Portsdown Hill SSSI and Top Field

Insect Survey

Survey and Report by
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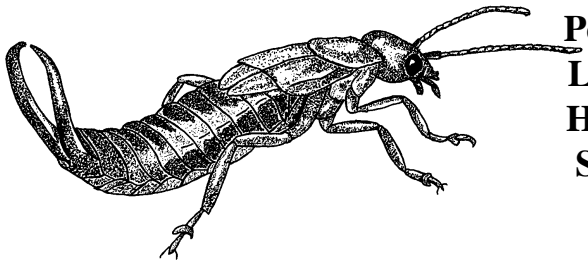
November 2018



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Portsdown Hill SSSI
and Top Field,
Portsmouth, Hampshire

Insect Survey 2018

CONTENTS

1.1 Summary

This report summarises the results of survey work to record the insect species present in three management compartments of Portsdown Hill SSSI and Top Field, Portsmouth, Hampshire.

Six visits were made in favourable conditions in April, May, June, July, August and September to record the insects of a number of terrestrial groups. The groups surveyed are highlighted in Section 1.3.

Survey involved direct searching and sweep-netting the vegetation in each survey area.

Tables showing the species recorded in each compartment are presented in Section 1.4.

Six Red Data Book, sixteen Nationally Scarce and two BAP Priority species were recorded. Details of these and other noteworthy species are presented in Section 1.5.

Species were identified in the field wherever possible, but due to identification difficulties with some species, some were retained and identified with the aid of a microscope. Reference material has been retained in the collection of the surveyor, surplus material has been donated to the collections of Portsmouth City Council Museums.

An overview of the results is presented in Section 1.6.

Recommendations for further survey were presented in Section 1.7 of the 2014 and are not repeated here.

Limited recommendations for management of the survey areas were provided in Section 1.8 of the 2014 report and still stand, so are not repeated or added to here.

Appendix 1 lists all species recorded during the present survey.

Appendix 2 lists all species recroded during surveys in 2014, 2015 and the present survey and highlights those species of conservation importance.

This survey was commissioned and funded by Portsmouth City Council.

1.2 Introduction

Portsdown Hill SSSI is a linear area of dry calcareous grassland habitat situated on the south-facing escarpment of an east-west anticline above the city of Portsmouth, Hampshire. The SSSI is bordered by Portsdown Hill Road (B2177) and James Callaghan Drive on the northern edge, and housing estates on the southern boundary. The SSSI covers an area of 80.67 hectares.

Between 1984 and the early 1990s the SSSI had been left largely ungrazed and unmanaged resulting in the species-rich grassland becoming dominated by scrub. Management, largely scrub removal, since 1991 has sought to re-establish the species-rich grassland to a greater extent, in order that scrub accounts for less than 35% total cover. Controlled grazing by livestock has also been reintroduced to the SSSI (Jones 2006).

Top Field is roughly triangular in shape and extends over the ridge of Portsdown Hill. It is sandwiched between the Portsdown Hill Road (B2177) on its northern boundary, James Callaghan Drive to the south and Fort Southwick complex to the west. There is little topsoil with chalk and flint dominant. Top Field was downland until the 1960s, then under arable production until 2010. The field has since been re-seeded using downland plants from the adjacent SSSI. Top Field covers an area of seven hectares (Jones, 2012).

The major habitats of the SSSI available are dry, steep, south-facing chalk grassland with areas of managed, differing aged scrub. Top Field is on an exposed hilltop with recently seeded arable reversion grassland, there is little seedling scrub in Top Field.

Three management compartments of the SSSI were surveyed for this report; one at the western end below Fort Southwick (Compartment 2), one central, below Top Field (Compartment 4), and one at the eastern end of the escarpment below Fort Widley (Compartment 9). The arable reversion field (Top Field) on the hill top was also surveyed. This survey was a repeat of one undertaken during 2014.

Six survey visits were made to record the insects present and the data collected forms the basis of this report. Survey visits were undertaken on 26th April, 23rd May, 25th June, 23rd July, 28th August and 25th September in favourable conditions for insect activity.

Visits were made between 09.00hrs and 16.00hrs and between one and two hours were spent in each survey area. Visits were timed to be a minimum of three weeks apart to ensure little repetition of species and to cover the period when most insect species are active. Section 1.3 outlines the insect groups surveyed and their particular habitat associations.

Survey involved direct searching for species visiting flowers as well as extensive sweep-netting of the vegetation.

Weather conditions throughout the survey period were rather mixed. The winter of 2017/18 had been one of the wettest on record. Snow fell and temperatures plummeted in late February and into March. April and May were mixed with warm weather, high winds and periods of rain. June, July and August experienced prolonged hot weather, high temperatures and drought conditions. September was also largely dry and sunny with high temperatures. These weather events probably significantly impacted on insect numbers recorded during this survey period.
The combination of wet winter, cold late spring with snow and dry, parched summer would have impacted species which had already been affected by equally poor conditions during 2017,particularly obvious both at Portsdown and other survey sites in southern England where even species considered common and widespread were often present in exceedingly low numbers, or were

entirely absent from survey samples.
All of this conspired to make the survey period one of low insect numbers of both species and individuals, something that was experienced on other southern survey sites.

However, the final total of six Red Data Book, sixteen Nationally Scarce and two BAP Priority species, many of which had been recorded previously, and three which were not, shows that Portsdown Hill SSSI still holds important insect assemblages. Many of these species are starting to appear/colonise in Top Field. This is a testament to the positive habitat management works being undertaken.

1.3 Survey Groups and Methodology

Survey was largely undertaken by means of sweep-netting the vegetation with the aim of dislodging species resting on foliage or feeding at flowers. Occasionally direct searching (where species with known plant hosts may be present) was employed as the main survey technique. Some species, such as the lepidoptera (butterflies) and odonata (dragonflies and damselflies) were primarily recorded flying through the survey areas. Without thorough searches for their larval stages many species in these groups are often difficult to determine which are breeding on site and those which are casual users of the site for feeding, roosting or hibernating.

The following insect groups were surveyed/recorded and their reason for attention in this survey highlighted:

Mecoptera: Scorpion flies
Only three species are recorded in Britain all can be found in most habitats, adults are often recorded in abundance. Larvae feed on decaying matter. None were recorded during this survey.

Neuroptera: Lacewings
The majority of species are aphid feeders in their larval stage, adults can usually be found resting on vegetation during the day.

Odonata:Dragonflies and Damselflies
All species develop in watercourses where they are predatory on other invertebrates. Adult males fly long distances, often away from water to feed, females stay close to water courses and pools. While adults are easy to record in any habitat, breeding on a site can only be proven if searches are made for the larval stages or exuviae.

Orthoptera: Bush Crickets and Grasshoppers
Many species are specific to wetland habitats and structured grassland with some scrub element, all of those recorded can be considered as generalist species.

Heteroptera: True Bugs (terrestrial species)
Many species in this group are host plant specific where they feed on plant sap, a number of species are predatory on other insects, they are best surveyed by sweep-netting vegetation.

Lepidoptera: Butterflies
A number of species are specific to grassland habitat but are usually reliant on established and relatively undisturbed habitats, all species were recorded on a casual basis.

Diptera: Hoverflies
A number of species are specific to wetland, grassland and scrub habitats but the majority are generalist in their habitats.

Diptera: Larger Brachycera (Snipeflies, Horseflies, Soldierflies and Robberflies)
A number of species are specific to wetland habitats. In the larval stages they live either as parasites in and on other insects, within decaying plant matter or in mud.

Diptera: Snail-killing Flies
All of the species feed within the shells of specific snail species usually in wetland habitats, only a few species live in drier habitats where they develop in terrestrial snails.

Diptera: Picture-winged Flies
All of the species are plant host specific developing as maggots within plant stems, flowerheads or seed heads.

Diptera: Conopid Flies
All of the species in this family parasitise solitary and social bees and wasps, either at their nest sites or by searching for adults foraging at flowers.

Diptera: Tachinid Flies
All of the species are parasites that spend their larval stages feeding within or on other insects e.g. lepidoptera caterpillars and shieldbugs.

Hymenoptera: Aculeates
Many bee, ant and wasp species nest in bare soils in warm sunny locations, each female bee or wasp excavates a series of burrows to provision them with nectar and/or pollen or live prey for their growing larvae to feed on. All species feed at flowers for nectar or pollen, while many species also feed on terrestrial invertebrates which are captured at flowers. Ants often nest in warm, highly thermophilic sites in grassland or bare and sparsely vegetated substrates.

Coleoptera: Ladybirds
Ladybirds occur in a range of habitats with few species being specific to this habitat. Due to the ease of recording and identifying the group they were recorded on a casual basis.

Longhorn Beetles
The majority of this group develop as larvae inside dead and decaying timber, adults are often brightly coloured and can be found feeding at flowers.

Soldier Beetles
This group of predatory species were added to the survey after an identification guide to the species was acquired. Adults are often brightly coloured and can be found at flowers and are often encountered in sweep-net samples.

1.4. Species Recorded

The following tables show all insects recorded during the survey period, the species lists and nomenclature follow the most recently available checklists for each group. The hoverfly checklist is currently in the process of being reorganised so for ease, species are presented here in alphabetical order. Notes regarding the available habitat of the survey plots are included where appropriate.

Those species highlighted with an asterisk (*) are Red Data Book, Nationally Scarce, BAP Priority or Noteworthy species. Accounts of these species are given in Sections 1.5 and 1.5.1.

1.4.1 Compartment 2

This compartment is at the western end of the SSSI below Fort Southwick, with a central grid reference at SU630066. Much of the grassland is relatively short, becoming longer towards the bottom of the slope. There are pockets of mixed age scrub scattered throughout the compartment, and older more established scrub on the northern and southern boundaries. Areas of broken ground are present with extremely short vegetation and areas of bare ground, these make ideal nesting sites for solitary bees and wasps.

Forage resources (nectar and pollen) were available throughout the survey period although in limited supply during the early spring period when Dandelion (*Taraxacum officinale* agg.), Cowslip (*Primula veris*), Blackthorn (*Prunus spinosa*) and limited amounts of Gorse (*Ulex europaeus*) Yellow Composites (*Hypochoeris* sp, *Leontodon* sp, *Crepis* sp,), Buttercup (*Ranunuculus* sp,) and Yellow Rattle (*Rhinanthus minor*) were the dominant resources. In mid-summer Privet (*Ligustrum vulgare*), Bramble (*Rubus fruticosus* agg), Horseshoe Vetch (*Hippocrepis comosa*), Kidney Vetch (*Anthyllis vulnerata*), Oxeye Daisy (*Chrysanthemum leucanthemum*), Weld (*Reseda luteola*), Wild Mignonette (*Reseda lutea*), Black Knapweed (*Centaurea nigra*), Field Scabious (*Knautia arvensis*), Prickly Lettuce (*Lactuca serriola*), Wild Carrot (*Daucus carota*), Agrimony (*Agrimonia eupatoria*), Hemp Agrimony (*Eupatorium cannabinum*), Marjoram (*Origanum vulgare*) and Red Bartsia (*Odontities verna*) dominated. Late summer saw Ragwort (*Senecio* sp), Bristly Oxtongue (*Picris echioides*), Wild Carrot, Hemp Agrimony, Marjoram and Red Bartsia dominate the available resources. By the time of the final visit in September, significant forage resources had diminished to a few stands of Yellow Composite (*Hypochoeris* sp, *Leontodon* sp, *Crepis* sp,), Ragwort (*Senecio* sp,), Hemp Agrimony and Bristly Oxtongue.
Ponies were grazing this compartment during the visit in April.

Survey Date/ Group and species	**26 Apr.**	**23 May**	**25 Jun.**	**23 July**	**28 Aug.**	**25 Sept.**
Neuroptera: Lacewings						
Chrysoperla carnea				*		
Odonata:Damselflies						
Coenagrion puella		*				
Enallagma cyathigerum			*			
Pyrrhosoma nymphula		*				
Dragonflies						
Libellula depressa		*				
Sympetrum striolatum						*
Orthoptera: Bush Crickets						
Tettigonia viridissima		*	*	*		
Pholiodoptera griseoaptera		*	*	*	*	

Survey Date/ Group and species	**26 Apr.**	**23 May**	**25 Jun.**	**23 July**	**28 Aug.**	**25 Sept.**
Conocephalus discolor		*	*	*		
Leptophyes punctatissima		*	*			
Grasshoppers						
*Stenobothrus lineatus**			*	*		
Omocestus viridulus			*	*		
Chorthippus brunneus		*	*	*	*	*
Chorthippus parallelus		*	*	*	*	
Dermaptera						
Forficula auricularia			*			*
Heteroptera: True Bugs						
Deraeocoris ruber				*		
Adelphocoris lineolatus				*		
Calocoris roseomaculatus					*	
Liocoris tripustulatus			*			
Lygocoris lucorum			*	*		
Lygus rugulipennis	*			*	*	
Orthops campestris	*		*	*	*	*
Phytocoris varipes					*	
Polymerus unifasciatus			*	*		
Stenotus binotatus			*			
Leptopterna dolobrata			*			
Pithanus maerkelii				*		
Stenodema calcarata		*	*		*	
Heterocordylus tibialis			*			
Heterotoma planicornis			*			
Macrotylus solitarius			*			
Plagiognathus arbustorum			*	*	*	
Plagiognathus chrysanthemi				*		
Coreus marginatus					*	
*Gonocerus acuteangulatus**					*	
Corizus hyoscyami						*
Dolycoris baccarum			*	*	*	*
Palomena prasina	*		*			
Piezodorus lituratus			*			
Lepidoptera: Butterflies						
Ochlodes venata			*	*		
Gonepteryx rhamni			*	*		
Pieris brassicae				*		
Pieris rapae			*	*	*	
Callophrys rubi		*				
*Cupido minimus**		*				
Polyommatus icarus		*		*	*	*
Lysandra coridon				*		
Celastrina argiolus					*	
Vanessa atalanta						*
Polygonia c-album				*		
Pararge aegeria		*	*	*		*
Melanargia galathea			*			
Pyronia tithonas				*		
Maniola jurtina			*	*	*	*
Aphantopus hyperantus			*			

Survey Date/ Group and species	**26 Apr.**	**23 May**	**25 Jun.**	**23 July**	**28 Aug.**	**25 Sept.**
Diptera: Hoverflies						
Cheilosia latifrons	*				*	
Chrysotoxum bicinctum		*	*			
*Chrysotoxum elegans**				*	*	
Episyrphus balteatus		*	*	*	*	*
Eristalis arbustorum			*	*	*	*
Eristalis interrupta				*		*
Eristalis intricarius				*		
Eristalis pertinax			*	*	*	
Eristalis tenax			*	*	*	*
Eumerus funeralis					*	
Eupeodes corollae			*		*	*
Eupeodes latifasciatus			*		*	*
Eupeodes luniger					*	
Helophilus pendulus					*	*
Helophilus trivittatus						*
Melanostoma mellinum	*		*		*	*
Melanostoma scalare	*		*	*	*	*
Meliscaeva auricollis	*					
Merodon equestris		*				
Myathropa florea		*	*	*		*
Paragus haemorrhous			*	*	*	
Pipiza noctiluca		*				
Pipizella lugubris		*				
Pipizella viduata			*	*	*	
Platycheirus albimanus		*	*			
Scaeva pyraustri				*		
Sphaerophoria interrupta			*	*	*	
Sphaerophoria scripta			*	*	*	*
Syrphus ribesii	*		*			*
Syrphus vitripennis	*					
Syritta pipiens			*	*	*	
Volucella bombylans				*		
*Volucella inanis**				*		
Volucella pellucens				*		
Diptera: Larger Brachycera						
Chorisops tibialis			*			
Chloromyia formosa			*			
*Machimus rusticus**			*			
Leptarthrus brevirostris			*			
Dioctria rufipes			*			
Diptera: Snail-killing Flies						
Pherbellia cinerella	*	*	*		*	*
Coremacera marginata						*
Diptera: Picture-winged Flies						
Urophora jaceana			*			
Urophora quadrifasciata				*		
Urophora stylata			*			
*Merzomyia westermanni**				*	*	
Sphenella marginata			*	*	*	*
Tephritis bardanae		*	*			

Survey Date/ Group and species	**26 Apr.**	**23 May**	**25 Jun.**	**23 July**	**28 Aug.**	**25 Sept.**
Tephritis neesii		*				
Chaetorellia jaceae				*		
Xyphosia miliaria			*			
Diptera: Conopid Flies						
Conops flavipes					*	
*Leopoldius signatus**						*
Thecophora atra				*	*	
*Thecophora fulvipes**				*		
Diptera: Tachinid Flies						
*Gymnosoma rotundatum**			*	*	*	
Phasia pusilla					*	
Phasia obesa			*		*	*
Hymenoptera: Aculeates						
Simple Wasps						
Tiphia femorata			*	*		
Ants						
Formica fusca			*	*		
Lasius niger	*	*	*	*	*	
Temnothorax nylanderi					*	
Myrmica ruginodis		*				
Spider Wasps						
Anoplius nigerrimus			*			
Social Wasps						
Vespula germanica						*
Vespula vulgaris			*	*	*	*
Solitary Wasps						
Astata boops						*
Ectemnius dives				*		
Ectemnius cephalotes			*			
Ectemnius lituratus			*			
Pemphredon lugubris				*		
Mellinus arvensis				*		
Cerceris rybyensis			*			
Solitary Bees						
*Colletes hederae**					*	*
Hylaeus communis			*			
Hylaeus confusus			*			
*Hylaeus signatus**			*			
Andrena scotica		*				
Andrena nigroenea		*				
Andrena haemorrhoa	*	*				
Andrena flavipes			*			
Andrena minutula			*	*		
Andrena dorsata	*					
Andrena ovatula			*			
Andrena wilkella		*	*			
Halictus tumulorum				*	*	*
Lasioglossum leucozonium			*		*	
Lasioglossum albipes			*		*	
Lasioglossum calceatum			*			
Lasioglossum fulvicorne			*			

Survey Date/ Group and species	**26 Apr.**	**23 May**	**25 Jun.**	**23 July**	**28 Aug.**	**25 Sept.**
Lasioglossum parvulum		*				
*Lasioglossum pauxillum**		*		*		
Lasioglossum morio			*	*	*	*
Sphecodes ephippius			*			
Sphecodes geofrellus				*		
*Melitta tricincta**			*	*	*	
*Osmia aurulenta**			*			
Osmia spinulosa			*	*		
*Nomada flavopicta**					*	
Nomada sheppardana			*			
*Ceratina cyanea**					*	
Social Bees						
Bombus hortorum			*			
*Bombus humilis**			*	*	*	
Bombus lapidarius			*	*	*	
*Bombus lucorum/terrestris^*		*				
Bombus pascuorum			*	*	*	*
*Bombus soroeensis**			*			
Bombus terrestris	*			*	*	*
Bombus vestalis	*		*	*		
Apis mellifera			*	*	*	*
Coleoptera: Ladybirds						
Harmonia axyridis			*			
Coccinella 7-punctata			*	*	*	*
Pysllobora 22-punctata		*				
Soldier Beetles						
Rhagonycha fulva				*		
Longhorn Beetles						
Grammoptera ruficornis		*				

Note: *Bombus lucorum/terrestris^*, these two species are inseparable unless queens or males are seen.

1.4.2 Top Field - arable reversion

This compartment covers seven hectares, is roughly triangular and situated on the hill top above the central section of the SSSI with a central grid reference of SU644066. Since 2010 Top Field has been re-seeded with flora from the adjacent SSSI as part of an arable reversion scheme.
Much of the vegetation is relatively long and dense with herbs dominating the grassland. Pathways had been mown through this section during the summer but this had no impact on insect numbers. There is no scrub in or bordering this compartment but a small component is becoming established within the grassland, all boundaries are fenced with barbed wire. Almost no broken ground is now present, the whole compartment is on more level ground than that of the other compartments surveyed, but the centre of the compartment is higher than the edges, providing some sloping aspects.

Forage resources (nectar and pollen), due to the age of this compartment were somewhat limited in species diversity but more than made up for in quantity and were available throughout the survey period. The early spring period saw Dandelion and a large strip of Cowslip running through the centre of the compartment make up the bulk of the available resources. In mid- and late-summer Red Clover (*Trifolium pratense*), White Clover (*T. repens*), Tufted Vetch (*Vicia cracca*), Lesser Trefoil (*T. dubium*), Common Bird's-foot-trefoil (*Lotus corniculatus*), Lady's Bedstraw (*Galium verum*), Creeping Thistle (*Cirsium arvense*), Yellow Rattle, Kidney Vetch, Bristly Oxtongue, Wild Carrot, Marjoram, Red Bartsia and Ragwort (*Senecio* sp,) dominated the available resources. By the time of the final visit in September, significant forage resources had diminished to a few stands of Red Clover, Wild Carrot, Red Bartsia, Yellow Composites (*Hypochoeris* sp, *Leontodon* sp, *Crepis* sp,) and Bristly Oxtongue.

In mid to late summer the density of vegetation in this compartment was such that it was difficult at times to walk briskly through it while sweep-netting. The density of the vegetation was remarkably similar to five year old arable reversion at RSPB Winterbourne Downs, Newton Tony, Wiltshire (a site which I have surveyed during ten years of a major arable reversion project). If the management of Top Field continues in the same vein as it currently stands, within five more years the sward, in both structure and density, should resemble something more like the grasslands of the SSSI, in keeping with my experiences at the RSPB site (pers obs). At this site, in a ten year timescale the invertebrates of the arable reversion were almost identical to those of the established calcareous grassland on the site.

Survey Date/ Group and species	**26 Apr.**	**23 May**	**25 Jun.**	**23 July**	**28 Aug.**	**25 Sept.**
Neuroptera: Lacewings						
Chrysoperla carnea		*		*		
Odonata:Dragonflies						
Anax imperator			*			
Orthoptera: Bush Crickets						
Tettigonia viridissima		*	*			
Metrioptera roeselli				*		
Conocephalus discolor			*		*	*
Grasshoppers						
Chorthippus brunneus			*	*		*
Chorthippus parallelus			*	*	*	
Dermaptera: Earwigs						
Forficula auricularia					*	*
Heteroptera: True Bugs						
Adelphocoris lineolatus				*		
Calocoris roseomaculatus					*	

Survey Date/ Group and species	**26 Apr.**	**23 May**	**25 Jun.**	**23 July**	**28 Aug.**	**25 Sept.**
Calocoris norvegicus			*			
Lygus rugulipennis			*			
Orthops campestris						*
Phytocoris varipes				*		
Stenotus binotatus			*			
Leptopterna dolobrata		*	*			
Leptopterna ferrugata			*			
Stenodema calcarata			*			
Macrotylus solitarius			*			
Nabis rugosus			*	*		
Coriomeris denticulatus		*				
Eurygaster testudinaria				*		
Dolycoris baccarum				*	*	*
Trichoptera: Caddisflies						
Limnephilus affinis						*
Lepidoptera: Butterflies						
Thymelicus sylvestris				*		
Ochlodes venata			*			
Pieris brassicae				*		
Pieris rapae				*		
*Cupido mimimus**				*		
Polyommatus icarus		*	*	*	*	
Aglais urticae			*			
Inachis io	*					
Melanargia galathea			*			
Maniola jurtina			*	*	*	
Diptera: Hoverflies						
Cheilosia albitarsis		*				
Cheilosia illustrata			*			
Cheilosia latifrons	*					
Cheilosia vernalis			*			
Chrysotoxum bicinctum			*			
Episyrphus balteatus			*		*	
Eristalis arbustorum			*	*		
Eristalis interrupta						*
Eristalis tenax			*	*	*	*
Eupeodes corollae	*		*	*	*	
Eupeodes latifasciatus			*			*
Eupeodes luniger	*		*			
Helophilus pendulus				*		*
Helophilus trivittatus						*
Melanostoma mellinum	*	*	*			
Melanostoma scalare	*	*	*	*	*	
Merodon equestris		*				
Myathropa florea				*		
Platycheirus albimanus			*		*	
Platycheirus manicatus		*			*	
Platycheirus scutatus+			*			
Sphaerophoria interrupta		*	*	*	*	
Sphaerophoria scripta	*	*	*	*	*	*
Sphaerophoria taeniata			*			

Survey Date/ Group and species	**26 Apr.**	**23 May**	**25 Jun.**	**23 July**	**28 Aug.**	**25 Sept.**
Syrphus ribesii			*		*	
Syrphus vitripennis	*					
Syritta pipiens			*	*	*	
Diptera: Larger Brachycera						
Haematopota pluvialis			*			
Tabanus bromius			*			
Pachygaster atra			*			
Chloromyia formosa			*			
Thereva nobilitata			*			
*Machimus rusticus**			*			
Diptera: Snail-killing Flies						
Pherbellia cinerella	*					
Coremacera marginata					*	
Limnia unguicornis			*		*	
Diptera: Picture-winged Flies						
Urophora jaceana			*	*		
Urophora stylata			*			
*Dioxyna bidentis**			*			
*Merzomyia westermanni**				*	*	
Sphenella marginata				*	*	*
Tephritis bardanae	*	*				
*Tephritis divisa**					*	
Tephritis hyoscyami			*			
Tephritis neesii	*					
Trupaena stellata					*	
Cerajocera tussilaginis			*			
Diptera: Conopid Flies						
Physocephala rufipes			*	*		
Thecophora atra					*	
Sicus ferrugineus			*			
Diptera: Tachinid Flies						
Eriothrix rufomaculata				*		
Phasia pusilla					*	
Phasia obesa		*				
Hymenoptera: Aculeates						
Simple Wasps						
Tiphia femorata			*	*		
Spider Wasps						
Arachnospila spissa						
Solitary Wasps						
Ectemnius cephalotes				*		
Mellinus arvensis			*	*		
Philanthus triangulum				*		
Solitary Bees						
*Hylaeus cornutus**			*			
Andrena fulva	*					
Andrena haemorrhoa	*	*				
Andrena flavipes			*		*	
Andrena minutula				*		
Andrena subopaca	*	*		*		
Lasioglossum albipes			*			

Survey Date/ Group and species	**26 Apr.**	**23 May**	**25 Jun.**	**23 July**	**28 Aug.**	**25 Sept.**
Lasioglossum calceatum		*				
Lasioglossum morio			*			
Melitta leporina			*			
*Melitta tricincta**				*		
Osmia spinulosa			*			
Social Bees *Bombus hortorum*	*			*		
*Bombus humilis**				*		
Bombus jonellus		*				
Bombus lapidarius	*	*	*	*	*	
*Bombus lucorum/terrestris^*		*	*	*		
Bombus pascuorum		*	*	*	*	
Bombus terrestris	*		*	*	*	*
Apis mellifera		*		*	*	*
Coleoptera: Ladybirds *Coccinella 7-punctata*		*		*	*	
Subcoccinella 24-punctata	*					
Longhorn Beetles *Stenurella melanura*			*			
Soldier Beetles *Cantharis rufa*		*	*			
Rhagnonycha fulva			*	*		
Malachite beetles *Malachius bipustulatus*		*				

Notes: *Platycheirus scutatus*+ agg This aggregate comprises *Platycheirus scutatus*, *P. splendidus* and *P. aurolateralis*. A voucher specimen was taken but turned out to be female - only males are separable to species level.

*Bombus lucorum/terrestris^*, these two species are inseparable unless queens or males are seen.

1.4.3 Compartment 4

This compartment is in the central of the SSSI and lies below Top Field, with a central grid reference of SU644065. Much of the grassland is relatively short, becoming longer towards the bottom of the slope. There are pockets of mixed age scrub scattered throughout the compartment, and older more established scrub on the northern and southern boundaries. Areas of broken ground are present with extremely short vegetation and areas of bare ground, these make ideal nesting sites for solitary bees and wasps.

Forage resources (nectar and pollen) were available throughout the survey period although in limited supply during the early spring period when Dandelion, Cowslip, Blackthorn and Yellow Composites (*Hypochoeris* sp, *Leontodon* sp, *Crepis* sp,) were the dominant resources. In mid-summer Privet, Bramble, Oxeye Daisy, Weld, Wild Mignonette, Black Knapweed, Field Scabious, Prickly Lettuce, Wild Carrot, Agrimony, Hemp Agrimony, Marjoram, Red Bartsia and Pyramidal Orchid (*Anacamptis pyramidalis*) dominated. Late summer saw Ragwort (*Senecio* sp), Bristly Oxtongue, Yellow Composites (*Hypochoeris* sp, *Leontodon* sp, *Crepis* sp,), Wild Carrot, Wild Parsnip, Scabious, Hemp Agrimony, Marjoram and Red Bartsia dominate the available resources. By the time of the final visit in September, significant forage resources had diminished to a few stands of Yellow Composite (*Hypochoeris* sp, *Leontodon* sp, *Crepis* sp,) and Scabious.
Ponies were grazing this compartment during the surveys in April and May.

Survey Date/ Group and species	**26 Apr.**	**23 May**	**25 Jun.**	**23 July**	**28 Aug.**	**25 Sept.**
Neuroptera: Lacewings						
Chrysoperla carnea				*		
Orthoptera: Bush Crickets						
Tettigonia viridissima		*	*	*		
Pholiodoptera griseoaptera	*	*			*	*
Conocephalus discolor			*	*	*	*
Leptophyes punctatissima		*	*			
Grasshoppers						
*Stenobothrus lineatus**			*	*	*	
Omocestus viridulus			*			
Chorthippus brunneus		*	*	*	*	*
Chorthippus parallelus		*	*	*	*	*
Dermaptera: Earwigs						
Forficula auricularia					*	*
*Forficula lesnei**	*					
Heteroptera: True Bugs						
Calocoris roseomaculatus					*	
Calocoris stysi		*				
Adelphocoris lineolatus				*		
Lygus rugulipennis				*	*	
Orthops campestris					*	
Phytocoris varipes			*	*	*	
Polymerus unifasciatus			*			
Stenotus binotatus			*			
Pithanus maerkelii			*	*		
Stenodema calcarata		*				
Heterocordylus tibialis			*			
Macrotylus solitarius			*			
Plagiognathus arbustorum			*			

Survey Date/ Group and species	**26 Apr.**	**23 May**	**25 Jun.**	**23 July**	**28 Aug.**	**25 Sept.**
Syromastus rhombeus				*		
Coriomeris denticulatus		*		*	*	
*Corizus hyoscyami**				*		
Dolycoris baccarum				*	*	*
Palomena prasina			*			
Lepidoptera: Butterflies						
Ochlodes venata			*			
Colias crocea				*		
Gonepteryx rhamni	*	*	*			
Pieris brassicae				*		*
Pieris rapae		*		*	*	
Pieris napi	*					
Callophrys rubi	*	*				
*Cupido minimus**		*	*	*		
Polyommatus icarus		*		*	*	*
Celastrina argiolus	*				*	
Lysandra coridon				*		
Vanessa atalanta						*
Aglais urticae				*		
Pararge aegeria	*					*
Melanargia galathea			*			
Pyronia tithonus				*	*	
Maniola jurtina			*	*	*	*
Aphantopus hyperantus			*			
Coenonympha pamphilus		*			*	
Diptera: Hoverflies						
Chrysotoxum bicinctum					*	
*Chrysotoxum elegans**		*			*	
Episyrphus balteatus					*	*
Eristalis arbustorum			*		*	*
Eristalis interrupta			*		*	
Eristalis tenax			*	*	*	*
Eupeodes corollae					*	*
Eupeodes latifasciatus						*
Eupeodes luniger				*		
Helophilus pendulus					*	*
Helophilus trivittatus				*	*	*
Melanostoma mellinum	*		*			
Melanostoma scalare	*		*			*
Myathropa florea				*	*	*
Paragus haemorrhous					*	
Platycheirus albimanus	*	*				*
Platycheirus scutatus+	*					
Scaeva pyrastri					*	
Sericomyia silentis						*
Sphaerophoria interrupta						*
Sphaerophoria scripta			*	*	*	*
Syrphus ribesii	*					*
Syrphus vitripennis	*					
Syritta pipiens				*	*	
*Volucella zonaria**					*	

Survey Date/ Group and species	**26 Apr.**	**23 May**	**25 Jun.**	**23 July**	**28 Aug.**	**25 Sept.**
Diptera: Larger Brachycera						
Chrysops caecutiens			*			
Haematopota pluvialis			*	*		
Chloromyia formosa			*			
Microchrysa polita			*			
Machimus atricapillus			*			
*Machimus rusticus**			*			
Dioctria atricapilla		*				
Diptera: Snail-killing Flies						
Pherbellia cinerella	*	*			*	*
Coremacera marginata						*
Dichetophora obliterata		*				*
Diptera: Picture-winged Flies						
Urophora jaceana		*	*	*		
Urophora quadrifasciata				*		
Urophora stylata			*	*		
*Merzomyia westermanni**				*	*	
Sphenella marginata				*	*	*
Tephritis bardanae		*				
Tephritis serratulae			*			
Cerajocera cylindrica				*		
Terellia colon			*			
Diptera: Conopid Flies						
Physocephala rufipes				*		
Sicus ferrugineus		*	*			
Diptera: Tachinid Flies						
Eriothrix rufomaculata				*		
Voria ruralis					*	
Epicampocera succincta					*	
Phasia pusilla			*			
Phasia obesa				*	*	
Tachina fera						*
Hymenoptera: Aculeates						
Simple Wasps						
Tiphia femorata					*	
Ants						
Formica fusca	*	*	*	*	*	
Lasius niger	*	*	*	*	*	*
Myrmica ruginodis		*	*			
Spider Wasps						
Anoplius nigerrimus		*				
Solitary Wasps						
Ectemnius continuus					*	
Pemphredon inornata					*	
Pemphredon lethifera			*			
Mellinus arvensis			*			
Philanthus triangulum				*		
Social Wasps						
Vespula vulgaris				*	*	*

Survey Date/ Group and species	**26 Apr.**	**23 May**	**25 Jun.**	**23 July**	**28 Aug.**	**25 Sept.**
Solitary Bees						
*Colletes hederae**						*
Hylaeus communis			*			
Hylaeus brevicornis				*		
Hylaeus confusus			*			
*Hylaeus signatus**			*			
Andrena nigroaenea	*					
Andrena flavipes			*		*	
Andrena subopaca	*		*			
Andrena wilkella	*		*			
Halictus tumulorum		*		*	*	*
Lasioglossum leucozonium			*	*	*	*
Lasioglossum calceatum		*	*			
Lasioglossum leucopus			*	*		
Lasiolgossum morio		*	*	*	*	
*Sphecodes crassus**				*	*	
Sphecodes ephippius		*	*			
Sphecodes geofrellus			*			
*Melitta tricincta**				*		
Osmia rufa		*				
*Osmia aurulenta**		*				
Osmia spinulosa			*	*		
Megachile centuncularis			*			
Nomada flava	*					
Nomada striata		*				
Social Bees						
Bombus hortorum			*			
Bombus hypnorum		*				
Bombus lapidarius			*	*		
*Bombus lucorum/terrestris^*			*			
Bombus pascuorum				*	*	*
*Bombus rupestris**					*	
Bombus terrestris	*			*	*	*
Bombus vestalis	*		*			
Apis mellifera		*	*	*	*	*
Coleoptera: Ladybirds						
Harmonia axyridis				*		
Coccinella 7-punctata			*	*	*	
Psyllobora 22-punctata		*				
Longhorn Beetles						
Grammoptera ruficornis		*				
Soldier Beetles						
Rhagonycha fulva				*		
Malachite beetles						
Malachius bipustulatus		*				

Notes: *Platycheirus scutatus*+ agg This aggregate comprises *Platycheirus scutatus*, *P. splendidus* and *P. aurolateralis*. A voucher specimen was taken but turned out to be female - only males are separable to species level.

Bombus lucorum/terrestris^, these two species are inseparable unless queens or males are seen.

1.4.4 Compartment 9

This compartment is at the eastern end of the SSSI below Fort Widley, with a central grid reference of SU658063. Much of the grassland is relatively short, becoming longer toward the bottom of the slope. There are pockets of mixed age scrub scattered throughout the compartment, and older more established scrub on the northern and southern boundaries. Areas of broken ground are present with extremely short vegetation and areas of bare ground, these make ideal nesting sites for solitary bees and wasps.

More short vegetation was present in this compartment when compared with compartments 2 and 4 due to thee presence of grazing livestock (ponies) in each of the visits from April to July. Livestock were no longer present in this compartment in August and September, but the drought had prevented any significant vegetation growth following the cessation of grazing. It is unlikely that a single summer season of grazing will have had a major impact on insect populations, despite the lower number of species recorded in this compartment compared to those of compartments 2 and 4.

As a result of grazing livestock being present forage resources (nectar and pollen) were more limited than in compartments 2 and 4, but were still available, though much reduced throughout the survey period. In early spring period when Dandelion, Cowslip, Apple (*Malus* sp,), Blackthorn and Yellow Composites (*Hypochoeris* sp, *Leontodon* sp, *Crepis* sp,) were the dominant resources. In mid-summer Privet, Hawthorn, Bramble, Lady's Bedstraw, Oxeye Daisy, Weld, Wild Mignonette, Black Knapweed, Horsehoe Vetch, Kidney Vetch, Common bird's-foot-trefoil, Yellow Rattle, Field Scabious, Prickly Lettuce, Wild Carrot, Agrimony, Hemp Agrimony, Marjoram and Red Bartsia dominated. Late summer saw Rag*wort (Senec*io sp*),* Bristly Oxtongue, Yellow Composites (*Hypochoeris* sp, *Leontodon* sp, *Crepis* sp,), Wild Carrot, Hemp Agrimony, Marjoram and Red Bartsia dominate the available resources. By the time of the final visit in September, significant forage resources had diminished to a few stands of Yellow Composite (*Hypochoeris* sp, *Leontodon* sp, *Crepis* sp,) and Scabious.

Survey Date/ Group and species	**26 Apr.**	**23 May**	**25 Jun.**	**23 July**	**28 Aug.**	**25 Sept.**
Neuroptera: Lacewings						
Chrysoperla carnea				*		
Orthoptera: Bush Crickets						
Tettigonia viridissima		*		*		*
Pholiodoptera griseoaptera		*				*
Conocephalus discolor			*	*		
Leptophyes punctatissima			*	*		
Grasshoppers						
*Stenobothrus lineatus**			*	*	*	
Chorthippus brunneus		*	*	*	*	*
Chorthippus parallelus		*	*	*	*	*
Dermaptera: Earwigs						
Forficula auricularia				*	*	
Heteroptera: True Bugs						
Calocoris norvegicus			*			
Lygus rugulipennis				*	*	*
Orthops campestris					*	
Polymerus unifasciatus			*			
Stenotus binotatus			*	*		
Leptopterna dolobrata		*				
Heterotoma planicornis				*		

Survey Date/ Group and species	**26 Apr.**	**23 May**	**25 Jun.**	**23 July**	**28 Aug.**	**25 Sept.**
Xylocoris galactinus					*	
Coreus marginatus						*
Dolycoris baccarum						*
Zicrona caerulea					*	
Acanthosoma haemorrhoidale					*	
Lepidoptera: Butterflies						
Gonepteryx rhamni	*					
Pieris brassciae				*		*
Pieris rapae				*	*	
Pieris napi		*				
*Cupido minimus**		*		*		
Polyommatus icarus		*		*	*	
Lysandra coridon				*		
Celastrina argiolus		*				
Pararge aegeria	*					*
Melanargia galathea			*			
Maniola jurtina			*			*
Diptera: Hoverflies						
*Cheilosia soror**					*	
Chrysotoxum bicinctum			*		*	
*Chrysotoxum elegans**					*	
Episyrphus balteatus			*			*
Eristalis arbustorum					*	*
Eristalis interrupta						*
Eristalis pertinax	*					
Eristalis tenax			*		*	*
Eumerus funeralis					*	
Eupeodes latifasciatus					*	*
Helophilus pendulus					*	*
Helophilus trivittatus					*	
Melanostoma mellinum	*					*
Melanostoma scalare	*					*
Meliscaeva auricollis	*					
Myathropa florea					*	*
Paragus haemorrhous					*	*
Platycheirus scutatus+						*
Sphaerophoria scripta			*	*	*	*
Syrphus ribesii						*
Syrphus vitripennis	*				*	
Syritta pipiens				*	*	
Diptera: Larger Brachycera						
Tabanus bromius			*			
Chorisops tibialis				*		
Chloromyia formosa			*			
Sargus bipunctatus						*
Machimus atricapillus			*			
Machimus cingulatus					*	*
Dioctria atricapilla		*				

Survey Date/ Group and species	**26 Apr.**	**23 May**	**25 Jun.**	**23 July**	**28 Aug.**	**25 Sept.**
Diptera: Snail-killing Flies						
Pherbellia cinerella	*	*	*	*	*	*
Coremacera marginata					*	
Dichetophora obliterata				*		*
Limnia unguicornis			*	*	*	
Diptera: Picture-winged Flies						
Urophora jaceana			*		*	
Urophora quadrifasciata				*		
Urophora stylata			*	*		
*Merzomyia westermanni**				*		
Sphenella marginata				*	*	*
Chaetostomella cylindrica		*				
Cerajocera tussilaginis				*		
Terellia colon				*		
Diptera: Conopid Flies						
Thecophora atra						*
Hymenoptera: Aculeates						
Jewel Wasps						
*Hedychrum niemelai**				*		
Ants						
Formica fusca		*				
Lasius niger	*	*	*	*	*	
Spider Wasps						
Anoplius nigerrimus		*				*
Social Wasps						
Vespula germanica						*
Vespula vulgaris					*	*
Solitary Wasps						
Astata boops				*		
Ectemnius continuus					*	
Pemphredon inornata					*	
Mellinus arvensis			*			
Solitary Bees						
*Colletes hederae**					*	*
Hylaeus confusus			*			
*Hylaeus signatus**		*				
Andrena cineraria		*				
Andrena haemorrhoa	*					
Andrena minutula				*		
Andrena subopaca		*				
Andrena wilkella			*			
Halictus tumulorum				*	*	
Lasioglossum leucozonium			*	*	*	
Lasioglossum albipes			*	*	*	
Lasioglossum calceatum		*	*	*		
*Lasioglossum pauxillum**				*		
Lasioglossum morio		*	*	*	*	
Sphecodes ephippius		*				
Sphecodes geofrellus		*	*			
*Melitta tricincta**				*		
Osmia spinulosa			*			

Survey Date/ Group and species	**26 Apr.**	**23 May**	**25 Jun.**	**23 July**	**28 Aug.**	**25 Sept.**
Nomada fabriciana			*			
Social Bees						
*Bombus humilis**						*
Bombus lapidarius			*	*	*	*
Bombus lucorum				*		
Bombus pascuorum		*	*	*	*	*
Bombus pratorum			*			
Bombus terrestris	*			*	*	*
Bombus vestalis			*			
Apis mellifera		*	*	*	*	*
Coleoptera: Ladybirds						
Psyllobora 22-punctata					*	
Soldier Beetles						
Rhagonycha fulva			*	*		
Longhorn Beetles						
Grammoptera ruficornis		*				

Note: *Platycheirus scutatus*+ agg This aggregate comprises *Platycheirus scutatus*, *P. splendidus* and *P. aurolateralis*. A voucher specimen was taken but turned out to be female - only males are separable to species level.

1.5 Notes on the Red Data Book and Nationally Scarce species

Six Red Data Book and sixteen Nationally Scarce species were recorded during the survey. Details of their national statuses are taken from the national reviews listed in the references in Section 1.9. In these reviews hymenoptera and dermaptera have been given Nationally Scarce A and B ratings, while diptera have not. A description of these ratings is given at the end of this text in Section 1.5.2.
It should be borne in mind that the national status reviews are a little old and in need of review, hence some species may now no longer be considered as Red Data Book or Nationally Scarce species.

Dermaptera, Earwigs

Lesne's Earwig *Forficula lesnei* **(Nationally Scarce B)**
Recorded from scattered localities in southern England and Wales, this species is elusive and almost certainly under-recorded and easily overlooked due to its overall similarity with the more common and widespread Common Earwig (*F. auricularia*). This species appears to have a preference for scrubby habitats and rough vegetation. Males were swept from Compartment 4 on 26th April and 23rd May.

Heteroptera, True Bugs

Box Leatherbug *Gonocerus acuteangulatus* **(Red Data Book 1*)**
Until recently this species was only recorded from Box Hill in Surrey where it fed solely on Box (*Buxus sempervirens*). Since the mid 1990's this species has been spreading across southern England and expanding it's range of food plants to cover a range of coniferous and deciduous tree and shrub species. In view of this the status of this species should be downgraded.
An adult was recorded from Compartment 2 on 28th August.

Diptera, Hoverflies

A Hoverfly *Cheilosia soror* **(Nationally Scarce)**
A species restricted to chalk and limestone grassland in southern and eastern England with a few records from the north-west coast of Lancashire and north Wales. Larvae are thought to develop inside fungi with truffles being one possible host. Adults are often to be found nectaring at the flowers of white umbels. A singleton recorded in Compartment 9 on 28th August.

A Hoverfly *Chrysotoxum elegans* **(Red Data Book 3)**
Recorded sparingly across southern England and into south Wales typically on dry open grassland. Larval habits are unknown but they may be predatory on root aphids.
Singletons recorded in Compartment 2 on 23rd July and 28th August, Compartment 4 on 23rd May and five on 28th August and Compartment 9 on 23rd July and 28th August.

A Hoverfly *Volucella inanis* **(Nationally Scarce)**
Locally abundant in southern and south-eastern England. The larvae are ectoparasites in the nests of social wasps and hornets. Typically found in areas of woodland and scrub. Widely recorded from southern England, this species has increased in range during the past 30 years. Recorded from a range of habitats including scrub, heath and chalk grassland.
A singleton recorded in Compartment 2 on 23rd July.

A Hoverfly *Volucella zonaria* **(Nationally Scarce)**
Locally abundant in southern and south-eastern England. The larvae are ectoparasites in the nests of social wasps and hornets. Found in a range of habitats including scrub, grassland, woodland and gardens, this species has increased in range in recent years.
A singleton recorded in compartment 4 on 28th August.

Diptera, Larger Brachycera, Robberflies

A Robberfly *Machimus rusticus* **(Red Data Book 2)**

A large and impressive robberfly restricted to chalk and limestone grassland in southern and central England. Larvae are probably predatory in the soil but so far this aspect of the life history is unknown. Adults feed on a range of terrestrial invertebrates, most typically captured by darting flights from stationary perches with piles of animal dung being favoured hunting perches.
Recorded in numbers at the height of its flight period in Compartments 2 and 4 25th June and a singleton in Top Field on the same date.

Diptera, Tephritidae, Picture-winged Flies

A Picture-winged Fly *Dioxyna bidentis* **(Nationally Scarce)**

Widely dispersed in the UK as far north as Yorkshire, but more common in south-east England. Typically associated with damp habitats rather than dry grassland sites. Larvae are known to develop in the flower heads of Bur-marigold (*Bidens tripartita*) but a range of other composites is probably also utilised.
A singleton recorded in Top Field on 25th June.

A Picture-winged Fly *Merzomyia westermanni* **(Nationally Scarce)**

A large and distinctive species which is recorded widely throughout southern and south-eastern England from a range of habitats including grassland, coastal marshes, fens and woodlands. Larvae develop in the flowerheads of Hoary Ragwort (*Senecio erucifolius*) but other hosts may be used.
Adults were swept in numbers from Compartments 2, 4, 9 and Top Field on 23rd July and Compartments 2, 4 and Top Field on 28th August.

Diptera, Conopid Flies

A Conopid Fly *Leopoldius signatus* **(Nationally Scarce)**

Recorded widely in England and Wales from a range of habitats, easily overlooked due to the late flying season, this species is typically to be found at the flowers of Ivy (*Hedera helix)*. It is thought to parasitise social wasps.
A singleton recorded on the Ivy in Compartment 2 on 25th September.

A Conopid Fly *Thecophora fulvipes* **(Nationally Scarce)**

Widely recorded across the UK but always in low numbers and with a clearly western bias. Typically found in open habitats including heaths, moors and unimproved grassland. Probably a parasitoid of solitary bees of the genera *Lasioglossum* and *Halictus*. This species is easy to overlook amongst the more common *T. atra*, which was present in numbers in Compartments 2, 4 and 9, it is likely that this species occurs in across the whole SSSI.
A singleton was recorded amongst a sample of *T. atra* in Compartment 2 on 23rd July.

Diptera, Tachinid Flies

A Tachinid Fly *Gymnosoma rotundatum* **(Red Data Book 3)**

A large and easily identified species recorded sparingly from southern England typically in woodland rides and glades and scrubby grassland. Larvae develop inside the common and widespread Green Shieldbug *Palomena prasina*.
Singletons recorded in Compartment 2 on 25th June and 23rd July and three in a single sweep-net sample on 28th August.

Hymenoptera, Aculeates

Jewel Wasps

A Jewel Wasp *Hedychrum niemelai* **(Red Data Book 3)**

Widely recorded across much of England typically in open sandy habitats including heathland, dunes and soft rock cliffs. A parasitoid of the common and widespread sphecid wasps in the genera *Cerceris*. One *Cerceris* host species (*C. rybyensis*)was recorded in Compartment 2 during the June visit.

A single female recorded in Compartment 9 on 23rd July.

Hymenoptera, Solitary Bees

A Solitary Bee *Hylaeus cornutus* **(Nationally Scarce A)**

Recorded sparingly from across southern England. The exact requirements of this species are unclear, but it has been found in a variety of habitats including woodland, fenland, chalk grassland and sandy habitats. Nests are reported from stems of Docks (*Rumex* sp) and Bramble (*Rubus* sp).

A single male recorded in Top Field on 25th June.

A Solitary Bee *Hylaeus signatus* **(Nationally Scarce B)**

Widely recorded across much of southern England south of The Wash in a wide range of flower-rich habitats. This species provisions its nests solely with pollen from Wild Mignonette *Reseda lutea* and Weld *R. luteola*. Nests may be in hollow plant stems or in open soils exposures.

Females were recorded at the host plants in Compartments 2 and 4 on 25th June and in Compartment 9 on 23rd May.

A Solitary Bee *Lasioglossum pauxillum* **(Nationally Scarce A)**

Recorded from scattered localities across southern England on a range of different habitats, including grassland, heathland and soft rock cliffs. Nests are constructed in bare soil, often with more than one female sharing the same nest entrance. This species has recently been undergoing expansion in range and distribution. Edwards & Broad (2005) suggest this species no longer warrants Nationally Scarce status.

Recorded from Compartment 2 on 23rd May and 23rd July and Compartment 9 on 23rd July.

A Solitary Bee *Sphecodes crassus* **(Nationally Scarce B)**

Recorded widely in southern and central England from a variety of habitats including heathland, calcareous grassland and soft rock cliffs. This species is a cleptoparasite of solitary bees of the genus *Lasioglossum*. A number of *Lasioglossum* species were recorded in all survey compartments and it is likely that any one of these plays host to *S. crassus*. The host species require areas of bare ground for nesting and a range of flower species for pollen.

Singletons recorded in Compartment 4 on 23rd July and 28th August.

A Solitary Bee *Melitta tricincta* **(Nationally Scarce B)**

Widely distributed in southern England from a variety of habitats including dry chalk and limestone grassland and coastal landslips. Nesting probably occurs in loose colonies in bare soil exposures. Females collect pollen solely from the flowers of Red Bartsia *Odontites verna*, nectar is almost exclusively collected from this species also.

Males and females were recorded in Compartments 2, 4 and 9 on 23rd July and in Compartment 4 on 25th June and 28th August.

A Solitary Bee *Osmia aurulenta* **(Nationally Scarce B)**

Widely recorded from southern coastal and inland counties from coastal dunes, shingle ridges, grassland and landslips. Females commonly build their nests in empty snail shells of a number of species. Pollen appears to be exclusively collected from Common Bird's-foot-trefoil (*Lotus corniculatus*).

Singletons recorded in Compartment 4 on 23rd May and Compartment 2 on 25th June.

A Solitary Bee *Nomada flavopicta* **(Nationally Scarce B)**
Widely recorded from southern England in a variety of flower-rich habitats on light soils, adults visit a range of flowers for nectar. A cleptoparasite of solitary bees of the genus *Melitta*, most British records refer to *Melitta leporina* which was recorded in Top Field during the survey, the rarer *M. tricincta* was record in Compartments 2, 4 and 9 and it is likely this species may also be a host.
A single male recorded in Compartment 2 on 28th August.

A Solitary Bee *Ceratina cyanea* **(Red Data Book 3)**
Recorded from a few sites in southern England mainly from south-facing calcareous grassland sites. Nesting and hibernation sites are established in broken, dead pithy stems of Bramble (*Rubus fruticosus* agg.) and Rose (*Rosa* sp,), preferably those lying on or just above the turf and either attached or detached from the living plant. Pollen is collected from a range of flower species.
A single female recorded in Compartment 2 on 28th August.

Hymenoptera, Cuckoo Bumblebees
A Cuckoo Bumblebee *Bombus rupestris* **(Nationally Scarce B)**
Widely recorded in England and Wales in a wide range of flower-rich habitats. This species is a social parasite in the nest of the common bumblebee species *Bombus lapidarius*. Both the host and the cuckoo require areas with a wide variety of flower species in continuity from March to September. Numbers of the parasite fluctuate according to the abundance of the host. This species is currently enjoying a period of population expansion. The host bumblebee was frequently recorded during the survey.
A single queen was recorded in Compartment 4 on 28th August, suggesting successful breeding in the area.

1.5.1 Additional Species Notes

In addition to the Red Data Book and Nationally Scarce species noted above, two BAP Priority species and six noteworthy/recent colonist species were also recorded, details of these species are given below.

Lepidoptera, Butterflies
Small Blue *Cupido minimus* **(BAP Priority species)**
A widespread but seemingly declining species of calcareous grasslands with a mosaic of short turf, bare ground and scattered scrub. The larvae feed solely on Kidney Vetch (*Anthyllis vulneraria*).
Recorded in numbers in Compartment 2, 4 and 9 on 23rd May, Compartment 4 on 25th June, Top Field, Compartment 4 and Compartment 9 on 23rd July.

Hymenoptera, Bumblebees
A Bumblebee *Bombus humilis* **(BAP Priority species)**
One of a number of bumblebee species that has declined during the past thirty years due to loss of extensive areas of foraging habitat. This species is typically associated large scale habitats of dry grassland or heathland.
Workers were recorded in Compartment 2 on 25th June, a worker and a male in Top Field on 23rd July, a single male in Compartment 2 on 23rd July and two there on 28th August and three males in Compartment 9 on 25th September suggesting successful nesting in the area.

Orthoptera, Grasshoppers

Stripe-winged Grasshopper *Stenobothrus lineatus* **(Noteworthy)**

Recorded widely from southern and eastern counties from areas of short turf mainly on chalk grassland but occasionally on dry heaths. This species is characteristic of long-established stable species rich grasslands.

Recorded from Compartments 2, 4 and 9 throughout the survey period.

Heteroptera, True Bugs

A Ground bug *Corizus hyoscyami* **(Noteworthy)**

This brightly coloured red and black species is typically recorded on southern coasts rarely straying more than a few hundred yards from the sea (Southwood & Leston 1959). Since 2006 there have been a number of inland records of this species where it has become established.

Singletons recorded from Compartment 2 on 25th September and Compartment 4 on 23rd July, it is difficult to know if this species has always been here or has recently moved in from the coast.

Diptera, Tephritidae, Picture-winged Flies

A Picture-winged Fly *Tephritis divisa* **(Recent colonist)**

This species was first recognised in Britain during 2005 on the south coast (Hodge 2006). It has recently been found from a number of southern counties from East Sussex through to West Dorset (M. Parker *pers comm.*) and can easily be swept in numbers from its host plant Bristly Oxtongue. A singleton was swept from the host plant in Top Field on 28th August.

Hymenoptera, Solitary Bees

A Solitary Bee *Colletes hederae* **(Recent colonist)**

This distinctive species was first recorded in Britain from Dorset in 2001, since when it has been spreading rapidly throughout southern England. Nests are excavated in bare soil and provisioned solely with the pollen from Ivy (*Hedera helix*) making this a late flying species.

Early emerging males were recorded in Compartment 2 on August 28th and a large aggregation of newly emerged males and females were recorded here on 25th September. Numerous specimens were present in Compartment 4 on 25th September and early emerging males in Compartment 9 on 28th August with large numbers of both sexes here on 25th September.

Hymenoptera, Bumblebees

A Bumblebee *Bombus hypnorum* **(Recent colonist)**

A distinctive ginger bumblebee with a white tail. This species was first recorded from Britain in Hampshire during 2001 and has since become established across England, Wales and Scotland.

A single worker was seen in Compartment 4 on 23rd May.

A Bumblebee *Bombus soroeensis* **(Noteworthy)**

This easy to overlook species is similar in appearance to the more common and widespread *Bombus lucorum* and *B. terrestris*, it is often associated with large scale habitats in southern England and Wales where it has declined dramatically in the past fifty years. Often associated with Scabious later in the summer. The nearest known populations are on Salisbury Plain, Wiltshire and Martin Down NNR, Hampshire (*pers obs*), with another population in Kent.

A single queen was observed nectaring at Gorse flowers in Compartment 2 on the rather late dates of 25th June.

1.5.2 Explanation of Rarity Ratings

Red Data Book1 Endangered; currently known from five or fewer 10km squares in Britain and in danger of extinction.

Red Data Book2 Vulnerable; currently known from between six and ten 10km squares in Britain. Populations declining and considered likely to become endangered.

Red Data Book3 Rare; currently known from between 11 and 15 10km squares in Britain. Small, thinly scattered local populations, but not at present considered to be vulnerable or endangered.

Nationally Scarce A; Very restricted national distribution, recorded from 16 - 30 10km squares in Britain since 1980.

Nationally Scarce B; Restricted national distribution, recorded from 31 - 100 10km squares in Britain since 1980.

Nationally Scarce; Restricted national distribution, recorded from 16 - 100 10km squares in Britain since 1980.

1.6 Discussion

Comparing data from the 2014 survey of the same management compartments across the same survey period and using the same survey techniques it is reassuring that the majority of species previously recorded are still present on the SSSI and in Top Field. Across almost all survey groups there have been additions in the number of species recorded, and, as can be expected, a number of previously recorded species not present during this survey. Given that on the SSSI compartments little has changed regarding habitat management and sward/scrub composition this is reassuring. The biggest change was in Top Field where the sward has become more species rich and denser, giving a more uniform structure, but with a greater floral diversity. Given continuing management of this compartment I can only see further improvements with regard structure and species diversity. In my experience of a similar arable reversion by year ten the sward should resemble the typical perception of a 'wildflower meadow' with areas of dense, tall vegetation and areas of short sparse vegetation. The current condition of Top Field is testament to the excellent management currently being undertaken, and has already seen species from the SSSI moving in and colonising after such a relatively short time.

It must be borne in mind that there will always be a dominance in these surveys of more common, widespread and generalist species present which often range over great distances, have more than one generation per year and, due to their often generalist habitat requirements, are able to colonise sites relatively rapidly. Species of established grassland and scrub habitats continued to feature strongly in the survey data and it is reassuring that a number of previously recorded Nationally Scarce and Red Data Book species are still present on the SSSI and have colonised Top Field (Jones 2006, Pinchen 2014, C. Palmer *pers comm*).

One major consideration must be the weather during the survey period and any extremes of weather prior to the survey being undertaken. In this instance, the winter of 2017/18 was one of the wettest on record, followed by a period of prolonged cold, with snow into late March. April was rather cool with the spring being rather 'late' with few warm or sunny days. May began in a similar vein but became warmer than average as the month progressed. June, July and August saw drought conditions and consistently higher than average temperatures and no rainfall, making the summer one of the driest on record. This was particularly evidenced by the parched nature of the flora through the latter part of the survey, resulting in a noticeable drop in insect numbers and species recorded. The latter phenomena being experienced at other southern survey sites during the same period where typically common and widespread species were simply absent from survey samples. The knock-on effects of poor weather in recent years undoubtedly would have had an effect on the range of species recorded. However, a number of positives can be gained from the survey, not least the numbers and range of species which are present and in particular populations or the presence of a number of Red Data Book, Nationally Scarce and BAP Priority species. Many of the Red Data Book and Nationally Scarce species recorded during survey of these same management compartments in 2014 were still present, and indeed a number of new species were also recorded. A number of species recorded during 2014, particularly amongst the heteroptera, were missing from this survey but this is no indication that they have been lost from the site, in contrast a large number of heteroptera not previously recorded were present during this survey.

The majority of species recorded in this survey can be classified as being common, widespread and generalist in their habitat requirements. Many are highly mobile, enabling them to colonise habitats quickly. The majority of these species will remain in stabilised habitats and it is likely that only a very few of these might be lost through natural dispersal unless the current management regimes are radically altered or entirely neglected. However, any such losses should be countered by the retention of the more specialist species and perhaps the colonisation of other more specialist species from sites nearby.

The results of this survey with, in general, good numbers of species of the twenty-eight survey groups surveyed for could have been anticipated due to the relatively established nature of the habitats present and the positive management regime in operation. Table 1 presents the total number of species recorded during the 2014 and 2018 surveys from each survey group and the total number of species currently recognised as resident in Britain in each group.

In many of the groups the number of species recorded were those that could have been expected, however, it is puzzling that no Scorpion flies were again recorded during the survey, despite all three species being relatively common and widespread in most habitats. Similarly, no Groundhopper species and it is perhaps surprising that the single species of Jewel Wasp recorded is a Red Data Book species often more frequently recorded on sandy or heathy habitats. Few solitary wasps and only two species of social wasp were recorded. This may be a result of recent weather events, or simply a result, in the case of the solitary wasps, of species that were lost during the years when the site was largely un-managed, and have not been able to recolonise due to a lack of similar habitats nearby.

Table 1

Numbers of species recorded from each survey group in 2014, 2018 and the two surveys combined, compared against the number of currently recognised British species.

Survey Group	No. of sp 2014	No of sp 2018	Combined 2014 & 2018	No. of British sp
Mecoptera; Scorpion Flies	0	0	0	3
Neuroptera; Lacewings	2	1	2	46
Odonata; Damselflies	1	3	3	16
Dragonflies	2	3	4	23
Orthoptera; Bush Crickets	5	5	5	11
Groundhoppers	0	0	0	3
Grasshoppers	4	4	4	11
Dermaptera; Earwigs	2	2	2	4
Trichoptera: Caddisflies	0	1	1	199
Heteroptera; True Bugs	45	34	53	488*
Lepidoptera; Butterflies	22	22	25	59
Diptera; Hoverflies	39	43	48	265
Larger Brachycera	12	15	17	159
Snail-killing Flies	4	4	4	67
Picture-winged Flies; Ulidiidae	3	0	3	16
Tephritidae	19	18	24	74
Conopid Flies	4	6	6	24
Tachinid Flies	6	7	9	247
Hymenoptera; Ants	4	4	5	53
Simple Wasps	1	1	2	8
Jewel Wasps	0	1	1	33
Spider-hunting Wasps	1	2	2	40
Potter Wasps	1	0	1	22
Social Wasps	1	2	2	9
Solitary Wasps	6	11	14	126
Solitary Bees	39	41	52	224
Social Bees	12	13	13	23
Coleoptera; Ladybirds	4	4	4	46
Longhorn Beetles	2	2	3	67
Soldier Beetles	3	2	4	25

*Heteroptera; True Bugs, this total is for terrestrial species only.

Lacewings were poorly represented in the survey as too were Ladybirds, something commented on during 2014. Both groups feed largely on aphids in their larval and adult stages - a group of insects that were once again noticeable by their absence during the sweep-net sampling.

Damselflies and Dragonflies recorded during the survey were obvious strays away from their breeding areas, many of which are probably the gardens of the housing estates on the southern border of the SSSI. Those species recorded generally range far from their natal pools while maturing as adults before returning to breed. Alternatively, they may have been dispersing to colonise new pools nearby. Their presence in the survey is indicative of there being insect prey available in the grassland for them.

The orthoptera and dermaptera were well represented and all species recorded during 2014 were again present. The less common Stripe-winged Grasshopper, which requires short turf is still present in numbers in Compartments 2, 4 and 9. The extended grazing into mid-summer in Compartment 9 was probably highly beneficial to this species above all others. By late August many of the species seemed to be over as a result of the drought conditions of the summer.

The relatively low number of heteroptera (true bugs) recorded remains something of a mystery and saw a drop in number of species recorded on the previous survey. However, despite this decline sixteen of the species recorded in this survey had not been found during 2014. The majority of species are host plant dependant, but the botanical diversity of the SSSI, and to some extent Top Field is good, and, as could be expected on calcareous grassland, should have yielded more species. Mirid bugs in particular were again rather poorly represented in the samples, with some common and widespread species being present in single-figure numbers during the surveys, where they would have been expected to be in three-figure numbers. This is especially true of grassland species such as *Leptopterna dolobrata*, *Stenodema calcarata* and *S. laevigata*, while the Tortoise *Eurygaster testudinaria* and Hairy Shieldbugs *Dolycoris baccarum*, were equally scarce in the samples. It seems likely after two survey years that these SSSI compartments and Top Field will always have a (perceived) impoverished heteroptera fauna and management should not be adjusted to attempt to make the habitat more attractive for this group.
Heteroptera in the sweep-net samples had declined to odd singletons by the time of the August visit and this is almost certainly a result of the drought conditions experienced inhibiting plant growth. In some instances species which should have been adult in preparation for hibernation by August (e.g. the Green Shieldbug *Palomena prasina*) were still present as early instar nymphs with perhaps three more moults before becoming adult, suggesting difficulties in finding enough sap food was preventing full development. This will have serious repercussions for next year and beyond if not enough adults were present in a population to overwinter.

Butterflies were recorded as additional to the survey due to the ease of identification with little effort involved, it is inevitable that some species may have been overlooked or missed. They are covered by site transects and require little comment here. Three species recorded in 2014 were not seen during this survey and similarly three species were seen in this survey which had not been recorded during 2014.

A single species of Caddisfly (*Limnephilus affinis)* was a surprise record in Top Field, where two specimens were taken in September. This is a species of still or flowing water bodies and is tolerant of mildly polluted and brackish conditions. It is likely that these specimens were ‘hill-topping’ a behavioural trait that involves species crossing high peaks *en route* from their natal areas to colonise new areas, it is assumed these two specimens were moving from habitat to the south of the hill.

The total number of hoverfly species recorded saw in increase of four over the 2014 survey, but that survey included five species which were not recorded during 2018, showing an increase overall of nine species. In keeping with many of the groups recorded many common and widespread species were present only in exceedingly low numbers and this is almost certainly a result of the recent run of exceptional weather conditions. In particular species like *Platycheirus albimanus*, *Melanostoma mellinum* and *M. scalare* were, as in 2014, again notable by their absence in any real abundance. The total absence of hoverflies in Compartment 9 during the May visit must be a result of the presence of

livestock and the lack of forage resources available, the temperature during the visit peaked at 22ºC with a little wind, so weather conditions cannot be to blame. However, low numbers of species and individuals of this group were also noted in the other compartments and may hint at a knock-on effect of the spring weather conditions too. Amongst the species were one Red Data Book (*Chrysotoxum elegans*) and three Nationally Scarce species (*Cheilosia soror*, *Volucella inanis* and *V. zonaria*). It is reassuring that *C. elegans* is still present on the SSSI, being recorded in Compartments 2, 4 and 9 throughout the survey in similar numbers to the 2014 survey. *Cheilosia soror* is typical of calcareous grassland where the larvae are thought to develop inside fungi, again the current management of the grassland should ensure these species remain. *Cheilosia soror* was recorded in Compartment 9, where it was also recorded during 2014. *Volucella inanis* and *V. zonaria* are large and impressive-looking wasp mimics which develop as larvae inside the nests of social wasps, singletons of each were seen only. Hosts were virtually absent during the survey as they have been across many sites in southern England during the past few years.

The hoverfly *Sericomyia silentis* can be considered to have been 'hill-topping'. Portsdown Hill provides an ideal location for this to be recorded. This species had also been recorded in a similar situation during 2014.

The Larger Brachycera (snipeflies, soldierflies, horseflies, robberflies and beeflies) were again poorly represented in the survey samples but did see an increase to 15 species recorded. Two species recorded in 2014 were not seen during this survey, bringing the total species recorded to 17. The normally abundant soldierfly *Chloromyia formosa*, was again present only as ones and twos in each compartment, something that has been experienced at a number of southern sites during the past five years or so, which suggests this species is currently struggling to maintain high populations. The obvious lack of this species in numbers can probably explain why other members of this large group, many of which are grassland specialists, which may have been expected, were also absent, while those that were present were so in only low numbers. Calcareous grassland robberflies such as *Leptarthrus brevirostris* were again present in similarly low numbers, as too were the more nationally widespread *Leptogaster cylindrica* and *Dioctria atricapilla* and *D. rufipes* as they were during 2014. It is possible that these low populations are more suggestive of the carrying capacity of the site being reached. The Red Data Book species *Machimus rusticus* is confined in Britain to calcareous grassland and was present in lower numbers in Compartments 2, 4 and 9 than previously noted. A single specimen was recorded in Top Field, suggesting colonisation from the SSSI is occurring. At the RSPB Winterbourne Downs reserve this species spread quickly from established calcareous grassland (where populations were exceedingly low) into arable reversion to the extent that after ten years of reversion it was present in double figures in most sweep-net samples (*pers obs*). One can only hope that a similar spread and expansion will be witnessed into Top Field. This species has a long history on the SSSI and it is reassuring that it is still present.

The same four species of Snail-killing fly recorded in 2014 were again present, all are common in a range of terrestrial habitats, with *Coremacera marginata* and *Dichetophora obliterata* being particularly associated with dry grassland.

Picture-winged flies (Tephritidae) were again well represented with 18 species recorded, three of which had not been recorded during 2014. Six species recorded previously were not found during this survey and this includes two Nationally Scarce species (*Urophora cuspidata* and *U. solstitialis*), both of which can be easily overlooked amongst the many similar-looking species. One new Nationally Scarce species, *Dioxyna bidentis,* was added to the species list, and *Merzomyia westermanni* was again abundant across all compartments. Across the two surveys of these compartments one third of all British picture-winged flies have now been recorded.
The Nationally Scarce *Urophora cuspidata* was absent during this survey but had been present in Compartments 2 and 4 during 2014. It is possible that the drought conditions leading to parching of the vegetation and a resulting lack of growth may have impacted this species, the host plant Greater

Knapweed is still abundant on the SSSI, it is also possible it was overlooked amongst the other similar-looking *Urophora* species.
Tephritis divisa, a species first recorded in Britain in 2005 has become widespread in southern England and could have been expected to still be present. This species develops in Bristly Oxtongue. Only a single specimen was recorded, in Top Field, where the host plant has declined in abundance since 2014 with the further establishment of the sward, it is likely that this species, typical of ruderal type habitats, could be lost from the area as the habitat changes, but it is a species which has the capability to spread into new, disturbed habitats rapidly.

The Conopid flies saw an increase to six species and included the widespread *Conops flavipes*, a species which could have been expected, and the Nationally Scarce *Leopoldius signatus*, a species which was recorded in Compartment 1 during 2015, this species has a late flight period so is often missed, but can be quite easy to find at the flowers of Ivy. The Nationally Scarce *Thecophora fulvipes* was again recorded amongst a representative sample of the more common *T. atra*. The healthy population of solitary hymenoptera, helped by the season-long presence of forage resources and areas of bare ground for nesting, will help these species to flourish across the hill.

The low number of Tachinid Flies recorded is, like the low number of heteroptera, something of a mystery. Two new species were recorded, both are common and widespread with larvae that develop inside lepidoptera caterpillars. The Red Data Book *Gymnosoma rotundatum* was recorded again, including a remarkable three in a single sweep net sample in Compartment 2, its host, the Green Shieldbug was again present in numbers, but given the comments above regarding the retarding of their development this year one can only wonder what effect this will have on the tachinid fly. There was again a notable absence of numbers of the common *Eriothrix rufomaculata*, a species usually so abundant as to often make up the majority of the insect mass in many sweep-net samples during mid summer, singles only were recorded when the species was present. Like the soldierfly *Chloromyia formosa*, this species seems to be undergoing a considerable population decline at present.

On the whole, aculeate hymenoptera numbers were interesting, with a single Jewel Wasp, two Spider-wasps eleven solitary wasps and two social wasps recorded. Solitary and social bees were recorded in good numbers and included a number of Nationally Scarce and one BAP species.

A single Jewel Wasp, *Hedychrum niemelai* was recorded in Compartment 9, this is a Red Data Book species often more associated with sandy or heathland habitats. It is a cuckoo in the nests of solitary wasps in the genus *Cerceris*, the host was recorded on the SSSI.

Ants are generally difficult to survey by sweep-netting and usually require time-consuming and more thorough searches to record their presence, however, the three of the species recorded are the most common and widespread. *Formica cunicularia* which was recorded during 2014 was not seen during this survey and may have been replaced by the larger *Formica fusca* which was commonly encountered. Another new species, *Temnothorax nylanderi* was recorded on the basis of two winged males in Compartment 2, it is known to inhabit grassland with scrub-type habitats and is perhaps not unexpected. Thorough, directed searches would probably increase the number of ant species recorded.

Simple Wasps were represented by a single species, *Tiphia femorata*, a species typically common on calcareous grassland, which surprisingly was absent from the 2014 survey. Numbers were present in Compartments 2, 4 and Top Field.

Spider-wasps and Potter wasps were poorly represented in the samples when one considers there are 40 and 22 species in each group respectively. A lack of established tall/long/rough grassland across the SSSI may be responsible for the lack of spider-wasps, with only two species being recorded, one (*Anoplius nigerrimus*) is common in most habitats. Spiders were again notable by their relative

absence in the sweep-net samples. Top Field contains a greater amount of tall vegetation (ideal for spiders), but given the relatively young age of the habitat, the (perceived) lack of spiders on the SSSI to colonise, and the lack of bare ground here for the wasps to nest in, it is perhaps less surprising that they are poorly represented in the samples. Potter wasps are often more associated with woodland edge and may be scarce here due to the relatively small amount of over-mature scrub/woodland, no species in this group were recorded during this survey, compared to one species in 2014.

Social Wasp numbers were poor with the two most abundant species recorded in what was another poor year for this family as a whole. Populations of this group have suffered badly during recent poor summers with the bulk of the poor weather occurring at the time when nests are becoming established.

Solitary Wasps were again poorly represented, but saw an increase over those recorded during 2014. Three species recorded in 2014 were not recorded during this survey, but and additional eight species were added to the species list. It has been noted before that a lack of standing dead wood as nesting habitat may be one reason for the low number of species present, as well as low populations of the host prey species. Additional species can still be expected with further survey effort.

Forty-one species of solitary bee were recorded, including seven Nationally Scarce and one Red Data Book species. Thirteen species were recorded during this survey which had not previously been recorded in these compartments, while 11 species were present in 2014 but not during 2018. The Red Data Book species *Ceratina cyanea* had been recorded in Compartment 7 in 2015 so its presence elsewhere on the SSSI (in Compartment 2 in this survey) was perhaps not unexpected. *Hylaeus signatus* was again present across the SSSI and is largely restricted to calcareous grasslands where it provisions its nests with pollen collected solely from Weld and Wild Mignonette, so retention of these species are critical to the survival of this species on site. *Hylaeus cornutus* is less restricted in requirements, but typically nests in dead plant stems, often umbellifers, so its presence in Top Field is perhaps not surprising, where members of this group are currently more abundant. *Melitta tricincta* provisions its nests with pollen collected solely from Red Bartsia and was again recorded in all three SSSI compartments. *Osmia aurulenta* nests in empty snail shells, which it often 'hides' with short lengths of grass stems, it provisions its nest with pollen collected solely from Common Bird's Foot Trefoil. Of the remaining Nationally Scarce species *Lasioglossum pauxillum* has become more widespread in recent years and appears to have no specific host plant species, while *Sphecodes crassus* has an unknown host, probably a *Lasioglossum* species, and no known nectar preferences. Both were recorded previously and continue to maintain a strong presence on the SSSI. *Nomada flavopicta* recorded in Compartment 2, is known to require *Melitta leporina* as its host, which was recorded during the survey (for the first time) in Top Field (where *N. flavopicta* was recorded during 2014).

The thirteen species of social bee recorded include ten which are the most common and widespread with few specialist habitat or forage requirements. All of the species were recorded foraging at flowers and no nests of any species were found. All of the species involved range over large distances to forage and the seven commonest true bumblebee species and the single cuckoo bumblebee species (*Bombus vestalis*) can be found in almost any habitat in Britain. The true bumblebee *B. jonellus* can easily be overlooked due to the similarity in appearance to *B. hortorum*, and is still present after being found during the 2014 survey. The cuckoo bumblebee *B. rupestris*, is a cuckoo in the nests of the common *B. lapidarius*, and, while assigned Nationally Scarce status, fluctuates in abundance in long time-cycles. It is currently enjoying a period of abundance after being relatively scarce until the mid 1990s. The host was relatively abundant during this survey. *Bombus soroeensis* is another species which could be overlooked due to the similarity in appearance to *B. lucorum* and *B. terrestris*. It has a limited range in southern England with centres of distribution being around Salisbury Plain and east Kent. A single queen in Compartment 2 in June was a late date for a queen, although it was carrying pollen, suggesting it was in the early stages of nesting. Males of this species are distinctive and easier

to identify than females so are worth being vigilant for. Whether this species is present in larger numbers in the region and being overlooked is difficult to establish at present.
It was reassuring to confirm the BAP species *B. humilis* as being still present in the area, with workers and males being seen in both Top Field and on the SSSI, suggesting nesting on or in the vicinity of the hill. Top Field probably provides more forage for this species at present, it being somewhat restricted as it is, to collecting pollen almost exclusively from Red Clover, the thatch layer in Top Field also provides more suitable nesting habitat for this species, nesting as it does amongst mosses and plant litter, often with the foundation being a small mammal nest.
Numbers of all bumblebee species were low throughout the survey and this was reflected at sites elsewhere (*pers obs*) the wet winter and cold spring probably having the major impact on queens hibernating and nest founding, as a result usually abundant early species like *B. pratorum* were virtually absent from the survey.

The number of ladybird species was surprisingly low with only four present and none in any particularly high numbers. It has been postulated above as to the reason for their relative scarceness on the SSSI and in Top Field.

The two species of Soldier Beetle recorded can be considered widespread and common species and did include one species not recorded during 2014: *Cantharis rufa*. Four species recorded in 2014 were not subsequently recorded but are probably still present. However, further species might have been expected given the established nature of the grassland and scrub of the SSSI. All members of this group are predatory feeding at ground level as larvae and on flowers and vegetation as adults. The typically super-abundant *Rhagonycha fulva* was present in only low numbers, this species is typically one of the most common insect species in high summer. This dearth of specimens was noticed elsewhere in southern England during the survey period and might be a knock-on effect of previous weather events.

Two species of longhorn beetle were recorded, the first the Common Grammoptera *Grammoptera ruficornis* is common and widespread in scrubby grassland and can often be beaten or swept in numbers from Hawthorn blossom. The second, the Black-striped Longhorn *Stenurella melanura* is often abundant in scrubby habitats but only a single specimen was recorded, in Top Field, the one compartment with the least amount of scrub. A lack of mature scrub and woodland with deadwood is a major factor behind the scarcity of this group in the survey.

It is testament to the management works being undertaken on the SSSI and in Top Field that the number and range of species recorded has increased since the survey in 2014. Part of this can be expected as single one-off surveys do act as a baseline with which to monitor changes. Weather plays an important role too and 2018 was no exception with a combination of wet winter, prolonged cold spring and summer drought having a huge impact on insect species and populations. Further survey in the future should see an increase in species recorded and will provide a means of monitoring changes in the established populations.

1.7 Acknowledgements

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1.8 References

The following references were used for information relating to the rarity values of species recorded. In addition to these the National Biodiversity Network Gateway was accessed at various times during the survey, this can be found at: http://www.nbn.org.uk/

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Appendices

Appendix 1 All species recorded during the six survey visits in 2018

Appendix 2 All species recorded during surveys in 2014, 2015 and 2018

Appendix 1 All species recorded during the six survey visits in 2018

The following list presents all species recorded for the whole site during the survey in 2018. The list is presented in checklist order. Species marked with an asterisk (*) are Red Data Book, Nationally Scarce or BAP Priority species, details of these can be found in the accompanying survey report.

Portsdown Hill SSSI & Top Field
Complete insect list 2018 survey

Neuroptera:
Lacewings 1 sp
Chrysoperla carnea

Odonata:
Damselflies 3 sp
Coenagrion puella
Enallagma cyathigerum
Pyrrhosoma nymphula

Odonata:
Dragonflies 3 sp
Anax imperator
Libellula depressa
Sympetrum striolatum

Orthoptera:
Bush Crickets 5 sp
Tettigonia viridissima
Pholidoptera griseoaptera
Metrioptera roeselii
Conocephalus discolor
Leptophyes punctatissima

Grasshoppers 4 sp
Stenobothrus lineatus
Omocestus viridulus
Chorthippus brunneus
Chorthippus parallelus

Dermaptera:
Earwigs 2 sp
Forficula auricularia
*Forficula lesnei**

Heteroptera:
True Bugs 34 sp
Deraeocoris ruber
Calocoris roseomaculatus
Calocoris norvegicus
Calocoris stysi
Adelphocoris lineolatus
Liocoris tripustulatus
Lygocoris lucorum
Lygus rugulipennis
Orthops campestris
Phytocoris varipes
Polymerus unifasciatus
Stenotus binotatus
Leptopterna dolobrata
Leptopterna ferrugata
Pithanus maerkelii
Stenodema calcarata
Heterocordylus tibialis
Heterotoma planicornis
Macrotylus solitarius
Plagiognathus arbustorum
Plagiognathus chrysanthemi
Nabis rugosus
Xylocoris galactinus
Syromastus rhombeus
Coriomeris denticulatus
Coreus marginatus
*Gonocerus acuteangulatus**
Corizus hyoscyami
Eurygaster testudinaria
Dolycoris baccarum
Palomena prasina
Piezodorus lituratus
Zicrona caerulea
Acanthosoma haemorrhoidale

Trichoptera: Caddisflies 1sp
Limnephilus affinis

Lepidoptera:
Butterflies 22 sp
Thymelicus sylvestris
Ochlodes venata
Colias crocea
Gonepteryx rhamni
Pieris brassicae
Pieris rapae
Pieris napi
Callophrys rubi
*Cupido minimus**
Polyommatus icarus
Lysandra coridon
Celastrina argiolus
Vanessa atalanta
Polygonia c-album
Aglais urticae
Inachis io
Pararge aegeria
Melanargia galathea
Pyronia tithonas
Maniola jurtina
Aphantopus hyperantus
Coenonympha pamphilus

Diptera:
Hoverflies 43 sp
Cheilosia albitarsis
Cheilosia illustrata
Cheilosia latifrons
*Cheilosia soror**
Cheilosia vernalis
Chrysotoxum bicinctum
*Chrysotoxum elegans**
Episyrphus balteatus
Eristalis arbustorum
Eristalis interrupta
Eristalis intricarius
Eristalis pertinax
Eristalis tenax
Eumerus funeralis
Eupeodes corollae
Eupeodes latifasciatus
Eupeodes luniger
Helophilus pendulus
Helophilus trivittatus
Melanostoma mellinum
Melanostoma scalare
Meliscaeva auricollis
Merodon equestris
Myathropa florea
Paragus haemorrhous
Pipiza noctiluca
Pipizella lugubris
Pipizella viduata
Platycheirus albimanus
Platycheiris manicatus
Platycheirus scutatus/

*splendidus/aurolateralis agg^*
Scaeva pyrastri
Sericomyia silentis
Sphaerophoria interrupta
Sphaerophoria scripta
Sphaerophoria taeniata
Syrphus ribesii
Syrphus vitripennis
Syritta pipiens
Volucella bombylans
*Volucella inanis**
Volucella pellucens
*Volucella zonaria**
(^ three species inseparable as females)

Diptera:
Larger Brachycera 15 sp
Chrysops caecutiens
Haematopota pluvialis
Tabanus bromius
Pachygaster atra
Chorisops tibialis
Chloromyia formosa
Microchrysa polita
Thereva nobilitata
Sargus bipunctatus
Machimus atricapillus
Machimus cingulatus
*Machimus rusticus**
Leptarthrus brevirostris
Dioctria atricapilla
Dioctria rufipes

Diptera:
Snail-killing Flies 4 sp
Pherbellia cinerella
Coremacera marginata
Dichetophora obliterata
Limnia unguicornis

Diptera: Picture-winged Flies
Tephritidae 18 sp
Urophora jaceana
Urophora quadrifasciata
Urophora stylata
*Dioxyna bidentis**
*Merzomyia westermanni**
Sphenella marginata
Tephritis bardanae
*Tephritis divisa**
Tephritis hyoscyami
Tephritis neesii
Tephritis serratulae
Trupanea stellata
Chaetostomella cylindirca
Cerajocera cylindrica
Cerajocera tussilaginis
Terellia colon
Chaetorellia jaceae
Xyphosia miliaria

Diptera:
Conopid Flies 6 sp
Physocephala rufipes
Conops flavipes
*Leopoldius signatus**
Thecophora atra
*Thecophora fulvipes**
Sicus ferrugineus

Diptera:
Tachinid Flies 7 sp
Eriothrix rufomaculata
Voria ruralis
Epicampocera succincta
*Gymnosoma rotundatum**
Phasia pusilla
Phasia obesa
Tachina fera

Hymenoptera: Aculeates
Jewel Wasps 1 sp
*Hedychrum niemelai**

Simple Wasps 1 sp
Tiphia femorata

Ants 4 sp
Formica fusca
Lasius niger
Temnothorax nylanderi
Myrmica ruginodis

Spider Wasps 2 sp
Anoplius nigerrimus
Arachnospila spissa

Solitary Wasps 11 sp
Astata boops
Ectemnius continuus
Ectemnius dives
Ectemnius cephalotes
Ectemnius lituratus
Pemphredon inornata
Pemphredon lethifera
Pemphredon lugubris
Mellinus arvensis
Cerceris rybyensis
Philanthus triangulum

Social Wasps 2 sp
Vespula germanica
Vespula vulgaris

Solitary Bees 41 sp
Colletes hederae
Hylaeus brevicornis
Hylaeus communis
Hylaeus confusus
*Hylaeus cornutus**
*Hylaeus signatus**
Andrena cineraria
Andrena fulva
Andrena scotica
Andrena nigroenea
Andrena haemorrhoa
Andrena flavipes
Andrena minutula
Andrena subopaca
Andrena dorsata
Andrena ovatula
Andrena wilkella
Halictus tumulorum
Lasioglossum leucozonium
Lasioglossum albipes
Lasioglossum calceatum
Lasioglossum fulvicorne
Lasioglossum leucopus
Lasioglossum parvulum
*Lasioglossum pauxillum**
Lasioglossum morio
*Sphecodes crassus**
Sphecodes ephippius
Sphecodes geofrellus
Melitta leporina
*Melitta tricincta**
Osmia rufa
*Osmia aurulenta**
Osmia spinulosa
Megachile centunctularis
Nomada fabriciana
Nomada flava
*Nomada flavopicta**
Nomada sheppardana
Nomada striata
*Ceratina cyanea**

Social Bees 13 sp

Bombus hortorum
*Bombus humilis**
Bombus hypnorum
Bombus jonellus
Bombus lapidarius
Bombus lucorum
Bombus pascuorum
Bombus pratorum
*Bombus rupestris**
*Bombus soroeensis**
Bombus terrestris
Bombus vestalis
Apis mellifera

Coleoptera:

Ladybirds 4 sp

Harmonia axyridis
Coccinella 7-punctata
Psyllobora 22-punctata
Subcoccinella 24-punctata

Soldier Beetles 2 sp

Cantharis rufa
Rhagonycha fulva

Longhorn Beetles 2 sp

Grammoptera ruficornis
Stenurella melanura

Malachite Beetles 1 sp

Malachius bipustulatus