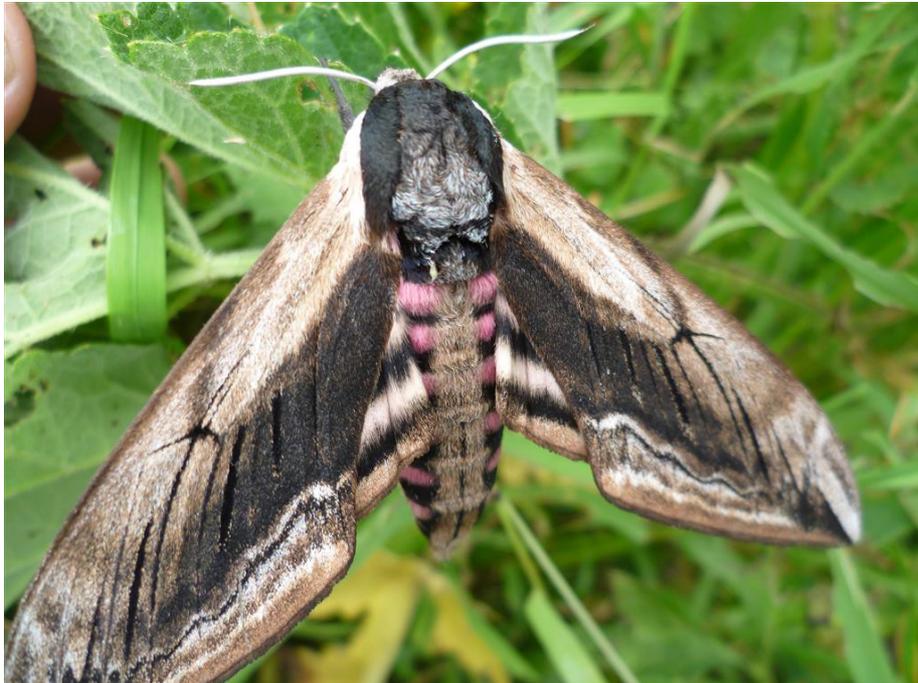


The Ecology and Management of Strawberry Hill Orchard

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Introduction

Kernow Ecology was commissioned to do an appraisal of Strawberry Hill Orchard, to establish the ecological importance of the site and suggest improvements that could be made to conserve and manage the biodiversity of the site.

Summary

The site has a rich invertebrate fauna. Five species of conservation interest were recorded on the survey, including two species with very few other records in Cornwall. The Orchard has excellent habitats and features for invertebrates. These include unimproved flower rich grassland (MG5), old orchard trees with dead wood habitats and ancient species rich hedgerows. The site has been assessed as high conservation value by Roper (R.Roper 2014).

43 sp. of invertebrate were recorded on the survey, although there are undoubtedly more and further surveys are required. An additional 64 moth species were recorded by M. Atkinson.

The flower-rich grassland is of great botanical importance with the Nationally scarce Bastard Balm *Melittis melissophyllum* (I. Bennalick, C. Roper 2014) and the Cornwall scarce / Red data book Birds nest Orchid *Neottia nidus-avis* (J. Kolinsky per.comm. 2014). Harvest mouse *Micromys minutus* Red Data Book 2005 and Section 41 species was also recorded (J. Kolinsky per.comm. 2014).

There are other micro features of importance such as a small quarry with bare ground features, a wet runnel and taller ruderal areas.

The site is small and isolated from other similar high quality open flower rich habitats, which does limit the species present, although there is some landscape connectivity within the local hedgerow network of the area.

Fig.1 Table of important species

<i>Melanargia galathea</i> Marbled White butterfly	Local in Cornwall. Medium priority on the Butterfly conservation SW regional Action Plan	Few individuals present. Likely to be a an isolated colony. Conserve some taller tussocky grassland
<i>Nomada hirtipes</i> A nomad bee	Rare (RDB3) Falk (1991)	This is Nationally scarce and Cornish Red Data book. It is a cleptoparasite of <i>Andrena bucephala</i> so relies on good populations of this bee. It has only been recorded on 2 other sites in Cornwall !
<i>Bombylius canescens</i> Western Bee-fly	Nationally notable (NBN 2014)	1 seen. Important isolated colony. Conserve flower rich grassland and sheltered bare ground. Parasite on solitary bees
<i>Andrena bucephala</i> Big-headed Mining-bee	Notable A (Falk 1991).	This bee is nationally scarce although probably more widespread and under recorded in Cornwall. Conserve sheltered open sunny bare ground and spring flowering trees such Apple and Hawthorn
<i>Oedemera femoralis</i> A beetle	Nationally scarce (K.Alexander per.comm.)	Only recorded from about 1 other site in Cornwall. Although likely to be very under-recorded and may be more widespread. Probably associated with old ivy, the larvae in the hollow dead stems. (K.Alexander per.comm.)
<i>Neottia nidus-avis</i> Birds nest orchid	Red Data book Nationally Threatened (JNCC 2014)	(J.Kolinsky per.comm. 2014) not recorded by PS
<i>Micromys minutus</i> Harvest mouse	Section 41. (JNCC 2014)	(J.Kolinsky per.comm. 2014) not recorded by PS
<i>Melittis melissophyllum</i> Bastard Balm	Red Data book vulnerable (JNCC 2014)	(Recorded I. Bennalick, C. Roper 2014) not recorded by PS

The Methodology

- Desktop study

A brief data search was completed using records held by ERICA software focusing on notable species within a 1km radius of the site.

- Field survey

Field survey took place over 3 visits 25/04/2014 25/6/14 and 15/05/2014

Evaluation of site

Desk top evaluation

No species of interest were found on ERICA survey. 64 sp. of moth were recorded on 27/5/14 by M. Atkinson. None of these moths were notable although the list is a varied species list.

Open flower-rich unimproved grassland.

The site is sheltered, steeply sloping and has a predominately south facing direction. This is significant as it creates a hot micro-climate which boosts the invertebrate interest and general species richness of the site.

Most of the species were recorded within the open flower rich grassland habitats. The grassland had an exceptional diversity of flowering plants, with large quantities of important pollen and nectar resources both in spring and in summer. Important plant families include *Fabaceae*: Birdsfoot trefoil *Lotus corniculatus* and Meadow vetchling *Lathyrus sylvestris*. The *Scrophulariaceae*: Red bartisa *Odonities verna* and Yellow bartisia *Parentcellia viscosa* and Umbellifers: hogweed *Heracleum sphondylium* and Water dropwort *Oenanthe crocata*.

The grassland was rich in butterflies such as Common blue *Polyommatus icarus*, where the large areas of Birdsfoot trefoil *Lotus corniculatus* occurred. There was a good range of spring flying hoverflies and bees such as the Early bumblebee *Bombus pratorum* and The hover fly *Bombylius major*. Where hedge woundwort *Stachys sylvatica* occurred the Fork Tailed Flower Bee *Anthophora furcata* was found, this bee is a specialist and needs good quality sites

The flower-rich grassland graded into other micro-habitats. The areas with a tussocky structure with denser thatches of grass are potential habitat for Marbled white butterflies *Melanargia galathea* and Harvest mouse *Micromys minutus*.

The grassland graded into a variety of flower rich ruderal habitats, unusually it had both wet and dry ruderal habitats. The wet ruderal area had a good stand of hemlock water dropwort *Oenanthe crocata* this is important for supporting a good diversity of invertebrates, including hoverflies such as *Myathropa florea*.

Drier ruderal habitats had insect supporting ruderals such as hogweed *Heracleum sphondylium* and teasle *Dipsacus fullonum* among other diverse flower rich habitats.

The ruderal and tussocky areas added greatly to the interest of the site but there were signs of these areas “going over” and starting to become more scrubby and dominating the finer flowering plant communities.

Other micro/macro habitat with the Orchard

These grade into the open flower rich areas of the site and form mosaics of habitat features.

Orchard standard trees

The presence of old fruit trees added structural diversity and further boosted species richness (Buglife, 2014 b.). There was some deadwood and some hollow trunks of particular note. These may support the notable beetle *Oedemera femoralis*. The trees when in flower are important pollen and nectar resources to support ground nesting Big-headed Mining-bee *Andrena bucephala* and its resultant cleptoparasite nomad bee *Nomada hirtipes*.

The newer orchard trees are important to replace the older trees, but there should be concerns that new plantings will shade areas out and reduce the area of open flower-rich habitats.

Bare ground/ quarry

The sheltered clay bare ground of the “Quarry” area and along the track at the bottom of the site is very important for range of nesting mining bees and their cleptoparasites. The very small Shaggy Mining Bee *Lasioglossum villosulum* and the nomad bee *Nomada fucata* occurred here as did the notable Western Bee-fly *Bombylius canescens* which is probably benefiting from the abundance of ground nesting prey species.

Runnel

A small area of open water and wet mud supported a few additional invertebrates such as the Large red damselfly *Pyrrosoma nymphula*. Some craneflies were observed in this area, which although small is an important additional feature. Wet bare ground is another under-valued habitat.

Boundary habitats Ancient and species-rich hedgerows

Bounding the orchard are Ancient and species-rich hedgerows. These had a range of important habitat features for invertebrates (Buglife 2014 a). These were of high quality both as important features within themselves but also they added habitat connectivity between the site and the wider landscape. Where the boundary was richer in flowering plants bees such as the common carder bee *Bombus pascorum* occurred.

Robert Wolton (Wolton Et. Al. 2014) stresses the importance of similar Westcountry hedges for invertebrates. Within his study 830 invertebrate sp. were identified on a small unexceptional Devon hedge, comparing very favourably with sites of high conservation significance. This research highlights the importance of a good hedge structure. To include as components a good shrub layer, emergent trees, a central bank, a ditch and herb rich margins. The Orchard did not have a ditch but had better emergent trees than the hedge in Wolton's study. The hedges bounding the Orchard had some other features such as hot bare clay banks and had a good variety of emergent and semi-veteran trees.



The eastern end of the orchard SX40766545 showing the quarry area, with bare ground and sheltered trackside slopes near areas of open flowering grassland and trees. These are important features for mining bees



Hollow orchard tree, important feature for invertebrates



East-end Tall grassland with abundant Lotus sp. Good habitat for bees and butterflies SX40726548



Dry open Flower-rich grassland with some ruderal plants towards western end of the site SX40576547

Comment

The site had a really good range of macro and micro features and the species list reflected this. The main areas of flower rich meadows are of obvious importance as are the species rich hedgerows. Additional areas of wet and dry south facing bare ground added value. Ruderal vegetation and tussocky grassland greatly added to the variety of the species communities.

The site is small and isolated from other open flower rich areas, which is a great concern for the species that occur. This probably means habitat quality is even more important to avoid extinction with low potential for recolonisation.



Nomada hirtipes

Management Plan

The primary focus of management of the site should be on maintaining open flower-rich habitats. Also conserve structural diversity, floristic diversity and additional micro habitats.

Management of unimproved grassland

The site could be managed either by grazing or by cutting. But given the practicalities of the site a mixture is best.

The flower rich grassland is at the moment under managed. Tussocky grassland and ruderal scrub is expanding. In the initial stages slightly harder management is needed to reduce the ruderal vegetation getting too much of a hold. But this should be balanced against conserving some ruderal and tussocky grassland areas. Also summer grazing/cutting will potentially reduce flower abundance and desirable annuals such as Red bartisa *Odonities verna* and Yellow bartisa *Parentcellia viscosa*.

Rotational management from August-April will best minimise these risks, with ideally grazing/cutting not taking place May/June, allowing a flower and seed peak. This may need to be flexible as cutting/grazing during autumn/ winter only may not reduce the vigour of weeds enough and prevent re-seeding. Also the grazier may be reluctant to graze at certain times of year.

The slopes of the Eastern field are starting to have rank Bramble, Figwort, and Marsh thistle so a second cut in May ideally very focussed on the worst areas and avoiding small patches of Red bartisa *Odonities verna* / Yellow bartisa *Parentcellia viscosa* as much as possible may be needed.

See fig. 2

There may be scope to combine cutting with donating or selling green hay for other conservation schemes restoring species rich grassland from local provenance stock.

Lower track and quarry

Keep short and open. Important not to allow shading by vegetation such as trees or scrub on the South side

fig 2. Grassland management prescriptions

Method	Timing	Area	Comment
Grazing	Ideally outside mid April – early July	Whole site or 1 field	The current sheep grazing is light, the site is undergrazed. Care should be taken with summer grazing, although harder autumn to spring grazing could be practised. Other stock such as ponies or cattle would be beneficial.
Autumn / Winter cutting	Late August to April	Ideally cut 60% of site, preferably rake cut material	30% in Autumn 30 % in early Spring would give greater diversity. Rotate the uncut sections randomly. Cutting regime should be flexible to grazing so if greater grazing takes place the 60% could be reduced. Or only more vigorous areas after a period of greater levels of management
Summer cutting	May	Cut dense local areas of persistent weeds Bramble,Dock,Thistle and Figwort, avoid patches of Bartsia if possible. Cut 30% of Dropwort	In conjunction with other cutting and weed treatment
Spot treat or Hand pull	As needed	Bramble,Dock, Thistle and Figwort areas.	In conjunction with other cutting and weed treatment

Management of Species-rich hedges

The Species-rich hedges bounding the orchard contain many standard and mature trees. Traditional hedgerow management involves laying sections. This may not be possible or desirable as will involve felling a large quantity of large standard trees at this site.

Rotationally fell some sections on a 4-8 yr rotation to ensure younger growth which can then be “laid” to improve the scrub layer. With no management rows of hedgerow standard trees will become gappy with no under-story.

Retain dead wood as much as possible. Some hedgerow standards at a safe distance away from the road could be ring barked. By cutting a ring round the bottom of the tree this will kill the tree. This would have a number of benefits, letting in light for a scrub layer, allowing better spacing for standard trees and most importantly creating new dead wood habitats.

More detailed tree management plan is needed to protect and conserve individual specimen trees, including balancing risk management of older trees with the importance of standing dead wood habitats and veteran trees. Contact suitable local tree professional. Where possible consider zoning uses, such as high risk and low access areas around older trees

Management of standard orchard trees

Prune and weed as required for fruit production.

Leave dead wood in situ as much as possible. Although very small diameter brush of little value. Standing dead wood most important.

Maintain open nature of site, if planting plant at very wide spacing or don't plant at all.

Management of other micro-habitats

Bare ground of differing types is important such as clay banks, old walls and shillet areas. Maintain and keep open and sunny.

Additional undisturbed deadwood, log and brash piles occur in the hedge boundaries. Given the quality of the species-rich grassland new brash piles on the grassland is not to be recommended.

Dung can be important for a range of invertebrates. Cattle or pony grazing would increase this resource. As there is limited cattle or pony grazing nearby there are unlikely to be rare dung species.

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Appendix 1. Species recorded by PS at Strawberry Hill Orchard

Taxon	Vernacular	Order	End Date /mm
<i>Sphecodes monilicornis</i>	a cuckoo bee	Apidae	25/04/2014
<i>Nomada ruficornis</i>	Red-horned Nomad Bee	Apidae	15/05/2014
<i>Nomada marshamella</i>	Marsham's Nomad Bee	Apidae	25/04/2014
<i>Nomada leucophthalma</i>	a solitary bee	Apidae	25/04/2014
<i>Nomada hirtipes</i>	a solitary bee	Apidae	25/04/2014
<i>Nomada fucata</i>	a solitary bee	Apidae	25/04/2014
<i>Nomada fucata</i>	a solitary bee	Apidae	25/04/2014
<i>Nomada flavoguttata</i>	a solitary bee	Apidae	25/04/2014
<i>Nomada flavoguttata</i>	a solitary bee	Apidae	25/04/2014
<i>Nomada flava</i>	a solitary bee	Apidae	25/04/2014
<i>Lasioglossum villosulum</i>	Shaggy Mining Bee	Apidae	25/04/2014
<i>Halictus tumulorum</i>	a mining bee	Apidae	15/05/2014
<i>Bombus vestalis</i>	a bumblebee	Apidae	25/06/2014
<i>Bombus terrestris</i>	Buff-tailed Bumble Bee	Apidae	25/04/2014
<i>Bombus pratorum</i>	Early Bumble Bee	Apidae	25/04/2014
<i>Bombus pascuorum</i>	Common Carder Bee	Apidae	25/06/2014
<i>Bombus lapidarius</i>	Large Red Tailed Bumble Bee	Apidae	25/06/2014
<i>Bombus hortorum</i>	Small Garden Bumble Bee	Apidae	25/04/2014
<i>Anthophora furcata</i>	Fork Tailed Flower Bee	Apidae	25/06/2014
<i>Andrena scotica</i>	a mining bee	Apidae	25/04/2014
<i>Andrena flavipes</i>	Yellow Legged Mining Bee	Apidae	25/04/2014
<i>Andrena dorsata</i>	a mining bee	Apidae	25/06/2014
<i>Andrena bucephala</i>	a mining bee	Apidae	25/04/2014
<i>Andrena bicolor</i>	Gwynne's Mining Bee	Apidae	25/04/2014
<i>Oedemera femoralis</i>		Coleoptera	25/04/2014
<i>Altica palustris</i>		Coleoptera	25/04/2014
<i>Agonum nigrum</i>		Coleoptera	15/06/2014
<i>Agonum muelleri</i>		Coleoptera	24/04/2014
<i>Volucella pellucens</i>		Diptera	25/06/2014
<i>Volucella bombylans</i>		Diptera	25/06/2014
<i>Syrirta pipiens</i>		Diptera	25/06/2014
<i>Rhingia campestris</i>		Diptera	25/04/2014
<i>Neoascia tenur</i>		Diptera	25/04/2014
<i>Myathropa florea</i>		Diptera	25/06/2014
<i>Merodon equestris</i>		Diptera	25/04/2014
<i>Gymnocheta viridis</i>		Diptera	25/04/2014
<i>Cheilosia illustrata</i>		Diptera	25/06/2014
<i>Bombylius major</i>		Diptera	25/04/2014
<i>Bombylius canescens</i>		Diptera	25/06/2014
<i>Sphinx ligustri</i>	Privet Hawk-moth	Lepidoptera	25/06/2014
<i>Polyommatus icarus</i>	Common Blue	Lepidoptera	15/05/2014
<i>Pieris rapae</i>	Small White	Lepidoptera	25/04/2014
<i>Petrophora chlorosata</i>	Brown Silver-line	Lepidoptera	15/05/2014
<i>Ochlodes faunus</i>	Large Skipper	Lepidoptera	25/06/2014
<i>Melanargia galathea</i>	Marbled White	Lepidoptera	25/06/2014
<i>Maniola jurtina</i>	Meadow Brown	Lepidoptera	25/06/2014
<i>Macroglossum stellatarum</i>	Humming-bird Hawk-moth	Lepidoptera	25/06/2014
<i>Lycaena phlaeas</i>	Small Copper	Lepidoptera	25/04/2014
<i>Inachis io</i>	Peacock	Lepidoptera	25/04/2014
<i>Gonepteryx rhamni</i>	Brimstone	Lepidoptera	25/04/2014
<i>Aphantopus hyperantus</i>	Ringlet	Lepidoptera	25/06/2014
<i>Anthocharis cardamines</i>	Orange-tip	Lepidoptera	25/04/2014
<i>Aglais urticae</i>	Small Tortoiseshell	Lepidoptera	25/06/2014
<i>Pyrrhosoma nymphula</i>	Large Red Damselfly	Odonata	15/05/2014
<i>Vespa crabro</i>	The Hornet	Vespoidea	25/04/2014

Appendix 2.moth list

May 27th/28th Robinson Mercury Vapour Trap set up at top of Strawberry Hill new Orchard (by request of Ted Coryton)

Quiet, mostly cloudy, night before new moon. Min temp 10C light on 9.45pm and off at 5.05am

Moths came in at once and busy till had filled bucket with tubed specimens at 11.05 left trap to do the rest.
(M. Atkinson ?)

Scalloped Hazel 3
Peppered 8
Pale Tussock 4
Buff Tip 7
Straw Dot 35
Brown silver-line 22
Scorched Wing 2
Foxglove Pug 2
Common Marbled Carpet 25
Common Carpet 4
Pseudogyrotoza conwagana 1 (ph)
Engrailed (or Small E.) 1
Lobster 1
White Pinion-spotted 2
Setaceous Hebrew Character 1
Common Wave 1
Small Phoenix 3
Buff Ermine 2
Purple Bar 3
Brimstone 1
Snout 1
The Flame 2
Bloodvein 8
Flame Shoulder 13
Sandy Carpet 1
Green Carpet 2
Pebble Prominent 2
Small Rivulet 1
Poplar Hawk 2
Coronet 2 (ph)
Silver-ground Carpet 2
Pebble Hook-tip 1
Treble Lines 14
Orange Footman 1 (ph)
Heart & Dart 1
Least Black Arches 4
Lychnis 3
Privet Hawk 1
Small Angle-shades 1
Nematopogon swammerdammella 1 (ph)
White Ermine 6
Dark Swordgrass 1
Spruce Carpet 1
Mottled Beauty 3
Purple Bar 2
Small Square-spot 3
Red Twin-spot Carpet 3
Brown Rustic 5
Ingrailed Clay 3

Agapeta hamana 1
Broken-barred Carpet 1 (ph)
Marbled Brown 4 (ph)
Poplar Kitten 1 (ph)
Riband Wave 1
Pale Pinion 1 (ph)
Middle-barred Minor 1 (ph)
V Pug 1 (ph)
Marbled Minor agg 3 (ph)
Swallow Prominent 1
Rivulet 1
Common Pug 2 (ph) id LT
Mottled Pug 1 (ph) id LT
Clouded-bordered Brindle 1 (ph) id LT
Celypha lacunana 6 (ph)id LT

253 individuals of 64 species plus some crane flies, assorted flies and 2

Key:

(ph) photographed

Id LT identified or confirmed by Leon Truscott, County Recorder

Italics for 'micro moths' which have no vernacular name.

Appendix 4.

Strawberry Hill Orchard

Botanical Species List updated 19/5/14

Recorders: I. Bennalick, C. Roper

Key:

Axiophytes/Ancient woodland indicators (T = 32)

Species	Common name
<i>Acer pseudoplatanus</i>	Sycamore
<i>Agrimonia eupatoria</i>	Common Agrimony
<i>Agrostis stolonifera</i>	Creeping Bent
<i>Ajuga reptans</i>	Bugle
<i>Alopecurus pratensis</i>	Meadow Foxtail
<i>Anagallis arvensis</i> subsp. <i>arvensis</i>	Scarlet Pimpernel
<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass
<i>Arctium minus</i>	Lesser Burdock
<i>Arrhenatherum elatius</i>	False Oat-grass
<i>Arum maculatum</i>	Lords-and-ladies
<i>Asplenium adiantum-nigrum</i>	Black Spleenwort
<i>Athyrium filix-femina</i>	Lady-fern
<i>Blechnum spicant</i>	Hard-fern
<i>Brachypodium sylvaticum</i>	Slender False Brome
<i>Calystegia sepium</i>	Hedge Bindweed
<i>Cardamine flexuosa</i>	Wavy Bitter-cress
<i>Cardamine hirsuta</i>	Hairy Bitter-cress
<i>Carex divulsa</i> subsp. <i>divulsa</i>	Grey Sedge
<i>Carex laevigata</i>	Smooth-stalked Sedge
<i>Carex remota</i>	Remote Sedge
<i>Carex sylvatica</i>	Wood-sedge
<i>Centaurea nigra</i>	Common Knapweed
<i>Centaureum erythrea</i>	Centaury
<i>Cerastium fontanum</i> subsp. <i>vulgare</i>	Common Mouse-ear Chickweed
<i>Chaerophyllum temulum</i>	Rough Chervil
<i>Circaea lutetiana</i>	Common Enchanter's-nightshade
<i>Cirsium arvense</i>	Creeping Thistle
<i>Cirsium palustre</i>	Marsh Thistle
<i>Cirsium vulgare</i>	Spear Thistle
<i>Clematis vitalba</i>	Traveller's-joy
<i>Clinopodium ascendens</i>	Common Calamint
<i>Conopodium majus</i>	Pignut
<i>Corylus avellana</i>	Hazel
<i>Crataegus monogyna</i>	Hawthorn
<i>Dactylis glomerata</i>	Cock's-foot
<i>Digitalis purpurea</i>	Foxglove
<i>Dipsacus fullonum</i>	Teasel
<i>Dryopteris affinis</i> subsp. <i>affinis</i>	Scaly Male-fern
<i>Dryopteris dilatata</i>	Broad Buckler-fern

<i>Dryopteris filix-mas</i>	Male-fern
<i>Epilobium ciliata</i>	American willowherb
<i>Epilobium montanum</i>	Broad-leaved willowherb
<i>Epilobium parviflorum</i>	Small-flowered Hairy willowherb
<i>Euonymus europaeus</i>	Spindle
<i>Eupatorium cannabinum</i>	Hemp-agrimony
<i>Festuca rubra</i> subsp. <i>rubra</i>	Red Fescue
<i>Filipendula ulmaria</i>	Meadowsweet
<i>Fragaria vesca</i>	Wild Strawberry
<i>Fraxinus excelsior</i>	Ash
<i>Galium aparine</i>	Goosegrass
<i>Galium mollugo</i>	Great Hedge Bedstraw
<i>Geranium dissectum</i>	Cut-leaved Crane's-bill
<i>Geranium lucidum</i>	Shining Crane's-bill
<i>Geranium robertianum</i>	Herb-Robert
<i>Geum urbanum</i>	Common Avens
<i>Glechoma hederacea</i>	Ground-ivy
<i>Glyceria declinata</i>	Small Sweet-grass
<i>Hedera helix</i> subsp. <i>hibernica</i>	Atlantic Ivy
<i>Heracleum sphondylium</i>	Hogweed
<i>Holcus lanatus</i>	Yorkshire-fog
<i>Holcus mollis</i>	Creeping Soft-grass
<i>Hyacinthoides non-scripta</i>	Bluebell
<i>Hypericum androsaemum</i>	Tutsan
<i>Hypericum humifusum</i>	Trailing St John's-wort
<i>Hypericum perforatum</i>	Perforate St John's-wort
<i>Hypericum pulchrum</i>	Slender St John's-wort
<i>Hypericum tetrapterum</i>	Square-stemmed St John's-wort
<i>Hypochaeris radicata</i>	Cat's-ear
<i>Ilex aquifolium</i>	Holly
<i>Juncus articulatus</i>	Jointed Rush
<i>Juncus bufonius</i>	Toad Rush
<i>Juncus conglomeratus</i>	Compact Rush
<i>Juncus effusus</i>	Soft-rush
<i>Lamiastrum galeobdolon</i> subsp. <i>argentatum</i>	Variiegated Yellow Archangel
<i>Lapsana communis</i>	Nipplewort
<i>Lathyrus pratensis</i>	Meadow Vetchling
<i>Lonicera periclymenum</i>	Honeysuckle
<i>Lotus corniculatus</i>	Common Bird's-foot-trefoil
<i>Lotus pedunculatus</i>	Large Bird's-foot-trefoil
<i>Luzula multiflora</i> subsp. <i>multiflora</i>	Heath Wood-rush
<i>Luzula pilosa</i>	Hairy Wood-rush
<i>Lysimachia nemorum</i>	Yellow Pimpernel
<i>Malus domestica</i>	Eating Apple
<i>Melittis melissophyllum</i>	Bastard Balm
<i>Mentha aquatica</i>	Water Mint
<i>Mentha arvensis</i>	Corn Mint

<i>Mercurialis perennis</i>	Dog's Mercury
<i>Moehringia trinervia</i>	Three-nerved Sandwort
<i>Myosotis discolor</i>	Yellow And Blue Forget-me-not
<i>Narcissus aggregate</i>	Daffodil var.
<i>Oenanthe crocata</i>	Hemlock Water-dropwort
<i>Orchis mascula</i>	Early-purple Orchid
<i>Pentaglottis sempervirens</i>	Green Alkanet
<i>Phyllitis scolopendrium</i>	Hart's-Tongue
<i>Pittosporum tenuifolium</i>	Pittosporum
<i>Plantago lanceolata</i>	Ribwort Plantain
<i>Plantago major</i> subsp. <i>major</i>	Greater Plantain
<i>Poa annua</i>	Annual Meadow-grass
<i>Poa pratensis</i>	Smooth Meadow-grass
<i>Poa trivialis</i>	Rough Meadow-grass
<i>Polypodium interjectum</i>	Intermediate Polypody
<i>Polystichum setiferum</i>	Soft Shield-fern
<i>Potentilla anserina</i>	Silverweed
<i>Potentilla reptans</i>	Creeping Cinquefoil
<i>Potentilla sterilis</i>	Barren Strawberry
<i>Primula vulgaris</i>	Primrose
<i>Prunella vulgaris</i>	Selfheal
<i>Prunus avium</i>	Gean
<i>Prunus spinosa</i>	Blackthorn
<i>Pteridium aquilinum</i>	Bracken
<i>Pulicaria dysenterica</i>	Common Fleabane
<i>Quercus petraea</i>	Sessile Oak
<i>Quercus robur</i>	Pedunculate Oak
<i>Ranunculus acris</i>	Meadow Buttercup
<i>Ranunculus ficaria</i> subsp. <i>ficaria</i>	Lesser Celandine
<i>Ranunculus parviflorus</i>	Small-flowered Buttercup
<i>Ranunculus repens</i>	Creeping Buttercup
<i>Rhinanthus minor</i>	Yellow-rattle
<i>Rosa arvensis</i>	Field-rose
<i>Rosa canina</i>	Dog-rose
<i>Rubus fruticosus</i> agg.	Blackberry
<i>Rumex acetosa</i>	Common Sorrel
<i>Rumex acetosella</i>	Sheep's Sorrel
<i>Rumex obtusifolius</i>	Broad-leaved Dock
<i>Rumex sanguineus</i>	Wood Dock
<i>Sagina procumbens</i>	Procumbent Pearlwort
<i>Salix cinerea</i> subsp. <i>oleifolia</i>	Grey Willow
<i>Sambucus nigra</i>	Elder
<i>Sedum telephium</i>	Orpine
<i>Scrophularia auriculata</i>	Water Figwort
<i>Scrophularia nodosa</i>	Common Figwort
<i>Senecio jacobaea</i>	Common Ragwort
<i>Silene dioica</i>	Red Campion
<i>Solanum dulcamara</i>	Bittersweet

<i>Solidago virgaurea</i>	Goldenrod
<i>Sonchus asper</i>	Prickly Sow-thistle
<i>Sonchus oleraceus</i>	Milk-thistle
<i>Sorbus aucuparia</i>	Rowan
<i>Stachys officinalis</i>	Betony
<i>Stachys sylvatica</i>	Hedge Woundwort
<i>Stellaria graminea</i>	Lesser Stitchwort
<i>Stellaria holostea</i>	Greater Stitchwort
<i>Stellaria uliginosa</i>	Bog Stitchwort
<i>Symphytum officinale</i>	Common Comfrey
<i>Tamus communis</i>	Black Bryony
<i>Taraxacum officinale</i> agg.	Common Dandelion
<i>Teucrium scorodonia</i>	Wood Sage
<i>Trifolium dubium</i>	Lesser Trefoil
<i>Trifolium repens</i>	White Clover
<i>Tussilago farfara</i>	Colt's-foot
<i>Ulex europaeus</i>	Gorse
<i>Umbilicus rupestris</i>	Pennywort
<i>Urtica dioica</i>	Common Nettle
<i>Valeriana officinalis</i>	Common Valerian
<i>Valerianella locusta</i>	Lamb's Lettuce
<i>Veronica arvensis</i>	Wall Speedwell
<i>Veronica beccabunga</i>	Brooklime
<i>Veronica chamaedrys</i>	Germander Speedwell
<i>Veronica filiformis</i>	Slender Speedwell
<i>Veronica hederifolia</i>	Ivy-leaved Speedwell
<i>Veronica montana</i>	Wood Speedwell
<i>Veronica officinalis</i>	Heath Speedwell
<i>Veronica serpyllifolia</i>	Thyme-leaved Speedwell
<i>Viburnum opulus</i>	Guelder-rose
<i>Vicia cracca</i>	Tufted Vetch
<i>Vicia hirsuta</i>	Hairy Tare
<i>Vicia sativa</i> subsp. <i>nigra</i>	Common Vetch
<i>Vicia sativa</i> subsp. <i>segetalis</i>	Common Vetch
<i>Vicia tetrasperma</i>	Smooth Tare
<i>Viola riviniana</i>	Common Violet

Additional observations/signs

Reptiles

Slow Worm

Mammals

Badger
Red Fox
Rabbit
Field vole
Bank vole

Insects

Hornet
Speckled wood
Green-veined white
(See also moth survey)

Birds

Black Cap
Chiff chaff
Pheasant
Mistle thrush
Robin
Reed warbler
Tawny Owl