

**INVERTEBRATE SURVEY OF WROXALL COPSE,
ISLE OF WIGHT.
2003.**

ADAM S. WRIGHT. BSc.(Hons.).

INTRODUCTION.

Wroxall Copse, Isle of Wight, is a linear strip of woodland situated on the lower slopes of the northern side of Wroxall and Luccombe Downs. It runs over a distance of just over a kilometre, from SZ558786 to SZ568789, and is approximately 200 metres deep at its widest point. Most of the woodland has a North - westerly aspect. Wroxall Copse is comprised of mixed deciduous woodland with Oak *Quercus robur*, Ash *Fraxinus excelsior*, Field Maple *Acer campestre*, Sycamore *Acer pseudoplatanus* and occasionally Beech *Fagus sylvatica* forming the main high - canopy species. All these species have mature and overmature examples present and the dead wood element within the Copse is well represented, both as standing and fallen timber.

Coppiced Hazel *Corylus avellana* forms the main tree species within the understorey, although Elder *Sambucus nigra* is also present in some quantity. Ivy *Hedera helix* is abundant and there are many large examples of this shrub. There is a scrub element of both Blackthorn *Prunus spinosa* and Hawthorn *Crataegus monogyna*, particularly at the western end of the wood. Bramble *Rubus* sp. is present in considerable quantities along the southern boundary of the copse, and in small quantities in the sunnier parts within the woodland.

The ground flora is dominated by Ramsons *Allium ursinum* and Bluebell *Endymion non-scriptus*. Both species are well established early in the season and out - compete other ground flora within the bulk of the Copse. Their presence, coupled with the heavily shaded nature of much of the copse, has led to a relatively species - poor ground flora. There are no major glades or clearings within the copse and alternative pollen and nectar sources amongst the ground flora are largely confined to path edges or areas with a lower density of trees. The footpath towards the western end of the site is open enough to allow Primrose *Primula vulgaris* to flower in small quantities and Hogweed *Heracleum sphondylium* occurs in some of the more open areas along the western and southern edges of the Copse.

METHODS.

Survey methods were confined to visual searching, the use of a hand net to capture individual species, sweeping vegetation, beating foliage and grubbing. The site was visited on a total of 17 occasions throughout the main insect flight period of 2003, commencing on 24th February and with the final visit on 9th October.

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. Species whose populations are low.

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**.

DIPTERA.

The 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 in small numbers visiting Primrose flowers at the western end of Wroxall Copse. Larvae of *B. discolor* are ectoparasitic on the larvae of mining bees, particularly *Andrena flavipes* and *Andrena cineraria*. Adults of the latter species were recorded on several occasions within the Copse. Falk (1991) 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.

Amongst the hoverflies, the discovery of *Myolepta dubia* was perhaps the most exciting find. A single specimen was found visiting a Hogweed flower along the southern margin of Wroxall Copse. This apparently constitutes the second Island record for this species, which was recorded by the author on a single occasion in the Bridesford woodland complex in 2002. This Nationally Scarce (N) species develops in wet rot holes of deciduous trees, where it takes more than one season to develop. *M. dubia* is restricted to South - East England and is usually associated with ancient woodland. Ball & Morris (2000) show it to occur in 33 10km squares nationally.

Two Nationally Scarce hoverflies of the genus *Volucella* were recorded during the survey ; both of these are included in the Isle of Wight BAP listings. *Volucella zonaria*, whose larvae develop in the nests of social wasps, was present in low numbers during late Summer. Nationally, this species is confined to South - East England. It is a reasonably frequent species on the Isle of Wight, where it is often encountered in suburban situations or gardens. In contrast *Volucella inflata* has a very strong association with ancient deciduous woodland, where it's larvae develop in sap runs on overmature trees. Nationally it is confined to heavily wooded areas in southern England. On the Island *V. inflata* is sometimes frequent in several woods, but curiously absent from other apparently suitable sites. *V. inflata* was present in Wroxall Copse in unusually large numbers, where it could often be seen visiting Bramble flowers.

Xanthandrus comtus is another hoverfly which is classed as both Nationally Scarce and an Island BAP species. 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. Within Wroxall Copse *X. comtus* was encountered on a few occasions basking on sunlit leaves.

A single specimen of the hoverfly *Xylota xanthocnema* was captured whilst basking on a Bramble leaf along the southern margin of the Copse. Nationally, this rare species of deciduous woodland is mainly southern in distribution. Larvae of *X. xanthocnema* develop in rot holes in deciduous trees. Locally, the author has recorded this species from three other Island woodlands.

Although not a Nationally Scarce species, it is worth noting that the hoverfly *Brachyopa scutellaris* was present in Wroxall Copse in very large numbers. This species, whose larvae develop in sap runs of overmature trees is decidedly local in its distribution on the Isle of Wight.

The Nationally Vulnerable (RDB2) picture-winged fly *Chetostoma curvinerve* was recorded on two occasions in Wroxall Copse, with at least five individuals being seen, including a pair *in cop*. All sightings were of specimens basking on the leaves of a single large Ivy bush adjacent to the footpath running westwards to Wroxall Down at SZ 561786. Clemons (1996) gives only 8 records nationally for this species - all confined to southern coastal counties. However, the author has recently recorded *C. curvinerve* from three Island localities and the species is now known from about 20 U.K. specimens (Clemons, pers. comm.). The larvae are believed to develop in berries. All my observations of this fly have been on Ivy and it is probable that this is the host plant for this species.

COLEOPTERA.

The Nationally Scarce (Nb) soldier beetle *Malthodes guttifer* was beaten from Hazel. Although both adults and larvae are probably predatory they have a requirement for decaying branch-wood or hardwood in which to develop. Nationally this species is widely distributed in Britain, although it is more frequent in the North and West. The author has not previously recorded this species from the Island.

In addition to the species discussed above, a number of the other species recorded are specifically associated with ancient or overmature deciduous trees. Stubbs (1982) selected species of hoverfly which he considered to be "primary woodland indicator" species, and placed them in 3 categories H1 - strong, H2 - good and H3 - weak. Alexander (2002) produced a provisional annotated checklist of invertebrates of living and dead timber for the UK. **Appendix 2** lists those species recorded during the current survey which appear in either or both of these publications, and briefly notes their larval requirements.

DISCUSSION.

The results show that Wroxall Copse contains populations of a number of insect species which are important in a local, and in some instances, national context. Species falling within the latter category would be *Bombylius discolor* and *Chetostoma curvinerve*.

Forty-eight species of hoverfly were recorded on the survey - almost one third of the total number of species known for the Island. Whilst some Isle of Wight woodlands have produced considerably higher totals, this is a creditable figure given the relatively small size and the North-facing location of Wroxall Copse. Interestingly, over 20% of those recorded are recognised as primary woodland indicator species (Stubbs, 1982) and within these, the populations of *Volucella inflata*, *Brachyopa scutellaris* and *Portevinia maculata* were amongst the largest the author has encountered. A further 11 species of insects dependent on dead wood for their existence were recorded. The majority of these species are relatively poor at dispersal and are thus indicative of a system where long-term availability of dead and decaying trees prevails. Efforts should be made to ensure this situation continues, and to this end the removal of dead timber, either fallen or standing, should be avoided where possible.

Whilst the presence of mature and post-mature trees is vital to the more interesting insect species found, much of the wood is very densely shaded from quite early in the season. Consequently there are very few flower-rich areas actually within the main body of the Copse to act as feeding stations for insects requiring nectar or pollen sources. This is exacerbated by the carpet of Ramsons, and to a lesser extent Bluebells, which establishes very early in the season through a large part of the wood and blocks out opportunities for other flowering plants to establish. Consideration should be given to thinning or clearing two or three areas within the main body of the Copse to produce small glades which could act as feeding stations. These would doubtless attract and benefit many invertebrate species.

It should be borne in mind during management work that the picture-winged fly *Chetostoma curvinerve* is almost certainly dependent upon Ivy berries for its existence, and care should be taken when considering removal of mature, heavily fruiting Ivy bushes.

The list of Aculeate Hymenoptera recorded is relatively poor, partly due to the paucity of pollen sources within the bulk of the Copse, but also because there is a lack of bare substrate to provide nesting opportunities for ground nesting species. This situation, however, is common to many woodlands, and should not be seen as a particular cause for concern.

The author felt that the lists of soldier beetles (Cantharidae) and Ladybirds (Coccinellidae) were average for a site of this nature, but that the Longhorn beetles (Cerambycidae) were poorly represented. This is probably at least partly due to the thermophilic tendencies of the adult Longhorns, many of which are quite mobile and may well have sought warmer feeding stations outside the Copse.

In conclusion it is felt that Wroxall Copse is locally important as a site for deciduous woodland - dependent invertebrates reliant upon long term stability of the site. Management efforts to maintain this stability by ensuring continued provision of trees at a range of age classes within the Copse, together with a dead wood element, will benefit the continued survival of the existing insect community.

REFERENCES.

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Ball, S. G. and Morris, R. K. A. 2000. "*A provisional atlas of British hoverflies (Diptera, Syrphidae)*". Biological Records Centre, Huntingdon.

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Falk, S. J. 1991. "*A review of the scarce and threatened flies of Great Britain (part 1)*". Research & survey in Nature Conservation No. 39. Nature Conservancy Council, Peterborough.

Stubbs, A. E. 1982. "*Hoverflies as primary woodland indicators with reference to Wharncliffe Woods*". Sorby Record **20** : 62 - 67.

Cheilosia illustrata		
Cheilosia pagana		
Cheilosia proxima		
Chrysogaster solstitialis		
Chrysotoxum bicinctum		
Criorhina berberina		
Criorhina floccosa		
Dasysyrphus albostriatus		
Dasysyrphus venustus		
Epistrophe eligans		
Epistrophe grossulariae		
Episyrphus balteatus		
Eristalis nemorum		
Eristalis pertinax		
Eristalis tenax		
Eupeodes corollae		
Eupeodes luniger		
Ferdinanda cuprea		
Helophilus pendulus		
Leucozona lucorum		
Meliscaeva auricollis		
Melanostoma mellinum		
Melanostoma scalare		
Myathropa florea		
Myolepta dubia	Nationally scarce (N)	
Pipiza austriaca		
Pipiza noctiluca		
Platycheirus albimanus		
Platycheirus manicatus		
Platycheirus peltatus		
Platycheirus scutatus		
Portevinia maculata		
Rhingia campestris		
Syrirta pipiens		
Syrphus ribesii		
Syrphus vitripennis		
Volucella bombylans		
Volucella inflata	Nationally scarce (N)	IOW BAP
Volucella pelluscens		
Volucella zonaria	Nationally scarce (N)	IOW BAP
Xanthandrus comtus	Nationally scarce (N)	IOW BAP
Xylota segnis		
Xylota sylvarum		
Xylota xanthocnema	Nationally scarce (N)	

TEPHRITIDAE

Anomoyia purmunda		
Cerajocera tussilaginis		
Chetostoma curvinerve	Vulnerable RDB2	
Tephritis bardanae		
Xyphosia miliaris		

OTITIDAE

Otites guttata

BIBIONIDAE

Bibio marci
Dilophus febrilis

HYMENOPTERA

SYMPHYTA

Aglaostigma aucupariae
Arge cyanocrocea
Arge ustulata
Macrophya annulata
Nematus lucidus
Pachyprotasis rapae
Priophorus pilicornis
Tenthredo atra
Tenthredo livida
Tenthredo mesomelas
Tenthredo temula

EUMENIDAE

Ancistrocerus trifasciatus

VESPIDAE

Vespula vulgaris

SPHECIDAE

Crossocerus capitosus
Crossocerus cetratus
Crossocerus styrius
Ectemnius lituratus
Pemphredon lethifer
Trypoxylon attenuatum

ANDRENIDAE

Andrena armata
Andrena cineraria
Andrena dorsata
Andrena haemorrhhoa
Andrena minutula
Andrena pubescens
Andrena scotica
Andrena thoracica

HALICTIDAE

Lasioglossum albipes
Lasioglossum calceatum

MEGACHILIDAE

Megachile lignesecca

APIDAE

Apis mellifera
Bombus hortorum
Bombus lapidarius
Bombus lucorum
Bombus pascuorum
Bombus pratorum
Bombus terrestris

COLEOPTERA

CANTHARIDAE

Cantharis decipiens
Cantharis rustica
Malthinus sereipunctatus
Malthodes guttifer
Malthodes minimus
Rhagonycha lignosa
Rhagonycha fulva

Nationally scarce (Nb)

CERAMBYCIDAE

Clytus arietans
Grammoptera ruficornis

COCCINELLIDAE

Adalia 10 - punctata
Calvia 14 - guttata
Coccinella 7 - punctata
Halyzia 16 - guttata
Propylea 14 - punctata
Subcoccinella 24 - punctata

ELATERIDAE

Agriotes acuminatus
Athous haemorrhoidalis
Athous vittatus
Denticollis linearis

PYROCHROIDAE

Pyrochroa serraticornis

APPENDIX 2.

PRIMARY WOODLAND INDICATOR AND DEAD WOOD DEPENDENT SPECIES RECORDED ON THE SURVEY.

SPECIES	STATUS IN STUBBS	DEVELOPMENTAL REQUIREMENTS.
<i>Brachyopa scutellaris</i>	H2	Sap runs in overmature trees.
<i>Criorhina berberina</i>	H2	Decaying heart rot or rot holes.
<i>Criorhina floccosa</i>	H3	Decaying wood.
<i>Epistrophe grossulariae</i>	H3	Aphids on broad - leaved trees.
<i>Ferdinandea cuprea</i>	H2	Sap runs in overmature trees.
<i>Myathropa florea</i>	—	Wet decaying timber.
<i>Myolepta dubia</i>	H2	Wet rot holes in overmature trees.
<i>Portevinia maculata</i>	H2	Larvae tunnel in Ramsons bulbs.
<i>Volucella inflata</i>	H1	Sap runs in overmature trees.
<i>Xylota segnis</i>	—	Decaying sap in freshly dead broadleaved trees.
<i>Xylota sylvarum</i>	H3	Decaying roots of broadleaved trees.
<i>Xylota xanthocnema</i>	H2	Rot holes in broadleaved trees.
<i>Crossocerus cetratus</i>	—	Nests in dead wood.
<i>Ectemnius lituratus</i>	—	In beetle burrows in dead wood.
<i>Megachile lignesecca</i>	—	Nests in decaying wood.
<i>Malthinus sereipunctatus</i>	—	Decaying branchwood or hardwood.
<i>Malthodes guttifer</i>	—	Decaying branchwood or hardwood.
<i>Malthodes minimus</i>	—	Decaying branchwood or hardwood.
<i>Grammoptera ruficornis</i>	—	Dead twigs or small branches of broadleaved trees.
<i>Denticollis linearis</i>	—	Under bark and in decaying heartwood.
<i>Pyrochroa serraticornis</i>	—	Under bark of dead broadleaved trees.