

**THE INVERTEBRATES OF CLIFF TOP HABITATS ON THE ISLE OF WIGHT, 2010,
WITH PARTICULAR REFERENCE TO ACULEATE HYMENOPTERA.**

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REPORT COMMISSIONED BY HAMPSHIRE AND ISLE OF WIGHT WILDLIFE TRUST. INTRODUCTION.

As part of an ongoing project studying the soft cliffs and chines of the Isle of Wight, in 2009 twenty-three cliff top sites were selected, covering a wide range of habitat types and management regimes. For each site a botanical survey was undertaken along a fixed 2m wide transect running from the cliff edge directly inland. Transect length varied from 10m to 46m according to the nature of the individual site.

In 2010, fourteen of these transects, selected to reflect the variety of habitats and management practices, were chosen for entomological survey. The primary target group was aculeate Hymenoptera, a group recognised as having many soft cliff dependent species. During survey the author also recorded any Nationally Scarce or Threatened species, BAP species or soft cliff dependent species encountered in other insect groups. Whilst the invertebrate fauna of the chines, soft cliffs and associated ledges has been subject to considerable study, little was known about how invertebrates utilised the cliff top habitats above these features.

Of the transects selected, four were on the North coast of the Island, whilst 10 were situated on the South coast between Chale Bay and Compton. The site number assigned to each site is that used in the botanical survey.

PROJECT AIMS.

The main aims of the survey were as follows :

- 1). To record species of aculeate Hymenoptera present at a variety of cliff top habitats on the Isle of Wight.
- 2). To relate records to the flora present at each location and to evaluate the diversity of habitats and their management to the species found.
- 3). To ascertain whether distance from the cliffs affects diversity or abundance of the Hymenoptera found.

METHODS.

In order to cover the peak activity seasons for as many insect species as possible each site was visited on three occasions during 2010 – in mid May, mid June and mid July. At each site, an initial site description covering habitat types, management regimes in place was made on each visit. The grid reference provided relates to the starting point of the transect from the point nearest to the cliff edge. Notes were made of the plant species in flower at the time of each individual visit to each site, together with the location of these plants (on the cliff side of the coastal path or inland from the cliff path). The cliff path itself was inspected for signs of hymenopteran nest holes, as was any other bare ground present.

On each visit, each site was surveyed using two types of standardised methodology recommended by Natural England for the Common Standards Monitoring (CSM) procedures. The methods selected for use in the current survey were Spot – Sweeping and Sweep netting.

Spot sweep sample.

This involves undertaking a 30-minute timed sample during which period the surveyor stalks conspicuous insects at flower heads or basking on bare ground. The surveyor covers as wide a range of collecting points (different flower species and types of bare ground) as possible within the survey area. This sampling method is particularly useful for recording aculeate Hymenoptera, Diptera and diurnal Lepidoptera. The advantage of this method is that it is easy to relate specific insect captures or sightings to particular plant species or microhabitats such as bare ground.

Sweep net sample.

This involves undertaking a 10-minute timed search during which period the surveyor walks through the sample area sweeping the net from side to side in front of them, through vegetation or just above bare ground. The survey is split into five approximately equal parts covering a range of microhabitats within the sample station. The catch is inspected regularly, and specimens requiring microscopic examination are sucked into a pooter, or tubed individually in the case of predatory species. Sweep netting may be undertaken using a heavy sweep net (best for catching Coleoptera and Arachnids) or a lightweight sweep

net (most effective for Diptera and Hymenoptera). In the 2010 survey the latter type was used to maximise catches of Hymenoptera; the main target group of the survey. This method is useful in finding species sheltering in locations not investigated during spot – sweeping, but does not permit the assigning of individual insects present to a particular plant species.

STATUS CATEGORY DEFINITIONS AND CRITERIA.

A full list of all insect species recorded at each site is given in the individual site spreadsheets. A number of the species encountered are considered to be Nationally Scarce or Red Data Book species. These are marked as such within the spreadsheets and are discussed in more detail in **Appendix 1**. The status category definitions and criteria for individual species are those devised by the JNCC and are as follows :

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.

RDB I – Indeterminate.

Taxa considered to be Endangered, Vulnerable or Rare, but where there is not enough information to say which of these three categories (RDB 1 to 3) is appropriate.

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.

HOWE RATINGS.

In 2002, M. A. Howe produced “ A Review of the Coastal Soft Cliff Resource in Wales, with particular reference to its Importance for Invertebrates” . Within this report, he defined three categories of invertebrate species which are associated within coastal soft cliff in the U.K.

These are defined as follows:

Grade 1 species (H1 in current report).

Species restricted to coastal soft cliff in the U.K. and dependent, for at least some stage of their life cycle, on soft cliff habitats. These include species which have always been restricted to coastal soft cliff and others which were once more widespread but are now confined to this habitat.

Grade 2 species (H2 in current report).

Species strongly associated with coastal soft cliff in the U.K., for at least some stage of their life cycle, with the majority of populations or the strongest populations occurring at such localities. However, they can also be found in other habitat types where extensive areas of bare ground and pioneer vegetation or seepages and fen vegetation occur, such as sand dunes, dry sandy heathland, coastal grassland, sand or gravel pits, inland seepages and reedbeds.

Grade 3 species (H3 in current report).

Species which are associated with coastal soft cliff in the U.K., at least in some part of their geographic range, but also occur in a wide range of habitat types where the presence of bare ground, pioneer vegetation, seepages or fen vegetation is of fundamental importance for some of their life cycle.

Howe (2002) lists 27 Grade 1 species, 20 Grade 2 species and 56 Grade 3 species of coastal soft cliff invertebrate in his review. Such species recorded during the course of the current survey are clearly marked with the appropriate grade in the individual site spreadsheets and are discussed in more detail in **Appendix 1**.

BIODIVERSITY ACTION PLAN SPECIES.

Additionally, some of the species found are included in either the National or Isle of Wight Biodiversity Action Plan (BAP) species listings. Again, these are clearly marked in the spreadsheets and discussed in **Appendix 1**.

RESULTS.

SITE 1. BROOK CHINE EAST 1. (ABOVE ROUGHLAND CLIFF) SZ38998303.

Transect length 30m. Underlying geology – cliffs capped with old river gravel and brick earth.

General Site description.

Nearest to the cliff edge is a slumped plateau some 12 metres wide comprising very short sward grassland which has been recently heavily grazed by both cattle and rabbits. At the extreme cliff edge there are small scattered patches of bare ground. North of this plateau is a vertical cliff face some 4 metres high. This cliff face is comprised of a sand / gravel substrate. Inland from this is heavily cattle grazed short sward grassland for the remaining 18 metres of the transect. The coastal footpath is not clearly defined and contains almost no bare ground. The site is exposed and windy. There is some maritime grassland influence, with Common Bird's – foot Trefoil *Lotus corniculatus* and Hawkbits *Leontodon* sp. present.

Condition at visit of 21st May 2010.

Weather : Sunny and warm with a light breeze.

Very few flowers were present on the plateau section of the transect, just a handful of Daisy *Bellis perrenis* flowers. No hymenoptera nest holes were found in the small area of bare ground nearest the cliff edge.

Small numbers of *Andrena* / *Lasioglossum* nest holes were present in the vertical cliff face - perhaps 10 in total. Exact numbers were difficult to ascertain due to the height of the cliff. Certainly no evidence of any nesting aggregations.

The inland section of the transect was also almost devoid of flowers, with just a few Daisies and Buttercup *Ranunculus* sp. present.

Cattle were not present at the time of this visit, although the site had clearly been heavily grazed in the recent past.

Condition at visit of 18th June 2010.

Weather : mainly sunny with a light breeze.

No hymenoptera nest holes were present in the bare ground at the cliff edge. The plateau grassland remains very short sward, with few flowers present. Very small amounts of Common Bird's – foot Trefoil were present, together with a few Hawkbits.

No nest holes were found in the vertical cliff face immediately North of the plateau.

The inland section of the transect was similarly composed of very short sward grassland with few plants in flower. Small quantities of White Clover *Trifolium repens* were noted, with Common Bird's – foot Trefoil, small yellow composites and *Ranunculus* sp. also present in small amounts.

Cattle were not present at the time of this visit.

Condition at visit of 17th July 2010.

Weather : Sunny spells, warm but breezy.

No hymenoptera nest holes were present in the bare ground at the cliff edge, which appears to be kept bare by the grazing activities of rabbits. The plateau grassland is still very short, with only a few Hawkbits and a little Groundsel *Senecio vulgaris* in flower.

Two hymenoptera nest holes (? *Andrena* sp.) were noted in the vertical cliff face North of the plateau.

The inland section of the transect was still very short grassland, with few flowers present. Apart from low numbers of Hawkbits, small quantities of Field Bindweed *Convolvulus arvensis* were also noted.

Cattle were not present at the time of this visit.

Table 1. Insect species recorded at Site 1.

Order	Group	Species	Flower Association	Number	Day	Month	Year	Method	Status	Howe rating
Hymenoptera	A wasp	<i>Oxybelus uniglumis</i>	Bare ground - plateau	2	18	6	2010	Spot		
Hymenoptera	A wasp	<i>Oxybelus uniglumis</i>	cliff face	1	18	6	2010	Spot		
Hymenoptera	A mining bee	<i>Andrena fulvago</i>	in flight - plateau	1	18	6	2010	Spot	Na	3
Hymenoptera	A mining bee	<i>Lasioglossum morio</i>	cliff face	1	21	5	2010	Spot		
Hymenoptera	A mining bee	<i>Lasioglossum / Andrena</i>	cliff face	few nests	21	5	2010	Spot		
Hymenoptera	A mining bee	? <i>Andrena</i>	cliff face	2 nests	17	7	2010	Spot		
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	in flight - plateau	1	18	6	2010	Spot		
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	grass - plateau	1	17	7	2010	Spot		
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	convolvulus - inland	1	17	7	2010	Spot		
Hymenoptera	A Bumble bee	<i>Bombus lucorum / terrestris worker</i>	in flight - inland	1	18	6	2010	Spot		
Hymenoptera	A Bumble bee	<i>Bombus lucorum / terrestris worker</i>	grass - inland	3	17	7	2010	Spot		
Hymenoptera	A Bumble bee	<i>Bombus terrestris</i>	in flight - inland	1	17	7	2010	Spot		
Lepidoptera	Wall	<i>Lasiommata megera</i>	in flight - plateau	1	21	5	2010	Spot	UK BAP	
Lepidoptera	Glanville Fritillary	<i>Melitaea cinxia</i>	in flight - plateau	1	21	5	2010	Spot	RDB 3	1
Lepidoptera	Glanville Fritillary	<i>Melitaea cinxia</i>	in flight - plateau	1	18	6	2010	Spot	UK BAP	
Lepidoptera	Glanville Fritillary	<i>Melitaea cinxia</i>	in flight - plateau	1	18	6	2010	Spot	RDB 3	1
Lepidoptera	Glanville Fritillary	<i>Melitaea cinxia</i>	in flight - plateau	1	18	6	2010	Sweep	UK BAP	

SITE 2. BROOK CHINE EAST 2. (SUDMOOR). SZ39428275

Transect length 30m. Underlying geology – cliffs capped with old river gravel and brick earth.

General Site description.

From the cliff edge for a distance of around 1 metre is an area of heavily cattle trampled bare ground. The remaining 29 metres of the transect comprises short sward cattle grazed grassland. The path, which is poorly defined, is some 14 metres inland from the cliff edge, and contains very little bare ground. There is little difference in character between the grassland on the cliff side of the path and the inland section of the transect. The site is exposed to the wind. There is limited maritime grassland influence, although small amounts of Thrift are present near the cliff edge for a distance of about 2 metres. Hawkbits are also present. When the botanical survey was undertaken in 2009, this site was mown rather than grazed.

Condition at visit of 21st May 2010.

Weather : Hazy sun with a light breeze.

Cattle trampled bare ground was present for the first 2 metres nearest the cliff edge; this area also contained scattered small patches of Thrift *Armeria maritima*. No Hymenoptera nest holes were found in the bare ground. The next 12 metres to the footpath comprised heavily cattle grazed short sward grassland with few flowers. An isolated patch of Gorse *Ulex europaeus* scrub was present and flowering some 7 metres from the cliff edge. Other plants in flower in this section were confined to a few Daisies and some small patches of Buttercups. Situated some 14 metres from the cliff side the footpath is poorly defined and contained no significant bare ground element. Inland from the path the remaining 15 metres of the transect was heavily grazed short sward grassland with small quantities of *Ranunculus* and Daisy, but pollen or nectar sources were available.

Cattle were present at the time of visit.

Condition at visit of 18th June 2010.

Weather : mainly sunny with a moderate breeze.

The bare ground patches in the first 2 metres inland from the cliff edge were still heavily trampled, and contained no Hymenoptera nest holes. Small amounts of Thrift were again in flower in this area. Inland from here to the coastal path the grass remained very short and hard grazed, with few flowers except for small amounts of Buttercups and Daisies. The Gorse was no longer in flower. The path was poorly defined. Inland from the path flowers were similarly sparse, although a small area of White Clover was noted in addition to the few Daisy and Buttercup flowers present.

Cattle had recently been removed from the site at the time of the visit.

Condition at visit of 17th July 2010.

Weather : sunny spells, warm but breezy.

The small 2 metre strip of bare ground adjacent to the cliff edge contained no visible Hymenoptera nest holes. Thrift was still flowering in very small quantities within this area. Between the cliff edge and the coastal path some 14 metres inland flowers were few, comprising of limited quantities of Hawkbit and a single Groundsel plant. Inland from the path the remaining 15 metres of the transect contained a few small yellow composites, small amounts of White Clover and a few Creeping thistle *Cirsium arvense* flowers.

Although the cattle were no longer present, the sward across the whole transect remained very short. The exposed nature of the site was accentuated by a fairly brisk breeze on this visit.

Table 2. Insect species recorded at site 2.

Order	Group	Species	Flower Association	Number	Day	Month	Year	Method	Status	Howe rating
Hymenoptera	A mining bee	<i>Andrena flavipes</i>	Gorse cliff side	5	21	5	2010	Spot Sweep		
Hymenoptera	A mining bee	<i>Andrena flavipes</i>	bare ground cliff side	4	17	7	2010	Spot Sweep		
Hymenoptera	A mining bee	<i>Andrena thoracica</i>	bare ground cliff side	1	17	7	2010	Spot Sweep		
Hymenoptera	A mining bee	<i>Andrena wilkella</i>	bare ground cliff side	1	18	6	2010	Spot Sweep		
Hymenoptera	A cuckoo bee	<i>Nomada goodeniana</i>	Gorse cliff side	3	21	5	2010	Spot Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	in flight	1	18	6	2010	Spot Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	bare ground cliff side	2	17	7	2010	Spot Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	grass	1	17	7	2010	Spot Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	White Clover inland	1	17	7	2010	Spot Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>		1	17	7	2010	Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lucorum</i>	bare ground cliff side	1	17	7	2010	Spot Sweep		
Hymenoptera	A Bumble	<i>Bombus lucorum /terrestris worker</i>	in flight	3	18	6	2010	Spot Sweep		

	bee								
Hymenoptera	A Bumble bee	<i>Bombus lucorum /terrestris worker</i>	White Clover inland	1	18	6	20	Spot Sweep	
Lepidoptera	Adonis blue	<i>Lysandra bellargus</i>	in flight	1	21	5	20	Spot Sweep	

SITE 5. ATHERFIELD POINT. SZ45317914.

Transect length 32m. Underlying geology – Atherfield clay.

General Site description.

From the cliff edge to the footpath, a distance of 10 metres, the area comprised short to medium sward unmanaged grassland. The path, which was hard packed soil, contained a limited amount of bare ground and very few Hymenoptera nests. At its widest point within the transect, the path reached a width approaching 2 metres. Inland from the footpath, the remaining 20 metres of the transect comprised unmanaged rough grassland that became increasingly more rank in nature as you progressed inland. A fence delimited the inland boundary.

The area between the cliff edge and the footpath showed some maritime influence, with plants such as Common Bird's foot Trefoil, Hawkbits, Wild Carrot *Daucus carota* and Common Restharrow *Ononis repens* present. The former two species were also present to a lesser extent in the rank grassland inland of the footpath.

This was one of the more sheltered sites visited.

Condition at visit of 17th May 2010.

Weather : sunny, warm and with a light breeze.

The 10 metre strip between the cliff edge and the coastal path was unmanaged short sward grassland with some good patches of Black Medick *Medicago lupulina*, Ribwort Plantain *Plantago lanceolata*, Common Bird's - foot Trefoil and Daisies. Common Bird's – foot Trefoil was also present, as were a few Dandelions *Taraxacum* sp. One *Andrena flavipes* nest was noted in sparsely vegetated ground in a patch of Black Medick. The footpath is about 2 metres wide at the widest point, and contains areas of hard packed bare ground. A single *Andrena flavipes* nest was noted in this.

Inland from the footpath, the unmanaged grassland became progressively more rank as one moved inland along the transect. Flowers in this area were relatively sparse, although some Daisies and Dandelions were present.

Condition at visit of 21st June 2010.

Weather : sunny and hot with a very light breeze.

From the cliff edge to the footpath 10 metres inland the grassland remained unmanaged and short sward.

Hawkbits were reasonably plentiful here, there were several Wild Carrot inflorescences and Daisies were also flowering, as was Common Bird's – foot Trefoil. The footpath contained relatively little bare ground and no Hymenoptera nests were found. Inland from the path the grass was rank, with small Yellow composites and Wild Carrot present in some quantity. A few Buttercups were also in flower.

Condition at visit of 12th July 2010.

Weather : sunny but windy.

The 10 metre coastal strip between the cliff edge and the footpath had Wild Carrot, Restharrow, Common Bird's – foot Trefoil and a variety of Hawkbits in flower. The footpath contained a small amount of bare ground, but no Hymenoptera nest holes were found here.

The inland section of the transect, comprising rank grassland, contained flowering yellow composites and Wild Carrot. Small quantities of Red Clover *Trifolium pratense* were also noted.

Table 3. Insect species recorded at site 5.

Order	Group	Species	Flower Association	Number	Day	Month	Year	Method	Status	Howe rating
Hymenoptera	An ant	<i>Lasius niger</i>		1	17	5	20	Sweep		
Hymenoptera	An ant	<i>Lasius niger</i>	Wild Carrot cliff side	1	21	6	20	Spot Sweep		
Hymenoptera	A wasp	<i>Cerceris rybyensis</i>	Wild Carrot cliff	1	12	7	20	Spot		

tera			side				10	Sweep		
Hymenop	A wasp	<i>Cerceris rybyensis</i>	Wild Carrot	1	12	7	20	Spot		
tera			inland				10	Sweep		
Hymenop	A wasp	<i>Crabro cribrarius</i>	Wild Carrot	2	21	6	20	Spot		
tera			inland				10	Sweep		
Hymenop	A wasp	<i>Crabro cribrarius</i>	Wild Carrot cliff	2	21	6	20	Spot		
tera			side				10	Sweep		
Hymenop	A mining	<i>Andrena alfenella</i>	Wild Carrot cliff	1	12	7	20	Spot	RDB 3	
tera	bee		side				10	Sweep		
Hymenop	A mining	<i>Andrena dorsata</i>	Ribwort Plantain	1	17	5	20	Spot		3
tera	bee		cliff side				10	Sweep		
Hymenop	A mining	<i>Andrena dorsata</i>	Wild Carrot	1	12	7	20	Spot		3
tera	bee		inland				10	Sweep		
Hymenop	A mining	<i>Andrena flavipes</i>	Black Medick	1	17	5	20	Spot		
tera	bee		cliff side				10	Sweep		
Hymenop	A mining	<i>Andrena flavipes</i>	Black Medick	1	17	5	20	Spot		
tera	bee		cliff side	nest			10	Sweep		
Hymenop	A mining	<i>Andrena flavipes</i>	bare ground -	2	17	5	20	Spot		
tera	bee		path				10	Sweep		
Hymenop	A mining	<i>Andrena flavipes</i>	bare ground -	1	17	5	20	Spot		
tera	bee		path	nest			10	Sweep		
Hymenop	A mining	<i>Andrena flavipes</i>		1	17	5	20	Sweep		
tera	bee						10			
Hymenop	A mining	<i>Andrena flavipes</i>	Wild Carrot cliff	9	12	7	20	Spot		
tera	bee		side				10	Sweep		
Hymenop	A mining	<i>Andrena flavipes</i>	Wild Carrot	6	12	7	20	Spot		
tera	bee		inland				10	Sweep		
Hymenop	A mining	<i>Andrena flavipes</i>	Hawkbit inland	1	12	7	20	Spot		
tera	bee						10	Sweep		
Hymenop	A mining	<i>Andrena flavipes</i>		8	12	7	20	Sweep		
tera	bee						10			
Hymenop	A mining	<i>Andrena humilis</i>	Black Medick	1	17	5	20	Spot	Nb	3
tera	bee		cliff side				10	Sweep		
Hymenop	A mining	<i>Andrena humilis</i>		1	17	5	20	Sweep	Nb	3
tera	bee						10			
Hymenop	A mining	<i>Andrena labialis</i>	Wild Carrot cliff	1	12	7	20	Spot	pN	
tera	bee		side				10	Sweep		
Hymenop	A mining	<i>Andrena minutula</i>	Daisy cliff side	1	17	5	20	Spot		
tera	bee						10	Sweep		
Hymenop	A mining	<i>Andrena minutula</i>	Wild Carrot	4	12	78	20	Spot		
tera	bee		inland				10	Sweep		
Hymenop	A mining	<i>Andrena minutula</i>		3	12	7	20	Sweep		
tera	bee						10			
Hymenop	A mining	<i>Andrena thoracica</i>	Wild Carrot	1	12	7	20	Spot		
tera	bee		inland				10	Sweep		
Hymenop	A mining	<i>Lasioglossum morio</i>	Black Medick	1	17	5	20	Spot		
tera	bee		cliff side				10	Sweep		
Hymenop	A mining	<i>Lasioglossum</i>	Hawkbit inland	1	21	6	20	Spot		
tera	bee	<i>parvulum</i>					10	Sweep		
Hymenop	A mining	<i>Lasioglossum</i>	Wild Carrot	1	12	7	20	Spot	Na	
tera	bee	<i>pauillum</i>	inland				10	Sweep		
Hymenop	A mining	<i>Lasioglossum</i>		1	12	7	20	Sweep	Na	
tera	bee	<i>pauillum</i>					10			
Hymenop	A mining	<i>Lasioglossum</i>		1	12	7	20	Sweep		
tera	bee	<i>punctatissimum</i>					10			
Hymenop	A mining	<i>Lasioglossum</i>	Daisy cliff side	1	17	5	20	Spot	Nb	3
tera	bee	<i>puncticolle</i>					10	Sweep		
Hymenop	A mining	<i>Lasioglossum</i>	Wild Carrot	1	12	7	20	Spot		
tera	bee	<i>villosulum</i>	inland				10	Sweep		
Hymenop	A bee	<i>Anthophora</i>	Wild Carrot cliff	1	12	7	20	Spot		
tera		<i>bimaculata</i>	side				10	Sweep		
Hymenop	A bee	<i>Anthophora</i>	Hawkbit inland	1	12	7	20	Spot		
tera		<i>bimaculata</i>					10	Sweep		
Hymenop	A cuckoo	<i>Nomada fucata</i>	Black Medick	1	17	5	20	Spot	Na	3
tera	bee		cliff side				10	Sweep		
Hymenop	A cuckoo	<i>Nomada fucata</i>	bare ground -	1	17	5	20	Spot	Na	3
tera	bee		path				10	Sweep		
Hymenop	A Bumble	<i>Bombus lapidarius</i>	Black Medick	3	17	5	20	Spot		
tera	bee		cliff side				10	Sweep		
Hymenop	A Bumble	<i>Bombus lapidarius</i>	Daisy cliff side	1	17	5	20	Spot		
tera	bee						10	Sweep		
Hymenop	A Bumble	<i>Bombus lapidarius</i>	Ribwort Plantain	1	17	5	20	Spot		
tera	bee		cliff side				10	Sweep		
Hymenop	A Bumble	<i>Bombus lapidarius</i>	in flight	1	17	5	20	Spot		
tera	bee						10	Sweep		
Hymenop	A Bumble	<i>Bombus lapidarius</i>	in flight	1	21	6	20	Spot		
tera	bee						10	Sweep		
Lepidopt	Glanville	<i>Melitaea cinxia</i>	Black Medick	1	17	5	20	Spot	RDB 3 UK	1

era	Fritillary		cliff side				10	Sweep	BAP	
Lepidoptera	Glanville	<i>Melitaea cinxia</i>	Ribwort Plantain	1	17	5	20	Spot	RDB 3 UK	1
era	Fritillary		cliff side				10	Sweep	BAP	
Lepidoptera	Glanville	<i>Melitaea cinxia</i>	Ribwort Plantain	2	21	6	20	Spot	RDB 3 UK	1
era	Fritillary		cliff side				10	Sweep	BAP	
Lepidoptera	Glanville	<i>Melitaea cinxia</i>	Hawkbit inland	1	21	6	20	Spot	RDB 3 UK	1
era	Fritillary						10	Sweep	BAP	
Lepidoptera	Glanville	<i>Melitaea cinxia</i>	Ranunculus inland	1	21	6	20	Spot	RDB 3 UK	1
era	Fritillary						10	Sweep	BAP	
Lepidoptera	Glanville	<i>Melitaea cinxia</i>	in flight	2	21	6	20	Spot	RDB 3 UK	1
era	Fritillary						10	Sweep	BAP	
Diptera	A conopid fly	<i>Thecophora atra</i>		1	12	7	20	Sweep		
							10			

SITE 6. ATHERFIELD POINT. SZ45497909.

Transect length 22m. Underlying geology – Ferruginous sand.

General Site description.

The first metre inland from the cliff edge comprised sparsely vegetated grassland before meeting the footpath. The footpath itself is approximately 1.5 metres wide at the widest point, and comprises hard trodden predominantly bare ground. No Hymenoptera nest holes were noted in this path. Inland from the path the remaining 20 metres of the transect consisted of rank unmanaged grassland. The inland boundary to the transect was a thin strip of sparsely vegetated ground immediately prior to the start of a dense strip of Creeping Thistles separating the transect from a field of Oilseed Rape. This thistle strip was not included in the transect.

Sea Spurrey *Spergularia* sp. is present on the small strip of land adjacent to the cliff edge. Wild Carrot was present in small quantities on the inland section of the transect together with a few Hawkbits.

Condition at visit of 17th May 2010.

Weather : sunny and warm with a light breeze.

The sparsely vegetated ground adjacent to the cliff edge, and the hard trodden bare ground of the footpath were found to contain no Hymenoptera nests. Inland from the footpath, the remainder of the transect was rank grassland with few flowers present, although some Dandelions were in flower, and a few Sow thistles *Sonchus oleraceus* were present. At the most inland point of the transect was a small strip of bare ground, which was found to have a nest of *Andrena flavipes*.

Condition at visit of 21st May 2010.

Weather : sunny and hot with a very light breeze.

The 1 metre strip by the cliff edge was found to have Sea Spurrey and Field Bindweed in flower. Inspection of the footpath failed to yield any signs of Hymenoptera nest holes. Inland from the path, the grassland was rank and unmanaged. The main forage source present was Common Mallow *Malva sylvestris*, although small quantities of Hawkbit and two Wild Carrot plants were noted. The thistles just beyond the most inland point of the transect were in flower, and appeared to attract insects (particularly bumblebees) away from the transect area.

Condition at visit of 12th July.

Weather : sunny but with a strong breeze.

Sea Spurrey and Field Bindweed continued to flower in the small strip along the cliff top. No nest holes were found in the bare ground section of the path. Inland from the path, the vegetation was very rank, with Common Mallow, a few Wild Carrot and some Ragwort *Senecio jacobaea* in flower.

Table 4. Insect species recorded at site 6.

Order	Group	Species	Flower Association	Number	Day	Month	Year	Method	Status	Howe rating
Hemiptera	A squash bug	<i>Enoplops scapha</i>		1	21	6	2010	Sweep	Local	3
Hymenoptera	A wasp	<i>Crabro cribrarius</i>	Mallow inland	2	21	6	2010	Spot Sweep		
Hymenoptera	A wasp	<i>Crossocerus podagricus</i>	Mallow inland	3	21	6	2010	Spot Sweep		
Hymenoptera	A bee	<i>Hylaeus annularis</i>	Wild Carrot	1	12	7	2010	Spot		

ptera			inland				10	Sweep		
Hymeno	A bee	<i>Hylaeus communis</i>	Wild Carrot	1	12	7	20	Spot		
ptera			inland				10	Sweep		
Hymeno	A mining	<i>Andrena flavipes</i>	bare ground	8	17	5	20	Spot		
ptera	bee		inland				10	Sweep		
Hymeno	A mining	<i>Andrena flavipes</i>	bare ground	1	17	5	20	Spot		
ptera	bee		inland	nest			10	Sweep		
Hymeno	A mining	<i>Andrena flavipes</i>	in flight	6	17	5	20	Spot		
ptera	bee						10	Sweep		
Hymeno	A mining	<i>Andrena flavipes</i>	Dandelion	2	17	5	20	Spot		
ptera	bee		inland				10	Sweep		
Hymeno	A mining	<i>Andrena flavipes</i>	Mallow inland	1	21	6	20	Spot		
ptera	bee						10	Sweep		
Hymeno	A mining	<i>Andrena flavipes</i>	Wild Carrot	5	12	7	20	Spot		
ptera	bee		inland				10	Sweep		
Hymeno	A mining	<i>Andrena flavipes</i>	Ragwort	1	12	7	20	Spot		
ptera	bee		inland				10	Sweep		
Hymeno	A mining	<i>Andrena flavipes</i>	Sea Spurrey	1	12	7	20	Spot		
ptera	bee		cliff side				10	Sweep		
Hymeno	A mining	<i>Andrena flavipes</i>		1	12	7	20	Sweep		
ptera	bee						10			
Hymeno	A mining	<i>Andrena minutula</i>		2	17	5	20	Sweep		
ptera	bee						10			
Hymeno	A mining	<i>Andrena minutula</i>	Wild Carrot	3	12	7	20	Spot		
ptera	bee		inland				10	Sweep		
Hymeno	A mining	<i>Andrena minutula</i>		3	12	7	20	Sweep		
ptera	bee						10			
Hymeno	A mining	<i>Lasioglossum malachurum</i>		1	17	5	20	Sweep	Nb	3
ptera	bee						10			
Hymeno	A mining	<i>Lasioglossum morio</i>	Sea Spurrey	1	12	7	20	Spot		
ptera	bee		cliff side				10	Sweep		
Hymeno	A mining	<i>Lasioglossum pauperatum</i>		1	21	6	20	Sweep	RDB 3	
ptera	bee						10			
Hymeno	A bee	<i>Anthophora bimaculata</i>	Mallow inland	1	12	7	20	Spot		
ptera							10	Sweep		
Hymeno	A bee	<i>Anthophora bimaculata</i>	Ragwort	1	12	7	20	Spot		
ptera			inland				10	Sweep		
Hymeno	A bee	<i>Anthophora bimaculata</i>		3	12	7	20	Sweep		
ptera							10			
Hymeno	A cuckoo	<i>Nomada fucata</i>		1	12	7	20	Sweep	Na	3
ptera	bee						10			
Hymeno	Honey bee	<i>Apis mellifera</i>	Mallow inland	1	21	6	20	Spot		
ptera							10	Sweep		
Hymeno	A Bumble	<i>Bombus lapidarius</i>	in flight	1	17	5	20	Spot		
ptera	bee						10	Sweep		
Hymeno	A Bumble	<i>Bombus lapidarius</i>	Mallow inland	2	21	6	20	Spot		
ptera	bee						10	Sweep		
Hymeno	A Bumble	<i>Bombus lapidarius</i>	grass inland	1	21	6	20	Spot		
ptera	bee						10	Sweep		
Hymeno	A Bumble	<i>Bombus lapidarius</i>	Mallow inland	4	12	7	20	Spot		
ptera	bee						10	Sweep		
Hymeno	A Bumble	<i>Bombus lapidarius</i>		3	12	7	20	Sweep		
ptera	bee						10			
Hymeno	A Bumble	<i>Bombus lucorum</i>		1	12	7	20	Sweep		
ptera	bee						10			
Hymeno	A Bumble	<i>Bombus lucorum / terrestris worker</i>	Mallow inland	1	12	7	20	Spot		
ptera	bee						10	Sweep		
Hymeno	A Bumble	<i>Bombus lucorum / terrestris worker</i>		1	12	7	20	Sweep		
ptera	bee						10			
Hymeno	A Bumble	<i>Bombus pascuorum</i>	Mallow inland	2	21	6	20	Spot		
ptera	bee						10	Sweep		
Hymeno	A Bumble	<i>Bombus pratorum</i>	in flight	1	21	6	20	Spot		
ptera	bee						10	Sweep		
Hymeno	A Bumble	<i>Bombus terrestris</i>	Mallow inland	1	21	6	20	Spot		
ptera	bee						10	Sweep		
Lepidopt	Glanville	<i>Melitaea cinxia</i>	in flight	2	21	6	20	Spot	RDB 3	1
era	Fritillary						10	Sweep	UK BAP	

Site 7. BOULDNOR CLIFF. SZ 38169040.

Transect length 10m. Underlying geology – Plateau gravel.

General Site description.

The cliff side section of the site was composed of a 4 metre wide strip of scrub containing Gorse, Oak *Quercus robur*, Evergreen Oak *Quercus ilex*, Hazel *Corylus avellana*, Silver Birch *Betula pendula*, Scots Pine *Pinus sylvestris*, Bramble *Rubus fruticosus* agg., Heather *Calluna vulgaris* and Honeysuckle *Lonicera periclymenum*. Inland from this scrub was a sandy, well defined path about 1 metre wide. Inland from the

path the remaining 5 metres of the transect consisted of a layer of clippings left from recent conifer felling operations. This section had virtually no bare ground and very little ground flora, although some young Bramble plants were present.

The site was sheltered and had no maritime vegetation. Although classed as the “cliff top”, there was a considerable tract of gently sloping slumped scrub between the survey site and the shoreline.

Condition at visit of 19th May 2010.

Weather : sunny and hot with a light breeze.

The only flowers present within the scrub on the cliff side of the path were small quantities of Gorse. Much of the ground was covered by leaf litter and moss.

No Hymenoptera nest holes were present in the bare ground of the path. The inland section of the transect contained no plants in flower.

Condition at visit of 23rd June 2010.

Weather : sunny and warm with a light breeze.

The scrub area on the cliff side of the transect had small amounts of Heather, Bramble and Honeysuckle in flower. The 1 metre wide path was largely comprised of hard trampled bare sandy ground. Inspection revealed one *Andrena minutula* nest hole. The remaining inland 5 metres of the transect contained no visible pollen or nectar sources, as the young Bramble here did not flower.

Condition at visit of 19th July 2010.

Weather : sunny and hot with a light breeze.

Heather and Bramble continued to flower within the cliff – side scrub section.

The bare ground of the path was inspected for Hymenoptera nest holes, but none were recorded.

The inland section of the transect was devoid of flowers at the time of visit.

Table 5. Insect species recorded at site 7.

Order	Group	Species	Flower Association	Number	Day	Month	Year	Method	Status	Howe rating
Hymenoptera	An ant	<i>Lasius niger</i>	bare ground path	1	19	5	2010	Spot Sweep		
Hymenoptera	A mining bee	<i>Andrena flavipes</i>	Heather cliff side	2	19	7	2010	Spot Sweep		
Hymenoptera	A mining bee	<i>Andrena flavipes</i>	Bramble cliff side	1	19	7	2010	Spot Sweep		
Hymenoptera	A mining bee	<i>Andrena flavipes</i>		1	19	7	2010	Sweep		
Hymenoptera	A mining bee	<i>Andrena minutula</i>	bare ground path	1	23	6	2010	Spot Sweep		
Hymenoptera	Honey bee	<i>Apis mellifera</i>	Bramble cliff side	3	19	7	2010	Spot Sweep		
Hymenoptera	A bumble bee	<i>Bombus hortorum</i>	Heather cliff side	1	19	7	2010	Spot Sweep		
Hymenoptera	A bumble bee	<i>Bombus lapidarius</i>	in flight	2	19	5	2010	Spot Sweep		
Hymenoptera	A bumble bee	<i>Bombus lapidarius</i>	Heather cliff side	4	19	7	2010	Spot Sweep		
Hymenoptera	A bumble bee	<i>Bombus lapidarius</i>	Bramble cliff side	2	19	7	2010	Spot Sweep		
Hymenoptera	A bumble bee	<i>Bombus lucorum</i>	in flight	1	19	5	2010	Spot Sweep		
Hymenoptera	A bumble bee	<i>Bombus lucorum</i>	Heather cliff side	1	19	7	2010	Spot Sweep		
Hymenoptera	A bumble bee	<i>Bombus lucorum</i>	Bramble cliff side	1	19	7	2010	Spot Sweep		
Hymenoptera	A bumble bee	<i>Bombus lucorum / terrestris worker</i>	Heather cliff side	1	23	6	2010	Spot Sweep		
Hymenoptera	A bumble bee	<i>Bombus lucorum / terrestris worker</i>	Bramble cliff side	1	23	6	2010	Spot Sweep		
Hymenoptera	A	<i>Bombus pascuorum</i>	Heather cliff	1	23	6	2010	Spot		

tera	bumble bee		side				10	Sweep	
Hymenop tera	A bumble bee	<i>Bombus pascuorum</i>	Bramble cliff side	3	23	6	20 10	Spot Sweep	
Coleopter a	A jewel beetle	<i>Agrilus laticornis</i>	Oak cliff side	1	23	6	20 10	Spot Sweep	Nb

SITE 9. WHALE CHINE (ABOVE WHALE LEDGE EAST). SZ47067814.

Transect length 10 m. Underlying geology – Windblown sand.

General Site description.

From the cliff edge the first 9 metres consists of a sand dune system comprised of bare or very sparsely vegetated ground. This area supports a large rabbit population; burrows and signs of digging are abundant. Inland from this, the remaining 1 metre of the transect is short sward grassland, again with considerable signs of rabbit activity. There is no clearly defined footpath present. Inland from the transect boundary is a buffer zone of some 30 metres to the edge of a cereal field. However, parts of this field had not been seeded, consequently the cereal crop was about 100 metres inland from the transect boundary.

The site is fairly sheltered, and a maritime influence within the sparsely vegetated sand dune is shown by the presence of Sea Spurrey and Thrift, and some quantity of Sand Sedge *Carex arenaria*.

Condition at visit of 17th May 2010.

Weather : warm and sunny with a light breeze.

Any vegetation within the cliff side sand dune area was very heavily rabbit grazed. Much of the bare sand showed signs of rabbit excavation, including rabbit burrows. No Hymenoptera nest holes were found within this area of sparsely vegetated or bare ground. The 1 metre wide strip of short sward grassland forming the most inland section of the transect was similarly hard grazed by rabbits.

There were no plants in flower within the survey area at the time of this visit.

Condition at visit of 18th June 2010.

Weather : sunny periods with a light breeze.

The bare or sparsely vegetated ground forming the bulk of the survey site contained small amounts of Sea Spurrey in flower and 10 Hawkbit flowers. Three Hymenoptera nest holes were noted in the bare ground , but the species identity for these was not established. The small strip of short sward grassland had no plants in flower at the time of the visit.

Condition at visit of 17th July 2010.

Weather : sunny spells. Warm but rather breezy.

Compared to sites visited earlier in the day, this site was sheltered.

The 9 metre sand dune section was found to have small amounts of Sea Spurrey, Hawkbit and Thrift in flower. Sand Sedge was also present . A few Hymenoptera nest holes were located within the dune, but the identity of the species nesting was not confirmed, although *Oxybelus uniglumis* was a likely candidate.

The 1 metre strip of short sward grassland forming the most inland section of the transect had small amounts of Groundsel in flower, and two Spear Thistle *Cirsium vulgare* plants were also flowering.

Table 6. Insect species recorded at site 9.

Order	Group	Species	Flower Association	Num ber	D ay	Mo nth	Ye ar	Metho d	Status	Howe rating
Hymeno ptera	An ant	<i>Lasius flavus</i>	bare sand cliff side	1	18	6	20 10	Spot Sweep		
Hymeno ptera	An ant	<i>Lasius niger</i>	cliff side	1	18	6	20 10	Sweep		
Hymeno ptera	A spider wasp	<i>Arachnospila anceps</i>	bare sand cliff side	1	17	7	20 10	Spot Sweep		
Hymeno ptera	A wasp	<i>Ammophila sabulosa</i>	in flight	1	18	6	20 10	Spot Sweep		
Hymeno ptera	A wasp	<i>Oxybelus uniglumis</i>	bare sand cliff side	1	18	6	20 10	Spot Sweep		
Hymeno ptera	A wasp	<i>Oxybelus uniglumis</i>	bare sand cliff side	1	17	7	20 10	Spot Sweep		

Hymeno ptera	A wasp	<i>Oxybelus uniglumis</i>	Spear thistle cliff side	1	17	7	20	Spot		
Hymeno ptera	A wasp	<i>Tachysphex unicolor</i> s.s.	cliff side	1	18	6	20	Sweep	pRDB IOW BAP	
Hymeno ptera	A mining bee	<i>Andrena pilipes</i>	bare sand cliff side	1	17	7	20	Spot	Nb IOW BAP	2
Hymeno ptera	A mining bee	<i>Andrena / Lasiglossum</i>	bare sand cliff side	2	18	6	20	Spot		
Hymeno ptera	A mining bee	<i>Lasiglossum minutissimum</i>	Hawkbit cliff side	1	17	7	20	Spot		
Hymeno ptera	A mining bee	<i>Dasypoda hirtipes</i>	bare sand cliff side	3	17	7	20	Spot	Nb	
Hymeno ptera	A leaf cutter bee	<i>Megachile dorsalis</i>	Spear thistle cliff side	1	17	7	20	Spot	Nb	
Hymeno ptera	A Bumble bee	<i>Bombus lapidarius</i>	Sea Spurrey cliff side	1	18	6	20	Spot		
Hymeno ptera	A Bumble bee	<i>Bombus lapidarius</i>	Spear thistle cliff side	1	17	7	20	Spot		
Hymeno ptera	A Bumble bee	<i>Bombus lucorum / terrestris worker</i>	in flight	3	18	6	20	Spot		
Coleoptera	A Tiger beetle	<i>Cylindera germanica</i>	bare sand cliff side	1	17	7	20	Spot	RDB 3 UK BAP	1
Coleoptera	A soldier beetle	<i>Cantharis fusca</i>	bare sand cliff side	2	18	6	20	Spot	RDB 3	
Coleoptera	A soldier beetle	<i>Cantharis fusca</i>	in flight	1	18	6	20	Spot	RDB 3	
Diptera	A robber fly	<i>Machimus cingulatus</i>	in flight	1	17	7	20	Sweep		

SITE 11. CLIFF LANE SZ 42548146.

Transect length 28m. Underlying geology – cliffs capped with outliers of alluvium.

General Site description.

The cliff side vegetation consists of a 10 metre section of short to medium sward unmanaged grassland, after which there is a fence. The innermost three metres of this section constitutes a 3 metre wide, poorly defined path with no bare ground. A small bank separates the path from the rest of the cliff side section, and provides some protection from the wind. This section showed a maritime grassland influence, containing Common Restharrow, Common Bird's – foot Trefoil and Wild Carrot.

Inland from the fence is a 25 metre wide mown buffer of short sward grassland to a cereal field. On the final visit this buffer was being grazed by cattle. Wild Carrot was present in this section, but in very small quantities.

This site is exposed in nature.

Condition at visit of 21st May 2010.

Weather: Sunny and hot, but rather windy.

Several species of plants were in flower within the 10 metre cliff side unmanaged grassland section of the transect. These were Common Bird's – foot Trefoil, Daisy, Buttercup and small amounts of Vetch *Vicia* sp. Black Medick was in flower on the poorly defined coastal footpath. No bare ground was noted on the path.

The sward height within this 10 metre section varied between short and medium grassland.

Inside the fence, the remaining 18 metres of mown grassland contained considerably fewer flowers, with just a few daisies flowering.

Condition at visit of 15th June 2010.

Weather : mainly sunny and warm, but breezy.

Large quantities of Common bird's – foot Trefoil were flowering in the 10 metre cliff side section. White Clover and Black Medick were also flowering in some quantity. Small amounts of Daisy and Buttercup were also flowering. A few umbels were in flower.

In comparison, the inland mown section of the transect inside the fence had few plants in flower, although Daisy, Buttercup, White Clover and Wild Carrot were all flowering in small quantities. The sward height in this section remained short.

Condition at visit of 18th July 2010.

Weather : sunny spells, rather windy.

The cliff side 10 metre strip of unmanaged grassland was reasonably flower – rich, with Common Restharrow, Wild Carrot and a few Black Knapweeds *Centaurea nigra* present. Red Clover was present in some quantity on the path.

The inland sector of the transect, inside the fence was found to have cattle on, resulting in the already short sward being even more tightly grazed. Flowers in this section were a scarce commodity and limited to a couple of Wild Carrot inflorescences.

Table 7. Insect species recorded at site 11.

Order	Group	Species	Flower Association	Number	Day	Month	Year	Method	Status	Howe rating
Hymenoptera	An ant	<i>Myrmica scabrinodis</i>	cliff side	1	15	6	2010	Sweep		
Hymenoptera	A wasp	<i>Vespula vulgaris</i>	Restharrow cliff side	1	18	7	2010	Spot Sweep		
Hymenoptera	A bee	<i>Hylaeus communis</i>	Wild Carrot cliff side	1	15	6	2010	Spot Sweep		
Hymenoptera	A mining bee	<i>Andrena haemorrhoa</i>	Lotus cliff side	1	21	5	2010	Spot Sweep		
Hymenoptera	A mining bee	<i>Halictus tumulorum</i>	Lotus cliff side	2	21	5	2010	Spot Sweep		
Hymenoptera	A mining bee	<i>Halictus tumulorum</i>	Restharrow cliff side	1	18	7	2010	Spot Sweep		
Hymenoptera	A mining bee	<i>Lasioglossum smeathmanellun</i>	Lotus cliff side	1	21	5	2010	Spot Sweep		
Hymenoptera	A mining bee	<i>Lasioglossum angusticeps</i>	cliff side	1	15	6	2010	Sweep	RDB 3 UK BAP	1
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	Lotus cliff side	4	15	6	2010	Spot Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	Restharrow cliff side	12	18	7	2010	Spot Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	Knapweed cliff side	2	18	7	2010	Spot Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	Red Clover path	1	18	7	2010	Spot Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	cliff side	1	18	7	2010	Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lucorum</i>	Restharrow cliff side	2	18	7	2010	Spot Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lucorum</i>	Knapweed cliff side	1	18	7	2010	Spot Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lucorum</i>	Red Clover path	3	18	7	2010	Spot Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lucorum / terrestris worker</i>	White Clover cliff side	1	15	6	2010	Spot Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lucorum / terrestris worker</i>	in flight	2	15	6	2010	Spot Sweep		
Hymenoptera	A Bumble bee	<i>Bombus pascuorum</i>	White Clover cliff side	1	15	6	2010	Spot Sweep		
Hymenoptera	A Bumble bee	<i>Bombus pratorum</i>	Wild Carrot cliff side	1	15	6	2010	Spot Sweep		
Hymenoptera	A Bumble bee	<i>Bombus pratorum</i>	cliff side	1	15	6	2010	Sweep		
Lepidoptera	Glanville Fritillary	<i>Melitaea cinxia</i>	White Clover cliff side	1	15	6	2010	Spot Sweep	RDB 3 UK BAP	1
Lepidoptera	Glanville Fritillary	<i>Melitaea cinxia</i>	in flight	1	15	6	2010	Spot Sweep	RDB 3 UK BAP	1
Lepidoptera	Glanville Fritillary	<i>Melitaea cinxia</i>	Wild Carrot inland	1	15	6	2010	Spot Sweep	RDB 3 UK BAP	1
Diptera	A picture-wing fly	<i>Acanthiphilus helianthi</i>	cliff side	1	18	7	2010	Sweep	N	

SITE 12. CLIFF LANE (EASTERN).SZ42698134.

Transect length 35m. Underlying geology cliffs capped with outliers of alluvium.

General Site description.

Nearest the cliff is a 3 metre section of rather rank, unmanaged grassland, which proved to be fairly flower rich. Inland from this was a hard trodden coastal path approximately 1 metre wide, which contained little bare ground.

Inland from the path the remaining 30 metres of the transect was unmanaged rank grassland followed by a fence forming the inland transect boundary. Beyond this fence was a hay meadow. Again, this section of the transect proved to be reasonably flower rich.

All parts of the transect showed some maritime grassland influence, with Hawkbits, Thrift and Wild Carrot being present. Common Bird's-foot Trefoil was present on the inland section of the site. However, the maritime grassland component diminished the further inland one progressed.

It should be noted that some 12 metres East of the transect location there was an abundance of Thrift along the cliff, and this may have drawn insect species away from the transect area to this more abundant forage source.

Condition at visit of 21st May 2010.

Weather : sunny and hot with a light breeze.

The 3 metre cliff side strip of unmanaged fairly rank grassland contained Thrift and Vetches in flower.

No nest holes were found in the path, which had a few Daisies in flower growing in it. Inland from the path, the remaining 30 metres of the transect comprised rank grassland within which Thrift, Buttercup and small quantities of Common Bird's-foot Trefoil were present.

Condition at visit of 15th June 2010.

Weather : sunny and warm but rather breezy.

The 3 metre strip of cliff side rank grassland contained Thrift, White Clover and a few Hawkbits in flower. The hard trampled path contained little bare ground and no evidence of ground nesting Hymenoptera. Small amounts of Buttercup were flowering on the path.

The 30 metre inland grassland sector was rank in nature and contained Thrift and Buttercups in flower, with small amounts of vetches and Common Bird's-foot Trefoil also in flower. Some nests of the ant *Lasius flavus* were present here.

Condition at visit of 18th July 2010.

Weather : sunny spells but with a medium breeze.

The cliff side grassland contained Wild Carrot, White clover and Red Clover in flower, with smaller amounts of Hawkbits and Buttercup present. A few flowers of Thrift also remained, although this plant had virtually finished flowering. One Spear Thistle was also present.

No plants were in flower on the footpath.

The inland section of the transect also had Wild Carrot and Red Clover in flower. Small amounts of Thrift and *Lotus corniculatus* were also present, together with a few small yellow composites and some Creeping Thistle.

Table 8. Insect species recorded at site 12.

Order	Group	Species	Flower Association	Number	Day	Month	Year	Method	Status	Howe rating
Hymenoptera	An ant	<i>Lasius flavus</i>	inland	15 nests	15	6	20	Spot		
Hymenoptera	A wasp	<i>Crabro cribrarius</i>	Wild Carrot cliff side	1	18	7	20	Spot		
Hymenoptera	A mining bee	<i>Andrena flavipes</i>	Thrift cliff side	8	21	5	20	Spot		
Hymenoptera	A mining bee	<i>Andrena flavipes</i>	Wild Carrot cliff side	1	18	7	20	Spot		
Hymenoptera	A mining bee	<i>Andrena flavipes</i>	White Clover cliff side	1	18	7	20	Spot		
Hymenoptera	A mining bee	<i>Andrena flavipes</i>	Hawkbit inland	1	18	7	20	Spot		
Hymenoptera	A mining bee	<i>Andrena minutula</i>	Wild Carrot cliff side	4	18	7	20	Spot		
Hymenoptera	A mining bee	<i>Andrena minutula</i>	Wild Carrot inland	3	18	7	20	Spot		
Hymenoptera	A mining bee	<i>Andrena minutula</i>		2	18	7	20	Sweep		
Hymenoptera	A mining bee	<i>Lasioglossum pauperatum</i>	Wild Carrot cliff side	1	18	7	20	Spot	RDB 3	
Hymenoptera	A bee	<i>Anthophora bimaculata</i>	Wild Carrot cliff side	1	18	7	20	Spot		
Hymenoptera	A bee	<i>Anthophora bimaculata</i>	Spear thistle cliff side	1	18	7	20	Spot		
Hymenoptera	A cuckoo bee	<i>Epeolus variegatus</i>	cliff side	1	18	7	20	Sweep		
Hymenoptera	A cuckoo	<i>Nomada goodeniana</i>	Thrift inland	1	21	5	20	Spot		

ptera	bee						10	Sweep		
Hymeno	Honey	<i>Apis mellifera</i>		1	15	6	20	Sweep		
ptera	bee						10	Sweep		
Hymeno	A Bumble	<i>Bombus lapidarius</i>	White Clover	1	18	7	20	Spot		
ptera	bee		cliff side				10	Sweep		
Hymeno	A Bumble	<i>Bombus lapidarius</i>	Wild Carrot	1	18	7	20	Spot		
ptera	bee		inland				10	Sweep		
Hymeno	A Bumble	<i>Bombus lapidarius</i>	Creeping	2	18	7	20	Spot		
ptera	bee		thistle inland				10	Sweep		
Hymeno	A Bumble	<i>Bombus lucorum</i>	in flight	1	21	5	20	Spot		
ptera	bee						10	Sweep		
Hymeno	A Bumble	<i>Bombus lucorum</i>	Thrift inland	2	15	6	20	Spot		
ptera	bee	<i>/terrestris worker</i>					10	Sweep		
Hymeno	A Bumble	<i>Bombus lucorum</i>	White clover	1	15	6	20	Spot		
ptera	bee	<i>/terrestris worker</i>	path				10	Sweep		
Hymeno	A Bumble	<i>Bombus pratorum</i>	Thrift inland	1	15	6	20	Spot		
ptera	bee						10	Sweep		
Hymeno	A Bumble	<i>Bombus pratorum</i>	White clover	1	15	6	20	Spot		
ptera	bee		path				10	Sweep		
Hymeno	A cuckoo	<i>Bombus vestalis</i>	White clover	1	15	6	20	Spot		
ptera	bee		path				10	Sweep		
Lepidopt	Glanville	<i>Melitaea cinxia</i>	path	1	21	5	20	Spot	RDB 3 UK	1
era	Fritillary		larva				10	Sweep	BAP	
Lepidopt	Glanville	<i>Melitaea cinxia</i>	Thrift inland	7	15	6	20	Spot	RDB 3 UK	1
era	Fritillary						10	Sweep	BAP	
Lepidopt	Glanville	<i>Melitaea cinxia</i>	Ranunculus	1	15	6	20	Spot	RDB 3 UK	1
era	Fritillary		inland				10	Sweep	BAP	
Lepidopt	Glanville	<i>Melitaea cinxia</i>	in flight	1	15	6	20	Spot	RDB 3 UK	1
era	Fritillary						10	Sweep	BAP	
Lepidopt	Glanville	<i>Melitaea cinxia</i>	Ranunculus on	1	15	6	20	Spot	RDB 3 UK	1
era	Fritillary		path				10	Sweep	BAP	
Lepidopt	Glanville	<i>Melitaea cinxia</i>	bare ground	2	15	6	20	Spot	RDB 3 UK	1
era	Fritillary		path				10	Sweep	BAP	
Lepidopt	Glanville	<i>Melitaea cinxia</i>	Lotus inland	3	15	6	20	Spot	RDB 3 UK	1
era	Fritillary						10	Sweep	BAP	
Lepidopt	Glanville	<i>Melitaea cinxia</i>	White clover	1	15	6	20	Spot	RDB 3 UK	1
era	Fritillary		path				10	Sweep	BAP	
Lepidopt	Glanville	<i>Melitaea cinxia</i>	Thrift cliff side	4	15	6	20	Spot	RDB 3 UK	1
era	Fritillary						10	Sweep	BAP	
Coleopte	A leaf	<i>Cassida nebulosa</i>	cliff side	1	21	5	20	Sweep	RDB I	
ra	beetle						10	Sweep	indeterminat	

SITE 13. EAST OF BARNES HIGH.SZ43778071.

Transect length 35m. Underlying geology - cliffs capped with outliers of alluvium.

General Site description.

The initial 8 metres inland from the cliff edge comprises short to medium sward unmanaged grassland, after which there is a 2 metre wide footpath containing some hard trodden bare ground. No Hymenopteran nest holes were found in the path section.

Inland from the footpath is an electric fence beyond which the remaining 25 metres of the transect is sheep grazed pasture. Despite the fact that sheep were actively grazing this section on all three site visits, the sward height was short to medium rather than extremely short.

There was little evidence of a maritime grassland influence at this site, although Hawkbits and Wild Carrot were present.

Condition at visit of 21st May 2010.

Weather : sunny and hot with a very light breeze.

The 8 metre wide coastal strip of unmanaged grassland nearest the cliff edge was short sward with very few plants in flower except for a few Daisies.

The 2 metre wide footpath abutting this section contained some hard packed bare ground, but there was no evidence of nesting Hymenoptera.

The sheep grazed 25 metre inland section of the transect was comprised of a medium sward grassland , again with very few flowers present. A few specimens of Daisy and Buttercup were noted, and 2 *Vicia* flowers were present.

Condition at visit of 15th June 2010.

Weather : mainly sunny and warm but breezy.

The cliff side medium sward grassland section was again rather poor for forage sources. A few Daisies and *Ranunculus* were flowering, with some Hawkbits and the odd Sow Thistle.

Although the footpath was well trodden and contained a bare ground element, no Hymenoptera nest holes were noted.

The inland, sheep grazed section of the transect also contained few flowers except for small quantities of *Ranunculus* and White Clover.

Condition at visit of 18th July 2010.

Weather : sunny spells with a medium strength breeze.

The cliff side section of the transect had plentiful Wild Carrot in flower, with some Hawkbits and Sow Thistle also present.

The bare ground element of the coastal path was found to contain no Hymenoptera nest holes.

The 25 metre section of the transect within the sheep grazed area had few flowers consisting of some small patches of White Clover, some Hawkbits and a few very stunted *Daucus carota*. The sward height varied between short and medium sward.

Table 9. Insect species recorded at site 13.

Order	Group	Species	Flower Association	Number	Day	Month	Year	Method	Status	Howe rating
Hymenoptera	An ant	<i>Myrmica scabrinodis</i>	inland	1	21	5	2010	Sweep		
Hymenoptera	A spider wasp	<i>Anoplius nigerrimus</i>	bare ground path	1	18	7	2010	Spot		
Hymenoptera	A mining bee	<i>Halictus tumulorum</i>	Daisy cliff side	1	21	5	2010	Spot		
Hymenoptera	A mining bee	<i>Andrena flavipes</i>	Wild Carrot cliff side	6	18	7	2010	Spot		
Hymenoptera	A mining bee	<i>Andrena flavipes</i>	cliff side	1	18	7	2010	Sweep		
Hymenoptera	A mining bee	<i>Andrena minutula</i>	Wild Carrot cliff side	2	18	7	2010	Spot		
Hymenoptera	A mining bee	<i>Lasioglossum morio</i>	Wild Carrot cliff side	1	18	7	2010	Spot		
Hymenoptera	A mining bee	<i>Lasioglossum pauperatum</i>	cliff side	1	18	7	2010	Sweep	RDB 3	
Hymenoptera	A mining bee	<i>Lasioglossum puncticolle</i>	Ranunculus cliff side	1	15	6	2010	Spot	Nb	3
Hymenoptera	A mining bee	<i>Lasioglossum smeathmanellum</i>	cliff side	1	21	5	2010	Sweep		
Hymenoptera	A cuckoo bee	<i>Nomada fucata</i>	Daisy cliff side	1	21	5	2010	Spot	Na	3
Hymenoptera	A cuckoo bee	<i>Nomada goodeniana</i>	Daisy cliff side	1	21	5	2010	Spot		
Hymenoptera	A cuckoo bee	<i>Nomada goodeniana</i>	cliff side	1	21	5	2010	Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	in flight cliff side	1	15	6	2010	Spot		
Hymenoptera	A Bumble bee	<i>Bombus lucorum / terrestris worker</i>	in flight inland	1	15	6	2010	Spot		
Hymenoptera	A Bumble bee	<i>Bombus pratorum</i>	in flight cliff side	1	15	6	2010	Spot		
Lepidoptera	Wall	<i>Lasiommata megera</i>	in flight cliff side	1	21	5	2010	Spot	UK BAP	

SITE 14. WEST OF BARNES HIGH. SZ 43578087.

Transect length 20m. Underlying geology – cliffs capped with outliers of alluvium.

General Site description.

Nearest to the cliff edge, the transect comprised of a 10 metre strip of short sward unmanaged flower rich grassland, with some bare ground present due to rabbit grazing activity.

Inland from this section was a 2 metre wide path which , although not particularly well defined, contains some hard trodden bare ground.

The remaining inland 8 metres of the transect is short sward mown grassland.

The site has a considerable maritime grassland influence, particularly in the 10 metre wide unmanaged section nearest the cliff edge, with this influence decreasing in the inland mown section.

The site was found to be extremely exposed on all three visits. This was accentuated by the fact that when one descended just a few metres down the gently sloping cliff it was extremely sheltered in comparison.

It was noted that seaward of the cliff edge was a gently sloping and sheltered section of cliff face with an abundance of Thrift and Common Bird's – foot Trefoil on several terraces. Hymenopteran activity on this cliff face was very high compared to the levels of activity on the transect.

Condition at visit of 21st May 2010.

Weather : sunny and warm but windy due to exposed nature of the site.

The 10 metre wide unmanaged short sward grassland strip adjacent to the cliff edge had abundant Thrift in flower and some patches of *Lotus corniculatus*. A few Daisies were also present.

No flowers were recorded either on the footpath section or the inland mown short sward grassland section of the transect.

Condition at visit of 15th June 2010.

Weather : mainly sunny, but cool due to the wind, which is strong on this exposed site.

The 10 metre cliff side unmanaged grassland buffer had considerable amounts of Thrift and Common Bird's – foot Trefoil in flower. White Clover, *Ranunculus* and some Daisies were also flowering. Some rabbit grazed patches of bare ground were noted in this section, although no Hymenoptera nest holes were found.

The footpath had some areas of hard packed bare ground, but again no Hymenoptera nest holes were found.

The 8 metre inland section of short sward mown grassland contained a few small patches of White Clover and some Buttercups in flower.

Condition at visit of 18th July 2010.

Weather : sunny spells but with a strong breeze.

The cliff side maritime grassland was found to be flower rich, with Wild Carrot, Thrift, *Lotus corniculatus* and small Hawkbit all present in some quantity. Small amounts of Red Clover were present.

Inland from this, the footpath contained a few small yellow composites in flower.

The inland, mown section of the transect was also reasonably flower rich. Red Clover, White Clover, Wild Carrot, Hawkbits and small amounts of Common Bird's – foot Trefoil were recorded in this section.

Table 10. Insect species recorded at site 14.

Order	Group	Species	Flower Association	Number	Day	Month	Year	Method	Status	Howe rating
Hymenoptera	A wasp	<i>Odynerus melanocephalus</i>	Thrift cliff side	1	15	6	2010	Spot	Na UK	2
Hymenoptera	A mining bee	<i>Lasioglossum malachurum</i>	Thrift cliff side	1	21	5	2010	Sweep	BAP Nb	3
Hymenoptera	A mining bee	<i>Lasioglossum malachurum</i>	Hawkbit inland	1	18	7	2010	Spot	Nb	3
Hymenoptera	A mining bee	<i>Lasioglossum minutissimum</i>	cliff side	1	15	6	2010	Sweep		
Hymenoptera	A mining bee	<i>Lasioglossum pauperatum</i>	Thrift cliff side	1	21	5	2010	Sweep	RDB 3	
Hymenoptera	A mining bee	<i>Lasioglossum puncticolle</i>	Ranunculus cliff side	1	15	6	2010	Spot	Nb	3
Hymenoptera	A cuckoo bee	<i>Lasioglossum puncticolle</i>	Hawkbit cliff side	1	18	7	2010	Spot	Nb	3
Hymenoptera	A cuckoo bee	<i>Nomada flavoguttata</i>	Thrift cliff side	4	21	5	2010	Spot		
Hymenoptera	A cuckoo bee	<i>Nomada goodeniana</i>	Thrift cliff side	1	21	5	2010	Spot		
Hymenoptera	A cuckoo bee	<i>Nomada lathburiana</i>	Thrift cliff side	1	21	5	2010	Spot	RDB 3	

	bee								
Hymenoptera	Honey bee	<i>Apis mellifera</i>	Thrift cliff side	3	15	6	20	10	Spot Sweep
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	Thrift cliff side	3	15	6	20	10	Spot Sweep
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	White clover inland	1	18	7	20	10	Spot Sweep
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	Lotus inland	1	18	7	20	10	Spot Sweep
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	Hawkbit inland	4	18	7	20	10	Spot Sweep
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	Red clover inland	2	18	7	20	10	Spot Sweep
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	inland	2	18	7	20	10	Sweep
Hymenoptera	A Bumble bee	<i>Bombus lucorum</i>	White clover inland	1	18	7	20	10	Spot Sweep
Hymenoptera	A Bumble bee	<i>Bombus lucorum / terrestris worker</i>	Thrift cliff side	1	21	5	20	10	Spot Sweep
Hymenoptera	A Bumble bee	<i>Bombus lucorum / terrestris worker</i>	Thrift cliff side	9	15	6	20	10	Spot Sweep

SITE 15. GURNARD CLIFFS (1).SZ 46348134.

Transect length 40m. Underlying geology – Bembridge marls on cliff face.

General Site description.

This transect differed from all the others in the survey in that it was located actually on the slumped cliff face rather than the cliff top. A 40 metre long linear transect was selected some 18 metres down the cliff face and running parallel to the cliff top. Five areas were surveyed within the transect length, mirroring the botanical transect methodology.

Area 1 contained much friable, gently sloping cracked bare ground, with small amounts of rank grass present. Area 2 was fairly flat and dominated by the early pioneer species Giant Horsetail *Equisetum telmateia* and Coltsfoot *Tussilago farfara*. Area 3 contained bare ground, with some Giant Horsetail and Coltsfoot present. There were signs of Rabbit activity here. Area 4 comprised of gently sloping friable bare ground with tussocky grass. Area 5 was similar in nature to Area 4.

Maritime influence, characterised by early pioneering plants such as Giant Horsetail, Coltsfoot and Yellow – wort *Blackstonia perfoliata* was a major feature of this site.

N.b. The fact that this transect was actually part way down the cliff face, rather than on the cliff top, must mean that the relevance of insect species recorded at this site to the insect activity on the cliff top is questionable.

Condition at visit of 19th May 2010.

Weather : Hazy sunshine with a light westerly breeze making the site feel exposed.

Area 1 had a few Vetches *Vicia* sp. in flower. Within Area 2, Giant Horsetail was dominant, with some Coltsfoot, which had finished flowering. Area 3 had flowering Vetches and a single Coltsfoot flower. Giant Horsetail was also present. Area 4 contained a few flowers of vetches, Field Forget – me – not *Myosotis arvensis* and Ground Ivy *Glechoma hederacea*. Area 5 was dominated by gently sloping friable bare ground, with tiny amounts of Ground Ivy.

No Hymenoptera nest holes were recorded from the bare ground elements of the transect.

Condition at visit of 24th June 2010.

Weather : sunny and warm with a light breeze.

Area 1 was found to contain a few flowers of Black Medick, Common Centaury *Centaureum erythraea*, Yellow – wort and White Clover. No nest holes were found in the bare ground. Area 2 contained small amounts of Yellow – wort in flower amongst the tall stand of Giant Horsetail. There was no significant bare

ground element in this part of the transect. Area 3 contained a few Yellow – wort flowers. No nest holes were noted in the bare ground. Area 4 had only a few *Ranunculus* in flower. *Lasioglossum puncticolle* was nesting here, as two individuals were noted entering cracks in the bare ground. Area 5 had a few flowers of *Ranunculus* and also Scarlet Pimpernel *Anagallis arvensis*. No nest holes were noted in the bare ground here.

Condition at visit of 19th July 2010.

Weather : sunny and warm with a light breeze.

Area 1 contained Common Centaury and White Clover in flower. No Hymenoptera nest holes were visible. Area 2 was dominated by dense *Equisetum*, although small amounts of Common Fleabane *Pulicaria disenterica* were also present. Area 3 had only a tiny amount of Common Centaury in flower. A single “chimney” denoting the distinctive nest entrance of the Black – headed Mason Wasp *Odynerus melanocephalus* was noted here in flat bare ground. Area 4 contained a few Teasels *Dipsacus fullonum* in flower, and small quantities of Buttercup flowers. Flowers within Area 5 were limited to a few *Ranunculus*. No Hymenoptera nest holes were found here.

Table 11. Insect species recorded at site 15.

Order	Group	Species	Flower Association	Number	Day	Month	Year	Method	Status	Howe rating
Hymenoptera	An ant	<i>Lasius niger</i>	bare ground cliff	1	19	5	20	Spot Sweep		
Hymenoptera	An ant	<i>Lasius niger</i>	bare ground cliff	1	24	6	20	Sweep		
Hymenoptera	An ant	<i>Lasius niger</i>	cliff	1	24	6	20	Sweep		
Hymenoptera	A wasp	<i>Odynerus melanocephalus</i>	bare ground cliff	1 nest	19	7	20	Spot Sweep	Na UK BAP	2
Hymenoptera	A Mining bee	<i>Andrena chrysoceles</i>	Equisetum cliff	2	19	5	20	Sweep		
Hymenoptera	A Mining bee	<i>Andrena labialis</i>	in flight cliff	1	24	6	20	Spot Sweep	pN	
Hymenoptera	A Mining bee	<i>Andrena scotica</i>	in flight cliff	1	19	5	20	Spot Sweep		
Hymenoptera	A Mining bee	<i>Lasioglossum puncticolle</i>	bare ground cliff	2	24	6	20	Spot Sweep	Nb	3
Hymenoptera	A Mining bee	<i>Lasioglossum puncticolle</i>	bare ground cliff	few nests	24	6	20	Spot Sweep	Nb	3
Hymenoptera	A Mason bee	<i>Osmia aurulenta</i>	in flight cliff	1	19	5	20	Spot Sweep		
Hymenoptera	A Cuckoo bee	<i>Nomada fucata</i>	White clover cliff	1	19	7	20	Spot Sweep	Na	3
Hymenoptera	A Cuckoo bee	<i>Nomada flavoguttata</i>	bare ground cliff	1	19	7	20	Spot Sweep		
Hymenoptera	A Bumble Bee	<i>Bombus lapidarius</i>	White clover cliff	1	19	7	20	Spot Sweep		
Hymenoptera	A Bumble Bee	<i>Bombus lucorum</i>	Medick cliff	1	24	6	20	Spot Sweep		
Hymenoptera	A Bumble Bee	<i>Bombus pascuorum</i>	in flight cliff	1	19	5	20	Spot Sweep		
Orthoptera	Long-winged conehead	<i>Conocephalus discolor</i>	cliff	1	19	7	20	Sweep	Na	
Diptera	A picture-winged fly	<i>Tephritis divisa</i>	cliff	1	19	7	20	Sweep	Recent colonist	

SITE 16. GURNARD CLIFFS (2). SZ 46459439.

Transect length 10m. Underlying geology – Hamstead Beds.

General Site description.

A narrow strip 1 metre wide at the extreme cliff edge consisted of rank grassland which separated the cliff edge from the coastal path, which was roughly 2 metres wide and of trampled grass with no bare ground. Inland from the footpath was a fence beyond which the remaining 7 metres of the transect consisted of rank unmanaged, semi improved neutral grassland.

The maritime grassland influence at this site was small, with just small quantities of Common Bird’s – foot Trefoil present at the extreme cliff edge.

Condition at visit of 19th May 2010.

Weather : Hazy sun, feeling exposed in the light westerly breeze blowing directly onto the site. Contrastingly, more sheltered areas nearby were very warm and teeming with insects.

No plants were in flower along the 1 metre wide cliff side section, and the footpath was found to contain only 1 Buttercup in flower. Inland, within the rank grassland inside the fence there were also few plants in flower, although some Tufted Vetch *Vicia cracca* was present. No bare ground element was present in the transect area.

Condition at visit of 24th June 2010.

Weather : sunny and very warm with a light breeze.

The cliff side vegetation included flowering *Lotus corniculatus* and small amounts of Dyer's Greenweed *Genista tinctoria*. Few flowers were present on the footpath, just small amounts of Daisy and Field Bindweed.

Inside the fence, the inland section of the transect contained Dyer's Greenweed, Field Bindweed and 2 Hogweed *Heracleum sphondylium* plants in flower. There were a few Buttercup flowers and some quantity of Meadow Vetchling *Lathyrus pratensis*.

Condition at visit of 19th July 2010.

Weather : sunny and hot with a light breeze.

The site is very dry, and starting to appear parched. The small cliff side strip contains small quantities of Common Bird's – foot Trefoil in flower. There are also single plants of Wild Carrot and Wild Parsnip *Pastinaca sativa* in flower. No flowers or bare ground are present in the 2 metre wide footpath.

Inland, inside the fence, the unmanaged rank grassland contained a few Wild Carrot plants in flower, with Field Bindweed and Meadow Vetchling also flowering. A few Creeping Thistle were present and one or two Bramble flowers were present at the furthest inland point of the transect.

Table 12. Insect species recorded at site 16.

Order	Group	Species	Flower Association	Number	Day	Month	Year	Method	Status	Howe rating
Hymenoptera	A cuckoo wasp	<i>Chrysis sp</i>		1	19	5	2010	Sweep		
Hymenoptera	A bee	<i>Hylaeus brevicornis</i>	Wild Carrot cliff side	1	19	7	2010	Spot		
Hymenoptera	A Mining bee	<i>Halictus tumulorum</i>	inland	1	24	6	2010	Sweep		
Hymenoptera	A Mining bee	<i>Lasioglossum smeathmanellum</i>	Wild Carrot cliff side	1	19	7	2010	Spot		
Hymenoptera	A leaf-cutter bee	<i>Megachile versicolor</i>	Meadow	1	19	7	2010	Spot		
Hymenoptera	A leaf-cutter bee	<i>Megachile willughbiella</i>	Vetchling inland	1	24	6	2010	Sweep		
Hymenoptera	A Mining bee	<i>Eucera longicornis</i>	Meadow	2	24	6	2010	Spot	Na UK	2
Hymenoptera	A Mining bee	<i>Eucera longicornis</i>	Vetchling inland	1	24	6	2010	Sweep	BAP	
Hymenoptera	A Mining bee	<i>Eucera longicornis</i>	in flight inland	1	24	6	2010	Sweep	Na UK	2
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	Lotus corniculatus cliff side	3	24	6	2010	Spot		
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	Rubus cliff side	3	19	7	2010	Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lucorum</i>	Rubus cliff side	2	19	7	2010	Spot		
Hymenoptera	A Bumble bee	<i>Bombus lucorum / terrestris worker</i>	Dyers Greenweed cliff side	4	24	6	2010	Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lucorum / terrestris worker</i>	Dyers Greenweed inland	2	24	6	2010	Spot		
Hymenoptera	A Bumble bee	<i>Bombus lucorum / terrestris worker</i>	inland	1	24	6	2010	Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lucorum / terrestris worker</i>	Convolvulus inland	1	19	7	2010	Spot		
Hymenoptera	A Bumble bee	<i>Bombus pascuorum</i>	Meadow	2	24	6	2010	Spot		
Hymenoptera	A Bumble bee	<i>Bombus pascuorum</i>	Vetchling inland	2	24	6	2010	Sweep		
Orthoptera	Long-winged conehead	<i>Conocephalus discolor</i>	inland	1	19	7	2010	Sweep	Na	

SITE 18. COMPTON CUTTING. SZ 37128500.

Transect length 46m. Underlying geology – Ferruginous sandstone.

General Site description.

The cliff side of the transect consists of a 20 metre section of short sward maritime grassland, which is rabbit grazed. The poorly defined cliff path lies within this section, 12 metres from the cliff edge. Some patches of sandy bare ground are present within the grassland, particularly between the cliff edge and the footpath. Twenty metres from the cliff edge is an electric fence, inland from which is a sheep grazed field which has an extremely short sward due to the very heavy grazing. This inland section of the transect is 26 metres in length.

The maritime grassland influence here is high, with Thrift, Hawkbits and Common Bird's – foot Trefoil being fairly abundant. Sea Spurrey is also present in places.

At the time of the botanical survey in 2009 this transect was unfenced and not subject to grazing.

Condition at visit of 23rd May 2010.

Weather : Sunny and very warm with a very light breeze.

The 20 metre cliff side maritime grassland strip contains plentiful Thrift in flower, with small amounts of Sea Spurrey and Ground Ivy also flowering. There are a few scattered patches of bare ground, particularly between the cliff edge and the footpath, but no Hymenoptera nest holes were noted. The footpath itself is some 12 metres from the cliff edge, and very poorly defined.

The inland section of the transect, within the sheep grazed field, is almost "Bowling Green" smooth, with no flowers evident. The sheep are present at the time of this visit.

Condition at visit of 23rd June 2010.

Weather : sunny and very warm with a light breeze.

The 20 metre cliff side short sward maritime grassland contained plentiful pollen and nectar sources, provided by an abundance of Thrift and Common Bird's – foot Trefoil, with Hawkbits, Black Medick and White Clover also present. The area is rabbit grazed, and small amounts of bare ground are present, particularly near the cliff edge.

The inland section of the transect, inside the sheep grazed field, no longer has sheep present. However, the grassland here remains very short sward. Small amounts of Thrift, *Lotus corniculatus* and Hawkbits are present, indicating that the maritime grassland influence at the site covers the whole of the transect.

Condition at visit of 19th July 2010.

Weather : sunny, very warm and with a light breeze.

The survey site is parched. The cliff side section of the transect, running inland from the cliff edge to the fence 20 metres inland has an abundance of Hawkbits in flower, with small patches of Groundsel present and a few stunted Wild Carrot. Small amounts of Common Bird's – foot Trefoil are still in flower, but the Thrift has finished flowering. No Hymenoptera nest holes are found within the small patches of bare ground. Inside the fence, the inland section of the transect is ungrazed, though the sward remains short. Hawkbits are flowering, and some small areas of Common Bird's- foot Trefoil are also in flower.

Table 13. Insect species recorded at site 18.

Order	Group	Species	Flower Association	Number	Day	Month	Year	Method	Status	Howe rating
Hymenoptera	An ant	<i>Formica cunicularia</i>	bare ground cliff side	1	19	7	2010	Spot Sweep		
Hymenoptera	An ant	<i>Formica fusca</i>	bare ground cliff side	1	23	5	2010	Spot Sweep		
Hymenoptera	An ant	<i>Formica fusca</i>	cliff side	1	23	5	2010	Sweep		
Hymenoptera	A wasp	<i>Oxybelus uniglumis</i>	bare ground cliff side	1	23	6	2010	Spot Sweep		
Hymenoptera	A wasp	<i>Oxybelus uniglumis</i>	bare ground cliff side	1	19	7	2010	Spot Sweep		
Hymenoptera	A Mining bee	<i>Colletes fodiens</i>	Thrift cliff side	15+	23	6	2010	Spot Sweep		
Hymenoptera	A Mining bee	<i>Colletes fodiens</i>	cliff side	1	23	6	2010	Sweep		
Hymenoptera	A Mining bee	<i>Andrena flavipes</i>	Thrift cliff side	1	23	5	2010	Spot Sweep		

Hymenoptera	A Mining bee	<i>Andrena pilipes</i>	Thrift cliff side	1	23	5	201	Spot	Nb	2
							0	Sweep		
Hymenoptera	A Mining bee	<i>Lasioglossum calceatum</i>	Hawkbit cliff side	2	19	7	201	Spot		
							0	Sweep		
Hymenoptera	A Mining bee	<i>Lasioglossum calceatum</i>	Hawkbit inland	1	19	7	201	Spot		
							0	Sweep		
Hymenoptera	A Mining bee	<i>Dasygaster hirtipes</i>	Hawkbit cliff side	1	19	7	201	Spot	Nb	
							0	Sweep		
Hymenoptera	A Mining bee	<i>Dasygaster hirtipes</i>	in flight cliff side	1	19	7	201	Spot	Nb	
							0	Sweep		
Hymenoptera	A leaf cutter bee	<i>Megachile dorsalis</i>	Lotus cliff side	2	23	6	201	Spot	Nb	
							0	Sweep		
Hymenoptera	A leaf cutter bee	<i>Megachile dorsalis</i>	cliff side	1	23	6	201	Sweep	Nb	
							0			
Hymenoptera	A leaf cutter bee	<i>Megachile dorsalis</i>	cliff side	1	19	7	201	Sweep	Nb	
							0			
Hymenoptera	A bee	<i>Anthophora bimaculata</i>	Thrift cliff side	1	23	6	201	Spot		
							0	Sweep		
Hymenoptera	A Cuckoo bee	<i>Nomada goodeniana</i>	cliff side	1	23	5	201	Sweep		
							0			
Hymenoptera	Honey bee	<i>Apis mellifera</i>	Thrift cliff side	2	23	6	201	Spot		
							0	Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	Thrift cliff side	1	23	5	201	Spot		
							0	Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	Thrift cliff side	5	23	6	201	Spot		
							0	Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	Lotus cliff side	7	23	6	201	Spot		
							0	Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	White clover cliff side	1	23	6	201	Spot		
							0	Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	Hawkbit cliff side	3	23	6	201	Spot		
							0	Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	Lotus inland	1	23	6	201	Spot		
							0	Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	cliff side	2	23	6	201	Sweep		
							0			
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	Lotus inland	1	19	7	201	Spot		
							0	Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	Hawkbit inland	1	19	7	201	Spot		
							0	Sweep		

SITE 23. ELMSWORTH FARM. SZ43079251.

Transect length 10m. Underlying geology –Bembridge Marls.

General Site description.

The cliff top is fenced. From the fence, the transect consists of a 10 metre section of very lightly cattle - grazed medium sward to rank unimproved grassland. The transect is a very small part of a large tract of similarly managed land. The grass is tussocky in part, and there is no clearly defined footpath. No areas of bare ground are present. Although cattle have access to the survey area, none were noted within 150 metres of the transect during any of the three visits. Cow dung indicated that they had however visited the survey site on occasion.

Maritime grassland influence at this site was low, although small amounts of *Lotus corniculatus* were present.

Condition at visit of 25th May 2010.

Weather : warm and sunny with a light breeze.

The site is lightly cattle grazed, and the resulting sward is of medium height and somewhat tussocky. There were few plant species in flower at the time of this visit, although small amounts of Common Bird's – foot Trefoil, Buttercup and Lesser Stitchwort *Stellaria graminea* were in flower. There is no clearly defined footpath, nor is there any bare ground.

Condition at visit of 22nd June 2010.

Weather : warm and sunny with a light breeze.

The grassland appears more rank than on the previous visit. Dyer's Greenweed is abundant; there are also small quantities of Common Bird's – foot Trefoil and *Ranunculus* in flower. A very small number of umbels

are present. There is no bare ground element. The cattle are a considerable distance away from the survey site.

Condition at visit of 23rd July 2010.

Weather : long sunny spells with a light breeze.

The rank grassland contained flowering Common Bird's – foot Trefoil and Buttercup. Very small amounts of Red Clover and White Clover were also present, as was Saw – wort *Serratula tinctoria* . There was no clearly defined footpath or bare ground element. No cattle are seen in the vicinity.

Table 14. Insect species recorded at site 23.

Order	Group	Species	Flower Association	Number	Day	Month	Year	Method	Status	Howe rating
Hymenoptera	A Mining bee	<i>Lasioglossum punctatissimum</i>	Lotus cliff side	1	25	5	2010	Spot		
Hymenoptera	A Mining bee	<i>Lasioglossum punctatissimum</i>	cliff side	1	25	5	2010	Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	in flight cliff side	1	25	5	2010	Spot		
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	Lotus cliff side	1	22	6	2010	Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	White clover cliff side	1	23	7	2010	Spot		
Hymenoptera	A Bumble bee	<i>Bombus lapidarius</i>	in flight cliff side	5	23	7	2010	Sweep		
Hymenoptera	A Bumble bee	<i>Bombus lucorum /terrestris worker</i>	Lotus cliff side	1	22	6	2010	Spot		
Hymenoptera	A Bumble bee	<i>Bombus lucorum /terrestris worker</i>	Dyers Greenweed cliff side	1	22	6	2010	Sweep		
Lepidoptera	Grizzled Skipper	<i>Pyrgus malvae</i>	in flight cliff side	1	25	5	2010	Spot	UK BAP	
Lepidoptera	Small Heath	<i>Coenonympha pamphilus</i>	in flight cliff side	1	25	5	2010	Sweep	UK BAP	
Diptera	A Hunchback fly	<i>Paracrocera orbiculus</i>	in flight cliff side	7	23	7	2010	Spot	BAP Local	

ANALYSIS OF RESULTS.

Overall, the survey produced records of 64 species of aculeate Hymenoptera, of which 4 species are classified as Rare (RDB 3), one as provisionally RDB. Three Nationally Scarce (Na) species and a further 8 species are Nationally Scarce (Nb) were recorded. One species is classified as provisionally Nationally Scarce. Three species are included in the UK BAP species listings. Using the Howe system for indicator species of coastal soft cliff 1 species of aculeate is a grade one indicator (H1), 3 species are grade 2 indicators (H2) and 6 species are grade 3 indicators (H3).

Within other insect orders, three Rare (RDB 3) species were recorded, with a further species classified as Indeterminate (RDB I). Three of the species found are Nationally Scarce (one in each of the categories Na, Nb and N). Five species are included in the UK BAP species listings. Using the Howe system for indicator species of coastal soft cliff 2 species are grade 1 indicators (H1) and 1 species is a grade 3 indicator (H3).

Species classified as Scarce, Threatened, BAP or coastal soft cliff indicators are shown in Table 15, which also shows the sites from which they were recorded.

Table 15. Scarce, Threatened BAP and coastal soft cliff indicators recorded during the survey.

Name	Status	Howe rating	Sites
<i>Enoplops scapha</i>	Local	3	6
<i>Conocephalus discolor</i>	Na		15,16
<i>Coenonympha pamphilus</i>	UK BAP		23
<i>Lasiommata megera</i>	UK BAP		1,13
<i>Pyrgus malvae</i>	UK BAP		23
<i>Melitaea cinxia</i>	RDB 3 UK BAP	1	1,5,6,11,12
<i>Odynerus melanocephalus</i>	Na UK BAP	2	14,15

<i>Tachysphex unicolor</i>	pRDB K		9
<i>Andrena alfenella</i>	RDB 3		5
<i>Andrena dorsata</i>		3	5
<i>Andrena fulvago</i>	Na	3	1
<i>Andrena humilis</i>	Nb	3	5
<i>Andrena labialis</i>	pN		5,15
<i>Andrena pilipes</i>	Nb	2	9,18
<i>Lasioglossum angusticeps</i>	RDB 3 UK BAP	1	11
<i>Lasioglossum malachurum</i>	Nb	3	6,14
<i>Lasioglossum pauperatum</i>	RDB 3		6,12,13,14
<i>Lasioglossum pauxillum</i>	Na		5
<i>Lasioglossum puncticolle</i>	Nb	3	5,13,14,15
<i>Dasygaster hirtipes</i>	Nb		9,18
<i>Megachile dorsalis</i>	Nb		9,18
<i>Eucera longicornis</i>	Na UK BAP	2	16
<i>Nomada fucata</i>	Nb	3	5,6,13,15
<i>Nomada lathburiana</i>	RDB 3		14
<i>Acanthiophilus helianthi</i>	N RDB 3 UK		11
<i>Cylindera germanica</i>	BAP	1	9
<i>Cantharis fusca</i>	RDB 3		9
<i>Cassida nebulosa</i>	RDB I		12
<i>Agrilus laticornis</i>	Nb		7

It is clear that collectively the sites produced a creditable number of species which are either Scarce or Threatened, or included in Howe's indicator species for coastal soft cliff. Although individual sites generally produced records for few of these target species, these transects only covered a miniscule proportion of the cliff top resource available. When taken as a whole, the cliff top vegetation is demonstrated to be a valuable resource for Hymenoptera and other insects associated with the coastal soft cliffs. The following analysis attempts to show which habitat types and individual plant species were found to be the most important components of the cliff top vegetation for the suite of insects under consideration.

Within the insect species recorded, those which are most directly relevant to the aims of the survey are those specifically associated with coastal soft cliffs.

No Howe indicator species were recorded from sites 2, 7, or 23. Two of these sites, numbers 7 and 23 did not contain any maritime grassland influence, and were situated on the North coast of the Island. Of the remaining two North coast sites, site 16, which also contained no maritime grassland element, produced only 1 coastal soft cliff indicator species. Site 15 produced records for 3 coastal soft cliff indicators, but since this transect actually sampled the pioneer / bare ground communities of the cliff face itself, one would anticipate the presence of such species. The results from site 15 are not considered relevant to the aim of the survey, which was to sample cliff top sites. If one ignores site 15, then the sites on the North coast of the Isle of Wight all produced low scores for the number of coastal soft cliff invertebrates recorded. It is thought that the lack of maritime grassland influence at these sites, and the fact that conditions on the cliffs of the North coast of the Island are less hospitable for the highly thermophilic invertebrates associated with coastal soft cliff habitat have a bearing on this.

Contrastingly, all sites surveyed on the southern coast of the Island had some maritime grassland influence present. During the 2009 botanical survey, National Vegetation Classification (NVC) assemblage types were assigned to the sites. The following table shows the main maritime NVC assemblage type assigned to each South coast site, the number of Howe indicator species and number of Howe indicator Hymenoptera species recorded at each site, and the total number of Howe indicator specimens were recorded at each site.

Table 16. Maritime grassland types and Howe indicator species recorded for South coast Island sites.

Site	NVC type	Exposed site	Howe species	Howe hymenoptera	No. Howe specimens
1	MC10	yes	2	1	3

2	MC8/9				
5	MC11		5	4	16
6	MC11		4	2	5
9	MC8		2	1	2
11	MC11	yes	2	1	4
12	MC8/11		1		21
13	MC10		2	2	2
14	MC11	yes	3	3	5
18	MC5/9		1	1	1

The most productive sites proved to be those containing MC11 maritime grassland habitats, followed by those containing MC10 maritime grassland habitats. Both these habitats typically comprise relatively short sward grasslands. The sites that attracted the most coastal soft cliff invertebrate species were generally those supporting a reasonably diverse flora – for example sites 5, 6, 11 and 14. Site 13 was an exception to this, since the flora here was less flower rich. Site 9 also had a sparse flora, but did have a significant bare sand element. Sites 5, 11, 13, 14 and 18 all have a short or medium sward unmanaged maritime grassland component. This component of the transect appeared to be most favoured by soft coastal cliff dependent species at each of these sites. Site 6 did not conform to this pattern, since the grassland here was more rank than at the above sites.

Grazing occurred at sites 1, 2, 11, 13 and 18, although at site 1 the cattle had been removed prior to the survey commencing, and did not reappear here for the duration of the survey. At site 11 no Hymenoptera were recorded from the inland grazed area. At site 13, all Hymenoptera were recorded from the ungrazed section of the transect, except for a single Bumblebee noted in flight within the grazed area. At site 18, the majority of Hymenoptera were recorded from the cliff side grassland, although a few bees were recorded from the grazed section on the final visit, which was several weeks after the sheep were moved off. This suggests, that at least during active grazing, such areas are less favourable to Hymenoptera. The time scale between grazing finishing and the habitat returning to favourable condition for insects to visit was not established.

Sites 1, 11 and 14 were all exposed in nature and yet were all utilised by reasonable numbers of Hymenoptera, including Howe indicator species at each site. This suggests that being windy and exposed does not stop Hymenopteran species from visiting a site. However, numbers of Hymenoptera recorded in the survey were very low at all sites, with less than 400 specimens noted from the south coast sites combined during the entire survey. North coast sites only produced records of only 82 specimens during the entire survey, even though site 15 was actually on the cliff face. These very low numbers of individuals suggest that although Hymenoptera do visit cliff top sites, the numbers doing so are extremely small in comparison to the numbers of specimens utilising the soft rock cliffs, chines and associated ledges. For example, *Andrena flavipes* was easily the most frequently recorded solitary bee on the survey, with 85 specimens noted in total. This species is present in vast numbers on the soft rock cliff system of the South coast of the Island, and frequently forms massive nesting aggregations of several hundred nests or more. The author has previously found nesting aggregations containing around 70 nests / square metre in some coastal cliff locations. Contrastingly, just 3 *Andrena flavipes* nests were recorded during the entire survey.

Some individual plant species proved more attractive to coastal soft cliff dependent invertebrates than others. The following table lists plant species from which these invertebrates were recorded. It also shows whether these plants were situated at the cliff side or inland section of the transect. Site 15 has been excluded from this table, since the results from this site relate directly to the cliff face, not cliff top.

Table 17. Plants visited by coastal soft cliff indicator insects during current survey.

Plant	Insect species	Status	Howe rating	flower assoc.	inland / cliffside	number
Thrift	Melitaea cinxia	RDB 3 UK BAP	1		inland	7
	Melitaea cinxia	RDB 3 UK BAP	1		cliff side	4
	Odynerus melanocephalus	Na UK BAP	2		cliff side	1
	Andrena pilipes	Nb IOW BAP	2		cliff side	1
	Lasioglossum malachurum	Nb	3		cliff side	1
Bare Ground	Melitaea cinxia	RDB 3 UK	1		cliff side	3

BAP					
	Andrena pilipes	Nb IOW BAP	2	cliff side	1
	Nomada fucata	Nb	3	cliff side	1
		RDB 3 UK			
	Cylindera germanica	BAP	1	cliff side	1
		RDB 3 UK			
Black Medick	Melitaea cinxia	BAP	1	cliff side	1
	Andrena humilis	Nb	3	cliff side	1
	Nomada fucata	Nb	3	cliff side	1
		RDB 3 UK			
Hawkbit	Melitaea cinxia	BAP	1	inland	1
	Lasioglossum malachurum	Nb	3	inland	1
	Lasioglossum puncticolle	Nb	3	cliff side	1
Daisy	Lasioglossum puncticolle	Nb	3	cliff side	1
	Nomada fucata	Nb	3	cliff side	1
		RDB 3 UK			
Ranunculus	Melitaea cinxia	BAP	1	cliff side	1
		RDB 3 UK			
	Melitaea cinxia	BAP	1	inland	3
	Lasioglossum puncticolle	Nb	3	cliff side	2
		RDB 3 UK			
Ribwort Plantain	Melitaea cinxia	BAP	1	cliff side	3
	Andrena dorsata		3	cliff side	1
Meadow Vetchling	Eucera longicornis	Na UK BAP	2	inland	2
Wild Carrot	Andrena dorsata		3	inland	1
		RDB 3 UK			
	Melitaea cinxia	BAP	1	inland	1
		RDB 3 UK			
White Clover	Melitaea cinxia	BAP	1	cliff side	2
Bird's foot Trefoil	Melitaea cinxia	RDB 3 UK	1	inland	3
		BAP	1	inland	3

This indicates that Thrift is the most highly favoured plant encountered in the survey, attracting 3 Howe rated species of Hymenoptera as well as Glanville Fritillary. Bare ground was also attractive to these species, attracting two species of Hymenoptera, Glanville Fritillary and the Cliff Tiger Beetle. Black Medick, Hawkbit and Daisy each attracted two species of Howe indicator Hymenoptera. All these plants are frequent within the short sward cliff top maritime grassland flora. They are also regularly encountered on the slumped cliffs, where they are attractive to foraging insects. Surprisingly, no indicator Hymenoptera species were recorded visiting Common Bird's – foot Trefoil during the current survey. This plant is one of the main pioneer species on the soft cliff systems, and is heavily utilised by Hymenoptera in these situations. It is possible that this is such an abundant source of pollen and nectar on the cliffs themselves, that few Hymenoptera travel away from the cliffs to visit this forage source on the cliff top.

The results suggest that most Hymenoptera visiting the cliff top sections are attracted to flowers or bare ground close to the cliff edge rather than further inland. This is likely to reflect the fact that at many sites the maritime grassland influence decreases as you move further inland from the cliff edge. A notable exception to this trend was the Glanville Fritillary *Melitaea cinxia* which was regularly recorded from the inland sections of the transects.

The results indicate that attempts to return the cliff top vegetation to unmanaged short sward maritime grassland is likely to be the most beneficial option for maintaining Hymenoptera and other coastal soft cliff dependent insects on the cliff top. Management regimes which approach this as a primary aim are most likely to favour this fauna.

COMPARISON WITH THE INSECT FAUNA OF CLIFF TOP SITES WITH THAT OF THE LEDGES AND CHINES.

The special invertebrate fauna associated with the coastal soft cliffs of the Isle of Wight has been studied in some detail, particularly with reference to the chines and ledges that occur here. The following section compares the numbers of scarce or threatened and coastal soft cliff indicator insects recorded in the current survey with the fauna of the chines and ledges during recent surveys (Colenutt & Wright 2006, 2007).

TABLE 18. Cliff top data compared to chines and ledges data.

Status category	Cliff top survey	Chines survey	Ledges survey.
H1	3	5	6
H2	3	3	2
H3	7	11	12
RDB 1		1	1
RDB 2			2
RDB 3	7	8	10
RDB Indet	1		
p RDB	1	2	1
Na	4	10	14
Nb	9	25	23
N	2	4	7

It is clear from the above table that the chines and ledges support a far richer invertebrate fauna than that encountered during the cliff top survey, both in terms of soft coastal cliff indicators and scarce or threatened species. Furthermore. There is considerable concrete evidence that many of these species are actually breeding on the chines and ledges, and it is highly likely that they all are. During the current survey the only of these species demonstrated to be breeding on the cliff top was the Glanville Fritillary *Melitaea cinxia*, a larva of which was recorded during survey.

In terms of numbers of species of Hymenoptera recorded, 64 species were recorded during the current cliff top survey, compared to 92 species from the chines survey and 121 species during the ledges survey. Again, these figures show that the overall Hymenopteran fauna is far richer on the soft cliff systems than on the cliff top above these systems.

Conveniently, cliff top site 18 surveyed in 2010 is situated directly above the slumped cliff and ledge at Compton, which was surveyed during the ledges survey (Colenutt & Wright, 2007). During the current survey a total of 13 species (all Hymenoptera) were recorded. These included three Nationally Scarce (Nb) species and one H2 coastal soft cliff indicator species. The survey of Compton ledge recorded 66 species of Hymenoptera, including 4 Red Data Book species, and 13 Nationally Scarce species. These included one H1, two H2 and 7 H3 soft coastal cliff dependent species. Again, this clearly demonstrates that the cliff top Hymenopteran fauna is nowhere near as rich as that on the soft cliff systems.

CONCLUSIONS.

Collectively, cliff top habitats on the Isle of Wight form a large forage resource for Hymenoptera and other insects associated with coastal soft cliffs. However:

1. Numbers of Hymenoptera and other coastal soft cliff dependent invertebrates recorded on the cliff top are very low compared to numbers encountered on the actual cliff systems.
2. Numbers of Hymenoptera nesting on the cliff tops are extremely small in comparison to numbers nesting on the actual cliff systems.
3. Species diversity within Hymenoptera and other coastal soft cliff indicator invertebrates on the cliff top is far lower than that encountered on the actual cliff systems.
4. Sites containing a short or medium sward unmanaged maritime grassland element on the cliff top are the most effective in attracting visiting Hymenoptera. Sites containing MC11 maritime grassland as defined in the National Vegetation Classification system appear to be most attractive. Management regimes which attempt to recreate this habitat are those most likely to benefit the associated insects present.
5. Thrift, Black Medick and Hawkbits appear to be the most attractive forage sources encountered on the cliff tops. Bare sand exposures also attract coastal soft cliff indicator species. Management practices which

encourage the growth or establishment of these plants are most likely to be beneficial to the associated insect species.

6. Sites which are actively being grazed by farm animals are little utilised by Hymenoptera on the cliff tops. The point at which these areas recover from the effects of grazing enough to attract Hymenoptera back has not been established.

7. Hymenoptera and other coastal soft cliff dependent insects are more frequently encountered near to the cliff edge than inland. This may reflect the fact that the maritime grassland influence diminishes with distance from the cliff edge.

8. Exposed, windy sites do not appear to be significantly less attractive to Hymenoptera on the cliff top than more sheltered locations.

9. Locations surveyed on the North coast of the Island support a less rich coastal soft cliff dependent invertebrate fauna than locations surveyed on the South coast of the Island.

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APPENDIX 1. SCARCE, THREATENED, BAP AND COASTAL SOFT CLIFF DEPENDENT INSECTS RECORDED DURING THE 2010 CLIFF TOP SURVEY.

HYMENOPTERA.

Black-headed mason wasp *Odynerus melanocephalus* Na. UK BAP. H2.

O. melanocephalus is a warmth-loving species, which nests in light, level exposed soils, often with a clay content. The excavated material is used to construct a 'chimney' around the entrance hole. The function of this is uncertain, but it may help protect the burrow from rain, or provide a deterrent to cleptoparasites or parasitoids. The nest is provisioned with weevil larvae of the genus *Hypera*. These are collected from common bird's-foot trefoil or medicks *Medicago* spp. Nationally, *O. melanocephalus* has been recorded from Devon to Kent and northwards to Northamptonshire. Edwards, R. (1997) has demonstrated a major decline in the distribution and abundance of *O. melanocephalus* recently, and as a result of this *O. melanocephalus* has been added to the UK BAP priority species list. Current strongholds are the Isle of Wight and Kent. During the current survey, *O. melanocephalus* was recorded from sample sites 14 and 15. At site 14 a single adult was noted on bare ground right at the cliff edge on 15th June. At site 15 a nest was found on flat bare ground on July 19th.

A solitary wasp. *Tachysphex unicolor* Provisionally RDB.

A single specimen of the Crabronid wasp *Tachysphex unicolor* sensu stricto were recorded from bare sand at sample site 9. This soil-nesting species has only recently been separated from the closely related *Tachysphex nitidus*. A key to their separation was provided in the BWARS Newsletter (Edwards & Roberts, 1996). So far, records for *T. unicolor* in Britain are confined to the South coast of the Isle of Wight and the Dorset coast (Edwards, 1998). The more common *T. nitidus* appears to be absent from the Island. In view of its extremely limited distribution, *Tachysphex unicolor* is doubtless a candidate for inclusion in any future edition of the British Red Data Book. Edwards (1998) maps modern records for only five 10km squares nationally. In common with other members of the genus, *T. unicolor* preys upon grasshopper nymphs.

A Mining bee *Andrena alfkenella* RDB 3.

A single example of the mining bee *Andrena alfkenella* was swept from a Wild Carrot inflorescence near the cliff top at sample site 5 on 12th July. This southern species favours dry, bare or sparsely vegetated ground in warm, sunny situations. Falk (1991b) cites only 5 post-1970 sites for *A. alfkenella*. Records relate to coastal eroding cliffs, heathland and calcareous grassland. *A. alfkenella* is thought to nest solitarily rather than in nesting aggregations, and is usually present on a site only in low numbers. On the Isle of Wight, the few recent records are all coastal, although elsewhere *A. alfkenella* is known from heathland and calcareous grassland.

A Mining bee *Andrena dorsata* H3.

This medium sized *Andrena* collects pollen from a variety of plants and may be found in several habitat types, both coastal and inland, although Howe (2002) accords it with Grade 3 coastal soft rock cliff status. It is a widespread and reasonably common species in southern England and is common on the Isle of Wight. During the current survey specimens were recorded from sample site 5 both from the cliff side and inland.

A Mining bee *Andrena fulvago* Na. H3.

A single specimen of the mining bee *Andrena fulvago* was captured in flight on 18th June, on the slumped cliff side plateau of site 1. Most of the pollen collected by this bee is taken from small "Hawkish" yellow composites. This nationally scarce (Na) species is confined to coastal sites or calcareous grassland, mainly in southern England. Falk (1991b) notes a substantial recent decline, particularly at inland sites, and quotes around 15 post-1970 sites for *A. fulvago*. Locally, the author has additionally recorded this bee from short sward areas of grassland on Tennyson Down, Brook Down and Culver Down.

A Mining bee *Andrena humilis* **Nb. H3.**

This species nests in hard sand or compacted soils such as paths in sunny locations. Although it is found inland, many of its known nest sites are coastal landslips or on cliff paths. *A. humilis* collects all its pollen for nest provision from small "Hawkish" yellow composites. It is widely but patchily distributed in England and Wales. Falk (1991b) notes a considerable decline, particularly at inland sites. During the current survey, two specimens were recorded from site 5 on 17th May. One was visiting Black Medick near the cliff, whilst the other was taken during general sweeping. Morey (1908) mentions a specimen from Freshwater. These records would appear to be the only other Island records for *A. humilis*.

A Mining bee *Andrena labialis* **Provisionally N.**

A large *Andrena* in which the male has yellow markings on the face. *A. labialis* usually nests singly, although aggregations occasionally occur. This bee is found in a variety of flower-rich, open habitats. It appears that most pollen is collected from legumes such as Common Bird's-foot Trefoil and Yellow Vetchling. Nationally, *A. labialis* is widespread in southern Britain and the Midlands, but the map of its British distribution published recently by Edwards, R. and Broad (2006) suggests a marked recent decline in range, meaning that its scarcity status requires upgrading. During the current survey, *A. labialis* was recorded from sample sites 5 and 15. At site 5 a specimen was swept from Wild Carrot on the cliff side of the transect on 12th July, whilst at site 15 a specimen was netted in flight on the slumped cliff on 24th June.

A Mining bee *Andrena pilipes* **Nb. IOW BAP H2.**

This species is primarily associated with coastal cliffs and rough coastal grassland, but is occasionally found inland on downland and heathland. Falk (1991b) notes a considerable decline for this southern species, particularly at inland sites. Locally, *A. pilipes* is recorded with some frequency, particularly along the soft rock cliffs and landslip systems of the South coast of the Island. Adults are often seen visiting Bramble flowers. During the current survey, *A. pilipes* was recorded from sample sites 9 and 18. At site 9 a single specimen was sat on bare sand on 17th July. At site 18 *A. pilipes* was noted visiting Thrift by the cliff edge on 23rd May.

A Mining bee *Lasioglossum angusticeps* **RDB 3. UK BAP H1.**

Nationally, this species is confined to coastal landslip systems in East Devon, Dorset and the South coast of the Isle of Wight. Hard clay-based substrates appear to be a requirement for nesting. Edwards & Telfer (2002) give records for 15 10km squares nationally. A single specimen was recorded from site 11 on 15th June during general sweeping on the cliff side of the path. This site had an abundance of *Lotus corniculatus* in flower at the time of this visit. This appears to be a plant highly favoured by this bee.

A mining bee *Lasioglossum malachurum* **Nb. H3.**

L. malachurum frequently forms large nesting aggregations, especially in bare ground in coastal sites. It is a eusocial species, and workers occur that are considerably smaller than the gynes. *L. 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, *L. malachurum* has become far more frequent and is extending its British range currently (Edwards, R. & Broad, 2005). If this expansion continues, it is likely that the status of *L. malachurum* will require review. During the current survey it was recorded from two sample sites. At site 6 it was recorded during general sweeping on 17th May. At site 14 *L. malachurum* was found visiting Thrift near the cliff edge on 21st May, and also at small yellow composites inland on 18th July.

A Mining bee *Lasioglossum pauperatum* **RDB 3.**

This species is recorded sparingly in southern England; Falk (1991b) gives less than 10 post 1970 sites for *L. pauperatum*, including records from the Isle of Wight. Most records are for light disturbed soils in warm situations, but information on this species' habits is limited. *L. pauperatum* was recorded on 4 occasions during the current survey, from areas 6, 12, 13 and 14. At sites 6 and 13 it was recorded during general sweeping. At site 12 a specimen was found visiting Wild Carrot on the cliff side of the path on 18th July. At site 14 *L. pauperatum* was recorded from Thrift near the cliff edge on 21st May.

A Mining bee *Lasioglossum pauxillum* **Na.**

L. pauxillum has a restricted range in southern England. It requires flat sparsely vegetated ground in which to nest, and shows a preference for chalk grassland and to a lesser extent open woodland. The author

records this bee with some regularity on the Isle of Wight. During the current survey *L. pauxillum* was found visiting Wild Carrot inland and also appeared in the sweep sample at site 5 on 12th July.

A Mining bee *Lasioglossum puncticolle* Nb. H3.

This species requires warm, light, disturbed soils in which to nest, and is primarily associated with the southern coastal counties of England. *L. puncticolle* appears to have suffered recent population declines, particularly at inland sites. (Falk, 1991b). This species is reasonably common locally, especially in coastal situations, and the Island may be considered one of its strongholds. During the current survey it was recorded at 4 sample sites. All specimens were found on the cliff side of the path. Specimens were found visiting *Ranunculus* at sites 13 and 14. Also at site 14 a specimen was found at small yellow composites. *L. puncticolle* was recorded visiting Daisy at site 5. At site 15, *L. puncticolle* was found to be nesting in flat bare ground on the slumped cliff, where a few specimens were noted going into fissures in the bare clay.

A mining bee *Dasygaster hirtipes* Nb.

This species requires hot sandy banks in which to nest, and females collect pollen only from "Hawkish" yellow composites. Most records of *D. hirtipes* are from coastal dunes, although it can occur on sandy sites inland. This species has undergone a considerable national decline, particularly at inland sites. There are a number of recent records for this species from sites along the South coast of the island, and there is a fairly strong colony at St. Helens Duver. During the current survey *D. hirtipes* was found at sites 9 and 18. At site 9, one was basking on bare sand on 17th July. At site 18, two specimens were seen on 19th July. One was noted in flight, and the other was found visiting small yellow composites.

A Mining bee *Eucera longicornis* Na. UK BAP. H2.

The long horned bee *Eucera longicornis* was found at site 16, when two males were noted visiting *Lathyrus pratensis* on the inland section of the transect on 24th June. A further specimen was captured during general sweeping in the same area. *E. longicornis* is believed to be oligolectic on Fabaceae, and is most frequently seen visiting vetches and Bird's-foot Trefoil. This Nationally scarce (Na) bee of southern England is found in a variety of flower-rich sandy habitats. Falk (1991b) notes a serious recent decline, and cites the Isle of Wight, South-west England and Kent as the modern strongholds for *E. longicornis*. Even on the Island this is a highly localised species, and it appears to be in decline. Most Island records are from the soft rock cliffs of the South coast, although the author has also found a small colony of this species at the Hersey Nature Reserve, Seaview. *E. longicornis* has recently been added to the national BAP species list.

A nomad bee *Nomada fucata* Na. H3.

N. fucata is a cleptoparasite of the mining bee *Andrena flavipes*. The host is associated with bare or sparsely vegetated soils in a variety of habitats, where it collects pollen from a wide range of plant species. *A. flavipes* is widespread in southern England and south Wales, and appears to have expanded its range in recent decades (Edwards, R. & Telfer, 2002). It is regularly encountered on the Island, and often forms large nesting aggregations on the soft rock cliffs and landslips. *N. fucata* is now similarly widespread in southern England and south Wales, and is regularly recorded on the Isle of Wight. It is currently a frequently encountered species, although in the 1970s, it endured a period of great scarcity and has in the past been subject to considerable fluctuations in population size and distribution. If *N. fucata* continues to prosper at present levels nationally, its status will require review (Edwards, R. & Telfer, 2002). During the current survey, *N. fucata* was recorded from sites 5,6,13 and 15. At site 5 two specimens were found on 17th May; one visiting Black Medick and the other sat on the path. A single specimen was swept at site 6 on 12th July. One was recorded at site 13 visiting a Daisy flower near the cliff edge on 21st May. At site 15 *N. fucata* was noted visiting White Clover on 19th July.

A nomad bee *Nomada lathburiana* RDB 3.

The nomad bee *N. lathburiana* was recorded at site 14 on 21st May, when a single specimen was found at Thrift flowers near the cliff edge. This bee is a cleptoparasite of the mining bee *Andrena cineraria*. This host was formerly essentially northern in its UK distribution, but has expanded southwards over the last few decades. It is now well established on a number of Island sites. The cleptoparasite *N. lathburiana* is most common in northern England, but has also expanded its range southwards with its host. The map in Edwards & Telfer (2002) demonstrates the recent range expansion, and they suggest that the status of *N. lathburiana* may require review.

ORTHOPTERA.

Long-winged conehead *Conocephalus discolor* Na.

This species was recorded at sites 15 and 16 during the current survey. Both specimens were taken during general sweeping of rank vegetation on 19th July. *C. discolor* was formerly a great rarity in Britain, which was 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 decade in response to a run of unusually warm, dry summers. In light of this range expansion, the current nationally scarce status of this species may need to be down-graded.

HEMIPTERA.

A squash bug *Enoplops scapha* **H3**.

A single specimen of this bug was found during sweeping at site 6 on 21st June. This species feeds on composites, with Scentless Mayweed *Tripleurospermum maritimum* being amongst the preferred foodplants. *E. scapha* is associated with dry sheltered areas with sparse vegetation, such as coastal cliff faces. *E. scapha* is primarily restricted to coastal sites in southern England and South Wales, and is recorded from the coast between Kent and Pembrokeshire.

LEPIDOPTERA.

The Small Heath *Coenonympha pamphilus* **UK BAP**.

Larvae of this butterfly feed on grasses such as Annual Meadow Grass *Poa annua*. The Small Heath is primarily associated with open grassland sites. It is widespread in Britain, but due to a considerable recent national decline has been added to the National BAP listings. This remains a relatively common butterfly on the Isle of Wight. During the current survey, a single specimen of the Small Heath was noted in flight at site 23 on 25th May.

The Wall *Lasiommata megera* **UK BAP**.

The Wall was recorded at sites 1 and 13 during the current survey. Both specimens were noted in flight on 21st May. This species requires warm bare ground for basking. Larvae feed on Annual Meadow Grass *Poa annua* and Cock's - foot *Dactylis glomerata*. Although the Wall remains widespread on the Island, numbers are decreasing. The Wall is in serious national decline and has recently been added to the national BAP listings.

The Grizzled Skipper *Pyrgus malvae* **UK BAP**.

A single specimen was encountered in flight at site 23 on 25th May. Larvae are associated with rosaceous plants, most commonly Wild Strawberry *Fragaria vesca*, but also Cinquefoils *Potentilla* spp. Most records for the Island are from areas to the North of the central chalk ridge, although it does appear in small numbers in the South Wight. The Grizzled Skipper is in decline on the Island, but has declined far more dramatically on the mainland. It has recently been added to the national BAP species listings.

The Glanville Fritillary *Melitaea cinxia* **RDB 3. UK BAP. H1**.

Native populations of this species are confined to the South of the Isle of Wight, and are largely coastal. The majority of breeding sites are located between Sandown Bay and Compton Bay. Larvae of this species feed gregariously on Ribwort Plantain *Plantago lanceolata*. It is a national BAP species of conservation concern. During the current survey, the Glanville Fritillary was recorded from five of the survey sites. At site 1 individuals were noted in flight on 21st May and 18th June. At site 5, one was recorded at Black Medick and another at Ribwort Plantain on 21st May. Both were on the cliff side of the path. On 21st June, six specimens were noted at site 5. Of these, 2 were recorded from Ribwort Plantain near the cliff edge, 1 was found inland visiting *Ranunculus* flowers and another was at Hawkbits inland. The remaining two specimens were noted in flight. At site 6, two specimens were recorded in flight on 21st June. The Glanville Fritillaries were found at site 11 on June 15th. One was recorded at White Clover near the cliff, one was noted inland at an umbel inflorescence and the third specimen was in flight. Site 12 proved the most productive for this species. A larva was noted on the cliff path on 21st May. On 15th June a total of 20 specimens was recorded. Seven were noted at Thrift inland from the coastal path, with another 4 at Thrift close to the cliff edge. Four were noted on the path itself, two on bare ground, one at White Clover and one at *Ranunculus* flowers. Three specimens were noted inland at Common Bird's - foot Trefoil and another at *Ranunculus*. The final specimen was noted in flight.

DIPTERA.

A picture-winged fly *Acanthophilus helianthii* **N**.

During the current survey, *A. helianthii* was recorded from site 11 on 18th July during sweeping near the cliff edge. In Britain, this species attacks the seed heads of Black Knapweed, although in Europe it is reported as a pest of Safflower *Carthamus tinctorius*. Falk (1991a) gave records for eight English counties and for Pembrokeshire. Recent recording efforts have shown that the species occurs widely but sparsely across southern England, with records extending to Yorkshire, and there are also a few records for Wales. Nationally, 26 10 km. squares are known to have post 2000 records for *A. helianthii*. (Clemons, 2008). Locally, the author has recorded this species from six other Island sites.

COLEOPTERA.

Cliff Tiger Beetle *Cylindera germanica* **RDB 3 UK BAP. H1.**

The Cliff Tiger beetle is a species associated with grassy slopes and sand and silt near freshwater flushes. The recent British distribution of this species is confined to the Isle of Wight, Hampshire and Dorset (Luff, 2007). The predatory larvae are to be found in burrows in damp soil. Areas almost devoid of vegetation are preferred. On the Isle of Wight the Cliff Tiger beetle is confined to cliffs and ledges on the South of the Island. The largest populations are around Whale Chine and Blackgang, where it is abundant in suitable habitats. There is also a population at Rocken end. During the current survey, a single specimen was recorded at site 9, where it was found on bare sand at the cliff top on 17th July.

A Tortoise beetle *Cassida nebulosa* **RDB I (indeterminate).**

A single specimen of the Tortoise beetle *Cassida nebulosa* was swept from cliff side vegetation at site 12 on 21st May. *C. nebulosa* is associated with field margins and grassland with some disturbance. Larvae are believed to feed on Goosefoot *Chenopodium* spp. This species is currently classified as RDBI (indeterminate), although recent data suggests that it is only known from eighteen 10Km. squares in the U. K. most of which are from East Anglia (Luff, 2007). The author has previously found a single specimen of *C. nebulosa* at St. Martins Down on the Isle of Wight.

A soldier beetle *Cantharis fusca* **RDB 3.**

Three specimens of this beetle were found at site 9 on 18th June. Two were crawling across bare sand near the cliff top, whilst the third was intercepted in flight. *C. fusca* is normally associated with tall grassy vegetation on permanently damp soils. Hyman & Parsons (1992) and Alexander (2003) state that this species has undergone considerable recent decline in England, and has been lost from many inland localities. It is now confined to a few southern coastal counties and some sites in Yorkshire. Strongholds for *C. fusca* are North Somerset, South Hampshire, East Sussex and Kent. On the Isle of Wight, the author has previously recorded this beetle from a coastal landslip system, from wet woodland and from rank grassland at the Hersey Nature Reserve, Seaview.

A Jewel beetle *Agrilus laticornis* **Nb.**

A single specimen of the Jewel beetle *Agrilus laticornis* was swept from Oak adjacent to the coastal path at site 7 on 23rd June. Larvae of this Nationally Scarce (Nb) beetle develop beneath sappy bark of dying and recently dead branch wood. *A. laticornis* occurs mainly in central and southern England, with scattered records further North. There are records of this species from several woodlands on the Isle of Wight.