



Fife's Buzzing pollinator survey report- year 2

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Saving the small things that run the planet

Summary

Over the three year project, Fife's Buzzing is creating wildflower meadows at 16 parks totalling over 12 hectares across Fife. Sites have been selected across the Kingdom of Fife to deliver multiple benefits to both wildlife and people. The creation and enhancement of meadows through this project includes planting a range of native wildflower species of known origin that will provide vital foraging habitat for pollinating insects and other wildlife.

Surveys to record invertebrates, focusing on pollinating insects, before and after meadow creation will identify species using the meadow as well as changes over the project lifetime.

During pollinator surveys in August 2015, a total of thirteen parks, selected for meadow creation and enhancement in autumn 2014 and spring 2015, were surveyed for invertebrates. Ten wildflower-rich grasslands which had been managed or created by Fife's Buzzing were surveyed: Dunnikier Park, Dunnikier Park Golf Course and Ravensraig Park in Kirkcaldy; Public Park in Dunfermline; Cotlands Park in Kennoway; Poplar Road in Methil; Riverside Park and Formonthills in Glenrothes; Silver Sands in Aberdour; and Guardbridge Park in Guardbridge. Baseline surveys were also undertaken in the Glenrothes Bumblebee Wood park, Leuchatsbeath Community Woodland, Guardbridge Park and at Woodend Park in Auchterderran. A higher number of species of invertebrate were recorded within areas of wildflower rich-grasslands (101 species) than in areas of amenity grassland during baseline surveys (5 species). A total of 101 invertebrate species were recorded during this survey this total includes 56 species of pollinating insect.

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1. Project introduction

A massive 97% (over 3,000,000 hectares) of flower-rich grassland have been lost in the UK since the 1940s through agricultural intensification to produce more home-grown food, and through wider development of housing, transport infrastructure and industry. These flower-rich areas are vital habitats for a range of wildlife species, particularly pollinating insects such as bees, butterflies and hoverflies. The loss of wildflower meadows across the UK has resulted in a massive decline in pollinators as well as other invertebrate species. Over 250 species of pollinating insects in the UK are in danger of extinction and are on the UK Biodiversity Action Plan (UKBAP) priority species list.

Eighty percent of plants need insects for pollination and without these plants we would not have the air we breathe and the food we eat. Pollinators are thought to be responsible for one in every three mouthfuls of the food that we eat and it is estimated that 84% of crops in the European Union (valued at £12.6 billion per annum) rely on insect pollinators. In the UK, pollination of agricultural crops by insects is valued at more than £400 million. National reports in the press stress the importance of honeybees in food production but wild bees and other insects are even more important as they are adapted to pollinate a much wider range of plants. With the recent decline in pollinating insects, there is evidence that insect pollinated plants are also declining and at a faster rate than wind and water pollinated plants.

In Fife, there has been a significant loss of species-rich grassland to urbanisation, industrialisation and agriculture (65% of the land area is cultivated as arable farming and 10% is urban). Acid, neutral and calcareous grassland make up a mere 2.8% of Fife's land area and improved, semi-improved and poor semi-improved grassland that are outwith arable farming make up 3.4% of land area. Many of the remaining grassland areas are managed strictly for amenity use and consequently, support very little wildlife and few plant species. As a result of the above loss in habitat, species-rich grassland is a priority habitat within the current edition of the Fife Local Biodiversity Action Plan (LBAP) (Figure 1).



Figure 1. Wildflower species-rich grasslands like this one created by the Fife's Buzzing project at Silversands in Aberdour are a priority habitat within the Fife Local Biodiversity Action Plan.

Buglife has joined forces with Fife Council to transform mown grassland in urban areas into colourful and wildlife-rich wildflower meadows across Fife. These wildflower meadows will not only provide habitat for invertebrates but will also provide food and nesting areas for a range of other wildlife such as birds, amphibians and small mammals including bats, of which all six species in Fife are a priority in the LBAP.

As well as being important for wildlife, meadows also offer enormous benefits for people. The wildflower meadows will create stunning natural areas that will improve the quality of greenspace for local residents and visitors to enjoy and this in turn will improve people's health and well-being. Additionally, they will also be used as an educational tool by community groups and schools. Across Fife these areas will bring communities together through their creation, management, use and enjoyment.

Fife's Buzzing will create 16 meadows (c. 12.6 hectares) across Fife. Sites have been selected in order to deliver multiple benefits to wildlife and people. So far 12 of these meadows have been created across Fife with a further 4 created in Autumn 2015 that will be observed in Spring 2016. This project started in August 2014 and is funded by the Heritage Lottery Fund and Fife Environment Trust.

2. Pollinator survey method

As part of this project, Buglife will undertake surveys to record invertebrates, focusing on pollinating insects, as well as wildflowers, before and after meadow creation to highlight the benefits to local wildlife and change in species within the meadows; this report will focus on the invertebrates recorded during the surveys.

During year two of the project, Buglife surveyed the areas which had either already been created or managed by Fife's Buzzing and in areas which were soon to be created. A total of 13 parks were surveyed in Autumn 2015, including 10 that were assessed on the success of the meadows first year (Dunnikier Park, Dunnikier Park Golf Course and Ravenscraig Park in Kirkcaldy; Cotlands Park in Kennoway; Poplar Road in Methil; Public Park in Dunfermline; Riverside Park and Formonthills in Glenrothes; Silver Sands in Aberdour; Guardbridge Park in Guardbridge) (Table 1); and areas of amenity grassland which had been selected for meadows (Leuchatsbeath Community Woodland in Cowdenbeath; Bumblebee Park in Glenrothes; Guardbridge Park in Guardbridge and Woodend Park in Auchterderran (Table 1).

Table 1. Date, grid reference and timing of habitat creation of selected amenity and meadow area surveyed at each of the eight parks.

Park Name	Area	Grid Reference	Date Surveyed	Habitat Creation
Dunnikier Park	Kirkcaldy	NT281939 (amenity) NT280940 (meadow)	11/09/2015	Autumn 2014
Dunnikier Park Golf Course	Kirkcaldy	NT278946	11/09/2015	Autumn 2014 Spring 2015

Ravenscraig Park	Kirkcaldy	NT296925	26/08/2015	Autumn 2014
Cotlands Park	Kennoway	NO353027	17/08/2015	Spring 2015
Poplar Road	Methil	NO356004	17/08/2015	Spring 2015
Public Park	Dunfermline	NT098873 (amenity) NT099872 (meadow)	26/08/2015	Spring 2015
Riverside Park	Glenrothes	NO262016	11/08/2015	Spring 2015
Silver Sands	Aberdour	NT197852 (Beach Meadow) NT195855 (Shinty Meadow)	11/09/2015	Spring 2015
Guardbridge Park	Guardbridge	NO449199	11/09/2015	Spring 2015
Formonthills	Glenrothes	NO255029	17/08/2015	Autumn 2015
Bumblebee Wood Park	Glenrothes	NT255999	17/08/2015	Autumn 2015
Leuchatsbeath Community Wood	Cowdenbeath	NT156926	26/08/2015	Autumn 2015
Woodend Park	Cardenden	NT228952	17/08/2015	Autumn 2015

Invertebrates were surveyed during a single visit to each park during dry and warm days in August/September 2015 (Table 1); the morning of 26th of August was an exception to this which was wet and windy and Dunfermline Public Park and Leuchatsbeath were surveyed).

The surveyor walked a transect across the park using direct observations and a sweep net to survey for invertebrates concentrating on pollinating insects such as bees and wasps (Order Hymenoptera), hoverflies (Family Syrphidae, Order Diptera) and butterflies and moths (Order Lepidoptera). Other invertebrate species found during the survey were also recorded. A complete list of invertebrate species recorded during this survey can be found in Appendix 1.

2.1 Sweeping vegetation

Sweep nets were used to collect invertebrates from vegetation, particularly from flower heads (Figure 2). A canvas net was swept over vegetation in a figure of eight for one minute in a transect across a site and specimens were then collected from the net. Specimens collected in this way were either put into a pot with 70% ethanol to be identified later or if they could be identified by the surveyor at the park the specimen was released.



Figure 2. A sweep net was used to collect invertebrates, particularly pollinating insects, from vegetation.

2.2 Direct observations

Identification of several species of bees, wasps, butterflies, moths and hoverflies were made through direct observation of specimens visiting flowers or in flight during a site survey. Sweep nets were sometimes used to aid in identification of a species which could then be released. Other species identified through direct observations included true bugs (Order Hemiptera), and some beetles (Order Coleoptera).

3. Results

A total of 101 invertebrate species were recorded in pollinator surveys across the 13 parks in Fife; some individuals of parasitoid wasps (Hymenoptera), sawfly (Hymenoptera), crane fly (Diptera), money spider (Aranea), weevil (Coleoptera), rove beetle (Coleoptera), lacewing (Neuroptera) recorded within the meadows at Public Park and Dunnikier Park have not been included within this total as several individuals were seen of an unknown number of species. Hoverflies made up the greatest number of pollinator species recorded with a total of 19 across all parks (Figure 3). Twelve species of butterflies and moths and 12 species of bees and wasps were recorded across the all parks (Figure 3). Pollinating beetles included the flower-visiting ladybirds, soldier beetles, rove beetles, click beetles and weevils as defined in

Pollination and Floral Ecology (Willmer, 2011). A total of 45 other species of invertebrate were recorded including true bug species, non-pollinating beetles and flies other than hoverflies (Figure 3).

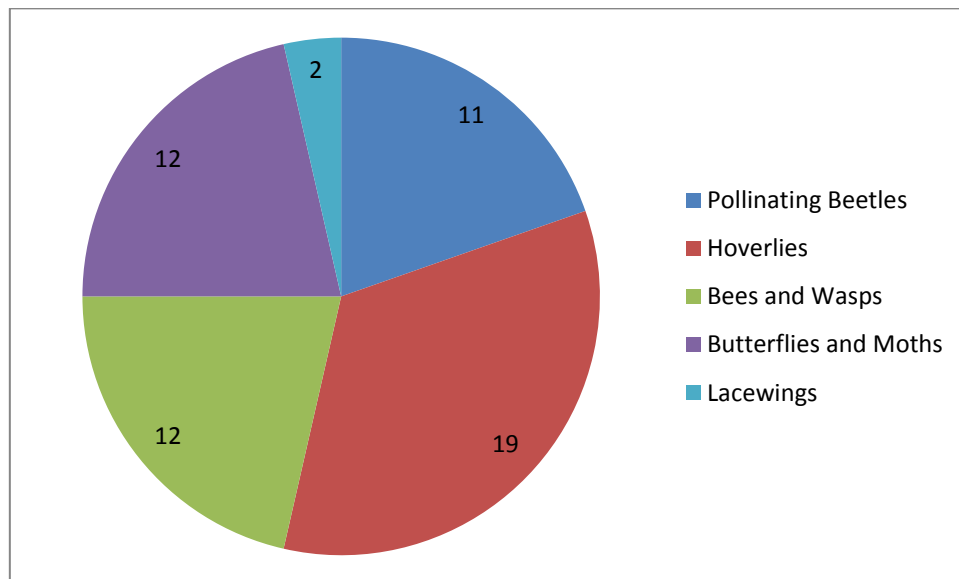


Figure 3. Total number of pollinator species recorded across all fourteen parks surveyed in Fife.

A total of 101 species of invertebrate were recorded within wildflower-rich grasslands created and managed by the Fife's Buzzing project (Figure 4). Four species of invertebrate were recorded within amenity grassland surveyed during baseline surveys at four parks (Figure 4).

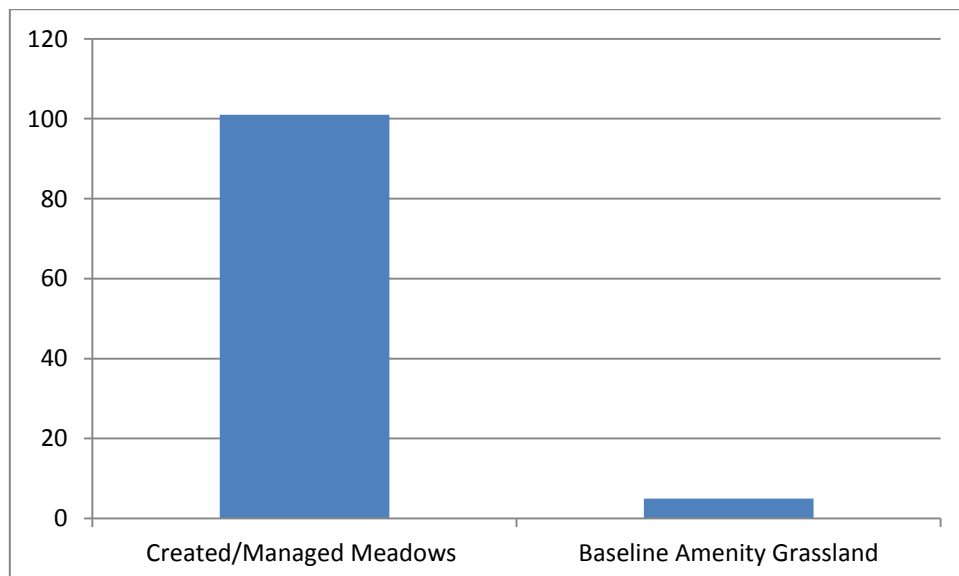


Figure 4. Total number of invertebrate species recorded from within wildflower-rich grasslands across 12 parks and amenity grassland in 4 parks.

The average number of pollinator species found at wildflower-rich grasslands was 22.75 species whilst the average number of pollinator species found at amenity grasslands was

1.75 species. Poplar Road and Riverside Park had the greatest diversity of invertebrates recorded with a total of 35 species at Poplar Road and 31 at Riverside Park (Figure 5). At amenity grassland areas within Bumblebee Wood, Guardbridge and Leuchatsbeath a total of four invertebrate species were found (Figure 5). No invertebrates were recorded at Woodend Park (Figure 5).

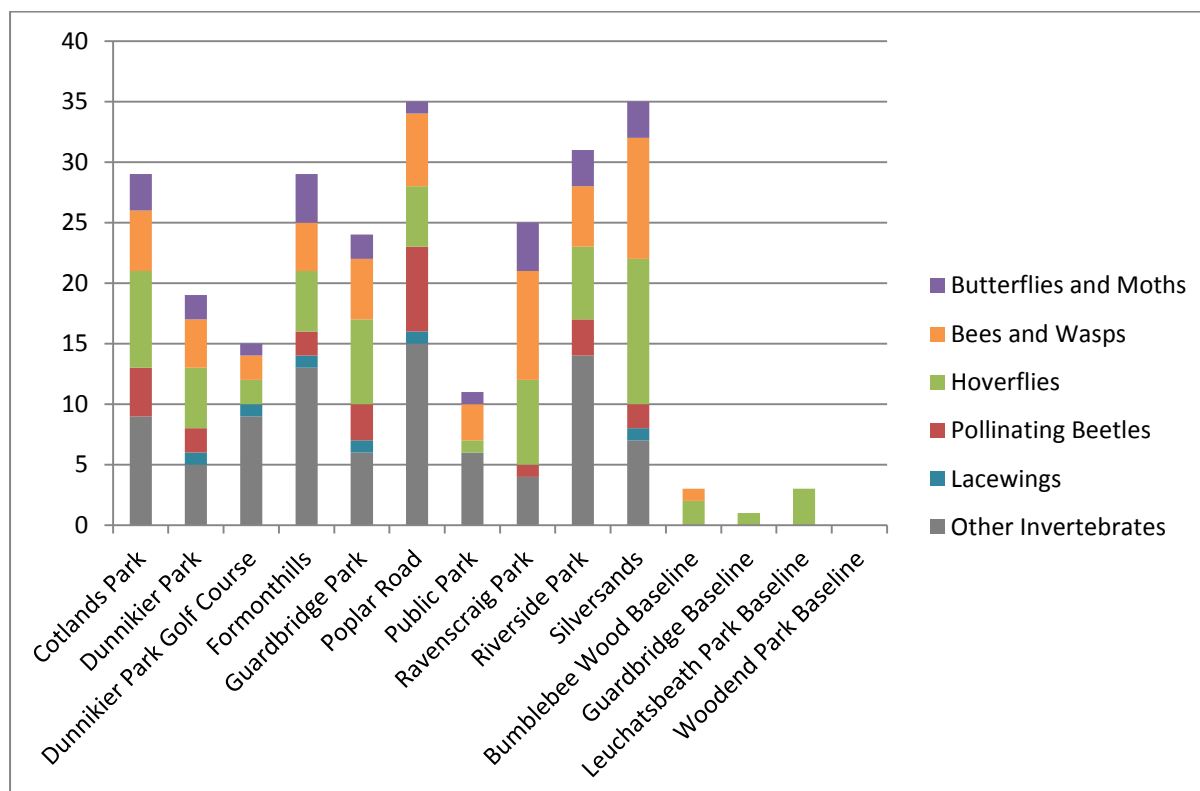


Figure 5. Total number of species recorded from 11 wildflower-rich grasslands and from four amenity grassland baseline surveys.

The number of pollinating species present at sites surveyed in 2014 (see Fife's Buzzing Pollinator Survey – Year 1) increased in all sites (Table 1). The largest increase in pollinating species found was at Poplar Road where there was zero pollinating species present in 2014 and 20 pollinating species present in 2015 (Table 1). The lowest observed difference was at Dunfermline Public Park where there was an increase of three species (Table 1).

Site	2014 Amenity Grassland Species Count	2015 Wildflower-Rich Grassland Species Count
Cotlands Park	1	20
Dunnikier Park	3	14
Dunnikier Golf Course	0	6
Dunfermline Public Park	2	5
Poplar Road	0	20
Ravenscraig Park	2	21
Riverside Park	0	17
Silversands	0	18

Table 1. Total number of species found at amenity grassland (2014) and wildflower-rich grassland (2015).

4. Discussion

Summers in Scotland have a mixture of dry and wet weather which varies from year to year across the country. Generally speaking the east coast is cool and dry whereas the west coast is warm and wet. This changeable weather is being further influenced by climate change which is causing summer droughts, flooding and other local extreme weather events. The weather during 2015 in Scotland was particularly poor with the summer being cool, wet and windy. This may have negatively influenced pollinators at wildflower grassland sites in this project as poor weather reduces the foraging behaviour of pollinators (Tuell and Isaacs, 2010).

The effect of weather on pollinator activity may be observed in the results of this survey. The morning of the 26th of August 2015 was particularly wet and windy during which Dunfermline Public Park and Leuchatsbeath Park were surveyed. When surveyed, the wildflower-rich grasslands in Dunfermline Public Park had the lowest number of pollinating insect species recorded. However, the number of species observed during the baseline survey at Leuchatsbeath remains consistent with findings from baseline surveys on other days that had good weather.

Regardless of the poor weather throughout the summer of 2015, the surveys this year indicate there has been a large increase in the number of pollinating insect species at sites which were previously just amenity grassland but now contain wildflower-rich habitat. This indicates that the habitat created and managed at these sites has been successful in providing foraging resources and nesting sites that have attracted a range of pollinators (Figure 6) and other invertebrates. Furthermore, this has benefited other wildlife by providing resources needed to allow them to thrive. For example, in Cotlands Park (Kennoway) a Common Frog (*Rana temporaria*) was found during the survey and in Ravenscraig a Kestrel (*Falco tinnunculus*) was observed flying above the wildflower-rich grassland.



Figure 6. Solitary bee, Davie's Colletes (*Colletes daviesanus*) forages on wildflower-rich grassland in Cotlands Park.

During this survey a total of four different species were observed at amenity grassland sites; this included the Common carder bee (*Bombus pascuorum*) and the hoverflies *Syrphus ribesii*, an *Eristalis* hoverfly and *Melanostoma scalare*. These species were all directly observed whilst flying across the sites. No pollinator species were observed flying across the amenity grassland site at Woodend in Auchterderran or collected during sweep netting. The complete lack of pollinators here may be due to this site being particularly isolated from good pollinator habitat.

Within wildflower-rich grassland areas created and managed by this project a total of 56 species of pollinating insect were found whilst only four were discovered on amenity grassland sites. A total of 23 hoverfly species, 11 pollinating beetle species, 12 species of bees and wasps, 12 species of butterflies and moths and two species of lacewing. There has been a significant increase in pollinating insect species and other invertebrates at sites which were surveyed last year before wildflower-rich areas were created. The increase in species diversity indicates that the wildflower rich areas created by this project so far have been successful in attracting and providing resources for a wide range of pollinating insects and other invertebrates.

The great variety of butterflies and moths found across wildflower-rich grassland sites included Green-veined white (*Pieris napi*), Peacock butterfly (*Anachis io*), Small tortoiseshell (*Aglais urticae*), Small copper butterfly (*Lycaena phlaeas*) and a caterpillar of the Elephant hawk-moth (*Deilephila elpenor*) (Figure 7). We had one unusual observation during the survey in Ravenscraig Park (Kirkcaldy) of an Orange-tip (*Anthocharis cardamines*) which is ordinarily found most active in Spring.

Examining the presence and diversity of butterflies on meadows can be valuable for understanding how healthy the site is. Butterflies are excellent bio-indicators (Horn, 2003),

meaning they are great organisms to study if you need to understand how healthy an environment for example, when examining pollution levels.



Figure 7. This Elephant hawk-moth caterpillar (*Deilephila elpenor*) was observed on the newly created wildflower-rich area at Guardbridge Park.

Additionally, nine species of bee were found across the parks including the Early bumblebee (*Bombus pratorum*), Buff-tailed bumblebee (*B. terrestris*) and the solitary bee *Colletes daviesanus*. The presence of high bee diversity is especially important to observe as bees fulfil a key role in pollinating our crops and flowers within the natural landscape. A good diversity of bee species safeguards against losses due to environmental pressures such as climate change. Where some species may be weaker in response to such threats, others will cope better which is why it is essential to monitor and conserve as many species as possible.

The increased pollinator diversity and the presence of other wildlife indicates that the wildflower-rich grasslands created by this project are, so far, successful in providing new habitat and important resources within parks in Fife. This is incredibly important given pollinators are facing a range of threats that are resulting in their decline. The impact this project has had on pollinator diversity in the parks of Fife will be further analysed and assessed at the end of the project in 2017.

5. Conclusion

A total of 101 invertebrate species, including 56 species of pollinating insects, were recorded at the 13 parks surveyed in August 2015. Meadows had been created at all but two of these parks in autumn 2014 and spring 2015. Only four species of invertebrate were recorded during baseline surveys of amenity grassland at four parks surveyed before meadow creation and enhancement through the Fife's Buzzing project in spring 2016.

The creation of wildflower meadows through the Fife's Buzzing project has used native wildflower species of known origin by sowing seed and planting plug plants of a diverse range of species. This has enhanced wildflower meadows already present as well as created new areas and has brought significant benefits to the local wildlife, particularly pollinating insects such as bees, hoverflies and butterflies that feed on a variety of wildflower species.

Appendix 1. Complete list of invertebrate species recorded from Wildflower rich grassland at 12 parks and amenity grassland at four parks.

Order	Species	Common name	Bumblebee Wood	Cotlands Park	Dunnikier Park	Dunnikier Park Golf Course	Formonthills	Guardbridge Park	Leuchatsbeath Park	Poplar Road	Public Park	Ravenscraig Park	Riverside Park	Silversands	Woodend Park
Aranaea	<i>Araneus diadematus</i>	Garden cross spider						•							
Aranaea	Family Linyphiidae	Money spider								•	•			•	
Aranaea	Family Lycosidae	Wolf spider								•					
Aranaea	<i>Meta</i> species	Long jawed spider									•				
Aranaea	<i>Tetragnatha</i> species	Long jawed spider												•	
Aranaea	Family Thomisidae	Crab spider					•								
Aranaea	<i>Xysticus cristatus</i>	Crab spider					•								
Coleoptera	<i>Agriotes pallidulus</i>	Click beetle											•		
Coleoptera	<i>Alticini</i> species	Flea beetle								•					
Coleoptera	<i>Amara aenea</i>	Ground beetle			•							•			
Coleoptera	<i>Amara</i> species	Bronze ground beetle			•										
Coleoptera	<i>Athous haemorrhoidalis</i>	Click beetle								•					
Coleoptera	<i>Cantharis decipiens</i>	Soldier beetle								•					
Coleoptera	<i>Cantharis nigra</i>	Black soldier beetle								•					
Coleoptera	Family Carabidae	Ground beetle					•								
Coleoptera	<i>Coccinella septempunctata</i>	7-spot ladybird		•	•		•	•		•		•		•	

Coleoptera	<i>Ctenicera cuprea</i>	Click beetle											•		
Coleoptera	<i>Longitarsus luridus</i>	Flea beetle											•		
Coleoptera	<i>Neocrepidodera transversa</i>	Flea beetle								•					
Coleoptera	Family Nitidulidae	Pollen beetle		•	•			•		•				•	
Coleoptera	<i>Rhagonycha fulva</i>	Common red soldier beetle		•			•			•					
Coleoptera	<i>Sitona</i> species	Weevil								•					
Coleoptera	<i>Sphaeroderma testaceum</i>	Flea beetle					•								
Coleoptera	<i>Stenus nitidusculus</i>	Rove beetle						•							
Coleoptera	<i>Stenus</i> species	Rove beetle		•											
Dermaptera	<i>Forficula auricularia</i>	Common earwig			•	•		•							
Diptera	<i>Episyrphus balteatus</i>	Marmalade hoverfly		•	•	•		•		•		•		•	
Diptera	<i>Eristalis arbustorum</i>	Hoverfly												•	
Diptera	<i>Eristalis pertinax</i>	Tapered Drone fly						•						•	
Diptera	<i>Eristalis</i> species	Hoverfly						•							
Diptera	<i>Eristalis tenax</i>	Drone fly		•	•		•	•		•		•		•	
Diptera	<i>Eupeodes luniger</i>	Hoverfly								•					
Diptera	<i>Eupeodes</i> species	Hoverfly					•			•					
Diptera	<i>Helophilus pendulus</i>	Tiger hoverfly			•			•				•		•	
Diptera	<i>Melanostoma mellinum</i>	Hoverfly								•		•	•	•	
Diptera	<i>Melanostoma scalare</i>	Hoverfly		•		•	•		•			•		•	

Diptera	<i>Melanostoma species</i>	Hoverfly	•		•					•					
Diptera	<i>Platycheirus albimanus</i>	Hoverfly		•				•				•	•	•	
Diptera	<i>Platycheirus clypeatus</i>	Hoverfly						•						•	
Diptera	<i>Platycheirus species</i>	Hoverfly		•											
Diptera	<i>Scaeva pyrastris</i>	Hoverfly						•							
Diptera	<i>Scaeva selenitica</i>	Hoverfly		•											
Diptera	<i>Scathophagidae species</i>	Yellow dungfly						•			•			•	
Diptera	<i>Sericomysia silentis</i>	Bog Hoverfly		•			•								
Diptera	<i>Sphaerophoria species</i>	Hoverfly									•				
Diptera	<i>Syrirta pipiens</i>	Thick-legged hoverfly												•	
Diptera	Family Syrphidae	Hoverfly							•						
Diptera	<i>Syrphus ribesii</i>	Hoverfly	•	•	•		•			•		•	•	•	
Diptera	<i>Syrphus torvus</i>	Hoverfly												•	
Diptera	<i>Tephritis verspertina</i>	Picture winged fly					•						•		
Diptera	Family Tipulidae	Crane fly species		•	•			•			•	•		•	
Diptera	<i>Xylota segnis</i>	Hoverfly		•											
Ephemeroptera	<i>Serratella ignita</i>	Blue-winged olive mayfly								•			•		
Gastropoda	<i>Arion ater</i>	Black Slug								•					
Gastropoda	<i>Cepaea hortensis</i>	White-lipped snail													
Hemiptera	<i>Anthocoris nemorum</i>	Flower bug		•		•									
Hemiptera		Aphid species					•	•		•				•	

Hemiptera	<i>Aphis fabaea</i>	Black bean aphid						•							
Hemiptera	<i>Campyloneura virigula</i>	Plant bug											•		
Hemiptera	<i>Cercopoidea</i> sp	Froghopper								•					
Hemiptera	<i>Cicadella viridis</i>	Green leafhopper					•								
Hemiptera	<i>Cicadula persimili/quadrinotata</i>	Leafhopper											•		
Hemiptera	<i>Closterotomus norvegicus</i>	Potato capsid		•						•					
Hemiptera	Family Delphacidae	Planthopper				•									
Hemiptera	<i>Dolycoris baccarum</i>	Hairy shieldbug					•								
Hemiptera	<i>Grypocoris stysi</i>	Plant bug		•											
Hemiptera	<i>Javesella pellucida</i>	Plant hopper											•		
Hemiptera	<i>Leptopterna dolabrata</i>	Meadow plant bug		•			•			•	•		•		
Hemiptera	<i>Lygus rugulipennis</i>	Tarnished plant bug		•	•	•	•			•			•	•	
Hemiptera	Family Miridae	Mirid bug			•	•								•	
Hemiptera	<i>Nabis limbatus</i>	Marsh damsel bug					•								
Hemiptera	<i>Neophilaenus lineatus</i>	Froghopper				•									
Hemiptera	<i>Pentatoma rufipes</i>	Red-legged shieldbug								•					
Hemiptera	<i>Philaenus spumarius</i>	Common froghopper		•		•				•		•			
Hemiptera	<i>Pinalitus cervinus</i>	Mirid bug												•	
Hemiptera	<i>Plagiognathus arbustorum</i>	Plant bug										•			

Hemiptera	<i>Plagiognathus chrysanthemi</i>	Plant bug								•					
Hemiptera	<i>Stenodema</i> sp	Grass bug		•		•	•								
Hemiptera	<i>Stenodema calcarata</i>	Grass bug			•	•		•			•				
Hemiptera	<i>Stenodema holsata</i>	Plant bug				•									
Hemiptera	<i>Stenodema laevigata</i>	Grass bug				•									
Hemiptera	<i>Stygnocoris sabulosus</i>	Ground bug											•		
Hymenoptera	<i>Andrena carantonica</i>	Solitary bee										•			
Hymenoptera	<i>Apis mellifera</i>	Honeybee						•				•		•	
Hymenoptera	<i>Bombus lapidarius</i>	Red-tailed bumblebee		•	•		•	•		•	•	•			
Hymenoptera	<i>Bombus lucorum</i>	White-tailed bumblebee		•			•					•		•	
Hymenoptera	<i>Bombus pascuorum</i>	Common carder bee	•	•			•	•		•	•	•		•	
Hymenoptera	<i>Bombus pratorum</i>	Early bumblebee								•					
Hymenoptera	<i>Bombus terrestris</i>	Buff-tailed bumblebee						•		•	•	•		•	
Hymenoptera	Family Chrysidoidea	Solitary bee										•			
Hymenoptera		Solitary bee			•										
Hymenoptera	<i>Colletes daviesanus</i>	Davie's mining bee		•								•			
Hymenoptera	Family Ichneumonoidea	Parasitoid wasp			•	•	•	•		•		•		•	
Hymenoptera	Symphyta	Sawfly		•						•					
Hymenoptera	<i>Tenthredo</i> sp.	Sawfly									•				
Hymenoptera	<i>Vespula vulgaris</i>	Common wasp		•	•	•				•				•	

Lepidoptera	<i>Aglais urticae</i>	Small tortoiseshell			•							•		•	
Lepidoptera	<i>Agriphila tristella</i>	Grass moth					•						•		
Lepidoptera	<i>Anthocharis cardamines</i>	Orange-tip butterfly										•			
Lepidoptera	<i>Aphantopus hyperantus</i>	Ringlet butterfly					•								
Lepidoptera	Family Crambidae	Grass moth		•											
Lepidoptera	<i>Deilephila elpenor</i>	Elephant hawkmoth caterpillar						•							
Lepidoptera	Family Geometridie	Looper caterpillar		•			•								
Lepidoptera	<i>Inachis io</i>	Peacock butterfly						•						•	
Lepidoptera	<i>Lycaena phlaeas</i>	Small copper butterfly										•			
Lepidoptera	<i>Maniola jurtina</i>	Meadow brown butterfly									•				
Lepidoptera	<i>Noctua pronuba</i>	Large yellow underwing			•								•		
Lepidoptera	<i>Pieris napi</i>	Green-veined white butterfly		•		•	•			•		•		•	
Neuroptera	<i>Chrysoperla carnea</i> grp	Green lacewing					•								
Neuroptera	Family Chrysopidae	Green lacewing					•								
Neuroptera	<i>Micromus variegatus</i>	Lacewing												•	
Neuroptera		Lacewing larva			•	•		•		•				•	
Orthoptera	<i>Omocestus viridulus</i>	Common green grasshopper		•			•			•					

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