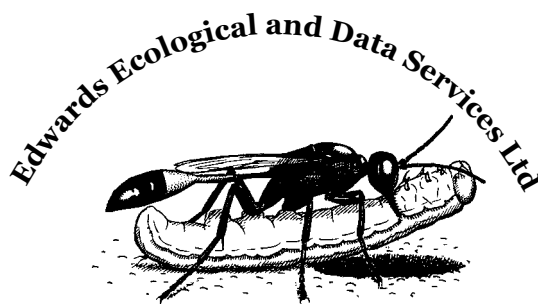


An Entomological survey within Binsted Parish, 2016 and 2017

MAVES



Company No: 7492664

Lea-Side, Carron Lane
MIDHURST
West Sussex
GU29 9LB

MAVES Entomological Report 2016-2017

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An Entomological Survey within the Parish of Binsted, 2016, 2017

1. Introduction

1.1 Binsted Parish has a very active group concerned with increasing the knowledge of the general environment of the parish - MAVES- Mid Arun Environmental Survey. During 2016 Peter Hodge and Mike Edwards were contracted to undertake two days' survey of some of the entomological interest of the parish and provide recommendations for the maintenance or enhancement of this.

1.2 2016 was not an easy year in which to undertake entomological surveys with many days of overcast and cool weather in a generally unsettled weather pattern. Never-the-less we did get two days of fairly reasonable weather for survey, 8th June, sunny, but cool all day, and 24th July, sunny to start with, overcast and cold by early afternoon. The 2016 sample areas are shown in Map 1.

1.3 This was followed up with a further set of survey days in 2017, partly overlapping the 2016 areas, but also sampling additional ones. The 2017 sampling areas are shown in Map 2.

1.4 The 2017 sample areas and dates were as shown hereafter. All had reasonable to good weather for survey at the time of year. 31st March and 5th May, M. Edwards with Graeme Lyons, sampling the northern woodland sections (North Wood 1, North Wood 2, North Wood 3 and Old Scotland Lane). On 7th April M. Edwards sampled the Binsted Park and East of Minor Road sections (with Ian Powell). On 9th May and 14th June M. Edwards with P. Hodge sampled the south-eastern section of Binsted Park, spending a large part of the time in this corner. This was recorded with the 'East of Minor Road section', as explained in the text; then East of Minor Road, followed on 9th May by Rife 1 and 14th June by Rife 2. These last two areas are combined for this report.

1.5 Both surveys are reported here as they relate to a single, wider environment of the parish, albeit with a wider range of habitats, most significantly by having an increased representation of wetland and wet woodland. A combined 2016/2017 table of results, together with brief notes on each species, is presented as section 4.

1.6 Mike Edwards concentrated on aculeate Hymenoptera (ants, wasps and bees), Orthoptera (grasshoppers and crickets) and some groups of Diptera (flies, especially craneflies, hoverflies and the larger Brachycera). Peter Hodge concentrated on Coleoptera (beetles), Hemiptera (bugs) and further groups of Diptera. Graeme Lyons concentrated on Coleoptera; Hemiptera; Arachnoidea (spiders); Myriapods and related groups (largely millipedes and centipedes) and Mollusca (snails). Invertebrates from other groups were recorded as seen and recognised. Whilst this coverage is not exhaustive, it samples a good cross-section of the species likely to be present, including wetland and dryland components.

1.7 An additional list of plants and birds, as seen and recorded by G. Lyons, is also provided. This relates to the North Wood areas only, but includes a number of significant species. It is included here (as a separate spreadsheet) for completeness, but will not be further commented on unless there is a specific entomological connection.

1.8 The 2016 visits were too late in the year for doing justice to the potential woodland component, where visits need to be made before canopy closure for the detection of most species; although the route did pass through two arms of the woodland. The 2017 survey sought to rectify this, especially within the larger woodland blocks to the north of the Parish.

1.9 It should be noted that a 1970's private publication on the very significant entomological fauna of the Rewell Wood area (immediately to the north of the current one) did make some very positive reference to the Binsted Woods, noting these as being similar, if a little damper generally, to the Rewell Wood area. Some data from Binsted Woods was included in this report (West Sussex Recording Group, Rewell Wood Report, 1978).

1.10 The survey reported here is by no means a complete coverage of the interest of the area, but is a reasonable indication of the high value of the overall area. Much more detailed recording over a longer time period in the year would be required to do full justice to the fauna of the area, especially as it is so close to the well-recorded, and very significant, Rewell Wood Area.



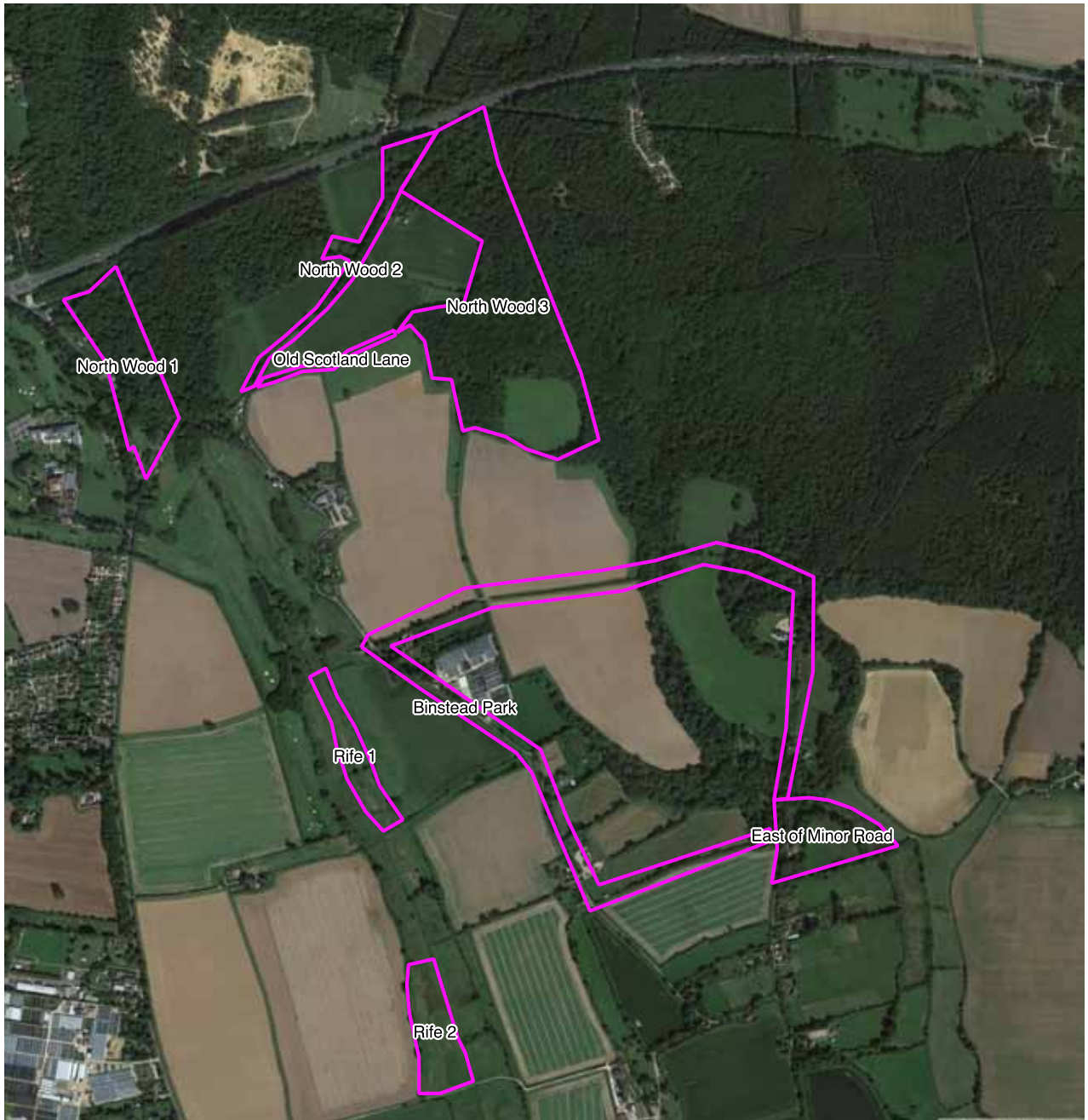
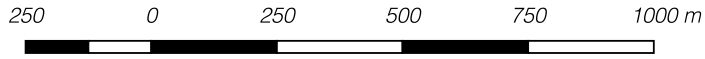
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Map 1. 2016 Survey route for Binstead Parish and major locations mentioned in text (para. nos.).

1.11 A total of 551 species were recorded during the survey. Although it is clear though that the area has a good representation of conservation-significant species, the number of these is not clear, as there are two different systems currently in force: the 1990 Conservation Review system, plus the ‘Section 41’ species list: or the Section 41, plus the new IUCN-based rating, which is incomplete. These two systems are not mutually compatible, making ‘counts’ less than straightforward. The most modern rating should be used if present. As this latter system is based on decline and threat, rather than on distribution (the old system), there is likely to be greater agreement between the old list and the new ‘National Scarcity’ list. However, this system is not complete either. (See Appendix i for more detail)

1.12 In particular the aculeate Hymenoptera have not yet been reviewed and two species, (*Lasioglossum pauxillum* and *L. malachurum*) have become very much commoner since the date of the original reviews, so much so that any of these species may be found almost anywhere in southern England and parts of Wales, although not found at all in northern England or Scotland. A similar situation is likely to be apparent in other groups when further modern assessments are made. Conversely, there will be some species which are shown to be widespread, but under threat.

Binstead



Map 2. Areas within Binstead Parish surveyed during 2017.



The cranefly *Tipula nigrotipula*, recorded at Binsted Rife, is associated with wet peat, a scarce habitat in West Sussex.

1.13 The listing of the Cinnabar Moth under Section 41 is a different situation and is tied up with socio-politics as much as anything. In one camp are the Ragwort haters - largely horse owners who are convinced that it is the very worst of all things - despite the fact that horse grazing is often one of the best promoters of Ragwort. On the other, a large group of entomologists who know of a lot of insect species associated with this plant, many of which are considered scarce (often being on the edge of their range. As the Cinnabar Moth feeds on Ragwort it was promoted as a counter to the 'pull it up everywhere' (very poor control management for Ragwort in any case) brigade. One man's meat.... What the actual situation is with The Cinnabar (which is an effective control agent itself) is much less clear. See <http://www.ragwort.org.uk/> for a fairly dispassionate look at Ragwort.

1.14 Although not reported on here, insect flight traps set on part of our survey route during 2016 are known to have recorded further Coleoptera of conservation significance.

2. Assessment and management suggestions, 2016 sites.

2.1 Binsted Rife is a different habitat to those found elsewhere, with localised peat deposits at the base of a flushed grassland below the minor road. Such situations are extremely scarce in West Sussex generally, and require careful conservation as they support specialised plant and insect communities; several cranefly species are restricted to such locations, including *Tipula nigrotipula*, recorded here during this survey. The Nationally Scarce Leaf Beetle *Chrysolina oricala* was discovered close by the church, feeding on Hedge Parsley, and the local legume-associated bee *Andrena labialis* was found on the flushed grasslands immediately above the Rife.

2.2 Whilst the larger fields above the flushed zone remain in active farming management, the smaller, sloping and more awkward areas running into the Rife itself could, with real benefit, be grazed rather harder, although this should be done in sections, not all together. Grazing should include periods during the summer, which would help reduce the stands of taller, rank vegetation and create areas of shorter grassland, improving the habitat niches for lower-growing plants of damp meadows and the associated insects. Such grazing would be best done by cattle, especially as sheep are likely to have problems with wet feet in this situation. A degree of poaching, resulting in exposure of some of the peat, is likely to be beneficial, but this must not be excessive!

2.3 This area needs more survey, including at other times of the year, probably with trapping to locate low-density species associated with such habitats. We were not able to locate any areas of open water (Knucker holes) within the peat areas, but understand that these are present. Such features need sampling for water beetles in particular. It should be noted that water beetles were not on our survey brief.



This hedgerow (2.6) has good physical quality features. It faces south and has a south-facing sloping foot (probably a result of earlier ploughing to the hedge!). The development of a rather scrubby layer at the base of the hedge includes sucker Blackthorn, a favoured egg-laying situation for Brown Hairstreak Butterflies as well as providing good over-wintering habitat for a range of insect species and nesting habitat for bumblebees. However, it does need cutting back on rotation, so that it doesn't just develop into another part of the hedge, it is maintaining the fairly open structure which is critical. The fairly narrow field margin is a vital part of this overall structure. This could be cut more regularly with considerable advantage for both farmer (weed control) and conservation as it promotes a different range of flower species to taller grassland; open, short grassland, managed for a conservation priority is a rare thing!

2.4 Old Scotland Lane. This old trackway runs between two arable fields on gravelly soils which have considerable areas not under cultivation. It started off close to the minor road as rather damp and shady, but it soon opened out to reveal two wide field margins which supported a good range of flower species, including stands of Common Knapweed, which was being heavily visited by several Bumblebee species. The Nationally Scarce snail-hunting beetle *Drilus flavescens* was also found here.

2.5 Binsted Park The margins away from the track were not investigated, but these clearly include considerable areas of field corner and uncultivated margin. As these are developed on the same soils which make the Rewell Wood area just to the north so rich entomologically they would repay much closer and prolonged investigation. The margins themselves have become rather dominated by coarser vegetation as they have fallen out of active farming management. Creating some soil disturbance by light ploughing and, if possible, following this with some rotational grazing management, if this is not possible, a programme of cutting and removing vegetation on rotation would promote the sort of environment seen alongside the trackway itself. Maintaining small areas of bare gravelly soil, perhaps as banks at the foot of the hedges, would be a very positive feature for nesting bees and wasps.

2.6 The small field and hedgerows between the minor road and the easterly tongue of woodland were good examples of modern farmland with smaller, less economically rewarding, fields under good management. The hedgerow running across the two large arable units had a good, south-facing aspect to one side and a variety of woody species. The grassy margin, whilst not botanically varied, served to protect the hedge-bottom itself. Maintaining this buffer through the rotational cutting of the hedge-bottom and adjacent margin is a highly recommended action. Such areas provide good nesting habitats, with forage resources in the hedge itself, for a range of spring-flying bees, many of which are important crop pollinators.

2.7 The most surprising find here was the fly *Dorycera graminum*, a Section 41 species more normally associated with damp, but drained, grasslands in the Thames Corridor. It is likely that the larva of the fly feed in the elongating flower head of grasses; the warm, south-facing aspect, with the correct humidity level being the less easily provided part of its habitat. This species was also found on the southern-most margin of our circuit, again in similar conditions.

2.8 The margins referred to in 2.5 are also present along the sides of the woodland running north from the hedgerow, as well as on the eastern side of the woodland finger. There are also two small fields, no longer suitable for cultivation with modern farm machinery, within the woodland itself. The RDB 3 Soldier Beetle *Cantharis fusca* was recorded along these damp woodland edges. This species is also recorded at the nearby Black Ditch to the east of Arundel, but survey there in 2014 failed to find it.

2.9 Establishing a suitable grazing regime, supported by occasional ground disturbance, here too is very likely to have high conservation gain, especially as it would provide essential open space for species living in the wood itself. Many species which live within woodland as larvae need to find flowers for adult flight and egg development. It is the loss of this partial habitat component which is more critical in much of the agricultural landscape, as the woodland itself. Further survey of these areas is highly recommended.

2.10 As noted above, the survey was not carried out at a suitable time for investigating the fauna within the wood itself, so little time was spent exploring this. Areas where large-crowned trees maintain open habitat under the canopy stress would be important targets, there are plenty of open-crowned trees, whether they have associated open areas is not known. Again, much more directed survey is required to establish the true value of the area, but I would expect it to be high, especially as many species associated with such woodland systems spend much time being 'rare', only to increase during occasional periods of highly favourable conditions, such as a major tree fall.

2.11 Any woodland management which increases the rotational occurrence of open areas would be highly beneficial. This does not need to be 'short-rotation coppicing', longer term firewood removal would serve well and be more relevant in modern terms.

2.12 Clearance of a high proportion of the trees which currently crowd the pond where the footpath rejoins the minor road would be highly beneficial to aquatic insects. Large numbers of trees eutrophicate the water through leaf fall and reduce the light, leading to a loss of submerged macrophyte vegetation, essential for diverse water-beetle populations. Fish should not be stocked!

2.13 During a winter circuit of the area, before writing this report, I noted that my recommendations regarding cutting the hedge-bottoms were already being carried out (nothing to do with me) along the newly-created hedgerow to the south. This area was where the Section 41



Worker *Bombus ruderatus* on Red Clover.

Bumblebee species *Bombus ruderatus* was recorded, the first record which I am aware of in this part of West Sussex since the early 20th Century. This species has responded well to the increased planting of red clover margins fields and as part of agricultural rotations over the past 20 years and is now being found over much of its former distribution, a success story for informed habitat restoration indeed.

3. Assessment and management suggestions, 2017 sites.

3.1 These fall into four main areas: The Northern Woodlands, previously unsurveyed; the Binsted Park area, partially surveyed in 2016; the fields immediately East of the Minor Road previously unsurveyed; and the Rife, also partially surveyed in 2016.

3.2 **The set of Northern Woodlands.** These were once part of the extensive and very high conservation value Rewell Wood complex, forming the damper end of a continuous gradation in soils from well-drained chalk-based soils, through the sands and gravels of the raised beach systems into the relatively modern clays of the mid-Arun valley.

3.2.1 Although these 'northern' woodlands are now largely separated from the rest of the series by the modern dual carriageway of the A27, there remains a very high value in the overall presence of such an extensive set of woodland and open grassland types in a compact landscape. Every attempt should be made to promote as much connectivity as possible through sensitive use and management on both sides of the road. This is particularly so at the western end, close to the Yapton junction on the A27 where a series of springs erupt through the gravels both to the north and south of the modern road.

3.2.2 **North Wood 1.** This spring line at the north-western corner is part of the Binsted Rife system, which has already been identified as very important within at least a West Sussex context under the 2016 component of this overall survey. This is on the basis of the presence of an open flushed-fen habitat; the additional presence of an extensive flushed-fen Alder/Ash woodland at the start of the Binsted Rife increases this importance still further. Entomologically the major interest is probably among the Craneflies (Diptera: Tipulidae), with two highly localised species *Limonia pictipennis* (RDB 2) and *L. masoni* (RDB 3) recorded within the Alder/Ash woodland during just two, hour-long, visits.

3.2.3 This important cranefly habitat relies on the development of a flushed moss-based field layer (itself with significant species - G. Lyons), where calcareous water seeps out from the springs. This, in turn, relies on the open-structured woodland to provide light for growth, whilst maintaining high levels of humidity. Large-scale clearances of mature trees would be highly damaging to this ecological system, as would the extensive development of secondary saplings or shrubs.

3.2.4 This is an important management consideration in several places within the woodland where Sycamore *Acer pseudoplatanus* has begun to invade towards the upper levels of the western side of the valley. Although the modern numbers of deer appear to be currently removing most of the germinating seedlings, a close eye needs to be kept on any increased colonisation by Sycamore. It is recommended that a set of fixed-point photos, taken no later than late April, be used to monitor this. Gradual removal of the mature Sycamore trees would be a good precaution, but this should be done carefully so as not to damage the overall humidity of the woodland.

3.2.5 A second threat to the woodland structure is the invasion of the South-western corner by Cherry Laurel *Prunus laurocerastus*. This sub-shrub is very capable of rapid expansion when conditions suit it and should be completely removed if at all possible.

3.2.6 The Laurel is possibly an historic invasion from nearby gardens. It has been largely removed from the adjacent garden and a short, occasionally grazed/cut turf with plentiful Ground Ivy *Glechoma hederacea* and Germander Speedwell *Veronica chamaedrys* has developed. This supported a range of mining bees when the owners were kind enough to allow us to survey on one visit. These included *Andrena labiata*, which is often associated with the speedwell. This species was found in two other survey compartments.



Andrena labiata, male. This small mining bee, typical of flower-rich meadows, has made a remarkable resurgence in recent years. It is still good to see it, however.



The larvae of this micro-moth *Hysterophora maculosana* feed on the seeds of Bluebell. The moth was found at the northern end of the Northern Woodland 3.

3.2.7 It should be noted that only the western section of this woodland (Little Danes Wood - North Woodland 1) was available for survey in 2017. The eastern section (Hundred House Copse) had a similar habitat on its side of the valley.



***Pyrochroa serraticornis* Black-headed Cardinal Beetle.** This striking insect was found in several survey areas. It is typical of older woodland where the larvae are predatory on other insects living under the bark of recently fallen tree limbs.

3.2.8 The section of Binsted lane from the junction with Hedgers Hill, running from this junction to the A27 was treated as a separate recording compartment, **North Wood 2**. This was primarily the plant-species-rich hedgerow and verge, but included the area around the pond and the tall beech woodland between the Lane and the A27 at the eastern end.

3.2.9 The long, almost linear, corridor formed by this compartment was, for its size, very species rich, with a fifth of the total list being recorded here - despite only 2 recording visits in the Spring being made. In good part this is due to the generally open nature of the habitat, providing more - but different - niches to the similar-sized NW1 (39 species) or much larger NW3 (98 species). It should be noted that the very compactness of the sample area will have aided a more complete assessment of the species present on a single pass through than a similar survey effort in the larger NW3 area.

3.2.10 Encouraging the establishment and ongoing management of wide margins along both the road and field edges will aid the conservation of this overall area. As with other sections within the Parish, making access to such margins non-obvious from the road could be a sensible approach as this will decrease the tendency of the general public to walk dogs or ride horses here, adding pressure to the habitats as well as the farmer's crops.

3.2.11 The last component surveyed, **North Wood (3)** was the large area to the south of the A27, stretching southwards to the Binsted Park area of the survey. Parts of this woodland were carpeted with flowers in the spring, notably Bluebell *Hyacinthoides non-scripta* and Wood Anemone *Anemone nemorosa* and such areas attracted a wide range of insects whilst they were in flower. Generally, however, the woodland canopy was continuous, creating large extents of uniform field-layer growth, both in species composition and structural diversity, with a matching lack of diversity in the insect species present.

3.2.12 The compartment did, however, include a small field which had been cut into the woodland the southern corner. This had a good extent of woodland edge, warm and sunny, with a greater diversity of plant species present. Many of the species recorded were associated with this component, rather than within the body of the wood itself, although many of the species were likely to be using the woodland for part of their life-cycle.

3.2.13 Typical of these was the large hoverfly *Criorhina ranunculi*. As an adult this fly visits the flowers of Blackthorn *Prunus spinosa* and Sallow *Salix* sp. on the edges, but lays its eggs at the base of old trees where the larvae live in wet-rotting timber.

3.2.14 The woodland floor, although in many places wet at the time of survey, clearly did not stay wet all year round, nor were the ditches permanently wet. Consequently there was a very restricted fauna associated with such habitats, a very marked contrast with that of Northern Woodland 1.

3.2.15 Generally the woodland fauna (and flora) would benefit from the provision of greater diversity in canopy cover throughout. There is a fairly wide trackway running through the wood (the eastern end of Old Scotland Lane) and thinning the woodland alongside this, in the process creating some glades over twice as wide as the surrounding trees are tall, would provide great benefit. Such thinning and widening could be, at least partially, rotational, providing the potential for ongoing fire-wood harvesting to off-set the costs.

3.2.16 The small field provides, as already noted, a much desired open edge to the woodland. It is being kept open, it would appear, by a cutting regime which does not include the removal of cuttings, nor a very low cut. Whilst such a regime does help maintain the edge to the woodland, it could be considerably improved by using a lower cut, with removal of the arisings, over about a half to one-third of the field at a time.

3.3 The Binsted Park area

3.3.1 One visit was made on 7th April to the wider area of Binsted Park shown on Map 2. This was to survey the woodland at an earlier time than in 2016 (2.10). Unfortunately this showed that the same considerations of poor canopy diversity and low diversity in the field layer as have been noted for the North Wood 3 component (3.2.11) were also restricting the value of this area - except in a small part of the south-eastern section which formed the, fairly extensive, garden of a private house. This comprised a small, south-facing field; a ditch and associated pond and a small area of open-grown woodland, plus a more conventional garden.



This rather unreal looking mini-monster is the ‘planthopper’ *Centrotus cornutus*. It sucks sap from twigs and is usually near the top of the canopy. It was found in two of the survey compartments.

The Wasp Beetle *Clytus arietus* is associated with sunny woodland edges. Its larva feeds in dead wood exposed to the sun. The old larval burrows are often re-used by cavity-nesting bees and wasps as nest chambers.



3.3.2 As this area had more in common with the small fields and ditch of the adjoining land to the east of the minor road it was recorded as part of this sample area, not the Park proper. Results for 2016, plus those from the 7th April 2017 are considered to be representative for the Park.

3.4. East of minor road

3.4.1 The two subsequent visits in 2017 visited this 'garden area' on the western side of the minor road. Both visits also recorded the fauna in the small fields to the east of the road. The garden provided a large proportion of the visits for its area, reflecting the more favourable light and warmth provided by the active and informed management of the area. The rotationally mown grass of the garden had, like the garden noted in 3.2.6, good stands of Germander Speedwell, also supporting the mining bee *Andrena labiata*, as well as a range of other mining bees.

3.4.2 Most of the wetland craneflies recorded in this compartment were recorded here too, although this was as much to do with the localised reduction of the fall of the stream and presence of the pond, with a consequent increase in permanently damp mud and organic matter, as anything else.

3.4.3 A small glade beside the pond was very attractive to a number of hoverflies and management to increase the extent of sheltered glade within the woodland would be beneficial. The pond on the eastern side had recently been opened up by local voluntary efforts. The beneficial outcome of this management was clear to see.

3.4.5 Two of the small fields were sheep-grazed. Whilst this management had undoubtedly improved the overall structure of the grassland, the presence of sheep during the flowering period was not helpful. It would be beneficial if a small area could be fenced-out of the grazing, if this occurs during the flowering period. Any such 'fenced out' area should be moved around the field over the years.

3.4.6 In contrast, the long, thin field adjacent to and south of Tortington Rife, has not been grazed in a very long while. It was apparent that this field was being considered for succession to woodland, with considerable planting of Black Poplar within it. As it also had a reasonable flora of wet meadow, and would doubtlessly be more varied under a more open, grazed regime, it is recommended that a more mixed structural habitat might be considered here. This would require investment in facilitating some grazing, preferably by cattle rather than sheep. Alternatively, and probably more practically, a rotational regime of 'cut and collect', would help greatly.

3.4.7 The dry reedbed, occasioned where Common Reed *Phragmites australis* was attempting to spread from the Rife, supported the gall-forming fly *Lipara lucens* and, for the first time in my knowledge for the Arun Valley, the small yellow-faced bee *Hylaeus pectoralis*, which uses the old fly galls in the reed flowering stems as a shelter for its nest. Any cutting management on Common Reed (and this can be desirable) should aim to leave a proportion uncut for five years. The gall is formed on the current year's flower spike; the fly does not vacate the gall until the following summer; the bee may not use the old chamber until the next season and its progeny will not leave the nest until the following one.



Mature gall of the fly *Lipara lucens*. As the top of the gall is still tightly closed the fly has not yet emerged. (Photo Ian Powell)



An old Lipara gall opened to show the *Hylaeus pectoralis* (Yellow-faced bee) larva inside. The thin 'cellophane' lining of the cell is typical of this group of bees and serves to stop the pollen and nectar which is stored in the cell from leaking out. It also helps waterproof the cell. (Photo Ian Powell)

3.4.8 A line of mature trees and associated hedgeline separates this wet field from the drier sheep-grazed field to the south. Although no significant insect species were recorded on these two visits, this is just the sort of feature which supports good saproxillic insect species, being warm, and it should be maintained as it is. The flowers of the hedgeline are important forage resources for a number of spring flying insects recorded here.

3.4.9 To the north of the house is a small lane with a hedge of mature hawthorn. The flowers here were well-visited by a range of mining bees, including *Andrena bucephala*. The females of this bee share a common entrance for their nest tunnels, but each has its own nest within. Mature, flowering hedgerows, such as this, are important features for a range of insects as well as a source of food for birds in the autumn and winter.

3.5 Binsted Rife

3.5.1 The more northerly section was primarily surveyed during 2016 and, although a brief visit was made on 9th May, the more extensive survey concentrated on the southern section (Rife 2) on 14th June. In contrast to Rife 1 this area was under a rotational grazing regime by commercial cattle and had plenty of structural variety and a somewhat different insect community to that of Rife 1.

3.5.2 As the western bank was not being grazed at the time of survey, effort was concentrated here, both along the course of the Rife, and on the low grassland to the side of it.

3.5.2 It was clear that more springs were erupting all along the valley, marked by areas of peaty ground within the clay grassland. The Rife itself was also clearly carrying more water than it did close to the Church. Overall, a good variety of insect species were recorded over the 2016-7 period, making about a quarter (127) of the overall total. This does not include the 32 species unique to the Alder/Ash woodland (Northern Wood 1) at the head of the Rife.

3.5.3 As noted in the 2016 section, an increased, but rotational, cattle grazing of the northern, Rife 1, area would be beneficial. It would still, however, be important to ensure that differing levels of grazing pressure were placed on the different areas over the course of a year.

3.5.4 The land to the south of the farm track was not surveyed, but looked to be similar to the area surveyed overall.

3.6 Overall, the area has proved to have an extremely varied, if in places rather localised, insect fauna. This is a consequence of the high level of diversity of habitat, plus the very good structural variety overall, with a good matrix of woodland and grassland, wet and dry components over the entire landscape. Careful management, whilst maintaining the actively farmed landscape and, hopefully, some active cropping of the woodland to improve its structural diversity, will add further value to what is already a valuable landscape.



Male of the mining bee *Andrena bucephala* on Hawthorn blossom, an important spring flower for many solitary bee species.

4. Species Recorded during 2016 and 2017

Species	NW 1	NW 2	NW 3	B. Park	EoMR	B Rife	Distrib- tion	Old Con Stat	Sect 41	IUCN	Nat. Rarity	Notes
MOLLUSCA (Slugs and Snails)												
Arionidae												
<i>Arion hortensis</i>	0	1	1	0	0	0	Universal			Least Con- cern		Frequently found. Local with few sites in northern Britain where it is restricted to synanthropic sites. In woodland and other semi natural sites in the south. Prefers well drained, base rich soils.
Endodontidae												
<i>Discus rotundatus</i>	0	1	1	1	0	0	Universal			Least Con- cern		Commonly found. In a variety of habitats.
Limacidae												
<i>Lehmanna marginata</i>	0	1	0	0	0	0	Universal			Least Con- cern		Frequently found. Feeds on lichens and mosses. Strongly associated with trees.
<i>Limax maximus</i>	0	0	1	0	0	0	Universal			Least Con- cern		Frequently found. Found in humid, sheltered habitats including woodlands and synanthropic sites. Nocturnally active when it may climb walls and trees.
Zonitidae												
<i>Oxychilus alliarius</i>	0	0	1	1	0	0	Universal			Least Con- cern		Very commonly found. Moist ground litter in a variety of habitats. Humid but not wet places.
ISOPODA (Woodlice)												
Armadillidiidae												
<i>Armadillidium vulgare</i>	0	0	1	0	0	0	Universal			Least Con- cern		Pill woodlouse. Commonly found, although scarcer in the north.
Asellidae												
<i>Asellus aquaticus</i>	0	0	1	0	0	0	Universal			Least Con- cern		Frequently found.

Oniscidae																						
<i>Oniscus asellus</i>	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Least Concern	Very commonly found in rotting vegetation.
Philosciidae																						
<i>Philoscia muscorum</i>	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Least Concern	Commonly found. Often at the base of hedgerows and in woodland.
<i>Porcellio scaber</i>	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Least Concern	Very commonly found. In a wide range of habitats.
Trichoniscidae																						
<i>Trichoniscus pusillus</i> s. l.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Not Applicable	Very commonly found. In damp soil and leaf litter. A taxonomically awkward group. All female specimens found in the absence of males have to be assigned to this taxon. The true species is triploid and parthenogenetic. Can only be distinguished from <i>T. provisorius</i> by dissection of males but males are very rare, c. 1% of population of this species c.f. 50% for <i>T. provisorius</i> . An abundant soil and litter species, probably occupying cooler damper habitats than <i>T. provisorius</i> .
CRUSTACEA																						
Talitridae																						
<i>Arcitalitrus dorrieni</i>	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Least Concern	Very commonly found. Under litter, stones and logs in a variety of situations. Originally a species of eastern Australia, now spread widely, both in gardens and wider countryside.
DIPLOPODA (Millipedes)																						
Blaniulidae																						
<i>Proterotritus fuscus</i>	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Least Concern	Commonly found. Under bark of conifers and broad leaves. Occasionally in litter and soil.
Glomeridae																						
<i>Glomeris marginata</i>	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Least Concern	Commonly found. The Pill Millipede. In drier places than most millipedes.

<i>Pogonognathellus longicornis</i>	0	0	1	0	0	0	0	0	Universal			Commonly found. Associated with the lower layers of vegetation litter.
IXODIDA (Ticks)												
<i>Ixodidae</i>												
<i>Ixodes ricinus</i>	0	1	1	1	0	0	0	0	Universal			Commonly found. Moist, warm conditions favour survival of adult ticks, which are the ones which attach to humans, among other larger animals. Larvae attack smaller hosts.
ARANEAE (Spiders)												
Amaurobiidae												
<i>Amaurobitus fenestralis</i>	0	0	0	1	0	0	0	0	Universal			Common and widespread throughout Britain in woodland, parks and gardens under pine bark or amongst dead wood and litter.
<i>Coelotes terrestris</i>	0	0	0	1	0	0	0	0	Southern Restricted	Nationally Scarce b	NS	Locally commonly found. Associated with woodland, mature scrub and mature heather.
Anyphaenidae												
<i>Anyphaena accentuata</i>	0	1	1	1	0	0	0	0	Southern Widespread			Commonly found on the lower branches of trees in woodland.
Araneidae												
<i>Mangora acalypha</i>	0	0	0	1	0	0	0	0	Southern Restricted			Locally commonly found. Not restricted to heathland but is most common in this habitat.
<i>Nuctenea umbratica</i>	0	0	1	0	0	0	0	0	Universal			Commonly found. Under the bark of trees and on fence posts.
<i>Zilla diodia</i>	0	1	0	1	0	0	0	0	Southern Restricted	Nationally Scarce b		Locally frequently found. On heather, tall vegetation and patches of scrub on heathland, open woodland and hedgerows.
Dysderidae												
<i>Harpactea hombergi</i>	0	1	0	0	0	0	0	0	Southern Widespread			Frequently found. Under stones, bark and leaf litter.

<i>Paidiscura pallens</i>	0	1	1	1	0	0	0	0	Southern Widespread		Least Concern	Commonly found. Widespread on tall vegetation, scrub and the lower branches of trees.
Thomisidae												
<i>Ditaca dorsata</i>	0	1	0	0	0	0	0	0	Southern Widespread		Least Concern	Infrequently found. It seems to be associated with evergreens and conifers on the edge of woodland. It was found on gorse during the survey.
<i>Xysticus lantio</i>	0	0	1	0	0	0	0	0	Southern Widespread		Least Concern	Commonly found. Usually found on the lower branches of trees, especially oak, in woodland.
OPLIONES (Harvestmen)												
Nemastomatidae												
<i>Nemastoma bimaculatum</i>	0	0	1	0	0	0	0	0	Universal.			Very commonly found.
Phalangidae												
<i>Platybunus triangularis</i>	0	1	0	0	0	0	0	0	Universal			Commonly found.
ODONATA (Damselfly and Dragonflies)												
Coenagrionidae (Damselflies)												
<i>Enallagma cyathigerum</i>	0	0	0	1	0	0	0	0	Universal			Common Blue Damselfly. Commonly found. Breeds in a variety of open waters.
<i>Pyrrhosoma nymphula</i>	0	0	0	0	1	0	0	0	Universal			Large Red Damselfly. Commonly found. Breeds in all types of still and flowing water and is tolerant of acidic, slightly brackish and mildly polluted conditions.
ORTHOPTERA (Crickets and Grasshoppers)												
Acrididae (Grasshoppers)												
<i>Chorthippus parallelus</i>	0	0	0	1	1	0	0	0	Universal		Least Concern	Meadow Grasshopper. Commonly found in a variety of grassy habitats.

<i>Omocestus viridulus</i>	0	0	0	1	0	0	0	0	0	Universal		Least Concern	Common Green Grasshopper. Commonly found. Long grass in moister situations.
Tetrigidae (Groundhoppers)													
<i>Tetrix subulata</i>	0	0	1	0	0	0	0	0	0	Southern Widespread		Least Concern	Slender Ground-hopper. Frequently found in wet places.
<i>Tetrix undulata</i>	0	1	0	0	0	0	0	0	0	Universal		Least Concern	Common Ground-hopper. Commonly found in damp places with areas of bare mud.
Tettigoniidae (Bush Crickets)													
<i>Conocephalus fuscus</i>	0	0	0	1	0	0	0	0	0	Southern Widespread	Nationally Scarce a	Least Concern	Long-winged Cone-head. Commonly found. Increasingly widespread throughout southern England.
<i>Leptophyes punctatissima</i>	0	1	1	1	1	0	0	0	0	Southern Widespread		Least Concern	Speckled Bush-cricket. Commonly found. Strongly biased towards southern England and Wales. Scrub.
<i>Meconema thalassinum</i>	0	0	0	1	0	0	0	0	0	Southern Widespread		Least Concern	Oak Bush-cricket. Commonly found. Wooded localities in the southern British Isles.
<i>Mettioptera roeselii</i>	0	0	0	1	0	0	0	0	0	Southern Restricted	Nationally Scarce b	Least Concern	Roesel, Å's Bush Cricket. Commonly found in long grass-lands and spreading rapidly in southern Britain.
<i>Pholidoptera griseoptera</i>	0	0	0	1	0	0	0	0	0	Southern Widespread		Least Concern	Dark Bush-cricket. Commonly found. A species of scrub.
DERMAPTERA (Earwigs)													
Forficulidae (Earwigs)													
<i>Forficula auricularia</i>	0	0	0	1	1	0	0	0	0	Universal		Least Concern	Common Earwig. Very commonly found.
MECOPTERA, MEGALOPTERA, NEUROPTERA (Lacewings and allies)													
Hemerobiidae (Brown Lacewings)													
<i>Hemerobius lutescens</i>	1	0	1	1	0	0	0	0	0	Universal			Commonly found. It occurs in most habitats on trees and shrubs.

<i>Coreus marginatus</i>	0	0	0	0	0	0	0	0	0	0	1	1	Southern Widespread				Least Concern		Commonly found. On Rumex and Polygonum
Lygaeidae (Groundbugs)																			
<i>Kleidocerys resedae</i>	0	1	0	0	0	0	0	0	0	0	0	0	Universal						Commonly found on a variety of trees and bushes
Miridae (Capsid Bugs)																			
<i>Acetropis gimmerthalii</i>	0	0	0	0	0	0	0	0	0	1	0	0	Southern Restricted						Commonly found, associated with grasses
<i>Amblytylus nasutus</i>	0	0	0	0	0	0	0	0	0	0	1	0	Southern Restricted						Commonly found, associated with grasses
<i>Bryocoris pteridis</i>	0	0	0	0	0	0	0	0	0	1	0	0	Universal						Frequently found in damp woodlands, associated with ferns, especially Lady Fern and Male Fern.
<i>Calocoris slysi</i>	0	0	0	0	0	0	0	0	0	1	0	0	Universal						Commonly found. It occurs on nettles growing in shaded areas. Widely distributed in the British Isles.
<i>Campyloneura virgula</i>	0	0	0	0	0	0	0	0	0	1	0	0	Universal						Commonly found. in hedgerows and thickets
<i>Capsus ater</i>	0	0	0	0	0	0	0	0	0	1	1	1	Universal						Commonly found, associated with grasses
<i>Closterotomus norwegicus</i>	0	0	0	0	0	0	0	0	0	1	0	1	Universal						Commonly found on a variety of plants
<i>Deraeocoris flavilinea</i>	0	0	0	0	0	0	0	0	0	1	0	0	Southern Restricted						Infrequently found. Only very recently recorded from Britain, this recent immigrant from European mainland has already been found in several English counties. It is likely that it will continue to spread and no conservation status is likely to be applied. Most records are for specimens beaten off the foliage of Sycamore Acer pseudoplatanus infested with aphids. The species is probably partially predatory.
<i>Deraeocoris lutescens</i>	0	1	0	0	0	0	0	0	0	0	0	0	Southern Widespread						Commonly found. On a variety of tree foliage
<i>Deraeocoris ruber</i>	0	0	0	0	0	0	0	0	0	1	0	0	Southern Widespread						Commonly found, associated with a variety of plants
<i>Dicyphus epilobii</i>	0	0	0	0	0	0	0	0	0	1	0	1	Universal						Commonly found. Associated with <i>Epilobium hirsutum</i>
<i>Dicyphus errans</i>	0	0	0	0	0	0	0	0	0	1	0	0	Universal						Commonly found. Associated with a variety of herbaceous plants including Urtica, Stachys sylvatica, Verbascum, Galeopsis, Geranium.
<i>Dryophilocoris flavoquadrimaculatus</i>	0	1	0	0	0	0	0	0	0	1	0	0	Universal						Commonly found. Associated with oak.
<i>Halticus luteicollis</i>	0	0	0	0	0	0	0	0	0	1	0	1	Southern Restricted						Frequently found. Local, associated with bedstraws
<i>Harpocera thoracica</i>	0	1	0	0	0	0	0	0	0	1	1	0	Universal						Commonly found. On oak <i>Quercus</i> species
<i>Heterotoma planicornis</i>	0	0	0	0	0	0	0	0	0	1	0	0	Universal						Commonly found on a variety of plant species

<i>Leptopterna dolabrata</i>	0	0	1	1	1	0	0	Universal	Commonly found. Associated with grasses
<i>Liocoris tripustulatus</i>	0	0	0	1	0	1	0	Universal	Commonly found, on Stinging Nettle <i>Urtica dioica</i>
<i>Lygocoris pabulinus</i>	0	0	0	1	0	0	0	Universal	Commonly found. Feeds on a wide variety of herbaceous and woody plant species.
<i>Monalocoris filicis</i>	0	0	0	0	1	0	0	Universal	Commonly found, on Bracken
<i>Notostira elongata</i>	0	0	0	1	1	1	0	Southern Widespread	Commonly found, associated with grasses
<i>Oncotylus viridiflavus</i>	0	0	0	1	0	0	0	Southern Restricted	Locally commonly found, on Hardheads <i>Centaurea nigra</i>
<i>Orthocephalus coriaceus</i>	0	0	0	1	0	0	0	Southern Widespread	Frequently found. On several species of Asteraceae
<i>Orthototus rufifrons</i>	0	0	0	1	0	0	0	Southern Widespread	Commonly found. Associated with the flowers and fruits of Stinging Nettle.
<i>Orthops campestris</i>	0	0	0	0	0	1	0	Universal	Commonly found, on several species of Apiaceae
<i>Orthotylus marginalis</i>	0	0	0	0	1	0	0	Universal	Commonly found on species of willows <i>Salix</i>
<i>Phylus coryli</i>	0	0	0	0	1	0	0	Universal	Commonly found. Feeds on Hazel and small invertebrates on the hazel.
<i>Phylus melanocephalus</i>	0	0	0	0	1	0	0	Universal	Commonly found on oak
<i>Phytocoris ulmi</i>	0	0	0	1	0	0	0	Universal	Commonly found, on grasses
<i>Phytocoris varipes</i>	0	0	0	1	0	0	0	Southern Widespread	Commonly found associated with grasses
<i>Pinallius cervinus</i>	0	0	0	1	1	0	0	Universal	Commonly found. The adults and young suck the sap of trees through the foliage.
<i>Plagiognathus arbutorum</i>	0	0	0	1	1	1	0	Universal	Commonly found. On a variety of herbaceous plants
<i>Plagiognathus chrysanthemii</i>	0	0	0	1	1	1	0	Universal	Commonly found. On a variety of herbaceous plants
<i>Rhabdomiris striatellus</i>	0	1	1	1	0	0	0	Universal	Commonly found, on oak.
<i>Stenodema calcarata</i>	0	0	0	0	1	1	0	Universal	Commonly found. Associated with grasses
<i>Stenodema laevigata</i>	0	0	0	1	0	0	0	Universal	Commonly found associated with grasses
<i>Stenotus binotatus</i>	0	0	0	0	0	1	0	Southern Widespread	Commonly found. Associated with grasses.
Nabidae (Damselflybugs)									
<i>Himacerus mirmicoides</i>	0	1	0	0	0	0	0	Southern Widespread	Commonly found. In grassland habitats
<i>Nabis flavomarginatus</i>	0	0	0	1	0	0	0	Universal	Commonly found. It lives amongst grasses, especially where they grow in damp areas or become tussocky. Widely distributed throughout the British Isles.

<i>Eilema depressa</i>	0	0	0	0	1	0	0	0	0	Southern widespread				Buff Footman. Locally frequently found. Larvae feed on lichens in woodland.
<i>Phragmatobia fuliginosa</i>	0	0	0	0	0	1	0	0	0	Universal				Ruby Tiger Moth. Commonly found. The hairy larvae feed on a variety of low plants.
<i>Tyria jacobaeae</i>	0	0	0	0	0	0	0	1	1	Universal	Section 41 species			The Cinnabar moth. Commonly found. Larvae feed on Ragwort.
Choruetidae														
<i>Anthophila fabriciana</i>	0	0	0	0	1	1	0	1	1	Southern Widespread				Nettle Tap. Commonly found. Feeds on the leaves of Stinging Nettle.
Ericranidae														
<i>Dysericrania subpurpurella</i>	0	0	0	0	1	0	0	0	0	Universal				Commonly found. The larvae mine the leaves of oak.
Geometridae														
<i>Aethalura punctulata</i>	0	1	0	0	0	0	0	0	0	Universal.				Grey Birch. Commonly found. Larvae feeds on birch, hazel and alder.
<i>Asthena albulata</i>	0	1	0	0	1	0	0	0	0	Universal				Small White Wave. Commonly found. Associated with deciduous woodland. Larva feeds primarily on Hazel, but also other Betulaceae.
<i>Cyclophora annularia</i>	0	0	0	0	1	0	0	0	0	Universal				Mocha. Locally frequently found. The larvae feeds on Field Maple.
<i>Cyclophora punctaria</i>	0	0	0	0	1	0	0	0	0	Universal				Local. The larva feeds on oak.
Gracillariidae														
<i>Caloptilia alchimiella</i>	0	0	1	0	1	0	0	0	0	Universal				Commonly found. The larva feeds on oak, at first in a mine and later in cones formed from rolled leaf sections.
Hesperiidae (Skipper Butterflies)														
<i>Ochlodes sylvanus</i>	0	0	0	0	0	1	0	0	0	Southern Widespread		Least Concern		Large Skipper butterfly. Commonly found. The larvae feed on taller grasses.
<i>Thymelicus sylvestris</i>	0	0	0	0	1	0	0	0	0	Southern Widespread		Least Concern		Small Skipper butterfly. Commonly found. The larva feeds on grasses, especially <i>Holcus</i> spp.
Lycanidae (Blue Butterflies)														

<i>Celastrina argiolus</i>	0	0	0	1	1	1	0	Southern Widespread				Holly Blue butterfly. Commonly found. There are two generations a year; larvae of the first feeding principally on the flowers of holly and of the second on buds of ivy.
Nepticulidae												
<i>Stigmella aurella</i>	0	0	1	1	0	0	0	Universal				Commonly found. The larvae mine within the leaves of bramble and other rosaceous plants.
Nymphalidae (Nymphalid, Eritillary and Brown Butterflies)												
<i>Aglais urticae</i>	0	0	0	0	0	0	1	Universal				Small Tortoiseshell. Commonly found. The larvae feed on common nettle, living communally.
<i>Aphantopus hyperantus</i>	0	0	0	1	0	0	0	Universal				Ringlet butterfly. Commonly found. The larvae feeds on grass.
<i>Inachis io</i>	0	0	1	1	1	1	0	Southern Widespread				Peacock butterfly. Commonly found. The larvae feed on common nettle, living communally.
<i>Maniola jurtina</i>	0	0	0	1	1	1	1	Universal				Meadow Brown butterfly. Commonly found. The larva feeds on many species of grass, preferring the finer varieties. It occurs in open grassy situations.
<i>Pararge aegeria</i>	0	0	0	1	1	1	1	Universal				Speckled Wood butterfly. Commonly found. Associated with shady woodlands, although it still requires patches of sunlight. The larva feeds on grasses, usually in sheltered situations such as woodland and scrub.
<i>Polygonia c-album</i>	0	0	0	1	1	1	0	Southern Widespread				Comma butterfly. Commonly found. The larva feeds on the leaves of nettle, elm and hop.
<i>Pyronia tithonus</i>	0	0	0	1	0	0	0	Southern Widespread				Gatekeeper butterfly. Commonly found. The larva feeds on various grasses, narrow-bladed species being preferred.
<i>Vanessa atalanta</i>	0	1	0	1	0	0	0	Migrant				Red Admiral butterfly. Commonly found. Migrant. The larva feeds on nettle. The adult is a migrant and can turn up almost anywhere.
<i>Vanessa cardui</i>	0	0	0	1	0	0	0	Migrant				Painted Lady butterfly. Commonly found. The larva feeds mainly on species of thistle. The adult is a migrant and cannot survive the British winter.
Oecophoridae												
<i>Depressaria radiella</i>	0	0	1	0	0	0	0	Universal				Commonly found. The larvae feed on the flowers and seeds of Wild Parsnip and Hogweed.
<i>Esperia sulphurella</i>	0	1	0	0	0	0	0	Universal				Commonly found. The larvae feeds on dead wood.

<i>Malthodes minimus</i>	0	0	0	0	0	0	1	0	0	0	0	Universal		Least Concern	Commonly found, on the foliage of trees and shrubs. The larvae probably develop in dead wood.
<i>Rhagozycha fulva</i>	0	0	0	1	0	0	0	1	0	0	1	Universal		Least Concern	Commonly found. In a wide variety of habitats.
<i>Rhagozycha lignosa</i>	0	0	1	0	0	0	0	0	0	0	0	Universal		Least Concern	Commonly found, on the foliage of trees and shrubs
<i>Rhagozycha limbata</i>	0	0	0	1	0	1	0	0	1	0	1	Southern Widespread		Least Concern	Commonly found. In grassland habitats
Carabidae (Ground Beetles)															
<i>Abax parallelepipedus</i>	0	0	0	1	0	1	0	0	0	0	0	Universal		Least Concern	Commonly found, flightless and predatory, in woodland
<i>Acupalpus meridianus</i>	0	0	0	0	1	0	0	0	0	0	0	Southern Widespread		Least Concern	Commonly found. On bare ground in a variety of situations, wet or dry.
<i>Agonum marginatum</i>	0	1	0	0	0	0	0	0	0	0	0	Universal		Least Concern	Commonly found. At edges of water bodies.
<i>Anara ovata</i>	0	0	0	0	1	0	1	0	0	0	0	Universal		Least Concern	Commonly found. Feeds on seeds.
<i>Demetrias atricapillus</i>	0	0	0	0	0	0	0	0	0	1	0	Southern Widespread		Least Concern	Commonly found. In grassland habitats and cereal fields.
<i>Elaphrus cupreus</i>	0	1	0	0	0	0	1	0	0	0	0	Universal		Least Concern	Commonly found. Damp places.
<i>Loricera pilicornis</i>	0	0	0	1	0	0	0	1	0	0	0	Universal		Least Concern	Very commonly found. A variety of habitats, but very dry ones.
<i>Nebria brevicollis</i>	0	0	0	1	0	1	0	0	0	0	0	Universal		Least Concern	Very commonly found in a variety of habitats.
<i>Notiophilus quadripunctatus</i>	0	1	0	0	0	0	0	0	0	0	0	Southern Widespread	Nationally Scarce b	Least Concern	Local and infrequently found. Associated with sparsely vegetated ground such as woodland tracks, heathland, undercliffs and the sides of drainage ditches. It is predatory and may prefer acidic soils.
<i>Notiophilus quadripunctatus</i>												Southern Widespread	Nationally Scarce b		Local and infrequently found. Associated with sparsely vegetated ground such as woodland tracks, heathland, undercliffs and the sides of drainage ditches. It is predatory and may prefer acidic soils.
<i>Notiophilus rufipes</i>	0	0	0	1	0	1	0	0	0	0	0	Southern Widespread		Least Concern	Frequently found. Associated with leaf litter in deciduous woodlands.
<i>Poecilus cupreus</i>	0	0	0	1	0	1	0	0	0	0	0	Southern Widespread		Least Concern	Commonly found. Often associated with arable land.
<i>Pterostichus madidus</i>	0	0	0	1	0	1	0	0	0	0	0	Universal		Least Concern	Commonly found, in a wide variety of habitats

<i>Pterostichus melanarius</i>	0	0	0	0	0	0	0	0	0	0	1	Universal			Least Concern	Commonly found. Open habitats.
<i>Syntomus foveatus</i>	0	0	0	0	0	0	0	0	0	0	0	Universal			Least Concern	Commonly found, on open dry soils, including arable land
Cerambycidae (Long-horn Beetles)																
<i>Clytus arvensis</i>	0	0	0	0	0	0	0	0	0	0	0	Southern Widespread				Commonly found in woods and hedgerows. The larvae breed in dry dead wood.
<i>Grammoptera ruficornis</i>	0	0	0	0	0	0	0	0	0	0	0	Southern Widespread				Commonly found in woodland habitats. Larvae develop in small twigs.
<i>Pseudovadonia livida</i>	0	0	0	0	0	0	0	0	0	0	0	Southern Restricted				Commonly found. In dry grassland
<i>Rhugium mordax</i>	0	0	0	0	0	0	0	0	0	0	0	Universal				Frequently found. The larvae feed on dead wood of most broad-leaved trees.
<i>Rutpala maculata</i>	0	0	0	0	0	0	0	0	0	0	1	Southern Widespread				Commonly found, adults visit flowers, breeds in tree stumps.
<i>Stenocorus meridianus</i>	0	0	0	0	0	0	0	0	0	0	0	Southern Widespread				Locally frequently found. Adults visit flowers, breeds in dead wood
Chrysomelidae (Leaf Beetles)																
<i>Alyca lythri</i>	0	0	0	0	0	0	0	0	0	0	1	Southern Widespread			Least Concern	Commonly found. Adult and larvae fed on Willowherbs.
<i>Cassida rubiginosa</i>	0	0	0	0	0	0	0	0	0	0	0	Universal			Least Concern	Commonly found, on thistles
<i>Cassida vibex</i>	0	0	0	0	0	0	0	0	0	0	1	Southern Widespread			Least Concern	Commonly found, on thistles
<i>Chrysolina oricalcia</i>	0	0	0	0	0	0	0	0	0	0	1	Universal	Nationally Scarce b		Least Concern	Locally infrequently found in dry grasslands. Feeds on the foliage of umbellifers.
<i>Chrysolina polita</i>	0	0	0	0	0	0	0	0	0	0	1	Universal			Least Concern	Commonly found, on Labiatae
<i>Crepidodera aurea</i>	0	0	0	0	0	0	0	0	0	0	0	Southern Widespread			Least Concern	Commonly found, on willows Salix species
<i>Cryptocephalus moraei</i>	0	0	0	0	0	0	0	0	0	0	0	Southern Widespread			Least Concern	Frequently found. The adults and larvae feed on St. John, Aôs Wort growing in short vegetation.
<i>Donacia marginata</i>	0	0	0	0	0	0	0	0	0	0	1	Southern Widespread			Least Concern	Commonly found, Branched bur-reed, Sparganium
<i>Donacia semicuprea</i>	0	0	0	0	0	0	0	0	0	0	1	Southern Widespread			Least Concern	Commonly found. Larvae feed in roots of Reed Sweet grass Glyceria sp. and possibly Branched Bur-reed Sparganium erectum. Adults on foliage.

<i>Donacia simplex</i>	0	0	0	0	0	0	0	0	0	1	Universal			Least Concern	Commonly found. Larvae feed in roots of Bur-reed, adults on foliage.
<i>Galericella sagittariae</i>	0	0	0	0	0	0	0	0	0	1	Universal			Least Concern	Frequently found. Associated with wetlands. feeds on the leaves of a range of plant species, including Runicaceae and Rosaceae
<i>Gastrophysa polygoni</i>	0	0	0	0	1	0	0	0	0	0	Universal			Least Concern	Commonly found. Adults and larvae feed on the leaves of Polygonaceae.
<i>Gastrophysa viridula</i>	0	0	0	0	0	1	0	0	0	1	Universal			Least Concern	Very commonly found, most often feeding on leaves of Polygonaceae, but will also utilise other plant families.
<i>Hermaphysa mercurialis</i>	0	1	0	0	0	0	0	0	0	0	Southern Widespread			Least Concern	Commonly found. Adults and larvae fed on leaves and roots of Dogs Mercury.
<i>Lochmaea crataegi</i>	0	0	1	0	0	0	0	0	0	0	Southern Widespread			Least Concern	Commonly found on hawthorn Crataegus species
<i>Neorepidodera transversa</i>	0	0	0	0	0	0	0	0	0	1	Universal			Least Concern	Commonly found. On thistles
<i>Oulema obscura</i>	0	0	0	0	0	0	0	0	0	1	Universal			Least Concern	Common, on grasses in marshy meadows
<i>Phaedon tumidulus</i>	0	0	1	0	1	0	0	0	0	0	Universal			Least Concern	It feeds on the leaves of various umbellifers, especially hogweed.
<i>Phyllotreta ochripes</i>	0	0	0	1	0	0	0	0	0	0	Southern Restricted			Least Concern	Frequently found in England south-east of a line from the Bristol Channel to the Humber. Associated with Brassicaceae, especially Alliaria petiolata, Rorippa amphibia, Cardamine amara, C. hirsuta, Erysimum cheiranthoides and Sinapis arvensis.
<i>Pilenostoma fastuosa</i>	0	0	0	0	1	0	0	0	0	0	Southern Restricted	Nationally Scarce a		Near Threatened	Very local, infrequently found. Associated with Asteraceae, especially Ploughman, Aôs Spikenard and Common Fleabane. The larvae live on the undersides of the leaves.
<i>Plateumaris rustica</i>	0	0	0	0	0	1	0	0	0	0	Southern Widespread	Nationally Scarce b		Least Concern	Infrequently found and local. Associated with Sedges growing at the margins of water-bodies.
<i>Podagrica fuscicornis</i>	0	0	0	0	1	0	0	0	0	0	Southern Widespread	Nationally Scarce b		Least Concern	Locally frequently found. Adults feed on foliage and larvae on roots of Mallows
<i>Prasocuris junci</i>	0	0	0	0	0	0	0	0	1	0	Southern Widespread			Least Concern	Commonly found. Although it may be found on a variety of plants growing in wet places, its hosts are plants of the genus Veronica.
<i>Sphaeroderma rubidum</i>	0	0	0	1	0	0	0	0	0	0	Southern Widespread			Least Concern	Commonly found, on Hardheads Centaurea nigra
<i>Sphaeroderma testaceum</i>	0	0	0	0	1	0	0	0	0	0	Universal			Least Concern	Commonly found, on thistles
Coccinellidae (Ladybird Beetles)															

<i>Adalia bipunctata</i>	0	0	0	0	1	0	0	0	0	0	Universal				Very commonly found. Larvae and adults feed on aphids, usually on shrubs and low-growing plants.
<i>Adalia decempunctata</i>	0	0	0	0	1	0	0	0	0	0	Universal				Commonly found, on foliage of broadleaf trees.
<i>Calvia quattuordecimguttata</i>	0	0	0	0	1	0	0	0	0	0	Universal				Commonly found, on foliage of broadleaf trees.
<i>Coccidula rufa</i>	0	0	0	0	0	0	0	0	0	1	Universal				Commonly found. Often associated with Reeds and Typha in wetlands.
<i>Coccinella septempunctata</i>	0	0	0	0	1	0	0	0	0	1	Universal				Commonly found. In a wide variety of habitats
<i>Exochomus quadripustulatus</i>	0	1	0	0	0	0	0	0	0	0	Universal				Commonly found, chiefly on pine. Feeds on scale insects.
<i>Halysia sedecimguttata</i>	0	1	0	0	1	0	0	0	0	0	Southern Widespread				Commonly found, on tree foliage, often on Sycamore.
<i>Harmonia axyridis</i>	0	1	1	1	1	1	1	1	1	1	Southern Widespread				Harlequin Ladybird. Commonly found. A fairly large ladybird occurring in a wide range of colour patterns. It occurs on various herbaceous plants and trees, the larvae being predatory on aphids and other insects. A recent addition to the British fauna, spreading rapidly.
<i>Propylea quattuordecimpunctata</i>	0	1	0	0	1	0	0	0	0	1	Universal				Commonly found. In a wide variety of habitats
<i>Rhyzobius litura</i>	0	0	0	0	1	0	0	0	0	1	Universal				Commonly found, in grassland habitats. Feeds on scale insects.
<i>Subcoccinella vigintiquatuorpunctata</i>	0	0	0	0	1	0	0	0	0	1	Universal				Commonly found, in dry grassland
<i>Tythaspis sedecimpunctata</i>	0	0	0	0	1	0	0	0	0	1	Universal				16-spot ladybird. Commonly found, in wet grassland
Colytidae															
<i>Pycnomerus fuliginosus</i>	0	0	0	0	1	0	0	0	0	0	Southern Restricted			Not Applicable	Frequently found. An Australian native, first found in Britain in 1962. Now widespread. Under bark.
Curculionidae (Weevils)															
<i>Anthrenomus rubi</i>	0	0	0	0	1	0	0	0	0	0	Universal				Commonly found. On herbaceous Rosaceae species.
<i>Archartus pyrrhoceras</i>	0	0	0	0	1	0	0	0	0	0	Universal				Commonly found, on oak
<i>Barypeithes araneiformis</i>	0	0	0	1	0	0	0	0	0	0	Universal				Commonly found. Feeds on a variety of herbaceous species.
<i>Ceutorhynchus alliariae</i>	0	0	0	0	1	0	0	0	0	0	Southern Widespread				Locally frequently found. Feeds on Garlic Mustard <i>Alliaria petiolata</i> , perhaps mining the stems.
<i>Ceutorhynchus obstrictus</i>	0	0	0	0	1	0	0	0	0	0	Universal				Commonly found. Feeds on Brassicaceae

<i>Ceutorhynchus pallidactylus</i>	0	0	0	1	0	0	0	0	0	Universal				Commonly found, on Brassicaceae.
<i>Ceutorhynchus pitaris</i>	0	0	0	0	1	0	0	0	0	Southern Widespread				Frequently found, local, on disturbed soils. The larvae feed in the stems of Brassicaceae.
<i>Ceutorhynchus pyrrhorhynchus</i>	0	0	0	1	0	0	0	0	0	Southern Widespread				Commonly found. Feeds on Brassicaceae, especially Hedge Mustard <i>Sisymbrium officinale</i> and Sea Kale <i>Cakile maritima</i> .
<i>Cionus alauda</i>	0	1	0	1	0	0	0	0	0	Universal				Commonly found, on figwort Scrophularia
<i>Cionus hortulanus</i>	0	0	1	1	0	0	0	0	0	Southern Restricted				Commonly found, on figwort Scrophularia
<i>Cleopus pulchellus</i>	0	0	0	1	0	0	0	0	0	Universal				Frequently found, but local. On Scrophularia nodosa in woodland
<i>Coelodes rana</i>	0	0	0	0	1	0	0	0	0	Universal				Commonly found, on oak
<i>Curculio glandium</i>	0	0	0	1	1	0	0	0	0	Southern Restricted				Commonly found, on oak
<i>Curculio venosus</i>	0	0	0	0	1	0	0	0	0	Southern Restricted				Common, on oak
<i>Datonychus melanostictus</i>	0	0	0	0	1	1	0	0	1	Southern Restricted				Commonly found, on Water Mint <i>Mentha aquatica</i>
<i>Euophyrum confine</i>	0	0	0	1	0	0	0	0	0	Southern Widespread				Commonly found. Breeds in dead wood, a native of New Zealand
<i>Hadroplontus litura</i>	0	0	0	0	1	0	0	0	0	Southern Widespread				Commonly found, on thistles
<i>Hypera pollux</i>	0	0	0	0	0	1	0	0	0	Southern Widespread				Commonly found. In wetland habitats on <i>Apium</i> , <i>Peucedanum</i> , <i>Oenanthe</i> , also possibly on <i>Daucus</i> . There is also a record from <i>Crithmum maritimum</i> .
<i>Hypera rumicis</i>	0	1	0	0	0	0	0	0	0	Southern Widespread				Common, on dock <i>Rumex</i> species
<i>Isochnus populicola</i>	0	0	0	1	0	0	0	0	0	Southern Restricted	pRDBK			Infrequently found. Reliably recorded from only East Kent, West Kent, East Sussex and recently (August 2000) in Mid-dlesex. First found at Canterbury in 1952 and Sandwich in 1970, it is now beginning to spread and has been found recently in several other places in Kent. It was discovered near Rise Farm on the Lewes Brooks, East Sussex in 1996. Phytophagous, the larvae are leaf miners. Associated with poplar and willow but most records are from Crack Willow <i>Salix fragilis</i> . Not listed in the insect Red Data Book (Shirt, 1987).
<i>Liophloeus tessulatus</i>	0	0	0	1	0	0	0	0	0	Universal				Commonly found. Adults often found on Ivy, but larvae feed in the rootstocks of Umbellifers.
<i>Nedyus quadrimaculatus</i>	0	0	0	1	1	1	0	0	1	Universal				Commonly found, on Stinging Nettle <i>Urtica dioica</i> .
<i>Orchestes signifer</i>	0	0	0	0	1	0	0	0	0	Universal				Commonly found, on oak
<i>Parethelcus pollinarius</i>	0	0	0	1	1	0	0	0	0	Universal				Commonly found, on Stinging Nettle <i>Urtica dioica</i>

<i>Phyllobius pomaceus</i>	0	0	1	0	1	0	1	1	Southern Widespread	Nationally Scarce a			Commonly found. On Stinging Nettle <i>Urtica dioica</i>
<i>Phyllobius roboretanus</i>	0	0	0	1	0	1	0	1	Southern Widespread				Commonly found, in grassland habitats
<i>Polydrusus cervinus</i>	0	0	0	0	1	0	1	0	Universal				Commonly found, on a variety of trees and shrubs
<i>Rhinocyllus conicus</i>	0	0	0	0	0	0	1	1	Southern Restricted				Infrequently found. Previously recorded from ten vice counties in southern England in the period before 1970 but greatly declined. Recent increase in frequency of recording. Found in grassland habitats, particularly on calcareous soils. Most records are for coastal sites but it also occurs inland. Phytophagous; associated with Creeping Thistle <i>Cirsium arvense</i> , Marsh Thistle <i>C. palustre</i> , Spear Thistle <i>C. vulgare</i> and Musk Thistle <i>Carduus nutans</i> .
<i>Sciaphilus asperatus</i>	0	1	0	0	0	0	0	0	Universal				Commonly found. Polyphagous, woodland edges and grasslands.
<i>Sitona lineatus</i>	0	0	1	1	1	1	1	1	Universal				Commonly found. On various species of Fabaceae
<i>Strophosoma melanogrammum</i>	0	0	1	1	0	0	0	0	Universal				Commonly found, on a variety of trees and shrubs
<i>Tychius picirostris</i>	0	0	0	1	0	1	0	1	Universal				Commonly found, on Trifolium species
Drilidae													
<i>Drilus flavescens</i>	0	0	0	1	1	1	0	0	Southern Restricted	Nationally Scarce a		Least Concern	Infrequently found and local. Recent records for only the Isle of Wight, Hampshire, Surrey, Kent and Sussex. Seldom found away from chalk grassland, the larvae feed on snails. The female is flightless.
Elateridae (Click Beetles)													
<i>Adrasus pallens</i>	0	0	0	0	1	0	0	0	Universal				Commonly found in grasslands.
<i>Agriotes acuminatus</i>	0	1	0	1	1	1	0	0	Universal				Commonly found, in grassland habitats
<i>Agriotes lineatus</i>	0	0	0	0	1	1	1	1	Universal				Commonly found. In grassland habitats
<i>Agriotes pallidulus</i>	0	1	1	1	0	1	0	0	Universal				Commonly found. In grassland habitats
<i>Agriotes sputator</i>	0	0	0	0	1	0	1	0	Southern Widespread				Commonly found, in grassland habitats
<i>Athous bicolor</i>	0	0	0	1	0	1	0	0	Southern Widespread				Commonly found, in dry grassland habitats
<i>Athous haemorrhoidalis</i>	0	0	1	1	1	1	0	0	Universal				Commonly found. In grassland and woodland edge habitats.
<i>Denticollis linearis</i>	0	1	0	0	1	0	1	0	Universal				Commonly found, in woodland habitats.
<i>Hemicrepidius hirtus</i>	0	0	0	1	0	1	0	0	Universal				Commonly found. In grasslands.

<i>Stenagostus rhombeus</i>	0	1	0	0	0	0	0	0	0	0	0	Southern Widespread				Frequently found as a larva in dead and decaying wood. Rarely found as adult except at light.
Eucnemidae																
<i>Dirrhagus pygmaeus</i>	0	0	0	0	0	1	0	0	0	0	0	Universal	RDB 3			Infrequently found. Associated with broad-leaved woodland and pasture woodland. The larvae develop in dead wood including oak, beech and birch. Listed as a Grade 1 Primary Woodland Indicator by Garland (1983) and a Grade 3 Ancient Woodland Indicator by Harding & Rose (1986).
Helophoridae																
<i>Helophorus grandis</i>	0	0	0	0	0	1	0	0	0	0	0	Universal				Commonly found
Lucanidae (Stag Beetles)																
<i>Sinodendron cylindricum</i>	0	0	0	0	0	0	0	0	0	1	0	Universal				Frequently found, associated with dead timber, where the larvae live.
Melandryidae																
<i>Abdera biflexuosa</i>	0	0	0	0	0	1	0	0	0	0	0	Southern Widespread	Nationally Scarce b	NS		Locally frequently found. Found in ancient broad-leaved woodland and parkland. Associated with dead wood, especially small dead twigs of oak, ash, lime and probably other tree species. Listed as a Grade 3 Dead-wood Indicator species in Harding & Rose (1986).
Melyridae																
<i>Anthocomus fasciatus</i>	0	1	0	0	0	0	0	0	0	0	0	Southern Widespread		NS		Locally frequently found. Larvae predatory, probably in plant stems, adults on flowers.
<i>Cordylepherus viridis</i>	0	0	0	0	1	1	0	1	0	0	0	Southern Restricted				Frequently found, in dry grassland
<i>Malachus bipustulatus</i>	0	0	0	0	1	1	0	1	0	0	0	Southern Widespread				Commonly found, on flowers in grassland and woodland.
Mordellidae (Tumbling Flower Beetles)																
<i>Mordellistena newwaldeggiana</i>	0	0	0	0	1	0	0	0	0	0	0	Southern Restricted	RDB K	NS		Infrequently found. Very local in southern England and only recently (1970 onwards) recorded from a few counties. Due to confusion with closely related species, the current status and distribution is uncertain. Occurs in or at the edges of woodland and pasture woodland. The larvae are stated to develop either in dead wood or plant stems, probably the latter

<i>Mordellochroa abdominalis</i>	0	0	0	1	0	0	0	Southern Widespread			Least Concern	Frequently found, but local. Adults occur on flowers and larvae probably develop in dead wood or plant stems.
Nitidulidae (Pollen Beetles)												
<i>Epuraea melanocephala</i>	0	0	0	1	0	0	0	Universal				Commonly found, on flowers and leaves of a variety of plant species.
<i>Meligethes aeneus</i>	0	1	1	1	1	1	1	Universal				Commonly found. Breeds in flowers of Brassicaceae.
<i>Meligethes atratus</i>	0	0	1	0	0	0	0	Universal				Commonly found, on Rosaceae
<i>Meligethes ruficornis</i>	0	0	0	1	0	0	0	Southern Widespread				Infrequently found and localised. Breeds in flowers of Ballota nigra
Oedemeridae												
<i>Ischnomera cyanea</i>	0	0	1	1	0	0	0	Southern Widespread	Nationally Scarce b	NR	Least Concern	Frequently found. Two species (<i>I. caerulea</i> and <i>I. cyanea</i>) were previously confused in Britain under the name <i>I. Caerulea</i> . <i>I. cyanea</i> is by far the most frequent and is widely distributed though local in England and Wales. Found mainly in ancient broad-leaved woodland, pasture-woodland and old hedgerows. Adults frequently visit flowers, including hawthorn and Hogweed. The larvae develop in dead wood of a variety of tree species.
<i>Oedemera lurida</i>	0	0	0	1	0	0	0	Southern Widespread			Least Concern	Commonly found. On a variety of flowers.
<i>Oedemera nobilis</i>	0	0	0	1	1	1	1	Southern Widespread			Least Concern	Commonly found. On a variety of flowers
Phalacridae												
<i>Olibrus aeneus</i>	0	0	0	0	0	1	1	Universal				Commonly found, on mayweeds and related species
Pyrochroidae (Cardinal Beetles)												
<i>Pyrochroa serraticornis</i>	0	0	0	1	1	1	1	Southern Widespread			Least Concern	Frequently found. The larvae are predatory under the bark of fallen trees in shady woodland.
Rhynchitidae (Weevils)												
<i>Tatianaerhynchites aequatus</i>	0	0	0	0	1	0	0	Universal				Commonly found. Feeds on hawthorn.
Scarabaeidae (Dung Beetles and Chafers)												

<i>Cetonia aurata</i>	0	0	0	1	0	0	0	0	0	Southern Widespread				The Rose Chafer. Locally frequently found. Breeds in decaying vegetable matter, often in gardens; adults visit flowers.
Scirtidae														
<i>Cyphon coarctatus</i>	0	0	0	0	1	0	0	0	0	Universal				Commonly found, in wetland habitats; larvae are aquatic
<i>Cyphon ochraceus</i>	0	0	0	0	1	0	0	0	0	Universal				Commonly found. Larvae are aquatic.
<i>Microcara testacea</i>	0	1	0	1	0	0	0	0	0	Universal				Commonly found. In wetland habitats, larvae are aquatic
<i>Prionocyphon serricornis</i>	0	0	1	0	0	0	0	0	0	Universal	Nationally Scarce b			Frequently found, but local. In puddles within the crowns and roots of trees.
<i>Scirtes hemisphaericus</i>	0	0	0	0	0	1	0	0	1	Southern Widespread				Locally frequently found. Adults on emergent wetland vegetation, larvae are aquatic
Scaptitidae														
<i>Anaspis fasciata</i>	0	0	1	1	0	0	0	0	0	Universal				Commonly found. Scarcer towards the northern limit of its range (Clyde) Adults on flowers. Has been reared from fallen oak branches.
<i>Anaspis frontalis</i>	0	1	0	1	0	0	0	0	0	Universal				on a variety of flowers
<i>Anaspis maculata</i>	0	1	1	1	0	0	0	0	0	Universal				Commonly found, on a variety of flowers. Possibly breeds in dead wood.
<i>Anaspis pulicaria</i>	0	0	0	1	0	0	0	0	0	Southern Widespread				Commonly found, on a variety of flowers.
Staphylinidae (Rove Beetles)														
<i>Drusilla canaliculata</i>	0	0	0	1	0	0	0	0	0	Southern Widespread				Commonly found, in dry grassland habitats
<i>Paederus littoralis</i>	0	0	0	1	0	0	0	0	0	Universal				Commonly found, but scarcer towards the north. Dry grassland.
<i>Paederus riparius</i>	0	0	0	0	1	0	0	0	1	Southern Widespread				Commonly found. in wetland habitats
<i>Stenus brunripes</i>	0	0	0	1	0	0	0	0	0	Universal				Commonly found.
<i>Stenus clavicornis</i>	0	0	0	1	0	0	0	0	0	Universal				Commonly found. In open habitats on all soil types
<i>Stenus flavipes</i>	0	0	0	0	1	0	0	0	0	Universal				Commonly found, in wetland habitats
<i>Tachyporus hypnorum</i>	0	0	0	1	1	0	0	0	0	Universal				Commonly found, amongst litter on the ground.
Tenebrionidae														
<i>Lagria hirta</i>	0	0	0	1	0	0	0	0	0	Universal				Commonly found. Associated with hedgerows and scrub.

<i>Nalassus laevioctostriatus</i>	0	1	1	1	1	0	0	0	0	0	Universal				Least Concern		Commonly found. Larvae probably feed in dead wood. It grazes algae and lichens on tree trunks and heather stems, occurring in woodland, heathland and coastal cliffs.
DIPTERA (Flies)																	
Agromizidae																	
<i>Phytomyza ilicis</i>	0	0	0	1	1	0	0	0	0	0	Universal						Commonly found. The larvae mine the leaves of Holly
Asilidae (Robberflies)																	
<i>Dioctria atricapilla</i>	0	0	0	1	1	0	0	0	0	0	Southern Widespread						Commonly found. Dry, grassy areas and heaths.
<i>Dioctria baumhaueri</i>	0	0	0	1	1	0	0	0	0	0	Southern Widespread						Commonly found. Dry, grassy areas and heaths at the edge of woodland.
<i>Dioctria linearis</i>	0	0	0	0	0	1	0	1	0	0	Southern Restricted						Frequently found. Open woodland. The larvae are predatory in the soil.
<i>Dioctria rufipes</i>	0	0	0	0	0	0	1	0	1	0	Universal						Frequently found. The adult is an active predator of flying insects, the larvae are soil-dwelling predators.
<i>Leptogaster cylindrica</i>	0	0	0	1	1	0	1	1	0	0	Southern Widespread.						Frequently found in long grass. The adult is an active predator of flying insects; the larvae are soil-dwelling predators.
Bibionidae (St Mark's Flies)																	
<i>Bibio anglicus</i>	1	0	0	0	0	0	0	0	0	0	Southern Restricted						Frequently found. The larvae feed in grassland.
<i>Bibio johannis</i>	0	1	1	1	1	0	0	0	0	0	Universal						Very commonly found. The larvae feed in grassland.
<i>Bibio leucopterus</i>	1	1	0	0	1	1	0	0	0	0	Southern Restricted						Frequently found. The larvae feed in grassland.
<i>Bibio marci</i>	0	1	1	1	1	1	1	1	0	0	Southern Widespread						Commonly found. The larvae feed in grassland.
<i>Bibio reticulatus</i>	0	1	0	1	1	0	0	0	0	0	Universal						Abundance: Frequently found. The larvae feed in grassland.
<i>Bibio varipes</i>	0	1	0	1	1	0	0	0	0	0	Universal						Frequently found. The larvae feed in grassland.
<i>Dilophus febrilis</i>	1	1	0	1	1	1	1	1	0	0	Universal						Very commonly found. The larvae feed in grassland.
Bombyliidae (Beeflies)																	
<i>Bombylius major</i>	1	1	1	1	1	1	1	1	0	0	Southern Widespread						Commonly found. A cleptoparasite of a variety of springtime ground-nesting solitary bees.

<i>Limonia nubeculosa</i>	1	0	1	1	0	0	0	0	0	Universal			Commonly found. Damp woodlands. The larvae feed in dead wood.
<i>Limonia phragmitidis</i>	1	0	1	1	0	0	0	0	0	Universal			Commonly found. Woodland.
<i>Molophilus appendiculatus</i>	0	0	0	0	1	0	0	0	0	Southern Widespread			Commonly found. The larvae live in wet mud.
<i>Molophilus medius</i>	0	0	1	0	0	0	0	0	0	Universal			Commonly found. Wet woodland.
<i>Molophilus serpentina</i>	0	0	1	1	1	0	0	0	0	Universal			Frequently found. Associated with carr and wet woodland.
<i>Ormosia nodulosa</i>	1	0	1	0	0	1	0	0	1	Universal			Commonly found. Dry and wet woodland.
<i>Phylidorea ferruginea</i>	1	0	0	0	1	1	0	0	1	Universal			Commonly found. Wet woodland.
<i>Phylidorea fulvonervosa</i>	0	0	0	0	0	1	0	0	1	Universal			Commonly found. Wet woodland.
<i>Pseudolimnophila lucorum</i>	1	0	0	1	0	0	0	0	0	Universal			Frequently found. Wet marsh and carr.
<i>Pseudolimnophila sepium</i>	0	0	0	0	0	0	0	1	1	Southern Restricted			Infrequently found. Calcareous wet woodland and carr.
Muscidae													
<i>Mesembrina meridiana</i>	0	0	0	0	0	1	0	0	1	Universal			Commonly found. The larva lives in dung of cattle and other species.
Pediciidae													
<i>Tricyphona immaculata</i>	1	0	1	1	0	0	0	0	0	Universal			Commonly found. The larvae live in wet mud and are predatory.
Ptychopteridae (Craneflies)													
<i>Ptychoptera contaminata</i>	0	1	0	0	0	0	0	0	0	Southern Widespread			Commonly found. Particularly associated with tall vegetation at the margins of lakes, ponds and ditches.
<i>Ptychoptera lacustris</i>	1	0	0	1	0	0	0	0	0	Universal			Frequently found. A species of lightly shaded woodland streams.
Rhagionidae													
<i>Chrysopilus cristatus</i>	0	0	0	0	1	1	0	0	1	Universal			Commonly found in damp places, particularly marshes and fens.
<i>Rhagio scolopaceus</i>	0	0	1	0	0	1	0	0	1	Universal			Commonly found in damp places.
<i>Rhagio tringarius</i>	0	0	0	1	1	0	1	0	0	Universal			Commonly found in damp places.
Sciomyzidae (Snail-killing Flies)													

<i>Ilione albiset</i>	0	0	0	0	0	0	0	0	0	1	Universal			Frequently found in wet places. Larvae are predators of pulmonate aquatic snails.
<i>Tetanocera arrogans</i>	0	0	0	0	0	1	0	0	0	0	Universal			Commonly found. Associated with a variety of wet habitats. The larvae prey on snails living at the margins of water bodies.
<i>Tetanocera ferruginea</i>	0	0	0	0	0	1	0	0	0	0	Universal			Frequently found. Associated with marshy areas and margins of water bodies. Larvae develop in aquatic snails.
Stratiomyidae (Soldierflies)														
<i>Beris chalybata</i>	0	1	0	0	0	1	0	0	0	0	Universal			Commonly found.
<i>Beris clavipes</i>	0	0	0	0	0	0	0	0	0	1	Southern Widespread	Nationally Scarce		Infrequently found. Larva develops at edges of water bodies, probably in litter layer.
<i>Beris fuscipes</i>	0	0	0	0	0	0	0	0	0	0	Southern Widespread	Nationally Scarce		Infrequently found. Local. Associated with fens, marshes and wet woodland.
<i>Chloromyia formosa</i>	0	0	0	0	1	1	1	0	0	1	Universal			Commonly found. Breeds in rotting vegetation.
<i>Chorisops tibialis</i>	0	0	1	0	0	0	0	0	0	0	Southern Widespread.			Frequently found in woodland rides and scrub-edge.
<i>Nemotelus pantherinus</i>	0	0	0	0	0	0	0	0	0	1	Southern Widespread			Locally frequently found. Associated with base-rich fens and grazing meadows.
<i>Oplodontha viridula</i>	0	0	0	0	0	0	0	0	0	1	Southern Widespread			Frequently found near well vegetated ponds and ditches.
<i>Pachygaster atra</i>	0	0	0	0	1	1	0	0	0	0	Southern Widespread.			Frequently found. The larvae develop in rotting vegetation.
Syrphidae (Hoverflies)														
<i>Cheilosia albitarsis</i> s.s.	0	0	0	1	0	0	0	0	0	0	Universal			Commonly found. The larvae mine the roots of buttercups, <i>Ranunculus</i> sp.
<i>Cheilosia illustrata</i>	0	0	0	1	1	1	1	0	0	1	Universal			Commonly found in a variety of habitats. The larvae mine the roots of large umbellifers.
<i>Cheilosia pagana</i>	0	0	0	1	0	1	0	0	0	0	Universal			Commonly found. The larvae develop in rotting vegetation.
<i>Cheilosia variabilis</i>	0	0	0	1	0	1	0	0	0	0	Universal			Commonly found. Woodland edges. The larva has been recorded as feeding in the stems and roots of figwort.
<i>Chrysogaster cemitiorum</i>	0	0	0	0	0	0	1	0	0	0	Universal			Frequently found. A species of wet meadows and fens, more frequently found in the northern and western U.K..
<i>Chrysogaster solstitialis</i>	0	0	0	1	1	1	1	0	0	0	Universal.			Commonly found. On the margins of wet woodlands and hedgerows. The larvae live in organically rich wet mud.
<i>Chrysotoxum bicinctum</i>	0	0	0	1	0	1	0	0	0	0	Universal			Frequently found. Dry grasslands and heaths, often near scrub. Probably feeds on aphids on roots. There may also be an association with ants.

<i>Criorhina berberina</i>	0	0	0	1	0	1	0	0	1	0	1	Universal		Least Concern		Infrequently found. The larvae live in rotten heartwood of trees
<i>Criorhina ranunculi</i>	0	0	1	1	0	1	0	0	1	0	0	Universal	Nationally Scarce	Least Concern		Locally frequent in long-established woodland. Adults have been seen to oviposit at the base of large trees.
<i>Dasyrphus albostrigatus</i>	0	0	0	1	0	1	0	0	1	0	0	Universal		Least Concern		Commonly found. Woodland edges.
<i>Epistrophe eligans</i>	0	0	1	1	0	1	0	0	1	0	0	Southern Widespread		Least Concern		Commonly found. The larvae prey on aphids on trees.
<i>Epistrophe grossulariae</i>	0	0	0	0	0	0	0	0	0	1	1	Universal		Least Concern		Infrequently found and local. A woodland edge species.
<i>Episyrrhus balteatus</i>	0	0	0	1	0	1	0	0	1	1	1	Universal		Least Concern		Very commonly found everywhere. A migratory species.
<i>Eristalinus sepulchralis</i>	0	0	0	0	0	0	0	0	0	1	1	Universal		Least Concern		Commonly found. Organically rich pools, especially on coastal grazing marshes. The larvae are semi-aquatic, occurring in rotting vegetation and in water enriched with animal dung.
<i>Eristalis arbustorum</i>	0	0	0	1	0	1	0	0	1	0	1	Universal		Least Concern		Very commonly found. The larvae live in organically rich wet mud.
<i>Eristalis interruptus</i>	0	0	0	1	0	1	0	0	1	0	0	Universal		Least Concern		Commonly found. Local towards the north of the U.K.. The larvae live in organically rich wet mud.
<i>Eristalis intricarius</i>	0	0	0	1	0	1	0	0	1	1	1	Universal		Least Concern		Commonly found. Often in woodland clearings.
<i>Eristalis pertinax</i>	0	1	0	1	0	1	0	0	1	1	1	Universal		Least Concern		Very commonly found. The larvae live in organically rich wet mud.
<i>Eristalis tenax</i>	0	0	1	1	0	1	0	0	1	0	0	Universal		Least Concern		Very commonly found. The larvae live in organically rich wet mud.
<i>Eupeodes corollae</i>	0	0	0	1	0	1	0	0	1	0	0	Universal		Least Concern		Very commonly found everywhere. The larvae feed on aphids. A migratory species.
<i>Helophilus hybridus</i>	0	0	0	1	0	1	0	0	1	0	0	Universal		Least Concern		Locally frequently found. Associated with decaying vegetation at the margins of ponds.
<i>Helophilus pendulus</i>	0	0	1	1	0	1	1	1	1	1	1	Universal		Least Concern		Very commonly found. The larvae live in organically rich wet mud.
<i>Helophilus trivittatus</i>	0	0	0	1	0	1	0	0	1	0	0	Universal		Least Concern		Infrequently found. Most often associated with grazing marshes and coastal meadows. Increased in distribution and found over many more habitat types recently.
<i>Melanogaster hirtella</i>	0	0	0	0	0	0	0	0	0	1	0	Universal		Least Concern		Commonly found. A species of wet places, particularly those with much emergent vegetation.
<i>Melanostoma mellinum</i>	0	0	0	0	0	0	0	0	0	1	1	Universal		Least Concern		Very commonly found. A grassland species.
<i>Melanostoma scalare</i>	1	0	1	1	1	1	1	0	1	0	0	Universal		Least Concern		Very commonly found. A grassland species.

<i>Melisaeva auricollis</i>	0	0	0	0	1	0	0	0	0	Universal		Least Concern	Frequently found in southern England, scarcer towards the north of the British Isles. The larvae feed on aphids on bushes.
<i>Myathropa florea</i>	0	1	0	0	1	1	0	0	0	Universal		Least Concern	Commonly found. The larvae live in wet, decaying leaves.
<i>Neoscia tenor</i>	0	0	0	0	0	1	0	0	0	Universal		Least Concern	Commonly found in marshes and fens. The larvae feed in rotting vegetation.
<i>Orthonevra brevicornis</i>	0	0	0	0	0	0	0	0	1	Universal	Nationally Scarce	Least Concern	Locally frequent. Associated with base-rich seepages.
<i>Partholophilus frutetorum</i>	0	0	0	0	0	1	0	0	0	Southern Widespread		Least Concern	Locally commonly found. Associated with Typha and tall vegetation at the edges of open water.
<i>Pipiza noctiluca</i>	0	0	0	1	1	0	0	0	0	Universal		Least Concern	Frequently found. The larvae feed on aphids on trees, the adults are associated with woodland edges.
<i>Pipizella viduata</i>	0	0	0	0	1	0	0	0	0	Universal		Least Concern	Commonly found. A species of dry grassland. The larvae feed on aphids on umbellifer roots.
<i>Platycheirus albianus</i>	1	1	1	1	1	1	1	1	1	Universal		Least Concern	Commonly found. The larvae are predatory.
<i>Platycheirus clypeatus s.s.</i>	0	0	0	0	0	0	0	0	1	Universal		Least Concern	Commonly found. The larvae are predatory.
<i>Platycheirus fulviventris</i>	0	0	0	0	0	0	0	0	1	Universal		Least Concern	Locally commonly found. Associated with lush marshy places.
<i>Rhingia campestris</i>	0	0	0	0	1	0	0	0	0	Universal		Least Concern	Commonly found. It breeds in the dung of cattle and other large herbivores.
<i>Riponnensia splendens</i>	0	0	0	0	1	0	0	0	0	Southern Widespread		Least Concern	Frequently found in lush marshes and fens, especially in the south.
<i>Sericomynia silentis</i>	0	0	0	0	1	0	0	0	0	Universal		Least Concern	Frequently found in wet acidic woodlands and meadows. The rat-tailed larvae live in small pools which are rich in organic material.
<i>Sphaerophoria scripta</i>	0	0	0	0	1	1	0	0	0	Universal		Least Concern	Very commonly found in the southern half of the British Isles. A grassland species, the larvae feed on aphids and Homoptera living in the ground layer.
<i>Sphaerophoria taeniata</i>	0	0	0	0	1	0	0	0	0	Universal		Least Concern	Frequently found. Associated with wet meadows.
<i>Sphlegina elegans</i>	0	0	0	0	0	1	0	0	0	Universal		Least Concern	Infrequently found. The larvae live in damp wood.
<i>Syrirta pipiens</i>	0	0	0	0	1	1	0	0	1	Universal		Least Concern	Very commonly found in most places throughout Britain. The larvae live in decaying vegetation.
<i>Syrphus ribesii</i>	0	0	0	0	1	1	0	0	0	Universal		Least Concern	Very commonly found. A migratory species. The larvae feed on aphids.
<i>Syrphus vitripennis s.l.</i>	0	0	0	1	1	1	1	1	1	Universal		Least Concern	Commonly found. Woodland edges. The larvae feed on aphids. Two species present under this name.

<i>Tropidia scita</i>	0	0	0	0	0	1	0	0	0	0	0	Universal			Least Concern		Locally common. A species of lush fen and marsh.
<i>Volucella bombylans</i>	0	0	0	0	0	0	1	0	0	1	0	Universal			Least Concern		Commonly found. The larvae live in bumble bee nests.
<i>Volucella pellucens</i>	0	0	0	0	0	1	1	0	0	0	0	Universal			Least Concern		Commonly found. Woodland edges and scrub. The larvae live in social wasp nests.
<i>Xylota segnis</i>	0	0	0	1	0	0	0	0	0	0	0	Universal			Least Concern		Commonly found. Woodlands and hedgerows. A dead-wood breeding species which will even use sawdust!
<i>Xylota sylvarum</i>	0	0	0	0	1	0	1	0	0	0	0	Universal			Least Concern		Commonly found. Woodlands and hedgerows. A dead-wood breeding species which will even use sawdust!
Tachinidae (Parasite Flies)																	
<i>Eriothrix rufomaculata</i>	0	0	0	0	1	0	0	0	0	0	0	Universal					Commonly found. In grassland habitats
<i>Zophomyia temula</i>	0	0	0	0	1	0	1	0	0	0	0	Southern Widespread	Nationally scarce				Frequently found. Associated with a variety of habitats including woodland, calcareous grassland and coastal dunes.
Tephritidae (Picture-wing Flies)																	
<i>Urophora cardui</i>	0	0	0	0	0	0	0	0	1	0	1	Southern Restricted					Commonly found, on Creeping Thistles <i>Cirsium vulgare</i>
<i>Urophora jaceana</i>	0	0	0	0	0	1	0	0	0	0	0	Universal					Commonly found, on Hardheads <i>Centaurea nigra</i>
<i>Urophora quadrifasciata</i>	0	0	0	0	1	0	1	0	0	0	0	Southern Restricted					Commonly found on Hardheads <i>Centaurea nigra</i>
<i>Urophora stylata</i>	0	0	0	0	0	1	0	0	0	1	0	Southern Widespread					Commonly found. Galls flower and seed-heads of thistles.
<i>Xyphosia miliaria</i>	0	0	0	0	0	1	0	0	0	1	0	Universal					Commonly found on thistles
Tipulidae (Craneflies)																	
<i>Nephrotoma appendiculata</i>	1	0	1	0	1	0	0	0	0	0	0	Universal					Commonly found. A species of dry grassland.
<i>Nephrotoma cornicina</i>	0	0	0	0	0	0	0	0	1	0	1	Southern Widespread					Locally commonly found. The larvae develop in dry calcareous or sandy soils.
<i>Nephrotoma flavescens</i>	0	0	0	0	1	0	1	0	1	0	1	Universal					Commonly found. A species of dry grasslands.
<i>Nephrotoma quadrifaria</i>	0	0	0	0	0	1	0	0	0	0	0	Universal					Commonly found. Prefers slightly damp woodland.
<i>Nigrotipula nigra</i>	0	0	0	0	0	0	0	0	0	1	0	Southern Widespread					Infrequently found. Associated with damp peat in fens.
<i>Tipula lateralis</i>	0	0	0	0	0	0	0	0	1	0	1	Universal					Commonly found. The larvae live in muddy seepages and sluggish streams.

<i>Tipula luna</i>	0	0	0	0	0	0	0	0	0	0	1	Universal				Frequently found. Associated with fens and marshes with rushy vegetation.
<i>Tipula maxima</i>	0	0	0	0	0	0	0	0	0	1	1	Universal				Frequently found. Associated with seepages on cliffs and in woodland.
<i>Tipula oleracea</i>	0	1	0	0	0	1	0	0	0	0	0	Universal				Commonly found. Associated with pastures on wet soils.
<i>Tipula paludosa</i>	0	1	0	0	1	0	0	0	0	0	0	Universal				Very commonly found. A pasture pest species.
<i>Tipula pierrei</i>	0	0	0	0	1	0	1	0	0	0	0	Universal				Frequently found. The larvae are associated with the open margins of coastal ditches and pools and eutrophic lakes. Some emergent vegetation needs to be present.
<i>Tipula varicornis</i>	1	0	0	0	0	0	0	0	0	0	0	Universal				Frequently found. A species which is associated with wet woodlands.
<i>Tipula varipennis</i>	0	0	1	0	0	1	0	0	0	0	0	Universal				Commonly found. A species of wet woodland.
<i>Tipula vernalis</i>	0	1	0	0	0	1	0	0	0	0	0	Universal				Commonly found. A species of herb-rich grasslands in open situations.
<i>Tipula vittata</i>	1	0	0	0	1	0	0	0	0	0	0	Universal				Frequently found. A species of small streams and muddy ponds in unimproved situations. The larvae live in the bare mud in streams and pond margins.
Uliidiidae																
<i>Dorycera graminum</i>	0	0	0	1	0	0	0	0	0	0	0	Southern Restricted	RDB 3	Section 41 species	Near Threat- ened	Frequently found. Associated with taller grasslands, often dry ones. However, the larval food plant is unknown; it may be the roots or inflorescences of grasses.
HYMENOPTERA SYMPHYTA (Sawflies)																
Tenthredinidae																
<i>Athalia rosae</i>	0	0	0	1	1	0	0	0	0	0	0	Southern Widespread				Very commonly found. The larva feeds on various species of crucifer, and was formerly a pest of turnips.
<i>Macrophya annulata</i>	0	0	0	1	0	0	0	0	0	1	1	Universal				Commonly found. The larvae feed on creeping cinquefoil.
<i>Rhogogaster viridis</i>	0	0	0	0	0	1	0	0	0	0	0	Universal				Commonly found. Lush vegetation and scrub. Larvae pos- sibly feed on leaves of woody plants.
HYMENOPTERA PARASITICA (Ichneumon Wasps and allies)																
Cynipidae (Gall Wasps)																

<i>Biorhiza pallida</i>	0	0	1	0	0	0	0	0	0	0	Universal				Commonly found. It galls the buds of oaks, forming Oak apples. The second generation galls the roots..
Gasteruptionidae (Parasitic Wasps)															
<i>Gasteruption jaculator</i>	0	0	0	0	0	0	0	0	1	Southern Restricted					Commonly found. A clepto-parasite of stem-nesting bees.
ACULEATE HYMENOPTERA (Ants, Bees and Wasps)															
Andrenidae (Mining Bees)															
<i>Andrena bicolor</i>	0	0	0	0	1	0	0	0	0	Universal					Very commonly found. Polylectic. Ground nesting.
<i>Andrena bucephala</i>	0	0	0	0	0	1	0	0	0	Southern Widespread	RDB 3				Colonial nester with females sharing a common nest entrance. Ground nesting. Polylectic.
<i>Andrena chrysoceles</i>	0	0	1	1	1	1	1	1	1	Southern Widespread.					Commonly found. Especially associated with clay woodlands. Polylectic. Ground nesting.
<i>Andrena cineraria</i>	0	1	1	1	0	0	0	0	0	Universal					frequently found. It makes large colonies. Polylectic
<i>Andrena clarkella</i>	0	0	0	0	1	0	1	0	0	Universal					Commonly found. Early spring woodland species. Oligolectic on <i>Salix</i> spp.
<i>Andrena dorsata</i>	0	1	1	1	1	0	1	0	0	Southern Widespread					Commonly found. Often the dominant species in southern Britain. Polylectic.
<i>Andrena flavipes</i>	1	0	0	1	1	1	1	0	0	Southern Restricted.					Commonly found. Forms very large colonies, especially in bare ground. Polylectic. Ground nesting.
<i>Andrena fulva</i>	0	1	1	1	0	0	0	0	0	Southern Widespread.					Locally commonly found, often in woodlands and gardens. Polylectic.
<i>Andrena haemorrhoa</i>	0	0	0	0	1	1	1	1	1	Universal					Commonly found. Females nest singly but males often congregate on blackthorn and hawthorn blossoms. Polylectic. Ground nesting.
<i>Andrena labialis</i>	0	0	0	0	0	0	0	0	1	Southern Widespread					Local species of old meadows. Oligolectic on the flowers of Fabaceae.
<i>Andrena labiata</i>	1	0	0	0	1	1	1	0	0	Southern Restricted	Nationally Scarce a				Locally frequent. Old meadowland and heathy grassland species. Polylectic, although it is often found associated with the flowers of Germander Speedwell, <i>Veronica chamaedrys</i> .
<i>Andrena minutula</i>	1	0	1	1	1	0	0	0	0	Universal					Commonly found. Polylectic. Ground nesting.
<i>Andrena nigroaenea</i>	0	1	1	1	1	1	1	1	1	Universal.					Commonly found. Polylectic. Ground nesting.
<i>Andrena nitida</i>	0	1	0	1	1	1	1	1	1	Southern Widespread					Commonly found. A species of meadows. Polylectic. Ground nesting.

<i>Andrena scotica</i>	0	1	1	1	1	1	1	1	1	1	Universal				Commonly found. Several females may share a common burrow entrance. Polylectic.
<i>Andrena semilaevis</i>	0	0	0	1	1	1	1	1	1	1	Universal				Commonly found. Polylectic, although with an apparent preference for Apiaceae.
<i>Andrena subopaca</i>	0	0	0	1	1	0	0	0	0	0	Universal.				Commonly found, especially in clay woodlands. Polylectic. Ground nesting.
<i>Andrena synadelpha</i>	0	0	0	1	1	0	0	0	0	0	Southern Restricted				Infrequently found. Associated with open woodlands and woodland edges. Local. Polylectic.
<i>Andrena wilkella</i>	0	0	0	1	1	0	0	0	0	0	Universal				Frequently found in unimproved meadows. Oligolectic on Fabaceae. Ground nesting.
Apidae (Bees)															
<i>Anthophora jurcata</i>	0	0	0	1	1	0	0	0	0	0	Southern Widespread				Infrequently found. Oligolectic on Lamiaceae. Nests in dead wood.
<i>Anthophora plumipes</i>	0	0	0	1	1	0	0	0	0	0	Southern Widespread				Commonly found. Nests in the ground or cliffs and walls.
<i>Bombus hortorum</i>	1	1	0	1	1	0	1	1	0	0	Universal				Very commonly found. Polylectic. Nests underground in cavities.
<i>Bombus hypnorum</i>	0	0	0	1	1	0	1	1	1	1	Southern Widespread				Commonly found. Recent colonist, first recorded in 2001 near Southampton, Now spreading rapidly. Strongly associated with gardens and woodland. Often nests in aerial cavities, including bird boxes. Polylectic.
<i>Bombus lapidarius</i>	0	1	1	1	1	1	1	1	1	1	Universal				Very commonly found. Nests underground in cavities. Polylectic.
<i>Bombus lucorum s.l.</i>	0	1	0	0	0	0	0	0	0	0	Universal				Very commonly found. Polylectic. Nests underground in cavities. Three cryptic species under this name in UK.
<i>Bombus pascuorum</i>	1	1	1	1	1	1	1	1	1	1	Universal				Very commonly found. Polylectic. Nests in surface litter.
<i>Bombus pratorum</i>	1	1	0	1	1	0	1	1	1	1	Universal				Very commonly found. Polylectic. Nests underground as well as in aerial cavities, including bird boxes.
<i>Bombus ruderatus</i>	0	0	0	1	1	0	0	0	0	0	Southern Restricted	Nationally Scarce b, Section 41 species			A UK BAP species which has recently shown a very favourable response to the planting of red clover as part of Agricultural Stewardship options. This bumble-bee used to be widespread in southern England at the turn of the century but has declined greatly since then. Although the 1980 Bumblebee Distribution Atlas (dateline 1974) gives about 85 10km. squares for the species, many of these are likely to be mis-identifications for the common <i>B. hortorum</i> . It is thought that this is one of the <i>Bombus</i> species of unimproved grazing meadow. It may also favour damper places than some other species.
<i>Bombus terrestris</i>	1	0	1	1	1	1	1	1	0	0	Universal				Very commonly found. Polylectic. Nests underground in cavities.

<i>Bombus vestalis</i>	0	0	0	1	1	0	0	0	0	Southern Widespread			Commonly found. Breeds in nests of <i>B. terrestris</i> .
<i>Melecta albifrons</i>	1	1	0	0	0	0	0	0	0	Southern Widespread			Infrequently found. A cleptoparasite of <i>Anthophora plumipes</i> .
<i>Nomada fabriciana</i>	0	0	0	1	0	0	0	0	0	Universal.			Commonly found. Parasitises several <i>Andrena</i> species. Ground nesting.
<i>Nomada flava</i>	1	1	1	1	1	0	0	0	0	Southern Widespread			Commonly found. Parasitises several <i>Andrena</i> species. Ground nesting.
<i>Nomada flavoguttata</i>	0	1	0	1	0	0	0	0	0	Universal			Commonly found. Parasitises several <i>Andrena</i> species. Ground nesting.
<i>Nomada goodeniana</i>	0	0	0	1	1	0	0	0	0	Universal			Commonly found. Parasitises several <i>Andrena</i> species. Ground nesting.
<i>Nomada marshamella</i>	0	0	0	1	0	0	0	0	0	Universal.			Commonly found. Parasitises several <i>Andrena</i> species.
<i>Nomada ruficornis</i>	0	0	0	1	0	0	0	0	0	Universal.			Frequently found. Cleptoparasite of <i>Andrena haemorrhoa</i> .
Colletidae (Bees)													
<i>Hylaeus communis</i>	0	0	0	1	1	0	0	0	0	Southern Widespread			Commonly found. Polylectic. Cavity nesting.
<i>Hylaeus pectoralis</i>	0	0	0	0	1	0	0	0	0	Southern Restricted.			Infrequently found. A species of dry reedbeds and associated grassland. Utilises the old gall-chambers of the fly <i>Lipara lucens</i> on Common Reed, <i>Phragmites australis</i> , as a nesting site. Polylectic.
Crabronidae (Solitary Wasps)													
<i>Argogorytes mystaceus</i>	0	0	0	0	1	0	0	0	0	Universal			Frequently found, often in woodlands. Preys on frog-hopper nymphs which it extracts from cuckoo-spit. Ground nesting.
<i>Cerceris rybyensis</i>	0	0	0	1	0	1	0	0	1	Southern Restricted.			Locally commonly found. Heathland and downland. Preys on various solitary bees. Ground nesting.
<i>Lindenus albilateralis</i>	0	0	0	1	0	0	0	0	0	Universal			Commonly found. Preys on Mirid bugs or sometimes small Diptera. Nests in hard-packed bare ground.
<i>Nysson trimaculatus</i>	0	0	0	0	1	0	0	0	0	Southern Widespread	Nationally Scarce b		Infrequently found, a cleptoparasite of <i>Gorytes</i> spp.
<i>Pemphredon morio</i>	0	0	0	1	0	0	0	0	0	Southern Restricted	Nationally Scarce b		Widespread but very infrequently found. Preys on aphids. Dead wood nesting.
Formicidae (Ants)													
<i>Formica fusca</i>	0	0	1	0	0	0	0	0	0	Universal			Commonly found in many habitats, although largely replaced by <i>F. lemami</i> towards the north.

<i>Lasius brunneus</i>	0	0	0	0	1	0	0	0	0	Southern Restricted	Nationally Scarce b		Locally frequently found. Nests in old trees, especially oaks.
<i>Lasius flavus</i>	0	0	0	0	1	0	0	1	0	Universal.			Commonly found. The large, dome-shaped nests are an indicator of long-established pasture.
<i>Lasius niger s.s.</i>	1	0	0	0	1	1	0	1	1	Universal			Very commonly found. Dry habitats.
<i>Myrmica rubra</i>	1	0	0	0	0	1	0	1	0	Universal			Locally common in sheltered localities.
<i>Myrmica ruginodis</i>	0	1	1	1	1	0	0	0	0	Universal			Commonly found in many habitats.
<i>Myrmica scabrinodis</i>	0	0	0	0	1	0	0	0	0	Universal			Commonly found in a variety of open habitats.
Halicidae (Miming Bees)													
<i>Halictus tumulorum</i>	0	1	0	0	1	0	0	0	0	Universal			Commonly found. A eusocial species. Polylectic. Ground nesting.
<i>Lasioslossum albipes</i>	0	0	0	0	0	1	0	0	0	Universal			Commonly found. A eusocial species. Polylectic. Ground nesting.
<i>Lasioslossum fulvicorne</i>	0	0	0	0	1	0	0	0	0	Southern Widespread			Locally commonly found on more alkaline soils. Polylectic. Ground nesting.
<i>Lasioslossum leucozonium</i>	0	0	0	0	0	1	0	0	0	Southern Widespread			Commonly found in a variety of habitats. Polylectic. Ground nesting.
<i>Lasioslossum malachurum</i>	0	0	0	0	1	0	0	0	0	Southern Restricted	Nationally Scarce a		Commonly found. Eusocial species which forms large colonies. Formerly, a largely coastal species. Increased its range during the 1990s, does not merit Nationally Scarce status now. Polylectic.
<i>Lasioslossum minutissimum</i>	0	0	0	0	1	0	0	0	0	Southern Restricted			Locally frequently found. Associated with sandy places. Polylectic.
<i>Lasioslossum morio</i>	1	0	0	0	0	0	0	0	0	Southern Widespread			Commonly found. Polylectic. Ground nesting
<i>Lasioslossum pauxillum</i>	0	0	0	0	1	1	0	0	0	Southern Restricted	Nationally Scarce a		Commonly found. Polylectic and eusocial. Became much commoner during the 1990s, does not merit Nationally Scarce status now. Ground nesting.
Megachilidae (Leafcutter and Mason Bees)													
<i>Megachile ligniseca</i>	0	0	0	0	1	0	0	0	0	Southern Widespread			Infrequently found. Dead-wood nesting. Polylectic.
<i>Osmia bicornis</i>	1	1	0	0	0	0	0	0	1	Universal.			Locally common. Cavity nesting. Polylectic.
<i>Osmia caeruleascens</i>	0	0	0	0	1	0	0	0	0	Southern Widespread			Locally commonly found. Cavity nesting. Polylectic.
<i>Osmia leatiana</i>	0	0	0	0	1	0	0	0	1	Southern Widespread			Infrequently found. Oligolectic on Asteracea.

Appendix i

Conservation Status Categories, Distribution and Abundance Terms for Insects

Conservation Status categories

GB Conservation Status categories are in the process of being upgraded. This means that it is currently necessary to provide values for both systems as not all groups have been dealt with.

The old RDB (Red Data Book) Conservation Status categories were based purely on the number of 10km squares which a species was known to have been recorded from, with a base-line date of 1970. These categories are obviously susceptible to the progressive accumulation of new records over time, especially so as, for some species in particular, non-specialist recording has increased significantly. There are also known changes in range and abundance which have been increasingly commented on by specialists.

The old system graded species like this:

RDB 1. Endangered. Species currently (post 1970) known to exist in five or fewer ten-kilometre squares.

RDB 2. Vulnerable. Species in severely declining or vulnerable habitats, or of low known populations. Known to exist (post 1970) in ten, or fewer, ten-kilometre squares.

RDB 3. Rare. Species with small populations, not at present Endangered or Vulnerable, but which are felt to be at risk. Species currently known to exist (post 1970) in fifteen, or fewer, ten-kilometre squares.

RDB K. Species of undoubted RDB rank, but with insufficient information for accurate placement; includes possible recent arrivals.

Nationally Scarce. Species currently (post 1970) known to exist in one hundred, or fewer, ten-kilometre squares.

In some groups these are further sub-divided into:-

Nationally Scarce a. Species currently (post 1970) known to exist in thirty, or fewer, ten-kilometre squares.

Nationally Scarce b. Species currently known to exist in thirty-one to one hundred ten-kilometre squares.

The new IUCN-type Red Data Book Conservation Status categories are based on perceived threat, of which distribution is only one part, the other being related to the population trend, over the 10 years previous to the assessment, for the species in question. Such trends may be inferred from accumulated specialist knowledge, but, as the quantity and quality of data improves, increasing effort is being made to model such changes. The output of such modelling then being compared with the specialist knowledge. Species with a negative trend may not be inherently rare, it is the decline which is the significant factor.

The new system grades species like this (This is very much a summary, there is considerable detail to this, please consult the published Great Britain Red List for a group for a better understanding of how the gradings have been arrived at):

Regionally Extinct (RE). As it says!

Critically Endangered (CE). Species with a very severe decline in population trend or geographic range within the area considered.

Endangered (E). Species with a severe decline in population trend or geographic range within the area considered.

Vulnerable (V). Species with a marked decline in trend or geographic range within the area considered.

Near Threatened (NT). Species which are suspected to qualify for Vulnerable, but where the data does not quite support such a category.

Least Concern (LC). Species which show no marked negative population trend or geographic range. Indeed they may have positive values for either or both.

There will be a number of species where it has been considered that there is insufficient information to provide a supported grading, such species are called Data Deficient (DD). There are also categories for invasive (with anthropogenic agency) species, usually Not Applicable (NA) is used for this.

This system was primarily developed for assessing large mammal populations and fish stocks, adapting it for

invertebrates is, inevitably, an experimental process and it is to be expected that there will be variability in its application and interpretation between groups. However, each published GB Red List has information on the actual way in which decisions have been arrived at. These should be consulted where necessary.

There is no inherent equivalence between the old and new systems

Great Britain has a considerable environmental gradient from north to south and, to a lesser extent, east to west. Species which are stable in their trend or geographic extent may still be considerably limited by the availability of suitable habitat resources. In order that such species do not get missed from conservation considerations a second, parallel, system of GB scarcity has been developed. This is similar to the old Conservation Status system in that it is based on the number of 10km squares which the species is known from, in a given time period, usually 30 years previous to the date of the assessment.

Categories for this National Scarcity rating are :

NR, with 1-15 10Km occupied squares

NS, with 16 to 100 10Km occupied squares.

Clearly both systems will require periodic revision if they are to remain relevant to the needs of a modern country and the conservation of its fauna.

Distribution categories

Distribution refers solely to the geographical extent of a species in the British Isles. Considerable confusion has been caused in the past by the varying meanings given to many assessments of species where geographic distribution has been confused with local abundance.

A distribution classification, based on the known distribution range, is used here. Where possible a provisional national distribution range status under this system is given, based on published distribution maps, updated where necessary by specialist information. The basic system has been to divide the British Isles into thirds, largely ignoring the influence of altitude. The lines delineating these thirds run approximately:

- i). Along a line from the Wash to the Severn and including South Wales.
- ii) Along a line running through the Scottish Borders.

Universal. Distributed throughout England and Wales, with at least some extension into central and northern Scotland.

Widespread. Distributed in about three-quarters of England and Wales, perhaps with a few records in southern Scotland, but not significantly found in the northern third (Southern Widespread) or southern third (Northern Widespread) of the British Isles. (NB Northern Widespread species are found in Scotland as well.)

Restricted. Distributed in the southern (Southern Restricted) or northern (Northern Restricted) third of the British Isles only.

Abundance Comments (in Notes)

These often form the first part of the 'Notes' in the species information. An attempt has been made to make something akin to the well-established DAFOR system for botanical abundance recording, but with just four categories. These rate the expectation of finding the species, if all its life-cycle resource requirements and temperature and humidity regimes are apparently met on a site.

i) **Commonly found.** An experienced observer would expect to find the species 90% or more of the time where all its requirements are met.

ii) **Frequently found.** An experienced observer would expect to find the species 60% or more of the time where all its requirements are met.

iii) **Infrequently found.** An experienced observer would expect to find the species 10% or more of the time where all its requirements are met.

iv) **Rarely found.** An experienced observer would expect to find the species less than 10% of the time where all its requirements are met.

These may be modified by a comment as to the degree of restriction to localities, even within its known range and when its requirements are met, often something like **Locally frequently found.**

Abundance comments are much more subjective than distribution comments, being dependent upon the precise timing of survey visits and the timing of emergence of the insect species, as well as the experience of the observer. The method of recording, e.g. by sight or hand-netting, sweeping, beating, malaise trap, pan trap, may also affect the observed abundance. It is assumed that recording takes place under favourable conditions of habitat, weather and season. Often a species appears to be rarely found, until the particular way of looking for it is discovered, when it proves to be much more prevalent than previously thought.

Some species, however, seem to exist in low numbers at all times in all suitable places. This may reflect the species' position in its particular ecological pyramid. The abundance may have no connection with the conservation status; some species are numerous in their particular locations: others may only ever be found as singletons. Comments under this heading rely heavily upon the observer's accumulated experience as the rating given is a measure of the expectation of finding the species in a suitable habitat. Species living towards the edge of their range are often less frequent than they are in the middle of their range.

Specialist Terms for Ants, Bees and Wasps

Cleptoparasitic: A species taking over the stored provisions of another species to feed its young. This usually involves the cleptoparasite laying an egg in the nest of the host, but may involve oviposition on prey being transported by the host.

Socially Parasitic: The queens of some social aculeates do not initiate their own nests from scratch, but take over established nests of other species. Sometimes this results in the gradual replacement of the workers of one species by another. In other cases the parasite does not produce its own workers and the nest just produces males and females of the invading parasite before it dies out. In some ant species the chain of socially parasitic species may have several links.

Nesting situations: Bees and wasps may construct their nesting chambers in the ground (ground nesting) or in aerial situations (aerial nesting). Such aerial nests may be constructed in dead wood (dead-wood nesting), dead bramble stems or similar pith-filled stems (stem nesting) or in a variety of cavities (cavity nesting).

Nest provisioning terms: These relate (in bees) to the preferred sources of pollen for provisioning the nest. Such resources may be very specific for some species. Nectar sources are not so clearly defined, although bees with longer tongues can forage at flowers with longer nectaries. Such flowers often have more concentrated nectar. The structure of the anthers and stigma is often related to the length of the tongue of the preferred pollinating insect.

Oligolectic: Bees which confine their pollen gathering activities to one species of plant, or a closely-related group of plants.

Polylectic: Bees which forage for pollen at a variety of different plants and show no particular preference.

Social organisation: The majority of bee and wasp species are solitary. One female provisions the nest and lays her eggs on the provisions. A number of solitary nesting insects may use the same small area when they are said to nest colonially. Eusocial species have a founding female who lays all the eggs, but the first insects to hatch (females) stay and help run the nest. At the end of the season males and females are produced. These mate and the newly mated females start their own nests. Usually only mated females overwinter. Some ant colonies have several mated females (queens).