongate black rove beetle with large eyes and yellow and black legs. It is primarily found in fens but also recorded from marshes and bogs. The beetle is usually found amongst reed and sedge litter and can most often be observed by sieving wet vegetation and cut vegetation heaps. It is widespread but local in England and Wales, with a bias for the Norfolk Broads and the Cambridgeshire Fens. On the 2023 survey, adults were sieved from tussocks at The Frith next to the wetland ditch system on January 31, and at The Lows, adults were recorded by tussock-sieving on January 9 and 31 and also on February 20. The species was also recorded prior to the 2023 survey, on December 4, 2017, at The Frith by sieving tussocks.

Trochosa spinipalpis – A wolf spider
Status: Nationally Scarce (NS), IUCN Least Concern
This is a relatively large brown predator that is ground-active in marshes, fens, wet heaths, bogs and damp grassland. The adults are usually encountered in the spring (April and May), although females can persist in the field into autumn, The species is widespread throughout England, Wales and Scotland, but very localised within this range. On the 2023 survey a single adult male was in pitfall traps at Little Fen and three were recovered from traps in the lower field west ditch at The Lows, all on May 9.

Vertigo angustior – Narrow-mouthed Whorl Snail
Status: Nationally Scarce, IUCN Vulnerable, NERC s. 41, Annex II EUHS Directive
This minute species is very localised in distribution in Britain, with its main population in East Anglia. Elsewhere, it is found throughout much of southern England northwards into Scotland and Wales. Although it is known from over 60 localities, many of these habitats are vulnerable to change. In the latter two countries it is largely coastal, and in Scotland it is particularly scarce. Its typical habitat is one of open permanently moist wetland, particularly near the coast, but in Norfolk, it occurs inland in sites that are permanently damp but not subject to inundation and which are

relatively free of trees and scrub. It prefers a lightly grazed sward of fine grasses and sedges. The species has a short life span and can recover from population reductions relatively quickly. On the 2023 survey, singletons were sieved from wetland ground litter in the fen area of the site on January 9 and again on February 20. The species was first recorded here in 2010 by Toby Abrehart and was again found in 2012 (Abrehart 2012). He assessed that the population was at healthy levels and made recommendations for appropriate habitat management. Although population counts were not made in 2023, evidence that the species is still present at the site is encouraging.

6.2.3 Breck Grassland ('Heath)' short-turf Species

Alevonota gracilenta – an aleocharine rove beetle
Status: Nationally Rare (RDBK), IUCN status not yet evaluated
This minute beetle is found in open habitats, including grassland, sandpits, chalk pits, downland and breck heath. It is associated in particular with sandy or chalky substrates. Its distribution extends through central and south-east England and Wales. Adults have been recorded between April and June and also in August and September. On the 2023 survey, a male was collected at The Frith, in breck grassland habitat, on May 4.

Alopecosa cuneata – A wolf spider
Status: Nationally Scarce (NS), IUCN Least Concern
This moderately large predator is marked with a relatively distinct white longitudinal banding pattern on the abdomen. It is ground-dwelling and is typically associated with dunes systems and short-turf grassland in England and Wales. Regionally it is perhaps most frequent in the Breckland area of East Anglia. Adults are usually encountered in May, although they have been recorded between April and August. On the 2023 survey, 10 adult males were recovered from the pitfall trap lines on breck grassland at The Frith on May 9, and on the same date, two adult males were in pitfall traps in the upper meadow at The Lows.

Amara lucida – a ground beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This small ovoid bronze ground beetle is most often encountered in coastal regions of England and Wales where it inhabits sandy areas such as dune systems and is also found on coastal shingle. There is however, a cluster of records from the Breckland region and environs in East Anglia and other scattered inland records, mainly in the east of England. The larvae are predatory, whereas the adults are phytophagous, feeding on seeds. On the 2023 survey, two were in pitfall traps in breck grassland at The Frith on May 9 and a singleton was in traps in similar habitat here on September 10.

Apion rubiginosum – a seed weevil
Status: Nationally Rare (Red Data Book RDB3), IUCN status not yet evaluated
This small weevil is one of several red species in the genus that inhabit short turf grassland where the food-plant sheep's sorrel *Rumex acetosella* grows. The larvae feed in galls at the roots of the plant whereas the adult stage feeds openly on the plant leaves. Unlike its closely related allies, *A. rubiginosum* is much more restricted in its distribution, being found only in lowland England and Wales and being largely coastal. The main exception is of a significant inland population across the East Anglian breckland region. On the 2023 survey, a singleton was swept from breck grassland at The Frith on September 10.

Argenna subnigra – A meshweb spider
Status: Nationally Scarce (NS), IUCN Least Concern
This is a small non-descript, mainly ground-active predator that inhabits waste ground, dunes and sparsely vegetated short-turf grassland. It is most commonly found near the coast. The species is widely but very locally distributed in England and Wales, with most records in south-east England. Adults are usually found in the field in May and June. On the 2023 survey, three adults were recorded on May 9 at The Lows.

Attactagenus plumbeus – a weevil
Status: Nationally Scarce (Notable B), IUCN status not yet evaluated
This rotund brown weevil is a species of grassland in various habitats including arable verges, sandpits and coastal dunes. It is perhaps most commonly encountered in sandy districts. The larvae feed on the roots of a variety of herbaceous plants. Adults have been recorded between April and August. The weevil is widely but locally distributed in suitable habitat throughout England and Wales. On the 2023 survey, a singleton was swept in dry grassland at The Frith on June 22.

Catopidius depressus – a round fungus beetle
Status: Nationally Scarce (Notable), IUCN status yet to be evaluated
This pale brown beetle is associated with underground mammal runs, particularly with rabbit burrow, and usually on sandy substrates, in various habitats including woodland, although it is perhaps most commonly encountered in open or verge habitats. Adults have been recorded in most months of the year. The species is widespread but local within a range that primarily encompasses the Midlands, East Anglia and south-east England. Outside of this area it is rarely recorded. On the 2023 survey, a singleton was sieved from leaf litter in a rabbit burrow beneath the pine clump at The Frith, on January 9.

Chrysis illigeri - a cuckoo wasp
Status: Nationally Scarce (Notable Nb), IUCN status not yet evaluated
This is a small but highly attractive metallic pink and green cuckoo wasp or ruby-tailed wasp. It is found in open sandy habitats such as lowland heath, sand dunes, gravel and sand pits. Adults visit umbellifer flowers as well as Hemp Agrimony *Eupatorium cannabinum*. The larvae are parasitoids on the solitary wasp *Tachysphex pompiliformis.* The species is distributed south of an imaginary line drawn from the Wash to the Bristol Channel with the main clusters of records from the Dorset heaths, the Thames estuary and Surrey heaths and the East Anglian Breckland. On the 2023 survey, a male was recovered from pitfall traps in breck grassland at The Frith on June 22.

Chrysotoxum elegans – Variable Spearhorn
Status: Nationally Scarce (NS), IUCN Least Concern
This attractive hoverfly is a wasp mimic that is found in coastal woodlands and also in open habitats including breck heath in East Anglia and coastal heathland in south-west England. The larvae are probably predators of ant-attended aphid species. The flight period of adults is between April and October. On the 2023 survey, an adult was pitfall trapped on The Frith, in breck grassland habitat on September 10.

Eutolmus rufibarbis – Golden-tabbed Robberfly
Status: Nationally Scarce (NS), IUCN Least Concern
This is a large and distinctive dark robber fly found in sandy districts including heathland and Breckland heath. In Britain it is restricted to the area east of an imaginary line drawn from the Wash to the Isle of Purbeck, with major clusters of records in the East Anglian Breckland and from heaths in the New Forest, Surrey, West Sussex and the Weald. The species is well represented in East Anglia. On the 2023 survey, a female was swept at The Frith on July 20.

Gymnetron rostellum – a weevil
Status: Nationally Scarce (Notable A), IUCN status not yet evaluated
This is a small nondescript dark weevil found in disturbed ground habitats, sand pits, roadside verges and field margins. It is possibly associated with speedwells *Veronica sp* as a food-plant. The species is mainly found in eastern England, with scattered outliers elsewhere. It is currently very scarce in East Anglia, where it is known from the brecks and the coastal regions. On the 2023 survey, two adults were swept from breck grassland at The Frith, not far from the north-west entrance gateway, on June 22.

Hedychrum niemelai – a ruby-tailed wasp or cuckoo wasp
Status: [Nationally Rare (pRDB2 (provisional status = Vulnerable), IUCN status not yet evaluated]
This is a brightly coloured and spectacular ruby-tailed wasp found in open, sandy localities such as dunes, quarries and tracks and pathways. As a parasitoid, its hosts are weevil-wasps or digger-wasps; species of the genus *Cerceris.* The ruby-tailed wasp seeks out nests of the host and lays its eggs in the nest. The larvae hatch and consume the grubs of the host. For nectar sources, the wasp is known to visit golden-rod *Solidago sp*, woundworts *Stachys sp.* and Yarrow *Achillea millefolium*. The species is found in southern England with records from Cornwall to Kent and north to Oxfordshire, Norfolk and Lincolnshire. It was assessed as being of provisional Red Data Book status by Steve Falk in 1991, but the BWARS website considers that it's current status should be downgraded. In Norfolk, the species' distribution centres around The Brecks, with outlying records to the north and east. On the 2023 survey, a male was swept at The Lows on July 18.

Hippodamia variegata – Adonis Ladybird
Status: [Nationally Scarce (Notable B), IUCN status not yet evaluated]
This is a medium-sized brick-red ladybird with a varying number of black spots and characteristic black and white patterning on the thorax. Like most ladybirds, it is a predator of aphids. Its distribution extends throughout southern, eastern and central England as far north as Cumbria and Tyne and Wear. In Cornwall, Wales and Scotland it becomes rather more scarce. It was formerly only commonly found on the English coast, but since the 1980s, it turned up

increasingly at inland post-industrial sites and other areas of short-turf grassland and disturbed grassland habitat, so although formerly considered Nationally Scarce, it is now so regularly encountered in suitable habitat, that it can only qualify as locally distributed at such time as its British Rarity status is formally re-evaluated. The beetle was recorded on the 2023 survey at The Frith on July 20.

Hypera diversipunctata – a weevil
Status: Nationally Rare (RDB3), IUCN status not yet evaluated.
This moderately-sized brownish-grey weevil is found in a variety of open grassland situations, probably with a preference for wet grassland, although it has been encountered at a number of breck heath sites in East Anglia also. It feeds on various Carophyllaceaea with Bog Stitchwort (*Stellaria alsine*), Field Mouse-ear (*Cerastium arvense*) and Water Chickweed (*Myosoton aquaticum*) cited in the literature. The larvae and adults feed externally on the foliage. Adults have been recorded in April and May and from July to November. The species is very widely but sporadically distributed throughout Britain with records from East Anglia, through the Midlands into Wales and then northern England up into Scotland. However, across its range, there are very few records. In East Anglia it is scarce, but known from an increasing handful of locations, most in the Breckland region. On the 2023 survey, one was swept from dry grassland at The Frith on July 20.

Megalonotus praetextatus – a groundbug
Status: Nationally Scarce (Notable B), IUCN status not yet evaluated
This is a distinctive medium-sized glossy dark ground bug with pale wing markings. It requires well-drained soils with a warm, sheltered aspect such as those in sand dune systems, gravel pits, sandy grasslands and breck heath. In such situations it is frequently associated with stork's-bill *Erodium*. Adults are active in the field between April and September. The bug is predominantly southern and coastal in south and east England and South Wales, but with inland records from the Breckland and other areas of southern England. On the 2023 survey, the species was recorded at The Lows on July 18, and several were swept from grassland at several locations at The Frith on July 20.

Megalonotus sabulicola – a groundbug
Status: Nationally Scarce (Notable B), IUCN status not yet evaluated
This is a small nondescript brown ground bug with pale tibiae which is found in sandy habitats on sparsely-vegetated ground, most typically in breck grassland and disturbed sites. The food-plant is probably common stork's-bill *Erodium cicutarium*. The majority of records are from the English south coast, south-east England and East Anglia. On the 2023 survey, singletons were recorded at The Lows (upper field) on July 18, and at The Frith, where they were swept in typical breck grassland habitat on June 22 and July 20, and one was also recovered from a pitfall trap here on June 22.

Nomada fucata – Painted Nomad Bee
Status: Nationally Scarce (Notable A), IUCN status not yet evaluated
This species is typically found in coastal grassland as well as in old quarries and sandpits where there are patches of sandy bare ground for nesting. Its host is the mining bee *Andrena flavipes.* Both Nomad and host were formerly scarce, but in recent decades their ranges have expanded northwards in England so that currently the species is found as far north as Durham. Adults fly from March to June and again in July and August. On the 2023 survey, a male was swept in grassland at The Frith on May 4.

Ortholomus punctipennis – a groundbug
Status: Nationally Rare (RDB3), IUCN status not yet evaluated
This ground-dwelling bug is found in high insolation habitats, typically breck heath and dune systems, where open areas of bare ground are punctuated by patches of short sward vegetation, on free-draining substrate. The species probably feeds on seeds of a variety of plants. Formerly known only from the east and south coastlines in England and the brecks of East Anglia, the bug has recently been found at new localities in Kent and has also reappeared in the brecks, which indicates expansion of range and colonisation. Adults have been recorded all year round. On the 2023 survey, a singleton was swept in breck grassland habitat at The Frith, east of the pine clump, on July 20.

Platynaspis lutorubra – Ant-nest Ladybird
Status: Nationally Scarce (Notable A), IUCN status not yet evaluated
This is a small but distinctive black, hairy ladybird with red spots on its wing-cases. It is found in a variety of habitats including woodland, grassland, hedgerows and coastal shingle, but it is perhaps most frequently encountered in short turf on free draining substrates. It is probably predatory both as larva and adult, on aphids. It is found in England, mainly south of an imaginary line drawn from the Wash on the east coast to the Bristol Channel on the west coast. Within this range, the majority of records come from the south-east around the home counties west of the Thames

estuary. Isolated outliers occur in south Wales and Nottinghamshire. On the 2023 survey a singleton was present in a pitfall trap in breck grassland at The Frith on June 22.

Rhopalus parumpunctatus - a rhopalid bug
Status: Nationally Scarce (NS), IUCN Least Concern
This is a reddish-brown bug that can be differentiated from similar species in the genus by the abdominal markings, the form of the scutellum and the dark spots on the wing veins. It is highly active in dry, sandy habitats such as grey dunes and breck heath. The adults are flower-visiting and there is an association with many plant species, particularly Mouse-ear *Cerastium sp.* The bug is locally distributed east of an imaginary line drawn from the Wash on the east coast to west Dorset on the south coast. It is also recorded from the Welsh coastline. Adults are recorded mainly between May and September. On the 2023 survey, the species was swept in grassland at The Frith; two on July 20 and one on September 4.

Saprinus aeneus – Bronze Mirror Clown
Status: Nationally Scarce (NS), IUCN Least Concern
This is a beetle of open short turf habitats on free-draining soils, including sand dunes, breck grassland, and heathland. It is almost always associated with carrion and dung. All active stages of the beetle predate the developing stages of other invertebrates in decaying organic material. Adults have been recorded between April and October. It is a widely distributed species Nationally, but has declined historically. Currently, it is most frequent along the coastal fringes of England and Wales, but it also maintains a significant stronghold inland in and around the Breckland region of East Anglia. On the 2023 survey, a singleton was sieved from a dead Woodpigeon *Columba palumbus* along the north hedge-line of The Frith on July 20.

6.2.4 Grassland/Verge generalist Species

Aleochara brevipennis – a rove beetle
Status: [Nationally Scarce (Notable), IUCN status not yet evaluated]
This small and nondescript brown rove beetle is an inhabitant of the ground layer in grassland habitats and is usually recorded either in pitfall traps or by sieving grass tussocks. Both the adults and the larvae are probably predatory on smaller invertebrates. The adults have been found all year round. The species is widely distributed but local in Britain. Some sources suggest that there have been recent declines, particularly in southern England, but it is the lead surveyor's opinion that the species is widely distributed and relatively frequent (particularly in pitfall traps) in East Anglia, and probably does not merit a British Rarity status. On the 2023 survey, eight specimens were recovered from pitfall traps in a lower field ditch at The Lows on June 22.

Asiraca clavicornis – a planthopper (a true bug)
Status: Nationally Scarce (NS), IUCN Status not yet evaluated.
This is an unmistakeable large leafhopper with flattened front legs and distinctive appearance. It is found in rough grassland and scrub on free-draining substrates. The adults can be found all year round (i.e. they hibernate as adults). Formerly more widespread in southern England, the species now has a very restricted distribution, mainly in the Thames gateway, a few areas in East Kent and the East Anglian Brecks upwards into north-west Norfolk. On the 2023 survey, one was swept in the woodland block at The Frith on May 4 and on the same date, one was also swept along the top field north hedge of The Lows. At the latter site, the species was again recorded on September 4 when one was swept in grassland near the top field north hedge.

Cassida prasina – a tortoise beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This is a green tortoise beetle with red scutellary marks. The name tortoise beetle refers to the way in which the insect withdraws its legs under a protective 'carapace' when threatened. It is found in grassland and disturbed ground where the food-plant Yarrow grows. The larvae are free-living on the plant. The species is locally distributed throughout southern, south-eastern and Midlands England. Outside of this area, it is decidedly scarce and predominantly coastal with records from Wales, northern England and Scotland. On the 2023 survey, an individual was swept from the upper field at The Lows on July 18.

Catapion pubescens – a seed weevil
Status: [Nationally Notable Nb, IUCN status not yet evaluated].
This is a small grey-black seed weevil found locally throughout England and Wales in grassland where it feeds on clovers *Trifolium sp* both as an adult and larva. The larva feeds in stem galls on the host-plant. In Norfolk, the species is

fairly localised in distribution, with records from 22 hectads of the National Grid in the two vice-counties as at December 2021. As of October 2021, the weevil had been recorded from 150 hectads of the National Grid, so this species effectively no longer merits Nationally Scarce status (upper threshold is 100 hectads), although status re-evaluation has yet to be formalised. On the 2023 survey, three adults were swept from grassland at The Frith on July 20.

Chiasmia clathrata - Latticed Heath
Status: no British Rarity status, IUCN Near Threatened
This distinctive day-flying moth is typically observed in open habitats, including dry grassland and heathland where the larval food-plants clovers, trefoils and Lucerne *Medicago sativa* grow. Adults are usually recorded between May and September, there being two generations of adults annually. Distributed through Britain, the moth is currently in decline, hence the designation under IUCN criteria. In Norfolk, the species remains common and widely distributed in suitable habitats. On the 2023 survey, the species was observed at light traps at The Lows on June 15.

Cistogaster globosa – a parasitic fly
Status: [Nationally Rare (Red Data Book RDB2), IUCN status not yet evaluated]
This is a small but distinctive fly, with a more-or-less shiny globose abdomen and the wings partly splayed when at rest. It parasitises the Bishop's Mitre shieldbug *Aelia acuminata*. The fly lays an egg on the dorsal surface of the host's abdomen and the larva when fully fed within the host, leaves the bug and pupates in the ground. The fly is typically found in dry grassland habitats. Adults have been observed to seek nectar on Wild Carrot *Daucus carota*. The fly is mainly found in southern England with a concentration of records in the south-east into East Anglia. It appears to be expanding its range and may no longer merit the status of RDB2. On the 2023 survey, individuals were swept at The Frith in grassland on July 20.

Coenonympha pamphilus – Small Heath Butterfly
Status: no British Rarity status, IUCN Vulnerable
The familiar Small Heath butterfly inhabits rough dry grassland and heath sites where its larvae feed on grasses, particularly bents and fescues. The adults flight period extends from mid-May to mid-September, with at least two generations produced annually. Small Heath was designated as Near Threatened at the time of the previous LOHP Invertebrate Survey in 2019, but has since been re-evaluated (2021) as Vulnerable due to continuing significant decline of the National population. On the 2023 survey, singletons were noted in flight over grassland at The Frith and at The Lows, on June 15 and the species was again recorded at The Frith later in the year on September 10.

Glocianus punctiger – a weevil
Status: [Nationally Scarce (Notable B), IUCN status not yet evaluated]
This grey weevil inhabits grassland sites where it feeds on Dandelion *Taraxacum* sp. Typical habitats include road verges, waste places, dunes, trackways and open rough ground. The eggs are laid in the stem of the plant and the larvae feed inside the flower-heads. The species is locally distributed throughout England and Wales (where it is mainly coastal) and has also been recorded from Scotland. Adults are active in the field mainly between May and August. As at October 2021, this species had been recorded from 110 hectads of the National grid since 1990 and cannot therefore be considered to merit British Rarity status, although the status has yet to be formally revised. On the 2023 survey, a singleton was swept at The Lows on May 19.

Larinus carlinae
Status: [Nationally Scarce (Notable B), IUCN status yet to be evaluated].
This is a moderately large, blackish, elongate weevil which is phytophagous on a variety of thistles (*Carduus* and *Cirsium sp*) in grassland. Adults are active in the field between April and September. It is primarily found in southern England, south of an imaginary line drawn from The Wash estuary to The Severn estuary, but is also widely distributed in Wales. The species is particularly well-represented in coastal grassland localities. The weevil has recently been increasing its range in a similar pattern of population expansion to that of the closely related thistle-feeder *Rhinocyllus conicus* and with records post-dating 1990 from 173 hectads of the National grid as at October 2021, the species no longer merits a British Rarity designation, although its status has yet to be formally revised. On the 2023 survey, a singleton was swept from thistles in the upper meadow at The Lows on September 4.

Longitarsus ballotae – a flea beetle
Status: Nationally Scarce (NS), IUCN Least Concern.
This small yellow-brown flea beetle is associated specifically with its food-plant black hore-hound *Ballota nigra* in hedgerow and verge habitats. It is distributed mainly in southern England and with most records occurring in the south-eastern areas of the country where it can be quite common. Adults are found in most months of the year. It is the lead

surveyor's opinion that this species no longer merits British Rarity status, as it is frequent and widespread at least across much of East Anglia. On the 2023 survey, an adult was swept off black hore-hound along the north hedge perimeter of The Lows on May 4.

Raglius alboacuminatus – a groundbug
Status: Nationally Scarce (Notable Nb), IUCN status not yet evaluated
This is a medium-sized ground bug with strikingly patterned wings. It feeds mainly on black hore-hound, favouring dense stands of the plant in sparsely-vegetated habitats. Typical sites include waste ground, roadside verges and woodland clearings. The adults are present throughout the year, part of which is spent in hibernation. They are active from spring through to autumn. This is a scarce bug which is found mainly in southern Britain, particularly the south-east around the Thames Gateway. It has also been recorded in Wales. On the 2023 survey, an adult was swept off the food-plant at the base of the top field north hedgerow at The Lows on May 4.

Rhinocyllus conicus – a weevil
Status: [Nationally Scarce (Notable A), IUCN status not yet evaluated]
This medium-sized elongate grey weevil is found in grassland where it is phytophagous on spear thistle *Cirsium vulgare* and musk thistle *Carduus nutans*. The adults are active from April to September and are known to hibernate in the turf mat and under bark. Until relatively recently, this species was more-or-less confined geographically to the south coast of England, but it has since expanded its range significantly, colonising inland counties in England and is certainly increasing. The species is found as far north as Yorkshire and has also been recorded in Wales. As of October 2022, the species had been recorded from more than 200 post-1990 hectads in Britain, rendering its British Rarity status invalid, although this has yet to be formally acknowledged. On the 2023 survey, the species was swept from thistles at The Lows on June 15 and July 18.

Syntomus truncatellus – a ground beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This small black predatory ground beetle inhabits open grassland sites such as grass verges, field edges and grey dunes. Its main area of distribution is in eastern England although it is distributed throughout England and Wales with scattered records north to Yorkshire and outliers in Scotland. It is particularly common in Norfolk. On the 2023 survey, two specimens were sieved from old straw at the western edge of the upper field of The Lows on May 19, and a singleton was also recorded here on July 18, whilst single individuals were recorded at The Frith on January 9, January 31 and June 22, the latter from pitfall traps in breck grassland.

Thyreocoris scarabaeoides – Scarab Shieldbug (a true bug)
Status: Nationally Scarce (NS), IUCN Least Concern
This very distinctive bronze, convex shieldbug lives in short sward grassland habitats such as quarries, sandpits, fixed dune, field margins, chalk downland and breck heath. It is most commonly found by sieving moss and litter or by pitfall-trapping in suitable habitat. The species is supposedly associated with violets *Viola sp*.,in suitable habitat across much of southern Britain, although it may utilise other food-plants. Adults have been recorded in all months of the year. In Norfolk, the species is relatively widespread and frequent. On the 2023 survey, an adult was swept at The Frith on July 20.

6.2.5 Woodland dead wood and fungi Species

Abdera biflexuosa – a false darkling beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This small elongate and somewhat cylindrical beetle is mainly black, but characteristically patterned with transverse undulating yellow bars on the wing-cases. It is distributed throughout England as far as north-east England and is also found in Wales. The species is an inhabitant of ancient broad-leaved woodland, parkland, hedgerows and isolated trees. The larvae probably develop in twigs, with records from oak (mainly), ash and lime. Adults have been recorded from April to August. On the 2023 survey, between five and ten specimens were beaten from dead oak boughs along the north and east site perimeter hedges of The Frith on July 20 and two were beaten off oaks at Little Fen on July 18.

Anaspis thoracica – a false flower beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This small orange-brown beetle has been found increasingly frequently in midland regions and possibly no longer merits the rarity status of Nationally Scarce. Its distribution extends from the southern English counties north to

Yorkshire and Lancashire and southern Scotland. It is associated with woodland habitats where the larvae develop in dead wood. Adults are most frequently observed by beating oak and other tree and shrub blossoms and by sweeping beneath trees, between May and September. On the 2023 survey, this species was recorded at Little Fen, where three (two males, one female) were beaten from oaks on the east edge of the woodland on June 15 and two, on July 18.

Anisoxya fuscula – a false darkling beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This small elongate convex, brown beetle is associated, during its larval development, with dead wood, particularly the twigs of Ash *Fraxinus*, willows, Beech *Fagus* and Field Maple *Acer campestre*. It is found primarily in deciduous ancient woodland and pasture woodland but has been noted to occur in more open sites also. Adult beetles generally occur in the tree canopy. It is distributed mainly south of an imaginary line drawn from the Humber estuary in the east to the Severn estuary in the south-west. The beetle has not been recorded in Scotland, but is present in Wales. On the 2023 survey three were beaten from dead boughs along the north perimeter hedgerow at The Lows on July 18, and on July 20, two were beaten off dead oak boughs along the perimeter hedge of The Frith.

Diaperis boleti – a darkling beetle **(Fig. 3)**
Status: Nationally Scarce (NS), IUCN Least Concern
This is a very distinctive convex black beetle with bright orange marks on the wing cases. It is found in birch woodland where the adults and larvae primarily infest the birch polypore bracket fungus *Piptoporus betulinus.* It is primarily a species of east and south-east England, with its stronghold in East Anglia, but there are also isolated records from Nottinghamshire and Cumbria at least. On the 2023 survey two were recorded from *Trametes* fungus in Little Fen on May 9 and several were observed in birch polypores in the woodland block at The Frith on May 16.

Dorcatoma flavicornis – a wood-borer beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This species is typically associated with pasture woodland and mature limb-damaged trees in hedgerows and woodland. The adults and larvae inhabit dead wood, usually red rotten oak *Quercus* and rotting heartwood. Willows *Salix*, Wych Elm *Ulmus glabra* and other broad-leaved trees also potentially support populations of the beetle. Adults are recorded mainly between April and August. The species is very locally distributed throughout England and Wales, as far north as Yorkshire. On the 2023 survey, three adults were beaten off dead oak boughs along the north and east hedge-lines at The Frith on July 20.

Dropephylla gracilicornis – a rove beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This is a small elongate brownish rove beetle which is easily overlooked in the field. It is associated with broad-leaved trees in hedgerows and pasture woodland where it has been found in a variety of situations, including beneath bark, in lichen, and in rotten wood. There may be a specific association with oak. Adults have been recorded in all months of the year. The species is widespread but very local in England, Wales and southern Scotland. On the 2023 survey, a male was beaten off hedgerow oaks at The Frith on May 16.

Enicmus brevicornis – a minute brown scavenger beetle
Status: Nationally Scarce (Notable), IUCN status not yet evaluated
This dull brown elongate beetle is easily missed in the field because it is very sluggish and small. It occurs locally in England and Wales, where it is primarily found in ancient broad-leaved and pasture woodlands. It is usually encountered beneath bark where it feeds on moulds. In the last few decades, many records have come from Sycamores *Acer pseudoplatanus* where the beetle feeds on sooty moulds. Adults have been collected between May and August. On the 2023 survey, a single adult was beaten off the large willow near the east fence-line perimeter in wetland at The Lows on July 18 and four were recorded by beating boughs of oaks along the north and east hedge-lines of The Frith on July 20.

Gonodera luperus – a darkling beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This is a large darkling beetle with red legs and wing cases that are dark to reddish brown in colour. It is highly mobile and can be found in and around deciduous woodland and scrub. The larvae develop in dead wood and the adults are flower visitors, particularly to Hawthorn *Crataegus monogyna* blossom. The species is distributed locally throughout England and Wales with the main cluster of records in southern England and East Anglia. On the 2023 survey, adults were recorded at all three sites with several at Little Fen on May 4 and on the same date at The Frith where it was again recorded on May 16 (several) and June 22 (one off oak). At The Lows, one was observed on May 19.

Hemicoelus canaliculatus – a wood-borer beetle
Status: Nationally Rare (NR), IUCN Least Concern
This dark, elongate beetle is probably a recent arrival in Britain, first recorded in 1980 in south-east England and apparently spreading. It inhabits dry dead wood from which the bark has been removed, typically in ancient woodland, wood pasture and hedgerow habitats. Adults have been recorded in July. On the 2023 survey, an adult male was beaten off dead boughs along the top field northernmost hedgerow at The Lows, on July 18. This represents the first Norfolk record for this species.

Lissodema cursor – a narrow-waisted bark beetle
Status: Nationally Rare (NR), IUCN Least Concern
This small brown beetle is associated with the dead top-most branches of ash trees in pasture woodland, hedgerows and on isolated trees. The larvae probably develop in the dead wood. Adults have been recorded from May to September. The species distribution is predominantly through south and midland England, but with records as far north as Derbyshire. On the 2023 survey, an adult was beaten off ash along the top field north hedgerow at The Lows on July 18.

Lissodema denticollis – a narrow-waisted bark beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This small brown beetle with pale reddish-yellow markings is found in woodland, pasture woodland, hedgerows and on isolated trees, usually in dead wood or under bark, but also by sweeping under and around trees. It is found on a variety of tree species, but with a probable preference for ash. The larvae probably develop in the dead wood. The species is widespread but local in England. On the 2023 survey, four were beaten off aspen logs lying on the ground at the south-west perimeter of The Frith on June 22, and a singleton was also recorded at the site on July 18.

Magdalis cerasi – a weevil
Status: [Nationally Scarce (Notable B), IUCN status not yet evaluated]
This dull black weevil is distributed locally throughout England and Wales where it occurs in woodland, scrub and hedgerows on oak and also on shrubs of the Rosaceae, particularly Hawthorn. The larvae feed inside branches and dead twigs. Adults can be found between May and August. As of October 2022, the species had been recorded from more than 100 post-1990 hectads in Britain, rendering its British Rarity status invalid, although this has yet to be formally acknowledged. On the 2023 survey, an adult was recorded at The Frith on May 16.

Mordellistena neuwaldeggiana – a tumbling flower beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This is a small orange-brown beetle that is characteristically convex with a distinctive elongated terminal abdominal segment and a jumping habit when captured. It was designated as a Red Data Book species in the 1990s because at that time, its distribution based on conclusive records, was restricted to a handful of southern and south Midland counties. It has in the last three decades, become increasingly frequent and is now widely distributed across midland and eastern England with records as far as Yorkshire in the north and into Devon and Wales in the west. The larvae probably develop in woody stems and the adults are often recorded visiting flowers or by general sweeping. In East Anglia, the species is well-represented. On the 2023 survey, an adult was recorded from the top hedgerow at The Lows on July 18.

Mordellistena variegata – a tumbling flower beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This is a small tumbling flower beetle that has a typically elongated terminal abdominal segment and a jumping habit when captured or disturbed. The beetle is a fuscous brown colour and is patterned with darker markings. The larvae develop in decaying wood. Adults are most often encountered visiting flowers such as umbellifers in and at the edge of ‘wooded’ habitats. The species is primarily distributed in midland, south-east and eastern England, being very scarce elsewhere in the country. Adults are active in the field between July and September. On the 2023 survey, a singleton was swept from the woodland area at The Frith on June 22.

Orthoperus nigrescens – a minute hooded beetle
Status: [Nationally Scarce (Notable B), IUCN status not yet evaluated]
This minute brown beetle is usually found in woodland, often in association with decaying organic matter, such as fungoid wood. Adults have been recorded in most months of the year. The species is considered to be perhaps the commonest member of the genus with a widespread distribution, so its British rarity status is likely to be invalid (M.G.Telfer *pers comm*). On the 2023 survey, three were beaten off oaks along the hedge-lines at The Frith on July 20.

Pseudotriphyllus suturalis – a hairy fungus beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This is a small brown beetle which is associated with bracket fungi (e.g. *Laetiporus sulphureus* and *Polyporus squamosus*) in pasture woodland, ancient woods and old hedgerows. The larvae probably develop within the fungus, whilst adults can be found in and around the brackets and also by beating branches of infected trees. On the 2023 survey, a singleton was tapped off chicken-of-the-woods fungus growing on the information panel wood sculpture near the north-west entrance gate at The Frith, on September 10.

Ptinus palliatus – a wood-boring spider beetle
Status: Nationally Rare (NR), IUCN Vulnerable.
This cryptically patterned species bears a superficial resemblance to the closely-allied wood-borer *Ptinomorphus imperialis.* It inhabits old dry timber of broad-leaved trees. Habitats that support the species include pasture woodland, ancient woodland and also mature dead or damaged trees in hedgerow and woodland situations. The larvae take two years to develop, feeding on cast skins of other insect larvae and pupae and boring into the wood. Adults have been recorded between March and June and also in August. The species is very locally distributed in central and south-east England, although it was formerly recorded also from north-east and south-west England and south Wales. On the 2023 survey, two adults were beaten off dead oak boughs on separate trees along the north hedge at The Frith on May 4.

Rabocerus gabrieli – a narrow-waisted bark beetle
Status: Nationally Scarce (NS), IUCN Least Concern.
This species is distributed thinly throughout Great Britain where it is widespread but local in the north and very local in the south. It inhabits woodland where it is usually found under bark and in dead wood. The larvae are thought to develop in dead wood, which possibly includes that of elder, sycamore and pine. Adults have been recorded in most months of the year. On the 2023 survey, an adult was swept along the eastern margin of Little Fen on May 4.

6.2.6 Woodland/Arboreal generalist Species

Anthribus fasciatus – a fungus weevil
Status: Nationally Scarce (Notable A), IUCN status not yet evaluated.
This is a striking pinkish-red and black mottled convex beetle found primarily in Midlands England with scattered records also in the south-east and in Wales. The species is found in woodland, pasture woodland and hedgerow habitats where it is associated with a large variety of trees, but particularly Hawthorn. The larvae predate scale insects. The adults are most frequently found by beating hawthorn blossom. Adults have been recorded from April through to August. On the 2023 survey a singleton was swept along the north perimeter hedgerow of The Frith on July 20.

Coeliodes ruber – a weevil
Status: Nationally Scarce (Notable B), IUCN status not yet evaluated
This reddish-brown weevil is usually an inhabitant of broad-leaved woodland where it is arboreal, feeding on oak and possibly also hazel. It is widely distributed throughout England and Wales as far north as Cumbria and sporadically up into Scotland. In East Anglia, it is very locally distributed in suitable habitat. On the 2023 survey, singletons were beaten off oak foliage along the north and east hedge-lines at The Frith on May 4 and June 22.

Curculio betulae - a weevil
Status: Nationally Scarce (Notable B), IUCN status not yet evaluated.
A small reddish-brown weevil with a distinctively long rostrum, found in broad-leaved woodland, carr and moorland feeding on Alder *Alnus glutinosa* and also on Birch *Betula*. The larvae develop in the fruits or catkins of the host tree. It is distributed throughout England and Wales with most records occurring south of an imaginarly line drawn from the Humber across country to the top of Wales. On the 2023 survey, two adults were beaten off alders along the perimeter fence-line in the south-west corner of the wetland meadows at The Lows on July 18.

Dendroxena quadrimaculata – The Caterpillar Hunter **(Fig. 5)**
Status: Nationally Scarce (NS), IUCN Least Concern
This is a large and distinctive flattened silphid beetle with beige wing cases marked with conspicuous black spots. It is found in oak woodland and also on oaks in hedgerow habitats. The adults are arboreal, probably largely nocturnal, and prey on caterpillars in the tree canopy, whereas the larvae are ground-dwelling in leaf litter where they too are invertebrate predators. Adults are recorded mainly between early May and late June, although there are records for all months of the year except September. Hibernating adults have been found in leaf litter and under bark. The species is

widespread but locally distributed in England and Wales, and is also recorded (much more sporadically) from Central Scotland. It is relatively widely distributed but local in East Anglia. On the 2023 survey, a single adult was beaten of oak along the west perimeter hedgerow of The Frith on May 16.

Itama brunneata – Rannoch Looper
Status: Nationally Scarce (NS), IUCN Near Threatened
The range of resident populations of this small orange-brown moth is in Scotland, from Perthshire east to Aberdeenshire and north to Ross-shire, where it typically inhabits clearings in established native pine and birch woodland. The larva feeds on bilberry, usually where this grows as a dense ground layer. In recent years, there has been an increase in observations of migrant individuals, particularly so in eastern England and it is speculated that the species may be establishing resident populations in Sussex. Adults fly in June and July. The male flies in hot sunshine, or can be disturbed from its food-plant in dull weather. On the 2023 survey, an adult was recorded at a moth trap at The Lows on June 15.

Lasius brunneus – Brown Tree Ant
Status: [Nationally Scarce (Notable A), IUCN status not yet evaluated]
First recorded in Britain in 1923, this small ant is readily identifiable by the pale brown head and trunk contrasting with the darker black-brown gaster (abdomen). It creates nests in old mature trees and also stumps etc in hedgerows. It is perhaps mainly associated with oak. The adults feed on honeydew collected from large tree aphids although they may supplement this with small invertebrates. It has only been recorded from southern and central English counties, from Essex to Shropshire, but is certainly expanding its range rapidly, and in the opinion of the lead surveyor, at least, the species no longer merits a British Rarity designation. On the 2023 survey it was encountered at all three sites and on seven dates during the year.

Rhagonycha lutea – a soldier beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This moderately small, elongate soldier beetle with soft wing cases is distinctive in having ochraceous wings with black tips. A similar colour pattern is present in the closely-allied common soldier beetle *Rhagonycha fulva,* but that species has a reddish rather than buff ground colour and is present in the field generally later in the season. *R. lutea* is usually associated with woodland or scrubby calcareous grassland where adults can be found from late May through to mid July. It is a predatory species. Its distribution extends through England and Wales, northwards up into Yorkshire. It has also been recorded rarely in Scotland. On the 2023 survey, an adult was recorded at Little Fen on June 15.

Xyela julii – Short Daggertail (a sawfly)
Status: none, IUCN Vulnerable
This small sawfly is associated with pines, the larvae feeding on the developing pollen in male cones which results in the cones to become mis-shapen. When fully developed, the larvae drop to the ground and pupate. They then either hatch the following spring, or diapause for up to three years. The pupa actually has legs and can move around on the ground. Adults have been recorded from mid-March to mid-May. The species is distributed throughout Britain, but appears to have declined in recent years. On the 2023 survey, a singleton was recorded from Little Fen on May 4, on which date several adults were beaten off pines at The Frith.

6.2.7 Non-habitat specific Species

Agrilinus constans – a dung beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This black dung beetle is typically found in woodland and pasture woodland, and also on heathland. It is associated primarily with cattle dung but has also been collected from sheep dung. The species has also occurred infrequently in flood debris on riverine sediments. It is an early spring species, found mainly from March to May, although occasionally later. The species is widely distributed but locally so throughout England, Wales and Scotland, although records are very sparse north of Wales and the Humber and again in the south-west in Devon and Cornwall. There appear to have been significant historical declines across the Midlands counties with evident range contractions away from previously occupied regions of Leicestershire, Warwickshire and Oxfordshire, although a very few populations persist in this region. The species' strongholds appear to be in the south-east region of England; in Surrey, Essex and East Sussex, this area accounting for around one third of the post-1990 locations in Britain. The New Forest, South Hampshire, is also a favoured area and probably the only area where the species could be described as 'abundant'. Elsewhere, it tends to occur as singletons or in low numbers. On the 2023 survey, a singleton was recorded in cattle dung in the wetland area just south of the cross-site alder lines at The Lows, on the early date of February 20.

Apamea anceps – Large Nutmeg
Status: none, IUCN Near Threatened
This relatively large noctuid moth is found throughout much of England, most frequently in the south-east and more locally elsewhere within its range north to northern England and Wales. It has declined in recent decades. The species is typically found in dry pasture bordering woodland edge. Adults fly in June and July, and come to light and also to sugar. The larvae feed on various Poaceae, which include Annual Meadow-grass *Poa annua* and Cock's-foot *Dactylis glomerata*. On the 2023 survey, the species was recorded at moth traps at The Lows on June 15.

Grypus equiseti – Horsetail Weevil
Status: [Nationally Scarce (Notable B), IUCN status not yet evaluated]
This cryptically-coloured grey, black and white weevil occurs in a variety of grassland habitats including brownfield, verges and wetland, where it is associated with its food-plants Field Horsetail *Equisetum arvense* and Marsh Horsetail *Equisetum palustre*. The larvae feed in the stems. Adults have been observed in the field between March and September. The species is recorded widely across England, Wales and Scotland. As at October 2021, the species had been recorded from 214 post-1990 hectads of the National grid and as such, this invalidates its British Rarity status, although this has yet to be formally acknowledged. On the 2023 survey, an adult in hibernation was sieved from a *Deschampsia* tussock along the margin of a small wetland ditch at The Lows on February 20 and three adults were recovered from pitfall traps in a lower field ditch here on June 22.

Leptacinus intermedius- a rove beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This small rove beetle usually frequents decaying vegetation heaps such as dung heaps, grass heaps and straw, where it predates on small invertebrates. It was formerly recorded north as far as County Durham in England and just into south-east Wales, but most recent records are from south-east England only. Adults have been recorded in all months of the year. On the 2023 survey, a singleton was sieved from the meadow cuttings heaps at The Lows on July 18.

Norellia spinipes – Daffodil Dung Fly
Status: [Nationally Scarce (Notable), IUCN status not yet evaluated]
This fly was first recorded in Britain in 1965 and has since expanded its range over much of southern Britain, extending as far north as Yorkshire at least. The larvae mine daffodil leaves and the adults can be found in and around daffodil clumps in spring, with females present also from late summer, occasionally persisting into winter. The species may no longer merit its British Rarity status although this has yet to be formally reviewed. On the 2023 survey, an adult was observed at Little Fen in winter on January 9.

Ocypus nitens – a rove beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This large rove beetle is related to the devil's coach-horse, although it is smaller in stature. The species has an obscure ecology and has been recorded from both open and shaded habitats which include woodland, coastal shingle and quarries. A common requirement may be one of free-draining substrates. It is distributed very locally in England and has also been found in Wales and Scotland. On the 2023 survey, a single adult was pitfall-trapped in woodland in the northern section of Little Fen on May 9.

Tachinus flavolimbatus – a tachyporine rove beetle
Status: Nationally Scarce (NS), IUCN Least Concern
This small blackish rove beetle has a tapered abdomen and bright yellow margins to the fore-body. It is associated with open ground including gardens, fields, coastal habitats and the foreshore where it is found in a variety of decaying organic matter, including dung. Its British distribution is centred on south-east England and East Anglia. There are an increasing number of British records (well over 60), from West Norfolk, West Kent and Cambridgeshire. On the 2023 survey, an adult was sieved from old straw and fungi along the west hedge at The Lows on May 19, and at The Frith, two males and one female were sieved from the large straw heap on January 31 with a further specimen recorded here on February 20.

Tenthredo baetica – Brassica Sawfly
Status: Nationally Scarce (NS), IUCN Least Concern
This impressive yellow and black sawfly was first recorded in Britain in the late 1930s when large numbers were observed near London, and then it became very rare and sporadic, up until 2019 when it recolonised East Anglia and now appears to be expanding its range. The larvae feed on wild Brassicas (Wild Cabbage *Brassica oleracea*, Wild

Mustard *Sinapis arvensis* and Wild Radish *Raphanus raphanistrum*). Adults fly between May and July. On the 2023 survey, a female was swept in the upper pasture at The Lows on May 19.

Fig. 2 Southern Hawker *Aeshna cyanea* photographed at The Frith in July.

Fig. 3 The darkling beetle *Diaperis boleti* photographed at Little Fen in May.

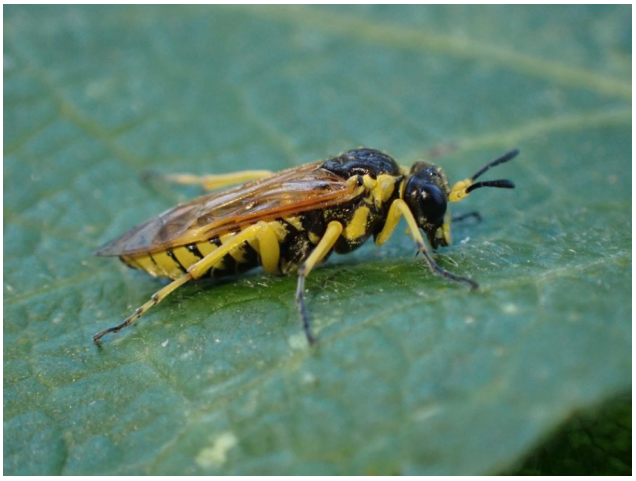


Fig. 4 The sawfly *Tenthredo baetica* netted in the north meadow at The Lows in May (photo: Andy Brown)

Fig. 5 The striking Caterpillar-hunter *Dendroxena quadrimaculata*, a single individual beaten off oaks along the western perimeter hedge-line at The Frith in June.

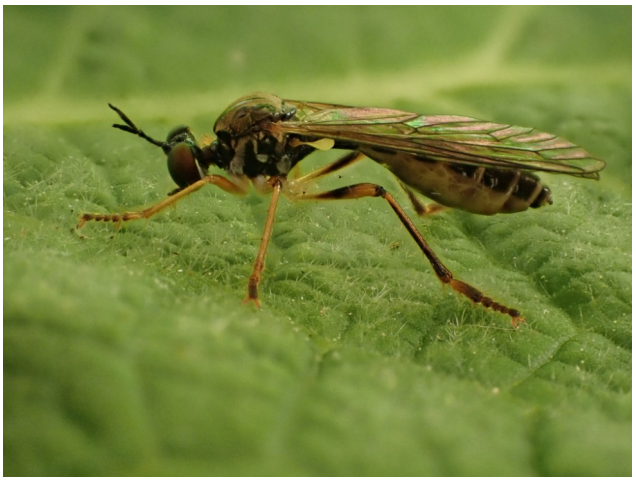


Fig. 6 The Small Yellow-legged Robberfly *Dioctria linearis* photographed at Little Fen in June (photo: Andy Brown)

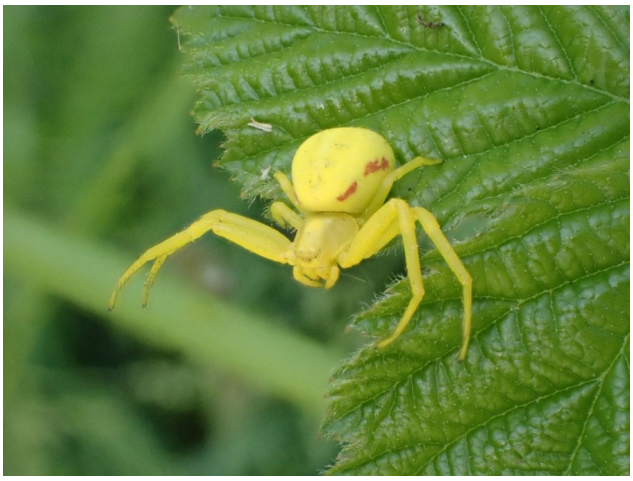


Fig. 7 The crab spider *Misumena vatia*, a female in the top meadow of The Lows in June (photo: Andy Brown)

6.3 BAP Priority Species (Research Only) Lepidoptera

A number of Lepidoptera species are of National BAP Priority (Research Only) status and as such they fall under the NERC Act 2006 legislation. Species "of principal importance for the purpose of conserving biodiversity" are covered under section 41, which requires that these species need to be taken into consideration by a public body when performing any of its functions with a view to conserving biodiversity.

There is sometimes a misconception among Ecological Consultants that these BAP (Research Only) Lepidoptera species are highly significant in a conservation context. However, for the most part, they are not treated Nationally through formal individual Species Action Plans and are not intended to play a role in site protection. There is valid concern however, that these Lepidoptera have declined in the UK in the last 40 years, despite still being relatively common and widespread, so they are flagged as Priority BAP species to encourage awareness of their presence at sites and to promote recording and monitoring.

At the LOHP sites, Lepidoptera species which fall into the BAP Priority (Research Only) category, recorded on the 2023 survey are Blood-vein *Timandra comae,* Buff Ermine *Spilosoma lutea*, Cinnabar *Tyria jacobaeae* and Mottled Rustic *Caradrina morpheus.*

6.4 Analysis

Table 5 All British Conservation Status invertebrates recorded prior to, and during, the 2023 Survey, organised by relevant habitat/microhabitat.

Site	Aquatic (includes all W/A taxa)	Wetland Terrestrial	Total Aquatic + Wetland	Short-turf Grassland/Lichen Heath	Dead wood Specialist	Habitat generalists	Total Conservation Species
The Lows	15	10	25	5	7	20	57
Little Fen	2	5	7	0	5	4	16
The Frith	9	3	12	17	13	14	56

From Table 5 it is evident by comparing the total numbers of invertebrates with British Rarity and IUCN Threat status for each site, that the most significant wetland assemblage in terms of rarity is from The Lows. This total compares favourably with those for Blo' Norton and Betty's Fens, from the 2021 survey, from Broomscot Common in 2022 and from Parker's Piece in 2019. These sites had lesser totals in this category, of 12, 17, 14 and 16 species respectively. The number recorded at Scarfe Meadows in 2022, was also high at 24 species, but a number of these and a small proportion of the invertebrates at The Lows, were recorded only at light traps. Light-trapping was not carried out at the Thelnetham Fen complex wetland sites, which potentially explains the discrepancies in the totals. A similarly significant high total (approx 24) of key wetland species recorded in the 2019 survey at Oak Tree Fen was undoubtedly due to extensive pitfall-trapping of wetland habitat there which boosted the survey total. Pitfall-trapping was not carried out at Betty and Blo-Norton Fens due to the sensitivity of the habitat there, but had it been employed in the methodology, we could have expected higher totals still, than those at The Lows, Scarfe Meadows and Oak Tree Fen.

The Frith had almost twice as many conservation value invertebrates associated with dead and decaying wood than The Lows. The total for this group at The Frith is far more than the recorded small totals of 5 or less species from all of the other LOHP sites surveyed from 2019 onwards, and is indicative of the number of mature hedgerow oak trees that flank the site. Thus The Frith in the context of LOHP sites in general, and also within the wider region, can be considered to be significant for its saproxylic fauna.

Unsurprisingly, The Frith has an overwhelming majority of scarce/rare breck grassland and short turf invertebrate specialists, with 17 in total, compared with The Lows (5) and Little Fen (0) and is second only to Broomscot Common for its breck specialists, amongst LOHP sites. Broomscot has a 32-strong assemblage of conservation value species from this habitat, as recorded during the surveys. Hinderclay Fen heaths also have an impressive number of species, and Parker's Piece, a lesser but nonetheless noteworthy assemblage, with 13 species in this category. As stated in earlier reports, this breck 'heath' component is an important habitat within the larger LOHP site complex, situated as it is, outside of the main Breckland region of East Anglia, yet proving to be an outlier of significance for its invertebrate fauna. In the analysis in Table 5 at least, The Frith can be seen as significant for its breck invertebrates.

6.4.1 Pantheon Analysis & Interpretation

Table 6 shows the Pantheon analysis for habitat and assemblages

Table 6 Pantheon analysis results for Specific Assemblage Types ('SATs') at the LOHP sites The Lows, Little Fen and The Frith from data collated prior to, and from, the 2023 survey, showing the number of species representing that habitat SAT in the Pantheon database, the calculated SQI value and whether the analysis gives a 'Favourable' or 'Unfavourable' condition for that specific habitat to support the associated species assemblage.

Compartment	Broad biotope	Habitat	SAT	No. of species	% representation	SQI	Reported condition
A – The Lows	tree-associated	decaying wood	bark & sapwood decay	28	6	179	Favourable
A	open habitats	short sward & bare ground	open short sward	16	8	156	Favourable
A	open habitats		scrub edge	14	6	100	Favourable
A	open habitats		rich flower resource	10	4	100	Unfavourable
A	open habitats	short sward & bare ground	bare sand & chalk	9	2	233	Unfavourable
A	wetland	marshland	undisturbed fluctuating marsh	7	18	200	Favourable
A	wetland	acid & sedge peats	moss & tussock fen	7	15	414	Favourable
A	wetland	acid & sedge peats	reed-fen & pools	6	5	200	Unfavourable

A	open habitats		scrub-heath & moorland	5	1	160	Unfavourable
A	tree-associated	decaying wood	epiphyte fauna	3	15	100	Favourable
A	wetland	running water	riparian sand	2	3	600	Unfavourable
A			epiphyte fauna	2	10	100	Unfavourable
A	tree-associated	decaying wood	heartwood decay	1	<1	100	Unfavourable
A	tree-associated	decaying wood	fungal fruiting bodies	1	1	100	Unfavourable

Compartment	Broad biotope	Habitat	SAT	No. of species	% representation	SQI	Reported condition
B – Little Fen	tree-associated	decaying wood	bark & sapwood decay	18	4	117	Unfavourable
B	open habitats		scrub edge	9	4	100	Unfavourable
B	open habitats		scrub-heath & moorland	6	2	100	Unfavourable
B	tree-associated	decaying wood	fungal fruiting bodies	6	7	150	Unfavourable
B	wetland	marshland	undisturbed fluctuating marsh	6	16	250	Favourable
B	tree-associated	decaying wood	heartwood decay	3	2	200	Unfavourable
B	open habitats	short sward & bare ground	open short sward	3	2	100	Unfavourable
B	wetland	acid & sedge peats	moss & tussock fen	2	4	250	Unfavourable
B	wetland	acid & sedge peats	reed-fen & pools	2	2	100	Unfavourable
B	wetland	running water	riparian sand	1	2	400	Unfavourable
B	wetland	running water	seepage	1	2	400	Unfavourable
B	open habitats		rich flower resource	1	<1	100	Unfavourable
B	wetland	acid & sedge peats	Sphagnum bog	1	<1	100	Unfavourable

Compartment	Broad biotope	Habitat	SAT	No. of species	% representation	SQI	Reported condition
C – The Frith	tree-associated	decaying wood	bark & sapwood decay	34	7	164	Favourable
C	open habitats		scrub edge	16	7	100	Favourable
C	open habitats	short sward & bare ground	bare sand & chalk	15	3	206	Unfavourable
C	open habitats	short sward & bare ground	open short sward	13	7	146	Favourable
C	open habitats		scrub-heath	9	3	178	Favourable

			& moorland				
C	tree-associated	decaying wood	fungal fruiting bodies	8	9	175	Favourable
C	open habitats		rich flower resource	7	3	100	Unfavourable
C	wetland	acid & sedge peats	reed-fen & pools	6	5	217	Unfavourable
C	wetland	marshland	undisturbed fluctuating marsh	6	16	160	Favourable
C	wetland	acid & sedge peats	moss & tussock fen	6	13	350	Favourable
C	tree-associated	decaying wood	heartwood decay	3	2	300	Unfavourable
C	tree-associated	decaying wood	epiphyte fauna	3	15	100	Favourable
C	wetland	acid & sedge peats	Sphagnum bog	1	<1	100	Unfavourable
			epiphyte fauna	1	5	100	Unfavourable

The highlighted rows (those rows entirely highlighted in yellow) are those for which **any** reliability can be placed on the resulting statistics. For these data, the number of represented species meets or exceeds the lower threshold of 15. It is suggested by Pantheon that where the number falls below this minimum threshold, the statistical analysis is potentially unreliable.

The SQI score that Pantheon uses is based on the sum of the conservation scores of the British Rarity-designated species in a sample divided by the **total number of species** in that sample multiplied by 100. Any value above 150 for this score is considered as indicating significant/good habitat invertebrate quality by this surveyor. A 'Favourable' result for any set of data analysed by Pantheon suggests that the specific habitat is considered to be of a high quality, suitable for supporting a significant associated specialist invertebrate assemblage. It is important to view Pantheon as one of several tools to be used in combination in the process of evaluating a site and not the only route for analysis or conclusion.

Table 6 above lists all of the habitats and habitat niches for each site that Pantheon recognises from the species data that was fed into this app. Pantheon delivers 'Favourable' condition for The Lows and The Frith for their dead wood invertebrate faunas, with respective, and respectable SQI scores of 179 and 164. This is despite the number of conservation value species at The Lows being relatively small.

Surprisingly, Pantheon considers the short sward habitat at The Lows to be of some significance, with a return of 'Favourable' and an SQI value of 156, whereas The Frith comes in with a value of 'Favourable' but a lower SQI score of 146, and a statistically unreliable result with under-representation of species in the sample. It is also interesting to note that The Frith, in the Pantheon analysis, scores low for its short sward 'bare sand and chalk' SAT, with an 'Unfavourable' Pantheon assessment, but with a very high SQI value of 206.

Little Fen unsurprisingly scores low generally, the only reliable statistic being for dead wood in which it has a lowly SQI of 117 and is returned as 'Unfavourable.

Scrub edge habitat, is considered 'Favourable' at The Frith and The Lows, but the number of representative species falls short at the latter site with less than 15 and in either case, the SQI is low at 100.

Finally, it is worth noting that the wetland habitats are considered less significant in the Pantheon analysis, although once again (see previous reports), it could be argued that 'undisturbed fluctuating marsh', and 'moss and tussock fen' mostly delivered as 'Favourable', but without the threshold total of species achieved, is at least indicated as being potentially significant even if it fails to exactly qualify as such. Considering the fact that all three sites have large and potentially important regional wetland invertebrate assemblages, the Pantheon returns are disappointing and perhaps indicative that there is potential for fen habitat enhancement across the sites.

By using Colin Plant Associates (UK Consultant Entomologists) guidelines (Table 3) for assessing the site significance of invertebrate habitat, The Lows, by virtue of the presence of an EUHS Directive species, is ranked, using this analysis, as being of National Importance, whereas The Frith would achieve County significance and Little Fen somewhere between Local and County significance.

7 Discussion and Recommendations

The Lows

Discussion: The Lows is undoubtedly most important for its wetland assemblages, even though its truly aquatic invertebrates are standard fare, at least as recorded in this survey. The jewel in the ecological crown is the Narrow-mouthed Whorl Snail *Vertigo angustior* which inhabits a sizeable swathe of fen habitat here. Also, of particular interest are the terrestrial wetland species that inhabit the ditch system edges in the lower fields. These include the spiders *Pardosa tenuipes* and *Trochosa spinipalpis,* the ground beetles *Pterostichus anthracinus* and *P. gracilis* and the rove beetle *Philonthus mannerheimi,* all of which are predators in the ground litter layer. The aleocharine rove beetle *Schistoglossa gemina,* found on several occasions in the wetland at the southern end of the site is also worthy of note.

The north hedge supports a small number of noteworthy saproxylic invertebrates, which are associated with oak and ash, including the wood-boring beetle *Hemicoelus canaliculatus* which was hitherto largely considered to be a species of relic ancient and pasture woodland sites in England, but which is spreading. Its occurrence at the LOHP site complex is its first recorded occurrence in Norfolk. Additionally, this hedgerow produced the false darkling beetle *Anisoxya fuscula* and the narrow-waisted bark beetles *Lissodema cursor* and *L. denticollis.*

The site is not rich in breck specialists although the spider *Alopecosa cuneata* and the ground bugs *Megalonotus praetextatus* and *M. sabulicola* are of note, both being recorded in the north meadow.

Recommendations: During the 2023 survey, it was noted that the smaller ditches that run longitudinally and aligned north-south, in the lower 'meadow', had dried up and were at least partly, choked with vegetation. Providing the water table can be maintained by the peat substrate here, there is an obvious potential to increase aquatic habitat here by re-cutting these smaller, narrower ditches, and potentially introducing additional east-west aligned ditches that cut across the existing ditches creating a lattice pattern of ditch systems. If this management work is considered, it might be best to carry out these enhancements piecemeal, so as to minimise disturbance to the ditch fauna and to allow colonisation of newly created habitat.

Further wetland habitat could be created in the west section of the sedge fen; in the lower most southern meadow south of the *Phragmites* ditch that traverses the site east-west. There is already a relict ditch running n-s in this area. This could be widened and deepened or a pool could be created here. This would enhance this section of the site for aquatic and wetland terrestrial invertebrates. Currently, the wetland here is likely to dry out in dry summers.

The grazing regime appears to suit the preservation of Narrow-mouthed Whorl Snail *Vertigo angustior* populations in the tall sward wetland in the eastern fringe of the lower 'meadow', demarcated by the main north-south aligned ditch. This area alone on the site, is also where the snail was originally discovered by Abrehart (2012), so its continuation at The Lows is encouraging.

A number of relatively mature ash trees on site may in future succumb to dieback *Hymenoscyphus fraxineus.* These trees and diseased branches should be left in-situ as much as is possible without recourse to felling or clearing, except

where there is a risk of injury. A number of scarce invertebrates, including the beetles *Lissodema cursor* and *Anisoxya fuscula* utilise dead ash limbs for development.

The 2023 survey results suggest that a healthy dung invertebrate community is present on site, indicating that the livestock are free of endectocides. It is good practice to avoid the use of endectocides as prophylactic treatments on nature reserves. In cases where intervention **is** required, then livestock should be treated off site and only returned once treatment has run its course and the chemicals have degraded.

Continuity of decaying vegetation heaps, created by stacking the arisings from meadow cuts, is desirable, as this 'patch' habitat is very important for invertebrates, both for those assemblages that specifically develop in this microhabitat, and also for invertebrates seeking refuge from extreme temperatures in summer and winter conditions. The provision of such heaps of wetland material (e.g. from cuts in the main lower meadow) left in wetland, would encourage colonisation of wetland terrestrial invertebrate assemblages that utilise these 'patch' habitats. It is desirable to establish such heaps where the ground remains more-or-less saturated throughout the year, yet without compromising nutrient levels in the fen.

Little Fen

Discussion: Little Fen is most noted for its wetland fauna, and the site was found to be particularly rich in craneflies (Diptera; Tipulidae, Limoniidae etc) with the tiny *Molophilus bihamatus* being particularly significant here. The tussocky, swampy nature of the inundations provides habitat for a terrestrial wetland invertebrate fauna that includes such highlights as the rove beetle *Scopaeus laevigatus* and the ground beetles *Pterostichus anthracinus* and *P. gracilis,* all of which are predators. The spider *Trochosa spinipalpis* was also found here.

The dead wood habitat at Little Fen appears to support only low level significance of saproxylic species, amongst them, the narrow-waisted bark beetle *Rabocerus gabrieli* and the false darkling beetle *Abdera biflexuosa.*

Recommendations: There is little that can be recommended in terms of management for this site. It appears currently to be unmanaged and has many inaccessible 'pockets' of carr swamp.

The population of Narrow-mouthed Whorl Snail at The Lows might be increased by colonisation of cleared willows and scrub along the wet western margin of the site, adjacent to The Lows, but this would entail management in very difficult conditions, and so is probably not worthwhile.

The creation of a footpath linking Little Fen, to the lowest south-eastern corner of The Lows, would create a looped walk for visitors. The addition of a sign at the entrance warning of 'seasonal anaemia' caused by the very healthy resident mosquito population, might be in order though! The footpath would follow the dry woodland along the eastern margin of the site and then follow the ditch tree-line along the southern carr habitat, eventually ending in a style over the fence and into The Lows, whence the visitor can walk up through that site back to the starting point. Creating the footpath would necessitate removal of some bramble and clearing *Phragmites* in the north section of the site and waymarking (with posts) navigation throughout. Provision of ramped walkways through the wetter areas in the south might be considered.

There is a low-level saproxylic fauna at Little Fen. Thus, it would be good practice to leave standing and fallen dead trees in situ wherever possible.

The Frith

Discussion: If The Lows stands out in 2023 for having a relatively significant wetland fauna, then The Frith carries the same accolade for its breck grassland assemblages, and is also particularly notable for the saproxylic invertebrates supported by the hedgerow trees.

The short sward grassland extends across much of the site. Pitfall trap samples and sweeping in this habitat produced such highlights as the ground bug *Ortholomus punctipennis,* which is to date seldom recorded in the county, along with the more frequently found ground bugs *Megalonotus praetextatus* and *M. sabulicola,* the spiders *Argenna subnigra* and *Alopecosa cuneata,* the ground beetle *Amara lucida*, the Ant-nest Ladybird *Platynaspis luteorubra,* the weevils

Gymnetron rostellum and *Hypera diversipunctata* (the latter also apparently associated with wetland in Britain), the rove beetle *Alevonota gracilenta* and the Golden-tabbed Robber Fly *Eutolmus rufibarbis* – an impressive list of conservation value species by any standards.

The wetland fauna, although unremarkable, does boast a suite of truly aquatic conservation-value beetles including the diving beetles *Agabus uliginosus, Enochrus nigritus* and *E. quadripunctatus*, *Hydaticus seminiger* and *Laccornis oblongus.* Broadlands Cordilura *Cordilura aemula* was also recorded at the site.

The hedgerow fauna was particularly impressive, primarily due to the amount of dead wood and damaged limbs on a good number of mature oak trees fringing the site. These produced the false darkling beetles *Anisoxya fuscula* and *Abdera biflexuosa,* the wood-borer beetles *Dorcatoma flavicornis* and *Ptinus palliatus*, the minute brown scavenger beetle *Enicmus brevicornis* and the narrow-waisted bark beetle *Lissodema denticollis.* The Hairy Fungus Beetle *Pseudotriphyllus suturalis* was found on fungus on the site interpretation sculpture. One of the most exciting finds of the season was the first Norfolk record of *Cryptocephalus rufipes.* Although the species has no conservation value, its appearance in East Anglia (away from its Essex stronghold) is surprising. An earlier record from Suffolk has prompted a note for publication (Piper & Lane, *in press*).

Recommendations: As shown by the results of the survey, the habitats at The Frith appear to be very successfully supporting significant invertebrate assemblages, so recommendations for this site are few.

There is an existing linear depression in the north section of the site, aligned roughly north-east to south-west, which is marked by clumps of *Juncus.* It might be interesting to see if a wet channel can be created here, to enhance the wetland fauna at the site. The field pond is subject to seasonal fluctuation and was almost completely dry by mid summer in 2023. It may be desirable to at least partially excavate this to create a deeper pool that will hold water for longer.

The sandy breck-type grassland ('heath') at The Frith, whilst not necessarily attaining the integrity of the best breckland heath (*cf* Wangford Warren and Weeting Heath true breck lichen heath), does boast an impressive array of breck invertebrate specialists. These are present here because the sward is kept short by sheep and rabbit grazing. Furthermore, excavation by the resident rabbit population creates disturbance at ground level, which is very important for creating a mosaic patchwork of bare ground adjacent to short turf. Continuity of these passive management interventions is crucial to maintaining and enhancing the health of the invertebrate fauna at The Frith as it allows the site to support thermophilic species that require exposed and highly insolated ground.

During the 2023 survey, there were two occurrences where dead sheep were found on the site. Whilst the surveyors recognise that livestock hygiene is first and foremost, 'carrion', particularly in breck habitat, plays an important role in attracting a stream of visiting Nationally scarce and rare invertebrates that either feed directly on the carcase or prey on species that themselves do (*e.g*. Calliphorid fly larvae). Providing there is no risk of infection, to living livestock, from dead animals, the occasional carcase would actually create habitat for an important insect assemblage that might include such species as *Trox sabulosus* and *Nicrophorus vestigator*.

The hedgerows, particularly those along the north and east perimeters of the site have an exceptional saproxylic fauna for this habitat-type, with some elements, more usually recorded in ancient and pasture woodland localities. It is important that these trees are retained in situ, regardless of any decay or wind damage. Even fallen branches on pasture at the base of the hedge-line were found to support significant conservation-value invertebrates. Selective and site-specific planting of oaks at The Frith, whilst being careful not to compromise existing habitat, will allow provision of dead wood habitat in the future, and, it is hoped, the continuity of these invertebrate assemblages.

As with The Lows, continuity of decaying vegetation heaps, created by stacking straw and other arisings, is desirable, as this 'patch' habitat is very important for invertebrates, both for those assemblages that specifically develop in this microhabitat, and also for invertebrates seeking refuge from extreme summer temperatures and winter conditions. The provision of such heaps of wetland material (e.g. from *Juncus* cuts in the wetland in the south-east corner of the site) left in wetland, would encourage colonisation of wetland terrestrial invertebrate assemblages that utilise these 'patch' habitats. It is desirable to establish such heaps where the ground remains more-or-less saturated throughout the year, yet without compromising nutrient levels in the fen.

Recommendations for Future Invertebrate Sampling

Now that an exhaustive baseline survey has been carried out at all of the LOHP sites, future sampling using standardised methodologies could be employed to sample future-created habitats or managed *vs* unmanaged areas within a site. The baseline surveys have identified assemblages and specific Nationally Rare and IUCN-threatened taxa which may make suitable subjects for future targeted research programmes. Target species might be those for which LOHP sites are particularly important in a regional or National context. It may also be worthwhile to resurvey sites that are likely to have changed since first surveyed in this invertebrate survey series.

8 References

ABREHART, T.R. 2012. Mollusc Report on the Little Ouse Headwater Project sites, Suffolk and Norfolk. Abrehart Ecology.

DRAKE, M.D., LOTT, D.A., ALEXANDER, K.N.A. & WEBB, J.R. 2007. Natural England Research Report NERR005: *Surveying terrestrial and freshwater invertebrates for conservation evaluation,* 1st Edition

LANE, S.A. 2019. *A review of the status of the beetles of Great Britain – The Staphylinidae: Tachyporinae beetles*. Natural England Commissioned Reports No. 265.

LANE, S.A. 2020. Invertebrate Survey Report: LOHP 2019; Parkers Piece, New Fen, Bleyswycks Bank, Oak Tree Fen, Webbs Fen, Reeves Meadows, Carr Meadow.

LANE, S.A. 2021. Invertebrate Survey Report: LOHP 2021; Betty's Fen, Blo' Norton Fen and Hinderclay Fen.

LANE, S.A. 2022. In vertebrate Survey Report: LOHP 2022; Broomscot Common and Scarfe Meadows.

LOTT, D.A. & ANDERSON, R. 2011. The Staphylinidae (rove beetles) of Britain and Ireland Parts 7 and 8: Oxyporinae, Steninae, Euaesthetinae, Pseudopsinae, Paederinae, Staphylinae. *Handbooks for the Identification of British Insects* **12**(7): 1-340.

MACADAM, C.R. 2015. A Review of the Stoneflies (Plecoptera) of Great Britain. Species Status No. 20. Natural England Commissioned Report NECR174, 1-41.

PIPER, R. & LANE, S.A. (in press). Cryptocephalus rufipes (Coleoptera; Chrysomelidae)(Goeze) in East Anglia. *Coleopterist.*

Appendix: Species List

The vernacular names have been taken from a number of different literature and internet sources, as well as from 'MapMate'.
Species name entries in italics relate to indeterminate species, species complexes, unresolved species identifications *etc.*
A 'YES' in the 'voucher retained?' column indicates that a voucher specimen has been retained (usually by Steve Lane, but occasionally this may have been donated to another person)
Nationally Rare (Red Data Book), Nationally Scarce (NS, Na/Nb Notable) and IUCN threat-designated species are highlighted in yellow.
For definitions of British Rarity codes, see section 6.1.1
IUCN Status column; for interpretation see e.g. Lane (2019).
Status column: National Statuses in brackets are those for which the true status of that species has changed since designation, and is no longer valid *e.g.* the species is not currently considered to be Nationally Rare or Nationally Scarce and is awaiting re-evaluation.

Associated Habitat Codes Key:
'G' = grassland/verge species
'H' = short turf lichen heath/breck habitat species
'P/R' = aquatic species – 'P' = still water e.g. pond and ditch, 'R' = river
'S' = woodland, scrub and hedgerow species, including saproxylics
'W' = wetland species, including wet woodland and wet grassland taxa

The 'Association' column lists the main plant associations where these are known and are few, and also dung, carrion etc. If the cell is left blank it may indicate that a phytophagous species is polyphagous or that a species is predatory.

Site Code Key:
'A' = The Lows
'B' = Little Fen
'C' = The Frith

Months - number refers to number of month e.g. '5' = May, '12' = December

An asterisk after a taxon name indicates that the taxon appears to be newly recorded at the LOHP site complex

The Table includes data gathered prior to the 2023 survey, although each instance is not specifically indicated in the collated data.

A data-sheet of raw data has been given to Rowena Langston (LOHP) along with this report

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Araneae – SPIDERS	Agelenidae – Funnelweb Spiders	Agelena labyrinthica	Labyrinth Spider	none	Least Concern		G/H		AC	6,7
Araneae	Araneidae – Orbweb Spiders	Agalenatea redii*		none	Least Concern		G		C	2,5,9
Araneae	Araneidae	Araneus diadematus	Garden Spider	none	Least Concern				C	9

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Araneae	Araneidae	Araneus marmoreus		none	Least Concern				C	7,9
Araneae	Araneidae	Araneus quadratus	Four-spotted Orbweb Spider	none	Least Concern				AC	9
Araneae	Araneidae	Araneus triguttatus		none	Least Concern		S		A	5
Araneae	Araneidae	Araniella cucurbitina	Common Cucumber Spider	none	Least Concern		S		A	6
Araneae	Araneidae	Araniella opisthographa	Cucumber Spider	none	Least Concern		S		AC	6
Araneae	Araneidae	Gibbaranea gibbosa	Humped Orbweb Spider	none	Least Concern		S		AC	5,9
Araneae	Araneidae	Hypsosinga pygmaea		none	Least Concern		G		A	5
Araneae	Araneidae	Larinioides cornutus		none	Least Concern		G		AC	5,6,7
Araneae	Araneidae	Mangora acalypha		none	Least Concern		G		AC	5,6,7
Araneae	Araneidae	Nuctenea umbratica	Walnut Orbweb Spider	none	Least Concern		S	often dead wood, under bark	AC	1,5,6,7,9
Araneae	Clubionidae – Sac spiders	Clubiona phragmitis		none	Least Concern		W		A	5
Araneae	Clubionidae	Clubiona stagnatilis		none	Least Concern		W		A	1,7
Araneae	Clubionidae	Clubiona terrestris		none	Least Concern				B	7
Araneae	Dictynidae – Meshweb spiders	Argenna subnigra		Nationally Scarce	Least Concern		H		A	5
Araneae	Dictynidae	Brigittea latens		none	Least Concern		G/H		ABC	6,7
Araneae	Dictynidae	Dictyna arundinacea		none	Least Concern		G/H		AC	5,6
Araneae	Dysderidae – Woodlouse Spiders	Harpactea hombergi		none	Least Concern		S		C	7
Araneae	Gnaphosidae – Ground spiders	Drassyllus pusillus		none	Least Concern		G/H		AC	5,6
Araneae	Gnaphosidae	Haplodrassus signifer		none	Least Concern		G		C	5,6
Araneae	Gnaphosidae	Trachyzelotes pedestris		none	Least Concern		G/H		A	6
Araneae	Gnaphosidae	Zelotes latreillei		none	Least Concern		G		A	5,6,9
Araneae	Hahniidae – Lesser Cobweb Spiders	Antistea elegans*		none	Least Concern		W		B	9
Araneae	Linyphiidae – Money Spiders	Erigone atra		none	Least Concern				C	6
Araneae	Linyphiidae	Erigone dentipalpis		none	Least Concern				AC	6,7
Araneae	Linyphiidae	Gnathonarium dentatum		none	Least Concern		S		AC	1,5
Araneae	Linyphiidae	Gongylidium rufipes*		none	Least Concern				B	1,6
Araneae	Linyphiidae	Hylyphantes graminicola		none	Least Concern		S		C	6
Araneae	Linyphiidae	Linyphia hortensis*		none	Least Concern		S		BC	5
Araneae	Linyphiidae	Micrargus subaequalis*		none	Least Concern		G		A	6
Araneae	Linyphiidae	Microneta viaria*		none	Least Concern		S		B	1,5
Araneae	Linyphiidae	Oedothorax retusus		none	Least Concern		G		C	5,6

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Araneae	Linyphiidae	Savignia frontata		none	Least Concern				A	5
Araneae	Linyphiidae	Tallusia experta*		none	Least Concern		W		AC	1
Araneae	Linyphiidae	Walckenaeria nudipalpis		none	Least Concern				AC	1,2
Araneae	Linyphiidae	Walckenaeria vigilax		none	Least Concern		W		C	6
Araneae	Lycosidae – Wolf Spiders	Alopecosa barbipes		none	Least Concern		H		C	5
Araneae	Lycosidae	Alopecosa cuneata		Nationally Scarce	Least Concern		H		AC	5
Araneae	Lycosidae	Alopecosa pulverulenta		none	Least Concern		G		AC	5,6
Araneae	Lycosidae	Arctosa leopardus		none	Least Concern		W		AC	5,6
Araneae	Lycosidae	Pardosa amentata		none	Least Concern				ABC	5,6
Araneae	Lycosidae	Pardosa palustris		none	Least Concern		G/H		AC	5,6
Araneae	Lycosidae	Pardosa prativaga		none	Least Concern				AC	5,6
Araneae	Lycosidae	Pardosa pullata		none	Least Concern				AC	5,6
Araneae	Lycosidae	Pardosa tenuipes		Nationally Scarce	Least Concern		W		A	5
Araneae	Lycosidae	Pirata piraticus		none	Least Concern		W		AC	5,6
Araneae	Lycosidae	Piratula hygrophila		none	Least Concern		W		ABC	5,6
Araneae	Lycosidae	Piratula latitans		none	Least Concern		W		AC	6
Araneae	Lycosidae	Trochosa ruricola		none	Least Concern		W/G		ABC	5,6
Araneae	Lycosidae	Trochosa spinipalpis		Nationally Scarce	Least Concern		W		AB	5
Araneae	Lycosidae	Trochosa terricola		none	Least Concern				C	5
Araneae	Philodromidae – Running Crab Spiders	Philodromus dispar		none	Least Concern		S		B	6
Araneae	Philodromidae	Tibellus oblongus		none	Least Concern		G		AC	1,2,6
Araneae	Corinnidae	Phrurolithus festivus		none	Least Concern				A	5,6
Araneae	Pisauridae – Nurseryweb Spiders	Pisaura mirabilis	Nurseryweb Spider	none	Least Concern				ABC	1,2,5,6,7,9
Araneae	Salticidae – Jumping Spiders	Heliophanus flavipes		none	Least Concern				AC	5,6
Araneae	Salticidae	Salticus scenicus	Common Zebra Spider	none	Least Concern		S	posts, tree trunks	C	5
Araneae	Tetragnathidae – Long-jawed Orbweb Spiders	Metellina mengei		none	Least Concern				B	5
Araneae	Tetragnathidae	Pachygnatha clercki		none	Least Concern		W		A	1,2,5
Araneae	Tetragnathidae	Pachygnatha degeeri		none	Least Concern				A	5,6
Araneae	Tetragnathidae	Tetragnatha extensa	Common Stretch Spider	none	Least Concern		W		AC	6,7
Araneae	Tetragnathidae	Tetragnatha montana		none	Least Concern		W		B	6,7

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Araneae	Tetragnathidae	Tetragnatha nigrita		none	Least Concern				C	6,7
Araneae	Theridiidae – Comb-footed Spiders	Anelosimus vittatus		none	Least Concern		S	oaks often	AC	5,6
Araneae	Theridiidae	Asagena phalerata		none	Least Concern		H		C	5,6,9
Araneae	Theridiidae	Enoplognatha latimana	Scarce Candy-striped Spider	none	Least Concern				C	7
Araneae	Theridiidae	Enoplognatha ovata	Common Candy-striped Spider	none	Least Concern				B	6
Araneae	Theridiidae	Neottiura bimaculata		none	Least Concern				C	6
Araneae	Theridiidae	Phylloneta impressa*		none	Least Concern		G/H		C	6
Araneae	Theridiidae	Theridion varians*		none	Least Concern		S		A	6
Araneae	Thomisidae – Crab spiders	Diaea dorsata	Green Crab Spider	none	Least Concern		S		B	1,7,9
Araneae	Thomisidae	Misumena vatia*		none	Least Concern		S		A	5,6
Araneae	Thomisidae	Xysticus cristatus		none	Least Concern		G		AC	5
Araneae	Thomisidae	Xysticus kochi		none	Least Concern		G/H		C	5
Araneae	Thomisidae	Xysticus lanio*		none	Least Concern		S		B	5
Araneae	Thomisidae	Xysticus ulmi		none	Least Concern		W		C	6
Coleoptera - BEETLES	Anthicidae – Ant Beetles	Anthicus antherinus		none	Least Concern		G		AC	5,7
Coleoptera	Anthicidae	Notoxus monoceros	Monoceros Beetle	none	Least Concern		H		AC	5,6,9
Coleoptera	Anthicidae	Omonadus floralis		none	Least Concern				A	7
Coleoptera	Anthicidae	Omonadus formicarius		none	Least Concern				B	5
Coleoptera	Anthribidae – Fungus weevils	Anthribus fasciatus*		Nationally Scarce (Notable A)	not yet evaluated	YES	S		C	7
Coleoptera	Apionidae – Seed Weevils	Apion haematodes		none	not yet evaluated		H	sheep's sorrel	C	6,7
Coleoptera	Apionidae	Apion frumentarium		none	not yet evaluated		G	docks	A	9
Coleoptera	Apionidae	Apion rubiginosum		Nationally Rare (RDB3)	not yet evaluated	YES	H	sheep's sorrel	C	9
Coleoptera	Apionidae	Betulapion simile		none	not yet evaluated		S	birch	BC	5,7,9
Coleoptera	Apionidae	Catapion pubescens*		[Nationally Scarce (Notable B)]	not yet evaluated		G	clovers	C	7
Coleoptera	Apionidae	Ceratapion carduorum		none	not yet evaluated		G	spear thistle	C	7
Coleoptera	Apionidae	Ceratapion gibbirostre		none	not yet evaluated		G	thistles	AC	2,5,6,7,9
Coleoptera	Apionidae	Ceratapion onopordi		none	not yet evaluated		G	thistles	AC	2,5,6
Coleoptera	Apionidae	Eutrichapion ervi		none	not yet evaluated		G	vetches	A	7

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Coleoptera	Apionidae	Eutrichapion vorax		none	not yet evaluated		G/S	vetches	B	7
Coleoptera	Apionidae	Exapion ulicis	Gorse Weevil	none	not yet evaluated		H	gorse	C	1,2,5,7
Coleoptera	Apionidae	Melanapion minimum		Nationally Rare (RDB3)	not yet evaluated	YES	C	willow	B	6
Coleoptera	Apionidae	Perapion hydrolapathi		none	not yet evaluated		G	docks	A	5,7
Coleoptera	Apionidae	Perapion marchicum		none	not yet evaluated		H/G	sheep's sorrel	C	6,7
Coleoptera	Apionidae	Protapion apricans		none	not yet evaluated		G	red clover	AC	5,6,9
Coleoptera	Apionidae	Protapion assimile		none	not yet evaluated		G	clovers	AC	5,6
Coleoptera	Apionidae	Protapion fulvipes	White Clover Seed Weevil	none	not yet evaluated			clovers	ABC	5,6,7,9
Coleoptera	Apionidae	Protapion nigritarse		none	not yet evaluated		G	clovers	AC	7
Coleoptera	Apionidae	Protapion trifolii		none	not yet evaluated		G	clovers	AB	6,7
Coleoptera	Apionidae	Taeniapion urticarium		none	not yet evaluated			stinging nettle	ABC	1,5,7
Coleoptera	Buprestidae – Jewel Beetles	Agrilus laticornis		none	Least Concern		S	dead wood, mainly oaks	AC	7,9
Coleoptera	Buprestidae	Agrilus sulcicollis*		none	Least Concern		S	dead wood, mainly oaks	C	6
Coleoptera	Byrrhidae – Pill Beetles	Byrrhus pilula	Common Pill Beetle	none	Least Concern		H	Pleurocarpus mosses?	AC	5,6
Coleoptera	Cantharidae – Soldier Beetles	Cantharis cryptica		none	Least Concern				A	5
Coleoptera	Cantharidae	Cantharis decipiens		none	Least Concern		S		ABC	5
Coleoptera	Cantharidae	Cantharis flavilabris		none	Least Concern		G		AC	6,7
Coleoptera	Cantharidae	Cantharis lateralis		none	Least Concern		G		AC	6,7
Coleoptera	Cantharidae	Cantharis nigra		none	Least Concern		W		ABC	7
Coleoptera	Cantharidae	Cantharis nigricans		none	Least Concern				AC	5,6
Coleoptera	Cantharidae	Cantharis pallida		none	Least Concern		W		AB	6,7
Coleoptera	Cantharidae	Cantharis pellucida		none	Least Concern		S		ABC	5,6
Coleoptera	Cantharidae	Cantharis rufa		none	Least Concern		G		A	6
Coleoptera	Cantharidae	Cantharis rustica		none	Least Concern		G		AC	5,6
Coleoptera	Cantharidae	Malthinus balteatus*		none	Least Concern		S	often oaks	B	6,7
Coleoptera	Cantharidae	Malthinus flaveolus		none	Least Concern		S	often oaks	ABC	6,7
Coleoptera	Cantharidae	Malthodes dispar		none	Least Concern		C	willows usually	B	7
Coleoptera	Cantharidae	Malthodes minimus		none	Least Concern		S/W		A	6
Coleoptera	Cantharidae	Rhagonycha fulva		none	Least Concern		G		AC	7
Coleoptera	Cantharidae	Rhagonycha lignosa		none	Least Concern		S	birch usually	A	5
Coleoptera	Cantharidae	Rhagonycha lutea		Nationally Scarce	Least Concern		S		B	6

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Coleoptera	Cantharidae	Rhagonycha nigriventris		none	Least Concern				A	6
Coleoptera	Cantharidae	Rhagonycha testacea		none	Least Concern		W		AB	6,7
Coleoptera	Cantharidae	Silis ruficollis		none	Least Concern		W		C	6
Coleoptera	Carabidae – Ground Beetles	Acupalpus dubius		none	Least Concern		W		ABC	1,2,5,6,7,12
Coleoptera	Carabidae	Acupalpus parvulus		none	Least Concern		W		A	2
Coleoptera	Carabidae	Agonum emarginatum		none	Least Concern		W		AC	5,6
Coleoptera	Carabidae	Agonum fuliginosum		none	Least Concern		W		ABC	1,2,5,9
Coleoptera	Carabidae	Agonum thoreyi		none	Least Concern		W		AC	1
Coleoptera	Carabidae	Agonum viduum		none	Least Concern		W		ABC	5,6,7
Coleoptera	Carabidae	Amara aenea		none	Least Concern		H/G		AC	5,6
Coleoptera	Carabidae	Amara communis		none	Least Concern		G		ABC	5,6,9
Coleoptera	Carabidae	Amara convexior		none	Least Concern		H		C	5,6,9
Coleoptera	Carabidae	Amara familiaris		none	Least Concern		G		C	5,6
Coleoptera	Carabidae	Amara lucida		Nationally Scarce	Least Concern		H		C	5,9
Coleoptera	Carabidae	Amara lunicollis		none	Least Concern		G		AC	5,6,9
Coleoptera	Carabidae	Amara similata		none	Least Concern		G		A	5
Coleoptera	Carabidae	Amara tibialis		none	Least Concern		H		C	5,6
Coleoptera	Carabidae	Anisodactylus binotatus		none	Least Concern		G		C	6
Coleoptera	Carabidae	Anthracus consputus		Nationally Scarce	Least Concern		W		C	1,6
Coleoptera	Carabidae	Asaphidion stierlini*		none	Least Concern		G/H		A	5
Coleoptera	Carabidae	Badister bullatus		none	Least Concern				C	6
Coleoptera	Carabidae	Bembidion articulatum		none	Least Concern		W		A	7
Coleoptera	Carabidae	Bembidion assimile		none	Least Concern		W		ABC	1,2,5,6,9,12
Coleoptera	Carabidae	Bembidion biguttatum		none	Least Concern		W		AC	1,5,6,9
Coleoptera	Carabidae	Bembidion clarkii		none	Least Concern		W		AC	5,6
Coleoptera	Carabidae	Bembidion dentellum		none	Least Concern		W		A	5,9
Coleoptera	Carabidae	Bembidion doris		none	Least Concern		W		B	5,6
Coleoptera	Carabidae	Bembidion lampros		none	Least Concern		G		BC	5,6
Coleoptera	Carabidae	Bembidion lunulatum		none	Least Concern		W		AB	1,6
Coleoptera	Carabidae	Bembidion mannerheimii		none	Least Concern				ABC	1,6,9
Coleoptera	Carabidae	Bembidion obtusum		none	Least Concern		G		AC	1,5
Coleoptera	Carabidae	Bembidion properans		none	Least Concern		G		AC	2,6,9

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Coleoptera	Carabidae	Bembidion tetracolum*		none	Least Concern		W		A	1
Coleoptera	Carabidae	Bradycellus harpalinus		none	Least Concern		G		AC	1
Coleoptera	Carabidae	Calathus fuscipes		none	Least Concern		G		AC	5,9
Coleoptera	Carabidae	Calathus melanocephalus		none	Least Concern		G		C	1,5,7,9
Coleoptera	Carabidae	Calathus rotundicollis		none	Least Concern		S		AB	5
Coleoptera	Carabidae	Calodromius spilotus		none	Least Concern		S	dead wood/bark	ABC	1,2,5,6,7,9
Coleoptera	Carabidae	Carabus granulatus		none	Least Concern		W		AB	5,6,9
Coleoptera	Carabidae	Chlaenius nigricornis		none	Least Concern		W		BC	5
Coleoptera	Carabidae	Clivina fossor		none	Least Concern				A	6
Coleoptera	Carabidae	Curtonotus aulicus		none	Least Concern		G	thistles	A	6
Coleoptera	Carabidae	Demetrias atricapillus		none	Least Concern		G		ABC	1,2,5,6,7,9
Coleoptera	Carabidae	Dicheirotrichus placidus		none	Least Concern		W		C	2,12
Coleoptera	Carabidae	Dromius meridionalis*		none	Least Concern		S	often oaks, dead wood, bark	AC	5,7
Coleoptera	Carabidae	Dromius quadrimaculatus		none	Least Concern		S	under bark, usually ak	AC	5,6,7,9
Coleoptera	Carabidae	Dyschirius globosus*		none	Least Concern		W/G		A	5,6
Coleoptera	Carabidae	Elaphrus cupreus		none	Least Concern		W		ABC	5,6,9
Coleoptera	Carabidae	Harpalus affinis		none	Least Concern		G/H		C	6
Coleoptera	Carabidae	Harpalus rubripes		none	Least Concern		H		C	6
Coleoptera	Carabidae	Harpalus rufipes	Strawberry Seed Beetle	none	Least Concern		G		A	6,9
Coleoptera	Carabidae	Harpalus tardus		none	Least Concern		H		C	5,6,9
Coleoptera	Carabidae	Leistus ferrugineus		none	Least Concern				A	9
Coleoptera	Carabidae	Leistus fulvibarbis		none	Least Concern		S		B	5
Coleoptera	Carabidae	Leistus spinibarbis*		none	Least Concern				AC	5
Coleoptera	Carabidae	Loricera pilicornis		none	Least Concern				AB	6,9
Coleoptera	Carabidae	Microlestes minutulus		none	Least Concern		G/H		AC	5,6,9
Coleoptera	Carabidae	Nebria brevicollis		none	Least Concern				AB	5,6,9
Coleoptera	Carabidae	Notiophilus biguttatus		none	Least Concern				ABC	5,7,9
Coleoptera	Carabidae	Notiophilus palustris		none	Least Concern				B	5
Coleoptera	Carabidae	Notiophilus rufipes		none	Least Concern	YES	S		B	5
Coleoptera	Carabidae	Oodes helopioides		Nationally Scarce	Least Concern		W		A	5,6
Coleoptera	Carabidae	Oxypselaphus obscurus		none	Least Concern		W		ABC	1,2,5,7,9,12
Coleoptera	Carabidae	Paradromius linearis		none	Least Concern		G		AC	1,5,7,9,12

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Coleoptera	Carabidae	Philorhizus melanocephalus		none	Least Concern		G		A	2
Coleoptera	Carabidae	Poecilus cupreus		none	Least Concern		G		AB	5,6,9
Coleoptera	Carabidae	Poecilus versicolor		none	Least Concern		G		AC	5,6,9
Coleoptera	Carabidae	Pterostichus anthracinus*		Nationally Scarce	Least Concern		W		AB	5,6,9
Coleoptera	Carabidae	Pterostichus diligens		none	Least Concern		W		AC	1,2,5,6
Coleoptera	Carabidae	Pterostichus gracilis		Nationally Scarce	Least Concern	YES	W		ABC	1,5,6
Coleoptera	Carabidae	Pterostichus madidus	Black Clock	none	Least Concern				AC	6,9
Coleoptera	Carabidae	Pterostichus melanarius		none	Least Concern		G		A	6,9
Coleoptera	Carabidae	Pterostichus minor		none	Least Concern		W		ABC	1,5,12
Coleoptera	Carabidae	Pterostichus niger		none	Least Concern				AB	6,9
Coleoptera	Carabidae	Pterostichus nigrita		none	Least Concern		W		AC	5,6,9
Coleoptera	Carabidae	Pterostichus rhaeticus		none	Least Concern		W		B	5,9
Coleoptera	Carabidae	Pterostichus strenuus		none	Least Concern				ABC	1,5,7
Coleoptera	Carabidae	Pterostichus vernalis		none	Least Concern				AC	1,2,6
Coleoptera	Carabidae	Stenolophus mixtus		none	Least Concern		W		AC	1,2,5,6
Coleoptera	Carabidae	Syntomus foveatus		none	Least Concern		H		C	5,6,9
Coleoptera	Carabidae	Syntomus truncatellus		Nationally Scarce	Least Concern		G		AC	1,5,6,7
Coleoptera	Carabidae	Trechus quadristriatus		none	Least Concern				AC	7,9
Coleoptera	Cerambycidae – Longhorn Beetles	Grammoptera ruficornis	Common Grammoptera	none	Least Concern		S	dead wood	ABC	5,6
Coleoptera	Cerambycidae	Leiopus linnei		none	Data Deficient		S	dead wood (usually oak)	AC	7
Coleoptera	Cerambycidae	Leptura quadrifasciata		none	Least Concern		S	dead wood	A	7
Coleoptera	Cerambycidae	Pogonocherus hispidus		none	Least Concern		S	dead wood	A	5
Coleoptera	Cerambycidae	Pseudovadonia livida	Fairy-ring Longhorn Beetle	none	Least Concern		G	Marasmius oreades	A	6,7
Coleoptera	Cerambycidae	Rutpela maculata	Black and Yellow Longhorn Beetle	none	Least Concern		S	dead wood	C	7
Coleoptera	Cerambycidae	Stenurella melanura*		none	Least Concern		S	dead wood	C	7
Coleoptera	Cerambycidae	Stictoleptura rubra		none	Least Concern	YES	S	coniferous dead wood	C	7
Coleoptera	Cerambycidae	Tetrops praeustus		none	Least Concern		S	dead wood	A	5
Coleoptera	Chrysomelidae – Leaf Beetles	Altica lythri		none	Least Concern		W	willowherbs (usually Great)	A	5,7

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Coleoptera	Chrysomelidae	Altica palustris		none	Least Concern		G	willowherbs	AC	1,2,5
Coleoptera	Chrysomelidae	Aphthona euphorbiae		none	Least Concern				ABC	5,7,9
Coleoptera	Chrysomelidae	Bruchidius varius		none	Least Concern		G	red clover	AC	5,6,9
Coleoptera	Chrysomelidae	Bruchus loti		none	Least Concern		G	Fabaceae	A	7
Coleoptera	Chrysomelidae	Bruchus rufimanus	Bean Beetle	none	Least Concern		G	Fabaceae	AC	5,7,9
Coleoptera	Chrysomelidae	Bruchus rufipes		none	Least Concern		G	Fabaceae	A	5
Coleoptera	Chrysomelidae	Cassida prasina		Nationally Scarce	Least Concern		G	yarrow	A	7
Coleoptera	Chrysomelidae	Cassida rubiginosa	Thistle Tortoise Beetle	none	Least Concern		G	thistles	A	5,6,9
Coleoptera	Chrysomelidae	Cassida vibex		none	Least Concern		G	thistles, knapweed	A	5,6,7
Coleoptera	Chrysomelidae	Chaetocnema concinna		none	Least Concern			Polygonaceae	BC	1,5
Coleoptera	Chrysomelidae	Chaetocnema hortensis		none	Least Concern			Poaceae	AC	5,6,7,9
Coleoptera	Chrysomelidae	Chrysolina polita		none	Least Concern		W	mints, ground ivy	AC	1,5,6
Coleoptera	Chrysomelidae	Crepidodera aurata		none	Least Concern		W/C	willows	ABC	5,6,7,9
Coleoptera	Chrysomelidae	Crepidodera aurea		none	Least Concern		S	aspen, poplars	BC	5,6,7,9
Coleoptera	Chrysomelidae	Crepidodera fulvicornis		none	Least Concern		W/C	willows	AC	5,6
Coleoptera	Chrysomelidae	Crepidodera plutus		none	Least Concern		W/C	willows	A	5,9
Coleoptera	Chrysomelidae	Cryptocephalus fulvus		none	Least Concern		H/G	sheep's sorrel, St John's wort	C	6,7
Coleoptera	Chrysomelidae	Cryptocephalus pusillus		none	Least Concern		S		AC	7,9
Coleoptera	Chrysomelidae	Cryptocephalus rufipes			not yet evaluated	YES	S	aspens, poplars, willows	C	7
Coleoptera	Chrysomelidae	Epitrix pubescens		none	Least Concern			woody nightshade	B	6,7
Coleoptera	Chrysomelidae	Galerucella sagittariae		none	Least Concern		W	Polygonaceae	C	7
Coleoptera	Chrysomelidae	Hippuriphila modeeri		none	Least Concern	YES	W/G	horsetails	A	5,6
Coleoptera	Chrysomelidae	Lema cyanella*		none	Least Concern	YES	G	thistles	A	5
Coleoptera	Chrysomelidae	Lilioceris lilii*	Lily Beetle	none	Least Concern			lilies, Solomon's seal	B	7
Coleoptera	Chrysomelidae	Lochmaea crataegi	Hawthorn Leaf Beetle	none	Least Concern		S	hawthorn	ABC	5
Coleoptera	Chrysomelidae	Longitarsus atricillus*		none	Least Concern		G	Fabaceae, sometimes Boraginaceae	A	6
Coleoptera	Chrysomelidae	Longitarsus ballotae*		[Nationally Scarce]	Least Concern		S	black horehound	A	5
Coleoptera	Chrysomelidae	Longitarsus flavicornis		none	Least Concern		G	ragwort	B	7
Coleoptera	Chrysomelidae	Longitarsus melanocephalus*		none	Least Concern		G	ribwort plantain	A	5
Coleoptera	Chrysomelidae	Longitarsus parvulus		none	Least Concern				ABC	5,6,7,9

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Coleoptera	Chrysomelidae	Longitarsus pellucidus*		none	Least Concern	YES	G	field bindweed	A	6
Coleoptera	Chrysomelidae	Longitarsus rubiginosus		none	Least Concern			Calystegia mainly	A	9
Coleoptera	Chrysomelidae	Neocrepidodera ferruginea		none	Least Concern		G		AC	6,7,9
Coleoptera	Chrysomelidae	Neocrepidodera transversa		none	Least Concern		G		AC	6,7
Coleoptera	Chrysomelidae	Oulema melanopus		none	Least Concern		G	Poaceae	A	6
Coleoptera	Chrysomelidae	Oulema obscura		none	Least Concern		G	Poaceae	A	5,7
Coleoptera	Chrysomelidae	Phaedon tumidulus		none	Least Concern		G	cow parsley, hogweed	A	7
Coleoptera	Chrysomelidae	Phratora vulgatissima	Blue Willow Beetle	none	Least Concern		C	willows	A	5
Coleoptera	Chrysomelidae	Phyllotreta exclamationis		none	Least Concern		W	Cruciferae	A	6
Coleoptera	Chrysomelidae	Phyllotreta nigripes		none	Least Concern		G	Cruciferae	ABC	1,2,5,6
Coleoptera	Chrysomelidae	Phyllotreta undulata		none	Least Concern			Cruciferae	C	5
Coleoptera	Chrysomelidae	Phyllotreta vittula		none	Least Concern			Cruciferae and Poaceae	ABC	1,5,7,9
Coleoptera	Chrysomelidae	Psylliodes affinis		none	Least Concern			woody nightshade	BC	5,7
Coleoptera	Chrysomelidae	Psylliodes chrysocephala		none	Least Concern			Cruciferae	AC	5,7,9
Coleoptera	Chrysomelidae	Psylliodes dulcamarae		none	Least Concern		W	woody nightshade	BC	5,6,7
Coleoptera	Chrysomelidae	Psylliodes picina		none	Least Concern		W	purple loosestrife	AC	7
Coleoptera	Chrysomelidae	Sphaeroderma testaceum		none	Least Concern		G	thistles	C	6,7
Coleoptera	Ciidae – Minute Tree-fungus Beetles	Cis bilamellatus		none	not yet evaluated	YES	S	fungi, usually birch polypore	ABC	1,5,9
Coleoptera	Ciidae	Cis boleti		none	not yet evaluated		S	fungi on dead wood	BC	5
Coleoptera	Ciidae	Cis pygmaeus		none	not yet evaluated		S	fungoid wood	C	5,7
Coleoptera	Ciidae	Cis vestitus*		none	not yet evaluated		S	fungoid wood	C	5,7
Coleoptera	Ciidae	Ennearthron cornutum		none	not yet evaluated		S	fungi on dead wood	C	5,7
Coleoptera	Cleridae – Chequered beetles	Thanasimus formicarius*	Ant Beetle	none	Least Concern		S	bark beetles	B	7
Coleoptera	Coccinellidae – Ladybirds	Adalia decempunctata	10-spot Ladybird	none	not yet evaluated		S		BC	5,6,7
Coleoptera	Coccinellidae	Calvia quattuordecimguttata	Cream-spot Ladybird	none	not yet evaluated		S		ABC	5,6,7,9
Coleoptera	Coccinellidae	Chilocorus renipustulatus	Kidney-spot Ladybird	none	not yet evaluated		C		AB	5,7
Coleoptera	Coccinellidae	Coccidula rufa	Red Marsh Ladybird	none	not yet evaluated		W		ABC	1,2,5,6,7
Coleoptera	Coccinellidae	Coccinella septempunctata	7-spot Ladybird	none	not yet evaluated				ABC	1,2,5,6,7,9
Coleoptera	Coccinellidae	Exochomus quadripustulatus	Pine Ladybird	none	not yet evaluated		S		AC	5,6,7,9

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Coleoptera	Coccinellidae	Halyzia sedecimguttata	Orange Ladybird	none	not yet evaluated		S		B	1
Coleoptera	Coccinellidae	Harmonia axyridis	Harlequin Ladybird	none	not yet evaluated				ABC	5,6,7,9
Coleoptera	Coccinellidae	Harmonia quadripunctata	Cream-streaked Ladybird	none	not yet evaluated		S	pines	C	9
Coleoptera	Coccinellidae	Hippodamia variegata	Adonis' Ladybird	[Nationally Scarce (Notable B)]	not yet evaluated		H		C	7
Coleoptera	Coccinellidae	Platynaspis luteorubra	Ant-nest Ladybird	Nationally Scarce (Notable A)	not yet evaluated		H		C	6
Coleoptera	Coccinellidae	Propylea quattuordecimpunctata	14-spot Ladybird	none	not yet evaluated				ABC	5,6,7,9
Coleoptera	Coccinellidae	Psyllobora vigintiduopunctata	22-spot Ladybird	none	not yet evaluated		G	mildews on hogweed, ragwort etc	AC	2,5,6,7,9
Coleoptera	Coccinellidae	Rhyzobius litura	Pointed-keeled Rhyzobius	none	not yet evaluated		G		AC	1,2,5,6,9
Coleoptera	Coccinellidae	Scymnus auritus	Oak Scymnus	none	not yet evaluated		S	oaks	C	5
Coleoptera	Coccinellidae	Scymnus frontalis	Angle-spotted Scymnus	none	not yet evaluated		H		A	5
Coleoptera	Coccinellidae	Scymnus suturalis	Pine Scymnus	none	not yet evaluated		S	pines	C	1,5,7,9
Coleoptera	Coccinellidae	Stethorus pusillus	Dot Ladybird	none	not yet evaluated		S		C	7,9
Coleoptera	Coccinellidae	Subcoccinella vigintiquattuorpunctata	24-spot Ladybird	none	not yet evaluated		G		ABC	1,5,6,7,9
Coleoptera	Coccinellidae	Tytthaspis sedecimpunctata	16-spot Ladybird	none	not yet evaluated		G		ABC	1,2,5,6,7,9
Coleoptera	Corylophidae – Minute Hooded Beetles	Corylophus cassidoides		none	not yet evaluated		W		C	1
Coleoptera	Corylophidae	Orthoperus nigrescens		[Nationally Scarce (Notable B)]	not yet evaluated		S	dead wood	C	7
Coleoptera	Corylophidae	Sericoderus brevicornis*		none	not yet evaluated				B	1
Coleoptera	Cryptophagidae – Silken Fungus Beetles	Atomaria atricapilla		none	not yet evaluated				A	5
Coleoptera	Cryptophagidae	Atomaria basalis		none	not yet evaluated		W		A	5
Coleoptera	Cryptophagidae	Atomaria fuscata		none	not yet evaluated				C	7
Coleoptera	Cryptophagidae	Atomaria lewisi		none	not yet evaluated			decaying vegetation heaps	AC	1,2,7
Coleoptera	Cryptophagidae	Atomaria linearis	Pygmy Beetle	none	not yet evaluated		G		AC	5

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Coleoptera	Cryptophagidae	Atomaria mesomela		none	not yet evaluated		W		C	1
Coleoptera	Cryptophagidae	Atomaria nitidula		none	not yet evaluated				A	2
Coleoptera	Cryptophagidae	Atomaria testacea		none	not yet evaluated		G		A	7
Coleoptera	Cryptophagidae	Cryptophagus dentatus		none	not yet evaluated		S	dead wood	A	5
Coleoptera	Cryptophagidae	Cryptophagus denticulatus		none	not yet evaluated			decaying vegetation heaps	C	1
Coleoptera	Cryptophagidae	Cryptophagus punctipennis*		none	not yet evaluated			decaying vegetation heaps	B	7
Coleoptera	Cryptophagidae	Micrambe ulicis		none	not yet evaluated		H	gorse	C	5,7
Coleoptera	Curculionidae – True Weevils	Acalles misellus		none	not yet evaluated		S	dead wood	AC	5,7
Coleoptera	Curculionidae	Acalyptus carpini		Nationally Scarce (Notable B)	not yet evaluated	YES	C	willows	AB	7
Coleoptera	Curculionidae	Andrion regensteinense		none	not yet evaluated		H	gorse and broom	C	5,6
Coleoptera	Curculionidae	Anthonomus pedicularius		none	not yet evaluated		S	hawthorn	AC	5,7
Coleoptera	Curculionidae	Anthonomus rubi	Strawberry Blossom Weevil	none	not yet evaluated		G	cinquefoils etc	AC	5,6,7
Coleoptera	Curculionidae	Attactagenus plumbeus		Nationally Scarce (Notable B)	not yet evaluated		H/G		C	6
Coleoptera	Curculionidae	Ceutorhynchus pallidactylus	Cabbage Stem Weevil	none	not yet evaluated			Cruciferae	AB	5,7,9
Coleoptera	Curculionidae	Ceutorhynchus typhae		none	not yet evaluated			Cruciferae	AC	5
Coleoptera	Curculionidae	Coeliodes ruber		Nationally Scarce (Notable B)	not yet evaluated		S	oaks	C	5,6
Coleoptera	Curculionidae	Coelositona cambricus		none	not yet evaluated		W	usually greater bird's-foot trefoil	A	2
Coleoptera	Curculionidae	Curculio betulae*		Nationally Scarce (Notable B)	not yet evaluated	YES	C	alders	A	7
Coleoptera	Curculionidae	Curculio glandium	Acorn Weevil	none	not yet evaluated		S	oaks	ABC	1,5,7
Coleoptera	Curculionidae	Curculio venosus		none	not yet evaluated		S	oaks	A	5
Coleoptera	Curculionidae	Datonychus melanostictus		none	not yet evaluated		W	water mint	A	5
Coleoptera	Curculionidae	Dorytomus dejeani		none	not yet evaluated		S	poplars, aspens	C	5
Coleoptera	Curculionidae	Dorytomus tortrix		none	not yet evaluated		S	aspen, poplars	C	5
Coleoptera	Curculionidae	Euophryum confine		none	not yet evaluated		S	dry dead wood	A	5,7

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Coleoptera	Curculionidae	Exomias pellucidus		none	not yet evaluated				ABC	5,6
Coleoptera	Curculionidae	Glocianus punctiger		[Nationally Scarce (Notable B)]	not yet evaluated		G	dandelion	A	5
Coleoptera	Curculionidae	Gymnetron rostellum		Nationally Scarce (Notable A)	not yet evaluated	YES	G	speedwells?	C	6
Coleoptera	Curculionidae	Hadroplontus litura		none	not yet evaluated		G	thistles	AC	6,7
Coleoptera	Curculionidae	Hypera arator*		none	not yet evaluated		G/H	Caryophyllaceae	C	5,7
Coleoptera	Curculionidae	Hypera diversipunctata*		Nationally Rare (RDB3)	not yet evaluated	YES	G/H	Caryophyllaceae	C	7
Coleoptera	Curculionidae	Larinus carlinae*		[Nationally Scarce (Notable B)]	not yet evaluated	YES	G	creeping thistle usually	A	9
Coleoptera	Curculionidae	Leiosoma deflexum		none	not yet evaluated			Ranunculaceae	A	6
Coleoptera	Curculionidae	Limnobaris dolorosa		none	not yet evaluated		W	sedges	A	2,6
Coleoptera	Curculionidae	Magdalis cerasi		[Nationally Scarce (Notable B)]	not yet evaluated		S	hawthorn and other Rosaceae	C	5
Coleoptera	Curculionidae	Mecinus pascuorum		none	not yet evaluated		G	plantains	A	5,6
Coleoptera	Curculionidae	Mecinus pyraster		none	not yet evaluated		G	plantains	A	7
Coleoptera	Curculionidae	Microplontus melanostigma		none	not yet evaluated		H	Matricaria sp.	B	5
Coleoptera	Curculionidae	Nedyus quadrimaculatus	Small Nettle Weevil	none	not yet evaluated			stinging nettle	ABC	5,6,7,9
Coleoptera	Curculionidae	Orchestes hortorum		none	not yet evaluated		S	oaks	AC	7,9
Coleoptera	Curculionidae	Orchestes pilosus		none	not yet evaluated		S	oaks	C	5,6,7,9
Coleoptera	Curculionidae	Otiorhynchus ovatus		none	not yet evaluated		H		C	5,6
Coleoptera	Curculionidae	Parethelcus pollinarius		none	not yet evaluated			stinging nettle	ABC	1,5,6,7
Coleoptera	Curculionidae	Philopedon plagiatum	Marram Weevil	none	not yet evaluated		H		C	5,6
Coleoptera	Curculionidae	Phloeotribus rhododactylus		none	not yet evaluated		H	broom	C	5
Coleoptera	Curculionidae	Phyllobius argentatus	Silver-green Leaf Weevil	none	not yet evaluated		S		C	5
Coleoptera	Curculionidae	Phyllobius glaucus		none	not yet evaluated		S		BC	5
Coleoptera	Curculionidae	Phyllobius maculicornis	Green Leaf Weevil	none	not yet evaluated		S		AB	5
Coleoptera	Curculionidae	Phyllobius pomaceus		none	not yet evaluated		G	stinging nettle	AC	5,6
Coleoptera	Curculionidae	Phyllobius pyri	Common Leaf Weevil	none	not yet evaluated		S		AC	5,6
Coleoptera	Curculionidae	Phyllobius roboretanus	Small Green Nettle	none	not yet evaluated		G		AC	5,7

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Coleoptera	Curculionidae	Phyllobius virideaeris	Weevil Green Nettle Weevil	none	not yet evaluated		G		C	5,6
Coleoptera	Curculionidae	Pityophthorus pubescens		none	not yet evaluated		S	dead wood – pines	C	7
Coleoptera	Curculionidae	Polydrusus cervinus		none	not yet evaluated		S	usually birch	BC	5,6,7
Coleoptera	Curculionidae	Rhamphus oxyacanthae		none	not yet evaluated		S	hawthorn	C	7
Coleoptera	Curculionidae	Rhinocyllus conicus		[Nationally Scarce (Notable A)]	not yet evaluated		G	thistles	A	6,7
Coleoptera	Curculionidae	Rhinoncus castor		none	not yet evaluated		G/H	sheep's sorrel	C	5,9
Coleoptera	Curculionidae	Rhinoncus pericarpius		none	not yet evaluated		G	docks	A	5
Coleoptera	Curculionidae	Scolytus intricatus		none	not yet evaluated		S	oak, dead wood	C	6
Coleoptera	Curculionidae	Scolytus rugulosus	Fruit Bark Beetle	none	not yet evaluated		S	Rosaceae	AC	7,9
Coleoptera	Curculionidae	Sitona lineatus	Pea Leaf Weevil	none	not yet evaluated		G	Fabaceae	ABC	1,2,5,6,7,9,12
Coleoptera	Curculionidae	Sitona obsoletus		none	not yet evaluated		G	Fabaceae	A	5
Coleoptera	Curculionidae	Strophosoma melanogrammum	Nut Leaf Weevil	none	not yet evaluated		S	oak, birch etc	C	1,5,7,9
Coleoptera	Curculionidae	Trichosirocalus troglodytes		none	not yet evaluated		G	plantains	AC	5,6,9
Coleoptera	Dermestidae – Larder Beetles, Carpet Beetles etc	Anthrenus verbasci	Carpet Beetle	none	NA				A	7
Coleoptera	Dryopidae – Long-toed Water Beetles	Dryops ernesti		none	Least Concern		W/P		A	5,6
Coleoptera	Dytiscidae – Diving Beetles	Agabus bipustulatus		none	Least Concern		P		BC	5,6
Coleoptera	Dytiscidae	Agabus uliginosus		Nationally Scarce	Near Threatened	YES	P		C	2,5
Coleoptera	Dytiscidae	Colymbetes fuscus		none	Least Concern	YES	P		AC	5,6
Coleoptera	Dytiscidae	Hydaticus seminiger		Nationally Scarce	Least Concern		P		C	5
Coleoptera	Dytiscidae	Hydroporus angustatus		none	Least Concern		P		A	5
Coleoptera	Dytiscidae	Hydroporus memnonius		none	Least Concern		P		C	5
Coleoptera	Dytiscidae	Hydroporus nigrita		none	Least Concern		P		C	5
Coleoptera	Dytiscidae	Hydroporus palustris		none	Least Concern		P		AC	5
Coleoptera	Dytiscidae	Hydroporus planus		none	Least Concern		P		C	5,6
Coleoptera	Dytiscidae	Hydroporus striola		none	Least Concern	YES	P		C	5
Coleoptera	Dytiscidae	Hygrotus impressopunctatus		none	Least Concern		P		C	5

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Coleoptera	Dytiscidae	Ilybius chalconatus		none	Least Concern		P		A	1
Coleoptera	Dytiscidae	Ilybius guttiger		none	Least Concern	YES	P		B	9
Coleoptera	Dytiscidae	Laccornis oblongus		Nationally Scarce	Near Threatened	YES	P		C	6
Coleoptera	Dytiscidae	Liopterus haemorrhoidalis		none	Least Concern		P		AC	5
Coleoptera	Elateridae – Click beetles	Actenicerus sjaelandicus	Marsh Click Beetle	none	not yet evaluated		W		A	6
Coleoptera	Elateridae	Adrastus pallens		none	not yet evaluated				C	7
Coleoptera	Elateridae	Agriotes acuminatus		none	not yet evaluated		G		AB	5
Coleoptera	Elateridae	Agriotes lineatus		none	not yet evaluated		G		A	1,5,6
Coleoptera	Elateridae	Agriotes obscurus		none	not yet evaluated		G		AC	5,6
Coleoptera	Elateridae	Agriotes pallidulus		none	not yet evaluated				BC	5,6
Coleoptera	Elateridae	Agriotes sputator		none	not yet evaluated		G		ABC	5,6,7
Coleoptera	Elateridae	Athous haemorrhoidalis		none	not yet evaluated		S		ABC	5,6,7
Coleoptera	Elateridae	Dalopius marginatus		none	not yet evaluated				ABC	5,6,7
Coleoptera	Elateridae	Denticollis linearis		none	not yet evaluated		S	dead wood	AB	6
Coleoptera	Elateridae	Hemicrepidius hirtus		none	not yet evaluated		S	dead wood	C	6,7
Coleoptera	Elateridae	Limonius poneli		none	not yet evaluated		G		ABC	5,6
Coleoptera	Erirhinidae – Wetland Weevils	Grypus equiseti	Horsetail Weevil	[Nationally Scarce (Notable B)]	not yet evaluated		W/G	horsetails	A	2,6
Coleoptera	Erirhinidae	Notaris acridulus		none	not yet evaluated		W	Glyceria	AC	2,5,6,7
Coleoptera	Erirhinidae	Tanysphyrus lemnae	Duckweed Weevil	none	not yet evaluated		P/W	duckweeds	C	5
Coleoptera	Erotylidae – Pleasing Fungus Beetles	Dacne rufifrons*		none	not yet evaluated	YES	S	bracket fungi on dead wood	B	1
Coleoptera	Geotrupidae – Dor Beetles	Geotrupes spiniger		none	Least Concern		G	dung	C	9
Coleoptera	Haliplidae – Crawling Water Beetles	Haliplus lineatocollis		none	Least Concern		P/R		A	1
Coleoptera	Helophoridae – Water Scavenger Beetles	Helophorus griseus		none	Least Concern		P		AC	2,6
Coleoptera	Helophoridae	Helophorus obscurus		none	Least Concern		P		AC	2,5
Coleoptera	Helophoridae	Helophorus strigifrons		Nationally Scarce	Least Concern	YES	P		C	7
Coleoptera	Heteroceridae – Variegated Mud-loving Beetles	Heterocerus fenestratus		none	Least Concern		W/P		A	6
Coleoptera	Heteroceridae	Heterocerus fusculus		[Nationally Rare]	[Vulnerable]		W/P		A	5

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Coleoptera	Histeridae – Clown Beetles	Kissister minimus	Little Clown	none	Least Concern		H		C	5
Coleoptera	Histeridae	Margarinotus brunneus	The Necromancer	none	Least Concern			carrion	C	7
Coleoptera	Histeridae	Margarinotus purpurascens	Blushing Clown	none	Least Concern		G/H		C	7
Coleoptera	Histeridae	Margarinotus ventralis	Small Dung Clown	none	Least Concern		G	dung	C	5
Coleoptera	Histeridae	Onthophilus striatus	Lesser Ridgeback	none	Least Concern	YES		dung	AC	5,7
Coleoptera	Histeridae	Saprinus aeneus	Bronze Mirror Clown	Nationally Scarce	Least Concern		H	carrion and dung	C	7
Coleoptera	Histeridae	Saprinus semistriatus	Carrion Clown	none	Least Concern			carrion	C	7
Coleoptera	Hydraenidae – Minute moss beetles	Ochthebius minimus		none	Least Concern		P/R		ABC	1,2,5
Coleoptera	Hydrochidae – Hydrochid Beetles	Hydrochus elongatus		Nationally Scarce	Near Threatened		P		A	5
Coleoptera	Hydrophilidae – Water Scavenger Beetles/Scavenger Beetles	Anacaena limbata		none	Least Concern		P/R		ABC	1,2,5,6,7
Coleoptera	Hydrophilidae	Anacaena lutescens		none	Least Concern		P		AC	1,2,5
Coleoptera	Hydrophilidae	Cercyon bifenestratus		Nationally Scarce	Least Concern		W		A	6
Coleoptera	Hydrophilidae	Cercyon convexiusculus		none	Least Concern		W		ABC	5,12
Coleoptera	Hydrophilidae	Cercyon granarius		Nationally Scarce	Least Concern		W		A	5,6
Coleoptera	Hydrophilidae	Cercyon haemorrhoidalis		none	Least Concern			dung	A	2
Coleoptera	Hydrophilidae	Cercyon lateralis		none	Least Concern			dung	A	6
Coleoptera	Hydrophilidae	Cercyon marinus		none	Least Concern		W		A	6
Coleoptera	Hydrophilidae	Cercyon sternalis		none	Least Concern		W		ABC	5,6,9
Coleoptera	Hydrophilidae	Cercyon tristis		none	Least Concern		W		AC	5,7
Coleoptera	Hydrophilidae	Cercyon unipunctatus*		none	Least Concern			dung/dung heaps	C	6
Coleoptera	Hydrophilidae	Cymbiodyta marginella		none	Least Concern		P		AC	5
Coleoptera	Hydrophilidae	Enochrus coarctatus		none	Least Concern		P		AC	5
Coleoptera	Hydrophilidae	Enochrus nigritus		Nationally Scarce	Near Threatened		P		AC	1,5
Coleoptera	Hydrophilidae	Enochrus ochropterus		none	Least Concern		P		C	5
Coleoptera	Hydrophilidae	Enochrus quadripunctatus		Nationally Scarce	Least Concern		P		AC	5,6
Coleoptera	Hydrophilidae	Hydrobius fuscipes sens. str.		none	not yet evaluated	YES	P		AC	1,5,6

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Coleoptera	Hydrophilidae	Hydrobius rottenbergii		none	not yet evaluated	YES	P		C	5
Coleoptera	Hydrophilidae	Hydrobius subrotundus		none	not yet evaluated		P		AB	1,5
Coleoptera	Hydrophilidae	Megasternum concinnum		none	not yet evaluated				C	1
Coleoptera	Hydrophilidae	Megasternum immaculatum*		none	not yet evaluated			usually in grass heaps, dung heaps etc	C	5
Coleoptera	Hydrophilidae	Sphaeridium lunatum		none	Least Concern			dung	A	6,7
Coleoptera	Kateretidae – Short-winged Flower Beetles	Brachypterus glaber		none	not yet evaluated		G	stinging nettle	AC	5,7
Coleoptera	Kateretidae	Brachypterus urticae	Nettle Pollen Beetle	none	not yet evaluated		G	stinging nettle	ABC	5,7
Coleoptera	Kateretidae	Kateretes rufilabris		none	not yet evaluated		W	Carex and Juncus	A	7
Coleoptera	Lampyridae – Glow Worms	Lampyris noctiluca	Glow-worm	none	Least Concern		G/W	snails	AB	5,6
Coleoptera	Latridiidae – Minute Brown Scavenger Beetles	Cartodere bifasciata		none	not yet evaluated				AC	1,2,5,7
Coleoptera	Latridiidae	Cartodere nodifer		none	not yet evaluated				A	5
Coleoptera	Latridiidae	Corticaria serrata		none	not yet evaluated			usually in straw heaps and bales	A	7
Coleoptera	Latridiidae	Corticarina minuta		none	not yet evaluated				ABC	1,2,5,6,7,9
Coleoptera	Latridiidae	Cortinicara gibbosa		none	not yet evaluated				ABC	1,5,7
Coleoptera	Latridiidae	Enicmus brevicornis		Nationally Scarce (Notable)	not yet evaluated		S	fungoid wood (usually sycamore)	AC	7
Coleoptera	Latridiidae	Enicmus histrio		none	not yet evaluated				A	7
Coleoptera	Latridiidae	Enicmus transversus		none	not yet evaluated				B	7
Coleoptera	Leiodidae – Round Fungus Beetles	Anisotoma humeralis		none	not yet evaluated	YES	S		BC	5
Coleoptera	Leiodidae	Anisotoma orbicularis*		none	not yet evaluated	YES	S		B	5
Coleoptera	Leiodidae	Catopidius depressus*		Nationally Scarce (Notable)	not yet evaluated	YES	G/H	mammal burrows	C	1
Coleoptera	Leiodidae	Catops chrysomeloides*		none	not yet evaluated			carrion/mammal burrows	A	5
Coleoptera	Leiodidae	Catops fuliginosus*		none	not yet evaluated			carrion/mammal burrows	A	5
Coleoptera	Leiodidae	Catops grandicollis		none	not yet evaluated			carrion/mammal burrows	AC	5
Coleoptera	Leiodidae	Catops kirbyi*		none	not yet evaluated	YES		often in carrion	A	5
Coleoptera	Leiodidae	Catops tristis*		none	not yet evaluated			carrion/mammal burrows	A	5

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Coleoptera	Leiodidae	Choleva agilis*		none	not yet evaluated			mammal burrows	A	6
Coleoptera	Leiodidae	Choleva angustata		none	not yet evaluated			mammal burrows	BC	5,6
Coleoptera	Leiodidae	Nargus velox		none	not yet evaluated		S		B	5
Coleoptera	Lucanidae – Stag Beetles	Dorcus parallelipipedus*	Lesser Stag Beetle	none	Least Concern		S	dead wood, often ash	B	5
Coleoptera	Melandryidae – False Darkling Beetles	Abdera biflexuosa		Nationally Scarce	Least Concern		S	dead wood, usually off oak boughs	BC	7
Coleoptera	Melandryidae	Anisoxya fuscula*		Nationally Scarce	Least Concern		S	dead wood, usually off oak boughs	AC	7
Coleoptera	Melyridae – Soft-winged Flower Beetles	Anthocomus rufus		none	Least Concern		W	Phragmites beds	C	9
Coleoptera	Melyridae	Cordylepherus viridis		none	Least Concern		G		AC	5,6,7
Coleoptera	Melyridae	Dasytes aeratus		none	Least Concern		S		C	5
Coleoptera	Melyridae	Malachius bipustulatus	Malachite Beetle	none	Least Concern		G		AC	5,6
Coleoptera	Monotomidae – Root-eating Beetles	Monotoma picipes		none	Least Concern			often in vegetation heaps	AC	1,7
Coleoptera	Mordellidae – Tumbling Flower Beetles	Mordellistena neuwaldeggiana		Nationally Scarce	Least Concern		S	dead wood	A	7
Coleoptera	Mordellidae	Mordellistena variegata		Nationally Scarce	Least Concern		S	dead wood	C	6
Coleoptera	Mycetophagidae – Hairy Fungus Beetles	Pseudotriphyllus suturalis*		Nationally Scarce	Least Concern	YES	S	fungi, often brackets	C	9
Coleoptera	Nanophyidae – Nanophyid weevils	Nanophyes marmoratus	Loosestrife Weevil	none	not yet evaluated		W	purple loosestrife	A	7
Coleoptera	Nitidulidae – Sap and Pollen Beetles	Epuraea aestiva		none	not yet evaluated		S/C		AC	5
Coleoptera	Nitidulidae	Epuraea melanocephala*		none	not yet evaluated		S		A	5
Coleoptera	Nitidulidae	Glischrochilus hortensis		none	not yet evaluated				A	5,7
Coleoptera	Nitidulidae	Meligethes aeneus	Common Pollen Beetle	none	not yet evaluated			Cruciferae	ABC	5,6,7
Coleoptera	Nitidulidae	Meligethes nigrescens		none	not yet evaluated		G	clovers (usually white clover)	AC	5,6
Coleoptera	Nitidulidae	Meligethes ovatus		none	not yet evaluated		G	ground ivy	C	5
Coleoptera	Nitidulidae	Meligethes ruficornis		none	not yet evaluated			black horehound	A	5,6
Coleoptera	Oedemeridae – False Blister Beetles	Oedemera lurida		none	Least Concern		G		AC	5,6,7
Coleoptera	Oedemeridae	Oedemera nobilis	Swollen-thighed Beetle	none	Least Concern		G		ABC	5,6,7
Coleoptera	Phalacridae – Shining Flower Beetles	Olibrus aeneus		none	Least Concern		G/H	mayweeds mainly	C	5

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Coleoptera	Phalacridae	Olibrus affinis		none	Least Concern		G/H	Tragopogon, Hypochoeris etc	C	6
Coleoptera	Phalacridae	Olibrus corticalis		none	Least Concern		G	ragworts, fleabanes	AC	5,9
Coleoptera	Phalacridae	Phalacrus championi		none	Least Concern		G/W	smutted grasses and Carex	C	5,6
Coleoptera	Phalacridae	Phalacrus corruscus		none	Least Concern		G	smutted foliage, ? cereal crops	C	6,7
Coleoptera	Phalacridae	Phalacrus fimetarius		none	Least Concern		G	smutted Brachypodium	A	6,7
Coleoptera	Phalacridae	Stilbus testaceus		none	Least Concern				BC	1,5,7,9
Coleoptera	Ptinidae – Wood-borer Beetles	Anobium inexspectatum		none	Least Concern		S	dead ivy stems	C	7
Coleoptera	Ptinidae	Anobium punctatum	Woodworm	none	Least Concern		S	dead wood	ABC	7
Coleoptera	Ptinidae	Dorcatoma flavicornis*		Nationally Scarce	Least Concern	YES	S	fungoid dead wood, usually oak	C	7
Coleoptera	Ptinidae	Hemicoelus canaliculatus*		Nationally Rare	Least Concern	YES	S	dead branches of broad-leaved trees	A	7
Coleoptera	Ptinidae	Hemicoelus fulvicornis		none	Least Concern		S	dead wood, usually oaks	ABC	6
Coleoptera	Ptinidae	Ochina ptinoides	Ivy Boring Beetle	none	Least Concern		S	dead wood of ivy	AC	6,7
Coleoptera	Ptinidae	Ptinomorphus imperialis		none	Least Concern		S	dead wood	C	5
Coleoptera	Ptinidae	Ptinus palliatus		Nationally Rare	Vulnerable	YES	S	dead rotten wood of oaks usually	C	5
Coleoptera	Pyrochroidae – Cardinal Beetles	Pyrochroa serraticornis	Common Cardinal Beetle	none	Least Concern		S	dead wood	AB	5,6
Coleoptera	Rhynchitidae – Tooth-nosed Snout Weevils	Involvulus icosandriae	Apple Twig Cutter	none	Least Concern		S	Rosaceae – hawthorn, blackthorn etc	A	5
Coleoptera	Rhynchitidae	Tatianaerhynchites aequatus	Apple Fruit Rhynchites	none	Least Concern		S	hawthorn	AC	5,6,7
Coleoptera	Salpingidae – Narrow-waisted Bark Beetles	Lissodema cursor*		Nationally Rare	Least Concern	YES	S	dead wood of ash	A	7
Coleoptera	Salpingidae	Lissodema denticollis		Nationally Scarce	Least Concern		S	dead wood, often ash	AC	6,7
Coleoptera	Salpingidae	Rabocerus gabrieli*		Nationally Scarce	Least Concern	YES	S	dead wood and under bark	B	5
Coleoptera	Salpingidae	Salpingus planirostris		none	Least Concern		S	dead wood	ABC	5,6,7,9
Coleoptera	Salpingidae	Vincenzellus ruficollis		none	Least Concern		S	dead wood	A	5
Coleoptera	Scarabaeidae – Dung Beetles and Chafers	Agrilinus ater		none	Least Concern		G	dung	BC	5
Coleoptera	Scarabaeidae	Agrilinus constans*		Nationally	Least Concern	YES	G	dung	A	2

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
				Scarce						
Coleoptera	Scarabaeidae	Aphodius fimetarius		none	Least Concern		G	dung	A	2,5
Coleoptera	Scarabaeidae	Aphodius foetidus		none	Least Concern		G	dung	C	2,5,7
Coleoptera	Scarabaeidae	Bodilopsis rufa		none	Least Concern			dung	C	7
Coleoptera	Scarabaeidae	Calamosternus granarius		none	Least Concern		G	dung	AC	5,7
Coleoptera	Scarabaeidae	Esymus pusillus		none	Least Concern		G	dung	C	5
Coleoptera	Scarabaeidae	Hoplia philanthus	Welsh Chafer	none	Least Concern		G		A	6
Coleoptera	Scarabaeidae	Melinopterus prodromus		none	Least Concern			dung	AC	2,5
Coleoptera	Scarabaeidae	Melinopterus sphacelatus		none	Least Concern			dung	AC	2,5
Coleoptera	Scarabaeidae	Onthophagus similis		none	Least Concern			dung	AC	1,5,6,7
Coleoptera	Scarabaeidae	Otophorus haemorrhoidalis		none	Least Concern		G	dung	AC	5,7
Coleoptera	Scarabaeidae	Oxyomus sylvestris*		none	Least Concern			dung	A	5
Coleoptera	Scarabaeidae	Volinus sticticus		none	Least Concern	YES		dung	AC	5,7,9
Coleoptera	Scirtidae – Marsh Beetles	Contacyphon coarctatus		none	Least Concern		W/P		ABC	5,7
Coleoptera	Scirtidae	Contacyphon hilaris		none	Least Concern		W/P		AC	7
Coleoptera	Scirtidae	Contacyphon laevipennis		none	Least Concern		W/P	Typha beds	C	5,9
Coleoptera	Scirtidae	Contacyphon ochraceus		none	Least Concern		W/P		ABC	6,7
Coleoptera	Scirtidae	Contacyphon padi		none	Least Concern		W/P		ABC	1,5,7,9
Coleoptera	Scirtidae	Contacyphon pubescens		Nationally Scarce	Least Concern		W/P		AC	1,5,6,9
Coleoptera	Scirtidae	Microcara testacea		none	Least Concern		C/P		AB	5,6,7
Coleoptera	Scraptiidae – False Flower Beetles	Anaspis fasciata		none	Least Concern		S	dead wood	BC	5,6
Coleoptera	Scraptiidae	Anaspis frontalis		none	Least Concern		S	dead wood	C	5
Coleoptera	Scraptiidae	Anaspis garneysi		none	Least Concern		S	dead wood	ABC	5,6
Coleoptera	Scraptiidae	Anaspis maculata		none	Least Concern		S	dead wood	ABC	5,6,7
Coleoptera	Scraptiidae	Anaspis pulicaria		none	Least Concern				AC	6,7
Coleoptera	Scraptiidae	Anaspis thoracica		Nationally Scarce	Least Concern		S	dead wood	B	6,7
Coleoptera	Silphidae – Carrion and Burying Beetles	Dendroxena quadrimaculata*	Caterpillar-hunter	Nationally Scarce	Least Concern		S	moth larvae on trees	C	5
Coleoptera	Silphidae	Nicrophorus vespillo	Bent-legged Burying Beetle	none	Least Concern			carrion	A	9
Coleoptera	Silphidae	Phosphuga atrata	Common Snail-hunter	none	Least Concern			snails	A	1
Coleoptera	Silphidae	Silpha tristis	Grassland Carrion Beetle	none	Least Concern		G	slugs?	A	6

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Coleoptera	Silphidae	Thanatophilus rugosus	Wrinkled Death-lover	none	Least Concern			carrion	C	7
Coleoptera	Silvanidae – Silvanid Beetles	Psammoecus bipunctatus		none	not yet evaluated		W		ABC	1,2,5,6,7,12
Coleoptera	Staphylinidae – Rove Beetles	Acrotona muscorum		none	not yet evaluated			dung and other decaying organic material	AB	1,7
Coleoptera	Staphylinidae	Acrotona parvula		none	not yet evaluated			dung and other decaying organic material	AC	5,6
Coleoptera	Staphylinidae	Acrotona pseudotenera		none	not yet evaluated	YES		usually decaying vegetation heaps	C	2,5
Coleoptera	Staphylinidae	Acrotona pygmaea*		none	not yet evaluated	YES	W?	dung and other decaying organic material	C	1,2
Coleoptera	Staphylinidae	Aleochara bipustulata		none	not yet evaluated			dung, carrion etc	A	9
Coleoptera	Staphylinidae	Aleochara brevipennis		[Nationally Scarce (Notable)]	not yet evaluated		G		A	6
Coleoptera	Staphylinidae	Aleochara intricata		none	not yet evaluated		G	dung	C	5,7
Coleoptera	Staphylinidae	Aleochara lanuginosa		none	not yet evaluated		G	dung	AC	2,5
Coleoptera	Staphylinidae	Aleochara lata		none	not yet evaluated			carrion	C	7
Coleoptera	Staphylinidae	Aleochara morion		none	not yet evaluated			dung	C	5
Coleoptera	Staphylinidae	Aleochara tristis		none	not yet evaluated		G	dung	C	5
Coleoptera	Staphylinidae	Alevonota gracilenta*		Nationally Rare (RDBK)	not yet evaluated	YES	H		C	5
Coleoptera	Staphylinidae	Alevonota hepatica*		none	not yet evaluated	YES	S		AB	5
Coleoptera	Staphylinidae	Aloconota gregaria		none	not yet evaluated				ABC	1,2,5
Coleoptera	Staphylinidae	Amischa analis		none	not yet evaluated				AC	1,2,5,12
Coleoptera	Staphylinidae	Amischa decipiens		none	not yet evaluated				AC	5,6
Coleoptera	Staphylinidae	Amischa forcipata		none	not yet evaluated		W?		AC	1,5
Coleoptera	Staphylinidae	Amischa nigrofusca		none	not yet evaluated				A	2
Coleoptera	Staphylinidae	Anotylus rugosus		none	Least Concern				ABC	1,2,5,7
Coleoptera	Staphylinidae	Anotylus tetracarinatus		none	Least Concern			dung usually	C	7
Coleoptera	Staphylinidae	Astenus lyonessius		none	Least Concern		G		A	6,9
Coleoptera	Staphylinidae	Astenus pulchellus		none	Least Concern			decaying vegetation heaps	A	7
Coleoptera	Staphylinidae	Atheta (Alaobia) sodalis*		none	not yet evaluated	YES	S	decaying organic matter	B	5
Coleoptera	Staphylinidae	Atheta (Alaobia) trinotata		none	not yet evaluated			fungi etc	AC	1,5

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Coleoptera	Staphylinidae	Atheta (Atheta) aquatica		none	not yet evaluated				AC	2,5
Coleoptera	Staphylinidae	Atheta (Atheta) britanniae*		none	not yet evaluated		S	decaying organic matter	A	5
Coleoptera	Staphylinidae	Atheta (Atheta) crassicornis		none	not yet evaluated			decaying organic matter	C	5
Coleoptera	Staphylinidae	Atheta (Atheta) divisa*		none	not yet evaluated	YES	S	decaying organic matter	C	7
Coleoptera	Staphylinidae	Atheta (Atheta) graminicola		none	not yet evaluated		W		C	1,2
Coleoptera	Staphylinidae	Atheta (Atheta) ravilla		none	not yet evaluated		S?	decaying organic matter	A	5
Coleoptera	Staphylinidae	Atheta (Chaetida) longicornis		none	not yet evaluated			dung	AC	2,7
Coleoptera	Staphylinidae	Atheta (Datomicra) nigra		none	not yet evaluated			decaying organic matter	AC	1,5,7
Coleoptera	Staphylinidae	Atheta (Dimetrota) atramentaria		none	not yet evaluated			dung	A	2
Coleoptera	Staphylinidae	Atheta (Dimetrotina) laticollis		none	not yet evaluated			decaying vegetation heaps	A	7
Coleoptera	Staphylinidae	Atheta (Mocyta) fungi*		none	not yet evaluated				A	7
Coleoptera	Staphylinidae	Atheta (Mocyta) fungi agg.				YES			ABC	1,5,7,9,12
Coleoptera	Staphylinidae	Atheta (Mocyta) orbata*		none	not yet evaluated	YES			B	1,9
Coleoptera	Staphylinidae	Atheta (Philhygra) volans		none	not yet evaluated		W		A	5
Coleoptera	Staphylinidae	Bisnius cephalotes*		none	Least Concern			decaying vegetation heaps	A	5
Coleoptera	Staphylinidae	Bisnius fimetarius		none	not yet evaluated				A	7
Coleoptera	Staphylinidae	Bolitochara bella*		none	not yet evaluated			fungi and fungoid wood	C	5
Coleoptera	Staphylinidae	Bryaxis bulbifer		none	not yet evaluated				C	1
Coleoptera	Staphylinidae	Callicerus obscurus*		none	not yet evaluated				B	5
Coleoptera	Staphylinidae	Callicerus rigidicornis		none	not yet evaluated				B	5
Coleoptera	Staphylinidae	Calodera aethiops*		none	not yet evaluated		W		BC	1
Coleoptera	Staphylinidae	Carpelimus corticinus		none	Least Concern		W		AC	1,2,5,6
Coleoptera	Staphylinidae	Carpelimus elongatulus		none	Least Concern		W		BC	1,5
Coleoptera	Staphylinidae	Carpelimus lindrothi		Nationally Scarce	Least Concern		W		A	5
Coleoptera	Staphylinidae	Carpelimus obesus		Nationally Scarce	Least Concern		W		A	5

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Coleoptera	Staphylinidae	Carpelimus pusillus		none	Least Concern				A	5
Coleoptera	Staphylinidae	Carpelimus rivularis		none	Least Concern		W		A	5
Coleoptera	Staphylinidae	Cordalia obscura		none	not yet evaluated				A	1,2,5,6
Coleoptera	Staphylinidae	Cypha discoidea		Nationally Scarce (Notable B)	not yet evaluated		W		A	5
Coleoptera	Staphylinidae	Cypha longicornis		none	not yet evaluated				ABC	1,5,7
Coleoptera	Staphylinidae	Dacrila fallax		Nationally Scarce (Notable)	not yet evaluated		W		A	1
Coleoptera	Staphylinidae	Dalotia coriaria*		none	not yet evaluated			decaying organic matter, often in vegetation heaps	AC	1,2,7
Coleoptera	Staphylinidae	Deinopsis erosa		none	not yet evaluated	YES	W		B	1
Coleoptera	Staphylinidae	Dilacra luteipes		none	not yet evaluated		W		A	5
Coleoptera	Staphylinidae	Dilacra vilis		none	not yet evaluated		W		BC	1,2,5
Coleoptera	Staphylinidae	Dinaraea aequata		none	not yet evaluated		S	dead wood, under bark	B	9
Coleoptera	Staphylinidae	Dinaraea angustula		none	not yet evaluated		G		BC	5
Coleoptera	Staphylinidae	Dropephylla gracilicornis*		Nationally Scarce	Least Concern		S	dead boughs, under bark etc, usually oak	C	5
Coleoptera	Staphylinidae	Dropephylla ioptera		none	Least Concern		S	under bark, on boughs, hawthorn flowers	A	5
Coleoptera	Staphylinidae	Drusilla canaliculata		none	not yet evaluated		G		AC	1,7
Coleoptera	Staphylinidae	Erichsonius cinerascens		none	Least Concern		W		AB	1,5
Coleoptera	Staphylinidae	Euaesthetus ruficapillus		none	Least Concern		W		C	1
Coleoptera	Staphylinidae	Fagniezia impressa*		none	not yet evaluated		W		A	2
Coleoptera	Staphylinidae	Gabrius breviventer		none	Least Concern		W		C	7
Coleoptera	Staphylinidae	Geostiba circellaris		none	not yet evaluated				C	2
Coleoptera	Staphylinidae	Gyrohypnus fracticornis		none	Least Concern			dung mainly	A	2,5
Coleoptera	Staphylinidae	Hapalaraea pygmaea		none	Least Concern		S	often flowering hawthorn	B	6
Coleoptera	Staphylinidae	Hygronoma dimidiata		none	not yet evaluated		W		A	6,7
Coleoptera	Staphylinidae	Ischnosoma splendidum		none	Least Concern				A	1,2,5,9
Coleoptera	Staphylinidae	Lathrobium brunnipes		none	Least Concern				AC	1,7,12
Coleoptera	Staphylinidae	Lathrobium elongatum		none	Least Concern		W		ABC	2,5,12
Coleoptera	Staphylinidae	Lathrobium impressum*		Nationally	Least Concern		W		A	2

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
				Scarce						
Coleoptera	Staphylinidae	Lathrobium longulum		none	Least Concern		W		C	2
Coleoptera	Staphylinidae	Leptacinus intermedius*		Nationally Scarce	Least Concern			decaying vegetation heaps	A	7
Coleoptera	Staphylinidae	Lesteva longoelytrata		none	Least Concern		W		B	6
Coleoptera	Staphylinidae	Lesteva sicula		none	Least Concern		W		C	5
Coleoptera	Staphylinidae	Liogluta longiuscula		none	not yet evaluated				BC	5
Coleoptera	Staphylinidae	Lithocharis nigriceps		none	Least Concern			decaying vegetation heaps	A	7
Coleoptera	Staphylinidae	Megalinus glabratus		none	Least Concern			dung	A	7
Coleoptera	Staphylinidae	Megarthrus bellevoyei*		none	Least Concern			decaying vegetation heaps	A	5
Coleoptera	Staphylinidae	Megarthrus depressus*		none	Least Concern			decaying vegetation heaps etc	A	7
Coleoptera	Staphylinidae	Metopsia clypeata		none	Least Concern				AC	1,5
Coleoptera	Staphylinidae	Micropeplus fulvus		none	Least Concern			usually in decaying vegetation heaps	C	1,5
Coleoptera	Staphylinidae	Micropeplus staphylinoides*		none	Least Concern			usually in decaying vegetation heaps	AB	2,5
Coleoptera	Staphylinidae	Myllaena gracilis*		none	not yet evaluated	YES	W		BC	1
Coleoptera	Staphylinidae	Myllaena intermedia		none	not yet evaluated		W		A	5
Coleoptera	Staphylinidae	Nehemitropia lividipennis		none	not yet evaluated			decaying vegetation heaps	AC	1,2,7
Coleoptera	Staphylinidae	Ocypus aeneocephalus		none	Least Concern		G		A	5,6
Coleoptera	Staphylinidae	Ocypus nitens		Nationally Scarce	Least Concern	YES	H?		B	5
Coleoptera	Staphylinidae	Ocypus olens	Devil's Coach-horse	none	Least Concern				ABC	5,6,7,9
Coleoptera	Staphylinidae	Ocyusa maura		none	not yet evaluated		W		C	1
Coleoptera	Staphylinidae	Ocyusa picina		none	not yet evaluated		W		AC	5,12
Coleoptera	Staphylinidae	Oligota parva*		none	not yet evaluated			decaying vegetation heaps	A	7
Coleoptera	Staphylinidae	Oligota picipes*		none	not yet evaluated	YES	G		C	5
Coleoptera	Staphylinidae	Olophrum fuscum		none	Least Concern		W		C	12
Coleoptera	Staphylinidae	Omalium caesum		none	Least Concern				A	5
Coleoptera	Staphylinidae	Omalium excavatum		none	Least Concern			usually in decaying vegetation heaps	C	1,2,5
Coleoptera	Staphylinidae	Ontholestes murinus		none	Least Concern			dung, carrion etc	A	6
Coleoptera	Staphylinidae	Othius laeviusculus		none	Least Concern				C	6,9
Coleoptera	Staphylinidae	Othius punctulatus		none	Least Concern		S		B	5

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Coleoptera	Staphylinidae	Oxypoda acuminata		none	not yet evaluated			decaying vegetation heaps	BC	1,5
Coleoptera	Staphylinidae	Oxypoda annularis*		none	not yet evaluated	YES			C	5
Coleoptera	Staphylinidae	Oxypoda carbonaria*		none	not yet evaluated	YES			A	2
Coleoptera	Staphylinidae	Oxypoda elongatula		none	not yet evaluated		W		AC	1,2,6
Coleoptera	Staphylinidae	Oxypoda haemorrhoa		none	not yet evaluated			decaying vegetation heaps	A	5
Coleoptera	Staphylinidae	Oxypoda opaca		none	not yet evaluated			dung and decaying vegetation heaps	AC	2,5
Coleoptera	Staphylinidae	Oxypoda vittata*		none	not yet evaluated	YES			A	2
Coleoptera	Staphylinidae	Pachnida nigella		none	not yet evaluated		W		C	1,12
Coleoptera	Staphylinidae	Paederus riparius		none	Least Concern		W		ABC	1,5,7,9
Coleoptera	Staphylinidae	Pella limbata		none	not yet evaluated		G		A	5,9
Coleoptera	Staphylinidae	Philonthus carbonarius		none	Least Concern		G		AC	5,6,7,9
Coleoptera	Staphylinidae	Philonthus cognatus		none	Least Concern		G		AC	2,6,9
Coleoptera	Staphylinidae	Philonthus concinnus		none	Least Concern		G		C	5
Coleoptera	Staphylinidae	Philonthus debilis		none	Least Concern			decaying vegetation heaps	A	5
Coleoptera	Staphylinidae	Philonthus decorus		none	Least Concern		S		B	5
Coleoptera	Staphylinidae	Philonthus fumarius		none	Least Concern		W		AB	2,5
Coleoptera	Staphylinidae	Philonthus jurgans		none	Least Concern			usually in decaying vegetation heaps	C	12
Coleoptera	Staphylinidae	Philonthus laminatus		none	Least Concern		G		AC	6,7
Coleoptera	Staphylinidae	Philonthus longicornis*		none	Least Concern			usually in decaying vegetation heaps	A	7
Coleoptera	Staphylinidae	Philonthus mannerheimi*		Nationally Scarce	Least Concern	YES	W		A	6
Coleoptera	Staphylinidae	Philonthus micans*		none	Least Concern		W		A	2
Coleoptera	Staphylinidae	Philonthus nigrita		none	Least Concern		W		B	5
Coleoptera	Staphylinidae	Philonthus politus		none	Least Concern			carrion often	C	7
Coleoptera	Staphylinidae	Philonthus quisquiliarius		none	Least Concern		W		C	6
Coleoptera	Staphylinidae	Philonthus rectangulus		none	Least Concern			dung heaps etc	A	7
Coleoptera	Staphylinidae	Philonthus sanguinolentus		none	Least Concern			dung	C	5
Coleoptera	Staphylinidae	Philonthus tenuicornis		none	Least Concern				AC	5,7
Coleoptera	Staphylinidae	Philonthus varians		none	Least Concern			dung often	C	5
Coleoptera	Staphylinidae	Platydracus stercorarius		none	Least Concern		G		A	9
Coleoptera	Staphylinidae	Platystethus nodifrons		none	Least Concern		W		B	5

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Coleoptera	Staphylinidae	Proteinus brachypterus		none	Least Concern				C	1
Coleoptera	Staphylinidae	Quedius cinctus*		none	Least Concern			often in decaying vegetation heaps	A	5
Coleoptera	Staphylinidae	Quedius cruentus		none	Least Concern			decaying vegetation heaps and blossoms	A	5
Coleoptera	Staphylinidae	Quedius curtipennis		none	Least Concern				C	5
Coleoptera	Staphylinidae	Quedius fuliginosus		none	Least Concern				BC	5,6
Coleoptera	Staphylinidae	Quedius fumatus		none	Least Concern				C	5
Coleoptera	Staphylinidae	Quedius humeralis*		none	Least Concern			usually in decaying vegetation heaps	A	5
Coleoptera	Staphylinidae	Quedius levicollis		none	Least Concern		G/H		C	7
Coleoptera	Staphylinidae	Quedius maurorufus		none	Least Concern		W		AC	1,12
Coleoptera	Staphylinidae	Quedius scintillans		none	Least Concern			decaying organic matter	AC	5,7
Coleoptera	Staphylinidae	Quedius semiaeneus*		none	Least Concern		G/H		C	7,9
Coleoptera	Staphylinidae	Quedius semiobscurus		none	Least Concern		G		A	9
Coleoptera	Staphylinidae	Reichenbachia juncorum		none	not yet evaluated		W		A	2
Coleoptera	Staphylinidae	Rugilus erichsonii		none	Least Concern				AC	1,2,5,6,7
Coleoptera	Staphylinidae	Rugilus rufipes		none	Least Concern				AB	2,5
Coleoptera	Staphylinidae	Rybaxis longicornis		none	not yet evaluated		W		ABC	5,7
Coleoptera	Staphylinidae	Schistoglossa gemina		Nationally Scarce (Notable)	not yet evaluated		W		A	1,6
Coleoptera	Staphylinidae	Scopaeus laevigatus		Nationally Scarce	Least Concern	YES	W		B	5
Coleoptera	Staphylinidae	Scydmaenus tarsatus*		none	not yet evaluated			usually in decaying vegetation heaps	A	5,9
Coleoptera	Staphylinidae	Sepedophilus marshami		none	Least Concern				C	5
Coleoptera	Staphylinidae	Sepedophilus nigripennis		none	Least Concern				C	1,2
Coleoptera	Staphylinidae	Stenus bifoveolatus		none	not yet evaluated		W		ABC	5,6
Coleoptera	Staphylinidae	Stenus bimaculatus		none	not yet evaluated		W		AC	1,2
Coleoptera	Staphylinidae	Stenus brunnipes		none	not yet evaluated		G		AC	2,5,7,9
Coleoptera	Staphylinidae	Stenus cicindeloides		none	not yet evaluated		W		AC	1,2,5,6,12
Coleoptera	Staphylinidae	Stenus clavicornis		none	not yet evaluated				C	1
Coleoptera	Staphylinidae	Stenus flavipes		none	not yet evaluated		G/W		AC	1,6
Coleoptera	Staphylinidae	Stenus fulvicornis		none	not yet evaluated		G		AC	1,2,12
Coleoptera	Staphylinidae	Stenus impressus		none	not yet evaluated				BC	1,5,6
Coleoptera	Staphylinidae	Stenus juno		none	not yet evaluated		W		ABC	1,2,5,7,12

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Coleoptera	Staphylinidae	Stenus nitidiusculus		none	not yet evaluated		W		B	7
Coleoptera	Staphylinidae	Stenus ossium		none	not yet evaluated		G		AC	1,2,5,6
Coleoptera	Staphylinidae	Stenus pallipes		none	not yet evaluated		W		AC	1,2,12
Coleoptera	Staphylinidae	Stenus palustris		Nationally Scarce (Notable B)	not yet evaluated	YES	W		AC	1,2,12
Coleoptera	Staphylinidae	Stenus picipennis		none	not yet evaluated		W		A	1
Coleoptera	Staphylinidae	Stenus picipes		none	not yet evaluated				A	6
Coleoptera	Staphylinidae	Stenus providus		none	not yet evaluated		W		AC	1,2,5,12
Coleoptera	Staphylinidae	Stenus similis		none	not yet evaluated		G		AC	1,6
Coleoptera	Staphylinidae	Stenus solutus		none	not yet evaluated		W		A	5
Coleoptera	Staphylinidae	Sunius propinquus		none	Least Concern		G		AC	1,5
Coleoptera	Staphylinidae	Tachinus flavolimbatus		Nationally Scarce	Least Concern			decaying vegetation heaps	AC	1,2,5
Coleoptera	Staphylinidae	Tachinus marginellus		none	Least Concern			dung	AC	2,7
Coleoptera	Staphylinidae	Tachinus rufipes		none	Least Concern				AB	2,5,6,7
Coleoptera	Staphylinidae	Tachyporus atriceps		none	Least Concern			mosses	C	1
Coleoptera	Staphylinidae	Tachyporus dispar		none	Least Concern				C	1
Coleoptera	Staphylinidae	Tachyporus hypnorum		none	Least Concern				ABC	1,2,5,6,7,9,12
Coleoptera	Staphylinidae	Tachyporus nitidulus		none	Least Concern				ABC	1,2,5,6,7
Coleoptera	Staphylinidae	Tachyporus pallidus		none	Least Concern		W		AB	1,7
Coleoptera	Staphylinidae	Tachyporus pusillus		none	Least Concern				C	6
Coleoptera	Staphylinidae	Tachyporus solutus		none	Least Concern				BC	5,6
Coleoptera	Staphylinidae	Tachyporus transversalis*		none	Least Concern	YES	W		A	1,2
Coleoptera	Staphylinidae	Tetartopeus terminatus		none	Least Concern		W		A	1,5
Coleoptera	Staphylinidae	Tychus niger		none	not yet evaluated				A	5
Coleoptera	Staphylinidae	Xantholinus elegans		none	Least Concern		G		C	6
Coleoptera	Staphylinidae	Xantholinus linearis		none	Least Concern				ABC	1,5,7,9
Coleoptera	Staphylinidae	Xantholinus longiventris		none	Least Concern				AC	1,2,5,6
Coleoptera	Staphylinidae	Xylodromus concinnus*		none	Least Concern	YES			A	5
Coleoptera	Tenebrionidae – Darkling Beetles	Diaperis boleti		Nationally Scarce	Least Concern		S	fungi on trees, usually birch polypore	BC	5
Coleoptera	Tenebrionidae	Eledona agricola		none	Least Concern		S	chicken-of-the-woods fungus	B	1
Coleoptera	Tenebrionidae	Gonodera luperus		Nationally	Least Concern	YES	S	flowering hawthorn	ABC	5,6

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
				Scarce				(mainly)		
Coleoptera	Tenebrionidae	Isomira murina		none	Least Concern		H/G		C	6
Coleoptera	Tenebrionidae	Lagria hirta		none	Least Concern		S		ABC	7
Coleoptera	Tenebrionidae	Scaphidema metallica*		none	Least Concern	YES	S	often under dead wood	ABC	5,6
Coleoptera	Tetratomidae – Polypore Fungus Beetles	Tetratoma fungorum*		none	Least Concern		S	fungi, usually brackets	B	1
Coleoptera	Throscidae – Throscid Beetles	Trixagus dermestoides		none	not yet evaluated		S		AB	5,6,7
Coleoptera	Throscidae	Trixagus meybohmi*			not yet evaluated		S		B	9
Coleoptera	Throscidae	Trixagus obtusus		none	not yet evaluated		S		A	5,6,7
Collembola – SPRINGTAILS	Dicyrtomidae	Dicyrtoma saundersi*		none	not yet evaluated				C	1
Collembola	Entomobryidae	Orchesella cincta*		none	not yet evaluated				C	1
Dermaptera – EARWIGS	Forficulidae	Forficula auricularia	Common Earwig	none	Least Concern				ABC	2,5,6,7,9
Dermaptera	Labiidae	Labia minor	Lesser Earwig	none	Least Concern			usually in manure heaps	A	7
Diptera – FLIES	Asilidae – Robber Flies	Dioctria atricapilla	Violet Black-legged Robberfly	none	Least Concern		G		A	5,6
Diptera	Asilidae	Dioctria baumhaueri	Stripe-legged Robberfly	none	Least Concern		S		C	7
Diptera	Asilidae	Dioctria linearis	Small Yellow-legged Robberfly	none	Least Concern		S		B	6
Diptera	Asilidae	Dioctria rufipes	Common Red-legged Robberfly	none	Least Concern		G		AB	5,6
Diptera	Asilidae	Dysmachus trigonus	Fan-bristled Robberfly	none	Least Concern		H		AC	6
Diptera	Asilidae	Eutolmus rufibarbis*	Golden-tabbed Robberfly	Nationally Scarce	Least Concern		H		C	7
Diptera	Asilidae	Leptogaster cylindrica	Slender-striped Robberfly	none	Least Concern		G		AC	6,7
Diptera	Asilidae	Machimus atricapillus	Kite-tailed Robberfly	none	Least Concern		G		C	7,9
Diptera	Asilidae	Machimus cingulatus	Brown Heath Robberfly	none	Least Concern		H		C	7,9
Diptera	Asilidae	Neoitamus cyanurus	Common Awl Robberfly	none	Least Concern		S		B	7
Diptera	Bibionidae – March Flies	Bibio marci	St Marks Fly	none	not yet evaluated				AC	5
Diptera	Bibionidae	Bibio hortulanus*	Orange Bibio	none	not yet evaluated		G		A	5
Diptera	Bibionidae	Dilophus febrilis	Common Fever Fly	none	not yet evaluated		G		AC	5
Diptera	Bibionidae	Dilophus femoratus		none	not yet evaluated		G		C	5
Diptera	Bombyliidae – Bee Flies	Bombylius major	Dark-edged Bee-fly	none	Least Concern				ABC	5

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Diptera	Chloropidae – Grass flies	Cetema neglectum*		none	Least Concern		G		A	6
Diptera	Chloropidae	Chlorops pumilionis*		none	Least Concern		G		AC	5
Diptera	Chloropidae	Chlorops serenus*		none	Least Concern		G		AC	5
Diptera	Chloropidae	Elachiptera brevipennis*		none	Least Concern		W		A	2
Diptera	Chloropidae	Lasiosina herpini*		none	Least Concern				A	2
Diptera	Chloropidae	Lipara lucens		none	Least Concern		W	Phragmites	A	6
Diptera	Chloropidae	Oscinisoma cognatum*		none	Least Concern		W		B	1
Diptera	Culicidae – Mosquitos	Ochlerotatus rusticus*		none	not yet evaluated				ABC	5
Diptera	Dolichopodidae – Long-legged Flies	Dolichopus festivus*		none	Least Concern		W		A	6
Diptera	Dolichopodidae	Dolichopus pennatus		none	Least Concern		W		C	6
Diptera	Dolichopodidae	Dolichopus popularis		none	Least Concern				B	6
Diptera	Dolichopodidae	Gymnopternus metallicus		none	Least Concern				AB	5,7
Diptera	Empididae – Dagger Flies	Empis caudatula*		none	Least Concern				A	5
Diptera	Empididae	Empis digramma*		none	Least Concern				AC	5
Diptera	Empididae	Empis femorata*		none	Least Concern				A	5
Diptera	Empididae	Empis livida		none	Least Concern				A	6
Diptera	Empididae	Empis nigritarsis*		none	Least Concern				B	5
Diptera	Empididae	Empis stercorea		none	Least Concern				AB	5
Diptera	Empididae	Empis tessellata		none	Least Concern				ABC	5
Diptera	Empididae	Empis trigramma		none	Least Concern				AB	5
Diptera	Empididae	Rhamphomyia atra		none	Least Concern				A	5
Diptera	Empididae	Rhamphomyia pilifer		none	Least Concern				B	5
Diptera	Empididae	Rhamphomyia subcinerascens		none	Least Concern				C	5
Diptera	Empididae	Rhamphomyia sulcata*		none	Least Concern				B	5
Diptera	Ephydridae – Shore Flies	Ilythea spilota*		none	Least Concern		W		C	2
Diptera	Hybotidae – Dance Flies	Hybos femoratus		none	not yet evaluated				C	7
Diptera	Hybotidae	Stilpon graminum*		none	not yet evaluated				A	2
Diptera	Limoniidae – Short-palped Craneflies	Austrolimnophila ochracea	Drab Splinter Longtail	none	not yet evaluated		S		B	6
Diptera	Limoniidae	Dicranophragma adjunctum	Cross-seam Longtail	none	not yet evaluated		W		A	5
Diptera	Limoniidae	Dicranomyia danica*	Danish Bigtail Crane	none	not yet evaluated		W		C	7
Diptera	Limoniidae	Ellipteroides lateralis	Upturned Black Lamb	none	not yet evaluated		W		B	7
Diptera	Limoniidae	Erioconopa trivialis	Common Striped Twist-tail	none	not yet evaluated		W		AC	5,7

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Diptera	Limoniidae	Euphylidorea dispar	Smart Longtail	none	not yet evaluated		W		B	6
Diptera	Limoniidae	Limonia flavipes*	Thumb-print Limonia	none	not yet evaluated		S		B	5
Diptera	Limoniidae	Limonia macrostigma*	Drab-winged Limonia	none	not yet evaluated		C	alder carr often	B	6,9
Diptera	Limoniidae	Limonia nigropunctata	Black-spot Limonia	none	not yet evaluated		S		BC	5
Diptera	Limoniidae	Limonia phragmitidis	Common Yellow Three-dot Limonia	none	not yet evaluated		S/C		ABC	5,6
Diptera	Limoniidae	Molophilus bihamatus*	Yellow-legged Black Mol	Nationally Scarce (Notable)	not yet evaluated		C	alder carr	B	5
Diptera	Limoniidae	Molophilus griseus	Heron-head Mol	none	not yet evaluated				B	5
Diptera	Limoniidae	Molophilus obscurus	Large-thumbed Dark Mol	none	not yet evaluated		W		A	5
Diptera	Limoniidae	Ormosia depilata*	Lesser Grey Bead	none	not yet evaluated		C		B	5
Diptera	Limoniidae	Ormosia hederae	Clefted Grey Bead	none	not yet evaluated		S/C		A	5
Diptera	Limoniidae	Ormosia nodulosa*	Common Tabbed Bead	none	not yet evaluated		S		A	6
Diptera	Limoniidae	Phylidorea ferruginea	Ringed Orange Longtail	none	not yet evaluated		W		AB	5,9
Diptera	Limoniidae	Pilaria discicollis	Yellow-shouldered Water-longtail	none	not yet evaluated		W		B	6
Diptera	Micropezidae – Stilt-legged Flies	Neria cibaria		none	Least Concern		S		A	6
Diptera	Pallopteridae – Trembling-wing Flies	Palloptera quinquemaculata*		none	Least Concern				C	5
Diptera	Pediciidae – Hairy-eyed Craneflies	Tricyphona immaculata	Single-striped Black Hairy-eye	none	not yet evaluated		W		ABC	5
Diptera	Platystomatidae – Signal Flies	Platystoma seminationis	Speckled Semaphor Fly	none	not yet evaluated		S		A	5,6
Diptera	Platystomatidae	Rivellia syngenesiae	Small Semaphor Fly	none	not yet evaluated		W	greater bird's-foot trefoil	A	6
Diptera	Ptychopteridae – Phantom Craneflies	Ptychoptera minuta	Acid Weak-mark Foldwing	none	Least Concern		P/W/C		B	5
Diptera	Rhagionidae – Snipe Flies	Chrysopilus cristatus	Black Snipefly	none	Least Concern		G		AC	6,7
Diptera	Rhagionidae	Chrysopilus asiliformis	Little Snipefly	none	Least Concern				C	7
Diptera	Rhagionidae	Rhagio lineola	Small Fleck-winged Snipefly	none	Least Concern		S		BC	6,7
Diptera	Rhagionidae	Rhagio scolopaceus	Downlooker Snipefly	none	Least Concern		S		A	5
Diptera	Scathophagidae – Dung Flies	Cordilura aemula*	Broadlands Cordilura	Nationally Rare (RDB3)	not yet evaluated		W		C	5
Diptera	Scathophagidae	Cordilura pubera*		none	not yet evaluated		W		A	5,6

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Diptera	Scathophagidae	Norellia spinipes*	Daffodil Dung Fly	[Nationally Scarce (Notable)]	not yet evaluated				B	1
Diptera	Scathophagidae	Scathophaga furcata	Furcate Dung Fly	none	not yet evaluated			dung	B	5
Diptera	Scathophagidae	Scathophaga stercoraria	Yellow Dung Fly	none	not yet evaluated			dung	ABC	2,5,9
Diptera	Sciaridae – Dark-winged Fungus Gnats	[Sciara hemerobioides]							C	6
Diptera	Stratiomyidae – Soldier Flies	Beris chalybata	Murky-legged Black Legionnaire	none	Least Concern		S		ABC	5
Diptera	Stratiomyidae	Chloromyia formosa	Broad Centurion	none	Least Concern		G	dung	AB	5,6,7
Diptera	Stratiomyidae	Chorisops tibialis	Dull Four-spined Legionnaire	none	Least Concern		S		AC	7
Diptera	Stratiomyidae	Nemotelus nigrinus	All-black Snout	none	Least Concern		W		A	5
Diptera	Stratiomyidae	Nemotelus pantherinus	Fen Snout	none	Least Concern		W		A	5,6
Diptera	Stratiomyidae	Odontomyia tigrina	Black Colonel	none	Least Concern		W		C	5
Diptera	Stratiomyidae	Oxycera nigricornis	Delicate Soldier	none	Least Concern		W		B	7
Diptera	Stratiomyidae	Pachygaster atra	Dark-winged Black	none	Least Concern		S		ABC	6,7
Diptera	Stratiomyidae	Pachygaster leachii	Yellow-legged Black	none	Least Concern		S		ABC	7
Diptera	Syrphidae – Hover Flies	Baccha elongata		none	Least Concern		S		BC	5
Diptera	Syrphidae	Chrysotoxum cautum*		none	Least Concern		G		A	5
Diptera	Syrphidae	Chrysotoxum elegans*	Variable Spearhorn	Nationally Scarce	Least Concern				C	9
Diptera	Syrphidae	Chrysotoxum festivum*		none	Least Concern				A	9
Diptera	Syrphidae	Epistrophe eligans		none	Least Concern		S		ABC	5
Diptera	Syrphidae	Episyrphus balteatus	Marmalade Hoverfly	none	Least Concern				AC	5,6,7
Diptera	Syrphidae	Eristalis pertinax	Tapered Dronefly	none	Least Concern				AC	6,7
Diptera	Syrphidae	Eristalis tenax	Common Dronefly	none	Least Concern				C	7
Diptera	Syrphidae	Eupeodes luniger		none	Least Concern				AC	5
Diptera	Syrphidae	Helophilus pendulus		none	Least Concern		W		AC	9
Diptera	Syrphidae	Leucozona lucorum		none	Least Concern				B	5
Diptera	Syrphidae	Melanostoma mellinum	Short Melanostoma	none	Least Concern				AC	7
Diptera	Syrphidae	Merodon equestris*	Narcissus Fly	none	Least Concern				A	6
Diptera	Syrphidae	Neoascia tenur		none	Least Concern		W		AC	5,6
Diptera	Syrphidae	Platycheirus albimanus		none	Least Concern				ABC	5
Diptera	Syrphidae	Platycheirus granditarsus*	Red-belted Boxer	none	Least Concern		W		A	5
Diptera	Syrphidae	Platycheirus peltatus	Meadow Boxer	none	Least Concern		G		AC	5,7

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Diptera	Syrphidae	Rhingia campestris		none	Least Concern		G	dung	C	5
Diptera	Syrphidae	Sphaerophoria scripta	Common Twist-tail	none	Least Concern		G		AC	6,7,9
Diptera	Syrphidae	Syritta pipiens	Compost Hoverfly	none	Least Concern		G		C	7
Diptera	Syrphidae	Syrphus ribesii	Humming Syrphus	none	Least Concern				AC	5
Diptera	Syrphidae	Syrphus sp							B	5
Diptera	Syrphidae	Tropidia scita	Tooth-thighed Hoverfly	none	Least Concern		W		A	5,6
Diptera	Syrphidae	Volucella bombylans	Bumblebee Plumehorn	none	Least Concern				AB	6
Diptera	Syrphidae	Volucella zonaria	Hornet Hoverfly	none	Least Concern				C	7
Diptera	Syrphidae	Xanthogramma pedissequum	Superb Ant-hill Hoverfly	none	Least Concern		G		AB	5
Diptera	Tabanidae – Horse Flies, Clegs, Deer Flies	Chrysops caecutiens	Splayed Deerfly	none	Least Concern		W	mammals	A	7
Diptera	Tabanidae	Haematopota pluvialis	Notch-horned Cleg	none	Least Concern			mammals	AC	7
Diptera	Tabanidae	Hybomitra bimaculata	Hairy-legged Horsefly	none	Least Concern		W/S	mammals	A	6
Diptera	Tachinidae – Parasitic Flies	Cistogaster globosa		[Nationally Rare (Red Data Book 2)]	not yet evaluated		H/G	Aelia acuminata	C	7
Diptera	Tachinidae	Tachina fera		none	not yet evaluated				A	9
Diptera	Tephritidae – Picture-winged Flies or Fruit Flies (part)	Anomoia purmunda		none	not yet evaluated		S	hawthorn	C	7
Diptera	Tephritidae	Chaetostomella cylindrica*		none	not yet evaluated		G	thistles, knapweeds	A	6
Diptera	Tephritidae	Philophylla caesio		none	not yet evaluated			stinging nettle	B	7
Diptera	Tephritidae	Tephritis neesii*		none	not yet evaluated		G	Ox-eye daisy	C	1
Diptera	Tephritidae	Terellia ruficauda		none	not yet evaluated		G	thistles	A	7
Diptera	Tephritidae	Terellia serratulae*		none	not yet evaluated		G	thistles	A	7
Diptera	Tephritidae	Urophora cardui		none	not yet evaluated		G	creeping thistle	A	6
Diptera	Tephritidae	Urophora quadrifasciata*		none	not yet evaluated		G	knapweed	A	6
Diptera	Therevidae – Stiletto Flies	Thereva nobilitata	Common Stiletto	none	Least Concern				C	6
Diptera	Tipulidae – Craneflies	Nephrotoma appendiculata	Inverted-U Tiger	none	not yet evaluated		G		A	5
Diptera	Tipulidae	Nephrotoma flavescens	Primrose Tiger	none	not yet evaluated		G		ABC	6,7
Diptera	Tipulidae	Nephrotoma quadrifaria	Wing-band Tiger	none	not yet evaluated		S		A	5
Diptera	Tipulidae	Nigrotipula nigra	Chocolate Long-palp	none	not yet evaluated		W		C	6
Diptera	Tipulidae	Tipula luna	Golden-tufted Grey Long-palp	none	not yet evaluated		W		AB	5

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Diptera	Tipulidae	Tipula lunata	Tabbed Orange Long-palp	none	not yet evaluated		S		AB	5,6
Diptera	Tipulidae	Tipula maxima	Giant Long-palp	none	not yet evaluated		W		B	6
Diptera	Tipulidae	Tipula oleracea	Marsh White-stripe	none	not yet evaluated		W		A	5
Diptera	Tipulidae	Tipula paludosa	Meadow White-stripe	none	not yet evaluated		G		AC	9
Diptera	Tipulidae	Tipula varipennis	Common Black-legged Mottle	none	not yet evaluated		S		C	5
Diptera	Tipulidae	Tipula vernalis	Grass Long-palp	none	not yet evaluated		G		ABC	5,6
Diptera	Tipulidae	Tipula vittata	Twin-striped Grey Long-palp	none	not yet evaluated		C		B	5
Diptera	Trichoceridae – Winter Gnats	Trichocera annulata*	Banded Winter Gnat	none	not yet evaluated				B	1
Diptera	Trichoceridae	Trichocera regelationis*	Lone-spot Winter Gnat	none	not yet evaluated				C	1
Diptera	Trichoceridae	Trichocera saltator*	Long-tailed Black Winter Gnat	none	not yet evaluated				B	1
Ephemeroptera – MAYFLIES	Baetidae – Mayflies (part)	Cloeon dipterum		none	Least Concern		R		C	5
Glomerida – PILL MILLIPEDES	Glomeridae – Pill Millipedes	Glomeris marginata	Pill Millipede	none	Least Concern		S		B	5
Hemiptera – TRUE BUGS	Acanthosomatidae – Shieldbugs (part)	Acanthosoma haemorrhoidale	Hawthorn Shieldbug	none	Least Concern		S	hawthorn	C	7
Hemiptera	Acanthosomatidae	Elasmostethus interstinctus	Birch Shieldbug	none	Least Concern		S	birch	BC	5,9
Hemiptera	Acanthosomatidae	Elasmucha grisea	Parent Bug	none	Least Concern		S	birch, alder	ABC	5,6,7,9
Hemiptera	Anthocoridae – Flowerbugs	Acompocoris alpinus		none	not yet evaluated		S	pines	C	7
Hemiptera	Anthocoridae	Anthocoris confusus		none	not yet evaluated		S		ABC	5,7
Hemiptera	Anthocoridae	Anthocoris limbatus		none	not yet evaluated		C	willows	C	7
Hemiptera	Anthocoridae	Anthocoris nemoralis		none	not yet evaluated		S		ABC	1,5,6
Hemiptera	Anthocoridae	Anthocoris nemorum		none	not yet evaluated				ABC	5,7
Hemiptera	Anthocoridae	Anthocoris simulans		none	not yet evaluated		S	ash	A	7
Hemiptera	Anthocoridae	Buchananiella continua		none	not yet evaluated		S		B	7
Hemiptera	Anthocoridae	Cardiastethus fasciiventris		none	not yet evaluated		S		AC	1,5,7
Hemiptera	Anthocoridae	Orius niger*		none	not yet evaluated		G		A	1
Hemiptera	Anthocoridae	Temnostethus gracilis		none	not yet evaluated		S		AC	7
Hemiptera	Anthocoridae	Temnostethus pusillus		none	not yet evaluated		S		C	6
Hemiptera	Aphididae – Aphids	Lachnus roboris*	Variegated Oak Aphid	none	not yet evaluated		S	oaks	C	7
Hemiptera	Aphrophoridae – Froghoppers	Aphrophora alni	Alder Froghopper	none	not yet evaluated		S		AB	7,9
Hemiptera	Aphrophoridae	Neophilaenus lineatus		none	not yet evaluated		G		AC	6,9

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Hemiptera	Aphrophoridae	Philaenus spumarius	Common Froghopper	none	not yet evaluated		G		ABC	6,7
Hemiptera	Aradidae – Flatbugs	Aneurus avenius		none	not yet evaluated		S	dead wood	A	5,7
Hemiptera	Berytidae – Stiltbugs	Berytinus minor		none	not yet evaluated		G	Fabaceae	C	9
Hemiptera	Cercopidae – Cercopid Froghoppers	Cercopis vulnerata	Red-and-black Froghopper	none	not yet evaluated		G		AC	5,6
Hemiptera	Cicadellidae – Leafhoppers	Alebra albostriella		none	not yet evaluated		S	oaks	C	7
Hemiptera	Cicadellidae	Allygus ?communis				YES			C	7,9
Hemiptera	Cicadellidae	Allygus mixtus		none	not yet evaluated		S		AC	7
Hemiptera	Cicadellidae	Allygus modestus		none	not yet evaluated		S		AC	6,7
Hemiptera	Cicadellidae	Anoscopus serratulae*		none	not yet evaluated		G		AC	6,7
Hemiptera	Cicadellidae	Aphrodes makarovi		none	not yet evaluated		G		AC	7,9
Hemiptera	Cicadellidae	Arthaldeus pascuellus		none	not yet evaluated		G	Poaceae	A	6
Hemiptera	Cicadellidae	Arthaldeus striifrons*		none	not yet evaluated		G		C	6
Hemiptera	Cicadellidae	Athysanus argentarius		none	not yet evaluated		G		A	7
Hemiptera	Cicadellidae	Cicadella viridis		none	not yet evaluated		W		AC	7
Hemiptera	Cicadellidae	Cicadula aurantipes*		none	not yet evaluated		W		AC	7
Hemiptera	Cicadellidae	Cicadula flori*		none	not yet evaluated		W	Carex sp	A	6
Hemiptera	Cicadellidae	Cicadula quadrinotata		none	not yet evaluated		W	rushes, sedges	A	6
Hemiptera	Cicadellidae	Conosanus obsoletus		none	not yet evaluated		W		C	7
Hemiptera	Cicadellidae	Doratura stylata		none	not yet evaluated		G		C	7
Hemiptera	Cicadellidae	Eupteryx aurata		none	not yet evaluated			stinging nettle mainly	C	7
Hemiptera	Cicadellidae	Eupteryx melissae*		none	not yet evaluated			labiates	A	6
Hemiptera	Cicadellidae	Eupteryx urticae		none	not yet evaluated			stinging nettle	BC	6,7
Hemiptera	Cicadellidae	Euscelis incisus		none	not yet evaluated		G		AC	5,6,7
Hemiptera	Cicadellidae	Iassus lanio		none	not yet evaluated		S	oaks	BC	7
Hemiptera	Cicadellidae	Ledra aurita*		none	not yet evaluated		S	oaks	BC	5,7
Hemiptera	Cicadellidae	Linnavuoriana decempunctata*		none	not yet evaluated		S	birch mainly	B	1
Hemiptera	Cicadellidae	Macropsis fuscinervis*		none	not yet evaluated		S	aspen	C	6
Hemiptera	Cicadellidae	Macropsis scotti		none	not yet evaluated		S	bramble	A	7
Hemiptera	Cicadellidae	Macropsis scutellata		none	not yet evaluated			stinging nettle	B	7
Hemiptera	Cicadellidae	Macrosteles horvathi*		none	not yet evaluated		W		A	7
Hemiptera	Cicadellidae	Oncopsis alni		none	not yet evaluated		S/C	alders	A	6
Hemiptera	Cicadellidae	Oncopsis avellanae		none	not yet evaluated		S	hazel	C	7
Hemiptera	Cicadellidae	Oncopsis tristis		none	not yet evaluated		S	birch	B	7

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Hemiptera	Cicadellidae	Populicerus laminatus*		none	not yet evaluated		S	aspen, grey poplar	C	6
Hemiptera	Cicadellidae	Psammotettix confinis		none	not yet evaluated		G	Poaceae	AC	6,7,9
Hemiptera	Cicadellidae	Streptanus sordidus		none	not yet evaluated		G		A	6
Hemiptera	Cicadellidae	Thamnotettix dilutior*		none	not yet evaluated		S	mainly on oaks	C	6
Hemiptera	Cicadellidae	Zyginidia scutellaris		none	not yet evaluated		G		A	6
Hemiptera	Cixiidae – Lacehoppers	Cixius nervosus		none	not yet evaluated		S		ABC	5,6,7
Hemiptera	Coreidae – Leatherbugs	Coreus marginatus	Dock Bug	none	Least Concern		G	docks	AC	5,6,7,9
Hemiptera	Coreidae	Gonocerus acuteangulatus	Box Bug	none	Least Concern		S	hawthorn, blackthorn etc	B	1
Hemiptera	Coreidae	Syromastus rhombeus	Rhombic Leatherbug	none	Least Concern		H	sandworts, spurreys etc	AC	5,7,9
Hemiptera	Corixidae – Lesser Water Boatmen	Callicorixa praeusta		none	Least Concern		P/R		A	6
Hemiptera	Cydnidae – Shieldbugs (part)	Legnotus limbosus	Bordered Shieldbug	none	Least Concern		G (mainly)	Galium sp	C	5
Hemiptera	Cydnidae	Sehirus luctuosus	Forget-me-not Shieldbug	none	Least Concern		G	Forget-me-not	B	5,6
Hemiptera	Cydnidae	Tritomegas bicolor	Pied Shieldbug	none	Least Concern		G	white deadnettle	A	5
Hemiptera	Delphacidae – Planthoppers	Asiraca clavicornis*		Nationally Scarce (Notable B)	not yet evaluated		G		AC	5,9
Hemiptera	Delphacidae	Chloriona smaragdula		none	not yet evaluated		W	Phragmites	AC	6,7
Hemiptera	Delphacidae	Conomelus anceps		none	not yet evaluated		W	Juncus	ABC	1,6,7
Hemiptera	Delphacidae	Delphax pulchellus		none	not yet evaluated		W	Phragmites	AC	7
Hemiptera	Delphacidae	Dicranotropis hamata		none	not yet evaluated		G		C	5,6
Hemiptera	Delphacidae	Euides basilinea		none	not yet evaluated		W	Phragmites	B	6
Hemiptera	Delphacidae	Florodelphax leptosoma		none	not yet evaluated		W		A	5
Hemiptera	Delphacidae	Javesella dubia		none	not yet evaluated				AC	5
Hemiptera	Delphacidae	Kelisia punctulum*		none	not yet evaluated		W	sedges	A	2
Hemiptera	Delphacidae	Stenocranus major		none	not yet evaluated		W	Phalaris	A	2,5
Hemiptera	Delphacidae	Stenocranus minutus*		none	not yet evaluated		G		C	1,5
Hemiptera	Lygaeidae – Groundbugs	Arocatus roeselii*		none	not yet evaluated	YES	S	alders	AC	5,9
Hemiptera	Lygaeidae	Chilacis typhae	Reedmace Bug	none	not yet evaluated		W	Typha beds	AC	7
Hemiptera	Lygaeidae	Cymus claviculus		none	not yet evaluated		H	toad rush, knotgrass	A	7
Hemiptera	Lygaeidae	Cymus melanocephalus		none	not yet evaluated		W		A	2,5,6
Hemiptera	Lygaeidae	Drymus brunneus		none	not yet evaluated		S		B	1,5,9
Hemiptera	Lygaeidae	Drymus pumilio*		Nationally	not yet evaluated		W		A	2

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
				Scarce (Notable B)						
Hemiptera	Lygaeidae	Drymus ryeii		none	not yet evaluated				AB	5,6
Hemiptera	Lygaeidae	Drymus sylvaticus		none	not yet evaluated				ABC	2,5,6,7
Hemiptera	Lygaeidae	Gastrodes grossipes		none	not yet evaluated		S	Scot's pine	C	1,5
Hemiptera	Lygaeidae	Heterogaster urticae	Nettle Groundbug	none	not yet evaluated			stinging nettle	AC	5,6,7
Hemiptera	Lygaeidae	Ischnodemus sabuleti	European Cinchbug	none	not yet evaluated		G/W	grasses and reeds	A	1,5,6
Hemiptera	Lygaeidae	Kleidocerys resedae	Birch Catkin Bug	none	not yet evaluated		S	birch and alder	ABC	1,5,6,7,9
Hemiptera	Lygaeidae	Megalonotus chiragra		none	not yet evaluated		H		A	6
Hemiptera	Lygaeidae	Megalonotus emarginatus*		none	not yet evaluated		H		AC	5,7
Hemiptera	Lygaeidae	Megalonotus praetextatus		Nationally Scarce (Notable B)	not yet evaluated		H		AC	7
Hemiptera	Lygaeidae	Megalonotus sabulicola		Nationally Scarce (Notable B)	not yet evaluated		H		AC	6,7
Hemiptera	Lygaeidae	Metopoplax ditomoides		none	not yet evaluated		H	often mayweeds	AC	6,7
Hemiptera	Lygaeidae	Nysius huttoni		none	not yet evaluated		G/H		C	6
Hemiptera	Lygaeidae	Nysius senecionis		none	not yet evaluated		G/H	ragworts etc	A	7
Hemiptera	Lygaeidae	Ortholomus punctipennis*		Nationally Rare (RDB3)	not yet evaluated	YES	H		C	7
Hemiptera	Lygaeidae	Peritrechus geniculatus		none	not yet evaluated		G		C	6,7
Hemiptera	Lygaeidae	Peritrechus lundii		none	not yet evaluated		H		C	7
Hemiptera	Lygaeidae	Peritrechus nubilus		none	not yet evaluated		G		C	1,5
Hemiptera	Lygaeidae	Raglius alboacuminatus*		Nationally Scarce (Notable B)	not yet evaluated	YES		black horehound	A	5
Hemiptera	Lygaeidae	Scolopostethus affinis		none	not yet evaluated				AC	1,5,6
Hemiptera	Lygaeidae	Scolopostethus grandis		none	not yet evaluated				C	2
Hemiptera	Lygaeidae	Scolopostethus puberulus		none	not yet evaluated		W/G		A	1,2
Hemiptera	Lygaeidae	Scolopostethus thomsoni		none	not yet evaluated				ABC	1,2,5,6,7
Hemiptera	Lygaeidae	Sphragisticus nebulosus*			not yet evaluated		H		C	7
Hemiptera	Lygaeidae	Stygnocoris fuligineus		none	not yet evaluated		G		BC	7,9
Hemiptera	Lygaeidae	Taphropeltus contractus		none	not yet evaluated		G/H		B	5
Hemiptera	Lygaeidae	Trapezonotus arenarius		none	not yet evaluated		H		C	7
Hemiptera	Lygaeidae	Trapezonotus desertus		none	not yet evaluated		H		C	6

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Hemiptera	Microphysidae – Minute Bladderbugs	Loricula elegantula		none	not yet evaluated		S	lichens on trees	ABC	7
Hemiptera	Microphysidae	Loricula pselaphiformis		none	not yet evaluated		S	lichens on trees	AC	5,6
Hemiptera	Miridae – Plant or Capsidbugs	Amblytylus nasutus		none	not yet evaluated		G		AC	6,7
Hemiptera	Miridae	Apolygus lucorum		none	not yet evaluated				A	7
Hemiptera	Miridae	Apolygus spinolae		none	not yet evaluated				C	7
Hemiptera	Miridae	Atractotomus mali		none	not yet evaluated		S	hawthorn, apple	AC	6,7
Hemiptera	Miridae	Blepharidopterus angulatus	Black-kneed Capsid	none	not yet evaluated		S	birch, alder etc	ABC	7,9
Hemiptera	Miridae	Bryocoris pteridis		none	not yet evaluated		S	ferns	B	6
Hemiptera	Miridae	Campyloneura virgula		none	not yet evaluated		S		ABC	7
Hemiptera	Miridae	Capsus ater		none	not yet evaluated		G	Poaceae	ABC	6
Hemiptera	Miridae	Capsus wagneri		Nationally Scarce (Notable B)	not yet evaluated	YES	W	reed canary grass etc	A	7
Hemiptera	Miridae	Chlamydatus pullus*		none	not yet evaluated		H		B	7
Hemiptera	Miridae	Closterotomus fulvomaculatus		none	not yet evaluated			hops, nettles	A	6
Hemiptera	Miridae	Closterotomus norwegicus		none	not yet evaluated		G		AC	7
Hemiptera	Miridae	Deraeocoris flavilinea		none	not yet evaluated		S		AC	6,7
Hemiptera	Miridae	Deraeocoris lutescens		none	not yet evaluated		S	oaks mainly	BC	5,7,9
Hemiptera	Miridae	Deraeocoris ruber		none	not yet evaluated				ABC	7
Hemiptera	Miridae	Dicyphus pallidus*		none	not yet evaluated			hedge woundwort	B	7
Hemiptera	Miridae	Dryophilocoris flavoquadrimaculatus		none	not yet evaluated		S	oaks	BC	5
Hemiptera	Miridae	Grypocoris stysi		none	not yet evaluated		C/S	nettles etc	B	6,7
Hemiptera	Miridae	Halticus luteicollis		none	not yet evaluated			bedstraws, white bryony	ABC	7
Hemiptera	Miridae	Harpocera thoracica		none	not yet evaluated		S	oaks	AC	5
Hemiptera	Miridae	Heterotoma planicornis		none	not yet evaluated				AC	6,7
Hemiptera	Miridae	Leptopterna dolabrata	Meadow Plant Bug	none	not yet evaluated		G	Poaceae	AC	6,7
Hemiptera	Miridae	Leptopterna ferrugata		none	not yet evaluated		G/H	Poaceae	C	6
Hemiptera	Miridae	Liocoris tripustulatus		none	not yet evaluated			stinging nettle	ABC	5,6,7,9
Hemiptera	Miridae	Lopus decolor*		none	not yet evaluated		G/H	Poaceae	AC	7
Hemiptera	Miridae	Lygocoris pabulinus	Common Green Capsid	none	not yet evaluated				BC	7

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Hemiptera	Miridae	Lygocoris rugicollis		none	not yet evaluated		C	willows	AC	6,7
Hemiptera	Miridae	Lygus pratensis complex							AC	7,9
Hemiptera	Miridae	Lygus rugulipennis	Tarnished Plant Bug	none	not yet evaluated				B	1
Hemiptera	Miridae	Megaloceroea recticornis		none	not yet evaluated		G	Poaceae	A	6,7
Hemiptera	Miridae	Miris striatus		none	not yet evaluated		S	usually hawthorn	AC	5
Hemiptera	Miridae	Monalocoris filicis		none	not yet evaluated		S	bracken	B	5
Hemiptera	Miridae	Neolygus contaminatus		none	not yet evaluated		S	birch	AB	6
Hemiptera	Miridae	Neolygus viridis		none	not yet evaluated		S		C	7
Hemiptera	Miridae	Notostira elongata		none	not yet evaluated		G	Poaceae	A	6,9
Hemiptera	Miridae	Oncotylus viridiflavus		none	not yet evaluated		G	knapweed	A	7
Hemiptera	Miridae	Orthocephalus saltator*		none	not yet evaluated		G		A	7
Hemiptera	Miridae	Orthonotus rufifrons		none	not yet evaluated		S/C	stinging nettle	B	7
Hemiptera	Miridae	Orthotylus marginalis		none	not yet evaluated		S/C	willows	C	6
Hemiptera	Miridae	Orthotylus nassatus*		none	not yet evaluated		S	oaks, ash	C	7
Hemiptera	Miridae	Orthotylus prasinus*		none	not yet evaluated		S	elm, oak, hazel	BC	7
Hemiptera	Miridae	Orthotylus tenellus		none	not yet evaluated		S	oak, ash hazel	C	6
Hemiptera	Miridae	Pantilius tunicatus*		none	not yet evaluated		S		C	9
Hemiptera	Miridae	Phoenicocoris obscurellus*		none	not yet evaluated		S	Scot's pine	C	6
Hemiptera	Miridae	Phylus melanocephalus		none	not yet evaluated		S	oaks	A	6
Hemiptera	Miridae	Phytocoris reuteri*		none	not yet evaluated		S	often oaks	C	7
Hemiptera	Miridae	Phytocoris ulmi		none	not yet evaluated		S	hawthorn (mainly)	AC	7
Hemiptera	Miridae	Pilophorus cinnamopterus*		none	not yet evaluated		S	Scot's pine	C	9
Hemiptera	Miridae	Pilophorus perplexus		none	not yet evaluated		S	oaks mainly	C	7
Hemiptera	Miridae	Pinalitus cervinus		none	not yet evaluated		S	hazel, ash, ivy	A	7
Hemiptera	Miridae	Pithanus maerkelii		none	not yet evaluated		G		AC	6,7
Hemiptera	Miridae	Plagiognathus arbustorum		none	not yet evaluated			often stinging nettles	ABC	6,7
Hemiptera	Miridae	Plagiognathus chrysanthemi		none	not yet evaluated		G	Compositae	AC	6,7
Hemiptera	Miridae	Polymerus palustris*		none	not yet evaluated		W	marsh bedstraw	A	7
Hemiptera	Miridae	Psallus ambiguus		none	not yet evaluated		C/S	alder, hawthorn, sallows etc	A	6
Hemiptera	Miridae	Psallus assimilis		none	not yet evaluated		S	field maple	A	6
Hemiptera	Miridae	Psallus mollis*		none	not yet evaluated		S	oak, apple	C	6
Hemiptera	Miridae	Psallus perrisi		none	not yet evaluated		S	oaks	A	6

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Hemiptera	Miridae	Psallus salicis		none	not yet evaluated		S	alder	A	9
Hemiptera	Miridae	Psallus varians		none	not yet evaluated		S	oaks	ABC	6
Hemiptera	Miridae	Pseudoloxops coccineus*		none	not yet evaluated		S	ash	A	7
Hemiptera	Miridae	Rhabdomiris striatellus		none	not yet evaluated		S	oaks	ABC	5,6
Hemiptera	Miridae	Stenodema calcarata		none	not yet evaluated		G	Poaceae	AC	1,5,6,7
Hemiptera	Miridae	Stenodema laevigata		none	not yet evaluated		G	Poaceae	ABC	1,5,6,7
Hemiptera	Miridae	Stenotus binotatus		none	not yet evaluated		G	Poaceae	ABC	6,7
Hemiptera	Miridae	Teratocoris antennatus		none	not yet evaluated		W	Club-rushes	AC	6,7
Hemiptera	Miridae	Trigonotylus caelestialium		none	not yet evaluated		G	Poaceae	A	7
Hemiptera	Miridae	Trigonotylus ruficornis		none	not yet evaluated		G	Poaceae	C	6
Hemiptera	Nabidae – Damselbugs	Himacerus apterus		none	not yet evaluated		S		ABC	7,9
Hemiptera	Nabidae	Himacerus mirmicoides		none	not yet evaluated		G		AC	1,5,6,7,9
Hemiptera	Nabidae	Nabis ferus	Field Damsel Bug	none	not yet evaluated		G		AC	5,7
Hemiptera	Nabidae	Nabis flavomarginatus	Broad Damsel Bug	none	not yet evaluated		G		A	7
Hemiptera	Nabidae	Nabis limbatus	Marsh Damsel Bug	none	not yet evaluated		W/G		BC	7,9
Hemiptera	Nabidae	Nabis rugosus	Common Damsel Bug	none	not yet evaluated		G		ABC	5,6,9
Hemiptera	Pentatomidae – Shieldbugs (part)	Aelia acuminata	Bishop's Mitre Shieldbug	none	Least Concern		G	Poaceae	AC	5,6,7,9
Hemiptera	Pentatomidae	Dolycoris baccarum	Hairy Shieldbug	none	Least Concern		G/H		AC	5,7
Hemiptera	Pentatomidae	Eurydema oleracea	Brassica Shieldbug	none	Least Concern			Cruciferae	A	5
Hemiptera	Pentatomidae	Eysarcoris venustissimus	Woundwort Shieldbug	none	Least Concern			hedge woundwort	B	5
Hemiptera	Pentatomidae	Palomena prasina	Common Green Shieldbug	none	Least Concern				ABC	5,7,9
Hemiptera	Pentatomidae	Pentatoma rufipes	Red-legged Shieldbug	none	Least Concern		S		AC	7,9
Hemiptera	Pentatomidae	Piezodorus lituratus	Gorse Shieldbug	none	Least Concern		H	gorse	C	5
Hemiptera	Pentatomidae	Podops inunctus	Turtle Shieldbug	none	Least Concern		G	Poaceae	A	6
Hemiptera	Piesmatidae – Beetbugs	Piesma maculatum		none	not yet evaluated				A	9
Hemiptera	Psyllidae – Jumping Plant Lice (part)	Psylla alni		none	not yet evaluated		S	alder	ABC	6,7,9
Hemiptera	Rhopalidae – Rhopalid bugs	Corizus hyoscyami		none	Least Concern		G		A	5
Hemiptera	Rhopalidae	Rhopalus parumpunctatus		Nationally Scarce	Least Concern		G/H		C	7,9
Hemiptera	Rhopalidae	Rhopalus subrufus		none	Least Concern		G		C	9
Hemiptera	Rhopalidae	Stictopleurus abutilon		none	NA		G		C	7
Hemiptera	Saldidae – Shorebugs	Saldula saltatoria		none	NA		G		A	7,9
Hemiptera	Scutelleridae – Tortoise	Eurygaster testudinaria	Tortoise Shieldbug	none	Least Concern		G	Poaceae	C	7

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
	Shieldbugs									
Hemiptera	Thyreocoridae – Thyreocorid Bugs	Thyreocoris scarabaeoides	Scarab Shieldbug	Nationally Scarce	Least Concern		G/H	violets?	C	7
Hemiptera	Tingidae – Lacebugs	Acalypta parvula		none	not yet evaluated			lichens	C	5,7
Hemiptera	Tingidae	Kalama tricornis		none	not yet evaluated		H		AC	6,7,9
Hemiptera	Tingidae	Physatocheila confinis/dumetorum							ABC	1,5
Hemiptera	Tingidae	Tingis ampliata	Creeping Thistle Lacebug	none	not yet evaluated		G	creeping thist;e	A	5,6
Hygrophila - FRESHWATER SNAILS	Lymnaeidae – Pond Snails	Stagnicola fuscus/palustris	Marsh Pond Snail				P/R		C	5
Hygrophila	Planorbidae – Ramshorn Snails	Anisus leucostoma	White-lipped Ramshorn	none	Least Concern		P/R		B	9
Hymenoptera – BEES, WASPS, ANTS, SAWFLIES	Andrenidae – Mining Bees	Andrena chrysosceles*	Hawthorn Mining Bee	none	not yet evaluated		S	hawthorn	A	5
Hymenoptera	Andrenidae	Andrena haemorrhoa	Orange-tailed Mining Bee	none	not yet evaluated				C	5
Hymenoptera	Apidae – Honey Bees, Bumblebees and allies	Apis mellifera	Western Honey Bee	none	not yet evaluated				AC	7
Hymenoptera	Apidae	Bombus hypnorum	Tree Bumblebee	none	not yet evaluated				AC	6,7
Hymenoptera	Apidae	Bombus lapidarius	Red-tailed Bumblebee	none	not yet evaluated				AC	5,7
Hymenoptera	Apidae	Bombus lucorum	White-tailed Bumblebee	none	not yet evaluated				AC	7
Hymenoptera	Apidae	Bombus pascuorum	Common Carder Bee	none	not yet evaluated				AC	7,9
Hymenoptera	Apidae	Bombus pratorum	Early Bumblebee	none	not yet evaluated				A	5
Hymenoptera	Apidae	Bombus terrestris	Buff-tailed Bumblebee	none	not yet evaluated				AC	5,6,7
Hymenoptera	Apidae	Nomada flava*	Flavous Nomad Bee	none	not yet evaluated				A	5
Hymenoptera	Apidae	Nomada fucata*	Painted Nomad Bee	Nationally Scarce (Notable A)	not yet evaluated				C	5
Hymenoptera	Apidae	Nomada ruficornis*	Fork-jawed Nomad Bee	none	not yet evaluated				B	5
Hymenoptera	Argidae – Argid Sawflies	Arge cyanocrocea*		none	Least Concern		S/G	Rubus	C	5
Hymenoptera	Cephidae – Stem-boring Sawflies	Cephus pygmeus	Wheat Stem Borer	none	Least Concern		S/G	grasses and buttercups	AC	5,6
Hymenoptera	Cephidae	Cephus spinipes*		none	Least Concern		G	grasses and buttercups	A	5

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Hymenoptera	Chrysididae – Cuckoo Wasps/Ruby-tailed Wasps	Chrysis illigeri		Nationally Scarce (Notable A)	not yet evaluated		H		C	6
Hymenoptera	Chrysididae	Hedychridium ardens		none	not yet evaluated		H		C	6
Hymenoptera	Chrysididae	Hedychrum niemelai		[Nationally Rare (Red Data Book 3)]	not yet evaluated		H		A	7
Hymenoptera	Crabronidae – Sand Wasps	Crabro cribrarius	Slender Bodied Digger Wasp	none	not yet evaluated		H	flies	AC	7
Hymenoptera	Crabronidae	Ectemnius continuus	Dark Fly Fox	none	not yet evaluated			dead wood and umbellifers	A	7
Hymenoptera	Formicidae – Ants	Formica fusca	Dusky Ant	none	not yet evaluated				C	2,5,7
Hymenoptera	Formicidae	Lasius brunneus	Brown Tree Ant	[Nationally Scarce (Notable A)]	not yet evaluated		S		ABC	5,6,7,9
Hymenoptera	Formicidae	Lasius flavus	Yellow Meadow Ant	none	not yet evaluated		G		A	5
Hymenoptera	Formicidae	Lasius niger sens. lat.							AC	2,5,6,7,9
Hymenoptera	Formicidae	Myrmica scabrinodis*		none	not yet evaluated				AC	5
Hymenoptera	Formicidae	Temnothorax nylanderi		none	not yet evaluated		S		BC	1,5
Hymenoptera	Halictidae – Sweat Bees, Blood Bees etc	Halictus tumulorum	Bronze Furrow Bee	none	not yet evaluated				A	5
Hymenoptera	Pompilidae – Spider-hunting Wasps	Evagetes crassicornis		none	not yet evaluated				A	6
Hymenoptera	Tenthredinidae – Tenthredinid Sawflies	Aglaostigma aucupariae		none	Least Concern		G/S	Galium sp	AC	5
Hymenoptera	Tenthredinidae	Dolerus aeneus		none	Least Concern		G	Poaceae	AC	5
Hymenoptera	Tenthredinidae	Dolerus aericeps		none	Least Concern		W	horsetails	A	6
Hymenoptera	Tenthredinidae	Dolerus nigratus		none	Least Concern		G	Poaceae	A	5
Hymenoptera	Tenthredinidae	Dolerus picipes*		none	Least Concern		G	Poaceae	C	5
Hymenoptera	Tenthredinidae	Dolerus puncticollis*		none	Least Concern		G	Poaceae	C	5
Hymenoptera	Tenthredinidae	Dolerus vestigialis		none	Least Concern		W	horsetails	A	5,6
Hymenoptera	Tenthredinidae	Eriocampa ovata		none	Least Concern		C	alder	A	5
Hymenoptera	Tenthredinidae	Eutomostethus ephippium		none	Least Concern			Poaceae	AC	5,7
Hymenoptera	Tenthredinidae	Eutomostethus luteiventris		none	Least Concern		W	Juncus effusus	A	5,6
Hymenoptera	Tenthredinidae	Euura clitellata		none	not yet evaluated		G	sedges, rushes, grasses	A	5

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Hymenoptera	Tenthredinidae	Hoplocampa crataegi		none	not yet evaluated		S	hawthorn	C	5
Hymenoptera	Tenthredinidae	Macrophya alboannulata*		none	Least Concern		S	elder	B	5
Hymenoptera	Tenthredinidae	Macrophya duodecimpunctata		none	Least Concern		W	sedges and grasses	A	5,6
Hymenoptera	Tenthredinidae	Nematus lucidus*		none	not yet evaluated		S	hawthorn, blackthorn	A	5
Hymenoptera	Tenthredinidae	Platycampus luridiventris*		none	not yet evaluated		S	alder	C	5
Hymenoptera	Tenthredinidae	Pristiphora biscalis*		none	not yet evaluated		S	blackthorn	C	5
Hymenoptera	Tenthredinidae	Rhogogaster scalaris		none	Least Concern				B	6
Hymenoptera	Tenthredinidae	Selandria serva		none	Least Concern		W	sedges, grasses, rushes	A	5,6
Hymenoptera	Tenthredinidae	Strombocerus delicatulus		none	Least Concern		S	ferns, bracken	B	5,7
Hymenoptera	Tenthredinidae	Tenthredo baetica	Crucifer Tenthredo	Nationally Scarce	Least Concern			Brassicaceae	A	5
Hymenoptera	Tenthredinidae	Tenthredopsis litterata*		none	Least Concern		G	Poaceae	A	5
Hymenoptera	Tenthredinidae	Tomostethus nigritus*		none	Least Concern		S	ash	A	5
Hymenoptera	Vespidae – Social Wasps	Vespula germanica	German Wasp	none	not yet evaluated				C	7
Hymenoptera	Vespidae	Vespula vulgaris	Common Wasp	none	not yet evaluated				C	5
Hymenoptera	Xyelidae – sawflies (part)	Xyela julii*	Short Daggertail	none	Vulnerable		S	pines	BC	5
Isopoda – WOODLICE	Armadillidiidae – Pill Woodlice	Armadillidium vulgare	Common Pill Woodlouse	none	Least Concern				AC	1,5,6,9
Isopoda	Asellidae – Water-slaters	Asellus aquaticus	Two-spotted Water-slater	none	Least Concern		P/R		B	5
Isopoda	Ligiidae – Woodlice (part)	Ligidium hypnorum		none	Least Concern		W/C		B	9
Isopoda	Ligiidae – Woodlice (part)	Oniscus asellus	Common Shiny Woodlouse	none	Least Concern				B	5
Isopoda	Ligiidae – Woodlice (part)	Philoscia muscorum	Common Striped Woodlouse	none	Least Concern				ABC	1,2,5,6
Isopoda	Ligiidae – Woodlice (part)	Porcellio scaber	Common Rough Woodlouse	none	Least Concern				ABC	1,2,5,7,9,12
Ixodida	Ixodidae – Ticks (part)	Ixodes sp							ABC	5,6
Julida	Julidae – Snake Millipedes	Cylindroiulus punctatus	Blunt-tailed Snake-millipede	none	Least Concern		S		B	1
Julida	Julidae	Ophyiulus pilosus		none	Least Concern		S		BC	5
Julida – SNAKE MILLIPEDES	Blaniulidae – Millipedes (part)	Proteroiulus fuscus*	Snake-millipede	none	Least Concern		S		B	1
Lepidoptera – MOTHS and	Adelidae – Longhorns	Adela reaumurella	Green Long-horn	none	not yet evaluated		S	leaf litter	BC	5

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
BUTTERFLIES										
Lepidoptera	Adelidae	Nematopogon swammerdamella	Large Long-horn	none	not yet evaluated				A	6
Lepidoptera	Blastobasidae – Scavenger Moths	Blastobasis lacticolella*	London Dowd	none	not yet evaluated			mosses, detritus etc	A	6
Lepidoptera	Coleophoridae – Casebearer Moths	Coleophora caespititiella*	Buff Rush Case-bearer	none	not yet evaluated		W	Juncus	A	6
Lepidoptera	Crambidae – Grass Moths	Anania hortulata	Small Magpie	none	not yet evaluated			labiates and bindweed	A	6
Lepidoptera	Crambidae	Anania perlucidalis	Fenland Pearl	none	not yet evaluated			thistles	A	6
Lepidoptera	Crambidae	Chrysoteuchia culmella	Garden Grass-veneer	none	not yet evaluated		G	Poaceae	A	6
Lepidoptera	Crambidae	Crambus lathoniellus	Hook-streak Grass-veneer	none	not yet evaluated		G	Poaceae	A	6
Lepidoptera	Crambidae	Parapoynx stratiotata	Ringed China-mark	none	not yet evaluated		P	pondweeds	A	6
Lepidoptera	Crambidae	Patania ruralis	Mother of Pearl	none	not yet evaluated			stinging nettle	C	7
Lepidoptera	Crambidae	Scoparia pyralella	Meadow Grey	none	not yet evaluated			detritus	A	6
Lepidoptera	Crambidae	Sitochroa verticalis	Lesser Pearl	none	not yet evaluated		H		A	6
Lepidoptera	Drepanidae – Hooktip Moths	Drepana falcataria	Pebble Hook-tip	none	Least Concern		S	birch, alder	A	6
Lepidoptera	Drepanidae	Tethea or	Poplar Lutestring	none	Least Concern		S/C	aspens and poplars	A	6
Lepidoptera	Erebidae – Erebid Moths	Cybosia mesomella	Four-dotted Footman	none	Least Concern				A	6
Lepidoptera	Erebidae	Eilema griseola	Dingy Footman	none	Least Concern		W/C	lichens and algae	C	7
Lepidoptera	Erebidae	Eilema sororcula*	Orange Footman	none	Least Concern		S	lichens on oak and beech	A	6
Lepidoptera	Erebidae	Laspeyria flexula	Beautiful Hook-tip	none	Least Concern			lichens	A	6
Lepidoptera	Erebidae	Lygephila pastinum	Blackneck	none	Near Threatened		W/G	tufted vetch	A	6
Lepidoptera	Erebidae	Macrochilo cribrumalis	Dotted Fan-foot	none	Least Concern		W	sedges and rushes	A	6
Lepidoptera	Erebidae	Rivula sericealis	Straw Dot	none	Least Concern		G	Poaceae	A	6
Lepidoptera	Erebidae	Spilosoma lutea	Buff Ermine	none	Least Concern				A	6
Lepidoptera	Erebidae	Thumatha senex	Round-winged Muslin	none	Least Concern		W	lichens and mosses	A	6
Lepidoptera	Erebidae	Tyria jacobaeae	Cinnabar	none	Least Concern		G	ragworts	A	6
Lepidoptera	Gelechiidae – Gelechiid Moths	Metzneria metzneriella*	Meadow Neb	none	not yet evaluated		G	knapweed	A	6
Lepidoptera	Geometridae – Geometrid Moths	Alcis repandata	Mottled Beauty	none	Least Concern				A	6
Lepidoptera	Geometridae	Cabera pusaria	Common White Wave	none	Least Concern		S	silver birch, alder, sallow	A	6
Lepidoptera	Geometridae	Campaea margaritaria	Light Emerald	none	Least Concern		S		A	6
Lepidoptera	Geometridae	Chiasmia clathrata	Latticed Heath	none	Near Threatened		G	Fabaceae	A	6
Lepidoptera	Geometridae	Colostygia pectinataria	Green Carpet	none	Least Concern		G	bedstraws	A	6
Lepidoptera	Geometridae	Epirrhoe alternata	Common Carpet	none	Least Concern		G	bedstraws	A	6

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Lepidoptera	Geometridae	Euphyia unangulata	Sharp-angled Carpet	none	Least Concern		S		A	6
Lepidoptera	Geometridae	Eupithecia vulgata	Common Pug	none	Least Concern		S		A	6
Lepidoptera	Geometridae	Idaea seriata	Small Dusty Wave	none	Least Concern			plant debris	A	6
Lepidoptera	Geometridae	Idaea trigeminata	Treble Brown Spot	none	Least Concern				A	6
Lepidoptera	Geometridae	Lomaspilis marginata	Clouded Border	none	Least Concern		S/C	aspen, poplars, willows	A	6
Lepidoptera	Geometridae	Macaria brunneata*	Rannoch Looper	[Nationally Scarce]	Least Concern			bilberry	A	6
Lepidoptera	Geometridae	Macaria notata	Peacock Moth	none	Least Concern		S	birch	A	6
Lepidoptera	Geometridae	Pasiphila rectangulata	Green Pug	none	Least Concern		S	hawthorn, blackthorn, crab apple	A	6
Lepidoptera	Geometridae	Peribatodes rhomboidaria	Willow Beauty	none	Least Concern				A	6
Lepidoptera	Geometridae	Plagodis dolabraria	Scorched Wing	none	Least Concern		S	oaks, birches	A	6
Lepidoptera	Geometridae	Timandra comae	Blood-vein	none	Least Concern			Polygonaceae	A	6
Lepidoptera	Geometridae	Xanthorhoe montanata	Silver-ground Carpet	none	Least Concern				A	6
Lepidoptera	Hepialidae – Swift Moths	Korscheltellus lupulina	Common Swift	none	Least Concern		W		A	6
Lepidoptera	Hesperiidae – Skipper Butterflies	Ochlodes sylvanus	Large Skipper	none	Least Concern		G	Cock's-foot, false brome	A	6
Lepidoptera	Hesperiidae	Thymelicus lineola	Essex Skipper	none	Least Concern		G	Poaceae	A	7
Lepidoptera	Hesperiidae	Thymelicus sylvestris	Small Skipper	none	Least Concern		G	Poaceae	C	7
Lepidoptera	Lycaenidae – Hairstreaks, Coppers and Blues	Aricia agestis*	Brown Argus	none	Least Concern		G/H		C	7
Lepidoptera	Lycaenidae	Celastrina argiolus	Holly Blue	none	Least Concern		S	holly, ivy	ABC	5,6
Lepidoptera	Lycaenidae	Favonius quercus	Purple Hairstreak	none	Least Concern		S	oak	C	5
Lepidoptera	Lycaenidae	Lycaena phlaeas	Small Copper	none	Least Concern		G	sorrels	C	5,7,9
Lepidoptera	Lycaenidae	Polyommatus icarus	Common Blue	none	Least Concern		G	Fabaceae	C	7
Lepidoptera	Noctuidae – Noctuid Moths	Agrotis clavis	Heart and Club	none	Least Concern				A	6
Lepidoptera	Noctuidae	Agrotis exclamationis	Heart and Dart	none	Least Concern				A	6
Lepidoptera	Noctuidae	Apamea anceps*	Large Nutmeg	none	Near Threatened		G	Poaceae	A	6
Lepidoptera	Noctuidae	Apamea crenata	Clouded-bordered Brindle	none	Least Concern			Poaceae	A	6
Lepidoptera	Noctuidae	Apamea monoglypha	Dark Arches	none	Least Concern			Poaceae	A	6
Lepidoptera	Noctuidae	Apamea sordens	Rustic Shoulder-knot	none	Least Concern			Poaceae	A	6
Lepidoptera	Noctuidae	Apamea unanimis	Small Clouded Brindle	none	Least Concern			Poaceae	A	6
Lepidoptera	Noctuidae	Autographa gamma	Silver Y	none	Least Concern				C	7
Lepidoptera	Noctuidae	Caradrina morpheus	Mottled Rustic	none	Least Concern				A	6

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Lepidoptera	Noctuidae	Charanyca trigrammica	Treble Lines	none	Least Concern		G		A	6
Lepidoptera	Noctuidae	Diachrysia chrysitis	Burnished Brass	none	Least Concern		G		A	6
Lepidoptera	Noctuidae	Hada plebeja*	Shears	none	Least Concern		G		A	6
Lepidoptera	Noctuidae	Hoplodrina ambigua	Vine's Rustic	none	Least Concern				A	6
Lepidoptera	Noctuidae	Lacanobia oleracea	Bright-line Brown-eye	none	Least Concern				A	6
Lepidoptera	Noctuidae	Lacanobia w-latinum*	Light Brocade	none	Least Concern				A	6
Lepidoptera	Noctuidae	Mythimna conigera	Brown-line Bright Eye	none	Least Concern			Poaceae	A	6
Lepidoptera	Noctuidae	Mythimna ferrago	Clay	none	Least Concern			Poaceae	A	6
Lepidoptera	Noctuidae	Mythimna pallens	Common Wainscot	none	Least Concern		G	Poaceae	A	6
Lepidoptera	Noctuidae	Noctua pronuba	Large Yellow Underwing	none	Least Concern				A	6
Lepidoptera	Noctuidae	Ochropleura plecta	Flame Shoulder	none	Least Concern				A	6
Lepidoptera	Noctuidae	Oligia fasciuncula	Middle-barred Minor	none	Least Concern		G	Poaceae	A	6
Lepidoptera	Noctuidae	Oligia latruncula*	Tawny Marbled Minor	none	Least Concern		G	Poaceae	A	6
Lepidoptera	Noctuidae	Oligia strigilis	Marbled Minor	none	Least Concern		G	Poaceae	A	6
Lepidoptera	Noctuidae	Rusina ferruginea	Brown Rustic	none	Least Concern				A	6
Lepidoptera	Noctuidae	Subacronicta megacephala	Poplar Grey	none	Least Concern		S/C	poplars, willows, aspen	A	6
Lepidoptera	Noctuidae	Xestia c-nigrum	Setaceous Hebrew Character	none	Least Concern				A	6
Lepidoptera	Noctuidae	Xestia triangulum	Double Square-spot	none	Least Concern				A	6
Lepidoptera	Noctuidae	Xestia xanthographa	Square-spot Rustic	none	Least Concern		G	Poaceae	A	6
Lepidoptera	Notodontidae – Prominents	Drymonia dodonaea	Marbled Brown	none	Least Concern		S	oaks	A	6
Lepidoptera	Notodontidae	Furcula furcula*	Sallow Kitten	none	Least Concern		S/C	willows	A	6
Lepidoptera	Notodontidae	Pheosia tremula	Swallow Prominent	none	Least Concern		S/C	willows, poplars	A	6
Lepidoptera	Notodontidae	Ptilodon capucina	Coxcomb Prominent	none	Least Concern				A	6
Lepidoptera	Nymphalidae – Brush-footed Butterflies	Aglais io	Peacock	none	Least Concern		G	stinging nettle	AC	5,7
Lepidoptera	Nymphalidae	Aglais urticae	Small Tortoiseshell	none	Least Concern		G	stinging nettle	A	9
Lepidoptera	Nymphalidae	Aphantopus hyperantus	Ringlet	none	Least Concern			Poaceae	C	7
Lepidoptera	Nymphalidae	Coenonympha pamphilus	Small Heath	none	Vulnerable		G	Poaceae	AC	6,9
Lepidoptera	Nymphalidae	Maniola jurtina	Meadow Brown	none	Least Concern		G	Poaceae	AC	6,7
Lepidoptera	Nymphalidae	Pararge aegeria	Speckled Wood	none	Least Concern		S	Poaceae	ABC	5,9
Lepidoptera	Nymphalidae	Polygonia c-album	Comma	none	Least Concern		S	hop, stinging nettle	AC	5,7,9
Lepidoptera	Nymphalidae	Pyronia tithonus	Gatekeeper	none	Least Concern		S	Poaceae	AC	7
Lepidoptera	Nymphalidae	Vanessa atalanta	Red Admiral	none	Least Concern			stinging nettle	AC	5,6,7,9
Lepidoptera	Nymphalidae	Vanessa cardui	Painted Lady	none	Least Concern		G	thistles	A	7

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Lepidoptera	Peleopodidae – Peleopodid Moths	Carcina quercana	Long-horned Flat-body	none	not yet evaluated		S	oaks	C	7
Lepidoptera	Pieridae – White Butterflies	Anthocharis cardamines	Orange-tip	none	Least Concern		G/W	cuckoo flower, garlic mustard etc	ABC	5
Lepidoptera	Pieridae	Gonepteryx rhamni	Brimstone	none	Least Concern			alder buckthorn, buckthorn	C	5
Lepidoptera	Pieridae	Pieris brassicae	Large White	none	Least Concern		G	Brassicas, Cabbages etc	AC	7
Lepidoptera	Pieridae	Pieris napi	Green-veined White	none	Least Concern			Cruciferae	AC	5,7
Lepidoptera	Pieridae	Pieris rapae	Small White	none	Least Concern			Cruciferae	AC	7,9
Lepidoptera	Plutellidae – Diamond-back Moths	Plutella xylostella	Diamond-back Moth	none	not yet evaluated			Brassicaceae	AC	6,7
Lepidoptera	Pterophoridae – Plume Moths	Pterophorus pentadactyla	White Plume Moth	none	not yet evaluated			bindweeds	A	6
Lepidoptera	Sphingidae – Hawk-moths	Deilephila elpenor	Elephant Hawk-moth	none	Least Concern		G	willowherbs, bedstraws	A	6
Lepidoptera	Sphingidae	Laothoe populi	Poplar Hawk-moth	none	Least Concern		C/S	willows, poplars	A	6
Lepidoptera	Tortricidae – Tortrix Moths	Aleimma loeflingiana	Yellow Oak Button	none	not yet evaluated		S	oaks	A	6
Lepidoptera	Tortricidae	Archips xylosteana	Variegated Golden Tortrix	none	not yet evaluated		S		A	6
Lepidoptera	Tortricidae	Celypha lacunana	Common Marble	none	not yet evaluated				A	6
Lepidoptera	Tortricidae	Cnephasia asseclana*	Flax Tortrix	none	not yet evaluated		G		A	6
Lepidoptera	Tortricidae	Cochylichroa atricapitana	Black-headed Conch	none	not yet evaluated		G	ragworts	A	6
Lepidoptera	Tortricidae	Eucosma cana	Hoary Belle	none	not yet evaluated		G	thistle, black knapweed	A	6
Lepidoptera	Tortricidae	Gypsonoma sociana	White Cloaked Shoot	none	not yet evaluated		S/C	poplars, sallows	A	6
Lepidoptera	Tortricidae	Hedya nubiferana	Marbled Orchard Tortrix	none	not yet evaluated		S		A	6
Lepidoptera	Tortricidae	Hedya pruniana*	Plum Tortrix	none	not yet evaluated		S		A	6
Lepidoptera	Tortricidae	Notocelia trimaculana	Triple-blotched Bell	none	not yet evaluated		S	hawthorn	A	6
Lepidoptera	Tortricidae	Notocelia uddmanniana	Bramble Shoot Moth	none	not yet evaluated		S	bramble	A	6
Lepidoptera	Tortricidae	Pandemis heparana	Dark Fruit-tree Tortrix	none	not yet evaluated		S		A	6
Lepidoptera	Tortricidae	Tortrix viridana	Green Oak Tortrix	none	not yet evaluated		S		A	6
Lithobiomorpha – CENTIPEDES (part)	Lithobiidae – Centipedes (part)	Lithobius crassipes*		none	Least Concern				C	1
Lithobiomorpha	Lithobiidae	Lithobius forficatus	Brown Centipede	none	Least Concern				ABC	2,5,6,7,9
Lithobiomorpha	Lithobiidae	Lithobius microps	Stone Centipede	none	Least Concern		S		B	5
Mecoptera – SCORPIONFLIES	Panorpidae – Scorpionflies	Panorpa communis		none	not yet evaluated		S		C	7
Mecoptera	Panorpidae	Panorpa germanica		none	not yet evaluated		S		ABC	5,7

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Neuroptera – LACEWINGS	Chrysopidae – Green Lacewings	Chrysopa perla		none	not yet evaluated		S		C	5
Neuroptera	Chrysopidae	Chrysoperla carnea agg.							C	7
Neuroptera	Coniopterygidae	Conwentzia psociformis*		none	not yet evaluated		S		C	5
Neuroptera	Hemerobiidae – Brown Lacewings	Hemerobius humulinus		none	not yet evaluated				C	5
Neuroptera	Hemerobiidae	Hemerobius lutescens		none	not yet evaluated				A	5
Neuroptera	Hemerobiidae	Hemerobius stigma*		none	not yet evaluated		S	Scot's pine	C	5
Neuroptera	Hemerobiidae	Micromus angulatus*		none	not yet evaluated				AC	1
Neuroptera	Hemerobiidae	Micromus variegatus		none	not yet evaluated		S		ABC	5,7,9
Odonata – DRAGONFLIES and DAMSELFLIES	Aeshnidae – Hawker Dragonflies	Aeshna cyanea	Southern Hawker	none	Least Concern		P/W		C	7
Odonata	Aeshnidae	Aeshna grandis*	Brown Hawker	none	Least Concern		P/W		AC	5 (nymph),9
Odonata	Aeshnidae	Aeshna mixta	Migrant Hawker	none	Least Concern		P/W		AC	9
Odonata	Aeshnidae	Brachytron pratense	Hairy Dragonfly	none	Least Concern		P/W		C	5
Odonata	Coenagrionidae – Red and Blue Damselflies	Coenagrion puella	Azure Damselfly	none	Least Concern		P/W		AB	5,6
Odonata	Coenagrionidae	Enallagma cyathigerum	Common Blue Damselfly	none	Least Concern		P/W		C	9
Odonata	Coenagrionidae	Ischnura elegans	Blue-tailed Damselfly	none	Least Concern		P/W		A	6,7
Odonata	Lestidae – Emerald Damselflies	Lestes sponsa*	Emerald Damselfly	none	Least Concern		P/W		A	7
Odonata	Libellulidae – Chasers, Skimmers and Darters	Sympetrum sanguineum	Ruddy Darter	none	Least Concern		P/W		AC	6,7,9
Odonata	Libellulidae	Sympetrum striolatum	Common Darter	none	Least Concern		P/W		AC	7,9
Opiliones – HARVESTMEN	Phalangiidae - Harvestmen (part)	Platybunus triangularis		none	not yet evaluated		S		B	5
Orthoptera – GRASSHOPPERS, GROUNDHOPPERS and BUSH-CRICKETS	Acrididae – Grasshoppers	Chorthippus brunneus	Field Grasshopper	none	Least Concern		G	Poaceae	AC	7,9
Orthoptera	Acrididae	Omocestus viridulus	Common Green Grasshopper	none	Least Concern		G	Poaceae	C	7
Orthoptera	Acrididae	Pseudochorthippus parallelus	Meadow Grasshopper	none	Least Concern		G	Poaceae	AC	6,7,9
Orthoptera	Conocephalidae – Coneheads	Conocephalus dorsalis	Short-winged	none	Least Concern		G	Poaceae	AC	7,9

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Orthoptera	Conocephalidae	Conocephalus fuscus	Conehead Long-winged Cone-head	none	Least Concern		G	Poaceae	AC	7,9
Orthoptera	Meconematidae – Oak Bush-crickets	Meconema thalassinum	Oak Bush Cricket	none	Least Concern		S	usually oaks	ABC	6,7,9
Orthoptera	Phaneropteridae – Bush-crickets (part)	Leptophyes punctatissima	Speckled Bush Cricket	none	Least Concern		S		ABC	5,6,7,9
Orthoptera	Tetrigidae – Groundhoppers	Tetrix subulata	Slender Ground Hopper	none	Least Concern		W/G		ABC	5,6,7
Orthoptera	Tetrigidae	Tetrix undulata	Common Ground-hopper	none	Least Concern		W/G		A	5
Orthoptera	Tettigoniidae – Bush-crickets (part)	Pholidoptera griseoaptera	Dark Bush Cricket	none	Least Concern		S		ABC	5,6
Orthoptera	Tettigoniidae	Roeseliana roeselii	Roesel's Bush-cricket	none	Least Concern		G		AC	5,6,7,9
Plecoptera – STONEFLIES	Nemouridae – Nemourid Stoneflies	Nemoura cinerea		none	Least Concern		P/W		BC	5
Plecoptera	Nemouridae	Nemoura dubitans		[Nationally Rare]	Least Concern		P/W		C	5
Polydesmida – FLAT-BACKED MILLIPEDES	Polydesmidae – Flat-backed Millipedes	Polydesmus angustus	Common Flat-backed Millipede	none	Least Concern				AB	1,5,6
Polydesmida	Polydesmidae	Polydesmus coriaceus		none	Least Concern				AB	5,6
Polydesmida	Polydesmidae	Polydesmus inconstans*		none	Least Concern				A	6
Pseudoscorpiones – PSEUDOSCORPIONS	Chernetidae – Pseudoscorpions (part)	Chernes cimicoides	Common Tree-chernes	none	not yet evaluated		S	dead wood, bark	B	5
Psocoptera – BARKLICE	Ectopsocidae	Ectopsocus petersi*		none	not yet evaluated				C	7
Psocoptera	Philotarsidae	Philotarsus parviceps*		none	not yet evaluated		S		C	7
Psocoptera	Stenopsocidae	Graphopsocus cruciatus		none	not yet evaluated		S		AC	5,7
Pulmonata – TERRESTRIAL SNAILS and SLUGS	Agriolimacidae – Slugs (part)	Deroceras laeve	Marsh Slug	none	Least Concern		W		A	6
Pulmonata	Clausiliidae – Door Snails	Clausilia bidentata	Common Door Snail	none	Least Concern				B	5
Pulmonata	Cochlicopidae – Cochlicopid Snails	Cochlicopa lubrica	Slippery Moss Snail	none	Least Concern		W		A	2,6
Pulmonata	Gastrodontidae – Gloss Snails	Zonitoides nitidus	Shiny Glass Snail	none	Least Concern				AB	1,6,9
Pulmonata	Helicidae	Cepaea hortensis	White-lipped Snail	none	Least Concern				A	5

Order	Family	Taxon	Vernacular	Status	IUCN Status	Voucher Retained	Habitat Code	Association	Site Code	Months
Pulmonata	Helicidae – Helicid Snails	Cepaea nemoralis	Brown-lipped Snail	none	Least Concern				B	1
Pulmonata	Hygromiidae	Trochulus hispidus	Hairy Snail	none	Least Concern				A	5
Pulmonata	Hygromiidae – Leaf Snails	Monacha cantiana	Kentish Snail	none	Least Concern		G/S		AC	1,5,7
Pulmonata	Oxychilidae – Oxychilid Snails	Aegopinella nitidula	Smooth Glass Snail	none	Least Concern				C	5
Pulmonata	Vertiginidae	Vertigo angustior	Narrow-mouthed Whorl Snail	Nationally Scarce	Vulnerable		W		A	1,2
Pulmonata	Vertiginidae	Vertigo pygmaea	Common Whorl Snail	none	Least Concern				A	1
Pulmonata	Vertiginidae – Whorl Snails	Columella aspera		none	Least Concern				B	1
Raphidioptera – SNAKEFLIES	Raphidiidae – Snakeflies	Xanthostigma xanthostigma		none	not yet evaluated		S		BC	5
Trichoptera – CADDISFLIES	Leptoceridae – Caddisflies (part)	Ceraclea fulva*		none	Least Concern		P/R/W		A	6
Trichoptera	Leptoceridae	Mystacides longicornis		none	Least Concern		P/R/W		A	6
Trichoptera	Limnephilidae	Grammotaulius nigropunctatus		none	Least Concern		P/R/W		AC	5,7
Trichoptera	Limnephilidae	Limnephilus auricula		none	Least Concern		P/R/W		C	5
Trichoptera	Limnephilidae	Limnephilus flavicornis		none	Least Concern		P/R/W		A	6
Trichoptera	Limnephilidae – Caddisflies (part)	Glyphotaelius pellucidus	Mottled Sedge	none	Least Concern		P/R/W		BC	5,9