

Biodiversity survey of the Iford Estate, 2021

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Fig. 1. An immature *Scotina palliardii*, new to East Sussex.

0 - Summary

The Iford Estate is a large estate in East Sussex, the area covered in this survey covering some 820 hectares and runs pretty much continuously from the north east edge of Brighton to Southerham roundabout near Lewes. The site covers a range of habitats, from arable, to chalk-grassland, to grazing marsh with ditches and artificial lakes.

The author was commissioned to carry out a baseline survey of the site in order to inform management of the farm and act as a sound baseline for assessing change over time. Therefore, methodologies to be used needed to be in line with other farm surveys carried out by the author using a rigorous and repeatable methodology that would give comparable data when repeated at a future date.

The Estate was split into three main habitats; Arable, Chalk-grassland and Brooks. Three recording sessions were agreed upon with three days to be spent during each period, split evenly between the three habitats. In each habitat, the site was further split into six recording blocks to stratify the time, meaning that there were 18 recording compartments overall, each of which was visited for a total of three hours during the survey.

The site was visited in spring (end of April/start of May), June and September. The final visit was a little late due to ill health and an August visit would have been more desirable.

A total of almost 5699 records of 1300 species were made over the nine days of survey, an impressive total. Of these 1300 species, 870 were invertebrates, 325 were vascular plants and 80 were birds.

Of the 870 invertebrates, 72 had some form of conservation status. This equates to a proportion of 8.3%, much higher than the author's rolling average across all sites (including all nature reserves, rewilding projects etc) of 6.3%. The highest number and proportion of scarce invertebrates occurred on the chalk-grassland, with 43 species present there (9.9%).

In terms of species-richness, the big surprise was that the arable scored highest in many categories. This in part down to the specialised nature of the chalk-grassland and the hard grazing and grassland management on the Brooks making the grassland component less interesting there.

A total of 67 bees, ants and wasps were recorded, a female *Halictus eurygnathus*. This RDB1 bee is pretty much entirely restricted to the Downs around Lewes, Brighton and Seaford. It was not found on chalk-grassland though and was recorded on a particularly rich arable margin. The impressive bee, *Andrena gravida*, was found to be breeding in Adder's Corner in spring. A rare bee that has made something of a comeback in recent years and is expanding in range. On the Brooks, a record of *Bombus muscorum* was made late in the year.

An impressive 152 species of spider were recorded. The endangered spider, *Scotina palliardi*, was recorded in an old chalk pit on north facing chalk-grassland. On the Brooks, *Hypomma fulvum* was recorded. This nationally scarce wetland money spider is only known from Rye Harbour in Sussex.

Nearby an unknown colony of the moth, the **Scarce Forester** was discovered. The **Shining Ramshorn** (*Segmentina nitida*) a nationally scarce/section 41 snail was found in a number of ditches on the Brooks, a known site for this species.

The most speciose invertebrate order were the beetles, with 285 species recorded. The nationally scarce **Bombardier Beetle** *Brachinus crepitans* was common on the arable under large flints, a particular feature of the Estate. The Nationally scarce a weevil *Melanobaris laticollis*, was common on the site, despite being a rare species in Sussex. It feeds on Hedge Mustard, which is common on the site.

Butterflies were well represented but often limited by hard grazing or under-grazing. **Adonis Blue** was recorded on three of the chalk-grassland plots and one nearby arable plot. In fact, all of the expected chalk-grassland butterflies occurred somewhere on the site. The isolated patch of chalk-grassland at the extreme south west of the Estate held the only site record of **Grizzled Skipper**.

Stone-curlews breed here, a well-kept secret, and did well in 2021. Other breeding highlights include good populations of **Corn Buntings**, **Skylarks** and **Yellowhammer**, especially on the Downs. On the Brooks, **Lapwing** breed in places and **Cetti's Warbler** and **Reed Bunting** are common. A total of 80 species of bird were recorded across the Estate. Of these, 40 were found to have some form of conservation status. Many of the birds encountered were migrants and fly overs, showing how important this site is as a migration route for birds leaving and entering the country.

A total of 325 vascular plants were recorded, nine of which had some form of conservation status. Of these, two were found on the arable, five on the chalk-grassland and two on the Brooks. Perhaps most exciting was the discovery of a single **Frog Orchid** (vulnerable and section 41) in late September in High Down, a small area of scrubby, unmanaged chalk-grassland.

Autumn Lady's-tresses, **Bastard-toadflax** and **Heath Dog-violet** (as well as the more widespread **Round-headed Rampion**) were all recorded in one very important but over-grazed valley, Long Bottom. Arable plants were poorly represented due to the amount of fertiliser put down here with only one plant of **Stinking Chamomile** and a handful of plants of **Dwarf Spurge** recorded across the whole of the arable area. Even common species like fluellen were not recorded.

On the Brooks, only **Tubular Water-dropwort** and **Frogbit** were recorded that had status but a wide range of local aquatic and emergent plants were also noted here, such as **Narrow-leaved Water-plantain**, **Fan-leaved Water-crowfoot**, **Marsh Dock** and **Flowering-rush**.

Each of the three broad habitats complement each other well and work together at the landscape level. Comparative analysis showed some interesting results though, with the arable areas coming out very well compared to the others in some metrics. More bees were recorded in the arable plots than the other chalk-grassland or the Brooks (the Brooks scoring particularly badly). This is as much down to grazing on the chalk-grassland and Brooks though, as it is the presence of year-round nectar sources on the arable margins.

Unsurprisingly, the chalk-grassland held the most species with conservation status and the Brooks the least. More than half of all rare and scarce invertebrates recorded were found on the chalk-grassland.

A total of 30 Section 41 species were recorded, with the largest number being found on the chalk-grassland. Using only these species and not all species with status, is however misleading, even if Defra do push for this metric to be a judge of success.

Management recommendations are given on a habitat by habitat and a compartment-by-compartment basis. Recommendations for further monitoring and data compilation are also provided.

1 - Introduction

The Iford Estate is extremely large, covering some 1200 hectares and runs pretty much continuously from the north east edge of Brighton to Southerham roundabout near Lewes.

The site covers a range of habitats, from arable, to chalk-grassland, to grazing marsh with ditches and artificial lakes.

The author was commissioned to carry out a baseline survey of the site in order to inform management of the farm and act as a sound baseline for assessing change overtime. Therefore, methodologies to be used needed to be in-line with other farm surveys carried out by the author using a rigorous and repeatable methodology that would give comparable data when repeated at a future date.

Chalk-grassland A & B are SSSI units in the Kingston Escarpment and Iford Down SSSI (under the name Iford Down where the compartment is listed in 'favourable condition' as of 2007). The author would agree that this area is still in 'favourable condition'. In fact, the unit seems to be in better condition in 2021 than it was in 2007 as over-grazing and scrub encroachment were both mentioned and these had been addressed in 2021. Although they would need to be ongoing to be successful in the long term.

Additionally, all of the Brooks (except Brooks - B) are partially in the Lewes Brooks SSSI. All units were assessed as 'unfavourable recovering' in 2013 and the author would continue to agree with this assessment.

Recording

The site straddles two 10 km squares, TQ30 to the west and TQ40 to the east. Most of the downland part of the site is in TQ30 while all of the Brooks are in TQ40.

2 - Methodologies

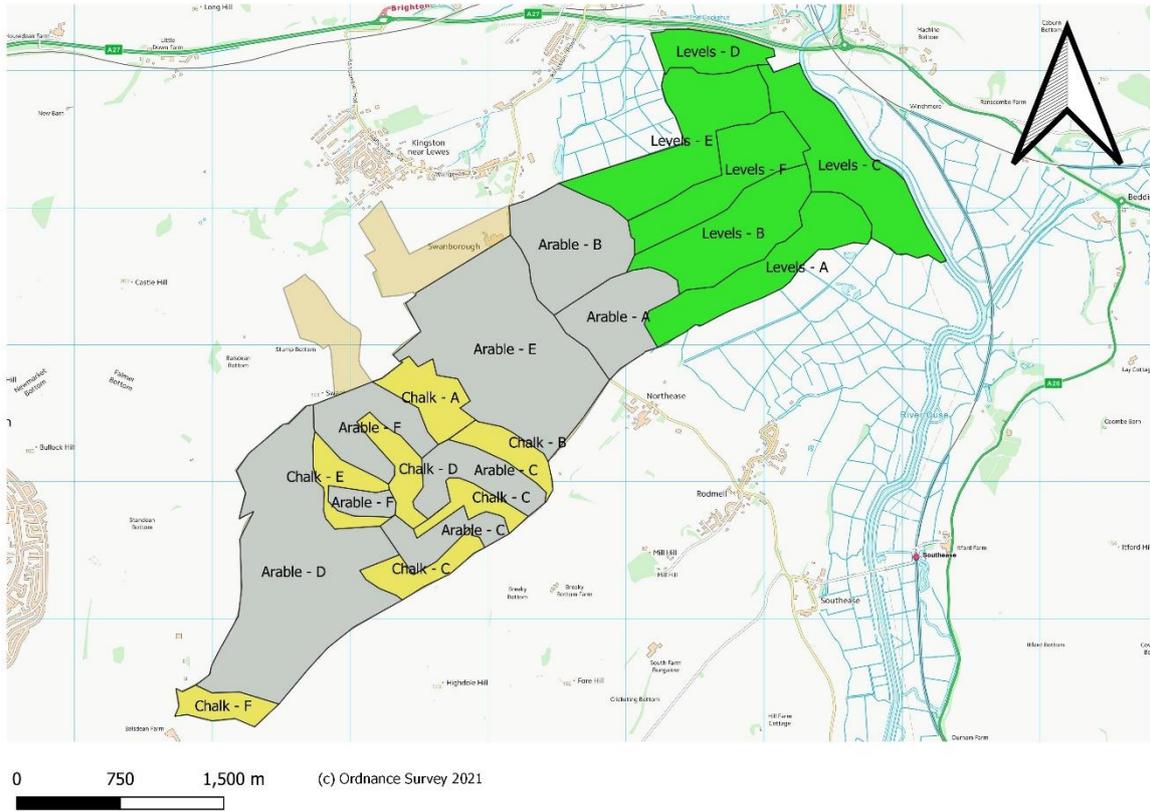


Fig. 2. Location of the 18 recording compartments

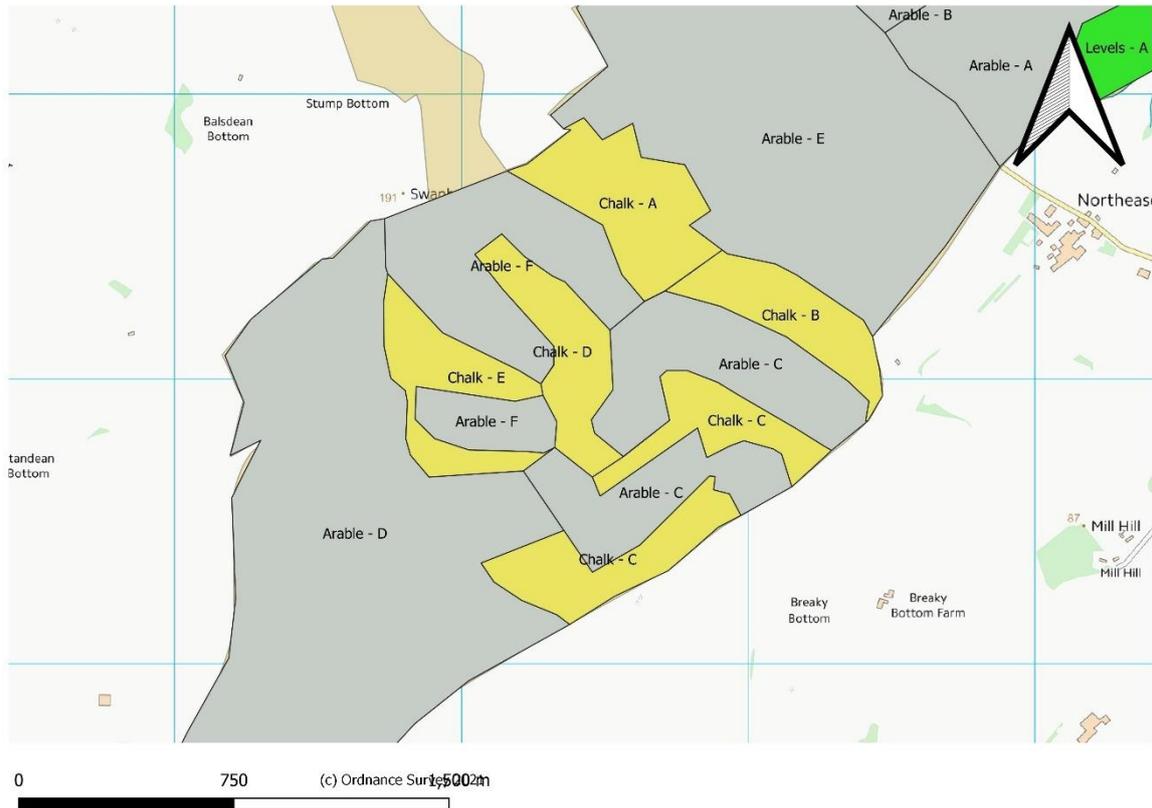


Fig. 3. Close up of the complexity of the chalk-grassland recording compartments.

The farm was split into three basic habitats/areas:

- Arable
- Chalk-grassland
- Brooks

The Brooks were spatially distinct from the other two habitats, while the arable and chalk were mixed together, effectively down to a series of steep sided valleys and hills that have escaped the plough over the years and remained as chalk-grassland. Chalk-grassland C, D, E & F are very isolated with limited public access, despite being CROW land (see figure 3 above).

Each of these areas were further split into six recording compartments. On any one day, up to six hours was spent recording. The Brooks were always completed as a single unit but the way the chalk-grassland and the arable was mixed together meant that sometimes these blocks were mixed up (i.e., four arable and two chalk-grassland were tackled in one day). Due to a heatwave and ill health in late summer, several days were split further with only half days (three recording blocks) tackled at any one time.

One hour was spent recording in each block. A 'bioblitz' approach was used; where all birds, plants, mammals and invertebrates were recorded when field identifiable. Invertebrate specimens were sampled at each site too and stored in alcohol until identification was possible in the winter.

All records were recorded to a generic grid reference at the centre of each recording compartment (a site centroid). All records will be passed in time to the Sussex Biodiversity

Records Centre. Any especially rare species recorded on the site, were recorded to a higher resolution using an eight-figure grid reference.

The site was visited on the following nine occasions in three distinct time periods aimed at maximising the number of species recorded:

Spring visit

- 29th April
- 30th April
- 1st May
- 2nd May

Mid-summer visit

- 13th June
- 14th June
- 15th June
- 23rd June

Late summer/early autumn visit

- 7th September
- 8th September
- 10th September
- 12th September
- 13th September
- 16th September

3 - Results

3.1 - Summary of findings

A total of 5699 records of 1300 species were made during the nine days of survey.

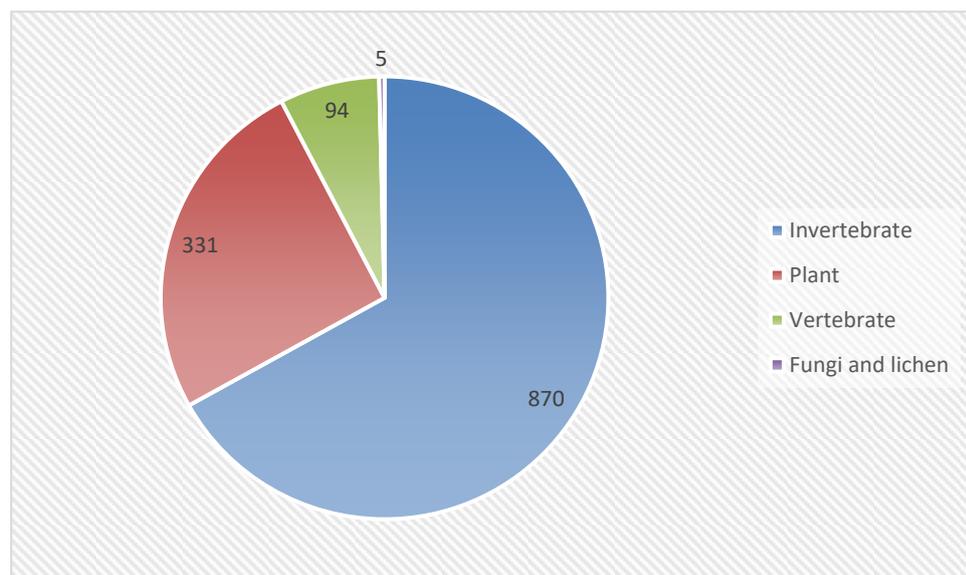


Fig. 4. Broad breakdown of the species recorded.

Approximately two thirds of all species recorded were invertebrates, one quarter plants and a twelfth, vertebrates.

Tab. 1. Species-richness in the three main areas across different groups/orders. Green shows the highest scoring habitat and red, the lowest.

Group	Order	A	C	L	All
I	acarine (Acari)	1	3	1	4
V	amphibian	1	0	2	2
I	annelid	0	0	4	4
V	bird	54	46	65	80
V	bony fish (Actinopterygii)	0	0	3	3
I	centipede	1	2	0	3
P	conifer	1	1	0	1
I	crustacean	6	6	7	10
P	fern	1	0	1	2
I	flatworm (Turbellaria)	0	0	1	1
P	flowering plant	182	164	174	319
F	fungus	0	2	2	4
I	harvestman (Opiliones)	5	4	3	7
P	horsetail	1	0	3	3
I	insect - beetle (Coleoptera)	152	118	135	285
I	insect - butterfly	16	22	15	29
I	insect - caddis fly (Trichoptera)	0	1	0	1
I	insect - cockroach (Dictyoptera)	1	1	0	1

I	insect - dragonfly (Odonata)	2	2	13	14
I	insect - earwig (Dermaptera)	1	1	1	1
I	insect - hymenopteran	44	42	17	67
I	insect - lacewing (Neuroptera)	1	0	2	2
I	insect - mayfly (Ephemeroptera)	0	0	1	1
I	insect - moth	26	37	20	64
I	insect - orthopteran	9	8	8	12
I	insect - scorpionfly	0	1	1	1
I	insect - true bug (Hemiptera)	66	58	45	119
I	insect - true fly (Diptera)	33	24	25	53
F	lichen	0	0	1	1
I	millipede	2	1	0	2
I	mollusc	13	15	23	35
P	moss	1	5	0	6
V	reptile	1	1	0	2
I	spider (Araneae)	90	84	71	152
I	springtail (Collembola)	3	3	3	3
V	terrestrial mammal	5	5	3	7
	Grand Total	719	657	650	1301

Across the different taxa, no one habitat stood out above the other two but overall, the arable plots held the most species overall.

3.2 - Species with conservation status

Conservation status is a complex issue. Each taxonomic group has used a slightly different set of criteria for assessing their species. Within each group, some species are assessed more often or more thoroughly than others. Some are long overdue and as a result there are two systems running at present. Mike Edwards has kindly allowed the author to use this text to explain both systems.

“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. This is 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 (post 1970) 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 being then 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 group-appropriate published Great Britain Red List for a better understanding of how the gradings have been arrived at):

Regionally Extinct (RE). See group-appropriate Red List for criteria. In general, a sufficiently long time has elapsed since the last record of this species.

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, which are usually assessed as Not Applicable (NA).

The IUCN Red List 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.”

The research BAP is a list of moth species that was never meant to carry equivalence to the actual BAP list. It was meant to guide funding towards research to understand why these common species were declining. However, this nuance has been lost and they are now often quoted as being BAP species when they are not. Here, this includes species like the Cinnabar moth.

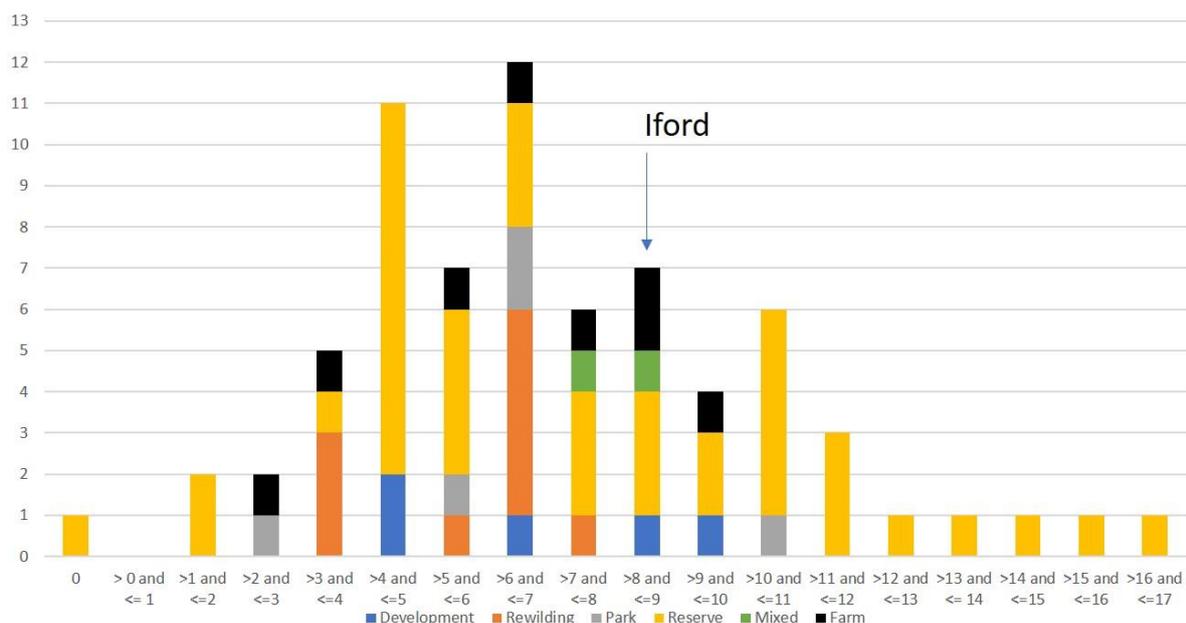


Fig. 5. Frequency distribution of the proportion of species with conservation status of all the author's recent surveys, colour-coded by site category.

The mean proportion of invertebrates with conservation status across all the author's recent surveys is 6.3%. Here, the whole Estate comes out at 8.3%, significantly higher than the average. At the time of writing, Iford was the 2nd highest farm, for the proportion of invertebrate species with conservation status, that the author had surveyed. The highest being Truleigh in West Sussex at 9.7%.

Araneae (spiders)

Spiders had their conservation statuses updated in 2017 and are therefore considered fairly up to date. The review was perhaps a little over lenient and put several species on the conservation status list that perhaps did not warrant it. The reader is encouraged to cross reference the following species accounts with the associated Spider Recording Scheme page for each species. The *Alopecosa cuneata* link is included here as an example. <http://srs.britishspiders.org.uk/portal.php/p/Summary/s/Alopecosa+cuneata>

A total of 152 species of spider were recorded through the survey, 16 of which had some form of conservation status. Arable held the most species, Brooks the least.

***Alopecosa cuneata* - Nationally Scarce**

A single female was recorded on 29th April on Chalk-grassland A. By late summer, the distinctive spiderlings were found to be widespread on the chalk-grassland and the arable where it was close to extant chalk-grassland. It was picked up in Arable D & E and Chalk-grassland A, B, C and E. This spider is most likely going to lose its status in the next review due to being found increasingly on the Downs by the author and other recorders.



Fig. 6. A stock image of an adult male *Alopecosa cuneata* male.

***Argenna subnigra* - Nationally Scarce**

A single adult male was suction sampled from short turf at the top of 'Adders Rest' /Chalk-grassland C on the 30th April. This species likes warm, dry, short turf, with plenty of bare ground. It is usually only ever collected by suction sampling.

***Cheiracanthium virescens* - Nationally Scarce**

A single female was recorded on Chalk-grassland A in September on the best chalk slope and an immature female on Chalk-grassland B. This spider is typically found on heathland and is quite scarce in East Sussex.

***Enoplognatha cf. mordax* - Nationally Scarce**

This is an unusual occurrence. In 2018, the author started to notice a spider that looked very like *Enoplognatha mordax* start to appear in atypical habitats. The true *E. mordax* is a strict saltmarsh species (in Sussex only known from East Head and Rye Harbour) while these were turning up in wet grassland inland and then by 2020, it was appearing in rank arable vegetation. An adult male was swept from high up in rank vegetation on the edge of an arable field in Arable D & E. Specimens have been sent to the Natural History Museum for DNA analysis. The author believes it may be a new species, as to demonstrate such a rapid range expansion into different habitat and different structural vegetation type is extremely unlikely. Given the proximity to the Continent, it could be that a species has colonised the UK from the south.

***Episinus maculipes* - Nationally Scarce**

A single adult male was swept from Chalk-grassland A in September. This species is unusual in that it spread rapidly in the last decade into Sussex, where it is usually found in deep shade. However, in late summer it seems that males do sometimes turn up in open chalk-grassland, as was seen here. The rate at which this species is spreading and the abundance of habitat available to this species, suggests it will not stay nationally scarce for long.

***Ero aphana* - Nationally Scarce**

Found in an ancient farm building around the farm yard in Arable A. This species is rapidly spreading in the UK and will soon no longer warrant the status it has. It is a generalist that seems to do especially well around buildings.

***Hypomma fulvum* - Nationally Scarce**

Only the second known Sussex site (the other being Rye Harbour). This is the first time the author has encountered this species. It was recorded in the spring at Brooks B (and later in the year at Brooks F) is the most westerly Sussex record. It is pretty much restricted to good quality wetland habitats. A genuinely scarce species.



Fig. 7. A female *Hypomma fulvum* under the microscope.

***Hypsosinga albovittata* - Nationally Scarce**

Found on two chalk-grassland banks. The south facing section of Chalk-grassland A where it was common on the 7th September and also on Chalk-grassland E on 8th September and also the isolated patch of Chalk-grassland, F. This species requires short, low-nutrient swards, most commonly on the chalk but it will also use acid grassland and occasionally bogs.

***Meioneta mollis* - Nationally Rare, S.41, Near Threatened**

Although almost as heavily designated as it is nearly possible for a UK spider to be, this is unwarranted and this spider should be at best considered, nationally scarce. It's more likely though that it is just common and widespread but overlooked due to its small size. Here it was recorded only once on Chalk-grassland C.

***Meioneta simplicitarsis* - Nationally Scarce**

This small, nondescript money spider is pretty much restricted to chalk-grassland, where it is usually fairly predictable. Here it was recorded in Arable D and Chalk-grassland C and E.

***Microctetonyx subitaneus* - Nationally Scarce**

A genuinely scarce money spider that is associated with straw. Here it was collected by suction from arable margins. This is the only record the author has of this species. Recorded from Arable A only. It is only the third Sussex recorded and the second East Sussex record, the last being in 2012 at Great Dixter.

***Nigma puella* - Nationally Scarce**

Found from Brooks B only where it was beaten from scrub. This small but attractive spider is almost always beaten from the lower branches of trees and shrubs, more often on hedgerows than it is woodland. It is much commoner in East Sussex than West.

***Panamomops sulcifrons* - Nationally Scarce**

Two males of this ugly little money spider were found on Arable A in June. This spider is usually found either on chalk-grassland or on tidal litter in river valleys. It is uncommon and this is a good record for the habitat.

***Pardosa tenuipes* (was *Pardosa proxima*) - Nationally Scarce**

A fairly generalist wolf spider that was collected in Arable C only. The species seems to simply need bare and open ground but with short turf but with few other habitat specifications beyond that. The author finds this species difficult to find except in bulk samples with lots of other wolf spiders where it is not uncommon.

Scotina palliardii* - Nationally Rare, Endangered - **NEW TO EAST SUSSEX*

Three immatures sieved from a large patch of moss in the quarry in Chalk-grassland B in April. A single adult female was found in the same place on the 7th September confirming the identification. This is by far the rarest spider recorded during this survey and one of the finds of the survey. The author has only ever seen it at Levin Down and Kingley Vale in West Sussex. Very few people have ever even seen this spider in the UK.



Fig.8. *Scotina palliardi*, later confirmed with an adult female.

***Styloctetor compar* (was called *Ceratinopsis stativa*) - Nationally Scarce**

A fairly common plump money spider that does not warrant the status it has. It was recorded in Chalk-grassland B through to E and Brooks A. It simply requires grasslands of no particular type or quality.

Aculeate Hymenoptera

A total of 67 bees, wasps and ants were recorded. The most were in the Arable (44) and the Chalk-grassland (42) while only 18 species were recorded on the Brooks and this is no doubt down to the lack of forage there. Of these 67 species, 11 had some form of conservation status and these were all bees.

***Andrena florida* - RDB3**

The Bryony Ming-bee. Now commoner than its status suggests but still local. The species typically collects pollen only from White Bryony. Here it was recorded once from an arable margin in Arable B.

***Andrena gravida* - RDB1**

A scarce bee that appears to be spreading. Two females and at least one male were recorded in 'Adders Corner' part of Chalk-grassland C on the 30th April. They were using

Ground-ivy and possibly also Gorse. This was an area of Gorse that by September, had been cleared. As long as some of the resources is left however, this species should be fine. When clearing scrub, it is best to never clear all of a particular type at once.



Fig. 9. A female *Andrena gravida*.

***Andrena minutuloides* - Nationally scarce a**

A single female was recorded on Arable E on the warm sunny margin. It is a fairly widespread species on the Downs but is still scarce nationally.

***Bombus humilis* (Brown-banded Carder Bee) - Section 41/BAP**

A single adult was found on 8th September at Adder's rest. It was further recorded at Chalk-grassland A, C, D & F during the survey. This species is scarce but is still widespread on the Downs in Sussex, especially close to the sea. It needs warm, legume rich grasslands. It was particularly well represented on this Estate.

***Bombus muscorum* (Moss Carder Bee) - Section 41/BAP**

Found on the Brooks at Brooks F only along the central track where it was feeding on clovers in late summer. This is much more uncommon in Sussex than the above species and is typically associated with Brooks rather than the chalk-grassland. A significant find.

***Bombus rupestris* - Nationally scarce b**

Although no longer scarce, this species was recorded only once in Chalk-grassland D. It is the cuckoo bee of the well-known *Bombus lapidarius*.

***Ceratina cyanea* (Little Carpenter Bee) - RDB3**

Recorded at Chalk-grassland B only. This species is much commoner than its status would suggest but is still fairly local. It is most common on the Downs but can be found elsewhere. It nests in old bramble stems and takes pollen from a wide range of flowers but clearly needs the warmth of the south east.

***Halictus eurygnathus* - RDB1, Endangered**

A single female was recorded in Arable E on the 14th June in a rich arable margin with a strong southerly aspect. This was an incredibly hot day that the author had to cut short due to early signs of heat stroke. However, it appears this was worth the effort as this is perhaps find of the survey.

A species thought to be extinct until around ten years ago when it was found to be present in this specific area of the South Downs. The author has seen it at Seaford Head and the Lewes Downs but this is pretty much its entire UK distribution.

***Lasioglossum malachurum* - Nationally scarce b**

Another now widespread and common be that is more typical of clay soils than it is the chalk. No longer warrants the status it has.

***Lasioglossum pauxillum* - Nationally scarce a**

A now extremely common bee that is likely to be widespread across all parts of the site. It certainly does not warrant the status it has, typically being one of the commonest species in the genus in the region.

***Nomada fucata* - Nationally scarce a**

This cuckoo bee is a parasite of the very common mining bee, *Andrena flavipes*. Although listed as Na, this species is now fairly common in the region and no longer warrants the status it has.

Coleoptera (beetles)

The most speciose invertebrate group of the survey with 285 species recorded. Arable held the most species with 153 while strangely, Chalk-grassland held the least species with 118 species. Of these species, 22 had some form of conservation status.

***Anotylus insecatus* - Nationally notable**

A single animal was recorded in Arable F. This tiny rove beetle is fairly scarce in Sussex but there are a small cluster of records in the specific area immediately around the Iford Estate.

***Aphanisticus pusillus* - Nationally Scarce**

A very small jewel beetle that feeds on sedges and rushes. Almost only ever found with suction sampler, as it is ground dwelling. It was widespread on the chalk-grassland being found in Chalk-grassland A, B, C & E.

***Brachinus crepitans* (Bombardier Beetle) - Nationally Scarce**

A striking red and black carabid that is well known for being able to make a small explosion when threatened. On the arable parts of Iford it was common, chiefly under large flint nodule on exposed chalk-grassland. It was recorded in Arable B, C, D & F.

***Cassida nobilis* - Nationally Scarce**

A striking tortoise beetle with two metallic stripes along the elytra. It is usually found in associated with goosefoot and oraches near the coast. Here it was recorded in Chalk-grassland D and E only.



Fig. 10. The striking *Cassida nobilis*.

***Cantharis fusca* - Nationally Scarce**

A large, once rare, soldier beetle that is spreading rapidly in the south east but does still appear to be regionally restricted. It was recorded once in all three main blocks being Arable E, Chalk-grassland D and Brooks B. Demonstrating its lack of association with any particular habitat or soil type.

***Cathormiocerus spinosus* - Nationally scarce a**

A tiny hedgehog weevil that is usually found by suction sample on chalk-grassland. Here it was recorded in Chalk-grassland A and E. A flightless species that feeds at the roots of a variety of plant species.

***Cryptocephalus bilineatus* - Nationally Scarce**

A fairly widespread chalk-grassland species on legumes. A tiny black and yellow striped leaf beetle. It was unusually scarce during this survey, only recorded in Chalk-grassland F, the isolated ungrazed compartment.

***Glocianus punctiger* - Nationally scarce b**

This species is no longer scarce, it feed on Dandelion which is hardly a scarce species. It was recorded only once in Chalk-grassland A.

***Gyrnius paykulli* - Nationally Scarce**

A reedbed specialist whirligig beetle typically found on base-rich sites. Here it was found in Brooks C only.

***Hydrophilus piceus* (Great Silver Diving Beetle) - Near Threatened**

This huge beetle is well known due its size and (once) rarity. It is now much commoner than it was. It was recorded on Brooks D and E only but is likely to be more widespread.

***Hydrovatus clypealis* - Nationally Scarce**

A tiny (c2mm) water beetle. This is the first time the author has encountered this predominantly southern species. It was recorded once in Brooks C.

***Limnoxenus niger* - Near Threatened**

Another scarce species that is actually fairly widespread in the south east. It was recorded in Brooks C, D and F but us likely to be even more widespread across the Brooks here.

***Melanobaris laticollis* - Nationally scarce a**

Two adults were suction sampled from a field margin in Arable B in spring. This is the first time the author has encountered this weevil in Sussex and only the second time they have ever seen it. It feeds on Hedge Mustard. It is not clear why a weevil with such a common food plant should be so scarce. By the end of the survey however, it was found in six different sites. Arable A, B, D & F and Chalk-grassland C & D.

***Neliocarus faber* - Nationally scarce b**

A single adult was recorded on the south east facing slope of Chalk-grassland A on the 29th April. It was later recorded on Chalk-grassland C and D. It feeds at the roots of a wide range of plants.

***Nephus quadrimaculatus* - RDB3**

A single adult was found by suction sampling Pellitory-of-the-Wall in the farm yard in Arable A in September. This tiny ladybird appears to be spreading.

***Peltodytes caesus* - Nationally Scarce**

A fairly widespread water beetle on Sussex brooks. Here it was recorded in Brooks A, B, C & F.

***Podagrica fuscipes* - Nationally Scarce**

This flea beetle feeds on mallows and as a result is not that scarce, it being a common plant. It does not warrant the status it has. Here recorded on Arable C and F.

***Protapion difforme* - Nationally scarce b**

Found on Brooks B & F only. This small but distinctive weevil is common in the region but is scarcer nationally. It feeds on clovers.

***Rhinocyllus conicus* - Nationally scarce a**

Recorded on Brooks A only. This weevil feeds on thistles, therefore it's not as scarce as its status would suggest and will almost certainly lose it in the review.

***Scymnus schmidti* - Nationally scarce b**

A small, black, nondescript ladybird that was recorded in every chalk-grassland compartment except E. It is usually fairly common on chalk-grassland but rarely away from it.

***Trachyphloeus alternans* - Nationally scarce b**

Single adults were suction sampled from warm, south facing slopes of Chalk-grassland C & D, on the 30th April.

***Tychius schneideri* - Nationally scarce b**

A small but striking stripey weevil that feeds only on Kidney Vetch. Here it was recorded in Chalk-grassland A, D & E.



Fig.11. *Tychius schneideri*.

Diptera (true flies)

Only 53 species of fly were recorded. Of these, four species were found to have some form of conservation status. The author does not cover flies in as much detail as other invertebrate groups.

***Atylotus rusticus* - Nationally Rare**

A large and striking horsefly with large green eyes. A single adult female was beaten from a hedgerow in compartment A on the arable section near to the farm yard. This is more of a Brooks species and it is surprising that it was not detected there.



Fig. 12. *Atylotus rusticus* female.

Dotted Bee-fly (*Bombylius discolor*) - Nationally Scarce

An increasingly common species of bee-fly that here was found on two areas on the Chalk-grassland (C & D). It is a parasite of mining bees, females can be seen flicking their eggs at possible nest holes, many of which, never make it.



Fig. 13. A stock photo of a Dotted Bee-fly.

***Machimus rusticus* - Nationally Scarce**

A large and impressive robber-fly that is very much restricted to good quality chalk-grassland. Here it was recorded only once on the best slope of Chalk-grassland A.

***Odontomyia ornata* (Ornate Brigadier) - Nationally Scarce**

A large and impressive soldierfly with aquatic larva. A single adult was found in Brooks C during the summer visit where Ben Taylor was instrumental in helping the author catch the specimen.

Cockroaches

One species of cockroach was recorded.

Lesser Cockroach - Nationally Scarce

It was common on the survey and was recorded in every chalk-grassland plot as well as Arable C & D. This species is usually found on coastal sites but given the proximity to the coast here, it is not surprising that this species is so abundant on the site.

Lepidoptera - butterflies

A total of 28 species of butterfly were recorded, eight of which had some form of conservation status. The chalk-grassland had the most species with 18, as well as the most species with status. The Brooks had the fewest species with only 14 species present.

Adonis Blue - Near Threatened

Feeds only on Horseshoe Vetch. It was commonest on the rich slope in Chalk-grassland A but it was also recorded in C and E. A wandering adult was also noted on the arable margin of Arable E. The species needs short turfs but not too hard grazed so as to remove all the nectar sources when the adults are flying. The best habitat by far was in Chalk-grassland A but C and E were too hard grazed to support thriving colonies.

Chalkhill Blue - Near Threatened

Recorded at Chalk-grassland A where it was common but also on Chalk-grassland F, where it was represented by a single individual. It might have been more widespread but the survey dates were a little late due to ill health. Like the above species, this species feeds only on Horseshoe Vetch as larvae.

Dingy Skipper - Vulnerable, Section 41

Recorded in Chalk-grassland sections C, D and F. This is widespread but now uncommon butterfly and its presence here is encouraging. It feeds on Bird's-foot Trefoil but it also feeds on Horseshoe Vetch occasionally.

Grizzled Skipper - Vulnerable, Section 41

Found only in the ungrazed Chalk-grassland F. The larvae feed on plants such as Wild Strawberry. Additionally, Agrimony and Creeping Cinquefoil.

Silver-spotted Skipper - Near Threatened

Recorded in Chalk-grassland A and C only. This species has spread in recent years and is now widespread on the Downs in short, warm, south facing turf where ever there is Sheep's Fescue and bare ground.

Small Blue - Near Threatened, Section 41

This butterfly feeds only on Kidney Vetch and was recorded in low numbers on every chalk-grassland block except the ranker and ungrazed Chalk-grassland F. Additionally, it was also recorded in two arable blocks, Arable E & F, where they were adjacent to the chalk-grassland and these are wandering adults.

Small Heath - Near Threatened, Section 41

A fairly common butterfly that likes short turfs with fine grasses. It was perhaps the most widespread species with cons status across the whole survey recorded in 15 of the 18 blocks, including all of the chalk-grassland blocks. Despite its status, this is still a widespread and common butterfly.

Wall - Near Threatened, Section 41

A scarce butterfly now but sometimes it can be common on the Downs. It feeds on fine grasses but needs some exposed bare ground, especially chalk. It is most common on farmland on the Downs now. It was recorded here in Arable C and F and Chalk-grassland A and E.

Lepidoptera - moths

A total of 67 species were recorded. The chalk-grassland, as with butterflies, held the most species with 37 and again the Brooks had the least, with only 20. Only three species in all had conservation status.

Agonopterix pallorella - Nationally scarce b

Feeds on knapweeds. Recorded once in compartment Chalk-grassland A where it was beaten from gorse.

Scarce Forester - Nationally scarce a

Abundant on the well managed grasslands of Chalk-grassland A and B only. It feeds on Knapweed and requires plenty of nectar sources to thrive. This is an uncommon species but is right in the middle of one of the wider colonies of this species. It does appear to be a new site for this species according to the Sussex Moth Group page and is therefore significant. Chalk-grassland A and B are also each in two different hectads.

<https://www.sussexmothgroup.org.uk/site/speciesAccount.php?speciesRef=1369>

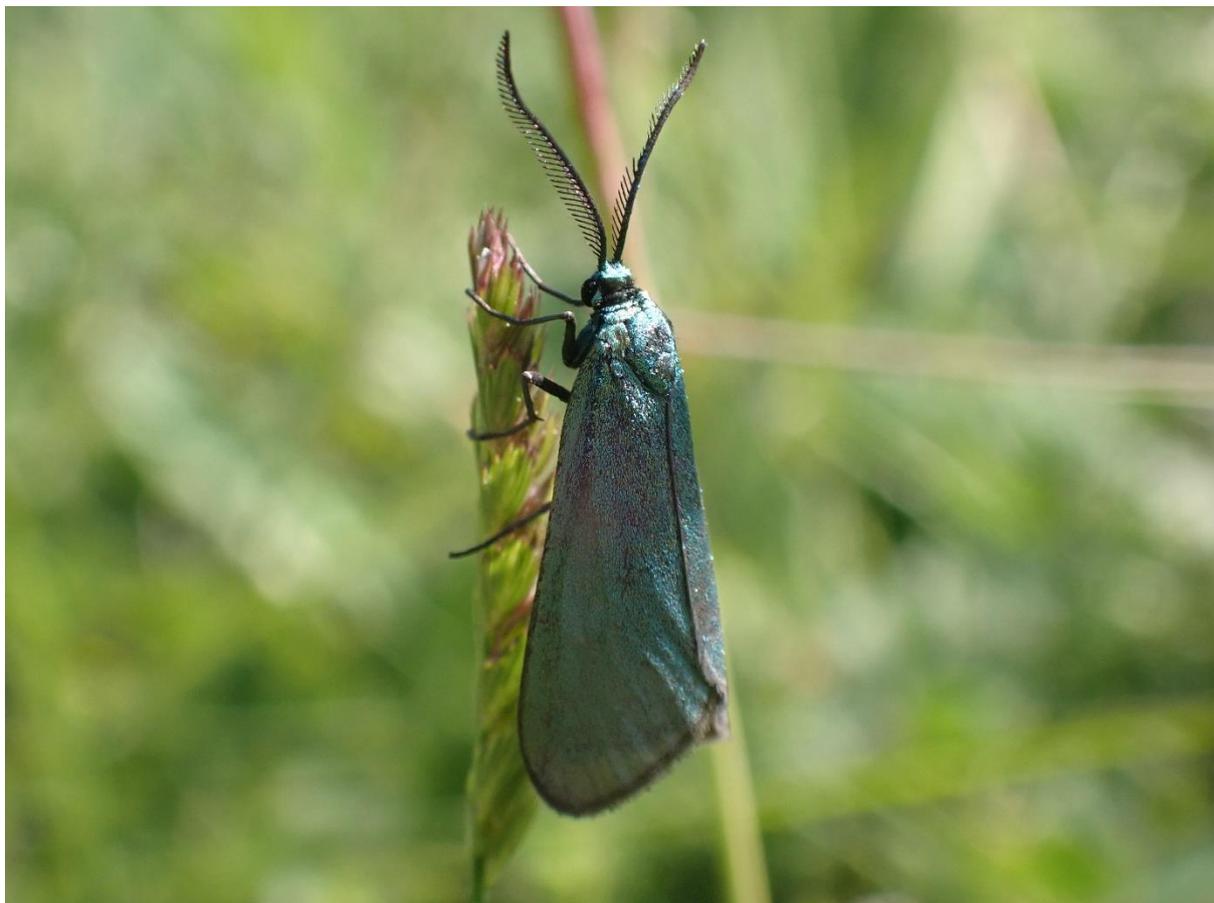


Fig. 14. A male Scarce Forester showing the pectinate antennae of the male.

***Scythris picaepennis* - Nationally scarce b**

Feeds on Bird'-foot Trefoil where it is readily suction sampled from short turf. In fact, it was recorded from all six chalk-grassland compartments.

Mollusca

A total of 35 species were recorded, the Brooks held the most with 23 and the arable the least with 13. Only one species with status was recorded.

***Segmentina nitida* (Shining Ramshorn) - Nationally Scarce, Section 41**

Found in one ditch on Brooks D/SSSI area and then later in the season in Brooks F too. This is an important species on the Brooks in the region and is part of a guild of molluscs that are particularly evident on East Sussex Brooks. It is already known from the site.



Fig. 15. The blood red *Segmentina nitida* with one of its characteristic radial lines.

Heteroptera (true bugs)

A total of 119 species were recorded, with only five having some form of conservation status. The most species (66), were recorded on the arable, with the least on the Brooks, 45.

***Aphanus rolandri* - Nationally scarce a**

A single animal was suction sampled from an arable margin on the edge of Arable E. This striking ground bug has spread in recent years, it feeds on Climbing Corydalis and fumitories, the latter being the foodplant on this site.

***Catoplatus fabricii* - Nationally scarce b**

A scarce and tiny lacebug associated with Ox-eye Daisy. Here it was represented by a single individual on the best slope at Chalk-grassland A. The author only has three or four records for this species, always on good quality chalk-grassland.

***Lasiosomus enervis* - Nationally scarce b**

This species appears to be spreading and does not have any specific habitat requirements beyond often being found near litter. It was recorded here on Arable C and F.

***Lygus pratensis* - RDB3**

Although listed as RDB3, this is now one of the commonest bugs in the region in late summer and no longer warrants the status it has at all. It is surprising that it was only recorded in Chalk-grassland A and Brooks A during this survey.

***Megalonotus praetextatus* - Nationally scarce b**

Found to be widespread on the arable blocks where instead of using its usual foodplant stork's-bill it was found to be using crane's-bills, a trend in more recent years on the Downs meaning this species is no longer tied to sandy sites. It was widespread being recorded in Arable C, D and F during the survey.

Odonata (dragonflies & damselflies)

Fourteen species of dragonfly and damselfly were recorded, including the rapidly expanding Willow Emerald Damselfly. Only one species with status was recorded.

Variable Damselfly - Near Threatened

A fairly widespread damselfly on the Brooks of Sussex and richer waterways of the county. Here adults and nymphs were found in Brooks D, E & F.

Orthoptera (crickets and grasshoppers)

A total of 12 species were recorded, none of which had status. Due to the proximity to Caste Hill, any areas that looked suitable for Wart-biter were searched during the final visit and an effort to listen out for them by ear was made. Chalk-grassland C & E had the most potential but no singing adults were recorded on the site.

Mammals

Brown Hare - Section 41

Recorded only on Arable D and Chalk-grassland C only. The author was surprised to not see more hares on the site, especially during the spring visits.

Badger - Protected

Recorded in Arable C and Chalk-grassland F as latrines and a skull respectively.

Reptiles

This kind of survey is not great at picking up herptiles, as more specific techniques are required. Despite this, two reptiles (and a further two amphibians) were recorded.

Common Lizard - Schedule 5, Section 41

Noted only on Chalk-grassland B & F but likely to be far more widespread than this.

Slow-worm - Schedule 5, Section 41

A single animal was found under a large flint on the edge of an arable field in Arable C to the south of the site. Again, this species is likely to be much more widespread than this.

Birds

A total of 80 species of bird were recorded, Birds of Conservation Concern 5 (BoCC5) was released on the 1st December and as a result there are some worrying and surprising additions to the amber and red lists. With Wood Pigeon and Wren now on the Amber List and Greenfinch on the Red List. Schedule 1 species are also included here for completeness.

Barn Owl - Schedule 1 - LIKELY BREEDING

Recorded in Chalk-grassland C only, where it was disturbed from the large barn there early one morning. Likely to be breeding on site.

Black-headed Gull - Amber Listed - NOT BREEDING

Recorded only once in Brooks C, where it is not breeding and would have been a fly-over.

Cetti's Warbler - Schedule 1 - BREEDING

Recorded only on the Brooks where this outspoken bird was perhaps the most obvious passerine. It was recorded in five of the six recording compartments but was not recorded in Brooks F. Scrubby ditch margins are this species' favourite habitat on this site, which are an abundant feature.

Corn Bunting - Red Listed, Section 41, Critically Endangered - BREEDING

Recorded on 11 plots, most widespread on the Chalk-grassland (five) and least widespread on the Brooks (two).

Cuckoo - Red Listed, Section 41, Vulnerable - LIKELY BREEDING

Only recorded once on Brooks A where a singing bird was seen during the second visit. Likely to be breeding on the site but Cuckoo have very large territories and are easy to miss if the survey visits are not aligned to their main calling period.

Dunnock - Amber List, Section 41 - BREEDING

Widespread across the site where it was recorded in 11 of the 18 plots but was least widespread on the arable (only recorded in two plots). A common garden and hedgerow bird where ever scrub is found.

Greenfinch - Red Listed, Endangered - LIKELY BREEDING

A new addition to the red list in BoCC5. A worrying and rapid decline of this once common garden species. Recorded in exactly half of the recording areas with three samples in each of the three recording areas.

Herring Gull - Red Listed, Section 41, Endangered - NOT BREEDING

Widespread as fly overs only and occasionally feeding in fields but not breeding. Recorded in seven out of 18 plots in all habitats.

Hobby - Schedule 1 - NOT BREEDING

A single bird was seen in September over Chalk-grassland C and was almost certainly a migrant.

House Sparrow - Red List, Section 41 - BREEDING

Breeding around the houses and yards. Recorded in two Arable (A & B) plots and three Brooks plots but not on the Chalk-grassland.

House Martin - Red Listed, Vulnerable - LIKELY BREEDING

Likely breeding around Arable A but most records were of flying birds and migratory birds beyond this. Recorded in eight compartments in all three habitats.

Kestrel - Amber Listed, Vulnerable - POSSIBLE BREEDING

Widespread around the site, recorded in 10 of the 18 plots in all habitats. Least widespread on the Brooks. Possibly breeding somewhere on the Estate but no evidence was found.

Lapwing - Red Listed, Section 41, Endangered - BREEDING

Recorded as a fly-over on Brooks B and displaying and likely breeding on Brooks E.

Linnet - Red Listed, Section 41, Endangered - BREEDING

Widespread and recorded on all Chalk-grassland, all Brooks and four of the Arable plots and it is likely breeding in all these areas.

Mallard - Amber Listed - BREEDING

Unsurprisingly, most common on the Brooks where it is most likely breeding in all the different compartments.

Meadow Pipit - Amber Listed - BREEDING and MIGRATORY

Definitely heard singing on Chalk-grassland A & B, but beyond this most records are likely to be fly overs from migrants. Recorded on 14 of the 18 compartments and widespread across the habitats.

Mistle Thrush - Red Listed, Vulnerable - POSSIBLE BREEDING

Widespread but scattered around the site and possible breeding.

Moorhen - Amber Listed, Vulnerable - BREEDING

Recorded only on the Brooks where it was noted in four of the six compartments. Another new addition to the Amber List on BoCC5.

Quail - Amber Listed, Schedule 1 - BREEDING

A single animal was heard singing in June in Arable D but only briefly. A small, migratory game bird that has boom and bust years. 2021 seemed to be a good year for Quail.

Redpoll - Red Listed, Section 41 - MIGRANT

Recorded as fly overs in Arable E and F only during the spring visits. Unlikely to be breeding.

Reed Bunting - Amber Listed, Section 41 - BREEDING

A widespread passerine on the Brooks, where it was recorded in all but Brooks D.

Ringed Plover - Red Listed, Vulnerable - NOT BREEDING

A single bird was recorded flying over Chalk-grassland E in the spring. Wader birds seem to use this site as a short cut when flying along the coast.

Rook - Amber Listed, Near Threatened - BREEDING

Another new addition to BoCC5. Most widespread on the Downs and least widespread on the arable plots. Breeding in Arable A.

Sedge Warbler - Amber Listed - BREEDING

Another new addition in BoCC5. Recorded on the Brooks only where it was recorded in comps Brooks B & F only where it was likely breeding.

Shelduck - AMBER LISTED - UNLIKELY BREEDING

Recorded on Brooks B around the scrape. Unlikely breeding but not out of the question somewhere on the Brooks.

Short-eared Owl - Amber Listed - NOT BREEDING

A single adult was flushed from short range on Arable D in September. A migratory bird and not breeding.

Skylark - Red Listed, Section 41, Vulnerable - BREEDING

A common breeding bird around the site, especially on the arable and Brooks blocks but less so on the chalk-grassland.

Sparrowhawk - Amber Listed - POSSIBLE BREEDING

Another new addition to the amber list in BoCC5. Recorded on Arable A and Chalk-grassland A & F. It could well be breeding on site in some of the smaller more wood areas.

Song Thrush - Red Listed, Section 41 - LIKELY BREEDING

Recorded on three plots each on the Chalk-grassland and the Brooks each. Likely to be breeding.

Stock Dove - Amber Listed - LIKELY BREEDING

Recorded in two arable, one chalk-grassland and one recording area in the Brooks. A hole-nesting bird that requires fairly large holes (and therefore trees).

Starling - Red Listed, Section 41, Vulnerable - LIKELY BREEDING

Recorded on all three areas but most widespread on the Brooks. Likely to be breeding around the buildings across the Estate.

Stone-curlew - Red Listed, Section 41, Vulnerable - BREEDING

Three birds were seen on 30th April. They were already known to be present by the Estate and have bred for a number of years. It would seem that two pairs may have bred in 2021, a record year for this species in Sussex.

Tree Pipit - Red Listed, Section 41

Recorded as a migratory fly over only and not likely to be breeding on this part of the Downs. Recorded once over Brooks D in September.

Wheatear - Amber List - NOT BREEDING

Another new addition to the Amber List in BoCC5. Not breeding but picked up in three places on the Arable and Brooks as a migrant in the spring and in the autumn.

Whimbrel - Red Listed, (Critically Endangered as a breeding bird) - NOT BREEDING

Birds were heard calling in flight on migration over Chalk-grassland C & D in spring. Not breeding.

Whinchat - Red List, (Near Threatened as a breeding bird) - NOT BREEDING

Recorded twice, once on the Arable and once on the Brooks in September. Not breeding in the county.

Whitethroat - Amber Listed - BREEDING

This species was on the amber list, then was removed and is now back again on it, as of BoCC5. A bird of scrub and hedgerows. It was widespread, recorded in all arable plots and five each of the chalk-grassland and Brooks but it is likely to be present in all 18 recording areas.

Wood Pigeon - Amber Listed

It is remarkable that the humble Wood Pigeon has been added to the Amber List in BoCC5. Widespread and expected to be found in all 18 compartments, however it was only recorded in 14 of the 18 plots.

Wren - Amber Listed - BREEDING

Sadly, Wren has also joined BoCC5. It was widespread and recorded in 13 of the 18 plots and is likely breeding in all areas.

Yellowhammer - Red Listed, Section 41 - BREEDING

Recorded on all the chalk-grassland plots where it was most widespread, no doubt down to the scrub here. It was further noted in two arable plots and one plot on the Brooks.

Yellow Wagtail - Red Listed, Section 41, Near Threatened - PROBABLY MIGRANT

It was surprising that no Yellow Wagtails were picked up on the Brooks as a breeding bird. In fact, it wasn't picked up until the final visits when a number of over-flying migrants were recorded. In September, it was picked up in half of all the plots spread evenly across the habitats. Some large flocks of 10+ birds were noted flying low over the Downs.

Vascular plants

A total of 325 vascular plants were recorded. Only nine species were found to have conservation status. Two in the Arable, five on the Chalk-grassland and two on the Brooks. There was no overlap between the main habitats. The arable was especially poor for rare arable plants, no doubt down to the amount of fertiliser put down. Even fairly predictable plants on arable chalk were not picked up, such as either of the fluellens or the scarcer poppies.

The best area for rare chalk-grassland plants was Long Bottom/Chalk-grassland E. Here, Autumn Lady's-tresses, Bastard-toadflax, Heath Dog-violet and Round-headed Rampion (along with Bee Orchid and Chalk Milkwort) were all seen on the south facing slope of this valley. It is suffering from over-grazing in the summer though.

Autumn Lady's-tresses - Near Threatened

This distinctive but small late flowering orchid was found to be common in Long Bottom (Chalk-grassland E) in September. Some were also found to the south of Adder's Corner in Chalk-grassland C. This plant does well in hard-grazed sites, and can even flower well during periods of hard grazing. That said, the presence of this plant alone does not warrant the level of grazing that occurs in Long Bottom and it could still thrive if the length or grazing pressure were reduced.



Fig. 16. Autumn Lady's-tresses.

Bastard-toadflax - Nationally Scarce

A scarce plant of the best, shortest and most diverse chalk-grassland slopes. It was found quite by chance to be in one specific area of chalk-grassland in Chalk-grassland E/Long Bottom in June but was also flowering in September. Very little of the plant was present but more could be present in this valley. Reducing summer grazing would likely benefit this plant.

The plant, despite being very small, has its own shieldbug. An extensive search was made around this area using the suction sampler but it was not found. Invertebrate species-richness was poor here, in part due to the huge numbers of Red-legged Partridge out down in the autumn.

Dwarf Spurge - Vulnerable

Noted in one specific arable margin in Arable D in September. This is a good indicator but not the rarest of arable plants. It tends to like areas that have low nutrients on the chalk-grassland but can occasionally tolerate richer soils.

Frogbit - Vulnerable

Recorded in every compartment on the Brooks except Brooks A (which was especially enriched but it is likely to be there somewhere). Despite being on the red list, this plant is still common in ditches on Brooks in Sussex. An early successional species of the water column, it disappears when ditches grow over.

Frog Orchid - Vulnerable, Section 41

A single Frog Orchid was found late on the 13th September and confirmed by members of Sussex Botanical Recording Society. The last (and only time) the author has seen this species in Sussex was in 2008 at Malling Down, this is really quite a rare orchid in the county and a significant find. The late flowering is also unusual.



Fig. 17. Frog Orchid.

Heath Dog-violet - Red List, Near Threatened

A plant more typical of acid-grassland, this species does occasionally occur on chalk-grassland, where the author has seen it in abundance at the nearby Castle Hill but also at Waterhall Golf Course in 2021 at Brighton. It is very like Common Dog-violet and the veins and stipules have to be examined under the microscope.

It was recorded only once in April at the head/northern end of the valley at Long Bottom/Chalk-grassland E.

Round-headed Rampion - Nationally Scarce

A well-known chalk-grassland plant in Sussex. AKA the Flower of Sussex. It was recorded in all chalk-grassland compartments except B (but it is likely to be there somewhere).

Stinking Chamomile - Vulnerable

A single plant was found along an arable margin in Arable C. This arable weed can handle fairly high nutrient Brooks, unlike many of the rarer arable plants. Despite this, it was only recorded once.

Tubular Water-dropwort - Red List, Vulnerable

A plant of recently/well-managed ditch margins on the Brooks. A poor competitor, it quickly loses ground to Reeds and coarser emergent plants. Here it was only recorded in one ditch in Brooks F.

3.3 - Additional species of note

The following species do not have conservation status but are still significant in terms of being regionally scarce, recent colonists or of note for some other reason.

Chalk Milkwort

A local species that grows on short, species-rich chalk-grassland but is by no means ubiquitous in this habitat. As an example, it is far more infrequent in Sussex than Round-headed Rampion is (despite that being listed as nationally scarce). Here it was recorded only in Chalk-grassland E on the south-facing part of Long Bottom.

***Eurydema ornata* (Ornate Shieldbug)**

A recent colonist and a striking bug. It is starting to spread rapidly in Sussex but this is the first time the author has encountered it (despite being county recorder for true bugs). It feeds on crucifers.



Fig. 18. Ornate Shieldbug.

Collinsia inerans

An uncommon (in Sussex at least) money spider. The first time the author has encountered it in Sussex. A single female was recorded in Arable A on the 13th June.

Stenodema trispinosa

A wetland grass bug that is local and rarely recorded in the county. It was recorded only once along a nice ditch in Brooks 2.

Oxycera trilineata



Fig. 19. The striking soldierfly, *Oxycera trilineata*.

Although not scarce, this fly is clearly not all that common as this is the first time the author has encountered this species. Larvae are aquatic. It was swept from an emergent vegetation along a well-managed ditch in Brooks D.

Troxochrus scabriculus

A tiny but uncommon money spider that is found in arable conditions and also on sand dunes. This is the first time the author has recorded the species in Sussex. It was recorded in Arable B and E only.

Agroeca inopina

Found in the chalk pit in Chalk-grassland B. An uncommon species often found on sand dunes but also likes chalk pits.

Marsh Dock

One plant growing in a ditch in Brooks C. An uncommon plant in Sussex that is known from the Ouse Valley. This is the first time the author has encountered this species in Sussex.

4 - Conclusions and analysis

4.1 - Comparative analysis at the broad habitat/landscape level

Tab. 2. Comparative analysis of the wider habitat types across the Estate.

	ALL	Arable	Chalk-grassland	Brooks
Total species	1300	719	657	650
Species with status	125	59	74	53
Proportion	9.6%	8.2%	11.3%	8.3%
Invertebrates	871	472	433	396
Inverts with status	72	27	43	19
Proportion	8.3%	5.7%	9.9%	4.8%
Vascular plants	325	185	165	178
Plants with status	9	2	5	2
Birds	80	54	46	65
Birds of Conservation Concern 5	40	28	23	33
Unique species (by compartment)	473*	179`	142	152
Unique species (by habitat)	782**	239	258	285

Unique species are those that are only found in any one compartment of the survey. This has been calculated in two different ways here.

*this figure is the total number of species that were only found in one of the 18 recording compartments across the whole survey.

**and this figure of the total number of species that were only recorded in one of the three broad habitats. Clearly it is much easier for a species to score as unique this way as it only has to occur in 1/3 samples (as opposed to 1/18 in the above metric). Hence, this figure is much higher.

The former figure works better on the fine scale and the latter at the landscape level. The latter is probably a better figure for ironing out recording biases, it is clear that totals are much closer to one another at the landscape level, with the Brooks coming out higher than the others, no doubt due to wetland species not being found in the other two habitats.

Whereas, at the compartment level, the arable plot came out much higher than the other two.

4.2 - Comparative analysis by compartment

Tab. 3. The highest and lowest figure per habitat is highlighted in green and red respectively, while the highest and lowest across all three habitats are further marked with a slash.

	Arable						Chalk-grassland						Brooks					
	A	B	B	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F
Total species	312	265	261	243	272	194	276	266	299	243	279	242	269	296	236	247	245	182
Species with status	23	18	19	23	21	16	40	27	43	30	31	24	20	25	30	22	20	19
Proportion	7.4	6.8	7.3	9.5	7.7	8.2	14.5	10.2	14.4	12.3	11.1	9.9	7.4	8.4	12.7	8.9	8.2	10.4
Total inverts	194	149	165	145	174	130	173	172	167	141	159	147	162	183	114	137	123	114
Status	8	4	8	8	9	8	24	15	21	16	16	10	5	8	7	5	2	8
Proportion inverts with status	4.1	2.7	4.8	5.5	5.2	6.2	13.9	8.7	12.6	11.3	10.1	6.8	3.1	4.4	6.1	3.6	1.6	7.0
Birds	36	32	16	21	29	12	24	23	31	21	21	22	35	36	41	34	33	14
BoCC5	15	14	8	13	12	8	14	11	18	13	11	10	14	16	22	16	16	9
Plants	84	81	79	78	67	53	78	66	98	80	98	68	70	78	79	72	82	51
Plants with status	0	0	1	1	0	0	2	0	2	1	4	2	1	1	1	1	2	2
Unique	54	38	17	27	24	19	27	21	22	20	20	32	29	36	29	18	22	18

4.3 - Invertebrate analysis using Pantheon

The data was run through the BRC's Pantheon database, at the landscape level (the whole farm) and at the habitat level. The data is presented in the following table.

Tab. 4. A resource/habitat in green is in favourable condition, one in red in unfavourable condition.

	ALL/Landscape	Arable	Chalk-grassland	Brooks
Rich flower resource	48/15	34/15	31/15	10/15
Open short sward	45/13	16/13	44/13	4/13
Bare sand and chalk	23/19	15/19	15/19	3/19
Scrub edge	19/11	12/11	12/11	3/11
Scrub-heath and moorland	15/9	5/9	13/9	1/9
Reed-fen and pools	10/11	2/11		9/11
Bark and sapwood decay	10/19	7/19	2/19	4/19
Open water on disturbed mineral sediments	7/6			7/6
Saltmarsh and traditional brackish marsh	2/9	2/9		2/9

Heartwood decay	2/6	1/6		1/6
Epiphyte fauna	2/3	1/3	1/3	1/3
Slow flowing rivers	1/4			1/4
Undisturbed fluctuating marsh	1/4			

These habitats that are thrown out by grouping invertebrates together with common needs by Pantheon, should be taken with a pinch of salt. The reason is that the way they are assessed as being in favourable condition is extremely arbitrary and as much an assessment of how much recording effort there has been. However, internal comparisons between the different plots can be analysed in this way with a little more confidence because recording effort between them is consistent.

Clearly, at the landscape level, the whole farm will have more habitats and more of these will be in favourable condition due to the increased recording effort. It is surprising that with such a large data set that only five of the twelve habitats were in favourable condition. Many of these unfavourable habitats are actually of limited relevance to the site, perhaps with the exception of the 'reed-fen and pools' one. This is effectively the fauna of the more open ditches. It was very close to being in favourable condition however. Bark and sapwood decay invertebrates were of limited interest on the site too, as there is not a great resource of big old trees and dead and decaying timber.

Some observations/discussion. There are as many species associated with 'bare sand and chalk' on the arable as there are on the chalk-grassland. Neither alone being in favourable condition but favourable at the landscape level.

Only one habitat was in favourable condition on the Brooks, 'open water on disturbed mineral sediments'. Grazing marsh is often very uniform and hard grazed, it holds on to any input for longer than the chalk and can often be dull for invertebrates. Almost all of the interest on the Brooks lay in the ditches. This is backed up by the lack of nectar loving species here (the Brooks being the only broad habitat to have 'rich flower source' in unfavourable condition).

Rich flower resource (effectively just a list of bees) was surprisingly close between Chalk-grassland and Arable. This could be seen as the Arable being as good as the Chalk-grassland. OR, it could be the converse, that the Chalk-grassland is as poor as the Arable. The reality is closer to the former. In many places, there are some rich arable margins with a wealth of nectar sources. Chalk-grassland A and B were alive with flowers and pollinators but the rest of the chalk had fewer pollinators down to over (or in one case under) grazing. The scores for Arable and Chalk are impressive, considering that each only received three days of surveying a piece.

4.4 - Analysis of Schedule 41/BAP/Species of principle conservation importance in England

There is a suggestion that Defra may focus only on the species on the Section 41 list to gauge the success of ELMS. The author strongly believes that this is a mistake and will lead to many important features being missed, mainly because the Section 41 list typically targets big, obvious species and misses any nuance. It is also not reactive, the list is old and does not update as much as other conservation statuses usually do.

The author strongly suggests that not too much is read into this list. As can be seen, it misses out many invertebrate orders almost in their entirety and many of the rarest species from this survey are not on the Section 41 list. A total of 30 species have been noted as being classed as Section 41 species.

Tab. 5. Summary of Section 41 species present.

	Status	Species	Vernacular	Arable					Chalk-grass					Brooks					A	C	B
				A	B	C	D	E	F	A	B	C	D	E	F	A	B	C			
bird	AL, S.41	<i>Emberiza schoeniclus</i>	Reed Bunting											1	1	1	1	1	0	1	
bird	AL, S.41	<i>Prunella modularis</i>	Duncock	1	1			1	1	1	1	1	1	1	1	1	1	1	1	1	
bird	RD, VU, S.41	<i>Burhinus oediacnemus</i>	Stone-curlew			1												1	0	0	
bird	RL, CR, S.41	<i>Emberiza calandra</i>	Corn Bunting		1	1	1	1	1	1	1	1			1			1	1	1	
bird	RL, S.41	<i>Acanthis cabaret</i>	Lesser Redpoll				1	1											1	0	
bird	RL, S.41	<i>Anthus trivialis</i>	Tree Pipit														1		0	1	
bird	RL, S.41	<i>Emberiza citrinella</i>	Yellowhammer		1	1			1	1	1	1	1		1			1	1	1	
bird	RL, S.41	<i>Passer domesticus</i>	House Sparrow	1	1									1	1	1	1	1	0	1	
bird	RL, S.41	<i>Turdus philomelos</i>	Song Thrush						1	1		1	1		1	1		0	1	1	
bird	RL, S.41, EN	<i>Larus argentatus</i>	Herring Gull	1	1	1			1	1					1	1		1	1	1	
bird	RL, S.41, EN	<i>Linaria cannabina</i>	Linnet	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	
bird	RL, S.41, EN	<i>Vanellus vanellus</i>	Lapwing											1			1		0	1	
bird	RL, S.41, NT	<i>Motacilla flava</i>	Yellow Wagtail	1	1		1		1	1	1			1	1	1		1	1	1	
bird	RL, S.41, VU	<i>Cuculus canorus</i>	Cuckoo											1				0	1	1	
bird	RL, S.41, VU	<i>Sturnus vulgaris</i>	Starling	1					1	1	1			1	1	1	1	1	1	1	
bird	RL, VU, S.41	<i>Alauda arvensis</i>	Skylark	1	1	1	1	1		1	1			1	1	1	1	1	1	1	
flowering plant	VU, S.41	<i>Coeloglossum viride</i>	Frog Orchid											1					0	1	
flowering plant	VU, S.41	<i>Oenanthe fistulosa</i>	Tubular Water-dropwort															1	0	1	
insect - butterfly	NT, S.41	<i>Coenonympha pamphilus</i>	Small Heath	1	1	1			1	1	1	1	1	1	1	1	1	1	1	1	
insect - butterfly	NT, S.41	<i>Cupido minimus</i>	Small Blue				1	1	1	1	1	1							1	1	
insect - butterfly	NT, S.41	<i>Lasiommata megera</i>	Wall		1				1										1	1	
insect - butterfly	VU	<i>Pyrgus malvae</i>	Grizzled Skipper											1					0	1	
insect - butterfly	VU, S.41	<i>Erynnis tages</i>	Dingy Skipper							1	1	1							0	1	
insect - hymenopteran	S.41	<i>Bombus humilis</i>	Brown-banded Carder-bee					1	1	1	1	1							0	1	
insect - hymenopteran	S.41	<i>Bombus muscorum</i>	Moss Carder-bee															1	0	1	
mollusc	S.41, NS	<i>Segmentina nitida</i>	The Shining Ram's-horn												1	1	0	0	1	1	
reptile	Sch5, S.41	<i>Anguis fragilis</i>	Slow-worm			1													1	0	
reptile	Sch5, S.41	<i>Zootoca vivipara</i>	Common Lizard					1			1								0	1	
spider (Araneae)	NR, NT, S.41	<i>Meioneta mollis</i>	Thin Weblet						1										0	1	
terrestrial mammal	S.41	<i>Lepus europaeus</i>	Brown Hare			1				1										1	
			TOTAL SPECIES	6	5	8	7	6	6	9	7	15	12	8	10	8	7	10	7	9	9
			MEAN SPECIES							6.33					10.2					8.33	

Clearly, the chalk-grassland held the most Section 41 species on average per plot but collectively, it only held one more species than the Brooks. Chalk C held half of all of the Section 41 specie of the whole survey. The heavy weighting of birds on this list and the lack of invertebrate interest makes this extremely misleading. Chalk-grassland A for example is poorly represented here while it came out as the most important compartment of all for invertebrates in the main analysis above. As many of these specie are not on the Section 41 list, this compartment scores badly in table 5 above, while Chalk-grassland C does very well.

5 - Management recommendations

5.1 - Arable

Arable - A

This block is the first block surrounding the farm yard and office and as such is off the Downs and part way towards the Brooks. Although extremely biodiverse, it does not hold a lot of rare or scarce species. In the arable areas themselves, there was little diversity due to the amount of fertiliser used and the lack of arable margins etc. Much of the interest here lay in the farmyard and old buildings itself.

Arable - B

Similar to A but a little more diverse with some secondary woodland blocks and some small areas of grassland. Little to no arable margins and this would be the main recommendation for Arable A and B.

Arable - C

The first of the three arable blocks on the top of the Downs. In terms of management recommendations, these three are best treated as one. Along with the three chalk-grassland valleys (Chalk-grassland C, D & F), the large number of Red-legged Partridge put down here in the autumn will be having a significant impact on the biodiversity here, especially invertebrates.

Arable - D

The second of the arable recording blocks on the Downs and the largest block of the entire survey. Clearly it is not possible to get everywhere on a site this big, even with nine days on the ground and many areas will not have been recorded.

This block includes the area where the Stone-curlew are breeding.

A large arable margin with two distinctively different margins runs along the main track here. The northern-most margin is extremely good for species associated with bare chalk while the southern margin is a little ranker and grassier but has a wealth of nectar sources. The two working together are really good for species such as bees, that need both of these resources.



Fig. 20. The edge of an arable field in April showing a wealth of Ground-ivy. This is one of our most important spring nectar sources and the arable margins at Iford are full of it.

Arable - E

This the block, mainly dominated with Oilseed Rape, between the road and the Downs. It had some exceptional arable margins that held some key rare species (albeit in part due to their proximity to Chalk-grassland A).

The arable margin here was incredibly rich in flowers, even in September. With a wealth of Bird's-foot Trefoil but the botanical diversity here was especially rich. Without these margins, this plot would have scored much lower though. The fact that the margin here was left to flower well into September is extremely positive. Many people flail their margins wholesale close to the end of harvest and this is really bad for wildlife.



Fig. 21. A wealth of Bird's-foot Trefoil on an arable margin in September.

Arable - F

The last of the arable blocks on the top of the Downs and the most northern block of the three.

5.2 - Chalk-grassland

Unlike the other two blocks, the chalk-grassland compartments all had names that seemed more relevant to use than the more arbitrary grouping of fields in the arable and Brooks blocks.

Chalk-grassland A (North Hill)

This was exceptionally well managed with livestock off during the key months. Equally though the site was clearly well grazed through the previous winter, as the sward was short at the right time of year in late April 2021 (see figure 22 below).



Fig. 22. Chalk-grassland A in late April.

One particular area of very tight south-facing, species-rich chalk-grassland (CG2) was especially rich in terms of plants and held the majority of the rare species in the compartment. It was perhaps the most important area of chalk-grassland surveyed.

Chalk-grassland B (Front & Sutton Hill)

As above, the grazing had been held off throughout the summer months and the grazing regime here was spot on. This area had even more flowers though, being a little ranker. Very typical for north-facing chalk-grassland, it was dominated by Devil's-bit Scabious later in the year and held many orchids in the summer. It did lack any rich south-facing areas. Clearly, some gorse scrub had been tackled at the brow of the hill.

Chalk-grassland C (Adders Corner, Frogshole Bank and Sutton & Black Shed)

Much of the recording in this block was concentrated on Adders Corner itself being the richest area in the block. A south-facing steep valley that catches the sunlight, this area is warm and scrubby in places, drifting towards more-base rich habitat mainly dominated with Tor-grass. Gorse scrub had been tackled between the 2nd and 3rd survey dates in these areas.

Grazing here was applied between the 2nd and 3rd visits, the key time for chalk-grassland and as such, was too hard a graze. There was very little structure and nectar left by September and a lighter graze and or a briefer graze are suggested for this time period in this area.

Chalk-grassland D (Home Bottom)

The main valley here is less base-rich, with a slightly more neutral element and thus fewer of the strict chalk-grassland species. As the valley curls back around towards Adder's Corner to the south, there is another area of extremely nice chalk-grassland. However, this whole area and the nearby Long Bottom (part of Chalk-grassland E below) were very hard grazed throughout the whole survey period. Dropping this off throughout at least some of the summer is vital for plants and invertebrates.

Chalk-grassland E (Long Bottom & The Triangle)

The Triangle was a ranker area that was not especially well grazed at the time (although livestock do have access to it at some times). The botanical and invertebrate diversity here was not especially rich but having some of the chalk-grassland component longer is very welcome. There is a lot of scrub here which probably has a great benefit to breeding birds due to the limited resource in the surrounding landscape.

Long Bottom is a large block of extremely important CG2 chalk-grassland. It is suffering from over-grazing and the extremely high number of Red-legged Partridge here. Between the two they are having a limiting impact on the invertebrates and plants here. With a more sympathetic grazing regime, this has the potential to be the most important chalk-grassland on the site.

Chalk-grassland F (High Down)

This is the isolated patch of scrub and ungrazed chalk-grassland at the extreme south west of the site, not far from Brighton. The grassland now makes up a very small component of the compartment and is threatened by scrub on all angles. Rabbits are clearly the only thing keeping this area open. Despite this, it held some species not seen anywhere else. The discovery of a late flowering Frog Orchid (the first the author has seen in Sussex since 2008) in September. It was also the only place Grizzled Skipper was recorded.

Grazing is needed here but it must be sympathetic and applied at first with a light touch. It should be very much deployed hand in hand with the scrub management. The first thing that would be needed would be to make a very rough scrub map. Start with an aerial photo and then ground truth the area into the following habitats; established scrub, pristine chalk-grassland and chalk-grassland where low scrub is starting to dominate. This latter is the key to tackle first before tackling any established scrub. The reason for this is that this low scrub still has functioning chalk-grassland under it while established scrub does not. Established scrub takes years of aftercare to get it back into some form of grassland (and this will not be pristine chalk-grassland either). This is a draw on resources that will result in the low scrub dominated and destroying the existing chalk-grassland while the established scrub is being managed. It is simply a question of priorities that time after time the author sees tackled in the wrong way. Large scale funding is often the reason why these bigger jobs are tackled first. Low scrub can be done with brushcutters, hand saws, remote flails and tree poppers while the established scrub is very much a chainsaw job.

Arising should be removed and ideally burnt on an area that is not pristine chalk-grassland. Any grazing should follow scrub management, as when the new growth begins to grow after management, this is when livestock will manage scrub. Only with the

combination of grazing and cutting together over a number of years can scrub like this be managed without destroying the existing biodiversity through over-grazing.

5.3 - Brooks

It is best to summarise the Brooks as being over-grazed (however, the author accepts that even with reduced grazing the grassland here is not especially interesting and is more commercial side to the Estate), with little structure and nectar (but partly down to enrichments and seeding, it's likely this would not be easy to rectify) and the ditches as being in fairly good condition, there could be more ditches in an early successional state at any one time and some areas are enriched for one reason or another. Finding the source of enrichment would be worth investigating, especially in Brooks A & D.

Brooks - A

The ditches here are more enriched than the rest of the Brooks, this may be due to the proximity to the farm yard. The ditches here have a distinct smell that is not present further out onto the Brooks.

Brooks - B

Possibly the richest area of the Brooks, with the most species, most invertebrates and (joint) most invertebrates with status.

Brooks - C

This has some of the richest ditches on the site but as with much of the grassland here it is hard-grazed, enriched and not very interesting. Almost all the biodiversity is limited to the ditches and their edges.

The invasive **Water-fern** was found to be present in these ditches but it is not a major issue and tends to come and go over time.

Brooks - D

This area had quite enriched ditches in places, despite being part of the SSSI. It was well-grazed, with sheep and cattle and typically for the Brooks, the grassland was uninteresting lacking structure and nectar sources.

Brooks - E

This included the fishing lakes, which were not especially rich for wildlife. It was also the area where Lapwing were likely breeding.

Brooks - F

A well-grazed part of the site but with some rich ditches.

Ditch management seemed to be good where it was observed across the Brooks but overall, more ditches in an early successional state at any one time would be more desirable.

5.4 - Further monitoring

Some species were missed due to the longer than predicted gap between the 2nd and 3rd visits. This was unfortunately down to ill health meaning that the species recorded are likely to be slightly reduced or different to what was really present. Additional visits could be made to top up the surveying but the author does not suggest this as high priority, rather a 'nice to do' if money was no issue. Additional visits would indeed add more species to the site list but there is a law of diminishing returns here and it would not likely change any of the recommendations either. A late July/early August visit would be the window to target if this were desired.

Targeted monitoring on ditches on the Brooks would be another way to add to the list. Although a great deal of effort was made to do this on the first and last Brooks surveys, this was also balanced with other equipment and surveying, so it was a compromise. A targeted survey would be a way to make this more comprehensive.

5.5 - Keeping a site list

Maintaining an accumulative site list (not just a snap shot in time like this survey) is suggested for all big estates like this one. A way of keeping track of all biodiversity on the site is a good way of seeing when something was last recorded, what the total number of species is over time, what the total number of species is that have status etc. The author can do this for the Estate if required.

If this was something the Estate wanted to pursue, a request from the SxBRC for all the data they hold and all the data the Estate hold would be made and add that to the data collated here. Any future surveys or records made would then be added to this list so rather than a snapshot time, the list acts as a repository of records over time. This way, the list only ever gets bigger and slowly converges towards the actual assemblage of wildlife present on the site.

5.6 - Repeating this survey in the future

This survey was designed in a way that make it repeatable and standardised so that it could be repeated in five or ten years following the same methodology. If there are major changes in the management of the site in favour of wildlife, then an earlier repeat is suggested but a ten-year repeat is more realistic for a survey of this magnitude if the management does not change much.

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Appendix 1

Species in bold show specie with conservation status. Species in red show non-native species. The three main habitats are colour-coded for ease of viewing the data.

Order	Status	Species	Vernacular	Arable						Chalk-grass						Brooks					
				A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F
acarine (Acari)		<i>Aceria thomasi</i>	Aceria thomasi											1	1						
acarine (Acari)		<i>Eriophyes exilis</i>	Eriophyes exilis													1					
acarine (Acari)		<i>Haemaphysalis punctata</i>	Coastal Red Tick	1	1									1	1						
acarine (Acari)		<i>Tetranychus lintearius</i>	Tetranychus lintearius										1								
amphibian		<i>Lissotriton</i> sp.	Newt sp.														1	1	1	1	1
amphibian		<i>Pelophylax ridibundus</i>	Marsh Frog				1									1	1	1	1	1	1
annelid		<i>Erpobdella octoculata</i>	Erpobdella octoculata													1	1	1	1	1	1
annelid		<i>Erpobdella testacea</i>	Erpobdella testacea																1	1	
annelid		<i>Glossiphonia complanata</i>	Glossiphonia complanata																1		
annelid		<i>Theromyzon tessulatum</i>	Duck Leech													1	1			1	
bird	RL, S.41	<i>Acanthis cabaret</i>	Lesser Redpoll					1	1												
bird	AL	<i>Accipiter nisus</i>	Sparrowhawk	1						1					1						
bird	AL	<i>Acrocephalus schoenobaenus</i>	Sedge Warbler													1					1
bird		<i>Acrocephalus scirpaceus</i>	Reed Warbler	1												1	1	1		1	1
bird		<i>Aegithalos caudatus</i>	Long-tailed Tit				1							1				1			
bird	RL, VU, S.41	<i>Alauda arvensis</i>	Skylark	1	1	1	1	1	1		1	1				1	1	1		1	1
bird		<i>Alectoris rufa</i>	Red-legged Partridge			1	1	1		1	1	1	1			1					
bird	AL	<i>Anas platyrhynchos</i>	Mallard	1												1	1	1		1	1
bird		<i>Anser anser</i>	Greylag Goose													1	1				
bird	AL	<i>Anthus pratensis</i>	Meadow Pipit	1	1	1		1	1	1	1	1		1	1		1	1	1	1	1
bird	RL, S.41	<i>Anthus trivialis</i>	Tree Pipit																1		
bird		<i>Ardea cinerea</i>	Grey Heron					1								1	1	1	1	1	1
bird	AL	<i>Asio flammeus</i>	Short-eared Owl				1														
bird		<i>Branta canadensis</i>	Canada Goose													1	1				
bird	RD, VU, S.41	<i>Burhinus oedicnemus</i>	Stone-curlew				1														
bird		<i>Buteo buteo</i>	Buzzard	1	1	1		1		1	1	1	1			1	1	1		1	1
bird		<i>Carduelis carduelis</i>	Goldfinch	1	1	1	1	1		1	1	1		1	1	1	1	1	1	1	1
bird		<i>Certhia familiaris</i>	Treecreeper					1													
bird	Schedule 1	<i>Cettia cetti</i>	Cetti's Warbler					1								1	1	1	1		
bird	RL, VU	<i>Charadrius hiaticula</i>	Ringed Plover											1							
bird	RL, EN	<i>Chloris chloris</i>	Greenfinch	1	1			1		1	1			1		1	1	1			
bird	AL	<i>Chroicocephalus ridibundus</i>	Black-headed Gull																1		

bird		<i>Coloeus monedula</i>	Jackdaw	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1
bird		<i>Columba livia</i>	Feral Pigeon				1												
bird	AL	<i>Columba oenas</i>	Stock Dove		1		1		1							1			
bird	AL	<i>Columba palumbus</i>	Woodpigeon	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
bird		<i>Corvus corax</i>	Raven	1	1	1	1	1	1	1	1	1	1	1	1			1	
bird		<i>Corvus corone</i>	Carrion Crow	1	1		1	1			1		1	1	1	1	1	1	1
bird	AL, NT	<i>Corvus frugilegus</i>	Rook	1			1		1	1	1	1	1	1	1	1			
bird	AL, schedule 1	<i>Coturnix coturnix</i>	Quail				1												
bird	RL, S.41, VU	<i>Cuculus canorus</i>	Cuckoo												1				
bird	AL	<i>Curruca communis</i>	Whitethroat	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
bird		<i>Curruca curruca</i>	Lesser Whitethroat										1	1	1	1			
bird		<i>Cyanistes caeruleus</i>	Blue Tit	1	1		1		1	1	1	1	1	1	1	1	1	1	1
bird		<i>Cygnus olor</i>	Mute Swan				1							1	1	1	1	1	1
bird	RL, VU	<i>Delichon urbicum</i>	House Martin	1	1				1	1	1			1	1		1		
bird		<i>Dendrocopos major</i>	Great Spotted Woodpecker		1		1												
bird		<i>Egretta garzetta</i>	Little Egret												1	1		1	
bird	RL, CR, S.41	<i>Emberiza calandra</i>	Corn Bunting			1	1	1	1	1	1	1	1			1			1
bird	RL, S.41	<i>Emberiza citrinella</i>	Yellowhammer			1	1		1	1	1	1	1	1		1			
bird	AL, S.41	<i>Emberiza schoeniclus</i>	Reed Bunting											1	1	1		1	1
bird		<i>Erithacus rubecula</i>	Robin	1	1		1		1	1	1	1	1	1	1	1		1	1
bird		<i>Falco peregrinus</i>	Peregrine	1	1	1													
bird	Schedule 1	<i>Falco subbuteo</i>	Hobby							1									
bird	AL, VU	<i>Falco tinnunculus</i>	Kestrel		1		1	1	1	1	1	1	1			1	1		
bird		<i>Fringilla coelebs</i>	Chaffinch	1	1		1	1	1	1	1		1	1	1	1	1	1	1
bird	AL, VU	<i>Gallinula chloropus</i>	Moorhen				1							1	1	1			
bird		<i>Garrulus glandarius</i>	Jay	1	1		1		1					1	1				
bird		<i>Hirundo rustica</i>	Swallow	1	1		1		1					1	1	1		1	1
bird	RL, S.41, EN	<i>Larus argentatus</i>	Herring Gull	1		1	1		1	1						1	1		
bird	RL, S.41, EN	<i>Linaria cannabina</i>	Linnet	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1
bird		<i>Milvus milvus</i>	Red Kite			1	1			1	1								
bird		<i>Motacilla alba yarrellii</i>	Pied Wagtail	1	1		1						1		1	1			
bird	RL, S.41, NT	<i>Motacilla flava</i>	Yellow Wagtail	1	1		1		1	1	1			1	1	1			
bird	RL, (CR)	<i>Numenius phaeopus</i>	Whimbrel							1	1								
bird	AL	<i>Oenanthe oenanthe</i>	Wheatear				1									1		1	

flowering plant		<i>Arenaria serpyllifolia</i>	Thyme-Leaved Sandwort			1	1			1	1	1	1						
flowering plant		<i>Arrhenatherum elatius</i>	False Oat-grass	1		1	1				1	1			1	1	1		1
flowering plant		<i>Artemisia vulgaris</i>	Mugwort	1			1							1					
flowering plant		<i>Arum maculatum</i>	Lords-and-Ladies	1				1						1					
flowering plant		<i>Asperula cynanchica</i>	Squinancywort							1	1	1			1				
flowering plant		<i>Atriplex patula</i>	Common Orache	1	1										1				
flowering plant		<i>Atriplex prostrata</i>	Spear-leaved Orache												1				1
flowering plant		<i>Avena fatua</i>	Wild-oat			1	1	1						1					
flowering plant		<i>Ballota nigra</i>	Black Horehound	1	1									1				1	1
flowering plant		<i>Barbarea</i>	Winter-Cress									1							1
flowering plant		<i>Bellis perennis</i>	Daisy	1	1	1	1	1	1	1	1	1	1	1					
flowering plant		<i>Berula erecta</i>	Lesser Water-parsnip											1				1	
flowering plant		<i>Blackstonia perfoliata</i>	Yellow-wort							1	1			1					
flowering plant		<i>Bolboschoenus maritimus</i>	Sea Club-rush													1			
flowering plant		<i>Brachypodium rupestre</i>	Tor-grass				1			1	1			1					
flowering plant		<i>Brassica napus subsp. oleifera</i>	Oil-seed Rape	1			1				1								
flowering plant		<i>Briza media</i>	Quaking-grass			1				1	1	1	1	1					
flowering plant		<i>Bromopsis erecta</i>	Upright Brome			1				1	1	1	1	1	1				
flowering plant		<i>Bromus hordeaceus</i>	Soft-Brome			1	1	1	1			1	1	1	1				1
flowering plant		<i>Bromus sterilis</i>	Barren Brome	1	1	1		1	1					1				1	
flowering plant		<i>Bryonia dioica</i>	White Bryony			1		1						1	1				
flowering plant		<i>Buddleja davidii</i>	Butterfly-bush	1															1
flowering plant		<i>Butomus umbellatus</i>	Flowering-rush																1
flowering plant		<i>Callitriche</i>	Water-Starwort												1	1	1	1	1
flowering plant		<i>Calystegia sepium</i>	Hedge Bindweed	1		1								1	1			1	1
flowering plant		<i>Calystegia silvatica</i>	Large Bindweed																1
flowering plant		<i>Campanula rotundifolia</i>	Harebell							1		1	1	1	1				
flowering plant		<i>Capsella bursa-pastoris</i>	Shepherd's-purse	1	1	1	1	1	1	1		1	1			1	1		1
flowering plant		<i>Cardamine flexuosa</i>	Wavy Bitter-cress	1															
flowering plant		<i>Cardamine hirsuta</i>	Hairy Bitter-cress								1	1	1	1		1			
flowering plant		<i>Cardamine pratensis</i>	Cuckooflower												1				
flowering plant		<i>Carduus crispus</i>	Wetted Thistle			1	1	1				1			1				
flowering plant		<i>Carduus nutans</i>	Musk Thistle									1	1						
flowering plant		<i>Carduus tenuiflorus</i>	Slender Thistle			1	1		1	1		1							

flowering plant		<i>Geranium dissectum</i>	Cut-leaved Crane's-bill		1	1	1	1	1		1	1	1				1			
flowering plant		<i>Geranium molle</i>	Dove's-foot Crane's-bill	1		1	1	1	1	1			1	1						
flowering plant		<i>Geranium robertianum</i>	Herb-Robert	1																
flowering plant		<i>Geum urbanum</i>	Wood Avens	1			1	1		1		1								
flowering plant		<i>Glechoma hederacea</i>	Ground-ivy	1	1	1	1		1		1		1		1	1	1			
flowering plant		<i>Glyceria fluitans</i>	Floating Sweet-grass													1	1	1	1	
flowering plant		<i>Glyceria maxima</i>	Reed Sweet-grass										1	1	1	1	1	1	1	
flowering plant		<i>Gymnadenia conopsea</i>	Fragrant Orchid						1	1			1	1						
flowering plant		<i>Hedera helix</i>	Ivy		1			1					1	1				1		
flowering plant		<i>Helianthemum nummularium</i>	Common Rock-rose										1							
flowering plant		<i>Helianthus annuus</i>	Sunflower			1														
flowering plant		<i>Helictotrichon pratense</i>	Meadow Oat-grass																1	
flowering plant		<i>Helictotrichon pubescens</i>	Downy Oat-grass																1	
flowering plant		<i>Heracleum sphondylium</i>	Hogweed		1	1	1	1	1		1	1	1	1	1	1	1	1	1	
flowering plant		<i>Hippocrepis comosa</i>	Horseshoe Vetch							1	1	1	1	1	1					
flowering plant		<i>Holcus lanatus</i>	Yorkshire-fog	1	1		1	1					1	1	1	1				
flowering plant		<i>Hordeum murinum</i>	Wall Barley	1		1			1				1							
flowering plant		<i>Hordeum secalinum</i>	Meadow Barley		1											1	1			
flowering plant		<i>Hyacinthoides non-scripta x hispanica</i>	Spanish Bluebell													1			1	
flowering plant	VU	<i>Hydrocharis morsus-ranae</i>	Frogbit													1	1	1	1	1
flowering plant		<i>Hypericum perforatum</i>	Perforate St John's-wort													1				
flowering plant		<i>Hypochaeris radicata</i>	Cat's-ear				1	1		1		1	1							
flowering plant		<i>Ilex aquifolium</i>	Holly	1			1													
flowering plant		<i>Iris foetidissima</i>	Stinking Iris	1	1															
flowering plant		<i>Iris pseudacorus</i>	Yellow Iris		1											1	1		1	
flowering plant		<i>Jacobaea erucifolia</i>	Hoary Ragwort										1	1	1	1				
flowering plant		<i>Jacobaea vulgaris</i>	Common Ragwort			1	1		1	1	1	1	1	1	1	1	1	1	1	
flowering plant		<i>Juglans regia</i>	Walnut																1	
flowering plant		<i>Juncus articulatus</i>	Jointed Rush													1		1	1	
flowering plant		<i>Juncus inflexus</i>	Hard Rush	1												1	1		1	1
flowering plant		<i>Knautia arvensis</i>	Field Scabious					1												
flowering plant		<i>Koeleria macrantha</i>	Crested Hair-grass							1	1	1	1		1					
flowering plant		<i>Lactuca serriola</i>	Prickly Lettuce	1					1											
flowering plant		<i>Lamium album</i>	White Dead-nettle	1	1											1			1	1

flowering plant		<i>Lamium amplexicaule</i>	Henbit Dead-nettle			1	1												
flowering plant		<i>Lamium purpureum</i>	Red Dead-nettle	1	1	1		1	1				1		1	1	1	1	1
flowering plant		<i>Lapsana communis</i>	Nipplewort	1			1								1				1
flowering plant		<i>Lathyrus pratensis</i>	Meadow Vetchling										1	1	1	1	1	1	1
flowering plant		<i>Lemna minor</i>	Common Duckweed												1	1			1
flowering plant		<i>Lemna minuta</i>	Least Duckweed													1	1	1	1
flowering plant		<i>Lemna trisulca</i>	Ivy-leaved Duckweed												1		1		1
flowering plant		<i>Leontodon hispidus</i>	Rough Hawkbit			1			1	1	1	1	1	1					
flowering plant		<i>Lepidium coronopus</i>	Swine-cress					1											
flowering plant		<i>Lepidium didymum</i>	Lesser Swine-cress								1								1
flowering plant		<i>Leucanthemum vulgare</i>	Oxeye Daisy		1		1	1	1	1		1		1					
flowering plant		<i>Linum catharticum</i>	Fairy Flax						1	1		1	1						
flowering plant		<i>Linum perenne</i>	Perennial Flax								1								
flowering plant		<i>Lolium perenne</i>	Perennial Rye-grass	1	1	1			1	1					1	1	1	1	1
flowering plant		<i>Lonicera nitida</i>	Wilson's Honeysuckle	1															
flowering plant		<i>Lotus corniculatus</i>	Common Bird's-foot-trefoil			1	1	1		1	1	1	1	1	1				
flowering plant		<i>Luzula campestris</i>	Field Wood-rush						1	1	1	1	1						
flowering plant		<i>Lycopus europaeus</i>	Gypsywort												1		1		1
flowering plant		<i>Malus pumila</i>	Apple																1
flowering plant		<i>Malva moschata</i>	Musk-mallow				1	1	1										
flowering plant		<i>Malva neglecta</i>	Dwarf Mallow					1	1		1				1				
flowering plant		<i>Malva sylvestris</i>	Common Mallow		1	1			1										1
flowering plant		<i>Matricaria discoidea</i>	Pineappleweed		1	1		1							1				
flowering plant		<i>Medicago lupulina</i>	Black Medick						1			1	1				1		1
flowering plant		<i>Medicago sativa subsp. sativa</i>	Lucerne				1												
flowering plant		<i>Mentha aquatica</i>	Water Mint												1		1	1	1
flowering plant		<i>Mercurialis annua</i>	Annual Mercury	1															
flowering plant		<i>Myosotis arvensis</i>	Field Forget-me-not				1	1	1	1		1			1				
flowering plant		<i>Myosotis discolor</i>	Changing Forget-me-not																1
flowering plant		<i>Myosotis ramosissima</i>	Early Forget-me-not						1					1					
flowering plant		<i>Myosotis scorpioides</i>	Water Forget-me-not												1	1	1	1	1
flowering plant		<i>Myosotis sylvatica</i>	Wood Forget-me-not																1
flowering plant		<i>Myriophyllum spicatum</i>	Spiked Water-milfoil														1		
flowering plant		<i>Oenanthe crocata</i>	Hemlock Water-dropwort												1	1			

insect - beetle (Coleoptera)	<i>Philonthus carbonarius</i>	Philonthus carbonarius					1											
insect - beetle (Coleoptera)	<i>Philonthus cognatus</i>	Philonthus cognatus							1				1					
insect - beetle (Coleoptera)	<i>Philorhizus melanocephalus</i>	Philorhizus melanocephalus	1		1					1			1	1			1	
insect - beetle (Coleoptera)	<i>Phyllobius oblongus</i>	Brown Leaf Weevil															1	
insect - beetle (Coleoptera)	<i>Phyllobius pomaceus</i>	Phyllobius pomaceus					1											
insect - beetle (Coleoptera)	<i>Phyllobius pyri</i>	Common Leaf Weevil							1				1	1				
insect - beetle (Coleoptera)	<i>Phyllobius roboretanus</i>	Phyllobius roboretanus				1			1				1				1	
insect - beetle (Coleoptera)	<i>Phyllobius virideaeris</i>	Phyllobius virideaeris			1	1				1	1	1	1					
insect - beetle (Coleoptera)	<i>Phyllotreta atra</i>	Phyllotreta atra										1						1
insect - beetle (Coleoptera)	<i>Phyllotreta nemorum</i>	Phyllotreta nemorum							1									
insect - beetle (Coleoptera)	<i>Phyllotreta nigripes</i>	Phyllotreta nigripes		1		1	1	1					1					
insect - beetle (Coleoptera)	<i>Phyllotreta undulata</i>	Phyllotreta undulata		1														
insect - beetle (Co NS	<i>Podagrica fuscipes</i>	Mallow Flea Beetle																
insect - beetle (Coleoptera)	<i>Poecilus cupreus</i>	Poecilus cupreus					1											
insect - beetle (Coleoptera)	<i>Prasocuris junci</i>	Brooklime Leaf Beetle																1
insect - beetle (Coleoptera)	<i>Prasocuris phellandrii</i>	Prasocuris phellandrii																1
insect - beetle (Coleoptera)	<i>Propylea quattuordecimpunctata</i>	14-spot Ladybird																1
insect - beetle (Coleoptera)	<i>Protapion apricans</i>	Protapion apricans				1	1	1	1	1	1	1	1					
insect - beetle (Coleoptera)	<i>Protapion assimile</i>	Protapion assimile							1				1					
insect - beetle (Co Nb	<i>Protapion difforme</i>	Protapion difforme																1
insect - beetle (Coleoptera)	<i>Protapion fulvipes</i>	White Clover Seed Weevil	1	1	1		1			1	1	1	1	1	1	1	1	1
insect - beetle (Coleoptera)	<i>Protapion trifolii</i>	Protapion trifolii					1	1		1	1	1						1
insect - beetle (Coleoptera)	<i>Protopirapion atratum</i>	Protopirapion atratum								1								
insect - beetle (Coleoptera)	<i>Psammoecus bipunctatus</i>	Psammoecus bipunctatus													1	1		1
insect - beetle (Coleoptera)	<i>Pseudapion rufirostre</i>	Pseudapion rufirostre	1				1											
insect - beetle (Coleoptera)	<i>Psylliodes affinis</i>	Psylliodes affinis										1						
insect - beetle (Coleoptera)	<i>Psylliodes chrysocephala</i>	Cabbage-stem Flea Beetle	1	1	1	1	1			1	1		1	1				1
insect - beetle (Coleoptera)	<i>Psylliodes dulcamarae</i>	Psylliodes dulcamarae								1								
insect - beetle (Coleoptera)	<i>Psyllobora vigintiduopunctata</i>	22-spot Ladybird	1	1			1			1			1					1
insect - beetle (Coleoptera)	<i>Pterostichus madidus</i>	Black Clock																1
insect - beetle (Coleoptera)	<i>Pterostichus melanarius</i>	Pterostichus melanarius																1
insect - beetle (Coleoptera)	<i>Pterostichus minor</i>	Pterostichus minor																1
insect - beetle (Coleoptera)	<i>Pyrochroa serraticornis</i>	Red-headed Cardinal Beetle								1	1	1						
insect - beetle (Coleoptera)	<i>Quedius levicollis</i>	Quedius levicollis											1	1				

insect - beetle (Coleoptera)	<i>Quedius semiobscurus</i>	Quedius semiobscurus			1														
insect - beetle (Coleoptera)	<i>Rhagonycha fulva</i>	Common Red Soldier Beetle	1																
insect - beetle (Coleoptera)	<i>Rhantus suturalis</i>	Rhantus suturalis												1				1	
insect - beetle (Co Na	<i>Rhinocyllus conicus</i>	Rhinocyllus conicus												1					
insect - beetle (Coleoptera)	<i>Rhinoncus inconspicuous</i>	Rhinoncus inconspicuous												1					
insect - beetle (Coleoptera)	<i>Rhinoncus leucostigma</i>	Rhinoncus leucostigma				1		1											
insect - beetle (Coleoptera)	<i>Rhyzobius litura</i>	Rhyzobius litura	1	1	1	1	1	1	1	1	1			1	1	1	1	1	1
insect - beetle (Coleoptera)	<i>Rugilus orbiculatus</i>	Rugilus orbiculatus					1								1				1
insect - beetle (Coleoptera)	<i>Scirtes hemisphaericus</i>	Scirtes hemisphaericus																	1
insect - beetle (Coleoptera)	<i>Scymnus frontalis</i>	Scymnus frontalis							1										
insect - beetle (Coleoptera)	<i>Scymnus interruptus</i>	Scymnus interruptus	1																
insect - beetle (Co Nb	<i>Scymnus schmidtii</i>	Scymnus schmidtii								1	1	1	1	1					
insect - beetle (Coleoptera)	<i>Sepedophilus nigripennis</i>	Sepedophilus nigripennis													1				
insect - beetle (Coleoptera)	<i>Sermylassa halensis</i>	Sermylassa halensis									1				1				
insect - beetle (Coleoptera)	<i>Silpha atrata</i>	Black Carrion Beetle										1							
insect - beetle (Coleoptera)	<i>Sitona hispidulus</i>	Clover-root Weevil				1	1												
insect - beetle (Coleoptera)	<i>Sitona humeralis</i>	Sitona humeralis								1									
insect - beetle (Coleoptera)	<i>Sitona lepidus</i>	Sitona lepidus					1			1									
insect - beetle (Coleoptera)	<i>Sitona lineatus</i>	Pea-leaf Weevil	1	1	1	1	1	1	1	1	1	1	1	1				1	1
insect - beetle (Coleoptera)	<i>Sitona sulcifrons</i>	Clover Weevil			1	1					1								
insect - beetle (Coleoptera)	<i>Sitona suturalis</i>	Sitona suturalis	1													1	1		
insect - beetle (Coleoptera)	<i>Sphaeridium scarabaeoides</i>	Sphaeridium scarabaeoides										1							
insect - beetle (Coleoptera)	<i>Sphaeroderma rubidum</i>	Sphaeroderma rubidum			1														
insect - beetle (Coleoptera)	<i>Sphaeroderma testaceum</i>	Sphaeroderma testaceum		1							1	1			1				
insect - beetle (Coleoptera)	<i>Stenurella melanura</i>	Stenurella melanura	1																
insect - beetle (Coleoptera)	<i>Stenus aceris</i>	Stenus aceris	1																
insect - beetle (Coleoptera)	<i>Stenus bimaculatus</i>	Stenus bimaculatus													1	1			
insect - beetle (Coleoptera)	<i>Stenus binotatus</i>	Stenus binotatus																	1
insect - beetle (Coleoptera)	<i>Stenus clavicornis</i>	Stenus clavicornis			1														
insect - beetle (Coleoptera)	<i>Subcoccinella vigintiquattuorpuntata</i>	24-spot Ladybird			1	1													1
insect - beetle (Coleoptera)	<i>Sunius propinquus</i>	Sunius propinquus				1	1												
insect - beetle (Coleoptera)	<i>Syntomus foveatus</i>	Syntomus foveatus	1			1				1			1	1	1				
insect - beetle (Coleoptera)	<i>Syntomus obscuroguttatus</i>	Syntomus obscuroguttatus	1	1	1		1							1	1	1	1	1	1
insect - beetle (Coleoptera)	<i>Tachyporus dispar</i>	Tachyporus dispar									1	1							

insect - beetle (Coleoptera)	<i>Tachyporus hypnorum</i>	Tachyporus hypnorum		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
insect - beetle (Coleoptera)	<i>Tachyporus nitidulus</i>	Tachyporus nitidulus			1			1										1	
insect - beetle (Coleoptera)	<i>Tachyporus pusillus</i>	Tachyporus pusillus		1		1					1								1
insect - beetle (Coleoptera)	<i>Tachyporus solutus</i>	Tachyporus solutus	1											1					1
insect - beetle (Coleoptera)	<i>Taeniapion urticarium</i>	Taeniapion urticarium			1														
insect - beetle (Coleoptera)	<i>Tasgius melanarius</i>	Tasgius melanarius						1											
insect - beetle (Coleoptera)	Nb	<i>Trachyphloeus alternans</i>	Trachyphloeus alternans								1	1							
insect - beetle (Coleoptera)		<i>Trachyphloeus angustisetulus</i>	Trachyphloeus angustisetulus			1						1	1						
insect - beetle (Coleoptera)		<i>Trechus quadristriatus</i>	Trechus quadristriatus	1				1											
insect - beetle (Coleoptera)		<i>Trichosirocalus troglodytes</i>	Trichosirocalus troglodytes			1						1	1	1	1				
insect - beetle (Coleoptera)		<i>Tychius junceus</i>	Tychius junceus								1			1	1				
insect - beetle (Coleoptera)		<i>Tychius meliloti</i>	Tychius meliloti			1													
insect - beetle (Coleoptera)		<i>Tychius picirostris</i>	Tychius picirostris								1				1				
insect - beetle (Coleoptera)	Nb	<i>Tychius schneideri</i>	Tychius schneideri								1			1	1				
insect - beetle (Coleoptera)		<i>Tychius stephensi</i>	Tychius stephensi								1		1	1					
insect - beetle (Coleoptera)		<i>Tytthaspis sedecimpunctata</i>	16-spot Ladybird	1	1	1	1	1	1			1	1			1	1	1	1
insect - butterfly		<i>Aglais io</i>	Peacock				1	1	1										1
insect - butterfly		<i>Aglais urticae</i>	Small Tortoiseshell	1	1													1	
insect - butterfly		<i>Anthocharis cardamines</i>	Orange-tip					1											
insect - butterfly		<i>Aricia agestis</i>	Brown Argus				1						1	1	1				
insect - butterfly		<i>Callophrys rubi</i>	Green Hairstreak												1				
insect - butterfly		<i>Celastrina argiolus</i>	Holly Blue					1											
insect - butterfly	NT, S.41	<i>Coenonympha pamphilus</i>	Small Heath		1	1	1				1	1	1	1	1	1	1	1	1
insect - butterfly		<i>Colias croceus</i>	Clouded Yellow											1	1	1			
insect - butterfly	NT, S.41	<i>Cupido minimus</i>	Small Blue					1	1		1	1	1	1	1				
insect - butterfly	VU, S.41	<i>Erynnis tages</i>	Dingy Skipper										1	1	1				
insect - butterfly		<i>Gonepteryx rhamni</i>	Brimstone																1
insect - butterfly	NT	<i>Hesperia comma</i>	Silver-spotted Skipper								1	1							
insect - butterfly	NT, S.41	<i>Lasiommata megera</i>	Wall			1			1	1				1					
insect - butterfly		<i>Limnephilus affinis</i>	Limnephilus affinis										1						
insect - butterfly		<i>Lycaena phlaeas</i>	Small Copper										1	1		1			
insect - butterfly		<i>Maniola jurtina</i>	Meadow Brown	1			1			1	1	1	1	1	1	1			1
insect - butterfly		<i>Ochlodes sylvanus</i>	Large Skipper									1							1
insect - butterfly		<i>Pararge aegeria</i>	Speckled Wood	1										1		1			

insect - butterfly		<i>Pieris brassicae</i>	Large White					1	1		1	1						
insect - butterfly		<i>Pieris napi</i>	Green-veined White					1										
insect - butterfly		<i>Pieris rapae</i>	Small White	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
insect - butterfly		<i>Polygonia c-album</i>	Comma					1									1	
insect - butterfly	NT	<i>Polyommatus bellargus</i>	Adonis Blue					1	1	1	1							
insect - butterfly	NT	<i>Polyommatus coridon</i>	Chalk Hill Blue						1				1					
insect - butterfly		<i>Polyommatus icarus</i>	Common Blue			1	1	1	1	1	1	1						1
insect - butterfly	VU , S.41	<i>Pyrgus malvae</i>	Grizzled Skipper										1					
insect - butterfly		<i>Speyeria aglaja</i>	Dark Green Fritillary						1									
insect - butterfly		<i>Vanessa atalanta</i>	Red Admiral	1	1	1	1	1	1				1	1	1	1	1	1
insect - butterfly		<i>Vanessa cardui</i>	Painted Lady			1	1	1	1			1				1		
insect - caddis fly (Trichoptera)		<i>Limnephilus auricula</i>	Limnephilus auricula							1								
insect - cockroach (I	NS	<i>Ectobius panzeri</i>	Lesser Cockroach			1	1			1	1	1	1	1	1			
insect - dragonfly (Odonata)		<i>Aeshna cyanea</i>	Southern Hawker															1
insect - dragonfly (Odonata)		<i>Aeshna grandis</i>	Brown Hawker					1									1	
insect - dragonfly (Odonata)		<i>Aeshna mixta</i>	Migrant Hawker	1	1			1	1					1	1	1	1	1
insect - dragonfly (Odonata)		<i>Anax imperator</i>	Emperor Dragonfly													1	1	1
insect - dragonfly (Odonata)		<i>Brachytron pratense</i>	Hairy Dragonfly													1	1	1
insect - dragonfly (Odonata)		<i>Chalcolestes viridis</i>	Green Emerald Damselfly					1										
insect - dragonfly (Odonata)		<i>Coenagrion puella</i>	Azure Damselfly	1										1	1	1	1	1
insect - dragonfly (Q	NT	<i>Coenagrion pulchellum</i>	Variable Blue Damselfly															1 1 1
insect - dragonfly (Odonata)		<i>Ischnura elegans</i>	Blue-tailed Damselfly												1	1		
insect - dragonfly (Odonata)		<i>Libellula quadrimaculata</i>	Four-spotted Chaser													1		1
insect - dragonfly (Odonata)		<i>Orthetrum cancellatum</i>	Black-tailed Skimmer													1		
insect - dragonfly (Odonata)		<i>Sympetrum sanguineum</i>	Ruddy Darter					1							1	1	1	
insect - dragonfly (Odonata)		<i>Sympetrum striolatum</i>	Common Darter							1						1	1	
insect - earwig (Dermaptera)		<i>Forficula auricularia</i>	Common Earwig	1		1	1	1	1	1	1			1	1	1		
insect - hymenopteran		<i>Abia sericea</i>	Abia sericea							1				1				
insect - hymenopteran		<i>Andrena bicolor</i>	Gwynne's Mining Bee	1				1						1				
insect - hymenopteran		<i>Andrena dorsata</i>	Andrena dorsata					1										
insect - hymenopteran		<i>Andrena flavipes</i>	Yellow-legged Mining Bee										1					
insect - hymenopte	RDB3	<i>Andrena florea</i>	Bryony Mining Bee															
insect - hymenopte	RDB1	<i>Andrena gravida</i>	White-bellied Mining Bee										1					
insect - hymenopteran		<i>Andrena haemorrhoa</i>	Orange-tailed Mining Bee	1	1									1				

insect - true bug (Hemiptera)	<i>Scolopostethus grandis</i>	Scolopostethus grandis							1		1						
insect - true bug (Hemiptera)	<i>Scolopostethus thomsoni</i>	Scolopostethus thomsoni		1				1					1				1
insect - true bug (Hemiptera)	<i>Sigara fossarum</i>	Sigara fossarum													1		
insect - true bug (Hemiptera)	<i>Stenocranus minutus</i>	Stenocranus minutus			1						1						
insect - true bug (Hemiptera)	<i>Stenodema calcarata</i>	Stenodema calcarata							1						1		1
insect - true bug (Hemiptera)	<i>Stenodema laevigata</i>	Stenodema laevigata				1					1						
insect - true bug (Hemiptera)	<i>Stenodema trispinosa</i>	Stenodema trispinosa												1			
insect - true bug (Hemiptera)	<i>Stenotus binotatus</i>	Timothy Grassbug	1														
insect - true bug (Hemiptera)	<i>Stictopleurus punctatonervosus</i>	Stictopleurus punctatonervosus	1														
insect - true bug (Hemiptera)	<i>Strongylocoris leucocephalus</i>	Strongylocoris leucocephalus									1						
insect - true bug (Hemiptera)	<i>Stygnocoris fuliginus</i>	Stygnocoris fuliginus			1	1		1			1	1					
insect - true bug (Hemiptera)	<i>Stygnocoris rusticus</i>	Stygnocoris rusticus										1					
insect - true bug (Hemiptera)	<i>Stygnocoris sabulosus</i>	Stygnocoris sabulosus									1		1	1			
insect - true bug (Hemiptera)	<i>Syromastus rhombeus</i>	Rhombic Leatherbug				1						1					
insect - true bug (Hemiptera)	<i>Taphropeltus contractus</i>	Taphropeltus contractus			1	1		1									
insect - true bug (Hemiptera)	<i>Tingis cardui</i>	Spear Thistle Lacebug						1									
insect - true bug (Hemiptera)	<i>Trigonotylus caelestialium</i>	Trigonotylus caelestialium															1
insect - true bug (Hemiptera)	<i>Trigonotylus ruficornis</i>	Trigonotylus ruficornis				1											
insect - true bug (Hemiptera)	<i>Tritomegas bicolor</i>	Pied Shieldbug															1
insect - true bug (Hemiptera)	<i>Zicrona caerulea</i>	Blue Shieldbug											1				
insect - true fly (Diptera)	<i>Atylotus rusticus</i>	Four-lined Horsefly	1														
insect - true fly (Diptera)	<i>Bibio marci</i>	St Marks Fly				1					1	1					
insect - true fly (Diptera)	<i>Bombylius discolor</i>	Dotted bee-fly										1	1				
insect - true fly (Diptera)	<i>Bombylius major</i>	Dark-edged Bee-fly										1					
insect - true fly (Diptera)	<i>Chloromyia formosa</i>	Broad Centurion		1													1
insect - true fly (Diptera)	<i>Chrysopilus cristatus</i>	Black Snipefly		1													
insect - true fly (Diptera)	<i>Coremacera marginata</i>	Coremacera marginata						1									
insect - true fly (Diptera)	<i>Dasineura sp.</i>	Dasineura on Dropwort												1			
insect - true fly (Diptera)	<i>Dioctria linearis</i>	Dioctria linearis						1									
insect - true fly (Diptera)	<i>Dioctria rufipes</i>	Common Red-legged Robberfly					1		1								
insect - true fly (Diptera)	<i>Episyrphus balteatus</i>	Marmalade Hoverfly		1	1				1			1	1				
insect - true fly (Diptera)	<i>Eriothrix rufomaculata</i>	Eriothrix rufomaculata									1						
insect - true fly (Diptera)	<i>Eristalinus sepulchralis</i>	Eristalinus sepulchralis														1	1
insect - true fly (Diptera)	<i>Eristalis arbustorum</i>	Eristalis arbustorum									1				1		

spider (Araneae)		<i>Oedothorax apicatus</i>	Oedothorax apicatus	1				1	1											
spider (Araneae)		<i>Oedothorax fuscus</i>	Oedothorax fuscus	1	1	1									1	1	1	1		1
spider (Araneae)		<i>Oedothorax retusus</i>	Oedothorax retusus		1	1		1	1							1		1		
spider (Araneae)		<i>Ostearius melanopygius</i>	Ostearius melanopygius						1											
spider (Araneae)		<i>Ozyptila brevipes</i>	Ozyptila brevipes	1				1	1						1			1		
spider (Araneae)		<i>Ozyptila praticola</i>	Ozyptila praticola		1															
spider (Araneae)		<i>Ozyptila sanctuaria</i>	Ozyptila sanctuaria						1	1	1				1					
spider (Araneae)		<i>Ozyptila simplex</i>	Ozyptila simplex					1	1		1	1		1						
spider (Araneae)		<i>Pachygnatha degeeri</i>	Pachygnatha degeeri		1	1	1	1	1	1	1		1	1		1	1			1
spider (Araneae)	NS	<i>Panamomops sulcifrons</i>	Panamomops sulcifrons	1																
spider (Araneae)		<i>Pardosa amentata</i>	Pardosa amentata	1												1		1		1
spider (Araneae)		<i>Pardosa monticola</i>	Pardosa monticola							1		1	1	1						
spider (Araneae)		<i>Pardosa nigriceps</i>	Pardosa nigriceps			1	1		1		1									
spider (Araneae)		<i>Pardosa palustris</i>	Pardosa palustris			1	1		1			1				1				
spider (Araneae)		<i>Pardosa prativaga</i>	Pardosa prativaga	1	1										1	1	1			
spider (Araneae)	NS	<i>Pardosa proxima</i>	Pardosa proxima			1														
spider (Araneae)		<i>Pardosa pullata</i>	Pardosa pullata	1	1	1	1	1	1	1	1									
spider (Araneae)		<i>Pelecopsis parallela</i>	Pelecopsis parallela			1					1		1	1	1				1	
spider (Araneae)		<i>Peponocranium ludicrum</i>	Peponocranium ludicrum								1					1				
spider (Araneae)		<i>Philodromus albidus</i>	Philodromus albidus	1	1															1
spider (Araneae)		<i>Philodromus cespitum</i>	Philodromus cespitum		1			1							1	1				
spider (Araneae)		<i>Philodromus dispar</i>	Philodromus dispar													1				
spider (Araneae)		<i>Pholcus phalangioides</i>	Cobweb Spider	1																
spider (Araneae)		<i>Phrurolithus festivus</i>	Phrurolithus festivus	1	1											1		1		
spider (Araneae)		<i>Phylloneta impressa</i>	Phylloneta impressa													1				
spider (Araneae)		<i>Phylloneta sisypbia</i>	Phylloneta sisypbia													1				
spider (Araneae)		<i>Pirata latitans</i>	Pirata latitans															1		
spider (Araneae)		<i>Pirata piraticus</i>	Pirata piraticus													1	1			1
spider (Araneae)		<i>Pisaura mirabilis</i>	Nursery-Web Spider	1	1	1		1			1	1		1					1	1
spider (Araneae)		<i>Platnickina tincta</i>	Platnickina tincta							1				1	1					
spider (Araneae)		<i>Pocadicnemis juncea</i>	Pocadicnemis juncea	1		1		1		1	1				1	1	1			
spider (Araneae)		<i>Porrhomma microphthalmum</i>	Porrhomma microphthalmum	1																
spider (Araneae)		<i>Porrhomma pygmaeum</i>	Porrhomma pygmaeum		1											1				
spider (Araneae)		<i>Robertus arundineti</i>	Robertus arundineti													1	1			

springtail (Collembola)	<i>Orchesella cincta</i>	Orchesella cincta	1	1	1		1	1		1	1	1		1	1			1		
springtail (Collembola)	<i>Orchesella villosa</i>	Orchesella villosa	1	1	1	1	1	1	1	1	1	1	1	1	1	1			1	1
springtail (Collembola)	<i>Pogonognathellus longicornis</i>	Pogonognathellus longicorr	1	1			1	1	1	1				1	1	1	1	1	1	
terrestrial mamma	S.41	<i>Lepus europaeus</i>				1				1										
terrestrial mamma	Protected	<i>Meles meles</i>			1									1						
terrestrial mammal		<i>Neomys fodiens</i>		1																
terrestrial mammal		<i>Oryctolagus cuniculus</i>	1	1					1	1	1			1					1	
terrestrial mammal		<i>Sciurus carolinensis</i>					1			1									1	
terrestrial mammal		<i>Talpa europaea</i>																	1	
terrestrial mammal		<i>Vulpes vulpes</i>										1								