ENTOMOLOGICAL SURVEY AND MONITORING AT CASTLE COVE, ISLE OF WIGHT, 2013.

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INTRODUCTION.

Following coastal protection works in 1996, which included the clearing of vegetation from the coastal slope to the North of Castle Cove, Isle of Wight, this soft rock slope was allowed to regenerate naturally. The resultant habitat is rough coastal grassland with a bare ground element. The site is split into two sections which are separated by a tarmac path. The western section is considerably larger than the eastern section.

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

METHODS.

Survey methods were confined to visual searching, the use of a hand net or pooter to capture individual species, sweeping vegetation, beating foliage and grubbing. The site was visited throughout the main insect flight period of 2013, commencing on 20th April and with the final visit on 28th August. All visits were made in suitable weather.

RESULTS.

CHANGES IN VEGETATION.

During survey in 2006 and 2007 dominant plant species included Common Bird's - foot Trefoil *Lotus corniculatus*, Common Fleabane *Pulicaria dysenterica*, Ox - eye Daisy *Leucanthemum vulgare*, Teasel *Dipsacus fullonum*, Wild carrot *Daucus carota* and Ribwort Plantain *Plantago lanceolata*. The northern margin of the site is comprised of scrub and scrubby woodland with some Bramble *Rubus* sp. and Buddleja *Buddleja davidii* . The main tree species is Sycamore *Acer pseudoplatanus*.

In 2010, a number of changes were noted, both in the dominant plant species and amount of bare ground present, as follows:

Eastern Section.

The upper part of this area is now becoming very rank, with Bracken *Pteridium aquilinum* and Giant Horsetail *Equisetum telmetela* increasing significantly and becoming dominant over much of the plateau. Bramble *Rubus fruticosus* agg. scrub is also increasing near the northern boundary of the site. The top plateau still contains fair amounts of Common Bird's – foot Trefoil, with some Tufted Vetch *Vicia cracca* and Ox – eye Daisy also present. Hawkbits *Leontodon* spp. have increased considerably. Teasel and Rock Rose *Helianthemum* spp. are also increasing. Common Fleabane is no longer present on this part of the site. The amount of bare ground available here has decreased significantly since the last survey. Bramble and Privet *Ligustrum vulgare* are increasing, particularly around the gabions. On the lower parts of this section coarse rank grass is also increasing, although *L. corniculatus* and Yellow – wort *Blackstonia perfoliata* are still present. Bramble scrub is encroaching here and bare ground is decreasing.

Western Section.

Much of this section (almost 40%) is now dominated by rank coarse grasses, with Giant Horsetail also increasing in frequency, along with Teasel and Bramble. Good areas of Common Bird's – foot Trefoil remain, but are now largely restricted to the eastern and central lower slopes of this section. Rock Rose is now well established in some areas, and Tufted Vetch and Hawkbits continue to increase in abundance. Ox – eye Daisy has decreased, as has Wild Carrot. Common Fleabane is no longer present in any quantity. Stinking Iris *Iris foetidissima* is well established in places. Ribwort Plantain remains reasonably abundant. Bare ground is largely confined to the footpath traversing the site, which remains well used and relatively unchanged. Sparsely vegetated ground is still present on the lower slopes and central section of the site. Rock Samphire *Crithmum maritimum* is increasing at the bottom of the slope close to the gabions. The northern boundary of the site, above the top footpath, is increasingly heavily scrubbed.

In 2011, the following changes were recorded:

Eastern Section.

Giant Horsetail, Bracken, Bramble and Privet continue to encroach further into the site, as does the rank grassland element. Common Bird's – foot Trefoil is still present in some quantity on the plateau and on the lower part of the site, and Ox – eye Daisy is also present. Hawkbits continue to flourish, and Prickly Sow – thistle *Sonchus aspe*r is increasing. Black Medick *Medicago lupulina* is increasing in the short sward areas. Wood Sage *Teucrium scorodonia* is becoming well established near the gabions. Wild Carrot appears to be increasing slightly, as does Common Fleabane. Yarrow *Achillea millefolium* and Ragwort *Senecio jacobaea* are now well established. A new area of bare ground has been formed by the northern end of the gabions. This has been created by people regularly taking a short cut through the site, resulting in the formation of a new path.

Western Section.

Prickly Sow – thistle *Sonchus asper* is increasing on site, as is Ragwort. Tufted Vetch and Red Clover *Trifolium pratense* are increasing on the upper slopes. Bramble and Dog Rose *Rosa canina* are encroaching further at the western end of this section. Ox – eye Daisy and Wild Carrot appear to be increasing in abundance. Good areas of Common Bird's – foot Trefoil are still present on the lower slopes. Alexanders *Smyrnium olusatrum* is established in small quantities in two areas.

During 2012, further changes in the character of vegetation on the site were noted :

Eastern Section.

Common Bird's – foot Trefoil is now in serious decline on the plateau, although plants do remain on the lower slope. On the plateau, Black Medick is increasing as the Common Bird's – foot Trefoil declines. There appears to be a small increase in the quantities of Tufted Vetch. Ox – eye Daisy is becoming less common on site, although quantities of small yellow composites remain fairly constant. Wild Carrot continues to become slightly more frequent, as does Ragwort. Overall, the site continues to become increasingly rank, and Giant Horsetail is becoming increasingly dominant on the upper part of the site. Bramble encroachment continues, both around the gabions and the edges of the lower section. The bare ground created by the short cut path through the site is heavily trampled.

Western Section.

The amount of Alexanders in the two areas where it is established continues to increase. Common Bird's – foot Trefoil is still abundant in the eastern and central areas of the compartment. Privet is becoming established in places, particularly in the North of the site. Stinking Iris is still present, but few plants appear to have successfully produced seed pods. Small yellow composites are increasing on the lower slopes, whilst Teasel continues to increase in the centre of the site. Prickly Sow – thistle continues to increase. Wild Carrot is increasing in the South – eastern part of the site. Bare ground is in decline.

During 2013, the following changes in the character of the vegetation were noted :

Eastern Section.

Very little Common Bird's – foot Trefoil remains on the plateau. Giant Horsetail continues to spread, and has now reached the lower sections of the site. Bracken and Bramble are encroaching further on to the site. Quantities of Ox – eye Daisy were comparable to last year. The vegetation is becoming increasingly rank. Five plants of Stinking Iris were noted close to the gabions. Quantities of Privet are increasing. Small quantities of Common Fleabane were present. Ragwort appeared to be less abundant than in 2012. Amounts of Prickly Sow – thistle are increasing.

Western Section.

Common Bird's – foot Trefoil remains well established in the eastern and central areas of the compartment, but is slowly declining. The grassland is continuing to become progressively rank, and Giant Horsetail is becoming well established in the North of the compartment. The amounts of Alexanders are similar to those noted in the previous season. Meadow Vetchling is increasing in the North – west of the site. Ox – eye Daisy remains fairly abundant. Red Clover is well established in places in the North of the compartment. Small yellow composites are well established on the lower slopes. Wild Carrot remains plentiful, and Teasel is increasing in abundance.

INVERTEBRATE SURVEY.

A full list of all insect species recorded during the course of survey in 2013 is appended as **Appendix 1**. A number of the species encountered are considered to be Nationally Scarce or Red Data Book species. These are marked as such within **Appendix 1** and are discussed in more detail below. The status category definitions and criteria for individual species are those devised by the JNCC and are as follows:

STATUS CATEGORY DEFINITIONS AND CRITERIA.

RDB 1 - Endangered.

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

Species which are known or believed to occur as only a single population within one 10km square of the National Grid.
Species which only occur in habitats known to be particularly vulnerable
Species which have shown a rapid or continuous decline over the last twenty years and are now estimated to exist in five or fewer 10km squares.
Species which are possibly extinct but have been recorded in the 20th century and if rediscovered would need protection.

RDB 2 - Vulnerable.

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

Species declining throughout their range.
Species in vulnerable habitats.

RDB 3 - Rare.

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

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

Nationally Scarce (Na).

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

Nationally Scarce (Nb).

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

Nationally Scarce (N).

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

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 **Appendix 1**.

LEPIDOPTERA.

The Dingy Skipper *Erynnis tages* **UK BAP.**

Small numbers of this species were seen on 27th May and 14th June, with 2 specimens recorded on each date. Larvae are associated with common bird's - foot trefoil and horseshoe vetch. The Dingy Skipper has never been recorded in significant numbers during the course of the Castle Cove surveys, and it remains unclear whether or not the species breeds on the site. It has previously been recorded here in 2004, 2005, 2006 and 2011. Nationally, the Dingy Skipper is widely distributed throughout Britain, but has strongholds in southern England. Locally, this has never been an abundant species, although it is present on chalk downs, in woodland rides and on coastal landslips. The Dingy Skipper is in significant decline both nationally and locally, and has recently been added to the national BAP species lists.

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

Single specimens were noted in the western section of the site on 14th June and 14th August. This species has previously been recorded in the 2005, 2007, 2011 and 2012 surveys. The Wall requires warm bare

ground for basking. Larvae feed on Annual Meadow Grass *Poa annua* and Cock's - foot *Dactylis glomerata*. Although this butterfly 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.

DIPTERA.

The Dotted Beefly *Bombylius discolor* **N. UK BAP.**

The Dotted Beefly was recorded from the western area of the site on 23rd April, when a single specimen was seen. This represents a return to more typical numbers of *B. discolor* on site after several were noted in 2012.The Dotted Beefly has also been recorded here in 2004, 2005, 2006 and 2011. Larvae of *B. discolor* are ectoparasitic on the larvae of the mining bee *Andrena flavipes*. Although *B. discolor* remains a reasonably common species on the Isle of Wight in areas where it's host may be found (especially soft rock cliffs), Stubbs & Drake (2001) state that the species has declined nationally to the stage where it is regarded as a rarity. It is classed as a national BAP Priority species.

HYMENOPTERA.

A mining bee *Andrena humilis* **Nationally Scarce Nb.**

A specimen of this pretty mining bee was found on 27th May 2013 in the western compartment. This is the first time that *A. humilis* has been recorded from Castle Cove. This species nests in hard sand or compacted soils such as paths in sunny locations. Although it is found inland, many of it's known nest sites are coastal landslips or on cliff paths. *A humilis* collects all it's pollen for nest provision from small "Hawkish" yellow composites, which have increased in numbers at Castle Cove over the last few years. It is widely but patchily distributed in England and Wales. Falk (1991) notes a considerable decline, particularly at inland sites. This appears to be a very scarce species on the Isle of Wight. During 2010, the author found 2 specimens at Atherfield, and in 2011 small numbers were present at the Field of Hope, Newchurch. *A. humilis* was also recorded from Sandown Meadows NR in 2012. 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 pilipes* **Nb. IOW BAP.**

Andrena pilipes was first recorded from Castle Cove in 2004, when a single individual was found on the eastern section of the site. Following that, numbers increased In 2006, when three individuals were seen. A maximum count of 10 individuals was recorded here in 2007. Subsequently, numbers of *A. pilipes* have steadily declined at Castle Cove, maximum counts of 7 in 2010, 4 in 2011 and 2 in 2012. In 2013, only one individual was seen on site, on 28th August. It was found visiting Bramble flowers in the western compartment around SZ 55227698. *A. pilipes* is double brooded, and in the past both broods were usually recorded at Castle Cove, with the Summer brood being the more numerous. This species is primarily associated with coastal cliffs and rough coastal grassland, but is occasionally found inland on downland and heathland. Falk (1991) notes a considerable decline for this southern species, particularly at inland sites. Locally, the author has recorded *A. pilipes* at six other Island sites.

A mining bee *Andrena proxima* **Rare (RDB3).**

A single specimen of this restricted species was found in visiting Alexanders in the North – West corner of the western section of the site at SZ 55157696 on 1st May 2012, representing the first record of *A. proxima* from Castle Cove. During the 2013 survey, two specimens were recorded in the same area on 27th May. *A. proxima* collects pollen from umbels, with Alexanders being a favoured source. This species is largely confined to coastal sites in southern England, and requires warm, sunny areas with sparsely vegetated turf. Falk (1991) notes that *A. proxima* has undergone considerable recent decline, and cites some 20 post 1970 records. Locally, the author has previously encountered *A. proxima* at Woody Bay and at some of the chines on the South coast of the Island.

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

This small mining bee was again found nesting in both compartments of the site as in every survey year, where it formed nesting aggregations on the paths or in areas of bare or sparsely vegetated ground. As in previous years, counts of the number of nests in these aggregations were undertaken in 2013, and are discussed in detail later in this report. *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. The Isle of Wight remains a national stronghold for *L. malachurum*, which is typical of the fauna of the soft rock systems on the South coast of the Island.

A mining bee *Dasypoda hirtipes* **Nationally scarce Nb.**
This species was recorded for the first time at Castle Cove on 22nd July 2013. A single specimen was noted visiting a Sow – thistle *Sonchus* sp. on the vegetated shingle at SZ 55287698. *D. hirtipes* requires hot sandy banks in which to nest, and females collect pollen only from yellow composites. Given the nature of the habitat at Castle Cove, it is unlikely that this species would find suitable nesting areas on site, and the specimen must be treated as a stray. Most records of *D. hirtipes* are from coastal dunes, although it can occur on sandy sites inland. *D. hirtipes* 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. A massive colony, numbering at least 1000 individuals, was noted at the Field of Hope in 2010.

A nomad bee *Nomada fucata* **Na.**
As in 2012, the homeless bee *Nomada fucata* was only recorded from the western compartment during 2013. It was recorded on 30th April and 7th May, with a combined total of only 3 specimens. This species is a cleptoparasite of the mining bee *Andrena flavipes*. Numbers of *N. fucata* have fluctuated considerably at Castle Cove from year to year. In 2004 and 2005 when it was regularly seen in double figures. Numbers declined between 2006 and 2010, but increased a little in 2011, when a maximum count of 10 individuals was recorded. During 2012, only 2 specimens of *N. fucata* were found at Castle Cove. The nesting aggregation of the host bee *Andrena flavipes* found in 2011 decreased in size in 2012 and 2013. Nationally, *N. fucata* is, like it's host, confined to southern England, but it is considerably scarcer than the host and absent from some areas where *A. flavipes* is well established. Locally, *A. flavipes* forms huge nesting aggregations at many landslip or soft rock cliff sites and the *Nomada* remains a relatively frequent insect. Although Falk (1991) listed this species as Nationally Scarce (Na) following a period of extreme scarcity in the 1970's, *N. fucata* populations recovered during the 1990's and Edwards & Telfer (2002) suggested that it's status should be downgraded.

COLEOPTERA.
A Weevil *Mononychus punctum –album* **Na.**
The Nationally Scarce (Na) weevil *Mononychus punctum - album* was first recorded at Castle Cove when a single specimen was swept from the leaves of Stinking Iris *Iris foetidissima* on the western section of the site in 2005. Larvae of this weevil develop in the seed pods of this plant. *M. punctum – album* became increasingly established, with maximum counts of 14 in 2006 and 37 in 2007. A decline in numbers followed in 2010 and 2011, with maximum counts falling to 9 and 5 respectively. During 2012, specimens were recorded from both sections of the site, with a maximum count of twelve individuals on 26th June. In 2013 *M. punctum – album* was regularly recorded between 14th June and 10th July, with a maximum count of 21 on 14th June. Specimens were noted in both compartments. It would appear that the host plant is producing good numbers of seed pods after a period between 2010 and 2012, when successful pod production appeared low. *M. punctum - album* is associated with coastal cliffs and has a very restricted distribution in southern England. Hyman and Parsons (1992) cite post 1970 UK records for just 4 Vice Counties, which include the Isle of Wight. They consider coastal stabilisation, and activities that change the rate of erosion to be major threats to this species.

NESTING AGGREGATION COUNTS.

Andrena flavipes.
A small nesting aggregation of this species was found during the 2011 survey, in the eastern sector near the gabions, and numbers of *A. flavipes* on the site appeared to have increased somewhat compared to numbers in 2010. In 2012, this nesting aggregation was much smaller with few nest holes, and in 2013 this nesting aggregation was no longer present. Similarly, numbers of the cleptoparasite *Nomada fucata* remain in decline.

***Lasioglossum morio*.**
In 2011 a new colony of around 30 nests of *L. morio* was found in the eastern sector of Castle Cove, to the North of the gabions. Numbers of nest holes in this colony were significantly down in 2012, and the rare cleptoparasite *Sphecodes niger* recorded here in 2011 was not found in 2012. During 2013, this nesting aggregation continued to diminish in size.

Lasioglossum malachurum.

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

Eastern Compartment.
In 2004, a large loose nesting aggregation was located around SZ 55295 77001, containing 311 *L. malachurum* nests.

In 2005, a nesting aggregation on the same terrace and slopes occurred, in roughly the same area, being centred around SZ 55291 76997 where 109 nests were counted. A second, small nesting aggregation was found lower down the slope, centred around SZ 55292 76981; however this contained only 27 nest holes. Even with these additional nest sites, the total number of *L. malachurum* nests counted in this compartment in 2005 was 136 nests, less than 44% of the 2004 count for this section.

In 2006, 151 nests were counted around SZ 55306 76942, and a further 76 were counted around SZ 55293 76984, giving a total of 227 nests.

The counts in 2007 were as follows : the nesting aggregation on the upper slope around SZ 55292 76998 was no longer present, and the amount of bare ground here had decreased. The nesting aggregation on the lower slope, around SZ 55296 76986 was found to support 72 nest holes, roughly the same as in 2006.

During 2010, 2 *L. malachurum* nests were found on the upper slope on 27th April. On 28th May, 48 *L. malachurum* nests were found on the bare ground at the base of the slope at SZ 55307693. This area had been very wet earlier in the season and this may account for the relatively late establishment of the nests here. The total of 50 nests recorded for this section of the site continues the downward trend of nesting abundance of *L. malachurum* on this section of the site.

In 2011, 102 nests were noted in an aggregation at the base of the slope around SZ 55297698 on 20th April. This is the largest number of nests recorded in this location since survey began. However, the nesting aggregation which used to occur on the plateau higher up the slope had been lost due to continued loss of bare ground in this area.

In 2012, no nests were recorded from the plateau area and it is thought this area no longer has sufficient bare ground to support a nesting aggregation. Attempts to count the number of nest holes around SZ 55297698 were made difficult by the fact that the area was waterlogged during late April and early May, although 84 *Lasioglossum malachurum* nests were counted here on 21st May. Considering the weather conditions, this count is not significantly down on the 2011 count for this area.

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

Western Compartment.
In 2004, the *L. malachurum* nesting aggregations on the paths totaled 278 nest holes, with a further 209 nests further down the paths at SZ 55246 76978. This gave a 2004 total of 487 nest holes for this compartment.

In 2005, nests along the upper footpath around SZ 55167 76969 totaled only 40 nests, with a further 26 nests around SZ 55256 76977. This gives a 2005 total for this compartment of only 66 nests.

In 2006 , 72 nests were counted around SZ 55215 76977 on the lower path, and a further 231 were nest holes were located widely spread along the upper path, giving a total of 303 nests.

In 2007, 134 *L. malachurum* nest holes were counted along the top path, with the largest concentration of nest holes around SZ 55169 76972. A further aggregation of 25 nests was situated further East on the path around SZ 55239 76975. Some 13 nests were found in a patch of sparsely vegetated soil on the main body of the site around SZ 55205 76977. Thus the total *L. malachurum* nest count for this sector in 2007 was 172.

During 2010, a total of 464 *L. malachurum* nests were counted in the bare ground of the upper path or immediately to the South of this path in sparsely vegetated soil. This represented a significant increase in the number of nests here in comparison to 2007, and shows a recovery almost back to the maximum levels recorded in 2004.

In 2011, the maximum number of nests recorded around the bare ground of the upper path was 263, on 20th April.

In 2012, very muddy conditions on the top path throughout the main nesting period for *Lasioglossum malachurum* made counting nest holes very difficult, and the highest count recorded was of only 66 nests on 21st May. It is probable that this figure does not accurately reflect the number of nesting attempts made here.

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

DISCUSSION.

The amount of available bare ground is continuing to decrease. For some species this has resulted in a considerable loss of suitable nest sites, with a resultant decrease in this species' numbers. For example, the mining bee *Lasioglossum malachurum* has not been recorded nesting on the plateau of the eastern compartment in any quantity since 2006, whilst prior to this date the area contained a significant nesting aggregation. It would appear that heavy soil compaction may now be affecting the nesting success of *L. malachurum* along the top path in the western section.

The coarse, rank grassland element of the site continues to increase. Tall ruderal plants, including Teasel, Ragwort and Prickly Sow – thistle are also increasing. Bramble continues to spread in some areas of the site. Common Bird's – foot Trefoil is in decline in some areas, most notably on the plateau section of the eastern compartment.

A number of scarce species recorded during 2012 were not seen in 2013; these are discussed below :

Roesel's Bush Cricket *Metrioptera roeselii* **Nationally Scarce (Nb) IOW BAP.**
This species has previously been recorded from Castle Cove in 2005 and 2012, with only single individuals found in each of these seasons, so it's occurrence here can at best be regarded as sporadic, and it would seem it has not yet fully established itself on site.

The Glanville Fritillary *Melitaea cinxia* **RDB 3. UK BAP.**
This species has previously been recorded at Castle Cove in every survey until 2013. Although the Glanville Fritillary is prone to fluctuations in numbers, there appears to have been a continuous downward trend in population size at Castle Cove since 2007. Previous annual maxima were 3 in 2012, 23 in 2011, 42 in 2010, 96 in 2007 (an exceptional year for Glanville Fritillary), 13 in 2006, 9 in 2005, 8 in 2004 and 6 in 2003. Concerns were raised in the 2012 report that the progressive increase in sward height and subsequent changes in plant composition of the grasslands may be having a deleterious effect on the Glanville Fritillary population at Castle Cove.

A Picture – winged fly *Campiglossa malaris* **RDB 1.**
Locally, the first Island records for *C. malaris* were in 2011, when it was recorded from Castle Cove and also at a site in the centre of the Island. During 2012, the author has recorded this species from four other Isle of Wight sites, suggesting that the species is continuing to spread. It is somewhat surprising that this species was not recorded from Castle Cove during the 2013 survey, although Ragwort did appear to be less prevalent on site than in 2012. Although officially accorded RDB 1 status, over the last decade or so this fly has undergone a massive extension in both range and frequency and no longer qualifies for any scarce or threatened status.

A nomad bee *Nomada fulvicornis* **Rare RDB 3.**
The rare homeless bee *Nomada fulvicornis* was recorded for the first time at Castle Cove in 2007, when a single individual was found. In 2010 a maximum of 3 specimens was recorded on 1st July, all in the eastern

section of the site. No specimens were found in 2011, and in 2012 a single specimen was recorded in the western section on 21st May. *N. fulvicornis* was not found at Castle Cove in 2013. This bee is cleptoparasitic on *Andrena pilipes*, a species which has declined considerably at Castle Cove over the last few years. Else (in prep.) states that *N*. *fulvicornis* is widely distributed but rare and decreasing in southern England. On the Isle of Wight *N*. *fulvicornis* would certainly appear to be a rare species; the author has only otherwise recorded single specimens from four other Island sites.

A Wasp Spider *Argiope bruennichi* **Nb. IOW BAP.**
The wasp spider *Argiope bruennichi* was recorded from Castle Cove for the first time in 2006, and again in 2007. During 2010 *A. bruennichi* was again found at Castle Cove. Two specimens were noted on the western section of the site on 3rd September. No specimens were recorded at Castle Cove in 2011, but a single specimen was found in the western compartment on 6th September 2012. *A. bruennichi* was not recorded at Castle Cove in the 2013 survey. As the vegetation became increasingly rank, it was anticipated that the frequency with which *A. bruennichi* was found at Castle Cove would increase, although so far this prediction has not been fulfilled. This species is a comparatively recent colonist from continental Europe. it was first recorded in England in the 1920's. Nationally, *A. bruennich*i is now encountered in rank grassland in southern and central England, and has been found on several Island sites. It is included in the Isle of Wight BAP listings.

CONCLUSION.

The Castle Cove habitats and associated insect communities are still changing, with tall ruderal plants becoming further established, and bare ground diminishing. This is reflected by the loss or decline of some species which were previously well established at Castle Cove, including the Glanville Fritillary and the mining bee *Andrena pilipes* and it's cleptoparasite *Nomada fulvicornis*. However, the mining bee *Andrena humilis* was recorded for the first time at Castle Cove during the 2013 survey, possibly as a result of an increase in it's favoured forage plants which are Hawkweed / Hawkbit type yellow composites.

REFERENCES.

Edwards, R. & Broad, G. (Eds.) 2005. *'Provisional atlas of the aculeate Hymenoptera of Britain and Ireland part 5."* Centre for Ecology and Hydrology, Huntingdon.

Edwards, R. and Telfer, M. (Eds.). 2002. "*Provisional atlas of the aculeate Hymenoptera of Britain and Ireland part 4* ". Biological Records Centre, Huntingdon.

Else, G. R. in prep. "*Handbook of Bees of the British Isles"*.

Falk, S. J. 1991. "*A review of the scarce and threatened bees, wasps and ants of Great Britain* ". Research & survey in Nature Conservation No. 35. Nature Conservancy Council Peterborough.

Hyman, P. S. and Parsons, M. S. 1992. " *A review of the scarce and threatened Coleoptera of Great Britain part 1'* ". JNCC, Peterborough.

Stubbs, A. E. and Drake, M. 2001. " *British Soldierflies and their allies* ". British Entomological and Natural History Society, Reading.

APPENDIX 1. Insect species recorded during Castle Cove survey 2013.

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

ORDER	FAMILY	SCIENTIFIC NAME		DATE 1ST RECORD	STATUS
ORTHOPTERA		Grasshoppers & Crickets			
		Leptophyes	puctatissima	14.8.2013	Common, Widespread
		Pholidoptera	griseoaptera	14.6.2013	Common, Widespread
DERMAPTERA		Earwigs			
		Forficula	auricularia	30.4.2013	Common, Widespread
HEMIPTERA		True Bugs			
	Coreidae	Squash Bugs			
		Coreus	marginatus	1.7.2013	Common, Widespread
LEPIDOPTERA		Butterflies & Moths			
		Aglais	urticae	20.4.2013	Common, Widespread
		Colias	croceus	14.8.2013	Common, Widespread
		Erynnis	tages	27.5.2013	UK BAP
		Inachis	io	20.4.2013	Common, Widespread
		Lasiommata	megera	14.6.2013	UK BAP
		Maniola	jurtina	1.7.2013	Common, Widespread
		Melanargia	galathea	10.7.2013	Common, Widespread
		Pararge	aegeria	1.7.2013	Common, Widespread
		Pieris	brassicae	7.5.2013	Common, Widespread
		Pieris	rapae	27.5.2013	Common, Widespread
		Polygonia	c - album	20.4.2013	Common, Widespread
		Polyommatus	icarus	27.5.2013	Common, Widespread
		Pyronia	tithonus	14.8.2013	Common, Widespread
		Thymelicus	lineola	22.7.2013	Common, Widespread
		Thymelicus	sylvestris	10.7.2013	Common, Widespread
		Vanessa	cardui	28.8.2013	Common, Widespread
DIPTERA		True Flies			
	Bibionidae	Fever Flies			
		Bibio	marci	7.5.2013	Common, Widespread
		Dilophus	febrilis	20.4.2013	Common, Widespread
	Stratiomyidae	Soldier Flies			
		Chloromyia	formosa	1.7.2013	Common, Widespread
	Bombyliidae	Bee Flies			
		Bombylius	discolor	23.4.2013	N UK BAP
		Bombylius	major	20.4.2013	Common, Widespread
	Syrphidae	Hoverflies			
		Cheilosia	pagana	28.8.2013	Common, Widespread
		Cheilosia	vernalis	1.7.2013	Common, Widespread
*		Chrysotoxum	bicinctum	28.8.2013	Common, Widespread
*		Dasysyrphus	tricinctus	28.8.2013	Common, Widespread
		Episyrphus	balteatus	14.6.2013	Common, Widespread
		Eristalis	arbustorum	28.8.2013	Common, Widespread
		Eristalis	pertinax	23.4.2013	Common, Widespread
		Eristalis	tenax	23.4.2013	Common, Widespread
		Eupeodes	corollae	20.4.2013	Common, Widespread
		Eupeodes	luniger	27.5.2013	Common, Widespread
*		Helophilus	pendulus	28.8.2013	Common, Widespread
		Helophilus	trivittatus	14.6.2013	Common, Widespread
		Melanostoma	mellinum	30.4.2013	Common, Widespread
		Merodon	equestris	14.6.2013	Common, Widespread
		Myathropa	florea	28.8.2013	Common, Widespread
		Paragus	haemorrhous	14.6.2013	Common, Widespread
		Pipizella	viduata	27.5.2013	Common, Widespread

		Platycheirus	albimanus	30.4.2013	Common, Widespread
		Platycheirus	clypeatus	14.6.2013	Common, Widespread
		Scaeva	pyrastri	14.8.2013	Common, Widespread
		Sphaerophoria	scripta	27.5.2013	Common, Widespread
		Syritta	pipiens	14.6.2013	Common, Widespread
		Syrphus	ribesii	30.4.2013	Common, Widespread
		Syrphus	vitripennis	23.4.2013	Common, Widespread
		Xanthogramma	pedisequum	27.5.2013	Common, Widespread
	Tephritidae	**Picture - winged Flies**			
		Eulia	heraclei	30.4.2013	Common, Widespread
		Sphenella	marginata	14.8.2013	Common, Widespread
		Tephritis	neesii	22.7.2013	Common, Widespread
	Ulidiidae	**Picture - winged Flies**			
		Herina	longistylata	1.7.2013	Common, Widespread
	Sciomyzidae	**Snail Killing Flies**			
		Pherbellia	cinerella	27.5.2013	Common, Widespread
*		Trypetoptera	punctulata	27.5.2013	Common, Widespread
	Scathophagidae	**Dung Flies**			
*		Scathophaga	stercoraria	20.4.2013	Common, Widespread
	Tachinidae	**Tachinid Flies**			
		Eriothrix	rufomaculatus	14.8.2013	Common, Widespread
HYMENOPTERA		**Bees, Wasps, Ants & Relatives**			
	Formicidae	**Ants**			
		Lasius	niger	20.4.2013	Common, Widespread
		Formica	cunicularia	1.7.2013	Common, Widespread
	Vespidae	**Social Wasps**			
		Vespula	vulgaris	22.7.2013	Common, Widespread
	Crabronidae	**Digger Wasps**			
		Cerceris	rybyensis	14.8.2013	Common, Widespread
	Apoidea	**Bees**			
	Colletidae	**Mining & Yellow - faced Bees**			
		Hylaeus	communis	14.6.2013	Common, Widespread
		Hylaeus	hyalinatus	14.6.2013	Common, Widespread
	Andrenidae	**Mining Bees**			
		Andrena	cineraria	23.4.2013	Common, Widespread
		Andrena	dorsata	20.4.2013	Common, Widespread
		Andrena	flavipes	23.4.2013	Common, Widespread
		Andrena	haemorrhoa	14.6.2013	Common, Widespread
*		Andrena	humilis	27.5.2013	**Nb**
		Andrena	minutula	23.4.2013	Common, Widespread
		Andrena	nitida	20.4.2013	Common, Widespread
		Andrena	pilipes	28.8.2013	**Nb IOW BAP**
		Andrena	proxima	27.5.2013	**RDB 3**
	Halictidae	**Mining & Cuckoo Bees**			
		Halictus	tumulorum	23.4.2013	Common, Widespread
		Lasioglossum	malachurum	20.4.2013	**Nb**
		Lasioglossum	morio	30.4.2013	Common, Widespread
	Mellitidae	**Mining Bees**			
*		Dasypoda	hirtipes	22.7.2013	**Nb**
	Megachilidae	**Solitary Bees**			
		Megachile	centuncularis	14.8.2013	Common, Widespread
		Megachile	willughbiella	1.7.2013	Common, Widespread
		Osmia	aurulenta	30.4.2013	Common, Widespread
		Osmia	rufa	30.4.2013	Common, Widespread
	Anthophoridae	**Flower & Nomad Bees**			

		Nomada	flava / panzeri male	14.6.2013	Common, Widespread
		Nomada	fucata	30.4.2013	**Na**
		Nomada	goodeniana	23.4.2013	Common, Widespread
		Nomada	marshamella	30.4.2013	Common, Widespread
	Apidae	**Social & Cuckoo Bees**			
		Apis	mellifera	23.4.2013	Common, Widespread
		Bombus	lapidarius	23.4.2013	Common, Widespread
		Bombus	lucorum	20.4.2013	Common, Widespread
		Bombus	pascuorum	20.4.2013	Common, Widespread
		Bombus	pratorum	23.4.2013	Common, Widespread
		Bombus	terrestris	20.4.2013	Common, Widespread
COLEOPTERA		**Beetles**			
	Cantharidae	**Soldier Beetles**			
		Rhagonycha	fulva	1.7.2013	Common, Widespread
	Cerambycidae	**Longhorn Beetles**			
*		Strangalia	maculata	22.7.2013	Common, Widespread
	Coccinellidae	**Ladybirds**			
		Coccinella	7 - punctata	23.4.2013	Common, Widespread
	Curculionidae	**Weevils**			
		Mononychus	punctum - album	14.6.2013	**Na**
	Malachiidae	**Pollen Beetles**			
		Malachius	bipustulatus	27.5.2013	Common, Widespread
	Oedemeridae	**Oedemerid Beetles**			
*		Oedemera	lurida	27.5.2013	Common, Widespread
		Oedemera	nobilis	27.5.2013	Common, Widespread