

APPENDIX 9.8
Invertebrate Survey 2009

ISLAND FARM SPORTS VILLAGE, BRIDGEND, WALES
Environmental Statement

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1.1 Executive summary

- 1.1.1 The Island Farm site was assessed and then surveyed for invertebrates. The site was visited on four occasions during 2009: on 23rd April, 29th May, 24th June and 9th July.
- 1.1.2 The first visit was primarily for site familiarisation. As a result of this visit, and taking into account the proposed development, the site was divided into four areas for recording. These areas are shown in Map 1.
- 1.1.3 On subsequent visits, all parts of the site were surveyed using the sweep net and beating tray and pitfall traps that were set in May and emptied in June.
- 1.1.4 A total of 511 invertebrate species was recorded. The great majority of these were widespread and common species typical of the wider countryside.
- 1.1.5 Three species classified as nationally scarce were recorded, namely a species of a flower beetle, a rove beetle, and a picture-winged fly. All three of these species were recorded in the northern part of the site, while the rove beetle was also found in the field margins.
- 1.1.6 The presence of these three, together with a wide range of commoner species, indicates that the site should be considered of District significance for invertebrates. The greatest invertebrate diversity was found in the north-west part of the site and retention of this area should be sufficient to maintain the overall values of the site for invertebrates.

1.2 Introduction

- 1.2.1 The invertebrate survey was carried out to assess:
- the overall invertebrate diversity of the site
 - how the invertebrate diversity is distributed over the site
 - the relative value of different parts of the site for invertebrates
 - the presence of nationally scarce or otherwise significant species
- 1.2.2 The results were assessed with reference to local and national Biodiversity Action Plan species, and also used to allocate a significance category according to a well-established set of criteria.
- 1.2.3 The impact of the proposed development on the overall invertebrate diversity of the site and on the scarce species recorded was also assessed.

1.3 Methods

Initial visit for site evaluation

- 1.3.1 The site was first visited on 23rd April 2009. The whole of the northern section of the site was walked thoroughly. Some of the arable field area hedgerows were also walked, as were the swallowholes. The remaining hedgerows were inspected from a distance with binoculars and it was considered that they did not differ sufficiently from the rest.
- 1.3.2 A number of invertebrates were observed and identified in the field, while others were collected in a sweep net and later identified. These species have been incorporated into the main list at the end of this report – see Appendix 1.

Summary evaluation

- 1.3.3 An expert evaluation was made at this stage to guide the survey locations and techniques suitable for this site.
- 1.3.4 It was noted that the northern section showed considerable diversity both of plant species and structure. The structural variation, from bare ground and sparse short vegetation, through grassland and scrub to woodland, provides a wide variety of suitable habitats for invertebrates. This is further complimented by the abundance of suitable food plants. Among the trees and shrubs hawthorn, willows, aspen and hazel support diverse faunas, while there are mature oaks around the largest swallowhole. There is also a good diversity of flowering plant species in the grassland, while the abundance of bramble is likely to provide a major nectar source.
- 1.3.5 In contrast, the southern section was observed to be much less diverse and suggests little potential invertebrate interest. The swallowholes are an exception to this, with the largest one containing woodland reminiscent of an ancient semi-natural type, with oak trees including substantial amounts of dead wood.
- 1.3.6 The arable fields themselves were ploughed and seeded right to the margins and largely devoid of the ruderal plant species which can make arable field margins important habitats. The hedges have clearly been cut recently. Although tall, they have almost vertical sides with virtually no projecting branches, while only a very narrow strip of herbaceous vegetation is present at the base. The exceptions are those hedgerows separating the northern section from the arable fields, which are of a much higher quality. The best hedgerows are marked on Map 2.

Recording areas

- 1.3.7 For the purpose of recording, following the initial evaluation and taking into account the proposed development, the site was divided into 4 areas, as shown on Map 1:
- 1.3.8 A control area to the north-west. This is the area with the most diverse habitats, is proposed as a wildlife area and is therefore least likely to suffer negative impacts from development.
- 1.3.9 An area in the northern part of the site which is likely to be affected by the proposed access road into the site. It includes a relatively large area of grassland and also woodland and

scrub.

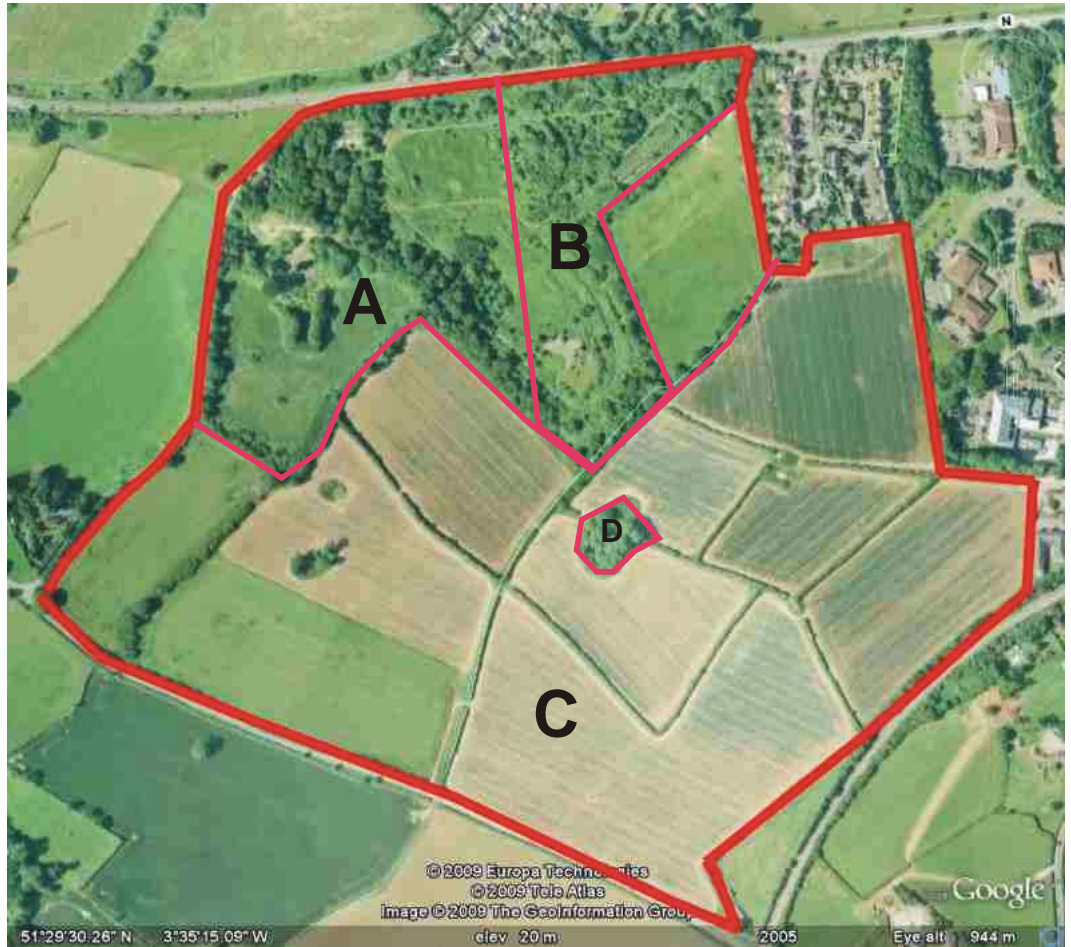
- 1.3.10 The arable fields, margins and hedgerows forming the largest part of the site, likely to be highly impacted by the development. Records were kept separate for each of the fields, but it became clear on analysis that there were no significant differences in species composition between individual fields and so the results were combined.
- 1.3.11 The largest of the swallow holes. This included damp woodland with grassland around the top. The other smaller swallow holes were very difficult to access except for around the top. The grassland around these showed no different species from the field margins and so they are included within C above.

Recording methods

- 1.3.12 On each visit substantial samples were taken by sweeping in A, B and D above. It was not possible to cover all of area C on each visit, but each field was sampled on two occasions. Suitable trees and shrubs were also sampled by beating, though this was rather unproductive in the field hedgerows which had been largely trimmed to form a vertical wall of foliage.
- 1.3.13 A total of 12 lines of pitfall traps, each of 6 traps, were set on the May visit and emptied in June. These were distributed as follows:
- A. 2 lines
 - B. 2 lines
 - C. 7 lines, each in a different field.
 - D. 1 line.
- 1.3.14 Each trap consisted of a plastic cup of 7 cm diameter filled with saturated salt solution and covered with a 1 cm wire mesh to prevent accidental trapping of small mammals.
- 1.3.15 In areas A and B, one line was set in a grassy habitat and one in a wooded area. In area C, they were set along field margins and in D in the damp woodland.

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Map 1
Survey Areas



1.4 Results

Invertebrate assemblage

1.4.1 A total of 511 invertebrate species was recorded. The groups recorded were:

	No. of species
Diptera (flies)	162
Coleoptera (beetles)	157
Heteroptera (true bugs)	54
Hymenoptera (bees, wasps, ants, sawflies)	39
Lepidoptera (butterflies and moths)	36
Araneae (spiders)	34
Others	29

1.4.2 This size of sample is considered more than adequate for site evaluation.

1.4.3 The vast majority of species recorded are widespread and common throughout much of England and Wales and have no specific conservation value. Only the three species below are considered nationally scarce.

Nationally scarce species

1.4.4 The following are the status definitions which are used to assess the threat status of invertebrates considered scarce in the UK:

Red Data Book category 1, RDB1 – Endangered

1.4.5 Taxa in danger of extinction and whose survival is unlikely if causal factors continue operating.

Red Data Book category 2, RDB2 – Vulnerable

1.4.6 Taxa believed likely to move into the Endangered category if the causal factors continue operating.

Red Data Book category 3, RDB3 – Rare

1.4.7 Taxa with small populations that are not at present Endangered or Vulnerable, but are at risk.

1.4.8 It should be noted that the RDB categories above have subsequently been modified to comply with the IUCN definitions, but most invertebrates were assessed under these older definitions.

1.4.9 In addition to the RDB categories, species which are considered nationally uncommon but not

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threatened have been classified as Nationally Scarce (formerly Nationally Notable). These are based primarily on the known or estimated distribution of the species in terms of 10 km grid squares. Species are assessed as Nationally Scarce if they are believed to occur in 100 or less 10 km squares. For the majority of species, they have been further subdivided:

Nationally Scarce Category A – Na.

- 1.4.10 Species which are believed to occur in 30 or less 10 km grid squares.

Nationally Scarce Category B – Nb.

- 1.4.11 Species which are believed to occur in 31 to 100 10 km grid squares.
- 1.4.12 At the present site, two species categorised as Nb were recorded, both beetles, and one fly categorised as RDB3.
- 1.4.13 *Ischnomera cyanea* (Coleoptera, Oedemeridae) a flower beetle

Nationally Scarce “B” (Nb)

- 1.4.14 Although still classified as nationally scarce, this species has become much more widely distributed and common in recent years and will certainly lose its status at the next review. It is now widespread and locally abundant through much of lowland England and Wales, typically associated with flowery grassland. Records on the National Biodiversity Network Gateway www.nbn.org.uk clearly show that the species no longer qualifies according to the Nb criterion given above. Only a single example was swept, from the control area. In view of the present relative abundance of this species, no mitigation measures specific to this species are required.
- 1.4.15 *Paederus fuscipes* (Coleoptera, Staphylinidae) a rove beetle

Nationally Scarce “B” (Nb)

- 1.4.16 The presence of this species in considerable numbers on the site is rather surprising. It is generally associated with wetlands and is considered to be specific to such habitats. On this site, several examples were swept from long grass, and also found in pitfall traps, along the field margins and in the grassy field in area A. The species is widespread but local in southern and western England and in Wales, most commonly near the coast. The present author has also recorded the species in rather dry habitat near the coast in Kent, and it seems possible that the requirement for wetland is less strong in sites within a few miles of the coast. As the species was recorded from both areas A and C, a viable population should be maintained if area A is not developed.
- 1.4.17 *Myopites inulaedyssentericae* (Diptera, Tephritidae) a picture-winged fly

Red Date Book 3 (RDB3) Rare.

- 1.4.18 This species is associated with Common Fleabane *Pulicaria dysenterica* which is quite common in the northern part of the site. Larvae develop in the flowerheads. Previously considered to be confined to southern England, from Dorset to Kent, the species has recently been found to be more widespread, at least as far north as Warwickshire. The RDB status is likely to be reduced to Scarce at the next review. The National Biodiversity Network Gateway

www.nbn.org.uk has only a single Welsh record, from Lavernock Point Wildlife Trust Nature Reserve, ST181681, 2005. It should be noted, however, that the dataset held by the NBN is by no means complete. Two examples of the species were swept in the northern part of the site, from area A and area B. It is likely to occur wherever fleabane is found on the site and a viable population of the insect should be maintained provided that a reasonable population of the food plant is retained.

1.5 Discussion and evaluation

1.5.1 The list of species recorded was assessed against the following:

- United Kingdom Biodiversity Action Plan
- NERC Act 2006: Section 42. List of species of principal importance for conservation of biological diversity in Wales
- Bridgend County Borough Local Biodiversity Action Plan
- Vale of Glamorgan Local Biodiversity Action Plan

1.5.2 No species of invertebrate included in any of the above was recorded on the survey.

1.5.3 Of the Lepidoptera species recorded from this site in 2002 (Wye Valley Surveys 2002), one is included in the Bridgend County Borough LBAP. This is the Coronet Craniophora ligustri, a species associated with Ash and Wild Privet. On a wider scale, this species is considered locally frequent in South Wales.

1.5.4 A further species which may be judged significant is the Jet Black Ant *Lasius fuliginosus*, which has no particular status but is considered sufficiently local in many areas to be worthy of conservation. A nest of this species was found associated with a large Sycamore on the boundary hedge between areas A and C and is marked on Map 2.

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Map 2



Notes on Lepidoptera

1.5.5 As this survey was diurnal, only a small number of Lepidoptera were recorded, nocturnal survey using mercury vapour (MV) light traps being required for a full survey. Those species recorded here were mainly observed flying, netted by sweeping or recorded as larvae beaten from trees and shrubs. However, a report completed in 2002 summarised the species known from the site at that time, based on 3 nights of MV trapping by a local group between 1997 and 2001 and 2 diurnal visits to record butterflies in August 2002 (Wye Valley Surveys 2002).

1.5.6 The 2002 survey recorded a total of 14 species of butterfly, as follows:

Small Skipper	Small Copper
Small White	Common Blue
Large White	Red Admiral
Green-veined White	Painted Lady
Small Tortoiseshell	Speckled Wood
Peacock	Gatekeeper
Comma	Meadow Brown

- 1.5.7 All of these were again recorded by the present author in 2009. In addition 4 further species were added: Orange Tip, Brimstone, Ringlet and Large Skipper. This brings the total for the site to 18 species.
- 1.5.8 The summary of moth species in the 2002 report noted 129 species of moth and the author suggested that a total of 300 species might be present (Wye Valley Suveys 2000). However, it is likely that not all of the species recorded are resident on the site since MV trapping can attract species from some distance including migrants and vagrants. In particular, the single nationally scarce species recorded, the Marsh Oblique-barred Hypenodes humidalis, would appear most unlikely to be resident. In most areas, including Wales, its normal habitat is boggy moorland and heathland, though also found in water meadows and fens in southern England. No remotely suitable habitat would appear to be present on this site and it is most probable that the specimen recorded was a vagrant.
- 1.5.9 The author of the 2002 report suggested that the hedgerows in the arable farmland would be suitable habitat for many species of Lepidoptera. However, since that date this habitat would appear to have deteriorated, with the hedgerows trimmed and only very narrow field margins left, these being treated with herbicide. Undoubtedly some species would be using the hedgerows but the present author could find no evidence that they were particularly significant. For example hazel was abundant and is a food plant for many species, but there was very little sign of larval feeding and very few larvae could be beaten. It would seem likely that the better quality hedgerows forming the northern boundary of the arable area provide the best potential habitat.

Evaluation

- 1.5.10 There are no agreed criteria for overall assessment of the invertebrate value of a site. However, a set of criteria have been developed by Colin Plant Associates (UK) Consultant Entomologists and these criteria are very widely used. The present author hereby acknowledges Colin Plant Associates as author of these criteria.
- 1.5.11 The levels of significance are, in descending order:
- International
 - National
 - Regional
 - County
 - District
 - Local
 - Low
- 1.5.12 The present site is of at least Local and probably of District significance for its invertebrates, but no more than that.

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Criteria for District significance

- 1.5.13 Site with populations of invertebrates or invertebrate habitats considered scarce or rare or threatened in the administrative District. A rather vague definition of habitats falling below county significance level, but which may be of greater significance than merely Local. They include sites for which Nationally Notable species in the range from 1 to 4 are reasonably expected, but not yet necessarily recorded.

Criteria for Local significance

- 1.5.14 Site with populations of invertebrates or invertebrate habitats considered scarce or rare or threatened in the affected and neighbouring Parishes. Habitats or species unique or of some other significance within the local area.
- 1.5.15 Since two species of Nationally Notable (Scarce) species and one RDB species were recorded, it is the present author's opinion that the site should be considered as of District significance.
- 1.5.16 In view of the proposed development, the distribution of species on the site is important. In particular, it should be noted that all three of the nationally scarce species were recorded within area A, though two of them were also recorded in areas likely to be developed. This suggests that if area A is retained as part of a wildlife area, populations of all three species should be maintained. In fact, this area contains a wide diversity of habitats and it is likely that extended intensive survey of area A would show most species present on the whole site to be found within this area.
- 1.5.17 While the nationally scarce species have some significance, the main value of the site is in its overall diversity, particularly in the northern part. The wide variety of flowering plant species support a correspondingly large variety of insects, with plants such as Bird's-foot Trefoil and other legumes, Knapweed, St John's Wort and Mugwort being examples. Common Fleabane has already been noted for the rare fly *Myopites inulaedysentericae* and also supports a tortoise beetle *Cassida nurrea* a species which has a restricted distribution, being confined to South Wales and south-west England, and hence may be regarded as a local speciality. In addition to plant species, structural diversity is also significant in providing a range of invertebrate habitats. However, the wooded areas appear to be less significant than the more open and grassy parts. Invasion by bramble, scrub and trees will need to be controlled to maintain the diversity in the long term.
- 1.5.18 The large swallow hole included a few species which were not recorded elsewhere, such as some small craneflies (Diptera, Limoniidae) associated with damp woodland. However, all of these species are nationally very common and likely to be widespread in the local area. A large oak with significant dead wood is present, but no saproxylic species were recorded. Otherwise this area had a limited fauna.
- 1.5.19 The author of the 2002 report on Lepidoptera noted that the site had particular importance for the number of individual butterflies rather than the number of species or presence of rarities. To a certain extent this applies to other groups of invertebrates also, with many species present in very large numbers, particularly those associated with flowers.

Mitigation

- 1.5.20 As noted above, the majority of species are either known or likely to be found in the area proposed as a wildlife area. If this area is protected from development and subsequently subject to appropriate management, this should be sufficient to maintain the overall invertebrate interest and the nationally scarce species. Development of the arable fields and margins will have relatively little impact, particularly if at least some of the boundary hedgerows can be maintained, especially those marked on Map 2. Some loss of shorter herb-rich grassland habitat will occur in the area of the access road. It is most important that the overall structural and plant species diversity of the wildlife area is maintained and this will require active management, e.g. control of scrub and cutting and raking of grassland. In particular, conversion of grassland for amenity value and general tidying are likely to have considerable adverse impacts. Otherwise no specific mitigation measures should be required to maintain the overall invertebrate interest.

1.6 References

Wye Valley Surveys. 2002. Island Farm Bridgend. Ecological Report. August 2002

1.7 Appendices

Appendix 1: Full species list

* species considered to be nationally scarce

				A	B	C	D
Isopoda	Armadillidae	<i>Armadillidium vulgare</i>		1		1	
woodlice	Oniscidae	<i>Oniscus asellus</i>		1		1	1
	Isosciidae	<i>Philoscia muscorum</i>		1		1	
Diplopoda	Julidae	<i>Cylindroiulus punctatus</i>		1		1	1
millipedes		<i>Tachypodoiulus niger</i>		1		1	1
	Polydesmidae	<i>Polydesmus angustus</i>				1	1
Insecta							
Orthoptera	Acrididae	<i>Chorthippus brunneus</i>	Common Field Grasshopper	1	1		
grasshoppers & crickets		<i>Chorthippus parallelus</i>	Meadow Grasshopper	1	1	1	

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		<i>Omocestus viridulus</i>	Common Green Grasshopper	1	1		
	Phaneropteridae	<i>Leptophyes punctatissima</i>	Speckled Bush Cricket	1		1	
	Tetrigidae	<i>Tetrix undulata</i>	Common Groundhopper	1		1	
Dermaptera	Forficulidae	<i>Forficula auricularia</i>	Common Earwig	1		1	
<i>earwigs</i>							
Heteroptera	Acanthosomatidae	<i>Acanthosoma haemorrhoidale</i>	Hawthorn Shield Bug	1		1	
<i>true bugs</i>	Anthocoridae	<i>Anthocoris confusus</i>		1			
		<i>Anthocoris nemoralis</i>		1	1	1	
		<i>Anthocoris nemorum</i>		1	1	1	
	Aradidae	<i>Aradus depressus</i>		1		1	
	Coreidae	<i>Coriomerus denticulatus</i>		1	1		
	Lygaeidae	<i>Drymus sylvaticus</i>		1		1	1
		<i>Heterogaster urticae</i>		1		1	
		<i>Scolopostethus affinis</i>		1	1	1	
		<i>Scolopostethus thomsoni</i>		1		1	1
	Miridae	<i>Acetropus gimmerthali</i>		1	1		
		<i>Amblytylus nasutus</i>		1			
		<i>Calocoris norvegicus</i>		1	1	1	
		<i>Calocoris stysi</i>		1	1		1
		<i>Campyloneura virgula</i>		1	1	1	
		<i>Capsodes gothicus</i>		1			
		<i>Capsus ater</i>		1	1	1	1
		<i>Chlamydatus pullus</i>		1	1		
		<i>Cyllecoris histrionicus</i>				1	1

		<i>Deraeocoris lutescens</i>		1			
		<i>Deraeocoris ruber</i>		1		1	
		<i>Dicyphus epilobii</i>		1		1	
		<i>Dicyphus globulifer</i>		1	1		
		<i>Harpocera thoracica</i>		1			1
		<i>Heterotoma planicornis</i>		1		1	1
		<i>Leptopterna dolabrata</i>		1	1	1	1
		<i>Leptopterna ferrugata</i>		1	1	1	
		<i>Liocoris tripustulatus</i>		1	1	1	1
		<i>Lopus decolor</i>		1	1		
		<i>Lygocoris contaminatus</i>		1	1	1	
		<i>Notostira elongata</i>			1	1	
		<i>Orthocephalus saltator</i>		1	1		
		<i>Orthonotus rufifrons</i>		1		1	
		<i>Orthops campestris</i>		1	1	1	
		<i>Orthops kalmi</i>		1		1	
		<i>Orthotylus marginalis</i>				1	
		<i>Phylus coryli</i>		1		1	
		<i>Phylus melanocephalus</i>					1
		<i>Pithanus maerkeli</i>		1		1	
		<i>Plagiognathus arbustorum</i>		1		1	1
		<i>Plagiognathus chrysanthemii</i>		1	1		
		<i>Polymerus nigrinus</i>		1	1	1	
		<i>Psallus lepidus</i>				1	
		<i>Psallus perrisi</i>		1	1		
		<i>Psallus varians</i>		1			1
		<i>Stenodema calcaratum</i>		1	1		

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		<i>Stenodema laevigatum</i>		1	1	1	1
		<i>Stenodema holsatum</i>		1		1	
		<i>Stenotus binotatus</i>		1	1	1	
	Nabidae	<i>Nabis limbatus</i>		1		1	1
		<i>Nabis rugosus</i>		1		1	
	Pentatomidae	<i>Palomena prasina</i>	Green Shieldbug	1			
		<i>Pentatoma rufipes</i>	Forest Bug	1			
	Rhopalidae	<i>Rhopalus subrufus</i>				1	
Auchenorrhyncha	Cercopidae	<i>Aphrophora alni</i>		1			1
<i>leafhoppers</i>		<i>Philaenus spumarius</i>	Common Froghopper	1	1	1	1
	Cicadellidae	<i>Eupteryx aurata</i>		1		1	1
		<i>Eupteryx urticae</i>		1	1		1
		<i>Evacanthus interruptus</i>		1		1	
	Cixiidae	<i>Cixius nervosus</i>		1			1
Lepidoptera	Hesperiidae	<i>Ochlodes faunus</i>	Large Skipper	1			
<i>butterflies and moths</i>		<i>Thymelicus sylvestris</i>	Small Skipper	1	1	1	
	Lycaenidae	<i>Lycaena phlaeas</i>	Small Copper	1			
		<i>Polyommatus icarus</i>	Common Blue	1			
	Nymphalidae	<i>Aglais urticae</i>	Small Tortoiseshell	1		1	
		<i>Inachis io</i>	Peacock	1	1		
		<i>Polygonia c-album</i>	Comma	1			
		<i>Vanessa atalanta</i>	Red Admiral	1	1	1	
		<i>Vanessa cardui</i>	Painted Lady	1	1	1	
	Pieridae	<i>Anthocharis cardamines</i>	Orange Tip	1			
		<i>Gonepteryx rhamni</i>	Brimstone	1		1	
		<i>Pieris brassicae</i>	Large White	1		1	
		<i>Pieris napi</i>	Green-veined White	1		1	
		<i>Pieris rapae</i>	Small White	1		1	
	Satyridae	<i>Aphantopus hyperantus</i>	Ringlet	1		1	

		<i>Maniola jurtina</i>	Meadow Brown	1	1	1	
		<i>Pararge aegeria</i>	Speckled Wood	1			
		<i>Pyronia tithonus</i>	Gatekeeper	1	1	1	
	Arctiidae	<i>Spilosoma luteum</i>	Buff Ermine	1			
		<i>Tyria jacobaeae</i>	Cinnabar Moth (larvae)		1		
	Choreutidae	<i>Anthophila fabriciana</i>	Nettle Tap	1	1	1	1
	Geometridae	<i>Camptogramma bilineata</i>	Yellow Shell			1	
		<i>Eppirhoe alternata</i>	Common Carpet			1	
		<i>Hemitea aestivaria</i>	Common Emerald	1			
		<i>Opisthograptis luteolata</i>	Brimstone moth	1			
	Lymantriidae	<i>Euproctis similis</i>	Yellow-tail (larvae)	1			
		<i>Orgyia antiqua</i>	Vapourer (larvae)			1	
	Micropterigidae	<i>Micropterix aruncella</i>				1	
	Noctuidae	<i>Autographa gamma</i>	Silver Y	1	1		
		<i>Noctua pronuba</i>	Large Yellow Underwing			1	
	Pyralidae	<i>Agriphila straminella</i>		1			
		<i>Chrysoteuchia culmella</i>		1			
		<i>Crambus pascuella</i>		1			
		<i>Pleuroptya ruralis</i>	Mother of Pearl			1	
	Tortricidae	<i>Epiblema uddmanniana</i>	Bramble Shoot Moth	1			
	Zygaenidae	<i>Zygaena filipendulae</i>	Six-spot Burnet		1		
Coleoptera	Anobiidae	<i>Anobium fulvicorne</i>		1			
beetles	Apionidae	<i>Apion frumentarium</i>				1	
		<i>Ceratapion onopordi</i>		1			
		<i>Eutrichapion ervi</i>		1	1		
		<i>Eutrichapion viciae</i>		1		1	

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		<i>Holotrichapion pisi</i>		1	1		
		<i>Ischnopterapion loti</i>		1	1		
		<i>Ischnopterapion virens</i>			1		
		<i>Oxystoma subulatum</i>		1			
		<i>Perapion curtirostre</i>		1		1	
		<i>Perapion hydrolapathi</i>				1	
		<i>Perapion violaceum</i>		1		1	
		<i>Protapion apricans</i>			1	1	
		<i>Protapion fulvipes</i>		1	1		
		<i>Protapion trifolii</i>			1	1	
		<i>Stenopterapion tenue</i>			1		
	Byrrhidae	<i>Cytilus sericeus</i>				1	
	Byturidae	<i>Byturus tomentosus</i>			1	1	1
	Cantharidae	<i>Cantharis cryptica</i>		1			1
		<i>Cantharis decipiens</i>		1		1	
		<i>Cantharis lateralis</i>		1		1	
		<i>Cantharis nigra</i>				1	
		<i>Cantharis nigricans</i>		1	1		
		<i>Cantharis pellucida</i>		1			
		<i>Cantharis rustica</i>		1			
		<i>Malthinus flaveolus</i>			1	1	
		<i>Malthodes minimus</i>				1	
		<i>Rhagonycha fulva</i>				1	
		<i>Rhagonycha lignosa</i>		1			
		<i>Rhagonycha limbata</i>		1			
	Carabidae	<i>Abax parallelepipedus</i>		1		1	1

		<i>Acupalpus dubius</i>			1	
		<i>Acupalpus meridianus</i>		1		
		<i>Amara communis</i>			1	
		<i>Amara familiaris</i>		1		
		<i>Amara plebeja</i>			1	
		<i>Anchonidium dorsale</i>			1	
		<i>Asaphidion curtum</i>			1	1
		<i>Bembidion lampros</i>			1	1
		<i>Bembidion obtusum</i>			1	
		<i>Bembidion tetracolum</i>			1	
		<i>Demetrias atricapillus</i>		1	1	1
		<i>Dromius linearis</i>		1	1	
		<i>Harpalus rufipes</i>			1	
		<i>Loricera pilicornis</i>		1	1	
		<i>Nebria brevicollis</i>		1	1	1
		<i>Notiophilus biguttatus</i>		1	1	
		<i>Platyderus depressus</i>		1		
		<i>Platynus assimilis</i>			1	1
		<i>Poecilus cupreus</i>			1	
		<i>Pterostichus madidus</i>		1	1	1
		<i>Pterostichus melanrius</i>			1	
		<i>Pterostichus strenuus</i>		1	1	
		<i>Pterostichus vernalis</i>		1	1	1
	Cerambycidae	<i>Grammoptera ruficornis</i>				
		<i>Rutpela maculata</i>			1	
	Chrysomelidae	<i>Altica lythri</i>			1	1
		<i>Bruchus loti</i>		1	1	
		<i>Cassida murraea</i>		1		
		<i>Cassida</i>		1		

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		<i>rubiginosa</i>					
		<i>Chaetocnema hortensis</i>				1	
		<i>Cryptocephalus fulvus</i>			1		
		<i>Cryptocephalus moraei</i>			1		
		<i>Gastrophysa polygoni</i>				1	
		<i>Gastrophysa viridula</i>		1		1	1
		<i>Lema cyanella</i>				1	
		<i>Longitarsus jacobaeae</i>			1		
		<i>Longitarsus melanocephalus</i>		1	1		
		<i>Oulema rufocyanea</i>		1		1	
		<i>Phaedon tumidulus</i>		1	1		1
		<i>Phratora vulgatissima</i>		1		1	
		<i>Phyllotreta undulata</i>			1	1	
		<i>Sphaeroderma testaceum</i>			1		
	Coccinellidae	<i>Adalia bipunctata</i>	2-spot Ladybird			1	
		<i>Adalia 10-punctata</i>	10-spot Ladybird			1	
		<i>Calvia 14-guttata</i>	Cream-spot Ladybird	1			
		<i>Coccinella 7-punctata</i>	7-spot Ladybird	1	1	1	1
		<i>Propylea 14-punctata</i>	14-spot Ladybird	1			
		<i>Subcoccinella 24-punctata</i>	24-spot Ladybird			1	
	Curculionidae	<i>Anthonomus rubi</i>			1		
		<i>Archarius salicivorus</i>			1		
		<i>Barynotus obscurus</i>				1	
		<i>Barypeithes</i>		1		1	

		<i>pellucidus</i>					
		<i>Ceutorhynchus obstrictus</i>		1			
		<i>Ceutorhynchus typhae</i>					1
		<i>Hylesinus varius</i>	Ash Bark Beetle	1			
		<i>Hypera nigrostris</i>		1		1	
		<i>Hypera rumicis</i>				1	
		<i>Liophloeus tessulatus</i>		1		1	
		<i>Mecinus pascuorum</i>		1	1	1	
		<i>Nedyus quadrimaculatus</i>		1	1	1	1
		<i>Orchestes alni</i>				1	
		<i>Otiorhynchus singularis</i>	Clay-coloured Weevil			1	
		<i>Parethelcus pollinarius</i>		1	1	1	1
		<i>Phyllobius pomaceus</i>		1	1	1	1
		<i>Phyllobius pyri</i>		1		1	
		<i>Phyllobius roboretanus</i>		1	1		
		<i>Rhamphus pulicarius</i>			1		
		<i>Rhinoncus pericarpus</i>			1	1	
		<i>Rhinoncus perpendicularis</i>				1	
		<i>Sitona lepidus</i>			1		
		<i>Sitona lineatus</i>		1	1	1	
		<i>Sitona lineellus</i>				1	
		<i>Sitona suturalis</i>			1	1	
		<i>Trichosirocalus troglodytes</i>		1	1	1	
		<i>Tychius picirostris</i>			1		
	Elateridae	<i>Agriotes lineatus</i>		1			
		<i>Agriotes obscurus</i>				1	
		<i>Agriotes pallidulus</i>		1	1	1	1
		<i>Agriotes sputator</i>			1	1	
		<i>Agrypnus murinus</i>				1	
		<i>Athous</i>		1	1	1	

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		<i>haemorrhoidalis</i>					
	Helophoridae	<i>Helophorus brevipalpis</i>		1			
	Hydrophilidae	<i>Anacaena globulus</i>				1	
		<i>Megasternum concinnum</i>				1	
	Kateretidae	<i>Brachypterus ater</i>		1	1	1	1
		<i>Brachypterus urticae</i>		1	1	1	1
	Latridiidae	<i>Cartodere bifasciata</i>				1	
		<i>Corticara gibbosa</i>		1	1		
	Leiodidae	<i>Catops fuscus</i>				1	
		<i>Nargus velox</i>				1	
		<i>Ptomaphagus subvillosus</i>				1	
	Malachiidae	<i>Malachius bipustulatus</i>		1	1	1	
	Nitidulidae	<i>Meligethes aeneus</i>		1	1	1	1
	Oedemeridae	<i>Ischnomera cyanea</i> ^		1			
		<i>Oedemera lurida</i>		1	1	1	1
		<i>Oedemera nobilis</i>		1	1	1	1
	Phalacridae	<i>Olibrus aeneus</i>		1	1		
	Scarabaeidae	<i>Onthophagus similis</i>				1	
	Scirtidae	<i>Microcara testacea</i>				1	
		<i>Scirtes hemisphaericus</i>				1	
	Scraptiidae	<i>Anaspis fasciata</i>		1			
		<i>Anaspis frontalis</i>			1		1
		<i>Anaspis garneysi</i>				1	
		<i>Anaspis maculata</i>		1	1	1	1
		<i>Anaspis regimbarti</i>		1		1	
	Silphidae	<i>Silpha laevigata</i>				1	
	Staphylinidae	<i>Anotylus rugosus</i>		1			
		<i>Anotylus tetracarinatus</i>				1	

		<i>Drusilla canaliculata</i>		1		1	
		<i>Megarthus bellevoeyi</i>				1	
		<i>Ocypus aeneocephalus</i>				1	
		<i>Paederus fuscipes</i> *		1		1	1
		<i>Philonthus carbonarius</i>				1	
		<i>Philonthus cognatus</i>		1		1	
		<i>Quedius curtipennis</i>				1	
		<i>Rugilus rufipes</i>				1	
		<i>Stenus brunripes</i>			1		
		<i>Stenus flavipes</i>		1		1	
		<i>Stenus pallitarsis</i>				1	
		<i>Stenus similis</i>		1		1	
		<i>Tachinus rufipes</i>		1		1	
		<i>Tachyporus hypnorum</i>		1	1	1	
		<i>Tachyporus obtusus</i>		1		1	
		<i>Tachyporus solutus</i>		1		1	
		<i>Xantholinus longiventris</i>				1	
	Tenebrionidae	<i>Lagria hirta</i>		1			
Mecoptera	Panorpidae	<i>Panorpa cognata</i>			1		
scorpion flies		<i>Panorpa communis</i>		1			
		<i>Panorpa germanica</i>				1	
Neuroptera	Chrysopidae	<i>Chrysopa perla</i>		1		1	
lacewings		<i>Chrysoperla carnea</i>		1			
	Hemerobiidae	<i>Micromus paganus</i>		1			
Diptera	Anisopodidae	<i>Sylvicola fenestralis</i>				1	
	Asilidae	<i>Dioctria rufipes</i>		1			
		<i>Leptogaster</i>		1			

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		<i>cylindrica</i>					
		<i>Machimus atricapillus</i>			1		
	Bibionidae	<i>Bibio johannis</i>	St John's Fly	1			
		<i>Bibio marci</i>	St Mark's Fly	1			
		<i>Dilophus febrilis</i>	Fever Fly	1			
	Bombyliidae	<i>Bombylius major</i>	Bee Fly	1			
	Calliphoridae	<i>Calliphora vicina</i>			1	1	1
		<i>Calliphora vomitoria</i>		1			
		<i>Lucilia caesar</i>		1	1		1
		<i>Lucilia sericata</i>		1			
		<i>Melinda gentilis</i>		1			
		<i>Pollenia intermedia</i>				1	
		<i>Pollenia rudis</i>		1	1	1	
	Conopidae	<i>Conops vesicularis</i>				1	
	Dolichopodidae	<i>Campsicnemus curvipes</i>					1
		<i>Chrysotus gramineus</i>		1	1	1	1
		<i>Dolichopus brevipennis</i>		1			
		<i>Dolichopus festivus</i>				1	
		<i>Dolichopus griseipennis</i>			1	1	
		<i>Dolichopus plumipes</i>				1	
		<i>Dolichopus trivialis</i>		1		1	
		<i>Dolichopus unguatus</i>		1		1	1
		<i>Hercostomus nigripennis</i>		1			
		<i>Poecilobothrus nobilitatus</i>		1			
		<i>Sciapus platypterus</i>				1	
		<i>Syntormon tarsatum</i>			1		
	Dryomyzidae	<i>Dryomyza anilis</i>		1		1	1

	Ephydriidae	<i>Parydra coarctata</i>					1
	Empididae	<i>Empis aestiva</i>			1		
		<i>Empis livida</i>			1		1
		<i>Empis lutea</i>			1		
		<i>Empis nigripes</i>		1			
		<i>Empis tessellata</i>		1	1	1	
		<i>Rhamphomyia dentipes</i>		1			
		<i>Rhamphomyia flava</i>		1			
		<i>Rhamphomyia sulcata</i>		1		1	
	Heleomyzidae	<i>Suillia bicolor</i>				1	
		<i>Suillia atricornis</i>		1			
		<i>Suillia variegata</i>				1	
	Hybotidae	<i>Bicellaria vana</i>		1			
		<i>Hybos culiciformis</i>		1		1	1
		<i>Ocydromia glabricula</i>		1			
		<i>Oedalea holmgreni</i>		1			
		<i>Platypalpus annulipes</i>			1	1	
		<i>Platypalpus calceatus</i>				1	
		<i>Platypalpus pallidiventris</i>				1	
		<i>Tachydromia aemula</i>		1			
	Lauxaniidae	<i>Calliopum aeneum</i>		1			
		<i>Calliopum simillimum</i>				1	
		<i>Lyciella decipiens</i>		1			
		<i>Lyciella rorida</i>		1		1	1
		<i>Minettia rivosa</i>				1	1
		<i>Sapromyza opaca</i>				1	
		<i>Tricholauxania praeusta</i>		1			
	Limoniidae	<i>Ilisia maculata</i>		1			
		<i>Limnophila ferruginea</i>		1			
		<i>Molophilus</i>		1			

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		<i>appendiculatus</i>					
	Lonchopteridae	<i>Lonchoptera lutea</i>		1		1	
	Muscidae	<i>Coenosia mollicula</i>			1		
		<i>Coenosia testacea</i>		1			
		<i>Coenosia tigrina</i>		1	1	1	
		<i>Eudasyphora cyanella</i>		1	1	1	1
		<i>Graphomyia maculata</i>		1			
		<i>Hebecnema vespertina</i>		1			
		<i>Helina impuncta</i>		1		1	1
		<i>Helina reversio</i>				1	
		<i>Mesembrina meridiana</i>			1		
		<i>Morellia aenescens</i>				1	
		<i>Morellia simplex</i>		1		1	
		<i>Musca autumnalis</i>		1	1	1	
		<i>Mydaea urbana</i>			1		
		<i>Phaonia angelicae</i>		1			1
		<i>Phaonia pallida</i>		1			1
		<i>Phaonia palpata</i>			1		
		<i>Phaonia serva</i>			1		
		<i>Polietes lardarius</i>		1		1	
	Opomyzidae	<i>Geomyza tripunctata</i>			1		
		<i>Opomyza florum</i>			1		
		<i>Opomyza germinationis</i>			1	1	
	Pipunculidae	<i>Cephalops semifumosus</i>		1			
		<i>Pipunculus campestris</i>		1			
		<i>Verrallia aucta</i>		1	1		
	Platystomatidae	<i>Platystoma seminationis</i>		1			
		<i>Rivellia syngenesiae</i>			1		
	Psilidae	<i>Psila rosae</i>			1		
	Ptychopteridae	<i>Ptychoptera</i>					1

		<i>albimana</i>					
	Rhagionidae	<i>Chrysopilus asiliformis</i>			1	1	
		<i>Chrysopilus cristatus</i>		1	1	1	
		<i>Rhagio scolopacea</i>		1		1	1
		<i>Rhagio tringarius</i>		1	1	1	
	Rhinophoridae	<i>Rhinophora lepida</i>		1			
	Sarcophagidae	<i>Sarcophaga dissimilis</i>		1	1		
		<i>Sarcophaga incisilobata</i>		1	1		
		<i>Sarcophaga subvicina</i>		1	1	1	
		<i>Sarcophaga vagans</i>		1		1	
		<i>Sarcophaga variegatus</i>		1			
	Scathophagidae	<i>Nanna fasciata</i>			1	1	
		<i>Norellisoma spinimanum</i>				1	
		<i>Scathophaga stercoraria</i>		1	1	1	1
	Sciomyzidae	<i>Coremacera marginata</i>		1			
		<i>Euthycera fumigata</i>		1			
		<i>Trypetoptera punctulata</i>		1	1	1	
	Sepsidae	<i>Nemopoda nitidula</i>		1			1
		<i>Sepsis cynipsea</i>		1		1	
		<i>Sepsis fulgens</i>		1	1	1	
	Stratiomyidae	<i>Beris geniculata</i>			1		
		<i>Beris vallata</i>		1		1	
		<i>Chloromyia formosa</i>			1	1	1
		<i>Chorisops tibialis</i>			1		
		<i>Microchrysa flavicornis</i>		1			
		<i>Microchrysa polita</i>		1			
		<i>Pachygaster atra</i>		1		1	

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		<i>Pachygaster leachi</i>			1	
	Syrphidae	<i>Cheilosia illustrata</i>	1			
		<i>Cheilosia proxima</i>			1	
		<i>Cheilosia pagana</i>			1	
		<i>Chrysogaster cemiteriorum</i>	1		1	
		<i>Epistrophe eligans</i>	1	1	1	
		<i>Episyrphus balteatus</i>	1	1	1	1
		<i>Eristalis horticola</i>		1	1	
		<i>Eristalis intricarius</i>	1			
		<i>Eristalis pertinax</i>	1		1	
		<i>Eristalis tenax</i>		1		
		<i>Eupeodes corollae</i>		1	1	
		<i>Eupeodes luniger</i>	1	1	1	
		<i>Helophilus pendulus</i>			1	1
		<i>Melanostoma mellinum</i>	1	1	1	
		<i>Melanostoma scalare</i>	1	1	1	
		<i>Myathropa florea</i>	1			
		<i>Neoascia podagrica</i>	1		1	
		<i>Paragus haemorrhous</i>	1			
		<i>Pipizella viduata</i>		1		
		<i>Platycheirus albimanus</i>		1	1	
		<i>Platycheirus angustatus</i>				
		<i>Platycheirus clypeatus s. str.</i>	1		1	
		<i>Platycheirus peltatus s. str.</i>		1		
		<i>Rhingia campestris</i>	1	1	1	
		<i>Sericomyia silentis</i>			1	
		<i>Sphaerophoria scripta</i>	1		1	

		<i>Syrphus ribesii</i>			1		
		<i>Syrphus vitripennis</i>				1	
		<i>Syrpita pipiens</i>				1	1
		<i>Volucella bombylans</i>		1			
	Tabanidae	<i>Haematopota pluvialis</i>		1	1	1	1
	Tachinidae	<i>Epicamocera succincta</i>		1	1		
		<i>Eriothrix rufomaculata</i>		1			
		<i>Phryxe vulgaris</i>		1			
		<i>Siphona geniculata</i>		1	1		
	Tephritidae	<i>Acidia cognata</i>		1			
		<i>Anomoia purmunda</i>				1	
		<i>Chaetorellia jaceae</i>			1		
		<i>Myopites inulaedyssentericae</i> *			1		
		<i>Tephritis vespertina</i>			1		
		<i>Urophora cardui</i>		1	1		
		<i>Urophora jaceae</i>		1			
	Tipulidae	<i>Nephrotoma appendiculata</i>				1	
		<i>Nephrotoma quadrifaria</i>		1		1	
		<i>Tipula lunata</i>					1
		<i>Tipula oleracea</i>				1	
		<i>Tipula vernalis</i>		1	1	1	
	Ulidiidae	<i>Herina longistylata</i>			1		
Hymenoptera – Symphyta	Argidae	<i>Arge cyanocrocea</i>			1	1	
sawflies		<i>Arge nigripes</i>		1			
	Cephidae	<i>Calameuta filiformis</i>		1			
		<i>Cephus pygmaeus</i>		1		1	
	Tenthredinidae	<i>Athalia glabricollis</i>				1	

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		<i>Athalia liberta</i>		1		1	
		<i>Dolerus nigratus</i>		1		1	
		<i>Priophorus pallipes</i>			1		
		<i>Rhogogaster viridis</i>		1			
		<i>Selandria serva</i>		1		1	
		<i>Tenthredo arcuata</i>		1			
		<i>Tenthredo atra</i>		1			
Hymenoptera – Aculeata	Apidae	<i>Andrena chrysoseles</i>		1		1	
bees, wasps & ants		<i>Andrena haemorrhoa</i>		1			
		<i>Andrena scotica</i>		1			
		<i>Apis mellifera</i>	Honey Bee	1			
		<i>Bombus hortorum</i>	Large Garden Bumble Bee	1			
		<i>Bombus lapidarius</i>	Large Red-tailed Bumble Bee	1		1	
		<i>Bombus lucorum</i>	White-tailed Bumble Bee	1	1		
		<i>Bombus pascuorum</i>	Common Carder Bee	1	1	1	
		<i>Bombus terrestris</i>	Buff-tailed Bumble Bee	1	1	1	
		<i>Halictus tumulorum</i>			1		
		<i>Hylaeus brevicornis</i>		1			
		<i>Hylaeus communis</i>				1	
		<i>Lasioglossum lativentre</i>		1			
		<i>Lasioglossum leucozonium</i>		1			
		<i>Lasioglossum morio</i>		1	1	1	
		<i>Nomada flava</i>		1			
		<i>Nomada flavoguttata</i>		1			
	Crabronidae	<i>Crossocerus podagricus</i>		1			
		<i>Trypoxylon</i>		1			

		<i>attenuatum</i>					
	Formicidae	<i>Lasius fuliginosus</i>	Jet Black Ant			1	
		<i>Lasius niger</i>	Common Black Ant		1	1	
		<i>Myrmica rubra</i>	a red ant	1	1		
		<i>Myrmica ruginodis</i>	a red ant			1	
	Pompilidae	<i>Priocnemis perturbator</i>			1		
	Tiphiidae	<i>Tiphia minuta</i> *				1	
	Vespidae	<i>Vespula germanica</i>	German Wasp	1			
		<i>Vespula vulgaris</i>	Common Wasp	1		1	
Arachnida – Araneae	Araneidae	<i>Araniella cucurbitina</i>		1			
		<i>Larinioides cornutus</i>				1	1
	Dictynidae	<i>Dictyna arundinacea</i>		1	1		
	Gnaphosidae	<i>Micaria pulicaria</i>				1	
	Linyphiidae	<i>Baryphma trifrons</i>				1	
		<i>Ceratinella scabrosa</i>				1	
		<i>Dismodicus bifrons</i>					
		<i>Erigone atra</i>		1		1	1
		<i>Erigone dentipalpis</i>		1		1	1
		<i>Gongylidium rufipes</i>				1	
		<i>Lepthyphantes tenuis</i>		1		1	
		<i>Lepthyphantes zimmermanni</i>				1	
		<i>Oedothorax retusus</i>				1	
	Lycosidae	<i>Alopecosa pulverulenta</i>		1		1	
		<i>Pardosa nigriceps</i>		1		1	
		<i>Pardosa pullata</i>		1		1	
		<i>Pirata hygrophilus</i>				1	
	Philodromidae	<i>Philodromus cespitum</i>		1			

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		<i>Tibellus oblongus</i>		1		1	
	Pisauridae	<i>Pisaura mirabilis</i>		1	1	1	
	Salticidae	<i>Heliophanus flavipes</i>			1		
	Tetragnathidae	<i>Meta mengei</i>		1	1	1	1
		<i>Meta segmentata</i>		1			
		<i>Pachygnatha clercki</i>				1	
		<i>Pachygnatha degeeri</i>		1	1	1	1
		<i>Tetragnatha montana</i>		1	1	1	1
	Theridiidae	<i>Enoplognatha ovata</i>		1	1	1	1
		<i>Neottiura bimaculata</i>		1			
		<i>Robertus lividus</i>				1	
		<i>Theridion sisyphium</i>		1			
	Thomisidae	<i>Misumena vatia</i>		1			
		<i>Ozyptila atomaria</i>				1	
		<i>Ozyptila praticola</i>				1	
		<i>Xysticus cristatus</i>		1	1	1	
Arachnida – Opiliones	Leiobunidae	<i>Leiobunum rotundum</i>		1			1
harvest spiders	Nemastomatidae	<i>Nemastoma bimaculatum</i>				1	1
	Phalangiiidae	<i>Phalangium opilio</i>		1			
		<i>Rilaena triangularis</i>		1	1	1	1
				327	173	296	84