

Radnorshire Wildlife Services Ltd, Warwick House, High Street, Llandrindod Wells, Powys, LD1 6AG


T: 01597 825722

E: info@rwtwales.org

[www.rwtwales.org](http://www.rwtwales.org)

Report by Radnorshire Wildlife Services Ltd for Knighton Tree Awareness Trust

**Report on baseline flora and fauna surveys at Greenstreet Larches, Llangunllo**

<b>Author</b>	<i>K Gaisford</i>	<b>Checked By</b>	<i>Phil Ward</i>
<b>Signature</b>		<b>Signature</b>	Phil Ward

<b>Report Status</b>			
<b>Date of Issue</b>		8 <sup>th</sup> October 2013	
<b>Distribution</b>			
<i>Date</i>	<i>Issued to</i>	<i>Name</i>	<i>No.</i>
08/10/13	Client	KTWT	1
08/10/13	RWS	-	1

Disclaimer: Radnorshire Wildlife Services is a wholly owned subsidiary of the Radnorshire Wildlife Trust. However, the views expressed in this report are those of the consultancy alone and do not necessarily reflect the opinions of the Trust, nor does the report infer any form of consultation with the Trust or any other Wildlife Trust.

This report or any part of it shall not be reproduced without the permission of Radnorshire Wildlife Services

# Report on Baseline Flora and Fauna Surveys at Greenstreet Larches

---

## Contents

<b>1</b>	<b>Introduction</b>	<b>3</b>
<b>2</b>	<b>Proposed surveys</b>	<b>3</b>
<b>3</b>	<b>Brief methodology for proposed surveys</b>	<b>3</b>
<b>4</b>	<b>Survey results</b>	<b>5</b>
<b>5</b>	<b>Recommendations</b>	<b>10</b>
	<b>Appendix 1: Species lists</b>	<b>11</b>

## 1 Introduction

- 1.1 This report was commissioned by the Knighton Tree Awareness Trust (KTWT) with the aim of recording a baseline dataset for Greenstreet Larches, hereafter referred to as the Site. The Site has been leased to KTWT under a 5 year contract. The Trust intends to manage the Site for its wood productivity and wildlife value.
- 1.2 The report details the survey methods and results of a number of surveys conducted at Greenstreet Larches woodland during 2012-13 by Radnorshire Wildlife Services, KTWT volunteers and local Radnorshire recording groups.

### Site Description

- 1.3 The Site is a small mixed conifer/broadleaf woodland c.1.8 Ha, located on the northwest boundary of Llangunllo village, NGR: SO 209 714. The woodland is at c.300m above Ordnance datum, on the eastern of a hill which reaches 370m asl and extends down to the River Lugg Valley. The Site is one of many woodland areas along the hills bordering the River Lugg Valley; Greenstreet Wood and Lea Hall Wood are broad-leaved woodlands to the north.
- 1.4 There is a disused quarry in the west section of woodland. The Site is marked as woodland on the 1890 map but not on the 1810 map. It is thought this hillside, although not ancient woodland, has gone through a number of wooded phases in its past.
- 1.5 The R. Lugg is a Site of Special Scientific Interest (SSSI) c.80m north/northwest of the Site. The R. Lugg is the only statutory designated site within 5km of the Site.

## 2 Proposed surveys

- 2.1 The following surveys were initially proposed in Autumn 2012:
  - Bat;
  - Bird;
  - Butterfly;
  - Flora;
  - Invertebrate;
  - Lower plants; and
  - Moths
- 2.2 The surveys were carried out during spring/summer 2013 to establish what ecological features are present at the Site. The following section sets out the methodologies for the proposed surveys.

## 3 Brief methodology for proposed surveys

- 3.1 Table 1 sets out a proposed timetable of the 2013 surveys.

### Bat

- 3.2 A single walked dusk transect survey will be carried out over a 2 hour period mid-summer when there are good levels of bat activity. The transect will be carried out using hand-held heterodyne bat detectors and Anabat recorders, it is hoped KTWT volunteers will attend the evening transect.

- 3.3 The survey will start 20minutes before- and continue 2-3 hours after sunset. Details to be recorded in the field will include: bat species, flight lines, direction of flight and activity (foraging, commuting etc.).

#### Bird

- 3.4 A monthly walk, especially around the Site boundary, would build up records around the year. This needs to be supplemented by a breeding bird's survey using British Trust for Ornithology methodology. This would entail at least two early morning visits plus an evening visit in the April to June period. KPAT have access to an ornithologist who will do this.

#### Butterfly

- 3.5 A monthly walk from April to September would record all species using the wood. If there are no members with the necessary expertise, the RWT or Butterfly Conservation would be able to help.

#### Flora

- 3.6 A Phase I habitat survey was conducted in September 2012 and updated in spring 2013 to identify the species present. Two surveys will be carried out to catch spring flowering plants not seen during the first September survey.
- 3.7 The vascular plant communities located within the Site will be recorded using Phase 1 Habitat categories. A species list will also be compiled for all habitats within the surveyed area. Relative abundance of each species will be recorded.

#### Invertebrates

- 3.8 An invertebrate survey will be conducted during June. This will involve a single site visit. The survey will use sweep nets, including beating trees and hedges, ground searching and direct observation to record invertebrate species at the Site. Specimens may be preserved in the field for later identification.

#### Lower plants

- 3.9 A survey of the moss, bryophyte and lichen species will be conducted in early spring by Ray Woods, RWT trustee. Species will be recorded along with substrate found on (tree species/rock etc).

#### Moths

- 3.10 The county moth recorders Pete and Ginny Clarke are RWT members and have agreed to provide a training session and do some moth recording. The survey night will be during June/July when there is good moth activity. The survey will involve two methods: afternoon daylight observations; and setting up two light trap - a wooden skinner trap (15w act) and plastic skinner trap (15w act) both of which will be set up and left over night in appropriate location(s) on the Site. The traps will be re-visited at dawn to collect and identify any catches. Moths will be identified in the field or taken home by the county recorders to identify to species level where possible.

Table 1: Proposed timetable of 2012/13 surveys

Survey	Total no. of site visits required	Proposed month(s) for survey	Actual survey date
Bat	1	Transect survey July/August	3 <sup>rd</sup> July 2013
Bird	6+	Monthly throughout the year	Records not held by RWS
Butterfly	6	Monthly April-September	Survey cancelled
Flora	2	September 2012 and Spring 2013	19 <sup>th</sup> September 2012 & 15 <sup>th</sup> May 2013
Invertebrates	1	Week beginning 10 <sup>th</sup> June	12 <sup>th</sup> June 2013
Lower plant	1	Spring 2013 (same day as spring flora survey)	15 <sup>th</sup> May 2013
Moths	1	Week beginning 10 <sup>th</sup> June	27 <sup>th</sup> July 2013

## 4 Survey results

### Bats

- 4.1 Table 2 below sets out a summary of survey conditions recorded on the evening of the transect.

Table 2: summary of survey conditions

<i>Dusk Survey</i>		<i>Surveyor</i>	<i>NRW bat license no./Competency</i>	<i>Recording equipment</i>
<b>Date</b>	3 <sup>rd</sup> July 2013	Katie Gaisford	Trainee bat worker with 3 years experience in emergent/re-entry and transect surveys.	Batbox Duet
<b>Sunset</b>	21:37			
<b>Start time</b>	21:30			
<b>Start temperature</b>	17°C			
<b>End time</b>	23:15	KTWT volunteers	N/A	Magenta BAT MKIIa heterodyne detector, Anabat SD2 x 2
<b>End temperature</b>	13°C			
<b>Weather</b>	Light breeze, dry			
<b>Cloud cover</b>	20%, increasing to 50%			

- 4.2 The transect started at the east access to the Site from the B4368. The group walked along the woodland track towards the Samantha Trust, Greenstreet Farm before turning into the woodland itself, the route returned to the track and walked up to the Samantha Trust farm buildings before returning along the track and B-road back to Llangunllo Village.
- 4.3 **On the track leading from the B4368 to the Samantha Trust:** At between 21:56 and 22:04 four common pipistrelle *Pipistrellus pipistrellus* and three soprano pipistrelles *Pipistrellus pygmaeus* were recorded (seen and heard) commuting along the west side of the Site, following the line of the trees against the track. They flew east-west from the R. Lugg towards Greenstreet Wood.
- 4.4 At 22:05 a single noctule *Nyctalus noctula* was recorded (seen and heard) commuting southwest-northeast across the open fields to the northwest of the woodland.
- 4.5 22:10 two common pipistrelle was recorded (seen and heard) foraging along the tree line of the track.

- 4.6 Anabat recording: at 22:15 a *Myotis* sp. call was recorded.
- 4.7 **Larch woodland, Greenstreet Wood:** At 22:20 a single common pipistrelle was heard passing over the woodland.
- 4.8 Anabat recording: at 22:22 a *Myotis* sp and soprano pipistrelle calls were recorded.
- 4.9 **Samantha Trust house:** At 22:40 a soprano pipistrelle was recorded (seen and heard) foraging around the farm buildings and adjacent mature oak tree.
- 4.10 Anabat recording: at 22:37 and 22:53 a *Myotis* sp. was recorded, call characteristics were similar to the other calls recorded earlier in the transect. The shape and frequency of the calls indicate Natterer's bat *Myotis nattereri*.
- 4.11 **Llangunllo Village:** At 23:05 a common pipistrelle was recorded (seen and heard) foraging along the village street, passing under the street lights.
- 4.12 **Summary:** The results from this single transect indicates the north boundary is a frequently used commuting line used by a local pipistrelle sp. bat roost. The Site is used for foraging by pipistrelle sp., and at least one *Myotis* sp. The trees within the site do not provide significant potential for roosts, many trees are of a similar age or still young, without the splits, cracks or ivy cover features utilised by bats as roosts.
- 4.13 The mature broadleaves along the north boundary and towards the B4368 are of most significance to bats in view of roost potential and foraging. Any mature broad-leaf should be inspected by a bat worker before works are carried out, felling or 'tidying' of dead wood should also be avoided.

#### Flora

- 4.14 A full species list is provided in Appendix 1, the habitats identified are described and summarised below.
- 4.15 The Site is a mixed conifer/broadleaf plantation woodland, dominated by planted conifer species.
- 4.16 **Woodland section against B4368:** Native species have persisted with occasional mature pedunculate oak, ash and rarely sweet chestnut and sycamore these mature trees are mainly along the access track and within a small triangle of woodland that extends down to the B4368. There are occasional mature examples of rowan, hazel and elder.
- 4.17 The ground flora of this area is dominated by bracken with frequent honeysuckle, ivy and bramble. The ground flora contains a number of grass and fern species common in woodland habitat including: tussocks of tufted hair-grass, creeping soft-grass, red fescue, male fern and broad buckler fern. Herbs included wood-sorrel, common dog violet, yellow pimpernel and wood anemone.
- 4.18 Phase 1 habitat: Broad-leaved semi-natural woodland
- 4.19 **Main woodland:** The canopy is dominated by planted Japanese larch and occasional Corsican pine. The under-storey is very sparse with occasional rowan, elder and holly.

- 4.20 The larch creates a very open canopy with a well lit woodland floor. Ferns dominate including broad-leaved buckler, male fern, bracken and occasional hard fern. Bramble and honeysuckle are also frequent along with wood-sorrel in more open areas. Herb and grass species present include red fescue, creeping soft-grass and foxglove concentrated alongside the woodland tracks. Bluebell is present throughout.
- 4.21 Phase 1 habitat: Conifer plantation woodland
- 4.22 **Access track:** The access track to the Site is shaded by mature broadleaves and larch plantation. The sides of the track were species-rich with many herbs and grasses. The area was dominated by common enchanter's-nightshade, creeping buttercup and rosebay willowherb. Grasses were frequent along with a wide range of shade-loving herbs including: ivy, wood-sorrel, wood avens, common valerian, opposite-leaved golden saxifrage, bluebell, wood anemone, greater stitchwort and barren strawberry. Species such as brooklime indicate the ground in this area is frequently damp.
- 4.23 **Planted woodland to the northwest end:** There is an area of young, planted trees with an open ground flora at the very edge of the Site. This area contains ash, blackthorn, fruit tree sp. guelder-rose, paper-back maple and wild cherry. The ground flora was sparse dominated by moss with occasional ivy and bramble and rare creeping cinquefoil, opposite-leaved golden saxifrage, grey field speedwell and herb robert.
- 4.24 Phase 1 habitat: Broadleaved plantation woodland
- 4.25 **Summary:** The canopy species show the plantation nature of the woodlands recent management. The ground flora contains a good range of woodland species some of which indicate long-term presence of woodland at the site (including wood anemone, wood-sorrel and bluebell).

#### Invertebrates

- 4.26 A total of 68 invertebrate species were recorded at the Site. A full list of species is provided in Appendix 1. A summary of the families and number of species records is given below:
- Opiliones (spider) - 2 species;
  - Arachnida (spider) - 2 species;
  - Chilopoda (centipede) - 1 species;
  - Isopoda (woodlouse) - 2 species;
  - Diplopoda (millipede) - 1 species;
  - Coleoptera (beetle) - 13 species;
  - Collembola (springtail) - 1 species;
  - Diptera (fly) - 30 species;
  - Ephemeroptera (mayfly) - 2 species;
  - Heteroptera (bug) - 2 species;
  - Parasitica (gall wasp) - 1 species;
  - Lepidoptera (moth) - 4 species;
  - Mecoptera (scorpion fly) - 1 species;
  - Neuroptera (lacewing) - 1 species;
  - Plecoptera (stonefly) - 1 species; and
  - Mollusca (slug) - 1 species
- 4.27 **Summary:** Although no rare or notable species were recorded, the Site provides a range of habitats for a wide variety of common species associated with woodland trees and flora and damp habitat.

#### Lower Plants

- 4.28 A total of 5 liverworts, 33 mosses and 22 lichens were identified during the survey. Tables 1-3 below provide full lists of the species identified, their location and abundance at the Site and, where possible, their common name.
- 4.29 N.B. Common names for lower plants are not always reliable and in the majority of cases do not exist.

Table 1: list of liverwort species:

Name	Location & Abundance
<i>Anisomeridium juistense</i>	Occasional on elder stems
<i>Arthonia radiata</i>	On ash twigs on boundary tree
<i>Arthonia spadicea</i>	Rare on lower trunk of sweet chestnut
<i>Baeomyces rufus</i>	Rare on soil bank
<i>Cladonia coniocraea</i>	Occasional on bases of trees
<i>Cladonia polydactyla</i>	Rare on tree base
<i>Evernia prunastri</i>	Frequent on larch branches
<i>Fuscidea lightfootii</i>	On larch branches
<i>Hypogymnia physodes</i>	Frequent on larch branches
<i>Hypogymnia tubulosa</i>	On larch branches
<i>Hypotrachyna revoluta</i>	On larch branches
<i>Lecanora chlarotera</i>	Frequent on larch branches
<i>Lepraria incana</i>	Occasional on bryophytes on banks and on tree trunks
<i>Melanelixia subaurifera</i>	On larch branches
<i>Parmelia saxatilis</i>	Frequent on larch branches
<i>Parmelia saxatilis</i>	On larch branches
<i>Parmelia sulcata</i>	On ash twigs on boundary tree
<i>Phaeophyscia orbicularis</i>	On ash twigs on boundary tree
<i>Physia tenella</i>	On ash twigs on boundary tree
<i>Platismatia glauca</i>	Frequent on larch branches
<i>Psililechia lucida</i>	Rare on shaded rock beside entrance track
<i>Xanthoria parietina</i>	On ash twigs on boundary tree

Table 2: List of moss species:

Name	Common name	Location & Abundance
<i>Amblystegium serpens</i>	Creeping feather-moss	Occasional on elder trunks
<i>Atrichum undulatum</i>		Rare on soil on banks
<i>Brachythecium rutabulum</i>	Rough-stalked feather-moss	Occasional on tree bases and trunks of elder
<i>Calliargon cuspidatum</i>	Pointed spear-moss	Rare beside paths
<i>Campylopus introflexus</i>	Heath star-moss	Rare on tree stumps
<i>Cirrophylum piliferum</i>		Rare on banks
<i>Cryphaea heteromalla</i>	Lateral cryphaea	Rare on elder trunks
<i>Dicranella heteromalla</i>	Silky forklet-moss	Rare on soil banks
<i>Dicranoweissia cirrata</i>		Rare on tree stumps
<i>Dicranum scoparium</i>	Broom moss	Occasional on banks and stumps
<i>Eurhynchium confertum</i>		Occasional on elder stems
<i>Eurhynchium striatum</i>	Common striated feather-moss	Occasional on hedge banks
<i>Fissidens taxifolius</i>	Common pocket-moss	Rare on soil on banks
<i>Hylocomium splendens</i>	Glittering wood-moss	Rare on banks
<i>Hypnum cupressiforme</i>	Cypress-leaved plait-moss	Occasional on tree trunks and banks
<i>Hypnum jutlandicum</i>	heath plait-moss	Rare on banks
<i>Isopterygium elegans</i>		Rare on woodland bank



<i>Kindebergia praelongum</i>		Occasional on hedge banks and fallen trunks and path sides
<i>Mnium hornum</i>	Swan's-neck thyme-moss	Occasional on banks
<i>Orthotrichum affine</i>	Wood bristle-moss	Occasional on elder trunks
<i>Orthotrichum diaphanum</i>	White-tipped bristle-moss	Rare on elder trunks
<i>Orthotrichum pulchellum</i>	Elegant bristle-moss	Rare on elder trunks
<i>Plagiomnium undulatum</i>	Hart's-tongue thyme-moss	Rare in hedge bottom
<i>Pleurozium schreberi</i>		Rare on banks
<i>Ploetrichum formosum</i>	Bank haircap	Occasional on banks and stumps
<i>Pogonatum aloides</i>	Dwarf haircap	Rare on banks
<i>Pseudoscleropodium purum</i>	Neat feather-moss	Occasional on banks
<i>Rhytidiadelphus loreus</i>	Little shaggy-moss	Common on woodland floor
<i>Rhytidiadelphus squarrosus</i>	Springy turf-moss	Occasional on banks and by paths
<i>Rhytidiadelphus triquetrus</i>	Big shaggy-moss	Rare on banks and path sides
<i>Thuidium tamariscinum</i>	Common tamarisk-moss	Common on banks
<i>Ulota crispa</i>	Crisped pincushion	Rare on elder trunks
<i>Zygodon viridissimus</i>	Green Yoke-moss	Rare on elder trunks

Table 3: list of lichen species:

Name	Location & Abundance
<i>Anisomeridium juistense</i>	Occasional on elder stems
<i>Arthonia radiata</i>	On ash twigs on boundary tree
<i>Arthonia spadicea</i>	Rare on lower trunk of sweet chestnut
<i>Baeomyces rufus</i>	Rare on soil bank
<i>Cladonia coniocraea</i>	Occasional on bases of trees
<i>Cladonia polydactyla</i>	Rare on tree base
<i>Evernia prunastri</i>	Frequent on larch branches
<i>Fuscidea lightfootii</i>	On larch branches
<i>Hypogymnia physodes</i>	Frequent on larch branches
<i>Hypogymnia tubulosa</i>	On larch branches
<i>Hypotrachyna revoluta</i>	On larch branches
<i>Lecanora chlarotera</i>	Frequent on larch branches
<i>Lepraria incana</i>	Occasional on bryophytes on banks and on tree trunks
<i>Melanelixia subaurifera</i>	On larch branches
<i>Parmelia saxatilis</i>	Frequent on larch branches
<i>Parmelia saxatilis</i>	On larch branches
<i>Parmelia sulcata</i>	On ash twigs on boundary tree
<i>Phaeophyscia orbicularis</i>	On ash twigs on boundary tree
<i>Physia tenella</i>	On ash twigs on boundary tree
<i>Platismatia glauca</i>	Frequent on larch branches
<i>Psililechia lucida</i>	Rare on shaded rock beside entrance track
<i>Xanthoria parietina</i>	On ash twigs on boundary tree

4.30 **Summary:** all species are considered common to the habitats and trees species present.

4.31 It is recommended long term management looks to replace the existing dominant larch with a tree species with similar shading and leaf fall to that of ash, recommended species include small-leaved lime and rowan.

## Moths

- 4.32 Following the two survey methods a total of 69 species were recorded with 292 individuals being identified. The full species list is at Appendix 1. . The overnight weather conditions were not ideal for moth surveying which will have effected activity levels.
- 4.33 Of the species identified there was one of particular interest - *Perittis obscurepunctella* a mine. This record is only the third Radnorshire record for the species. This small moth has a leaf mining larvae that feeds on honey suckle. It is widespread across England but considered scare across Wales. It is generally found in open woodland.
- 4.34 **Summary:** A good number of moths were captured on this initial survey, was mentioned above there was one species of note the majority being common to the habitat and locality. It should be noted a much better picture of the moth species present is only built up by regular repeat surveys through the survey period.

## 5 **Recommendations**

- 5.1 It is recommended future management of the Site aims to retain the current light levels and leaf-fallen provided by the larch and most frequent broad-leaved species. Due to the current concerns and potential to spread disease though the use of ash, it is recommended rowan and small-leaved lime are planted as the larch is felled. These two species would provide usable crops of timber and would mimic the light levels and produce leaf-litter at a volume that will, it is hoped, maintain the flora and lower plant species present.
- 5.2 The additional of hazel and coppicing of hazel stands already present could also be beneficial in terms of timber and management of the ground flora.
- 5.3 **Fauna:** It is recommended a minimum of 6 simple, timber bat boxes are erected along the woodland edge to provide roosting potential. These will be located on a southerly aspect where possible, out of the prevailing weather, with a clear access line and 2-3m from the ground. Bat boxes can be clustered in 2's or 3's on one tree to provide range in internal temperatures.
- 5.4 It is recommended a minimum of 6 timber 32mm hole bird boxes are erected within the woodland on trees that will be retained in the long-term. Bird boxes need to be located c20m apart to allow for territorial behaviour, on the northern side of the tree with clear access lines.

## Appendix 1: Species lists

Phase 1 habitat survey species list:

Date of survey	19/09/2012 & 15/05/2013		Ground flora				
Surveyor	Katie Gaisford		Ground flora				
Common Name	Scientific Name	Canopy layer	Under-storey	Track	Eastern slope	Main woodland	NW end of wood (planted)
<b>Ground flora</b>							
Atlantic ivy	<i>Hedera helix ssp hibernica</i>			6	6		✓
Barren strawberry	<i>Potentilla sterilis</i>			4			
Bluebell	<i>Hyacinthoides non-scripta</i>			5		3	
Bracken	<i>Pteridium aquilinum</i>				8	5	
Bramble	<i>Rubus fruticosus agg.</i>			5	6	5	✓
Broad buckler fern	<i>Dryopteris dilatata</i>			4	5	8	
Brooklime	<i>Veronica beccabunga</i>			2			
Bush vetch	<i>Vicia sepium</i>			3			
Cocksfoot	<i>Dactylis glomerata</i>			3			
Common chickweed	<i>Stellaria media</i>			2			
Common Enchanter's-nightshade	<i>Circaea lutitiana</i>			7			
Common gorse	<i>Ulex europaeus</i>					3	
Common polypody	<i>Polypodium vulgare</i>			2			
Common valerian	<i>Valeriana officinalis</i>			5			
Creeping bent	<i>Agrostis stolonifera</i>			3		3	✓
Creeping buttercup	<i>Ranunculus repens</i>			7			
Creeping cinquefoil	<i>Potentilla reptans</i>						✓
Creeping soft-grass	<i>Holcus mollis</i>			6	5	3	
Dandelion	<i>Taraxicum agg.</i>			3			
Field wood-rush	<i>Luzula campestris</i>			4			
Field-rose	<i>Rosa arvensis</i>			2			
Foxglove	<i>Digitalis purpurea</i>			3		3	
Garlic-mustard	<i>Alliaria petiolata</i>			2			
Germander speedwell	<i>Veronica chamaedrys</i>			6		2	✓
Greater stitchwort	<i>Stellaria holostea</i>			3			
Grey field speedwell	<i>Veronica polita</i>			3			✓

Hard fern	<i>Blechnum spicant</i>			1	3	5	✓
Heath bedstraw	<i>Galium saxatile</i>			4			
Herb robert	<i>Geranium robertum</i>			6	3		✓
Honeysuckle	<i>Lonicera periclymenum</i>			6	6	6	
Lady's-mantle	<i>Alchemilla vulgaris</i> agg.			3			
Male fern	<i>Dryopteris filix-mas</i>			2	5	4	
Nettle	<i>Urtica dioica</i>			3			
Nipplewort	<i>Lapsana communis</i>			4			
Opp-leaved golden saxifrage	<i>Chrysosplenium oppositifolium</i>			5			✓
Raspberry	<i>Rubus idaeus</i>			3			
Red currant	<i>Ribes sylvestre</i>					3	
Red fescue	<i>Festuca rubra</i>			5	3	4	
Remote sedge	<i>Carex remota</i>			3			
Rosebay willowherb	<i>Chamaenerion angustifolium</i>			7			
Selfheal	<i>Prunella vulgaris</i>			3			
Slender St John's-wort	<i>Hypericum pulchrum</i>			1			
Spear-leaved willowherb	<i>Epilobium lanceolatum</i>			2			✓
Sweet vernal-grass	<i>Anthoxanthum odoratum</i>			4	3		✓
Tufted hair-grass	<i>Deschampsia cespitosa</i>			6	6	2	
Tufted vetch	<i>Vicia cracca</i>			6			
Velvet bent	<i>Agrostis canina</i>			1			
Voilet sp	<i>Viola</i> sp.			3	3		
Wavy bitter-cress	<i>Cardamine flexuosa</i>			4	3		
Wood anemone	<i>Anemone nemorosa</i>			2	2		
Wood avens	<i>Geum urbanum</i>			6			✓
Wood-sorrel	<i>Oxalis acetosella</i>			6	5	6	
Yellow pimpernel	<i>Lysimachia nemorum</i>				3		
Yorkshire fog	<i>Holcus lanatus</i>			4	3		
<b>Canopy/tree species</b>							
Ash	<i>Fraxinus excelsior</i>	✓					✓
Beech	<i>Fagus sylvatica</i>		✓				
Blackthorn	<i>Prunus spinosa</i>						✓
Corsican pine	<i>Pinus nigra</i>	✓					
Downy birch	<i>Betula pendula</i>		✓				
Elder	<i>Sambucus nigra</i>	✓	✓				

Fruit tree sp.							✓
Goat willow	<i>Salix caprea</i>		✓				
Guelder-rose	<i>Viburnum opulus</i>						✓
Hawthorn	<i>Crataegus monogyna</i>	✓					
Hazel	<i>Corylus avellana</i>	✓	✓				
Holly	<i>Ilex aquifolium</i>		✓				4
Japanese larch	<i>Larix kaempferi</i>	✓ (D)					
Norway spruce	<i>Picea abies</i>		✓				
Paper-bark maple	<i>Acer griseum</i>						✓
Pedunculate oak	<i>Quercus robur</i>	✓					
Rowan	<i>Sorbus aucuparia</i>	✓	✓				
Snowberry	<i>Symphoricarpos albus</i>				3		
Sweet chestnut	<i>Castanea sativa</i>	✓					
Sycamore	<i>Acer pseudoplatanus</i>	✓	✓				
Wild cherry	<i>Prunus avium</i>						✓

Invertebrate survey species list:

Order	Family	Species name	Common name	Comments
Arachnida_Opiliones	Phalangiidae	<i>Megabunus diadema</i>	a harvestman	
Arachnida_Opiliones	Nemastomatidae	<i>Nemastoma bimaculatum</i>	a harvestman	
Arachnida_Spider	Linyphiidae	<i>Linyphia triangularis</i>	a large money spider	
Arachnida_Spider	Tetragnathidae	<i>Meta segmentata</i>	a spider	
Chilopoda	Lithobiidae	<i>Lithobius</i>	a centipede	
Crustacea_Isopoda	Trichoniscidae	<i>Androniscus dentiger</i>	Rosy Woodlouse	
Crustacea_Isopoda	Oniscidae	<i>Oniscus asellus</i>	Common shiny woodlouse	
Dilopoda	Glomeridae	<i>Glomeris marginata</i>	Pill millipede	
Insect_Coleoptera	Elateridae	<i>Agriotes pallidulus</i>	a click beetle	
Insect_Coleoptera	Elateridae	<i>Athous haemorrhoidalis</i>	a click beetle	
Insect_Coleoptera	Chrysomelidae	<i>Derocrepis rufipes</i>	a flea beetle	
Insect_Coleoptera	Cantharidae	<i>Malthodes marginatus</i>	a soldier beetle	
Insect_Coleoptera	Scarabaeidae	<i>Melolontha melolontha</i>	Maybug or Cockchafer	
Insect_Coleoptera	Curculionidae	<i>Otiorhynchus singularis</i>	a weevil	
Insect_Coleoptera	Curculionidae	<i>Phyllobius argentatus</i>	a weevil	
Insect_Coleoptera	Curculionidae	<i>Phyllobius pomaceus</i>	a weevil	
Insect_Coleoptera	Chrysomelidae	<i>Phytodecta pallida</i>	a leaf beetle	

Insect_Coleoptera	Curculionidae	<i>Polydrusus pilosus</i>	a weevil	
Insect_Coleoptera	Staphylinus	<i>Quedius curtipennis</i>	a rove beetle	
Insect_Coleoptera	Cantharidae	<i>Rhagonycha lignosa</i>	a soldier beetle	
Insect_Coleoptera	Curculionidae	<i>Strophosoma melanogrammum</i>	a weevil	
Insect_Collembola		<i>Collembola</i>	a springtail	
Insect_Diptera	Agromyzidae	<i>Aulagramyza hendeliana</i>	a leaf-mining fly	Mines only. Common in honeysuckle throughout the woodland.
Insect_Diptera	Stratiomyidae	<i>Beris chalybata</i>	a soldier fly	
Insect_Diptera	Stratiomyidae	<i>Beris chalybata</i>	a soldier fly	2 females.
Insect_Diptera	Bibionidae	<i>Bibio leucopterus</i>	a St Mark's fly	Female
Insect_Diptera	Bibionidae	<i>Bibio marci</i>	a St Mark's fly	As prey of <i>Empis tessellata</i> !
Insect_Diptera	Hybotidae	<i>Bicellaria</i>	a dance fly	<i>Bicellaria vana</i> ? Female, probably this species.
Insect_Diptera	Agromyzidae	<i>Chromatamyia lonicerae</i>	a leaf-mining fly	2 adult females swept from honeysuckle.
Insect_Diptera	Sphaeroceridae	<i>Crumomyia nitidae</i>		Male. Common on ground in the woodland.
Insect_Diptera	Bibionidae	<i>Dilophus femoratus</i>	a St Mark's fly	Male and female.
Insect_Diptera	Empididae	<i>Dolichocephala guttata</i>	a dance fly	Male.
Insect_Diptera	Dolichopodidae	<i>Dolichopus popularis</i>	a marsh fly	Female.
Insect_Diptera	Empididae	<i>Empis punctata</i>	a dance fly	2 males, 2 females.
Insect_Diptera	Empididae	<i>Empis stercorea</i>	a dance fly	Female.
Insect_Diptera	Empididae	<i>Empis tessellata</i>	a dance fly	Male with <i>Bibio marci</i> prey!
Insect_Diptera	Fanniidae	<i>Fannia mollissima</i>		Male.
Insect_Diptera	Fanniidae	<i>Fannia rondani</i>		3 females.
Insect_Diptera	Empididae	<i>Hilara cornicula</i>	a dance fly	Male
Insect_Diptera	Limoniidae	<i>Limonia flavipes</i>	a crane fly	
Insect_Diptera	Lonchopteridae	<i>Lonchoptera lutea</i>	a pointed-winged fly	2 males, female.
Insect_Diptera	Hybotidae	<i>Ocydromia glabricula</i>	a dance fly	Male.
Insect_Diptera	Agromyzidae	<i>Phytomyxa ranunculi</i>	a leaf-mining fly	Female.
Insect_Diptera	Syrphidae	<i>Platycheirus albimanus</i>	a hoverfly	Female.
Insect_Diptera	Hybotidae	<i>Platypalpus annulipes</i>	a dance fly	Male.
Insect_Diptera	Hybotidae	<i>Platypalpus verralli</i>	a dance fly	Female.
Insect_Diptera	Keroplastidae	<i>Platyura marginata</i>	a fungus gnat	2 males.
Insect_Diptera	Empididae	<i>Rhamphomyia crassirostris</i>	a dance fly	Male.
Insect_Diptera	Empididae	<i>Rhamphomyia tarsta</i>	a dance fly	Male.
Insect_Diptera	Syrphidae	<i>Rhingia campestris</i>	a hoverfly	
Insect_Diptera	Scathophagidae	<i>Scathophaga stercoraria</i>	Yellow dung fly	

Insect_Diptera	Dolichopodidae	<i>Sympycnus desoutteri</i>	a marsh fly	4 females.
Insect_Diptera	Limoniidae	<i>Tasiocera murina</i>	a crane fly	Male
Insect_Diptera	Tipulidae	<i>Tipula oleracea</i>	a crane fly	
Insect_Diptera	Lauxaniidae	<i>Tricholauxania praeusta</i>	a fly	Male, 2 females.
Insect_Ephemeroptera	Ephemeridae	<i>Ephemera danica</i>	a large mayfly 'green drake'	
Insect_Ephemeroptera	Leptophlebiidae	<i>Paraleptophlebia submarginata</i>	a mayfly	
Insect_Hemiptera_Heteroptera	Anthocoridae	<i>Anthocoris nemorum</i>	Common Flower Bug	
Insect_Hemiptera_Heteroptera	Miridae	<i>Bryocoris pteridis</i>	Fern bug	
Insect_Hymenoptera_Parasitica	Cynipidae	<i>Andricus kollari</i>	Oak marble gall wasp	
Insect_Lepidoptera_Moth	Choreutidae	<i>Anthophila fabriciana</i>	Nettle Tap moth	
Insect_Lepidoptera_Moth	Geometridae	<i>Asthenia albulata</i>	Small White Wave	
Insect_Lepidoptera_Moth	Micropterigidae	<i>Micropteryx aureatella</i>	a micro moth	
Insect_Lepidoptera_Moth	Micropterigidae	<i>Micropteryx aureatella</i>	a micro moth	Male, female.
Insect_Mecoptera	Panorpidae	<i>Panorpa germanica</i>	a scorpion fly	
Insect_Neuroptera	Hemerobiidae	<i>Micromus paganus</i>	a brown lacewing	
Insect_Plecoptera	Leuctridae	<i>Leuctra hippopus</i>	a needlefly stonefly	Female.
Mollusca_Slug	Arionidae	<i>Arion ater</i>	Large black slug	

Moth survey species list:

Scientific name	Common name	Quantity	Stage	Comment
<b>Afternoon Day Observations (total: 6 species, 14 moths/mines)</b>				
<i>Caloptilia syringella</i>		5	Mine	on Ash
<i>Carcina quercana</i>		1	Adult	
<i>Mompha langiella</i>		5	Mine	on Enchanter's nightshade
<i>Opisthograptis luteolata</i>	Brimstone Moth	1	Adult	
<i>Perittia obscurepunctella</i>		1	Mine	on Honeysuckle <b>3rd VC43 Radnor Record</b>
<i>Udea lutealis</i>		1	Adult	
<b>Wooden Skinner Trap (15w act) left overnight (total: 46 species, 129 moths)</b>				
<i>Abraxas grossulariata</i>	Magpie Moth	4	Adult	
<i>Agriphila tristella</i>		1	Adult	
<i>Alcis repandata</i>	Mottled Beauty	23	Adult	
<i>Anaplectoides prasina</i>	Green Arches	1	Adult	
<i>Apamea monoglypha</i>	Dark Arches	1	Adult	
<i>Aphelia paleana</i>	Timothy Tortrix	1	Adult	
<i>Cabera exanthemata</i>	Common Wave	1	Adult	
<i>Campaea margaritata</i>	Light Emerald	6	Adult	
<i>Celypha lacunana</i>		1	Adult	
<i>Cerapteryx graminis</i>	Antler Moth	1	Adult	
<i>Chrysoteuchia culmella</i>	Garden Grass-veneer	1	Adult	
<i>Cnephasia asseclana</i>	Flax Tortrix	2	Adult	
<i>Colostygia pectinataria</i>	Green Carpet	1	Adult	
<i>Crocallis elinguaris</i>	Scalloped Oak	1	Adult	
<i>Deileptenia ribeata</i>	Satin Beauty	22	Adult	
<i>Diachrysis chrysis</i>	Burnished Brass	1	Adult	
<i>Diarsia brunnea</i>	Purple Clay	4	Adult	
<i>Dipleurina lacustrata</i>		4	Adult	
<i>Ectropis bistortata</i>	Engrailed	2	Adult	
<i>Eilema griseola</i>	Dingy Footman	1	Adult	
<i>Eilema lurideola</i>	Common Footman	2	Adult	
<i>Epirrhoe alternata</i>	Common Carpet	1	Adult	
<i>Euphyia biangulata</i>	Cloaked Carpet	2	Adult	
<i>Geometra papilionaria</i>	Large Emerald	1	Adult	
<i>Herminia grisealis</i>	Small Fan-foot	1	Adult	



<i>Hydriomena furcata</i>	July Highflyer	3	Adult
<i>Hylaea fasciaria</i>	Barred Red	2	Adult
<i>Hypena proboscidalis</i>	Snout	1	Adult
<i>Idea dimidiata</i>	Single-dotted Wave	1	Adult
<i>Lacanobia oleracea</i>	Bright-line Brown-eye	1	Adult
<i>Lomaspilis marginata</i>	Clouded Border	1	Adult
<i>Lycophotia porphyrea</i>	True Lover's Knot	1	Adult
<i>Macaria liturata</i>	Tawny-barred Angle	4	Adult
<i>Mythimna pallens</i>	Common Wainscot	1	Adult
<i>Noctua pronuba</i>	Large Yellow Underwing	4	Adult
<i>Pandemis heparana</i>	Dark Fruit-tree Tortrix	1	Adult
<i>Pleuroptya ruralis</i>	Mother of Pearl	2	Adult
<i>Schrankia costaestrigalis</i>	Pinion-streaked Snout	2	Adult
<i>Scotopteryx chenopodiata</i>	Shaded Broad-bar	1	Adult
<i>Selenia dentaria</i>	Early Thorn	5	Adult
<i>Selenia tetralunaria</i>	Purple Thorn	1	Adult
<i>Udea prunalis</i>		3	Adult
<i>Xestia ditrapezium</i>	Triple-spotted Clay	2	Adult
<i>Xestia triangulum</i>	Double Square-spot	2	Adult
<i>Ypsolopha parenthesella</i>		1	Adult
<i>Zanclognatha tarsipennalis</i>	Fan-foot	4	Adult
<b>Plastic Skinner Trap (15w act) left overnight (total: 45 species, 249 moths)</b>			
<i>Abraxas grossulariata</i>	Magpie Moth	1	Adult
<i>Acronicta tridens/psi</i>	Dark Dagger / Grey Dagger	1	Adult
<i>Agrotis exclamationis</i>	Heart and Dart	1	Adult
<i>Alcis repandata</i>	Mottled Beauty	23	Adult
<i>Anaplectoides prasina</i>	Green Arches	1	Adult
<i>Apamea monoglypha</i>	Dark Arches	3	Adult
<i>Apamea scolopacina</i>	Slender Brindle	1	Adult
<i>Autographa jota</i>	Plain Golden Y	3	Adult
<i>Autographa pulchrina</i>	Beautiful Golden Y	1	Adult
<i>Campaea margaritata</i>	Light Emerald	4	Adult
<i>Celypha lacunana</i>		2	Adult
<i>Chloroclysta citrata</i>	Dark Marbled Carpet	1	Adult
<i>Chloroclystis v-ata</i>	V-Pug	1	Adult

<i>Colostygia pectinataria</i>	Green Carpet	2	Adult
<i>Crocallis elinguaris</i>	Scalloped Oak	2	Adult
<i>Deileptenia ribeata</i>	Satin Beauty	18	Adult
<i>Diachrysis chrysitis</i>	Burnished Brass	2	Adult
<i>Diarsia brunnea</i>	Purple Clay	2	Adult
<i>Dipleurina lacustrata</i>		8	Adult
<i>Ectropis bistortata</i>	Engrailed	3	Adult
<i>Eulithis pyraliata</i>	Barred Straw	1	Adult
<i>Euphyia biangulata</i>	Cloaked Carpet	2	Adult
<i>Herminia grisealis</i>	Small Fan-foot	3	Adult
<i>Hydriomena furcata</i>	July Highflyer	11	Adult
<i>Hypena proboscidalis</i>	Snout	1	Adult
<i>Idaea aversata ab. remutata</i>	Riband Wave [non-banded form]	6	Adult
<i>Macaria liturata</i>	Tawny-barred Angle	7	Adult
<i>Mythimna ferrago</i>	Clay	1	Adult
<i>Noctua pronuba</i>	Large Yellow Underwing	8	Adult
<i>Oligia strigilis agg.</i>	Marbled Minor agg.	1	Adult
<i>Opisthograptis luteolata</i>	Brimstone Moth	1	Adult
<i>Ourapteryx sambucaria</i>	Swallow-tailed Moth	1	Adult
<i>Pandemis heparana</i>	Dark Fruit-tree Tortrix	1	Adult
<i>Pheosia tremula</i>	Swallow Prominent	2	Adult
<i>Ptilodon capucina</i>	Coxcomb Prominent	2	Adult
<i>Schrankia costaestrigalis</i>	Pinion-streaked Snout	1	Adult
<i>Selenia dentaria</i>	Early Thorn	1	Adult
<i>Selenia tetralunaria</i>	Purple Thorn	1	Adult
<i>Udea olivalis</i>		3	Adult
<i>Udea prunalis</i>		5	Adult
<i>Xestia baja</i>	Dotted Clay	3	Adult
<i>Xestia ditrapezium</i>	Triple-spotted Clay	2	Adult
<i>Xestia triangulum</i>	Double Square-spot	3	Adult
<i>Yponomeuta evonymella</i>	Bird-cherry Ermine	1	Adult
<i>Zanclognatha tarsipennalis</i>	Fan-foot	1	Adult