

Kemerton Conservation Trust

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ROGER WORKMAN

Daffurn's Orchard Bioblitz Project Report

7th June 2024

Project Background

Daffurn's Orchard is a traditional orchard in the heart of Kemerton village, owned by Kemerton Conservation Trust (KCT) but managed as a community orchard with public access, including a bench for visitors. It is a valued village asset, with a band of enthusiastic local volunteers helping to maintain it all year round, and an annual Apple Day which attracts hundreds of attendees from the local area. However, the Trust did not have many biological records for the site, and we wanted to improve species records and our understanding of wildlife and habitats within Daffurn's Orchard. We also wanted to raise the profile of the orchard in the village and wider local area, especially with young families, and encourage more people to visit and get involved with wildlife recording.

The Trust therefore applied to Welcome to Our Future for a grant to hold a bioblitz event at the orchard in April 2024 when the apple blossom would be at its best. We successfully applied for £683.38, which covered 100% of the total project cost. The project began in X 2023 and was completed in May 2024.

Project Aims

The main aims of the project were to improve species records for the orchard including looking at taxa for which we had few existing records, such as moths, and to increase our understanding of wildlife and habitats within the orchard to assist us in management decisions in the future. Our secondary aims were to raise the profile of the orchard within the village, increase local involvement in the site, encourage more young families to get involved, and increase participants' understanding of local wildlife and how to record it. The event would also involve our volunteers.

Overview of Works

Project works commenced in September 2023 shortly after the grant was awarded, and the final works were completed in May 2024 (see Appendix A – Project Photo Montage).

In September, Project Manager Kate Aubury ordered the new bat detectors and began planning the Bioblitz, including choosing the date for April 2024.

In October, Project Manager Kate Aubury researched and booked a local face painter for the event and the project was publicised in Kemerton Village Newsletter and at the annual Kemerton Apple Day. Daffurn's Orchard volunteers (collectively known as Kemerton Orchard Workers or KOW) were informed of the successful grant and invited to take part in the bioblitz.

In November, Project Manager Kate Aubury booked the village hall and ordered all the survey equipment from NHBS.

In December, Project Manager Kate Aubury began to contact possible experts and volunteers for the bioblitz.

In January, an article about the project was included in KCT's Kemerton Clippings newsletter. All experts for the various sessions were confirmed and timings agreed.

In March, Project Manager Kate Aubury began organising a rota of volunteers for the event, designed a recording form for the event, designed a drawing competition for kids, and designed a publicity poster.

In April, Project Manager Kate Aubury publicised the upcoming event on our Facebook page and on Kemerton Village WhatsApp. A volunteer mowed the lawn and circular path so it was ready for the event. The day before the event, volunteers erected gazebos, and two recorders (Project Manager Kate Aubury and Governor Roger Umpelby) did some quick surveys.

The bioblitz was held on Saturday 27th April. The weather was overcast and drizzly during the daytime session, which affected certain target groups such as bees and butterflies. Experts including KCT Conservation Advisor Pamela Clarke, Governors Roger Umpelby and Rosemary Winnall MBE, and staff from CSA Environmental undertook surveys of groups including bees, butterflies, wildflowers, fungi, birds and lichen, while members of the public were able to join them to learn more about the flora, fauna and fungi found. There was an arts table for children, including a drawing competition, and a face painter joined us for 2 hours offering nature-themed face painting for the kids. At the village hall, volunteer David Aubury had a pop-up lab including a microscope and laptop, and he had some fungal spore specimens under the microscope for those who were interested in learning more. Whilst turnout was lower than we had hoped due to the poor weather conditions, everyone who came enjoyed it and we hit our 100 species target. In the evening, the bat survey went ahead with the assistance of staff from CSA Environmental and a trail camera was also installed in the orchard. Unfortunately, weather conditions meant we had to cancel the moth trapping session. The weather was unsettled and cold and we did not manage to record any bats, which was disappointing but likely a reflection of the poor conditions, as bats are frequently seen at the site. A Facebook post highlighting the event and some of the wildlife recorded was posted on the day.

Two days later, volunteers took down the gazebos and Project Manager Kate Aubury did another quick survey as the sun was shining. Another Facebook post highlighting some of the finds from the Bioblitz was posted.

In May, the trail camera was collected, and footage reviewed. A clip of a fox was shared on Facebook. The rescheduled moth trapping session went ahead on 16th May with experts Gavin Peplow and Oliver Wadsworth. Conditions were still rather unsettled, with some drizzle on the night, but another 45 records were added to the list, mostly moths plus a few additional insects attracted to the traps. Some photos of moths from the trapping session were posted on Facebook. Finally, all records from experts were collected, checked and collated into a spreadsheet (see Appendix B – Species List), which will be uploaded to Recorder (and ultimately Worcestershire Biological Records Centre) by our Conservation Advisor Pamela Clarke.

Project Results

Our project was completed one month behind schedule, because the wet weather meant we had to reschedule the moth trapping in May, and collating records took longer than anticipated. It went slightly over budget (£17.05) but the extra cost was covered from the Trust's annual budget.

The bioblitz was successful, with our target of 100 species met and surpassed – we received 191 records in total (not all records were to species level), and 120 of them were new records for the site, so we have increased our understanding of the flora, fauna and fungi in the orchard significantly. One of our experts has experience of orchard pests and diseases and recorded two host specific mites affecting the plum and pear trees. The plant records highlight an increase in the number of wildflowers on the site, likely due to the management of much of the grassland as a meadow. We already had quite a comprehensive wildflower list for the site, but have added another 30 including Meadow Buttercup, Common Vetch, Barren Strawberry and Black Bryony. We only had two moth records for the site prior to the bioblitz, so we now have a much better knowledge of the species using the orchard. Some of the species rely on specific plants for the larvae; Mottled Pug larvae feed on blackthorn and hawthorn, both found in the hedges at the orchard, while Pinion-spotted Pug larvae feed on apple, which of course is plentiful in the orchard. Foxglove Pug larvae however feed on foxgloves, which are not present in the orchard, but will be growing in some of the gardens a stone's throw from the site. The bioblitz added quite a few other interesting insect records, including a county rarity, the Four-spotted Nephus Ladybird. There are only 8 records currently for Worcestershire on the NBN Gateway Atlas, and this is KCT's first record of this small ladybird.

Weather conditions on the day of the event meant attendance was lower than we had hoped, and it affected the number of insects on the wing too, but those who came enjoyed the experience and learnt more about the site and its wildlife. The publicity around the event, including social media posts about the finds, has also increased the profile of the orchard amongst residents and our members. A number of children attended, who loved getting their faces painted with bees and butterflies. Some of them took part in the art competition, with winners in two age categories receiving a wooden bug hotel and sunflower seeds as prizes.

The Future

The records gathered from the bioblitz will be uploaded into Recorder later this year and will then be added to the Worcestershire Biological Records database, available for all. They will help us to continue managing the orchard to benefit the flora, fauna and fungi we now know is there.

The equipment purchased for the bioblitz, including the bat detectors, will be used at member and public events as applicable. We have already used the detectors for a bat walk at Kemerton Lake Nature Reserve, and the sweep net and magnifying pots have proved useful for insect surveys throughout the summer.

In July, a final article on the project will be included in our Kemerton Clippings newsletter.

Acknowledgements

Kemerton Conservation Trust would like to thank our funder for generously supporting this project and making it possible.

We would also like to thank all those who assisted in the bioblitz, particularly our Project Manager Kate Aubury, Conservation Advisor Pamela Clarke, members of Kemerton

Orchard Workers and KCT volunteers who helped us run the event, and the brilliant experts who gave their time and expertise to help us survey the orchard; Governors Roger Umpelby and Rosemary Winnall, moth trappers Gavin Peplow and Oliver Wadsworth, and the fantastic team from CSA Environmental.

Appendix A - Photo Montage

All photos copyright Kate Aubury except where noted otherwise



Daffurn's Orchard ready for the bioblitz, 26/04/24



Experts Roger Umpelby and staff from CSA Environmental, along with attendees, at the start of the bioblitz 27/04/24



Volunteer David with pop-up lab in the village hall, 27/04/24



Volunteer Lottie with kids art table ready for visitors, 27/04/24



Volunteer Lottie with her face painted with a hedgehog design, 27/04/24



Expert Rosemary Winnall leading her group in search of bees during the bioblitz, 27/04/24



Staff from CSA Environmental surveying the plants during the bioblitz, 27/04/24



Mottled Umber *Erannis defoliaria*
caterpillar on Apple Blossom



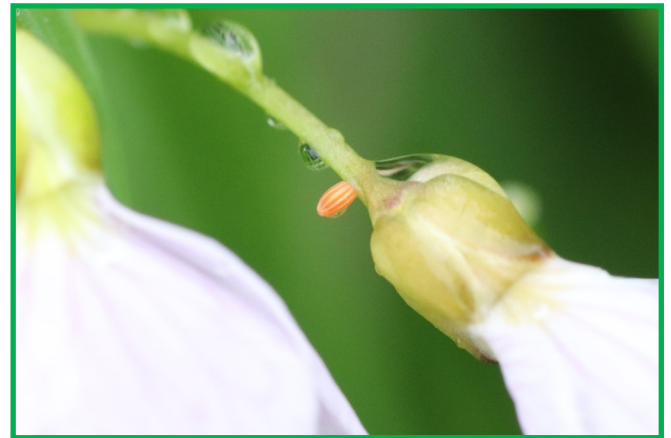
Gooden's Nomad Bee *Nomada*
goodeniana



Liophloeus tessulatus



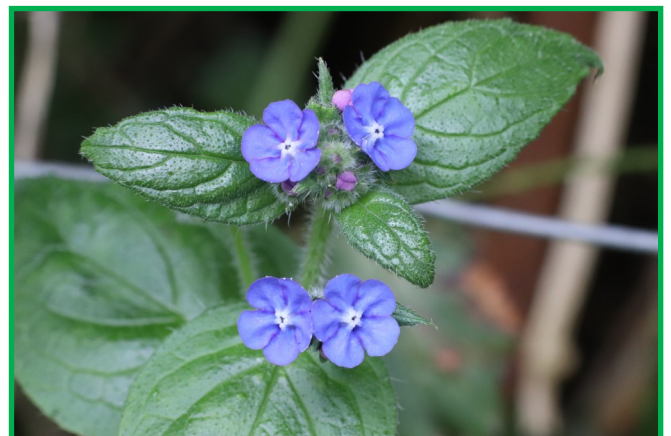
Cricket Bat Spider *Mangora acalypha* male
(photo copyright Rosemary Winnall)



Orange-tip Butterfly *Anthocharis cardamines* egg on
Cuckooflower



Cushion Bracket *Phellinus pomaceus* on a plum tree



Green Alkanet *Pentaglottis sempervirens*



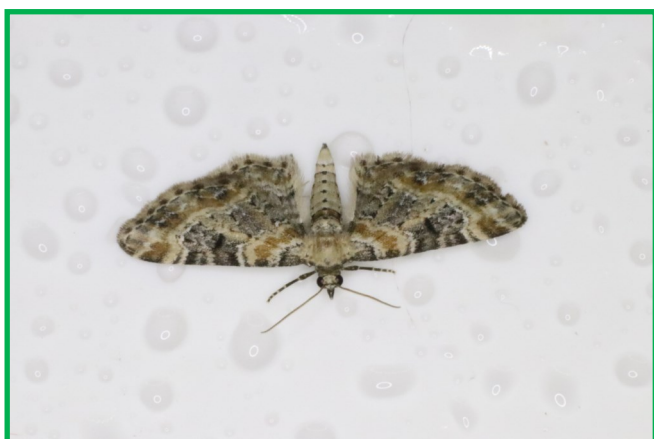
Expert Gavin Peplow checking a moth trap



Green Carpet *Colstygia pectinataria*



Black Sexton Beetle *Nicrophorus humator*



Foxglove Pug *Eupithecia pulchellata*



Cockchafer *Melolontha melolontha* (male)



White Ermine *Spilosoma lubricipeda* (male)



Pale Tussock *Calliteara pudibunda* (male)

Appendix B - Bioblitz Records

Full List in Alphabetical Order by Group

	Binomial Name	Common Name
Arachnid	<i>Agelena sp.</i>	Funnel Weaver
Arachnid	<i>Araniella opisthographa</i>	
Arachnid	<i>Araniella sp.</i>	Orb Spider
Arachnid	<i>Family Tydeidae</i>	Tydeid Mite
Arachnid	<i>Mangora acalypha</i>	Cricket Bat Spider
Arachnid	<i>Panonychus ulmi</i>	Fruit Tree Red Spider Mite
Arachnid	<i>Phytoptus pyri</i>	Pear Leaf Blister Mite
Arachnid	<i>Phytoptus sp.</i>	Plum Leaf Gall Mite
Arachnid	<i>Tetragnatyha sp. (extensa)</i>	Long-jawed Orb Weaver
Arachnid	<i>Trombidiidae sp.</i>	Red Velvet Mite
Bird	<i>Alauda arvensis</i>	Skylark
Bird	<i>Carduelis carduelis</i>	Goldfinch
Bird	<i>Certhia familiaris</i>	Treecreeper
Bird	<i>Chloris chloris</i>	Greenfinch
Bird	<i>Coloeus monedula</i>	Jackdaw
Bird	<i>Columba palumbus</i>	Woodpigeon
Bird	<i>Cyanistes caeruleus</i>	Blue tit
Bird	<i>Dendrocopos major</i>	Great Spotted Woodpecker
Bird	<i>Erithacus rubecula</i>	Robin
Bird	<i>Fringilla coelebs</i>	Chaffinch
Bird	<i>Parus major</i>	Great Tit
Bird	<i>Phylloscopus collybita</i>	Chiffchaff
Bird	<i>Prunella modularis</i>	Dunnock
Bird	<i>Regulus regulus</i>	Goldcrest
Bird	<i>Sylvia atricapilla</i>	Blackcap
Bird	<i>Troglodytes troglodytes</i>	Wren
Bird	<i>Turdus merula</i>	Blackbird
Crustacean	<i>Philoscia muscorum</i>	Common Striped Woodlouse
Fungus	<i>Calocybe gambosa</i>	St George's Mushroom
Fungus	<i>Chlorocibaria sp.</i>	Green/Turquoise Elf Cup
Fungus	<i>Monilinia sp.</i>	Brown Rot Fungus
Fungus	<i>Phellinus pomaceus</i>	Cushion Bracket
Fungus	<i>Puccinia sessilis</i>	Wild Arum Rust
Insect	<i>Abrostola tripartita</i>	Spectacle
Insect	<i>Acasis viretata</i>	Yellow-barred Brindle
Insect	<i>Acrionicta alni</i>	Alder Moth
Insect	<i>Adalia bipunctata</i>	2-spot Ladybird
Insect	<i>Adalia decempunctata</i>	10-spot Ladybird
Insect	<i>Andrena cineraria</i>	Ashy Mining Bee
Insect	<i>Andrena fulva</i>	Tawny Mining Bee
Insect	<i>Anthocharis cardamines</i>	Orange-tip
Insect	<i>Bibio marci</i>	St Marks Fly
Insect	<i>Bombus lapidarius</i>	Red-tailed Bumblebee
Insect	<i>Bombus lucorum</i>	White-tailed Bumblebee

Insect	<i>Bombus pascuorum</i>	Common Carder Bee
Insect	<i>Byturus sp.</i>	Fruitworm Beetle
Insect	<i>Calliteara pudibunda</i>	Pale Tussock
Insect	<i>Campaea margaritata</i>	Light Emerald
Insect	<i>Catharius decipiens</i>	
Insect	<i>Celastrina argiolus</i>	Holly Blue
Insect	<i>Celypha lacunana</i>	
Insect	<i>Charanyca trigrammica</i>	Treble Lines
Insect	<i>Cilix glaucata</i>	Chinese Character
Insect	<i>Clausilia bidentata</i>	Common Door Snail
Insect	<i>Cnephasia sp.</i>	
Insect	<i>Coccinella septempunctata</i>	7-spot Ladybird
Insect	<i>Colostygia pectinataria</i>	Green Carpet
Insect	<i>Dichrorampha acuminatana</i>	
Insect	<i>Dolycoris baccarum</i>	Hairy Shieldbug
Insect	<i>Dysstroma truncata</i>	Common Marbled Carpet
Insect	<i>Eilema sororcula</i>	Orange Footman
Insect	<i>Epiphyas postvittana</i>	Light Brown Apple
Insect	<i>Erannis defoliaria</i>	Mottled Umber Moth
Insect	<i>Eupithecia exigua</i>	Mottled Pug
Insect	<i>Eupithecia pulchellata</i>	Foxglove Pug
Insect	<i>Eupithecia vulgata</i>	Common Pug
Insect	<i>Eupithecia insigniata</i>	Pinion-spotted Pug
Insect	<i>Evergestis forficalis</i>	Garden Pebble
Insect	<i>Hadena bicruris</i>	Lychnis
Insect	<i>Harmonia axyridis</i>	Harlequin Ladybird
Insect	<i>Hedya nubiferana</i>	Marbled Orchard Tortrix
Insect	<i>Hofmannophila pseudospretella</i>	Brown House Moth
Insect	<i>Ligdia adustata</i>	Scorched Carpet
Insect	<i>Liophloeus tessulatus</i>	Weevil
Insect	<i>Lomographa temerata</i>	Clouded Silver
Insect	<i>Melolontha melolontha</i>	Cockchafer
Insect	<i>Menophra abruptaria</i>	Waved Umber
Insect	<i>Muscidae</i>	Fly
Insect	<i>Myrmica rubra</i>	Red Ant
Insect	<i>Nematopogon swammerdamella</i>	
Insect	<i>Nephrotoma sp.</i>	Cranefly
Insect	<i>Nephus quadrimaculatus</i>	Four-spotted Nephus Ladybird
Insect	<i>Nicrophorus humator</i>	Black Sexton Beetle
Insect	<i>Nola confusalis</i>	Least Black Arches
Insect	<i>Nomada goodeniana</i>	Gooden's Nomad Bee
Insect	<i>Notocelia cynosbatella</i>	Black Cloak
Insect	<i>Notocelia trimaculana</i>	Hawthorn Shoot Moth
Insect	<i>Ochropleura plecta</i>	Flame Shoulder
Insect	<i>Oligia strigilis agg.</i>	Marbled Minor Agg
Insect	<i>Operophtera brumata</i>	Winter Moth
Insect	<i>Opisthograptis luteolata</i>	Brimstone Moth
Insect	<i>Otiorhynchus singularis</i>	Clay-coloured Weevil
Insect	<i>Palloptera quinquemacul</i>	Five-spotted Flutter Fly
Insect	<i>Pedicia littoralis</i>	

Insect	<i>Peribatodes rhomboidaria</i>	Willow Beauty
Insect	<i>Phytoecia cylindrica</i>	Umbellifer Longhorn
Insect	<i>Phytomyza chaerophylli</i>	
Insect	<i>Phytomyza ilicis</i>	Holly Leafminer
Insect	<i>Platycheirus sp</i>	Fly
Insect	<i>Plutella xylostella</i>	Diamond-back Moth
Insect	<i>Polydrusus/Phyllobius sp</i>	Nettle Weevil
Insect	<i>Polygonia c-album</i>	Comma
Insect	<i>Pseudargyrotoza conwagana</i>	
Insect	<i>Pyrausta aurata</i>	Mint Moth
Insect	<i>Rhynchitinae sp</i>	Leaf Roller Weevil
Insect	<i>Sarcophaga sp.</i>	Flesh Fly
Insect	<i>Scathophaga sp.</i>	Dung Fly
Insect	<i>Spilosoma lubricipeda</i>	White Ermine
Insect	<i>Taxomyia taxi</i>	Yew Artichoke Gall Fly
Insect	<i>Tipula vernalis</i>	Cranefly
Insect	<i>Trichoptera</i>	Caddisfly
Insect	<i>Udea olivalis</i>	
Insect	<i>Xanthorhoe spadicearia</i>	Red Twin-spot Carpet
Lichen	<i>Cladonia sp.</i>	
Lichen	<i>Lecanora chlarotera s.l.</i>	
Lichen	<i>Lecidella elaeochroma</i>	
Lichen	<i>Melanelixia glabratula</i>	
Lichen	<i>Physcia sp.</i>	
Mammal	<i>Cricetidae sp.</i>	Vole
Mammal	<i>Vulpes vulpes</i>	Fox
Mammal	<i>Muntiacus reevesi</i>	Muntjac
Mollusc	<i>Monacha cantiana</i>	Kentish Snail
Plant	<i>Achillea millefolium</i>	Yarrow
Plant	<i>Aegopodium podagraria</i>	Ground Elder
Plant	<i>Aglaostigma fulvipes</i>	White-sided Cleaver
Plant	<i>Agrimonia eupatoria</i>	Agrimony
Plant	<i>Alliaria petiolata</i>	Garlic Mustard
Plant	<i>Alopecurus pratensis</i>	Meadow Foxtail
Plant	<i>Angelica sylvestris</i>	Wild Angelica
Plant	<i>Anthoxanthum odoratum</i>	Sweet Vernal Grass
Plant	<i>Anthriscus sylvestris</i>	Cow Parsley
Plant	<i>Arctium sp.</i>	Burdock
Plant	<i>Arum maculatum</i>	Lords and Ladies
Plant	<i>Bellis perennis</i>	Common Daisy
Plant	<i>Brachypodium sylvaticum</i>	Wood False Brome
Plant	<i>Bromus sterilis</i>	Barren Brome
Plant	<i>Buddleja davidii</i>	Butterfly Bush
Plant	<i>Cardamine pratensis</i>	Cuckoo Flower
Plant	<i>Carex flacca</i>	Glaucous Sedge
Plant	<i>Cerastium sp</i>	Mouseear
Plant	<i>Cirsium arvense</i>	Creeping Thistle
Plant	<i>Cirsium vulgare</i>	Spear Thistle
Plant	<i>Crataegus monogyna</i>	Hawthorn
Plant	<i>Dactylis glomerata</i>	Cock's-foot

Plant	<i>Dioscorea communis</i>	Black Bryony
Plant	<i>Epilobium</i> sp.	Willowherb
Plant	<i>Festuca rubra</i>	Red Fescue
Plant	<i>Ficaria verna</i>	Lesser Celandine
Plant	<i>Galium aparine</i>	Cleavers
Plant	<i>Geranium dissectum</i>	Cut-leaved Cranesbill
Plant	<i>Geranium robertianum</i>	Herb Robert
Plant	<i>Geum urbanum</i>	Wood Avens
Plant	<i>Glechoma hederacea</i>	Ground Ivy
Plant	<i>Hedera helix</i>	Ivy
Plant	<i>Heracleum sphondylium</i>	Hogweed
Plant	<i>Holcus lanatus</i>	Yorkshire Fog
Plant	<i>Humulus lupulus</i>	Hop
Plant	<i>Hyacinthoides hispanica</i>	Spanish Bluebell
Plant	<i>Hyacinthoides non-scripta</i>	Common Bluebell
Plant	<i>Ilex aquifolium</i>	Holly
Plant	<i>Iris foetidissima</i>	Stinking Iris
Plant	<i>Lamium album</i>	White Dead-nettle
Plant	<i>Lathyrus pratensis</i>	Meadow Vetchling
Plant	<i>Muscari armeniacum</i>	Grape Hyacinth
Plant	<i>Myosotis arvensis</i>	Field Forget-me-not
Plant	<i>Narcissus pseudonarcissus</i>	Daffodil
Plant	<i>Pentaglottis sempervirens</i>	Green Alkanet
Plant	<i>Plantago lanceolata</i>	Ribwort Plantain
Plant	<i>Plantago major</i>	Broad-leaved Plantain
Plant	<i>Poa pratensis</i>	Smooth Meadow Grass
Plant	<i>Potentilla sterilis</i>	Barren Strawberry
Plant	<i>Primula veris</i>	Cowslip
Plant	<i>Primula vulgaris</i>	Primrose
Plant	<i>Prunus domestica</i>	Plum
Plant	<i>Ranunculus bulbosus</i>	Bulbous Buttercup
Plant	<i>Ranunculus pratense</i>	Meadow Buttercup
Plant	<i>Ranunculus repens</i>	Creeping Buttercup
Plant	<i>Rhinanthus minor</i>	Yellow Rattle
Plant	<i>Rubus fruticosus</i> agg.	Bramble
Plant	<i>Rumex acetosa</i>	Common Sorrel
Plant	<i>Rumex obtusifolius</i>	Broad-leaved Dock
Plant	<i>Sambucus nigra</i>	Elder
Plant	<i>Senecio</i> sp.	Ragwort
Plant	<i>Taraxacum officinale</i> agg.	Dandelion
Plant	<i>Taxus baccata</i>	Yew
Plant	<i>Urtica dioica</i>	Common Nettle
Plant	<i>Veronica chamaedrys</i>	Germander Speedwell
Plant	<i>Veronica hederifolia</i>	Ivy-leaved Speedwell
Plant	<i>Vicia sativa</i>	Common Vetch
Plant	<i>Vicia tetrasperma</i>	Smooth Tare
Plant	<i>Viola</i> sp.	Violet

Record Total: 191 (not all to species level)

Records in blue have been recorded on the site before