

# ENTOMOLOGICAL SURVEY AND MONITORING AT CASTLE COVE, ISLE OF WIGHT, 2016.

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## INTRODUCTION.

Following coastal protection works in 1996, which included the clearing of vegetation from the coastal slope to the north of Castle Cove, Isle of Wight, this soft rock slope was partially reseeded with a grass mixture, whilst turves removed prior to stabilisation works were replanted in other areas. A further section was left to regenerate naturally. The resultant habitat is rough coastal grassland with a bare ground element. The site is split into two sections which are separated by a tarmac path. The western section is considerably larger than the eastern section.

A baseline survey was carried out in 2003, and further survey and monitoring was undertaken in 2004, 2005, 2006, 2007, 2010, 2011, 2012, 2013, 2014 and 2015. The Castle Cove site was again surveyed during 2016, and changes in vegetation composition and the amounts of available bare ground were monitored. As in previous surveys, counts were made of certain target insect species in order to assess changes in population densities, and the number of nesting holes for certain species of ground nesting Hymenoptera were counted in order to monitor any changes.

## METHODS.

Survey methods were confined to visual searching, the use of a hand net or pooter to capture individual species, sweeping vegetation, beating foliage and grubbing. The site was visited throughout the main insect adult activity period of 2016, commencing on 5<sup>th</sup> April and with the final visit on 1<sup>st</sup> September. All visits were made in suitable weather.

## RESULTS.

### CHANGES IN VEGETATION.

During survey in 2006 and 2007 dominant plant species included common bird's - foot trefoil *Lotus corniculatus*, common fleabane *Pulicaria dysenterica*, ox - eye daisy *Leucanthemum vulgare*, teasel *Dipsacus fullonum*, wild carrot *Daucus carota* and ribwort plantain *Plantago lanceolata*. The northern margin of the site is comprised of scrub and scrubby woodland with some bramble *Rubus fruticosus* agg. and buddleja *Buddleja davidii*. The main tree species was sycamore *Acer pseudoplatanus*.

During 2015 the following changes in vegetation were noted :

#### Eastern Section.

The amounts of common bird's – foot trefoil continue to decrease. Bracken *Pteridium aquilinum* encroachment is increasing, as is the presence of giant horsetail *Equisetum telmetela*. Stinking iris *Iris foetidissima* is still present in some quantity near the gabions, but is becoming shaded out by bramble, which is spreading. Common fleabane is increasing in frequency towards the bottom of the slope.

#### Western Section.

There has been a small increase in the amounts of alexanders *Smyrniium olusatrum* present. Tufted vetch *Vicia cracca* is becoming more frequent in places. Both ox – eye daisy and common bird's – foot trefoil are present in similar quantities to the previous season. Giant horsetail is spreading on the higher parts of the slope. There is a decline in the amount of wild carrot, but marjoram *Origanum vulgare* is increasing in quantity, as is common fleabane.

In 2016 the following changes in vegetation were noted :

#### Eastern section.

Common bird's - foot trefoil continued to decline in frequency and is now absent from large areas where it was formerly well established. Bracken, bramble and giant horsetail continue to encroach onto the remaining grassland areas. The amounts of common fleabane remain roughly the same as in 2015. The stinking iris around the gabions is still present.

#### Western section.

The amounts of common bird's - foot trefoil, and to a lesser extent wild carrot, have declined, although oxeye daisy remains fairly well established in some areas. Giant horsetail is increasing in frequency, as are rank grasses, prickly sow – thistle *Sonchus asper* and bramble.

## **INVERTEBRATE SURVEY.**

A full list of all insect species recorded during the course of survey in 2016 is appended as **Appendix 1**. A number of the species encountered are considered to be Nationally Scarce or Red Data Book species. These are marked as such within **Appendix 1** and are discussed in more detail below. Additionally, some of the species found are included in the National Biodiversity Action Plan ( BAP ) or Isle of Wight BAP species listings. Again, these are clearly marked in **Appendix 1**.

The status category definitions and criteria for individual species are those devised by the JNCC and are as follows:

### **STATUS CATEGORY DEFINITIONS AND CRITERIA.**

#### **RDB 1 - Endangered.**

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

Species which are known or believed to occur as only a single population within one 10km square of the National Grid.

Species which only occur in habitats known to be particularly vulnerable

Species which have shown a rapid or continuous decline over the last twenty years and are now estimated to exist in five or fewer 10km squares.

Species which are possibly extinct but have been recorded in the 20th century and if rediscovered would need protection.

#### **RDB 2 - Vulnerable.**

Taxa believed likely to move into the endangered category in the near future if the causal factors continue operating.

Species declining throughout their range.

Species in vulnerable habitats.

#### **RDB 3 - Rare.**

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

Species which are estimated to exist in only fifteen or fewer post 1970 10km squares. This criterion may be relaxed where populations are likely to exist in over fifteen 10km squares but occupy small areas of especially vulnerable habitat.

#### **Nationally Scarce (Na).**

Taxa which do not fall within the RDB categories but which are none - the - less uncommon in Great Britain and thought to occur in 30 or fewer 10km squares of the National Grid.

#### **Nationally Scarce (Nb).**

Taxa which do not fall within the RDB categories but which are none - the - less uncommon and thought to occur in between 31 and 100 10km squares of the national Grid.

#### **Nationally Scarce (N).**

Species which are estimated to occur within the range of 16 to 100 10km squares.

## **ORTHOPTERA.**

The long-winged conehead *Conocephalus discolor* formerly **Nationally Scarce Na**.

This species was recorded whilst sweeping in the eastern compartment on 1<sup>st</sup> September. This species was also recorded at Castle Cove in 2014 and 2015. The long – winged conehead is associated with coarse grassland habitats. *Conocephalus discolor* was formerly very scarce in Britain, being confined to just a handful of counties in south-east England, but it has spread rapidly to the north and west of its former range during the last two decades, and is now present in southern England, East Anglia, the Midlands and South Wales. In light of this range expansion, its Nationally Scarce status was downgraded ( Sutton, 2015) as it is now considered a common insect. The long – winged conehead is regularly recorded on the Isle of Wight.

## LEPIDOPTERA.

The Glanville Fritillary *Melitaea cinxia* **Rare RDB 3. UK BAP.**

This species has previously been recorded at Castle Cove in every survey between 2003 and 2007, and between 2010 and 2012. No specimens were recorded during the 2013 and 2014 surveys, and it was thought that the Glanville fritillary had been lost from the site. Although the Glanville Fritillary is prone to fluctuations in numbers, there appears to have been a continuous downward trend in population size at Castle Cove since 2007. Previous annual maxima were 3 in 2012, 23 in 2011, 42 in 2010, 96 in 2007 (an exceptional year for Glanville Fritillary), 13 in 2006, 9 in 2005, 8 in 2004 and 6 in 2003. Concerns were raised in the 2012 report that the progressive increase in sward height and subsequent changes in plant composition of the grasslands may be having a deleterious effect on the Glanville Fritillary population at Castle Cove. However, on 3<sup>rd</sup> June 2015 four adult Glanville fritillaries were recorded in the western section of the survey area. In 2016, three specimens were recorded from the western section on 17<sup>th</sup> May, and a further specimen was found in the eastern section on that date. As in 2015, no Glanville fritillary caterpillars were found here earlier in the season, and it may be that the specimens seen were strays from another nearby site. Whether or not this species will (or has) recolonised at Castle Cove remains unclear.

The Cinnabar moth *Tyria jacobaeae* **UK BAP ( Research only).**

A common species whose larvae develop on ragwort, a plant which is patchily distributed across the survey area. Caterpillars were recorded feeding on ragwort in the western compartment on 19<sup>th</sup> July 2016, although numbers were low. Perhaps surprisingly, the Cinnabar has not been recorded in the previous Castle Cove surveys. The moth remains widespread and frequent through much of the British Isles. It has, however declined considerably over the last 35 years, and for this reason has been added to the UK BAP listings for monitoring purposes.

## HYMENOPTERA.

A mining bee *Lasioglossum malachurum* **Nationally Scarce Nb.**

This small mining bee was again found nesting in both compartments of the site as in every survey year, where it formed nesting aggregations on the paths or in areas of bare or sparsely vegetated ground. As in previous years, counts of the number of nests in these aggregations were undertaken in 2016, and are discussed in detail later in this report. *Lasioglossum malachurum* is polylectic, collecting pollen from a wide variety of plants. It has been recorded from a range of habitats where there is warm disturbed ground. Typical breeding sites are in bare clayey soil on coastal cliffs and landslips, but it also occurs inland, in quarries, chalk grassland and heaths. Nationally, this species is restricted to southern England. Previously a very local and scarce species, *Lasioglossum malachurum* has become far more frequent and is extending its British range (Edwards, R. & Broad, 2005). If this expansion continues, it is likely that the status of *Lasioglossum malachurum* will require review. The Isle of Wight remains a national stronghold for *Lasioglossum malachurum*, which is typical of the fauna of the soft rock systems on the south coast of the Island.

A nomad bee *Nomada fucata* **Nationally Scarce Na.**

This species is a cleptoparasite of the mining bee *Andrena flavipes*. Numbers of *Nomada fucata* have fluctuated considerably at Castle Cove from year to year. In 2004 and 2005 when it was regularly seen in double figures. Numbers declined between 2006 and 2010, but increased a little in 2011, when a maximum count of 10 individuals was recorded. During 2012, only 2 specimens of *Nomada fucata* were found at Castle Cove, and 3 specimens were recorded in 2013. No specimens were found during the 2014 survey. During 2015, a single specimen was recorded on 22<sup>nd</sup> April in the western section of the site. During 2016, a single specimen of *Nomada fucata* was recorded from the western compartment on 4<sup>th</sup> May. The host bee *Andrena flavipes* continues to have a presence at Castle Cove, but no longer forms nesting aggregations as it did in the past. Nationally, *Nomada fucata* is, like its host, confined to southern England, but it is considerably scarcer than the host and absent from some areas where *Andrena flavipes* is well established. Locally, *Andrena flavipes* forms huge nesting aggregations at many landslip or soft rock cliff sites and the *Nomada* remains a relatively frequent insect. Although Falk (1991) listed this species as Nationally Scarce (Na) following a period of extreme scarcity in the 1970's, *Nomada fucata* populations recovered during the 1990's and Edwards & Telfer (2002) suggested that its status should be downgraded.

## COLEOPTERA.

A Weevil *Mononychus punctum -album* **Nationally Scarce Na.**

*Mononychus punctum - album* was first recorded at Castle Cove in 2005 when a single specimen was swept from the leaves of stinking iris on the western section of the site. Larvae of this weevil develop in the seed

Pods of this plant. *Mononychus punctum – album* became increasingly established, with maximum counts of 14 in 2006 and 37 in 2007. A decline in numbers followed in 2010 and 2011, with maximum counts falling to 9 and 5 respectively. During 2012 the maximum count was of 12 specimens, whilst in 2013 the maximum count was 21 specimens and in 2014 the highest count was of 29 specimens. Last year, the highest count was of 16 specimens on 30<sup>th</sup> June 2015. In 2016, *Mononychus punctum – album* was found to be present in both compartments, with a maximum count of 26 specimens on 8<sup>th</sup> June. This suggests that the population is still well established at Castle Cove. *Mononychus punctum - album* is associated with coastal cliffs and has a very restricted distribution in southern England. Hyman and Parsons (1992) cite post 1970 UK records for just 4 Vice Counties, which include the Isle of Wight. They consider coastal stabilisation, and activities that change the rate of erosion to be major threats to this species.

## **NESTING AGGREGATION COUNTS.**

### ***Andrena flavipes.***

No nesting aggregations of this species have been recorded in the survey area since 2012.

### ***Lasioglossum morio.***

In 2011 a new colony of around 30 nests of *Lasioglossum morio* was found in the eastern sector of Castle Cove, to the north of the gabions. Numbers of nest holes in this colony were significantly down in 2012, and the rare cleptoparasite *Sphecodes niger* recorded here in 2011 was not found in 2012. During 2013, this nesting aggregation continued to diminish in size. No nesting aggregation was present in 2014, 2015 or in 2016.

### ***Lasioglossum malachurum.***

The favoured nesting areas for the mining bee *Lasioglossum malachurum* are areas of gently sloping bare ground, including the compacted soils of the footpaths across the site. Detailed counts of the number of nest holes within these nesting aggregations were made in 2004, 2005, 2006, 2007, 2010 and 2011; attempts to repeat this process in 2012 were impaired by the wet weather which regularly washed away the excavated soil and obliterated the nest holes. A return to more typical weather patterns in 2013 allowed counts to be undertaken satisfactorily.

### **Eastern Compartment.**

Maximum annual counts for the number of nest holes for *Lasioglossum malachurum* in this compartment are as follows:

2004 – 311 nests  
2005 – 136 nests  
2006 – 227 nests  
2007 – 72 nests. Nesting aggregation in plateau area lost.  
2010 – 50 nests  
2011 – 102 nests  
2012 – 84 nests

In 2013, nests were confined to the lower slope around SZ 552975698, but the maximum count was of only 24 nests on 27<sup>th</sup> May. Parts of this area are now permanently waterlogged, making them unsuitable for nesting purposes.

In 2014, nests were again confined to the lower slope, but the maximum count reduced to only 16 nest holes. The area continues to be partially waterlogged.

In 2015, the maximum count was of 27 nests, all confined to the base of the slope. The count is comparable to those made in 2013 and 2014 and the population appears stable at this reduced level.

In 2016, nests were again confined to the base of the slope. A maximum count of a rather poor 19 nests was made, and the area continues to be waterlogged.

### **Western Compartment.**

Maximum annual counts for the number of nest holes for *Lasioglossum malachurum* in this compartment are as follows:

2004 – 487 nests  
2005 – 66 nests  
2006 – 303 nests  
2007 – 172 nests.  
2010 – 464 nests  
2011 – 263 nests  
2012 – 66 nests

In 2013, the maximum count along the path was of 79 nest holes on 30<sup>th</sup> April. This count is not significantly better than the 2012 count, and it would appear that the species may be in decline at Castle Cove. The path is now heavily compacted, and most nest holes are now confined to the path edges where compaction is less.

This situation continued in 2014, and the highest count was of only 37 nest holes, on 12<sup>th</sup> May. Of these 25 nests were adjacent to the top path, with a further 12 nests counted along the lower path. It would appear that *Lasioglossum malachurum* is now in significant decline in both site compartments.

During 2015, the highest count was a total of 64 nest holes. Sixty were found along the top path, and a further 4 nests were recorded on the lower path. This is an improvement on the 2014 count, and is roughly the same as the counts from 2012 and 2013.

A serious decline in the number of *Lasioglossum malachurum* nest holes occurred in 2016, with the maximum count being only 18. This represents the lowest count for this compartment since counts began.

It is known that the number of *Lasioglossum malachurum* nests at Castle Cove can fluctuate considerably from year to year, but the 2016 count of only 37 nest holes for the entire site suggests that the species may well be in serious decline.

## **DISCUSSION.**

The amount of available bare ground is continuing to decrease. For some species this has resulted in a considerable loss of suitable nest sites, with a resultant decrease in this species' numbers. The number and abundance of scarce ground – nesting species continues to decrease, as do numbers of their attendant cleptoparasites. Coarse rank grassland continues to increase, and the amounts of giant horsetail present are also increasing. Encroachment by scrub such as bramble, but also bracken on the eastern compartment, continues to increase.

Common bird's – foot trefoil is in decline in some areas, most notably on the plateau section of the eastern compartment, where it was barely present in 2015 or 2016. Alexanders is not increasing greatly within the survey area, consequently the population of the rare mining bee *Andrena proxima* is not increasing significantly. This species was not recorded from the survey area in 2015 or 2016, although it continues to occur at Flowersbrook.

In 2016, four species of cleptoparasitic Hymenoptera were recorded, all within the genus *Nomada*. This represents an increase on the 2015 total, when only 1 cleptoparasitic species of Hymenoptera was found. However, of those recorded in 2016, only one species is associated with a host which is primarily associated with soft rock cliffs. The number of species of ground nesting Hymenoptera on site has fallen slightly compared to the 2015 results, and only three of these species are typically associated with soft rock cliffs. In 2015, nine Nationally Scarce or Rare species were recorded during the Castle Cove survey; in 2016 only four such species were recorded ( five if you include *Conocephalus discolor*). In 2015 this species was still classed as Nationally Scarce, but has now been downgraded. It remains present at Castle Cove.

A number of scarce species recorded during 2015 were not seen in 2016; these are discussed below :

### **DICTYOPTERA.**

A cockroach *Ectobius* sp. **Nationally Scarce Nb. IOW BAP.**

A single very small nymph was found during sweeping in the eastern compartment on 1<sup>st</sup> September 2015. *Ectobius pallidus* was recorded here in 2014, and is the most likely candidate. It has a two – year life history, and is an omnivorous species. It is found in a wider variety of habitats than the other two native cockroach

species, and has been recorded from coastal cliffs and chalk grassland on the Isle of Wight. No specimens were found in 2016.

#### **DIPTERA.**

A picture – winged fly *Myopites inulaedyssentericae* **Rare RDB 3.**

Several specimens were swept from common fleabane in the both compartments on 6<sup>th</sup> August 2015. *Myopites inulaedyssentericae* was recorded at Castle Cove in 2014, although prior to that it had not been found here since 2007. Larvae of *Myopites inulaedyssentericae* develop in the seed heads of common fleabane. This plant appears to have had a relatively poor season at Castle Cove in 2016, and has suffered a slight decrease in frequency. In the past *Myopites inulaedyssentericae* was an extremely localised species in southern and south - eastern England. Although it is still largely confined to this geographical area, *Myopites inulaedyssentericae* appears to have become more common in recent decades, particularly in Dorset, Hampshire and the Isle of Wight. Clemons (1996) suggests that in view of this increase in frequency, *Myopites inulaedyssentericae* should be downgraded to Nationally Scarce (Nb) status. On the Isle of Wight, *Myopites inulaedyssentericae* is widespread and regularly recorded.

#### **HYMENOPTERA.**

An ant *Temnothorax albipennis* **Nationally Scarce Na.**

A single specimen of this tiny ant was found crawling on bare ground in the north – east of the western compartment at SZ 5527699 on 3<sup>rd</sup> June 2015. This species was also recorded from Castle Cove in a similar area in 2005. Because of its small size, *Temnothorax albipennis* is an easy species to overlook, and it is likely that it has persisted at the site throughout the duration of surveys at Castle Cove, although no specimens were found in 2016. Nationally, *Temnothorax albipennis* is found on or near the coast in southern England and Wales, with only one fully inland site known. Most records of *Temnothorax albipennis* are from undercliffs and landslips. Locally, Edwards (1998) gives records for two 10km. squares at the southern tip of the Isle of Wight.

A Mining bee *Andrena pilipes* **Nationally Scarce Nb. IOW BAP.**

*Andrena pilipes* was first recorded from Castle Cove in 2004, when a single individual was found on the eastern section of the site. Following that, numbers increased In 2006, when three individuals were seen. A maximum count of 10 individuals was recorded here in 2007. Subsequently, numbers of *Andrena pilipes* have steadily declined at Castle Cove, maximum counts of 7 in 2010, 4 in 2011, 2 in 2012 and 1 in 2013. No specimens of *Andrena pilipes* were recorded from the site in 2014 or in 2016. A single specimen was recorded on 10<sup>th</sup> July 2015, visiting bramble flowers by the gabions in the eastern compartment. *Andrena pilipes* is double brooded, and in the past both broods were usually recorded at Castle Cove, with the summer brood being the more numerous. This species is primarily associated with coastal cliffs and rough coastal grassland, but is occasionally found inland on downland and heathland. Falk (1991) notes a considerable decline for this southern species, particularly at inland sites. Locally, the author has recorded *A. pilipes* at seven other Island sites.

#### **CONCLUSION.**

The effects of succession in the grassland communities present continue to make the site less suitable for insect species particularly associated with soft rock coastal cliffs. Many of the Hymenopteran species associated with this habitat collect pollen from early successional plants such as common bird's – foot trefoil. This plant continues to decrease in abundance on both sections of the site. Many soft cliff specialist insects nest in bare ground, which is now a scarce commodity at Castle Cove, being largely confined to pathways. The continued changes in vegetation density and composition since stabilisation have now reached a stage where they are having a significant effect on the insect fauna of the site, and many specialist species have now been lost.

#### **APPENDIX 1. Insect species recorded during Castle Cove survey 2015.**

Species marked with an asterisk \* have not been recorded during previous Castle Cove surveys.

ORDER	FAMILY	SCIENTIFIC NAME	DATE 1ST RECORD	STATUS
ORTHOPTERA	<b>Grasshoppers &amp; Crickets</b>			
		Chorthippus brunneus	1st September 2016	Common, Widespread
		Chorthippus parallelus	1st September 2016	Common, Widespread
		Conocephalus discolor	1st September 2016	Common, Widespread
HEMIPTERA	<b>True Bugs</b>			
	Coreidae	<b>Squash Bugs</b>		
		Coriomeris denticulatus	1st September 2016	Common, Widespread
*	Pentatomidae	<b>Shield Bugs</b>		
		Palomena prasina	1st September 2016	Common, Widespread
LEPIDOPTERA	<b>Butterflies &amp; Moths</b>			
		Aglais urticae	5th April 2016	Common, Widespread
	*	Aphantopus hyperantus	19th July 2016	Common, Widespread
		Celastrina argiolus	8th June 2016	Common, Widespread
		Colias croceus	1st September 2016	Common, Widespread
		Inachis io	5th April 2016	Common, Widespread
		Maniola jurtina	8th June 2016	Common, Widespread
		Melanargia galathea	28th June 2016	Common, Widespread
		Melitaea cinxia	17th May 2016	<b>RDB3 UK BAP</b>
		Pieris brassicae	28th June 2016	Common, Widespread
		Pieris rapae	1st September 2016	Common, Widespread
		Polyommatus icarus	17th May 2016	Common, Widespread
		Pyronia tithonus	19th July 2016	Common, Widespread
		Vanessa atalanta	1st September 2016	Common, Widespread
		Vanessa cardui	12th August 2016	Common, Widespread
	*	Tyria jacobaeae	19th July 2016	<b>UK BAP (Research only)</b>
	DIPTERA	<b>True Flies</b>		
Stratiomyidae		<b>Soldier Flies</b>		
		Chloromyia formosa	28th June 2016	Common, Widespread
		Pachygaster leachii	19th July 2016	Common, Widespread
Bombyliidae		<b>Bee Flies</b>		
		Bombylius major	5th April 2016	Common, Widespread
	Syrphidae	<b>Hoverflies</b>		
	Dasysyrphus albostriatus	19th July 2016	Common, Widespread	

	Epistrophe	eligans	5th April 2016	Common, Widespread
	Episyrphus	balteatus	17th May 2016	Common, Widespread
	Eristalis	interruptus	4th May 2016	Common, Widespread
	Eristalis	pertinax	5th April 2016	Common, Widespread
	Eristalis	tenax	5th April 2016	Common, Widespread
	Eupeodes	corollae	28th June 2016	Common, Widespread
	Eupeodes	luniger	8th June 2016	Common, Widespread
	Meliscaeva	auricollis	8th June 2016	Common, Widespread
	Melanostoma	mellinum	12th August 2016	Common, Widespread
	Melanostoma	scalare	18th April 2016	Common, Widespread
	Merodon	equestris	17th May 2016	Common, Widespread
	Myathropa	florea	28th June 2016	Common, Widespread
	Paragus	haemorrhous	8th June 2016	Common, Widespread
	Pipizella	viduata	17th May 2016	Common, Widespread
	Platycheirus	albimanus	5th April 2016	Common, Widespread
	Sphaerophoria	scripta	19th July 2016	Common, Widespread
	Syritta	pipiens	28th June 2016	Common, Widespread
	Syrphus	ribesii	5th April 2016	Common, Widespread
	Syrphus	vitripennis	18th April 2016	Common, Widespread
	Xanthogramma	pedisequum	17th May 2016	Common, Widespread
<b>Tephritidae</b>	<b>Picture - winged Flies</b>			
	Eulia	heraclei	18th April 2016	Common, Widespread
<b>Ulidiidae</b>	<b>Ulidiid Flies</b>			
	Sphenella	marginata	12th August 2016	Common, Widespread
	Herina	longistylata	28th June 2016	Common, Widespread
<b>HYMENOPTERA</b>	<b>Bees, Wasps, Ants &amp; Relatives</b>			
<b>Formicidae</b>	<b>Ants</b>			
	Lasius	niger	5th April 2016	Common, Widespread
<b>Vespidae</b>	<b>Social Wasps</b>			
	Vespula	vulgaris	19th July 2016	Common, Widespread
<b>Crabronidae</b>	<b>Digger Wasps</b>			
	Cerceris	rybyensis	28th June 2016	Common, Widespread
*	Crossocerus	podagricus	19th July 2016	Common, Widespread
<b>Apoidea</b>	<b>Bees</b>			
<b>Colletidae</b>	<b>Mining &amp; Yellow - faced Bees</b>			
	Hylaeus	dilatatus (annularis)	19th July 2016	Common, Widespread

*	<b>Andrenidae</b>	<b>Mining Bees</b>	Hylaeus	hyalinatus	19th July 2016	Common, Widespread		
			Andrena	clarkella	18th April 2016	Common, Widespread		
			Andrena	dorsata	5th April 2016	Common, Widespread		
			Andrena	flavipes	5th April 2016	Common, Widespread		
			Andrena	nigroaenea	18th April 2016	Common, Widespread		
	<b>Halictidae</b>	<b>Mining &amp; Cuckoo Bees</b>	Halictus	tumulorum	5th April 2016	Common, Widespread		
			Lasioglossum	calceatum	28th June 2016	Common, Widespread		
			Lasioglossum	leucozonium	17th May 2016	Common, Widespread		
			Lasioglossum	malachurum	5th April 2016	<b>Nationally Scarce Nb</b>		
	<b>Megachilidae</b>	<b>Solitary Bees</b>	Megachile	centuncularis	1st September 2016	Common, Widespread		
			Osmia (Hoplitis)	spinulosa	28th June 2016	Common, Widespread		
			<b>Anthophoridae</b>	<b>Flower &amp; Nomad Bees</b>	Anthophora	bimaculata	1st September 2016	Common, Widespread
	Anthophora	plumipes			5th April 2016	Common, Widespread		
	Nomada	fucata			4th May 2016	<b>Nationally Scarce Na</b>		
	Nomada	goodeniana			4th May 2016	Common, Widespread		
	Nomada	leucothalma			17th May 2016	Common, Widespread		
	Nomada	marshamella			5th April 2016	Common, Widespread		
	<b>Apidae</b>	<b>Social &amp; Cuckoo Bees</b>			Apis	mellifera	5th April 2016	Common, Widespread
					Bombus	lapidarius	28th June 2016	Common, Widespread
			Bombus	lucorum	5th April 2016	Common, Widespread		
Bombus			pascuorum	5th April 2016	Common, Widespread			
Bombus			pratorum	5th April 2016	Common, Widespread			
Bombus			terrestris	5th April 2016	Common, Widespread			
<b>COLEOPTERA</b>			<b>Cantharidae</b>	<b>Soldier Beetles</b>	Rhagonycha	fulva	28th June 2016	Common, Widespread
	<b>Coccinellidae</b>	<b>Ladybirds</b>			Coccinella	7 - punctata	5th April 2016	Common, Widespread
			Harmonia	axyridis	5th April 2016	Common, Widespread		

	<b>Curculionid ae</b>	<b>Weevils</b>			
		Mononychus	punctum - album	8th June 2016	<b>Nationally Scarce Na</b>
	<b>Drilidae</b>	<b>Snail - eating Beetles</b>			
*		Drilus	flavescens	17th May 2016	Local
	<b>Oedemerid ae</b>	<b>Oedemerid Beetles</b>			
		Oedemera	nobilis	17th May 2016	Common, Widespread

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