INVERTEBRATE SURVEY OF

CHILLINGWOOD COPSE AND ROWLANDS WOOD,

ISLE OF WIGHT

2005

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Introduction.

Chillingwood Copse and Rowlands Wood are two separate areas of mixed woodland located approximately 1 Km. South - east of Havenstreet on the Isle of Wight. Both woods are classified as Sites of importance for Nature Conservation and are classed as Ancient Woodland in the Nature Conservancy Council"s "Provisional Directory of Ancient Woodland" produced in 1987.

Geologically, both woods have a Hamstead clay substrate, which means drainage is slow, resulting in several areas of wet woodland. Both Chillingwood Copse and Rowlands Wood show similarities to several of the other woodlands in the Havenstreet and Briddlesford woodland complexes, and indeed it is believed that at one time these woodlands were interconnected as a large belt of woodland.

Chillingwood Copse comprises of approximately 15 ha. of mixed woodland dominated by Pedunculate Oak *Quercus robur*, Sweet Chestnut *Castanea sativa* and Beech *Fagus sylvatica* with a coniferous element. Aspen *Populus tremula* is also present. Much of this woodland appears to be plantation woodland established in the 1950's, although older trees also exist within the planted areas, and the area is known to have been wooded in the late 18th Century.The area known as Burnt Piece contains more old trees than the rest of Chillingwood Copse, including a number of old Crab Apple *Malus sylvestris* trees.Recent management work has resulted in a considerable amount of clearing and "opening up" of the wood, and some rides have also been re - established.Other parts remain densely shaded. Parts of Chillingwood Copse have a Hazel *Corylus avellana* understorey, and some Holly *Ilex aquifolium* is present.

Rowlands Wood is somewhat larger than Chillingwood Copse, covering some 22ha. Rowlands Wood contains pockets of remnant semi - natural ancient woodland, although considerable planting has additionally been undertaken in the mid 20th Century. Beech, Pedunculate Oak, Sycamore *Acer pseudoplatanus*, Ash *Fraxinus excelsior*,Sweet Chestnut, Aspen and several coniferous species are present. There is a Birch *Betula pendula* and Hazel understorey in places. Holly is also present. Rowlands Wood has also been subject to recent active management to produce better rides and cleared areas, although densely shaded areas still remain.

Botanical survey by Pope (2003) showed that Rowlands Wood contained considerably more ancient woodland indicator plant species than Chillingwood Copse, although the distribution of some of these species within the woodland was restricted to certain areas. Recent management work in both woods is encouraging the recovery of a number of plant species, and some of the rides and recent clearings now offer considerable sources of pollen and nectar.

Within Chillingwood Copse the richest areas floristically were the main North - South and East - West rides and their margins,where Bugle *Ajuga reptans*, Primrose *Primula vulgaris*, Wood Spurge *Euphorbia amygdaloides*, Thistles *Cirsium* spp. and Bramble *Rubus fruticosus* agg. provided nectar and pollen sources. However, the most useful source of pollen and nectar was the hedge forming the Eastern boundary of the Copse, which had a good mixture of flowering plants and shrubs providing nectaring opportunities throughout the season. Blackthorn *Prunus spinosa*, Hawthorn *Crataegus monogyna*, Willow *Salix* sp., Dogwood *Cornus sanguinea*, Guelder Rose *Viburnum opulus*, Dog Rose *Rosa canina*, Teasel *Dipsacus fullonum*, Thistles, Bramble and Common Fleabane *Pulicaria dysenterica* were all present.

Rowlands Wood is bisected by the Isle of Wight Steam Railway line. In the northern sector of the wood most of the pollen and nectar sources were concentrated around the main West - east ride. An open area around SZ 5666 8950 proved of particular interest with *Salix*, Blackthorn, Primrose, Bugle, Wood Spurge and Bramble all being well represented. The eastern end of this ride has some permanently damp areas where Water Mint *Mentha aquatica* flourishes, providing a useful late summer nectar source.Within the southern part of the wood, it is again the rides and their adjacent clearings which provide the bulk of the foraging opportunities for insects. An area around SZ 5661 8912, close to the small ponds had several Guelder Rose bushes and a variety of umbels in late Summer in addition to more widely distributed species such as Primrose, Bugle and Wood Spurge. Another area with a rich flora was a damp area along the ride in the South -east of the wood around SZ 568 889; Ragged Robin *Lychnis flos - cuculi* was abundant here.

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. Both woods were visited on a regular basis throughout the main period of adult insect activity. Survey commenced on 18th March 2005; the last visit was made on 7th September. Visits were all undertaken in good weather.

Results.

A full list of all insect species recorded during the course of survey 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**. Where possible, locations of where scarcer species were recorded are provided on **Map1** for Chillingwood Copse and **Map 2** for Rowlands Wood.

ORTHOPTERA.

Small numbers of the Nationally Scarce (Na) Long - winged Conehead *Conocephalus discolor* were swept from areas of ranker grassland in Chillingwood Copse.Although still confined to southern coastal counties in Britain, on the Isle of Wight *C. discolor* is quite widespread in suitable habitats such as reedbeds and coarse grassland, particularly close to the coast. Formerly a very rare insect nationally, *C. discolor* appears to be flourishing and is forming new colonies.

LEPIDOPTERA.

The author was delighted to find the Nationally Scarce (N) Silver - washed Fritillary *Argynnis paphia* in both Chillingwood Copse and Rowlands Wood. Numbers in Chillingwood Copse appear to be low, but a fairly strong colony appears to exist in Rowlands Wood. This handsome butterfly was first recorded on 6th July 2005, when it was found in both woods - as a singleton in Chillingwood Copse, but with at least 7 individuals being seen in Rowlands Wood. A clearing in the southern section of Rowlands Wood around SZ 56609 89122 appeared to be particularly favoured on this visit, although it was recorded from both the North and South sections. Five Silver - washed Fritillaries were noted in Rowlands Wood on 18th July, and seven were recorded here on 2nd August. Of these, two were females of the dark form *valezina* ; these were located at SZ 56678 89500. A single specimen was seen in Rowlands Wood on the late date of 23rd August.

Larvae of this species feed on Dog Violet *Viola riviniana*, which is present along some of the rides and in the cleared areas within both woods. The Silver - washed Fritillary is in decline both nationally and locally and is classed as a National Biodiversity Action Plan (BAP) species of conservation concern. It is also an Island BAP species. Locally, the author has previously recorded the Silver - washed Fritillary from Briddlesford Copse (Wootton), and Walter's Copse (Newtown). This butterfly has disappeared from many woodlands on the Isle of Wight and until the current survey was assumed to be lost from Rowlands Wood and Chillingwood Copse. The larval foodplant is succeptable to over - shading so the recent ride management and clearing work is likely to benefit the host plant and in turn the butterfly population.

The White Admiral *Ladoga camilla*, although not considered Nationally Scarce or threatened, is another woodland butterfly worthy of mention, since it appears to also be in considerable national and local decline. This attractive species was present in both Chillingwood Copse and Rowlands Wood. The highest count for Chillingwood was of 5 on 6th July, whilst Rowlands Wood produced 14 individuals on July 18th. The White Admiral is still present in several Island woodland areas, but a recent decline has been noted. Larvae of this species feed on Honeysuckle *Lonicera periclymenon* but only utilise plants in very densely shaded areas. Thus over - clearing within a wood can result in the demise of this butterfly.

DIPTERA.

The Dotted Beefly *Bombylius discolor* is considered a Nationally Scarce (N) species, and due to significant recent national decline is included in the National BAP long list as a species of national conservation concern. It was encountered regularly in both Rowlands Wood and Chillingwood Copse visiting the flowers of Primrose. Larvae of *B. discolor* are ectoparasitic on the larvae of mining bees, particularly *Andrena flavipes* which was also found in both woods. Falk (1991a) notes a considerable recent decline in *B. discolor*, which nationally is largely confined to southern England. However, this fly is widely distributed and not infrequent on the Isle of Wight.

Within the true flies, the Hoverflies (Syrphidae) are widely recognised as a group which have many specialist species associated with ancient woodland. In view of this the author surveyed for this group in detail . The resulting list totals 77 species (28% of the total British list, and 49 % of the current Island list) , which for a single season is a very creditable total. Stubbs (1982) produced a list of 54 species of hoverfly which he considered to be indicator species for primary woodland. These he graded from H1 (strong) through H2(good) to H3 (weak) indicators. Sixteen of the species on Stubbs lists were recorded on the survey - these are tabulated in **Appendices 2** and **3**. The results include 12 Nationally Scarce and one Red Data Book species of hoverfly, which are detailed below:

The Nationally Scarce hoverfly *Cheilosia carbonaria* was taken by general sweeping in the northern sector of Rowlands Wood on 27th April. This uncommon species appears confined to woodland areas, and is listed by Stubbs (1982) as a strong primary woodland indicator species, although this association appears to be weaker than originally thought. The larval stage is unknown. Locally the author has only previously encountered this species in Walter's Copse (Wright, 2000).

A single specimen of the Rare (RDB3) hoverfly *Cheilosia nebulosa* was found hovering at *Salix* catkins in the northern section of Rowlands Wood around SZ 56678 89500 on 15th April. Larvae of *C. nebulosa* remain unknown. This early Spring species has a widely scattered distribution as far North as central Scotland. Ball & Morris (2000) give records for only 28 10Km squares in the UK. This would appear to constitute the first Isle of Wight record for *C. nebulosa*.

The hoverfly *Criorhina ranunculi* , a Nationally Scarce (N) bumblebee mimic, was present in some numbers in Chillingwood Copse, with a maximum of 7 individuals being seen on 15th April. Most of these were visiting Blackthorn and *Salix* blossom, and could be seen patrolling the eastern boundary hedge of Chillingwood Copse. Larvae of *C. ranunculi* develop in wet rot cavities at the base of trees, particularly Beech, and the species is considered to have a strong association with ancient semi - natural woodland.Most British records are from southern England. Locally, the author has recorded this species from 3 other Island sites, but has only ever previously encountered single specimens. In view of it's local scarcity and specific habitat requirements, *C. ranunculi* is included in the Isle of Wight BAP listings.

Small numbers of the Nationally Scarce hoverfly *Epistrophe diaphana* were seen in Rowlands Wood in early June. They were found visiting flowers of Hogweed *Heracleum sphondyllium* along the main East - West ride in the northern sector of the wood. The larvae are believed to be aphidophagous. Nationally, *E. diaphana* is mainly restricted to southern English counties. It is associated with woodland and scrubby habitats. The author has recorded *E. diaphana* from 3 other Island sites. *E. diaphana* is included in the Isle of Wight BAP listings.

A single specimen of the hoverfly *Eumerus ornatus* was found basking on a leaf in the southern section of Rowlands Wood around SZ 5661 8192 on 7th June. This species is associated with woodland localities in southern England, with a scattering of records North to the Lake District. It is likely that the larvae develop in plant bulbs or roots. Locally, the author has recorded *E. ornatus* from 6 other woodland localities on the Island. *E. ornatus* is classified as both Nationally Scarce (N) and is a national BAP species of conservation concern.

A single specimen of the Nationally Scarce hoverfly *Pipizella virens* was swept from rank vegetation at the junction of the main North - South and East - West rides in Chillingwood Copse on 12th June. Larvae of *P. virens* are believed to be associated with aphids at the roots of umbelliferous plants. This species is associated with lush vegetation in a variety of habitats in southern England. On the Island, the author has previously recorded *P. virens* from two other woodland sites and a rough coastal grassland site.

The distinctive hoverfly *Volucella inanis* was recorded from both Chillingwood Copse and Rowlands Wood during August, when several specimens were seen visiting umbel flowers. Larvae of this species are ectoparasites of social wasps. *V. inanis* is largely confined to South - east England, and is classified as a Nationally Scarce (N) species. Although included in the Isle of Wight BAP listings, *V. inanis* appears to be coming increasingly common on the Island, where it may be recorded in a variety of situations in late Summer.

The closely related *Volucella zonaria* was only recorded from Rowlands Wood, where it was seen on several occasions. Larvae of *V. zonaria* also develop in the nests of social wasps, but they are believed to be both scavengers and predatory. The national distribution is again largely confined to South - east England. *V. zonaria* is a comparatively recent colonist, having first become established in the UK in the 1940's. Locally, this Nationally Scarce species appears to be increasing, and it's inclusion in the Isle of Wight BAP listings is perhaps questionable.

In contrast, *Volucella inflata* is confined to ancient semi - natural woodland situations. This Nationally Scarce hoverfly was recorded regularly in June and early July in both Chillingwood Copse and Rowlands Wood. Eggs are laid in sap runs on overmature trees; the larvae are believed to be predatory on other insect larvae living in the sap runs.*V. inflata* is seldom encountered North of the Severn - Wash line. The Weald, South Hampshire, Dorset and the Isle of Wight are considered to be it's strongholds. Locally, this species can be frequent in some of the older woodlands, but it curiously absent from other apparently suitable sites. *V. inflata* is an Isle of Wight BAP species.

Xanthandrus comtus is another hoverfly which is classed as both Nationally Scarce and an Island BAP species.A few individuals were seen in Rowlands Wood, and the species was seen on one occasion in Chillingwood Copse.Most specimens were found basking on sunlit leaves. It's larvae prey on the caterpillars of micro - moths. It is widely scattered but thinly distributed in Britain. Ball & Morris (2000) propose that *X. comtus* may be a migrant species, but the regularity with which the author has recorded it from certain Island sites over a period of years would suggest that the species breeds here. However, *X. comtus* appears

succeptable to considerable fluctuations in population density, these are the first specimens the author has seen on the Island since 2003.

Single specimens of the elusive species *Xylota tarda* were found running across leaves in both Chillingwood Copse and Rowlands Wood. *X. tarda* is confined to wet areas in over mature deciduous woodland, where it's larvae develop in sap runs or rotting wood.An association with Aspen has been suggested. Populations of this species are often small and confined to a particular area; it is rarely encountered in numbers. Nationally, it is a very scarce but widely distributed species. Apart from a specimen found by the author in Stockers Hole Copse in 2002 and an old (pre 1960) record from the East of the Island , there appear to be no other published Island records for *X. tarda*.

Xylota xanthocnema was recorded from Rowlands Wood on 18th July, when a single specimen was captured basking on a Guelder Rose leaf along a ride margin in the southern sector of the wood. Larvae of *X. xanthocnema* develop in rot holes of deciduous trees. This Nationally Scarce (N) species is predominantly southern in it's UK distribution. Populations tend to be small, and it is unusual to find this species in numbers at a site. Locally, the author has recorded this species from four other woodland sites on the Island.

The long - headed fly *Dolichopus virgultorum* was swept from vegetation along a damp section of the main North - South ride in Chillingwood Copse. The biology of this Nationally Scarce species remains unknown, although it is likely that the larvae are semi - aquatic predators. Falk & Crossley (2005) cite some 15 post 1960 sites for *D. virgultorum*, five of which are from the Isle of Wight. The species is confined to southern England and South Wales.

A single specimen of the Tachinid fly *Hemyda vittata* was found at the flowers of Bugle on the main East - West ride of Chillingwood Copse on 27th April. Larvae develop as parasites in pentatomid bugs. This Rare (RDB3) fly is a relatively recent colonist, having first been recorded in Britain in 1956, with all other British records dating from post 1970. Belshaw (1993) gives 17 British records, all from southern England. M.Smith (pers. comm, 2005) states that *H. vittata* has now reached as far North as Warwickshire. The National Tachinid recording scheme houses no other records of *H. vittata* from the Isle of Wight.

HYMENOPTERA.

The small mining bee *Lasioglossum puncticolle* was present in low numbers in Chillingwood Copse. *Lasioglossum puncticolle* is a nationally scarce (Nb) species confined to southern England. It requires warm bare ground in which to nest. Although it's UK distribution is restricted, *L. puncticolle* is a typical element of the fauna of the soft rock landslip systems of the South coast of the Isle of Wight, and is also regularly recorded inland here.

A single specimen of the Rare (RDB3) cuckoo bee *Sphecodes scabricollis* was captured whilst sitting on a leaf along the margin of the main East - West ride in the northern sector of Rowlands Wood on 2nd August 2005. This rare bee is cleptoparasitic on mining bees, and *Lasioglossum zonulus* (which was recorded with some frequency in both woods) is considered to be a likely host. Most records of *S. scabricollis* are from deciduous woodland, although it has also been recorded from the margins of heathland. Falk (1991b) gives about 10 known post - 1970 sites for this species in Britain, mainly in E. Sussex, but also in S. Hampshire and E. Kent. Else (in prep.) states that *S. scabricollis* should have been admitted to the Red Data Book as a vulnerable species, and that it's current status does not reflect it's true scarcity within the UK. *S. scabricollis* is quite widely distributed in central and southern Europe, but is very rare nearly everywhere. The author has been unable to locate any previous records for *S. scabricollis* from the Isle of Wight.

The Nationally Scarce (Na) Long - horned bee *Eucera longicornis* was a surprise addition to the species list for Rowlands Wood. A single male of this distinctive species was encountered flying along a ride on June 7th. Plants of Tufted Vetch *Vicia cracca*, a favoured nectar source, were found nearby. *E. longicornis* has suffered a marked decline nationally and locally in recent decades, especially at inland sites. It is now mainly associated with coastal grassland sites in South - west England, Kent, the Isle of Wight and on the Gower peninsula. Although the author has encountered *E. longicornis* on a number of occasions at coastal locations on the Island and the mainland, it is the first time that he has seen the species at an inland site.

COLEOPTERA.

Several specimens of the Hazel leaf - rolling weevil *Byctiscus betulae* were beaten from Hazel in Chillingwood Copse during May. Adults of this Nationally Scarce (Nb) beetle are most commonly seen on coppiced Hazel

and occasionally on Birch. The larvae are found in leaf rolls.*B. betulae* is widely distributed but local in England and South Wales.

The Jewel beetle *Agrilus laticornis* was recorded in some numbers between 7th June and 6th July. Although present in both Chillingwood Copse and Rowlands Wood, populations in the southern sector of the latter site were particularly strong, with numbers into the teens being not uncommon.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. Alexander (2003) shows two other post 1980 records for this species on the Isle of Wight.

The Nationally Scarce weevil *Magdalis carbonaria* was beaten from foliage in Rowlands Wood on 16th May. This beetle is associated with Birch in deciduous woodland; it's larvae feed internally in dead Birch twigs and branches. *M. carbonaria* is widespread but local throughout England and Scotland, but commoner in the North.

Discussion.

The survey resulted in the recording of some 268 species of invertebrate, of which 3 are classified as Red Data Book species, and a further 20 are classed as Nationally Scarce. Together these represent almost 9% of the total species recorded. Nine Isle of Wight BAP species were found, of which one species is a UK BAP Priority species, and a further two are UK BAP species of conservation concern. In terms of Nationally Scarce and threatened species Rowlands Wood produced slightly more species than Chillingwood Copse (2 RDB species and 16 Nationally Scarce species compared to 1 RDB and 13 Nationally Scarce species). 39 species specifically associated with primary woodland or dead wood were recorded from Rowlands Wood compared to 35 species from Chillingwood Copse.

Although considerable overlap of these indicator species occurred, it is interesting to note that both woodlands had species which well represented in one wood but were not recorded from the other. A good example is the large and distinctive hoverfly *Criorhina ranunculi* which was present in large numbers in Chillingwood Copse but unrecorded from Rowlands Wood.

In order to assess the local importance of Rowlands Wood and Chillingwood Copse as semi - natural ancient woodland it is useful to compare the results of survey here with those from a survey of the Briddlesford woodland complex conducted by the author in 2002, particularly since the Briddlesford woodland complex is considered to be of regional importance entomologically. The Briddlesford woodland complex covers some 95 ha. compared to the approximately 37 ha. occupied by Rowlands Wood and Chillingwood Copse. However, the number of Nationally Scarce and threatened species from the Briddlesford area is very similar to those recorded from the current survey (Briddlesford produced 2 RDB and 23 Nationally Scarce species compared to 3RDB and 20 Nationally Scarce species in Rowlands Wood and Chillingwood Copse). The number of primary woodland indicator hoverflies was also markedly similar, and considerable overlap of species occurred. (Briddlesford 4H1; 10 H2; 3 H3. Rowlands Wood and Chillingwood Copse 4H1; 10H2; 2H3.). It is probable that for the more mobile species at least, metapopulations may exist whereby species may recolonise from surrounding populations when suitable conditions arise. For example recent clearing or coppicing work, which has been undertaken both at the Briddlesford woodlands and in Rowlands Wood and Chillingwood Copse may well have resulted in local migrations within species which benefit from such situations in woodland.

Management considerations.

There has been a considerable amount of management work undertaken in both woodlands over the last few years. This has focussed on the production of clearings, coppicing and re-opening overgrown rides. This work has doubtless been of considerable benefit to the invertebrate populations within the woods. It is understood that such work will continue, resulting in a more open structure within the woods. Following completion of this initial phase a coppicing programme is to be instituted. Such actions are likely to be of significant benefit to many of the insect species present.

Whilst this work will benefit many species, it should be borne in mind that certain species such as the White Admiral butterfly are dependent upon Honeysuckle in densely shaded woodland, and such conditions should not be completely eradicated.

Features such as sap runs and rot holes, which are favoured by many ancient woodland dependent insects, are scarce in both Rowlands Wood and Chillingwood Copse, as is standing dead wood. It would be beneficial to leave some standing dead timber where possible, and conservation of the larger trees exhibiting signs of physical damage such as rot holes and sap runs is advocated. Additionally, it would be advantageous to retain some of the log piles that have been made, providing this is financially possible.

The eastern boundary hedge of Chillingwood Copse forms a particularly important source of pollen and nectar for insects living within this wood, and if possible this hedge should be kept in it's current state rather than being allowed to progress through to woodland.

The current programme of ride widening and scalloping will also be of significant benefit. The resultant flora will provide an important nectar and pollen source for many of the invertebrates present. Additionally species such as Dog Violet, which needs sunny situations in which to flourish, should become more abundant with time. As this is the larval foodplant for the Silver - washed Fritillary butterfly, such actions should help ensure the survival of this species in these woods.

Because many of the rides are permanently damp plant growth tends to be quite rapid along these rides. In an attempt to ensure that plants had seeded prior to being cut, a late cut was performed on some rides in 2005. Unfortunately, this resulted in a very dense layer of thatch following the cut; removal of this proved time consuming and expensive, and is perhaps not a realistic practice. Consideration could perhaps be given to selecting some scalloped areas which could be cut less frequently than the main rides.

Conclusion.

The number of primary woodland indicator species and dead wood dependent species recorded during the current survey can leave little doubt that Chillingwood Copse and Rowlands Wood form an extremely important habitat for these insects on the Isle of Wight, and indeed they are of regional significance for a number of the scarcer species recorded. At least three species of insect previously unknown from the Island have been found on the current survey, and many other species known to be highly restricted on the Isle of Wight have also been recorded. It is also especially heartening to note the presence of the bees *Eucera longicornis* which is extinct at the majority of it's former UK inland sites, and particularly the bee *Sphecodes scabricollis* - a woodland species which is considered very rare throughout Europe.

Additional Records.

Although not strictly within the scope of the main survey the following Isle of Wight BAP species were recorded during the course of the survey.
Red Squirrel was seen regularly in both Chillingwood Cops e and Rowlands Wood. This is a National BAP Priority species.
Buzzards were seen regularly in both woods and are probably breeding in Rowlands Wood. This is a National BAP species of conservation concern.
A Nightingale was heard in the North - eastern corner of Chillingwood Copse. This is a National BAP species of conservation concern.
Common Toad was frequent in Rowlands Wood. This is a National BAP species of conservation concern.

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Appendix 1.
List of insect species recorded from Rowlands Wood and Chillingwood Copse, 2005.

Species recorded from Chillingwood Copse are denoted by “C”.
Species recorded from Rowlands Wood are denoted by “R”.

Species	Compartment(s) present	Status	BAP listing
ORTHOPTERA	(Grasshoppers & Crickets)		
Conocephalus discolor	C	Nationally Scarce (Na)	
Leptophyes punctatissima	C, R		
Pholidoptera griseoaptera	C, R		
Tetrix subulata	C, R		
Tetrix undulata	R		
DERMAPTERA	(Earwigs)		
Forficula auricularia	C, R		
ODONATA	(Dragonflies & Damselflies)		
Aeshna cyanea	R		
Anax imperator	C, R		
Enallagma cyathigerum	C, R		
Ischnura elegans	C, R		
Libellula depressa	R		
Pyrrhosoma nymphula	C, R		
Sympetrum striolatum	C, R		
HEMIPTERA	(True Bugs)		
ACANTHOSOMIDAE	(Shield bugs)		
Acanthosoma haemorrhoidalis	C, R		
Elasmostethus interstinctus	R		
PENTATOMIDAE	(Shield bugs)		
Dolycoris baccarum	C, R		
Eurydema oleracea	R		
Palomena prasina	C, R		
RHOPALIDAE	(Squash bugs)		
Coryzus hyoscyami	C		
LEPIDOPTERA	(Butterflies & moths)		
BUTTERFLIES			
Aglais urticae	Small tortoiseshell	R	
Anthocharis cardamines	Orange Tip	C, R	
Aphantopus hyperantus	Ringlet	C, R	
Argynnis paphia	Silver - washed Fritillary	C, R	Nationally Scarce (N) UK BAP SOCC
Celastrina argiolus	Holly Blue	C, R	

Coenonympha pamphilus	Small heath		C, R
Gonepteryx rhamni	Brimstone		R
Inachis io	Peacock		C, R
Ladoga camilla	White Admiral	C, R	
Maniola jurtina	Meadow Brown	C, R	
Melanargia galathea	Marbled White	C	
Pararge aegeria	Speckled Wood	C, R	
Pieris brassicae	Large White	C, R	
Pieris napi	Green veined white	C, R	
Pieris rapae	Small White	C, R	
Polygonia c - album	Comma	C, R	
Pyronia tithonus	Gatekeeper	C, R	
Thymelicus sylvestris	Small skipper	C, R	
Vanessa atalanta	Red Admiral	C, R	

DIPTERA (True Flies)

TIPULIDAE (Craneflies)

Epiphragma ocellaris	R

STRATIOMYIDAE (Soldierflies)

Beris chalybata	C
Beris vallata	C
Chloromyia formosa	C, R
Chorisops tibialis	R
Microchrysa polita	R
Sargus iridatus	C

RHAGIONIDAE (Snipeflies)

Chrysopilus asiliformis	C
Chrysopilus cristatus	C, R
Rhagio lineola	C
Rhagio scolopacea	C, R
Rhagio tringarius	C

TABANIDAE (Horseflies)

Haematopota pluvialis	C
Tabanus bromius	C, R

ASILIDAE (Robberflies)

Dioctria linearis	C, R
Dioctria rufipes	R

BOMBYLIIDAE (Beeflies)

Bombylius discolor	C, R	Nationally Scarce (N)	UK BAP Priority species
Bombylius major	C, R		

SYRPHIDAE (Hoverflies)

Baccha elongata	C, R	
Brachyopa scutellaris	R	
Brachypalpoides lentus	C, R	
Chalcosyrphus nemorum	R	
Cheilosia albipila	C	
Cheilosia albitarsis	C, R	
Cheilosia carbonaria	R	Nationally scarce (N)
Cheilosia impressa	R	
Cheilosia lasiopa	C	
Cheilosia nebulosa	R	Rare (RDB3)
Cheilosia pagana	C	

Cheilosia proxima	R		
Cheilosia ranunculi	C		
Cheilosia scutellata	R		
Cheilosia variabilis	C, R		
Cheilosia vernalis	C, R		
Chrysogaster solstitialis	R		
Chrysotoxum bicinctum	C, R		
Chrysotoxum cautum	C		
Criorhina berberina	C, R		
Criorhina floccosa	C, R		
Criorhina ranunculi	C	Nationally scarce (N)	IOW BAP
Dasysyrphus albostriatus	C, R		
Dasysyrphus tricinctus	C, R		
Dasysyrphus venustus	C, R		
Epistrophe diaphana	R	Nationally Scarce (N)	IOW BAP
Epistrophe eligans	C, R		
Epistrophe nitidicollis	C, R		
Episyrphus balteatus	C, R		
Eristalis arbustorum	C, R		
Eristalis nemorum	C, R		
Eristalis pertinax	C, R		
Eristalis tenax	C, R		
Eumerus ornatus	R	Nationally Scarce (N)	UK BAP SOCC
Eupeodes corollae	C, R		
Eupeodes latifasciatus	R		
Eupeodes luniger	C, R		
Ferdinandea cuprea	C, R		
Helophilus hybridus	C, R		
Helophilus pendulus	C, R		
Leucozona lucorum	C, R		
Melangyna lasiopthalma	C		
Meligramma cincta	C, R		
Meliscaeva auricollis	C, R		
Melanostoma mellinum	C, R		
Melanostoma scalare	C, R		
Myathropa florea	C, R		
Neoascia podagrica	C, R		
Parasyrphus punctulatus	C, R		
Pipiza austriaca	C, R		
Pipiza fenestrata	C		
Pipiza noctiluca	C, R		
Pipizella viduata	C		
Pipizella virens	C	Nationally Scarce (N)	
Platycheirus albimanus	C, R		
Platycheirus clypeatus	R		
Platycheirus peltatus	C, R		
Platycheirus rosarum	C, R		
Rhingia campestris	C, R		
Scaeva pyrastri	C		
Sericomyia silentis	R		
Sphaerophoria batava	R		
Sphaerophoria scripta	C, R		
Sphegina eligans	C		
Syritta pipiens	C, R		
Syrphus ribesii	C, R		
Syrphus vitripennis	C, R		
Volucella bombylans	C		
Volucella inanis	C, R	Nationally Scarce (N)	IOW BAP
Volucella inflata	C, R	Nationally Scarce (N)	IOW BAP
Volucella pelluscens	C, R		
Volucella zonaria	R	Nationally Scarce (N)	IOW BAP
Xanthandrus comtus	C,R	Nationally Scarce (N)	IOW BAP
Xylota segnis	C, R		

Xylota sylvarum	C, R	
Xylota tarda	C, R	Nationally Scarce (N)
Xylota xanthocnema	R	Nationally Scarce (N)

DOLICHOPODIDAE (Long - headed flies)

Argyra argentella	R	
Dolichopus virgultorum	C	Nationally Scarce (N)
Hercostomus gracilis	C, R	
Poecilobothrus nobilitatus	R	

CONOPIDAE (Thick - headed flies)

Conops ceraieformis	R	
Conops quadrifasciatus	R	
Sicus ferrugineus	C, R	

TEPHRITIDAE (Picture - winged flies)

Chaetostomella cylindrica	C	
Sphenella marginata	R	
Tephritis bardanae	R	
Tephritis cometa	R	
Terrellia ruficauda	C	

BIBIONIDAE (Fever flies)

Bibio marci	C, R	
Bibio varipes	C	
Dilophus febrilis	C, R	

SCATHOPHAGIDAE

Scathophaga stercoraria	C,R	

SCIOMYZIDAE

Pherbellia dubia	C	
Sepedon sphegea	R	
Sepedon spinipes	R	
Tetanocera hyalipennis	R	

TACHINIDAE (Tachinid flies)

Eriothrix rufomaculata	C	
Hemyda vittata	C	Rare (RDB3)
Phasia hemiptera	C	
Servillia lurida	C, R	
Tachina fera	C, R	

HYMENOPTERA (Bees, Wasps & Allies)

SYMPHYTA	(Sawflies)
Aglaostigma aucupariae	R
Aglaostigma fulvipes	R
Arge pagana	C, R
Eutomostethus ephippius	C
Monophadnoides tenuicornis	R
Nematus incompletus	C
Rhogogaster viridis	C, R
Tenthredo livida	C
Tenthredo temula	C, R
Tenthredo livida	R
Tenthredo mesomelas	C, R
Urocerus gigas	C

FORMICIDAE	(Ants)
Myrmica rubra	C, R
Myrmica ruginodis	R

POMPILIDAE	(Spider hunting wasps)
Priocnemis fennica	C
Priocnemis perturbator	C

EUMENIDAE	(Potter & Mason wasps)
Ancistrocerus scoticus	C, R
Symmorphus gracilis	R

VESPIDAE	(Social wasps)
Dolichovespula sylvestris	R
Vespula vulgaris	C, R

SPHECIDAE	(Solitary wasps)
Argogorytes mystaceus	R
Crossocerus megacephalus	C, R
Crossocerus pusillus	C
Crossocerus quadrimaculatus	C
Diodontus minutus	R
Ectemnius cephalotes	R
Ectemnius lituratus	C, R
Ectemnius rubicola	R
Pemphredon inornata	R
Pemphredon lugubris	C

COLLETIDAE	(Mining & Yellow - faced bees)
Hylaeus communis	C, R
Hylaeus confusus	C

ANDRENIDAE	(Mining bees)
Andrena bicolor	C, R
Andrena chrysosceles	C, R
Andrena clarkella	C, R
Andrena dorsata	R
Andrena flavipes	C, R
Andrena haemorrhoa	C, R
Andrena minutula	C, R
Andrena pubescens	C, R
Andrena scotica	C, R

HALICTIDAE	(Mining & Cuckoo bees)	
Lasioglossum calceatum	C, R	
Lasioglossum morio	R	
Lasioglossum puncticolle	C	Nationally Scarce (Nb)
Lasioglossum zonulus	C, R	
Sphecodes ephippius	C	
Sphecodes scabricollis	R	Rare (RDB3)
MEGACHILIDAE	(Solitary bees)	
Megachile willughbiella	C	
ANTHOPHORIDAE	(Flower & Nomad bees)	
Eucera longicornis	R	Nationally Scarce (Na)
Nomada fabriciana	C, R	
Nomada flava	C, R	
Nomada flava / panzeri	R	
Nomada flavoguttata	C, R	
Nomada leucopthalma	R	
Nomada marshamella	C	
Nomada ruficornis	R	
Nomada succincta	C, R	
APIDAE	(Social & Cuckoo bees)	
Apis mellifera	C, R	
Bombus lapidarius	C	
Bombus lucorum	C, R	
Bombus pascuorum	C, R	
Bombus pratorum	C, R	
Bombus terrestris	C, R	
Psythirus vestalis	C, R	

COLEOPTERA (Beetles)

ANOBIIDAE	(Wood boring beetles)	
Ptilinus pectinicornis	R	
ATTELABIDAE	(Leaf - rolling weevils)	
Apoderus coryli	C, R	
Byctiscus betulae	C	Nationally scarce (Nb)
Rhynchites caeruleus	C	
Rhynchites germanicus	R	
BUPRESTIDAE	(Jewel beetles)	
Agrilus laticornis	C, R	Nationally scarce (Nb)
BYTURIDAE	(Flower beetles)	
Byturus fumatus	C	
CANTHARIDAE	(Soldier beetles)	
Cantharis bicolor	C	
Cantharis decipiens	C	
Cantharis pellucida	C, R	
Cantharis rufa	C	
Malthinus sereipunctatus	C, R	
Malthodes marginatus	C, R	
Malthodes minimus	R	
Rhagonycha fulva	C, R	
Rhagonycha lignosa	C, R	

CERAMBYCIDAE	(Longhorn beetles)	
Alosterna tabacicolor	C	
Clytus arietis	C, R	
Grammoptera ruficornis	C, R	
Leptura melanura	C, R	
Rhagium bifasciatum	C	
Rhagium mordax	C	
Strangalia maculata	C, R	
Stenocorus meridianus	C, R	
CHRYSOMELIDAE		
Chrysolina menthastri	R	
Lema melanopa	R	
Oulema cyanella	R	
Zeugophora subspinosa	C, R	
COCCINELLIDAE	(Ladybirds)	
Chilocoris renipustulatus	R	
Coccinella 7 - punctata	C, R	
Propylea 14 - punctata	C, R	
CURCULIONIDAE		
Magdalis carbonaria	R	Nationally scarce (Nb)
Phyllobius argentatus	R	
Polydrusus cervinus	R	
ELATERIDAE	(Click beetles)	
Agriotes acuminatus	C, R	
Agriotes pallidulus	C	
Agriotes sputator	C	
Athous haemorrhoidalis	C, R	
Dalopius marginatus	C	
Denticollis linearis	C, R	
MELYRIDAE	(False soldier beetles)	
Anaspis frontalis	R	
Dasytes aerosus	C	
Malachius bipustulatus	C, R	
OEDEMERIDAE	(Flower beetles)	
Oedemera nobilis	C, R	
STAPHYLINIDAE	(Rove beetles)	
Staphylinus dimidiaticornis	R	
Stenus impressus	C	
TENEBRIONIDAE	(Darkling beetles)	
Cylindronotus laevioctostriatus	R	

APPENDIX 2.

PRIMARY WOODLAND INDICATOR AND DEAD WOOD DEPENDENT SPECIES RECORDED FROM ROWLANDS WOOD.

SPECIES	STATUS IN STUBBS	DEVELOPMENTAL REQUIREMENTS.
Brachyopa scutellaris	H2	Sap runs in overmature trees.
Brachypalpoides lentus	H1	Decaying Beech heartwood.
Chalcosyrphus nemorum	H2	Sap runs or wet rot holes.
Cheilosia carbonaria	H1	Larval requirements unknown.
Criorhina berberina	H2	Decaying heart rot or rot holes.
Criorhina floccosa	H3	Decaying wood.
Epistrophe nitidicollis	H2	Larvae feed on arboreal aphids.
Eumerus ornatus	H1	Larval habits unknown, probably root or bulb feeder
Ferdinandea cuprea	H2	Sap runs in overmature trees.
Myathropa florea	_	Wet decaying wood and rot holes.
Volucella inflata	H1	Sap runs in overmature trees.
Xylota segnis	_	Decaying sap and sap runs.
Xylota sylvarum	H3	Decaying roots of broadleaved trees.
Xylota tarda	H2	Larvae in sap runs on Aspen.
Xylota xanthocnema	H2	Larvae in rot holes.
Epiphragma ocellaris	_	Hard deadwood in long established woodland
Chorisops tibialis	_	Larvae in shallow rot holes.
Bibio marci	_	Very decayed wood or soil
Dilophus febrilis	_	Very decayed wood or soil
Symmorphus gracilis	_	Nests in holes in wood.
Crossocerus megacephalus	_	Nests in rotten wood.
Ectemnius cephalotes	_	Nest tunnels in large pieces of rotten timber.
Ectemnius lituratus	_	In beetle burrows in dead wood.
Pemphredon inornata	_	nests in cavities in wood.
Apis mellifera	_	Nests in standing hollow trees.
Ptilinus pectinicornis	_	In dry heartwood of old trees, especially Beech
Agrilus laticornis	_	Larvae in dying branches of Oak.
Malthinus sereipunctatus	_	Decaying branchwood or hardwood.
Malthodes marginatus	_	Decaying wood or under bark on dead ti17mber.
Malthodes minimus	_	Decaying heartwood or branchwood.
Clytus arietis	_	Dead deciduous trees.
Grammoptera ruficornis	_	Dead twigs or small branches of broadleaved trees.
Strangalia maculata	_	Moist rotten wood and stumps.
Strangalia melanura	_	Larvae in thin decayed branches.
Stenocorus meridianus	_	Stumps and dead roots of trees.
Magdalis carbonaria	_	Larvae associated with dead Birch.
Denticollis linearis	_	Under bark and in decaying heartwood.
Malachius bipustulatus	_	Predatory in holes of wood boring insects.
Cylindronotus laevioctostriatus	_	Decaying timber in old woodland.

APPENDIX 3.

PRIMARY WOODLAND INDICATOR AND DEAD WOOD DEPENDENT SPECIES RECORDED FROM CHILLINGWOOD COPSE.

SPECIES	STATUS IN STUBBS	DEVELOPMENTAL REQUIREMENTS.
Brachypalpoides lentus	H1	Decaying Beech heartwood.
Cheilosia lasiopa	H2	Larval biology unknown.
Criorhina berberina	H2	Decaying heart rot or rot holes.
Criorhina floccosa	H3	Decaying wood.
Criorhina ranunculi	H2	Wet rot cavities , especially in Beech.
Epistrophe nitidicollis	H2	Larvae feed on arboreal aphids.
Ferdinandea cuprea	H2	Sap runs in overmature trees.
Myathropa florea	_	Wet decaying wood and rot holes.
Sphegina elegans	H2	Decaying sap in wet woodland.
Volucella inflata	H1	Sap runs in overmature trees.
Xylota segnis	_	Decaying sap and sap runs.
Xylota sylvarum	H3	Decaying roots of broadleaved trees.
Xylota tarda	H2	Larvae in sap runs on Aspen.
Bibio marci	_	Very decayed wood or soil
Bibio varipes	_	Very decayed wood or soil.
Dilophus febrilis	_	Very decayed wood or soil
Urocerus gigas	_	Bores in conifers.
Crossocerus megacephalus	_	Nests in rotten wood.
Ectemnius lituratus	_	In beetle burrows in dead wood.
Pemphredon lugubris	_	Nests in rotten wood.
Apis mellifera	_	Nests in standing hollow trees.
Agrilus laticornis	_	Larvae in dying branches of Oak.
Malthinus sereipunctatus	_	Decaying branchwood or hardwood.
Malthodes marginatus	_	Decaying wood or under bark on dead ti mber.
Alosterna tabacicolor	_	Old damp rotten Hazel or Field Maple stumps.
Clytus arietis	_	Dead deciduous trees.
Grammoptera ruficornis	_	Dead twigs or small branches of broadleaved trees.
Leptura melanura	_	Larvae in thin decayed branches.
Rhagium bifasciatum	_	Rotten bows, stumps and trunks, especially Pine.
Rhagium mordax	_	Decaying sapwood in Oak stumps or boles.
Strangalia maculata	_	Moist rotten wood and stumps.
Stenocorus meridianus	_	Stumps and dead roots of trees.
Denticollis linearis	_	Under bark and in decaying heartwood.
Dasytes aerosus	_	Carnivorous under bark, especially Oak.
Malachius bipustulatus	_	Predatory in holes of wood boring insects.