

BioBlitz at Madingley Hall

BioBlitz events aim to catalogue as much biodiversity as possible in a single location over a period of 24 hours. Not only does this provide a valuable record of species found in a specific area, but it is also a great opportunity for members of the public to get involved and to learn more about local wildlife from a team of experts.

The Cambridge BioBlitz event for 2014 took place at Madingley Hall, from 5pm on Friday 27 June to 5pm on Saturday 28 June. It was coordinated by the University Museum of Zoology, the Institute of Continuing Education and the University of Cambridge Public Engagement team.

The results of the survey are now in! Despite the wet weather, 381 different species of animals and plants were recorded, including two species of bats (Common and Soprano Pipistrelle), 17 species of birds, 68 species of moths and butterflies, eight species of dragonflies and damselflies, 29 species of other insects, 18 species of slugs and snails, and 238 species of plants! The event was well-attended with around 270 members of the public coming along on the day and 20 experts taking part.

This wealth of species found in a relatively small area shows how diverse the UK countryside can be for wildlife and how important it is to conserve our natural environment.



Families searching for insects on the day in the Madingley grounds.

Madingley grounds and gardens

Madingley Hall boasts beautiful gardens, with a wealth of flower-rich borders and wilder areas of meadow that are home to many species of animals and plants. The history of the house and gardens represents a rich subject area in its own right. The Hall itself was built in the 16th century, originally as a hunting lodge, before expanding to become a well-supplied country house. The gardens themselves have also evolved substantially over this time, from formal gardens in the 17th century to more naturalistic landscapes and parkland in the 18th century. Although only eight acres, Madingley includes a diverse range of habitats, including woodland, encroaching scrub, ponds and lakes, improved grassland, unimproved meadow and kept gardens. This diversity of different habitats is likely to reflect a diversity of species of animals and plants that live there.



A view of Madingley Hall from the meadow area.

Set-up of the day and sampling methods

The event included a series of scheduled walks and surveys throughout the day, including light trapping for moths, bat walks, early morning bird walks, pond-dipping, a snail safari, and mini-beast hunts. As well as more general searches, experts also surveyed for biodiversity in the Madingley grounds using pitfall traps (small plastic cups sunk into the ground to collect ground-walking invertebrates), sweep-netting, pond-netting, light trapping for moths and using bat-detectors to identify bat echolocation calls!

Highlights

A total of 381 different species of animals and plants were recorded over the 24 hours. Although this sounds like a lot, it is likely to only represent a small subset of the total number of species that call Madingley their home. For example, only two species of mammals were recorded over the sampling period (the Common Pipistrelle bat (*Pipistrellus pipistrellus*) and Soprano Pipistrelle bat (*Pipistrellus pygmaeus*)), but we know from previous surveys that Daubenton's bat (*Myotis daubentonii*) is also commonly found over the lake and there are also lots of other mammal species found in the grounds and surrounding area, including numerous rodent species, rabbits, hedgehogs and larger species such as foxes, badgers, and Muntjac deer. This incomplete sampling shows how much the timing of surveys can influence the results of this sort of work and how secretive the natural world can be. Weather probably didn't help with this, with wet and cool conditions limiting the amount of time that some species were active over the 24-hour period. Such incomplete sampling is particularly clear in some of the insect groups, such as bumblebees. Although there are several species of bumblebee commonly found at Madingley, including the Buff-tailed Bumblebee (*Bombus terrestris*), the White-tailed Bumblebee (*Bombus lucorum*), the Red-tailed Bumblebee (*Bombus lapidarius*) and the Tree Bumblebee (*Bombus hypnorum*), none were recorded during the BioBlitz event, probably because of unfavourable weather, meaning that the bees were not flying when many of the surveys took place.



A subset of some of the butterflies and day-flying moths found at Madingley (from left to right: Small Tortoiseshell; top- Red Admiral, middle – Speckled Wood, bottom – Meadow Brown; Five-spot Burnet Moth).

Many of the species found during the survey could be described as 'wider habitat species'; organisms that are at home in gardens and unspecialised habitats. For example, of the 17 species of birds recorded, the majority could be found in a garden setting. Similarly, the eight species of butterfly found are also all commonly found in gardens and parks and have food-plants that are widely distributed across the countryside. For example, the caterpillars of Small Tortoiseshells, Red Admirals and Commas all eat stinging nettles! These results together illustrate that, despite being incomplete, the survey has encapsulated quite well the nature of the Madingley area – a typical UK mixed habitat.

Despite this, there were several more specialised species found, including a few rarities. Many of these were recorded from the meadow area to the north of the hall, which has a diverse flora (56 plant species recorded from previous surveys), indicating that it has not been enriched with fertilisers in the past. Specialities recorded during the survey included the rare Adder's Tongue Fern (*Ophioglossum vulgatum*; conservation status: scarce), the beautiful Common-spotted orchid (*Dactylorhiza fuchsii*), Common Twayblade (*Neottia ovata*) and a very high number of Cowslips (*Primula veris*). Rare insects also discovered in the meadow area while sweep-netting, included the plant-hoppers *Allygidius commutatus* (national status: local) and *Stiroma bicarinata* (national status: notable B).

The records from the BioBlitz event also included several species that illustrate some of the environmental changes that are occurring in the British countryside. For example, the list of insects recorded includes two recently-arrived species: the Horse-chestnut leaf miner moth (*Cameraria ohridella*) that was first reported in the UK in 2002, and the Harlequin Ladybird (*Harmonia axyridis*), which was first reported in the UK in 2004. Both were introduced as a result of human activities and have spread rapidly, with the Harlequin potentially posing a threat to native ladybird species. An invasive plant species of longer standing in the UK, which was identified during the survey, was the water weed known as Parrot's Feather (*Myriophyllum aquaticum*). This was first described from the UK in 1960 and is now found across a large part of the country, potentially outcompeting native species. Other more subtle changes as a result of human activity can also be seen from the records. For example, the Reflexed Saltmarsh Grass (*Puccinellia distans*) was recorded along the drive. This species is particularly tolerant to salt and has spread rapidly along road verges in the UK, owing to the use of salt on our roads (and the Madingley driveway!) over the winter months.

Acknowledgements

Our thanks go to the team of volunteers and experts who generously gave up their time to help with the event. These include: Richard Preece, Frances Dipper, Jake Snaddon, Gabrielle Davidson, Alison Greggor, Richard Gant, Richard Denham, Ashley Arbon, Jonathan Shanklin, Alex Dittrich, Peter Holden, Ian Harvey, Roger Northfield, Alex Summers, David Lees, Lynn Dicks, Chris Stafford, Rosie Earwaker, Rebecca Lingwood, Erica Bithell, Alex Torok, Le Qin Choo, George Goodman, David Seilly, Anita Joysey, Matt Riley, Pam Haplin, Daniel Rowson, Mafkhir & Kelly Richards. Without these individuals, it would be impossible for BioBlitz to take place and we are extremely grateful. We are also very grateful to Madingley Hall and Garden staff for their kind support with the event and generous use of their facilities.



Appendix – full species list for the event

Taxon Name	Group	Taxonomic level	Common name
<i>Pipistrellus pipistrellus</i>	Mammal	Species	Common Pipistrelle
<i>Pipistrellus pygmaeus</i>	Mammal	Species	Soprano Pipistrelle
<i>Carduelis carduelis</i>	Bird	Species	Goldfinch
<i>Certhia familiaris</i>	Bird	Species	Treecreeper
<i>Chloris chloris</i>	Bird	Species	Greenfinch
<i>Columba palumbus</i>	Bird	Species	Wood pigeon
<i>Corvus corone</i>	Bird	Species	Carrion Crow
<i>Corvus monedula</i>	Bird	Species	Jackdaw
<i>Erithacus rubecula</i>	Bird	Species	Robin
<i>Fringilla coelebs</i>	Bird	Species	Chaffinch
<i>Hirundo rustica</i>	Bird	Species	Swallow
<i>Motacilla alba</i>	Bird	Species	Pied Wagtail
<i>Phasianus colchicus</i>	Bird	Species	Pheasant
<i>Regulus regulus</i>	Bird	Species	Goldcrest
<i>Strix aluco</i>	Bird	Species	Tawny Owl
<i>Sylvia atricapilla</i>	Bird	Species	Blackcap
<i>Troglodytes troglodytes</i>	Bird	Species	Wren
<i>Turdus merula</i>	Bird	Species	Blackbird
<i>Turdus philomelos</i>	Bird	Species	Song Thrush
<i>Triturus vulgaris</i>	Amphibian	Species	Smooth Newt
<i>Gerris lacustris</i>	Insect (Order Hemiptera)	Species	Common Pond Skater
<i>Plea sp.</i>	Insect (Order Hemiptera)	Species	Lesser Backswimmer
<i>Aphrophora ulni</i>	Insect (Order Hemiptera)	Species	Spittlebug
<i>Philaenus spumaris</i>	Insect (Order Hemiptera)	Species	Spittlebug
<i>Allygidius commutatus</i>	Insect (Order Hemiptera)	Species	
<i>Cicadula persimilis / quadrimaculata</i>	Insect (Order Hemiptera)	Species	
<i>Edwardsiana sp.</i>	Insect (Order Hemiptera)	Genus	
<i>Eupteryx urticae</i>	Insect (Order Hemiptera)	Species	
<i>Eupteryx vittata</i>	Insect (Order Hemiptera)	Species	
<i>Euscelis incisus</i>	Insect (Order Hemiptera)	Species	
<i>Evacanthus acuminatus</i>	Insect (Order Hemiptera)	Species	
<i>Macrostelles sp.</i>	Insect (Order Hemiptera)	Genus	
<i>Coccinella 7-punctata</i>	Insect (Order Hemiptera)	Species	Seven-spot Ladybird
<i>Harmonia axyridis</i>	Insect (Order Hemiptera)	Species	Harlequin Ladybird
<i>Propylea 14-punctata</i>	Insect (Order Hemiptera)	Species	Fourteen -spot Ladybird
<i>Corixidae</i>	Insect (Order Hemiptera)	Family	Lesser Water Boatman
<i>Javesella pellucida</i>	Insect (Order Hemiptera)	Species	
<i>Stiroma bicarinata</i>	Insect (Order Hemiptera)	Species	
<i>Aglais urticae</i>	Insect (Order Lepidoptera)	Species	Small Tortoiseshell
<i>Hesperiinae</i>	Insect (Order Lepidoptera)	Subfamily	Large Skipper
<i>Nymphalinae</i>	Insect (Order Lepidoptera)	Subfamily	Red Admiral
<i>Polygonia c-album</i>	Insect (Order Lepidoptera)	Species	Comma
<i>Aphantopus hyperantus</i>	Insect (Order Lepidoptera)	Species	Ringlet
<i>Pararge aegeria</i>	Insect (Order Lepidoptera)	Species	Speckled Wood
<i>Maniola jurtina</i>	Insect (Order Lepidoptera)	Species	Meadow Brown
<i>Pieris napi</i>	Insect (Order Lepidoptera)	Species	Green-veined White
<i>Abrostola tripartita</i>	Insect (Order Lepidoptera)	Species	Spectacle
<i>Acleris variegana</i>	Insect (Order Lepidoptera)	Species	
<i>Agonopterix heracliana</i>	Insect (Order Lepidoptera)	Species	
<i>Agrotis clavis</i>	Insect (Order Lepidoptera)	Species	Heart & Club
<i>Agrotis exclamationis</i>	Insect (Order Lepidoptera)	Species	Heart & Dart
<i>Alcis repandana</i>	Insect (Order Lepidoptera)	Species	
<i>Apamea monoglypha</i>	Insect (Order Lepidoptera)	Species	Dark Arches
<i>Aphomia sociella</i>	Insect (Order Lepidoptera)	Species	Bee Moth
<i>Archips podana</i>	Insect (Order Lepidoptera)	Species	
<i>Axyia putris</i>	Insect (Order Lepidoptera)	Species	The Flame
<i>Biston betularia</i>	Insect (Order Lepidoptera)	Species	Peppered Moth
<i>Cabera pusaria</i>	Insect (Order Lepidoptera)	Species	Common White Wave
<i>Callistege mi</i>	Insect (Order Lepidoptera)	Species	Mother Shipton
<i>Cameraria ohridella</i>	Insect (Order Lepidoptera)	Species	Horse -chestnut Leaf Miner
<i>Celypha lacunana</i>	Insect (Order Lepidoptera)	Species	
<i>Chrysoteuchia culmella</i>	Insect (Order Lepidoptera)	Species	
<i>Cynia mendica</i>	Insect (Order Lepidoptera)	Species	Muslin moth
<i>Deilephila elpenor</i>	Insect (Order Lepidoptera)	Species	Elephant Hawk Moth
<i>Diachrysa chrysitis</i>	Insect (Order Lepidoptera)	Species	Burnished Brass
<i>Dryobotodes eremita</i>	Insect (Order Lepidoptera)	Species	Brindled Green
<i>Eilema depressa</i>	Insect (Order Lepidoptera)	Species	Buff Footman
<i>Eilemma lurideola</i>	Insect (Order Lepidoptera)	Species	Common Footman
<i>Epiblema turbidana</i>	Insect (Order Lepidoptera)	Species	
<i>Eudonia mercurella</i>	Insect (Order Lepidoptera)	Species	
<i>Habrosyne pyritoides</i>	Insect (Order Lepidoptera)	Species	Buff Arches
<i>Hedya pruniana</i>	Insect (Order Lepidoptera)	Species	
<i>Hoplodrina alsines</i>	Insect (Order Lepidoptera)	Species	Uncertain
<i>Hyloicus pinastri</i>	Insect (Order Lepidoptera)	Species	Pine Hawk
<i>Hyperba proboscidalis</i>	Insect (Order Lepidoptera)	Species	Snout
<i>Laothoe populi</i>	Insect (Order Lepidoptera)	Species	Poplar Hawkmoth
<i>Laspeyria flexula</i>	Insect (Order Lepidoptera)	Species	Beautiful Hooktip
<i>Leucoma salicis</i>	Insect (Order Lepidoptera)	Species	White Satin
<i>Lomaspilis marginata</i>	Insect (Order Lepidoptera)	Species	Clouded Border



Taxon Name	Group	Taxonomic level	Common name
<i>Lozotaeniodes formosana</i>	Insect (Order Lepidoptera)	Species	
<i>Mesapamea secalis</i>	Insect (Order Lepidoptera)	Species	Common Rustic
<i>Mythimna conigera</i>	Insect (Order Lepidoptera)	Species	Brown-Line Bright-Eye
<i>Mythimna impura</i>	Insect (Order Lepidoptera)	Species	Smoky Wainscot
<i>Mythimna pallens</i>	Insect (Order Lepidoptera)	Species	Common Wainscot
<i>Noctua fimbriata</i>	Insect (Order Lepidoptera)	Species	Broad Bordered Yellow Underwing
<i>Noctua pronuba</i>	Insect (Order Lepidoptera)	Species	Large Yellow Underwing
<i>Oligia versicolor</i>	Insect (Order Lepidoptera)	Species	Rufus Minor
<i>Opisthograptis luteolata</i>	Insect (Order Lepidoptera)	Species	Brimstone Moth
<i>Orgyia antiqua</i>	Insect (Order Lepidoptera)	Species	Vapourer Moth
<i>Peribatodes rhomboidaria</i>	Insect (Order Lepidoptera)	Species	Willow Beauty
<i>Phalera bucephala</i>	Insect (Order Lepidoptera)	Species	Buff Tip
<i>Plagodis dolabraria</i>	Insect (Order Lepidoptera)	Species	Scorched Wing
<i>Pseudargyrotoza convagana</i>	Insect (Order Lepidoptera)	Species	
<i>Sphinx ligustri</i>	Insect (Order Lepidoptera)	Species	Privet Hawk Moth
<i>Spilosoma luteum</i>	Insect (Order Lepidoptera)	Species	Buff Ermine
<i>Swammerdamia albicapitella</i>	Insect (Order Lepidoptera)	Species	
<i>Tethea ocularis</i>	Insect (Order Lepidoptera)	Species	Figure of Eight
<i>Thyatira batis</i>	Insect (Order Lepidoptera)	Species	Peach Blossom
<i>Udea olivalis</i>	Insect (Order Lepidoptera)	Species	
<i>Xanthorhoe ferrugata</i>	Insect (Order Lepidoptera)	Species	Dark Barred twin Spot
<i>Xanthorhoe quadrfasciata</i>	Insect (Order Lepidoptera)	Species	Large Twin Spot carpet
<i>Xestia c-nigrum</i>	Insect (Order Lepidoptera)	Species	Setaceous Hebrew Character
<i>Xestia triangulum</i>	Insect (Order Lepidoptera)	Species	Double Square Spot
<i>Zonitica lonicerae</i>	Insect (Order Lepidoptera)	Species	Narrow Bordered Five Spot Burnet
<i>Zygaena trifolii</i>	Insect (Order Lepidoptera)	Species	Five-spot Burnet
<i>Idaea aversata</i>	Insect (Order Lepidoptera)	Species	Riband Wave
<i>Pyrhosoma nymphula</i>	Insect (Order Odonata)	Species	Red-eyed Damselfly
<i>Coenagrion pulchellum</i>	Insect (Order Odonata)	Species	Variable Damselfly
<i>Coenagrion puella</i>	Insect (Order Odonata)	Species	Azure Damselfly
<i>Enallagma cyathigerum</i>	Insect (Order Odonata)	Species	Common Blue Damselfly
<i>Ischnura elegans</i>	Insect (Order Odonata)	Species	Blue-tailed Damselfly
<i>Platynemis pennipes</i>	Insect (Order Odonata)	Species	White-legged Damselfly
Not determined	Insect (Order Odonata)	Class	Dragonfly
<i>Rhagonycha fulva</i>	Insect (Order Coleoptera)	Species	Common red soldier beetle
<i>Abax parallelepipedus</i>	Insect (Order Coleoptera)	Species	Ground Beetle
<i>Pterostichus madidus</i>	Insect (Order Coleoptera)	Species	Ground Beetle
<i>Anabolia sp.</i>	Insect (Order Trichoptera)	Genus	Caddisfly
<i>Phryganea grandis</i>	Insect (Order Trichoptera)	Species	Caddisfly
<i>Panorpasp.</i>	Insect (Order Mecoptera)	Genus	Scorpionfly
<i>Leptophyes punctatissima</i>	Insect (Order Orthoptera)	Species	Speckled Bush Cricket
<i>Lasius niger</i>	Insects (Order Hymenoptera)	Species	Black ant
<i>Apis mellifera</i>	Insects (Order Hymenoptera)	Species	European honey bee
<i>Armadillidium vulgare</i>	Crustacean	Species	Common Pill Woodlouse
<i>Gammarus sp.</i>	Crustacean	Genus	Freshwater Shrimp
<i>Oniscus asellus</i>	Crustacean	Species	Common Shiny Woodlouse
Hirudinea	Annelid worm	Class	Leech
<i>Acanthinula aculeata</i>	Molluscs (Gastropod)	Species	
<i>Aegopinella nitidula</i>	Molluscs (Gastropod)	Species	
<i>Arion ater</i>	Molluscs (Gastropod)	Species	
<i>Cepaea hortensis</i>	Molluscs (Gastropod)	Species	
<i>Cepaea nemoralis</i>	Molluscs (Gastropod)	Species	
<i>Cochlicopa lubrica</i>	Molluscs (Gastropod)	Species	
<i>Cochlicopa lubricella</i>	Molluscs (Gastropod)	Species	
<i>Cochlodina laminata</i>	Molluscs (Gastropod)	Species	
<i>Comu aspersum</i>	Molluscs (Gastropod)	Species	
<i>Deroceras reticulatum</i>	Molluscs (Gastropod)	Species	
<i>Discus rotundatus</i>	Molluscs (Gastropod)	Species	
<i>Limax maximus</i>	Molluscs (Gastropod)	Species	
<i>Monacha cantiana</i>	Molluscs (Gastropod)	Species	
<i>Oxychilus helveticus</i>	Molluscs (Gastropod)	Species	
<i>Trochulus hispidus</i>	Molluscs (Gastropod)	Species	
<i>Trochulus striolatus</i>	Molluscs (Gastropod)	Species	
<i>Vallonia costata</i>	Molluscs (Gastropod)	Species	
<i>Vallonia excentrica</i>	Molluscs (Gastropod)	Species	
<i>Acer campestre</i>	Plant	Species	Field Maple
<i>Acer platanoides</i>	Plant	Species	Norway Maple
<i>Acer pseudoplatanus</i>	Plant	Species	Sycamore
<i>Achillea millefolium</i>	Plant	Species	Yarrow
<i>Aesculus hippocastanum</i>	Plant	Species	Horse-chestnut
<i>Aethusa cynapium</i>	Plant	Species	Fool's Parsley
<i>Agrostis stolonifera</i>	Plant	Species	Creeping Bent
<i>Alchemilla mollis</i>	Plant	Species	Garden Lady's-mantle
<i>Alliaria petiolata</i>	Plant	Species	Garlic Mustard
<i>Allium vineale</i>	Plant	Species	Wild Onion
<i>Alnus glutinosa</i>	Plant	Species	Alder
<i>Alopecurus myosuroides</i>	Plant	Species	Black-grass
<i>Alopecurus pratensis</i>	Plant	Species	Meadow Foxtail
<i>Anagallis arvensis</i>	Plant	Species	Scarlet Pimpernel



Taxon Name	Group	Taxonomic level	Common name
<i>Anemone nemorosa</i>	Plant	Species	Wood Anemone
<i>Anisantha sterilis</i>	Plant	Species	Barren Brome
<i>Anthoxanthum odoratum</i>	Plant	Species	Sweet Vernal-grass
<i>Anthriscus sylvestris</i>	Plant	Species	Cow Parsley
<i>Antirrhinum majus</i>	Plant	Species	Snappedragon
<i>Apium nodiflorum</i>	Plant	Species	Fool's-water-cress
<i>Aquilegia vulgaris</i>	Plant	Species	Columbine
<i>Arctium minus</i>	Plant	Species	Lesser Burdock
<i>Arenaria leptoclados</i>	Plant	Species	Slender Sandwort
<i>Arrhenatherum elatius</i>	Plant	Species	False Oat-Grass
<i>Arum maculatum</i>	Plant	Species	Lords-and-Ladies
<i>Asplenium scolopendrium</i>	Plant	Species	Hart's-tongue
<i>Bellis perennis</i>	Plant	Species	Daisy
<i>Betula pendula</i>	Plant	Species	Silver Birch
<i>Brachypodium sylvaticum</i>	Plant	Species	False-brome
<i>Briza media</i>	Plant	Species	Quaking-grass
<i>Bromopsis ramosa</i>	Plant	Species	Hairy-brome
<i>Bromus hordeaceus</i>	Plant	Species	Soft-brome
<i>Bryonia dioica</i>	Plant	Species	White Bryony
<i>Buxus sempervirens</i>	Plant	Species	Box
<i>Calystegia sepium</i>	Plant	Species	Hedge Bindweed
<i>Calystegia silvatica</i>	Plant	Species	Large Bindweed
<i>Capsella bursa-pastoris</i>	Plant	Species	Shepherd's-purse
<i>Cardamine hirsuta</i>	Plant	Species	Hairy Bitter-cress
<i>Carex hirta</i>	Plant	Species	Hairy Sedge
<i>Carex otrubae</i>	Plant	Species	False Fox-sedge
<i>Carex pendula</i>	Plant	Species	Pendulous Sedge
<i>Carex remota</i>	Plant	Species	Remote Sedge
<i>Carex riparia</i>	Plant	Species	Greater Pond-sedge
<i>Carex spicata</i>	Plant	Species	Spiked Sedge
<i>Carex sylvatica</i>	Plant	Species	Wood-sedge
<i>Carpinus betulus</i>	Plant	Species	Hornbeam
<i>Catapodium rigidum</i>	Plant	Species	Fern-grass
<i>Centaurea nigra</i>	Plant	Species	Common Knapweed
<i>Centranthus ruber</i>	Plant	Species	Red Valerian
<i>Cerastium fontanum</i>	Plant	Species	Common Mouse-ear
<i>Cerastium glomeratum</i>	Plant	Species	Sticky Mouse-ear
<i>Ceratophyllum demersum</i>	Plant	Species	Rigid Hornwort
<i>Ceratophyllum submersum</i>	Plant	Species	Soft Hornwort
<i>Chaenorhinum minus</i>	Plant	Species	Small Toadflax
<i>Chenopodium album</i>	Plant	Species	Fat-hen
<i>Circaea lutetiana</i>	Plant	Species	Enchanter's-nightsshade
<i>Cirsium arvense</i>	Plant	Species	Creeping Thistle
<i>Cirsium vulgare</i>	Plant	Species	Spear Thistle
<i>Convolvulus arvensis</i>	Plant	Species	Field Bindweed
<i>Cornus sanguinea subsp. australis</i>	Plant	Species	Dogwood
<i>Corylus avellana</i>	Plant	Species	Hazel
<i>Corylus maxima</i>	Plant	Species	Filbert
<i>Crassula helmsii</i>	Plant	Species	New Zealand Pigmyweed
<i>Crataegus monogyna</i>	Plant	Species	Hawthorn
<i>Crepis biennis</i>	Plant	Species	Rough Hawk's-beard
<i>Crepis capillaris</i>	Plant	Species	Smooth Hawk's-beard
<i>Crepis vesicaria</i>	Plant	Species	Beaked Hawk's-beard
<i>Cymbalaria muralis</i>	Plant	Species	Ivy-leaved Toadflax
<i>Cynosurus cristatus</i>	Plant	Species	Crested Dog's-tail
<i>Dactylis glomerata</i>	Plant	Species	Cock's-foot
<i>Dactylorhiza fuchsii</i>	Plant	Species	Common Spotted-orchid
<i>Daucus carota</i>	Plant	Species	Carrot
<i>Deschampsia cespitosa</i>	Plant	Species	Tufted Hair-grass
<i>Digitalis purpurea</i>	Plant	Species	Foxglove
<i>Dryopteris dilatata</i>	Plant	Species	Broad Buckler-fern
<i>Dryopteris filix-mas</i>	Plant	Species	Male-fern
<i>Elytrigia repens</i>	Plant	Species	Common Couch
<i>Epilobium ciliatum</i>	Plant	Species	American Willowherb
<i>Epilobium hirsutum</i>	Plant	Species	Great Willowherb
<i>Epilobium parviflorum</i>	Plant	Species	Hoary Willowherb
<i>Epilobium tetragonum</i>	Plant	Species	Square-stalked Willowherb
<i>Equisetum arvense</i>	Plant	Species	Field Horsetail
<i>Erigeron karvinskianus</i>	Plant	Species	Mexican Fleabane
<i>Euonymus europaeus</i>	Plant	Species	Spindle
<i>Euphorbia peplus</i>	Plant	Species	Petty Spurge
<i>Fagus sylvatica 'Purpurea'</i>	Plant	Species	Copper Beech
<i>Fallopia convolvulus</i>	Plant	Species	Black-bindweed
<i>Festuca rubra agg.</i>	Plant	Species	Red Fescue
<i>Fraxinus excelsior</i>	Plant	Species	Ash
<i>Fumaria capreolata subsp. babingtonii</i>	Plant	Species	White Ramping-fumitory
<i>Galium aparine</i>	Plant	Species	Cleavers
<i>Galium odoratum</i>	Plant	Species	Woodruff
<i>Galium verum</i>	Plant	Species	Lady's Bedstraw



Taxon Name	Group	Taxonomic level	Common name
<i>Geranium dissectum</i>	Plant	Species	Cut-leaved Crane's-bill
<i>Geranium molle</i>	Plant	Species	Dove's-foot Crane's-bill
<i>Geranium pusillum</i>	Plant	Species	Small-flowered Crane's-bill
<i>Geranium robertianum</i>	Plant	Species	Herb-Robert
<i>Geum urbanum</i>	Plant	Species	Wood Avens
<i>Glechoma hederacea</i>	Plant	Species	Ground-ivy
<i>Hedera helix</i>	Plant	Species	Common Ivy
<i>Helminthotheca echioides</i>	Plant	Species	Bristly Oxtongue
<i>Heracleum sphondylium</i>	Plant	Species	Hogweed
<i>Hieracium maculatum</i> agg.	Plant	Species	A hawkweed
<i>Holcus lanatus</i>	Plant	Species	Yorkshire-fog
<i>Hordeum murinum</i>	Plant	Species	Wall Barley
<i>Hordeum secalinum</i>	Plant	Species	Meadow Barley
<i>Hyacinthoides non-scripta</i>	Plant	Species	Bluebell
<i>Hypochaeris radicata</i>	Plant	Species	Cat's-ear
<i>Inula helenium</i>	Plant	Species	Elecampane
<i>Iris foetidissima</i>	Plant	Species	Stinking Iris
<i>Iris pseudacorus</i>	Plant	Species	Yellow Iris
<i>Juncus inflexus</i>	Plant	Species	Hard Rush
<i>Lamium album</i>	Plant	Species	Garden Yellow-archangel
<i>Lamium album</i>	Plant	Species	White Dead-nettle
<i>Lapsana communis</i>	Plant	Species	Nipplewort
<i>Larix x marschlinii</i>	Plant	Hybrid cross	Hybrid Larch (<i>L. decidua</i> x <i>kaempferi</i>)
<i>Lathyrus pratensis</i>	Plant	Species	Meadow Vetchling
<i>Lemna minor</i>	Plant	Species	Common Duckweed
<i>Lemna minuta</i>	Plant	Species	Least Duckweed
<i>Leontodon hispidus</i>	Plant	Species	Rough Hawkbit
<i>Leucanthemum vulgare</i>	Plant	Species	Oxeye Daisy
<i>Linaria vulgaris</i>	Plant	Species	Common Toadflax
<i>Lolium perenne</i>	Plant	Species	Perennial Rye-grass
<i>Lonicera pileata</i>	Plant	Species	Box-leaved Honeysuckle
<i>Lysimachia nummularia</i>	Plant	Species	Creeping-Jenny
<i>Malva neglecta</i>	Plant	Species	Dwarf Mallow
<i>Matricaria discoidea</i>	Plant	Species	Pineappleweed
<i>Medicago arabica</i>	Plant	Species	Spotted Medick
<i>Medicago lupulina</i>	Plant	Species	Black Medick
<i>Mentha aquatica</i>	Plant	Species	Water Mint
<i>Mercurialis perennis</i>	Plant	Species	Dog's Mercury
<i>Myosotis arvensis</i>	Plant	Species	Field Forget-me-not
<i>Myriophyllum aquaticum</i>	Plant	Species	Parrot's-feather
<i>Neottia ovata</i>	Plant	Species	Common Twayblade
<i>Nymphaea alba</i>	Plant	Species	White Water-lily
<i>Nymphaea maritima</i>	Plant	Species	Coloured Water-lily
<i>Ophioglossum vulgatum</i>	Plant	Species	Adder's-tongue
<i>Papaver atlanticum</i>	Plant	Species	Atlas Poppy
<i>Papaver rhoeas</i>	Plant	Species	Common Poppy
<i>Papaver somniferum</i>	Plant	Species	Opium Poppy
<i>Pentaglottis sempervirens</i>	Plant	Species	Green Alkanet
<i>Persicaria maculosa</i>	Plant	Species	Redshank
<i>Petasites fragrans</i>	Plant	Species	Winter Heliotrope
<i>Picea abies</i>	Plant	Species	Norway Spruce
<i>Pilosella aurantiaca</i>	Plant	Species	Fox-and-cubs
<i>Pimpinella saxifraga</i>	Plant	Species	Burnet-saxifrage
<i>Plantago lanceolata</i>	Plant	Species	Ribwort Plantain
<i>Plantago major</i>	Plant	Species	Greater Plantain
<i>Platanus x hispanica</i>	Plant	Hybrid cross	London Plane (<i>P. occidentalis</i> x <i>orientalis</i>)
<i>Poa annua</i>	Plant	Species	Annual Meadow-grass
<i>Poa nemoralis</i>	Plant	Species	Wood Meadow-grass
<i>Poa trivialis</i>	Plant	Species	Rough Meadow-grass
<i>Polygonum aviculare</i> agg.	Plant	Species	Knotgrass
<i>Polystichum setiferum</i>	Plant	Species	Soft Shield-fern
<i>Potamogeton natans</i>	Plant	Species	Broad-leaved Pondweed
<i>Potamogeton trichoides</i>	Plant	Species	Hairlike Pondweed
<i>Potentilla anserina</i>	Plant	Species	Silverweed
<i>Potentilla reptans</i>	Plant	Species	Creeping Cinquefoil
<i>Primula veris</i>	Plant	Species	Cowslip
<i>Primula vulgaris</i>	Plant	Species	Primrose
<i>Prunella vulgaris</i>	Plant	Species	Selfheal
<i>Prunus cerasifera</i>	Plant	Species	Cherry Plum
<i>Prunus laurocerasus</i>	Plant	Species	Cherry Laurel
<i>Prunus spinosa</i>	Plant	Species	Blackthorn
<i>Puccinellia distans</i>	Plant	Species	Reflexed Saltmarsh-grass
<i>Quercus cerris</i>	Plant	Species	Turkey Oak
<i>Quercus ilex</i>	Plant	Species	Evergreen Oak
<i>Quercus robur</i>	Plant	Species	Pedunculate Oak
<i>Ranunculus acris</i>	Plant	Species	Meadow Buttercup
<i>Ranunculus repens</i>	Plant	Species	Creeping Buttercup
<i>Rumex acetosa</i>	Plant	Species	Common Sorrel
<i>Rumex crispus</i>	Plant	Species	Curled Dock



Taxon Name	Group	Taxonomic level	Common name
<i>Rumex hydrolapathum</i>	Plant	Species	Water Dock
<i>Rumex obtusifolius</i>	Plant	Species	Broad-leaved Dock
<i>Rumex sanguineus</i>	Plant	Species	Wood Dock
<i>Ruscus aculeatus</i>	Plant	Species	Butcher's-broom
<i>Sagina filicaulis</i>	Plant	Species	Upright Pearlwort
<i>Sagina procumbens</i>	Plant	Species	Procumbent Pearlwort
<i>Sagina subulata</i>	Plant	Species	Heath Pearlwort
<i>Salix caprea</i>	Plant	Species	Goat Willow
<i>Salix cinerea</i> subsp. <i>oleifolia</i>	Plant	Species	Rusty Willow
<i>Salix x sepulcralis</i> nothovar. <i>chrysocoma</i>	Plant	Hybrid cross	Weeping Willow (<i>S. alba</i> var. <i>vitellina</i> x <i>babylonica</i>)
<i>Sambucus nigra</i>	Plant	Species	Elder
<i>Schedonorus arundinaceus</i>	Plant	Species	Tall Fescue
<i>Schedonorus giganteus</i>	Plant	Species	Giant Fescue
<i>Scrophularia auriculata</i>	Plant	Species	Water Figwort
<i>Senecio erucifolius</i>	Plant	Species	Hoary Ragwort
<i>Senecio jacobaea</i>	Plant	Species	Common Ragwort
<i>Senecio vulgaris</i>	Plant	Species	Groundsel
<i>Silene coronaria</i>	Plant	Species	Rose Campion
<i>Silene x hampeana</i>	Plant	Hybrid cross	Pink Campion (<i>S. dioica</i> x <i>latifolia</i>)
<i>Sison amomum</i>	Plant	Species	Stone Parsley
<i>Solanum dulcamara</i>	Plant	Species	Bittersweet
<i>Solanum lycopersicum</i>	Plant	Species	Tomato
<i>Sonchus arvensis</i>	Plant	Species	Perennial Sow-thistle
<i>Sonchus asper</i>	Plant	Species	Prickly Sow-thistle
<i>Sonchus oleraceus</i>	Plant	Species	Smooth Sow-thistle
<i>Stachys sylvatica</i>	Plant	Species	Hedge Woundwort
<i>Stellaria media</i>	Plant	Species	Common Chickweed
<i>Symphoricarpos albus</i>	Plant	Species	Snowberry
<i>Tamus communis</i>	Plant	Species	Black Bryony
<i>Tanacetum parthenium</i>	Plant	Species	Feverfew
<i>Taraxacum</i> agg.	Plant	Species	Dandelion
<i>Taxus baccata</i>	Plant	Species	Yew
<i>Tellima grandiflora</i>	Plant	Species	Fringecups
<i>Thuja plicata</i>	Plant	Species	Western Red-cedar
<i>Tilia x europaea</i>	Plant	Hybrid cross	Lime
<i>Tragopogon pratensis</i>	Plant	Species	Goat's-beard
<i>Trifolium dubium</i>	Plant	Species	Lesser Trefoil
<i>Trifolium pratense</i>	Plant	Species	Red Clover
<i>Trifolium repens</i>	Plant	Species	White Clover
<i>Trisetum flavescens</i>	Plant	Species	Yellow Oat-grass
<i>Tussilago farfara</i>	Plant	Species	Colt's-foot
<i>Typha latifolia</i>	Plant	Species	Bulrush
<i>Ulmus minor</i>	Plant	Species	Small-leaved Elm (sensu Stace)
<i>Ulmus x vegeta</i>	Plant	Hybrid cross	Huntington Elm (<i>U. glabra</i> x <i>minor</i>)
<i>Urtica dioica</i>	Plant	Species	Common Nettle
<i>Verbascum thapsus</i>	Plant	Species	Great Mullein
<i>Veronica arvensis</i>	Plant	Species	Wall Speedwell
<i>Veronica chamaedrys</i>	Plant	Species	Germander Speedwell
<i>Veronica filiformis</i>	Plant	Species	Slender Speedwell
<i>Veronica serpyllifolia</i>	Plant	Species	Thyme-leaved Speedwell
<i>Viburnum lantana</i>	Plant	Species	Wayfaring-tree
<i>Viburnum opulus</i>	Plant	Species	Gelder-rose
<i>Vicia sativa</i> subsp. <i>segetalis</i>	Plant	Species	Common Vetch
<i>Viola odorata</i>	Plant	Species	Sweet Violet
<i>Viola riviniana</i>	Plant	Species	Common Dog-violet
<i>Marchantia polymorpha</i> subsp. <i>ruderalis</i>	Plant	Species	Common Liverwort
<i>Lunularia cruciata</i>	Non-vascular Plant	Species	Crescent cup Liverwort
<i>Cololejeunea minutissima</i>	Non-vascular Plant	Species	
<i>Metzgeria violacea</i>	Non-vascular Plant	Species	
<i>Riccia fluitans</i>	Non-vascular Plant	Species	Crystalwort
<i>Fissidens taxifolius</i>	Non-vascular Plant	Species	Common Pocket Moss
<i>Rhytidiadelphus squarrosus</i>	Non-vascular Plant	Species	
<i>Plagiomnium undulatum</i>	Non-vascular Plant	Species	Hart's-tongue Thyme-moss
<i>Amblystegium serpens</i>	Non-vascular Plant	Species	
<i>Grimmia pulvinata</i>	Non-vascular Plant	Species	
<i>Tortula muralis</i>	Non-vascular Plant	Species	Twisted Moss
<i>Rhynchostegium confertum</i>	Non-vascular Plant	Species	Clustered Feather-moss