

Survey for saproxylic invertebrates at Alfoxton Park in 2022

Acknowledgements

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Summary

This report describes a saproxylic invertebrate survey at Alfoxton Park, which is part of The Quantocks Site of Special Scientific Interest (SSSI) in Somerset. There is little documentary evidence about the origin of the park. The 1887 Ordnance Survey Map labels Alfoxton Park as a deer park, although it is not known when this was established. It is likely to be of relatively recent origin but incorporating part of a pre-existing area of ancient wood pasture on the Quantock Common. Potential long-term continuity for availability of veteran trees in the local landscape is suggested by two large, lapsed pollard sessile oaks in Alfoxton Park, and there are over 300 lapsed oak pollards in nearby Willoughby Cleeve.

The aim of the survey was to assess the saproxylic invertebrate assemblages at the site, and to provide management advice. The assessment includes whether the saproxylic invertebrate assemblages would qualify as notified features for The Quantocks SSSI, including Specific Assemblage Types (SATs) A211 heartwood decay, A212 bark and sapwood decay, and A313 fungal fruiting bodies.

Eleven flight interception traps were deployed on three sessile oak *Quercus petraea* (6 traps), three beech *Fagus sylvatica* (4 traps) and one sweet chestnut *Castanea sativa* (1 trap) between April and November, with additional free-ranging samples collected from dead wood habitats, flowers, and fungi. 201 saproxylic invertebrate species were recorded in the samples, comprising 5 Araneae, 122 Coleoptera, 61 Diptera, 1 Hemiptera, 10 Hymenoptera, and 2 Lepidoptera. These were part of a total of 378 invertebrate taxa, of which 327 were classified within Pantheon, Natural England's database for the analysis of invertebrate sample data.

Four SATs exceeded the national thresholds for Favourable condition – A211 heartwood decay, A212 bark and sapwood decay, A313 fungal fruiting bodies, and F001 scrub edge. From 100 qualifying species of saproxylic beetle, the Saproxylic Quality Index for Alfoxton Park is 366. The Index of Ecological Continuity is 34, which is above the threshold of 25 suggested for a site of national importance for saproxylic invertebrates (Alexander, 2004). Four species were recorded for the first time in Somerset (VC5 or VC6) – the mould beetle *Dienerella vincenti*, the leiodid beetle *Nemadus colonoides*, the zopherid beetle *Synchita undata*, and the long-legged fly *Systemus leucurus*. Two species were recorded for the first time in South Somerset (VC5) – the ciid beetle *Cis festivus*, and the pseudoscorpion *Dinocheirus panzeri*.

Alfoxton Park currently contains many good features for saproxylic invertebrates, which is reflected in the range of conservation significant invertebrate species recorded. Most species were associated with beech and sessile oak, and a lesser number were recorded from sycamore *Acer pseudoplatanus*. Other commoner species were encountered on ash *Fraxinus excelsior*, common ivy *Hedera helix*, elder *Sambucus nigra*, hawthorn *Crataegus*

monogyna, hazel *Corylus avellana*, horse chestnut *Aesculus hippocastanum*, silver birch *Betula pendula* and sweet chestnut *Castanea sativa*. Saproxylic invertebrates were collected from 12 species of wood decay fungi, with *Polyporus squamosus* being most productive, and species with conservation status were also recorded from *Daldinia concentrica*, *Ganoderma australe*, *Stereum gausapterum* and *Trametes versicolor*. One tree with sap-runs on the trunk was noted. Open-grown hawthorns and sycamore provide nectar sources for some saproxylic invertebrates, and to a lesser extent holly and bramble, although these are mostly shaded. In sunny situations, galleries of wood-boring beetles in hard timber have been colonised by solitary bees and wasps.

Dead wood including white-rotten and red-rotten heartwood and wood mould is available in open, semi-shaded, and shaded situations across the park. This includes standing and fallen dead trees, boughs, and branches. Currently, as is good practice, the majority of this has not been cut up or removed from the site. The main threat to the saproxylic invertebrate assemblages at Alfoxton Park is the potential for future breaks in the availability of veteran trees and dead wood habitats. Grazing by deer is keeping parts of the site open, while at the same time preventing seedling trees from establishing. Previous episodes of regeneration mean that some veteran trees are affected by shading, and where young trees are present there are not clear opportunities for future open-grown trees to develop.

There are ten recommendations from this survey:

- 1) List saproxylic invertebrates as a notified feature of The Quantocks SSSI for Unit 37, including SATs A211 heartwood decay, A212 bark and sapwood decay, A313 fungal fruiting bodies, and F001 scrub edge.
- 2) Tag trees as part of a veteran tree inventory.
- 3) Add veteran trees in Alfoxton Park to the Woodland Trust Ancient Tree Inventory.
- 4) Assess the potential saproxylic invertebrate and lichen interest in The Quantocks SSSI Unit 38 (Alfoxton Wood) and Unit 49 (Willoughby Cleeve).
- 5) Create a veteran tree management plan for Alfoxton Park that considers management in combination with The Quantocks SSSI Unit 38 (Alfoxton Wood) and Unit 49 (Willoughby Cleeve).
- 6) Develop and implement a tree planting plan to establish new open-grown sessile oak and beech trees in Alfoxton Park.
- 7) Remove secondary woodland in Alfoxton Park where it is competing with veteran trees.
- 8) Remove trees and shrubs competing with young oaks already growing in Alfoxton Park that can develop as potential future open-grown trees.
- 9) Remove bramble in Alfoxton Park where it is encroaching on veteran trees and engulfing fallen dead wood.
- 10) Consider the long-term potential to re-introduce stock grazing.

1. Introduction

1.1 Brief

The brief for this survey was to:

- Undertake a saproxylic invertebrate survey at Alfoxton Park using standardised sampling methods, in areas potentially supporting Specific Assemblage Types (SATs) A211 heartwood decay, A212 bark and sapwood decay, and A313 fungal fruiting bodies.
- Visit in late spring, summer, and autumn.
- Provide a description of the habitat and its condition, suggesting where current management is working and where it is not, and why that might be.

1.2 Site description and landscape context

Alfoxton Park is in South Somerset (VC5) on the northern side of the Quantocks Hills, south of Kilve village and within four kilometres of the Bristol Channel. The site is on a steep north-facing slope, from 200 m at the highest point to 130 m at the base. The underlying rocks on the higher slope are hard sandstones of the Hangman Grits strata with the Avill Slates and Sandstones Member lower down. Alfoxton is labelled as a deer park on the 1887 Ordnance Survey Map, although the date this was established is unknown. It is likely to be of relatively recent origin although incorporating part of a pre-existing area of ancient wood pasture on the Quantock Common.

The St. Albyn family who owned Alfoxton House enclosed four acres on Longstone Hill in about 1629 and this had increased to 34 acres by 1839 (Baggs & Siraut, 1992). The largest tree in Alfoxton Park is a lapsed pollard sessile oak with diameter at breast height (dbh) measured at 305 cm. This may be the “old oak tree” referred to by Dorothy Wordsworth in 1798 (Moorman, 1971). A second lapsed pollard sessile oak in the eastern half of the park has dbh 214 cm. It is likely these are part of a more extensive veteran tree landscape, as there are over 300 lapsed oak pollards in nearby Willoughby Cleeve. This suggests potential long-term continuity in the availability of open-grown trees at Alfoxton Park.

1.3 Designation

Alfoxton Park is Unit 37 within The Quantocks Site of Special Scientific Interest (SSSI). This unit is 14.97 ha in area and located approximately 2 km south of Kilve village in west Somerset. The SSSI is notified for a wide variety of habitats including dry dwarf-shrub heath, wet dwarf-shrub heath, acidic flushes, ancient semi-natural broadleaved woodland, and dense scrub. While Alfoxton Park is not specifically mentioned, the citation does

include formerly pollarded trees, and the presence of mature sessile oak *Quercus petraea* in the adjacent Alfoxton Wood is also noted (Natural England, 2022). Invertebrates are not a notified feature of the SSSI, although the citation lists previous records of saproxylic beetles including *Thymalus limbatus*, *Orchesia undulata* and *Salpingus ruficollis*.

2. Method

2.1 Desk study

A data-search from Somerset Environmental Records Centre (SERC) returned no records of invertebrates at Alfoxton Park. The site is also not listed in *Beetles of Somerset* (Duff, 1993).

2.2 Sampling methods

An overall 13 habitat features were investigated to sample the three Specific Assemblage Types specified in the survey brief, comprising:

1. Live tree trunks, particularly in well-lit, sunny areas.
2. Foliage.
3. Flowers, particularly hawthorn *Crataegus monogyna*, elder *Sambucus nigra*, holly *Ilex aquifolium*, bramble *Rubus fruticosus*, hogweed *Heracleum sphondylium*, ragwort *Senecio jacobaea*, and common ivy *Hedera helix*.
4. Sap runs.
5. Epicormic litter.
6. Galleries of wood-boring beetles.
7. Decaying bark.
8. Branch wood decay.
9. Heartwood decay, including red-rotten and white-rotten wood.
10. Wet rot holes.
11. Wood mould.
12. Fungi.
13. Cobwebs, for captured invertebrates.

Where present, these features were sampled by a combination of free-ranging searches and passive flight interception traps.

Free-ranging searches

Saproxylic invertebrates were recorded using a combination of four free-ranging sampling methods, as listed in Table 1 on the following page (adapted from Drake *et al.* 2007).

Table 1. Free-ranging search methods for saproxylic invertebrate survey classified by saproxylic invertebrate resource requirements.

SAPROXYLIC INVERTEBRATE RESOURCE REQUIREMENT	SAMPLING METHOD			
	Direct searching	Beating	Sweeping	Sieving
Live tree trunks	✓	–	–	–
Tree foliage	✓	✓	✓	–
Flowers	✓	✓	✓	–
Sap runs	✓	–	✓	–
Epicormic litter	–	–	–	✓
Galleries of wood-boring beetles	✓	–	✓	–
Decaying bark	✓	–	–	–
Branch wood decay	✓	✓	–	–
Wet rot holes	✓	–	–	–
Heartwood decay	–	–	–	✓
Wood mould	–	–	–	✓
Fungi	✓	✓	✓	✓
Cobwebs	✓	–	–	–

Passive trapping

Flight interception traps were also deployed to sample saproxylic invertebrates throughout the survey period. Traps were placed by or within tree cavities or hollow trunks (see Photos in Appendix 1). A trap combining four 2-litre plastic bottles with windows cut in the sides and suspended under a plastic base was used for larger cavities (Carrel, 2002; Alexander *et al.*,

2016). A single 2-litre bottle was used in smaller cavities (Steininger *et al.*, 2015). The inverted bottle necks were filled with non-toxic preservative (50% propylene glycol and 50% distilled water) and a drop of detergent to break the surface tension. This was drained through a sieve into a muslin square each time the trap was serviced.

Trap locations were chosen during a preliminary walkover of the site. Natural England guidance recommends ten flight interception traps for site assessment (Webb & Hackman, 2018). Eleven trap locations were used to sample a range of the dead wood habitats present on site, and to provide some redundancy in case traps were damaged by people, grazing animals, or bad weather. Two traps were deployed on three trees to sample at different heights. Eight traps were deployed for the full survey period, and three traps were operated for part of this. The trap locations, tree species, tree diameter at 1.3 m (dbh), and the primary type and stage of wood decay in the tree are outlined in Table 2.

Table 2. The trees in Alfoxton Park sampled for saproxylic invertebrates with flight interception traps in 2022.

Code	SSSI Unit	O.S. grid reference	Tree species	Tree dbh (cm)	Wood decay by trap
1	37	ST 1468 4135	<i>Fagus sylvatica</i>	129.9	White-rotten wood mould
2	37	ST 1468 4135	<i>Fagus sylvatica</i>	129.9	White-rotten wood
3	37	ST 1466 4134	<i>Castanea sativa</i>	98.7	Red-rotten wood
4	37	ST 1468 4126	<i>Quercus petraea</i>	161.1	Red-rotten wood mould
5	37	ST 1468 4126	<i>Quercus petraea</i>	161.1	Red-rotten wood mould
6	37	ST 1495 4118	<i>Fagus sylvatica</i>	164.0	White-rotten wood
7	37	ST 1495 4117	<i>Fagus sylvatica</i>	126.0	White-rotten wood
8	37	ST 1502 4126	<i>Quercus petraea</i>	87.8	Red-rotten wood
9	37	ST 1502 4126	<i>Quercus petraea</i>	119.8	Basal decay
10	37	ST 1502 4126	<i>Quercus petraea</i>	119.8	Red-rotten wood
11	37	ST 1505 4111	<i>Quercus petraea</i>	165.0	Hollow trunk

The location of each flight interception trap is shown in Figure 1 on the following page.



The Quantocks SSSI Unit 37 [Alfoxton Park] Flight interception trap locations 2022

Figure 1. Flight interception trap locations at Alfoxton Park in 2022. Imagery © 2022 Google, Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies.

The type, deployment height, and dates of operation for each trap are provided in Table 3.

Table 3. The trap type, height of trap placement, and dates of deployment for each flight interception trap in the saproxylic invertebrate survey at Alfoxton Park in 2022.

Sample Code	Trap type	Trap height (cm)	Date deployed	Date removed
1	4-bottle	20	20 th April 2022	18 th September 2022
2	4-bottle	75	20 th April 2022	13 th November 2022
3	4-bottle	50	18 th September 2022	13 th November 2022
4	1-bottle	90	20 th April 2022	13 th November 2022
5	1-bottle	170	20 th April 2022	13 th November 2022

Sample Code	Trap type	Trap height (cm)	Date deployed	Date removed
6	4-bottle	190	20 th April 2022	13 th November 2022
7	4-bottle	145	20 th April 2022	13 th November 2022
8	4-bottle	30	17 th June 2022	13 th November 2022
9	4-bottle	0	20 th April 2022	13 th November 2022
10	1-bottle	145	20 th April 2022	13 th November 2022
11	4-bottle	0	20 th May 2022	13 th November 2022

Survey dates and weather conditions

The weather conditions during the saproxylic invertebrate survey visits at Alfoxton Park in 2022 are outlined in Table 4. This includes records made during two night-time visits as part of a moth survey (McGill, 2022a).

Table 4. Weather conditions during saproxylic invertebrate survey visits at Alfoxton Park in 2022.

Date (2022)	Start time	Finish time	Maximum temperature (°C)	Cloud cover (%)	Rainfall (mm)	Maximum wind speed (mph)
20 th April	1000	1600	14	50	0	13
7 th May	1000	1700	16	25	0	10
20 th May (night)	2145	2345	12	30	0	16
12 th June	1000	1730	16	20	0	15
17 th June (night)	2200	2350	17	20	0	10
20 th June	1000	1730	19	25	0	12

Date (2022)	Start time	Finish time	Maximum temperature (°C)	Cloud cover (%)	Rainfall (mm)	Maximum wind speed (mph)
9 th July	1000	1730	22	10	0	8
22 nd July	1000	1730	19	75	0	6
14 th August	1000	1730	29	75	0	6
18 th September	1000	1700	16	50	0	12
15 th October	0900	1600	15	50	0	20
13 th November	0930	1530	16	25	0	15

Sample identification

Most specimens from the samples were identified by microscopy although some readily recognisable species were recorded in the field. Voucher specimens have been retained for some critical species and likely new county records.

2.3 Pantheon analysis

Results are input into Pantheon, a database tool developed by Natural England and the Centre for Ecology & Hydrology to analyse invertebrate sample data (Heaver *et al.*, 2017). This classifies invertebrate species by their association with broad habitats and as part of Specific Assemblage Types (SATs) that are characterised by ecologically restricted species. SATs provide numerical scores that can be used to assess site quality in comparison with national thresholds, and additionally provide a basis for monitoring changes in site condition.

2.4 Data interpretation

Classification of saproxylic species

Saproxylic invertebrates were classified from lists in Alexander (2002, 2004), with additional information on individual species from Duff (2020) and Boyce (2021).

Saproxylic indices

Two measures of the value of a site for saproxylic beetles have been devised, comprising the Index of Ecological Continuity (Alexander, 2004), and the Saproxylic Quality Index (Fowles *et al.*, 1999).

Index of Ecological Continuity

Alexander (2004) presents an Index of Ecological Continuity (IEC) for saproxylic beetles, based on lists of species associated with habitat continuity from Harding & Rose (1986). These are allocated to three groups, based on their strength of association with areas of pasture-woodland, ancient woodland, and continuity of deadwood habitats. The groups are defined as follows:

- **Group 1** – Species which are known to have occurred in recent times only in areas believed to be ancient woodland, mainly pasture woodland.
- **Group 2** – Species which occur mainly in areas believed to be ancient woodland with abundant dead-wood habitats, but which also appear to have been recorded from areas that may not be ancient or for which the locality data are imprecise.
- **Group 3** – Species which occur widely in wooded land, but which are collectively characteristic of ancient woodland with dead-wood habitats.

Species categorised within the IEC are relatively poor colonists of newly available habitats, and a high-scoring assemblage suggests a site of high conservation value and low replaceability (Alexander, 2004). The index is calculated by adding the scores for all species recorded. Alexander (2004) suggests the following hierarchy of IEC thresholds to assess site importance:

- **15-24** – Regional importance.
- **25-79** – National importance.
- **80** – International importance.

This provides a strong assessment of site quality, as it is based on species-richness of the old-growth fauna, although the value is cumulative and therefore heavily dependent on recording effort. It is not expected that high values will be obtained from single recording visits except on exceptional sites, since only a fraction of the saproxylic assemblage is likely to be recorded by such a visit.

Saproxylic Quality Index (SQI)

Fowles *et al.* (1999) designed a Saproxylic Quality Index (SQI) based on the national conservation status of saproxylic beetles, rather than the extent of their association with sites of long ecological continuity. This is less dependent on cumulative recording effort than the IEC and provides a complementary assessment of site condition (Alexander, 2015). The SQI is calculated by summing the scores for all species, dividing this score by the number of scoring species, and multiplying by 100. Fowles *et al.* (1999) suggest a minimum of 40

scoring saproxylic species for a meaningful calculation. A threshold of 500 was initially given for national significance, although it has been suggested that this should be approximately 300 as very few sites score over 500 (Alexander, 2015). A listing of British sites based on SQI values is available for comparison (Fowles *et al.*, 1999).

2.5 Conservation status of invertebrates

Invertebrate species with published conservation status, or a provisional conservation status assessment, are listed in Subsection 3.3. The conservation status of some invertebrate groups has not been assessed using current IUCN Red List criteria and thresholds (IUCN, 2001; IUCN, 2012), with the result that two classification systems are currently in operation. These are summarised in Appendix 2.

2.6 Constraints

One vane trap sample was lost during this survey, from trap location 7 for the period 15th October – 13th November. The trap fell when the section of rotten beech trunk it was attached to collapsed. This was late in the survey season and the other traps from this period produced few records, so it is likely to have had very limited effects on the results. No other constraints were encountered during the survey.

3. Results

202 saproxylic invertebrate species were recorded in the 2022 samples at Alfoxton Park. These comprise 5 Araneae, 122 Coleoptera, 61 Diptera, 1 Hemiptera, 10 Hymenoptera, and 3 Lepidoptera. All these species are new records for the site. An additional 177 invertebrate species were noted as casual records during the field survey, or during identification of samples for saproxylic taxa. 328 of the overall 379 invertebrate species were classified within Pantheon. One notable lichen species found on a host tree additional to that in the previous survey (Orange, 2022) is also detailed in sub-section 3.3.

3.1 Broad Biotypes and Habitats

Thirteen Broad Biotypes and Habitats were reported by Pantheon for the invertebrate samples at Alfoxton Park in 2022. These are summarised in Table 5 on the following page.

Table 5. Broad Biotypes and Habitats reported by Pantheon for invertebrate samples at Alfoxton Park in 2022.

Broad Biotype	Habitat	Number of species recorded
Open habitats	Tall sward & scrub	42
	Short sward & bare ground	7
	Upland	1
Tree-associated	Decaying wood	167
	Shaded woodland floor	71
	Arboreal	27
	Wet woodland	4
Wetland	Marshland	2
	Acid & sedge peats	4
	Wet woodland	3
	Running water	2
Coastal	Brackish pools & ditches	1
	Saltmarsh	1

3.2 Specific Assemblage Types

Seven Specific Assemblage Types were reported by Pantheon for the invertebrate samples at Alfoxton Park in 2022. These are summarised in Table 6 on the following page, including species thresholds set at a national level for Favourable condition of the assemblages.

Table 6. Specific Assemblage Types reported by Pantheon for invertebrate samples at Alfoxton Park in 2022.

SAT code	SAT name	Number of species recorded	SAT species threshold	SAT condition
A211	Heartwood decay	21	6	Favourable
A212	Bark & sapwood decay	77	19	Favourable
A213	Fungal fruiting bodies	20	7	Favourable
F001	Scrub edge	13	11	Favourable
F002	Rich flower resource	2	15	Unfavourable
F003	Scrub-heath & moorland	2	9	Unfavourable
F111	Bare sand & chalk	2	19	Unfavourable

Of the SATs specifically associated with saproxylic invertebrates, A211 heartwood decay, A212 bark & sapwood decay, and A213 fungal fruiting bodies were all reported by Pantheon as in Favourable condition. F001 scrub edge also exceeded the threshold for Favourable condition.

3.3 Species status

40 invertebrate species with published conservation status or a provisional conservation status were recorded at Alfoxton Park in 2022. Four species were recorded for the first time in Somerset (VC5 or VC6) – the mould beetle *Dienerella vincenti*, the leiodid beetle *Nemadus colonoides*, the zopherid beetle *Synchita undata*, and the long-legged fly *Systemus leucurus*. Two species recorded for the first time in South Somerset (VC5) – the ciid beetle *Cis festivus*, and the pseudoscorpion *Dinocheirus panzeri*. These species, conservation status, and categorisation as saproxylic are listed in Table 7 on the following page. Following Table 7, the ecology and distribution of the saproxylic species is discussed.

Table 7. Invertebrate species with conservation status recorded at Alfoxton Park in 2022, classified by saproxylic life-history.

Order	Family	Taxon	Status	Saproxylic
Araneae	Dictynidae	<i>Nigma puella</i>	NS	No
Araneae	Linyphiidae	<i>Trematocephalus cristatus</i>	NS	No
Coleoptera	Anthribidae	<i>Platyrhinus resinosus</i>	Nb	Yes
Coleoptera	Biphyllidae	<i>Diplocoelus fagi</i>	Nb	Yes
Coleoptera	Cantharidae	<i>Malthodes crassicornis</i>	NT, NR	Yes
Coleoptera	Chrysomelidae	<i>Orsodacne humeralis</i>	NS	No
Coleoptera	Ciidae	<i>Cis festivus</i>	Nb	Yes
Coleoptera	Corylophidae	<i>Orthoperus nigrescens</i>	Nb	Yes
Coleoptera	Curculionidae	<i>Acalles ptinoides</i>	Nb	Yes
Coleoptera	Curculionidae	<i>Cathormiocerus aristatus</i>	Nb	No
Coleoptera	Elateridae	<i>Calambus bipustulatus</i>	Nb	Yes
Coleoptera	Eucnemidae	<i>Microrhagus pygmaeus</i>	RDB 3	Yes
Coleoptera	Histeridae	<i>Aeletes atomarius</i>	NS	Yes
Coleoptera	Latridiidae	<i>Dienerella vincenti</i>	–	Yes
Coleoptera	Leiodidae	<i>Nemadus colonoides</i>	–	Yes
Coleoptera	Melandryidae	<i>Orchesia minor</i>	NS	Yes
Coleoptera	Meloidae	<i>Meloe violaceus</i>	S41	No
Coleoptera	Mycetophagidae	<i>Pseudotriphyllus suturalis</i>	NS	Yes
Coleoptera	Mycetophagidae	<i>Triphyllus bicolor</i>	NS	Yes
Coleoptera	Oedemeridae	<i>Oedemera femoralis</i>	NS	Yes
Coleoptera	Phloiophilidae	<i>Phloiophilus edwardsii</i>	NS	Yes
Coleoptera	Platypodidae	<i>Platypus cylindrus</i>	Nb	Yes
Coleoptera	Ptiliidae	<i>Ptenidium turgidum</i>	RDB K	Yes
Coleoptera	Sphindidae	<i>Sphindus dubius</i>	Nb	Yes
Coleoptera	Staphylinidae	<i>Anopleta corvina</i>	RDB K	No
Coleoptera	Staphylinidae	<i>Gyrophana congrua</i>	N	Yes
Coleoptera	Staphylinidae	<i>Gyrophana hanseni</i>	N	Yes
Coleoptera	Staphylinidae	<i>Gyrophana manca</i>	N	Yes

Order	Family	Taxon	Status	Saproxyllic
Coleoptera	Staphylinidae	<i>Haploglossa marginalis</i>	N	No
Coleoptera	Staphylinidae	<i>Quedius xanthopus</i>	Nb	Yes
Coleoptera	Staphylinidae	<i>Scaphisoma boleti</i>	Nb	Yes
Coleoptera	Tenebrionidae	<i>Pseudocistela ceramboides</i>	NS	Yes
Coleoptera	Zopheridae	<i>Synchita undata</i>	–	Yes
Diptera	Clusiidae	<i>Clusia tigrina</i>	pNS	Yes
Diptera	Dolichopodidae	<i>Australachalcus melanotrichus</i>	NS	Yes
Diptera	Dolichopodidae	<i>Systemus leucurus</i>	NS	Yes
Diptera	Fanniidae	<i>Piezura graminicola</i>	pNS	Yes
Diptera	Keroplastidae	<i>Keroplatus testaceus</i>	NS	Yes
Diptera	Lauxaniidae	<i>Aulogastromyia anisodactyla</i>	pNS	Yes
Diptera	Mycetophilidae	<i>Acnemia amoena</i>	NT, NR	Yes
Diptera	Mycetophilidae	<i>Mycetophila lastovkai</i>	NS	Yes
Diptera	Sciomyzidae	<i>Pherbellia annulipes</i>	N	Yes
Hymenoptera	Pompilidae	<i>Auplopus carbonarius</i>	Nb	No
Pseudoscorpiones	Chernetidae	<i>Dinocheirus panzeri</i>	–	No

Key: **NT** = Near Threatened; **NR** = Nationally Rare; **NS** = Nationally Scarce (new system); **RDBK** = Red Data Book Insufficiently Known; **Nb** = Nationally Scarce B; **N** = Nationally Scarce (old system); **pNS** = provisionally Nationally Scarce (equivalent to Nationally Notable in old system).

Beetles

Acalles ptinoides [Nb]

A weevil. One male was recorded in a 4-bottle trap in the hollow interior of a standing dead beech snag, and one female was recorded at night on an aerial dead limb of a sessile oak. This species occurs across a wide area of England and has been recorded in heathland as well as woodland.

Aeletes atomarius [NS]

A clown beetle. A female was recorded in a 4-bottle trap by white-rotten base of a fallen beech trunk. It is widely scattered in wood pastures and parklands, primarily in southern and central England (Lane *et al.*, 2020). There is one other location in VC5, at Nettlecombe Park. It is part of the group of saproxyllic beetles known to have occurred in

recent times only in areas believed to be ancient woodland, mainly pasture-woodland (Alexander, 2004).

Calambus bipustulatus [Nb]

A click beetle. A male was recorded in a 1-bottle trap in the hollow trunk of a red-rotten oak. The larvae are predators in soft rotten wood of oak and other broadleaved trees (Alexander, 2002). This species has been found at four localities in VC5 (Duff, 1993) with an additional record in 2022 at Nettlecombe Park. It is part of the group of saproxylic beetles that occur widely in wooded land, although collectively being characteristic of continuity in saproxylic habitats (Alexander, 2004).

Cis festivus [Nb]

A ciid beetle. One female was beaten from *Ganoderma australe* brackets on hazel. It is associated with fungi on trees and dead wood, including *Piptoporus betulinus* on birch and *Stereum hirsutum* on hazel. This is the first record for VC5.

Diplocoelus fagi [Nb]

Three females were recorded in a 4-bottle trap by white-rotten base of a fallen beech trunk. A male and a female were beaten from *Polyporus squamosus* brackets on a standing dead sycamore trunk, and a male was beaten from *Trametes versicolor* brackets on a fallen beech trunk. It is usually found under loose bark on dead beech, and sycamore bark affected by the sooty bark fungus *Cryptostroma corticale*.

Gyrophæna congrua [Notable]

A rove beetle. One male was recorded in a 4-bottle trap in red-rotten wood of a fallen oak trunk. 1 male was beaten from *Polyporus squamosus* brackets on a standing dead sycamore trunk. This species is usually associated with bracket fungi and is widespread in England.

Gyrophæna hansenii [Notable]

A rove beetle. 4 males were beaten from *Polyporus squamosus* brackets on a standing dead sycamore trunk. This species is usually associated with bracket fungi and is widespread in England.

Gyrophæna manca [Notable]

A rove beetle. 4 males were beaten from *Polyporus squamosus* brackets on a standing dead sycamore trunk. This species is usually associated with bracket fungi and is widespread in England.

Malthodes crassicornis [NR, NT]

A soldier beetle. One male was recorded in a 4-bottle trap in red-rotten wood of a fallen oak trunk. This beetle is usually develops in red-rotten heartwood of oaks in relict old lowland forest and wood pastures (Alexander, 2014a). The range in England is highly fragmented, although there are previous records in Somerset from single sites in VC5 and VC6, both in association with willow pollards. It is part of the group of saproxylic beetles known to have occurred in recent times only in areas believed to be ancient woodland, mainly pasture-woodland (Alexander, 2004).

Microrhagus pygmaeus [RDB3]

A false click beetle. One male was swept from around a veteran sessile oak with decaying limbs on the west side of the park. The larvae probably develop in dead wood, particularly in old shady oak woods (Alexander, 2002). The species has become much more frequent in recent years, and this is the third location in VC5.

Nemadus colonoides

A leiodid beetle. One male was recorded in a 4-bottle trap in the hollow trunk of a sessile oak. This species is usually associated with bird nests in tree hollows (Alexander, 2002). This is the first Somerset record.

Oedemera femoralis [NS]

A false blister beetle. One female was found at night on the trunk of a lapsed pollard sessile oak. It is widespread in Somerset (Duff, 1993).

Orchesia minor [NS]

A false darkling beetle. One male was recorded in a 4-bottle trap on a white-rotten fallen beech trunk. Larvae develop in fruiting bodies of wood-decay polypore fungi and possibly Ascomycetes (Alexander, 2002). It is widespread in Britain although scarcer in the west and this is the second site in VC5, with the previous record at Boomer Wood near Bridgwater.

Orthoperus nigrescens [Nb]

A corylophid beetle. One female was recorded in a 1-bottle trap in the hollow trunk of a red-rotten oak. It is associated with fungoid bark. This is the fifth locality in VC5, where it has also been recorded in wood mould of an ash tree, and willow pollards on grazing marshes of the Somerset Levels.

Phloiophilus edwardsii [NS]

A phloiophilid beetle. One male and two females were beaten from an aerial dead branch encrusted with the fungus *Stereum gausapatum* beneath the canopy of a lapsed sessile

oak pollard. The larvae are usually associated with *Peniophora* fungi in this situation. There are two previous records in VC5, both on Exmoor (Duff, 1993; Alexander, 2022).

Platypus cylindrus [Nb]

An ambrosia weevil. One male was recorded in a 4-bottle trap in the hollow base of a red-rotten oak. This species is scattered in England and is part of the group of saproxylic beetles that occur widely in wooded land, although collectively being characteristic of continuity in saproxylic habitats (Alexander, 2004).

Platyrhinus resinosus [Nb]

A fungus weevil. Two females were recorded at night in association with *Daldinia concentrica* fruiting on the limb of a fallen beech tree. Single females were also recorded in 4-bottle traps on a white-rotten fallen beech trunk, and in a hollow beech snag. This species occurs across a wide area of England, and is usually associated with *Daldinia concentrica* on ash, although it also occurs on other trees including birch *Betula* species, beech, and sycamore *Acer pseudoplatanus*. It is part of the group of saproxylic beetles that occur widely in wooded land, although collectively being characteristic of continuity in saproxylic habitats (Alexander, 2004).

Pseudocistela ceramboides [NS]

A darkling beetle. Two males were recorded in a 4-bottle trap on a white-rotten fallen beech trunk. Larvae develop in the wood mould of decaying trees. This is the sixth locality in VC5, with the others being Dunster Park, Nettlecombe Park, and from willow pollards in three grazing marshes on the Somerset Levels (Duff, 1993; McGill, 2022b). It is part of the group of saproxylic beetles that occur widely in wooded land, although collectively being characteristic of continuity in saproxylic habitats (Alexander, 2004).

Pseudotriphyllus suturalis [NS]

A fungus beetle. 9 males and 9 females were beaten from *Polyporus squamosus* brackets on a standing dead sycamore trunk. It is usually associated with bracket fungi, most often *Laetiporus sulphureus* and *Polyporus squamosus*. Records are widely scattered in England, but it is scarcer in the south-west. It is part of the group of saproxylic beetles that occur widely in wooded land, although collectively being characteristic of continuity in saproxylic habitats (Alexander, 2004).

Ptenidium turgidum [RDBK]

A featherwing beetle. 54 specimens were variously recorded in beech wood mould, or in 4-bottle traps on well-decayed beech trees. It is associated with the rotten heartwood of broadleaved trees, particularly beech. This species has a scattered distribution in England and Wales and there is one other site in VC5 at Nettlecombe Park (Boyce, 2021). It is part of the group of saproxylic beetles that occur mainly in areas with long-term continuity of saproxylic habitats (Alexander, 2004).

Quedius xanthopus [Nb]

A rove beetle. One male was sieved from wood mould at the base of a white-rotten beech snag, and another male was recorded in a 4-bottle trap at the white-rotten base of a fallen beech trunk. It is associated with decaying wood and associated fungi and has been recorded at widely scattered localities in VC5, including Exmoor, the Brendon Hills, and the Quantocks (Duff, 1993).

Scaphisoma boleti [Nb]

A rove beetle. One female was recorded in a 4-bottle trap on a white-rotten fallen beech trunk. It is associated with rotten heartwood and fungal fruiting bodies associated with wood decay. There are widely scattered localities including on Exmoor, the Brendon Hills, and the Fivehead Ridge (Duff, 1993).

Sphindus dubius [Nb]

A cryptic slime-mould beetle. Five females were recorded in a 4-bottle trap on a white-rotten fallen beech trunk. It is associated with slime fungi on broadleaved trees (Alexander, 2002). It occurs locally in England and Wales, and this is the fourth site in VC5.

Synchita undata

A zopherid beetle. One male was beaten from *Polyporus squamosus* brackets on a standing dead sycamore trunk. This species is associated with sooty bark disease on sycamore, caused by the ascomycete fungus *Cryptostroma corticale* (Alexander, 2002). It is most often recorded in south-east England but is increasing and this is the first Somerset record.

Triphyllus bicolor [NS, IEC Group 2]

A fungus beetle. One female was beaten from *Polyporus squamosus* brackets on a standing dead sycamore trunk. Larvae have been reared from *Laetiporus sulphureus* and *Piptoporus quercinus*. It has a scattered distribution in England and Wales, and there are two other localities in VC5 at Nettlecombe Park, and Dunster Park (Duff, 1993; McGill, 2022b). It is part of the group of saproxylic beetles that occur mainly in areas with long-term continuity of saproxylic habitats (Alexander, 2004).

Dienerella vincenti

A mould beetle. One female was recorded in a 4-bottle trap in a hollow sessile oak. The species is poorly known and associated with fungi and decaying wood (Duff, 2020). This is a new record for Somerset.

Flies

Acnemia amoena [NR, NT]

A fungus gnat. One female was recorded in a 4-bottle trap in front of the white-rotten base of a fallen beech tree, and one female was swept in open oak woodland in the east of the park. This species is associated with decaying broadleaved wood, although the larval biology is unknown. It has a scattered distribution in central southern and eastern England, with two previous VC5 sites on Exmoor (P. Chandler *pers. comm.*). Since the most recent status assessment (Falk and Chandler, 2005) it has been found at additional locations and Nationally Scarce may be a more appropriate conservation status (Alexander, 2014b).

Aulogastromyia anisodactyla [pNS]

A lauxaniid fly. One female was swept from oak foliage. This species is generally associated with deciduous woodland, although the larval biology is unknown. Records are widely scattered in England.

Australachalcus melanotrichus [NS]

A long-legged fly. A male was recorded in a 1-bottle trap in front of red-rotten wood on a red-rotten standing trunk that had recently snapped. The larvae have been reared from rot-hole debris and this species is widely scattered in England (Drake, 2018). This is the third locality in VC5, with the others being Pixton Park and Dunster Park (Alexander, 2022; McGill, 2022b).

Clusia tigrina [pNS]

A druid fly. A male was found displaying on a dead beech snag, and a male was recorded in a 4-bottle trap at the same location. Another male was recorded in a 4-bottle trap in front of the white-rotten base of a fallen beech tree. This is the third site in VC5, with the others in the Neroche Forest and at Pixton Park (Alexander, 2022).

Keroplatus testaceus [NS]

One male was found at night on the trunk of a lapsed pollard sessile oak, and another male was recorded in a 4-bottle trap in front of white-rotten wood mould on a fallen beech trunk. The larvae develop in webs on the underside of logs encrusted with fungi, or beneath bracket fungi (Falk and Chandler, 2005). The species is widely distributed in Britain.

Mycetophila lastovkai [NS]

A fungus gnat. One male was recorded in a 4-bottle trap on the exterior of a hollow beech snag with white-rotten wood mould. The larval biology of this species is unknown, and other sites include wood pastures, wooded river valleys and small woodlands. Most

localities are in south-west Britain, although there are recent records outside this area (Alexander, 2014b).

Pherbellia annulipes [Notable]

A snail-killing fly. This is a species of open deciduous woods, particularly beech or alder, and the larvae are predators of snails on dead wood (Alexander, 2002). It has a scattered distribution in England and Wales, with more records in the west (Ball, 2017).

Piezura graminicola [pNS]

Two males and a female were recorded in a 4-bottle trap by the white-rotten exterior of a hollow beech snag. Another female was recorded in a 4-bottle trap on a white-rotten fallen beech trunk. The larvae develop in a variety of fungi, including saprotrophic species and it has a scattered distribution in southern England.

Systemus leucurus [NS]

A long-legged fly. A female was recorded in a 4-bottle trap in red-rotten wood of a fallen oak trunk. Larvae develop in sap-runs and wet rot-holes in many deciduous tree species (Drake, 2018). This is the first Somerset record.

Lichens

Zwackhia prosodea [NT, NS]

This lichen was recorded on a lapsed pollard sessile oak at ST 1505 4118. A previous lichen survey in Alfoxton Park found it on one sycamore (Orange, 2022).

3.4 Indices for saproxylic beetles

The Saproxylic Quality Index for Alfoxton Park is 365, and the Index of Ecological Continuity is 34. The full calculation of these indices is provided in Appendix 3. A comparison between the scores for Alfoxton Park and other sites in west Somerset (Fowles, 2022; McGill, 2022b) is presented in Table 9 on the following page.

Table 9. Saproxylic Quality Index (SQI) and Index of Ecological Continuity (IEC) scores for sites in west Somerset.

Site	SSSI Notified Feature	Number of species	SQI	IEC
Nettlecombe Park	Yes	129	377	58
Dunster Park and Heathlands	Yes	106	380	39
Alfoxton Park	No	100	366	34
Pixton Park	N/A	61	313	17
Crowcombe Park	No	51	284	12

It is difficult to directly compare the sites as these have been subject to different levels of survey. It is nevertheless apparent that the saproxylic beetle fauna at Alfoxton Park is above the IEC threshold of 25 for national significance (Alexander, 2004) and that this is an important site for the conservation of saproxylic invertebrates in Somerset. It is unlikely that any of the sites individually support the full range of species found in the area, and this is certainly not the case from the survey results so far.

3.5 Tree species where saproxylic invertebrates were recorded at Alfoxton Park

The number of saproxylic invertebrate species recorded at each tree species sampled at Alfoxton Park in 2022 is summarised in Table 10 on the following page. The trees were not subject to equal sampling intensity, and the data are based on adult specimens which may not have developed in the tree where these were recorded. Nevertheless it is likely that this broadly represents the importance of different tree species at the site.

Table 10. The number of saproxylic invertebrates recorded at different tree species at Alfoxton Park in 2022

Plant scientific name	Plant vernacular name	Saproxylic species	Saproxylic species with conservation status
<i>Acer pseudoplatanus</i>	Sycamore	39	4
<i>Aesculus hippocastanum</i>	Horse chestnut	2	–
<i>Betula pendula</i>	Silver birch	4	–
<i>Castanea sativa</i>	Sweet chestnut	4	–
<i>Corylus avellana</i>	Hazel	2	–
<i>Crataegus monogyna</i>	Hawthorn	14	–
<i>Fagus sylvatica</i>	Beech	119	15
<i>Fraxinus excelsior</i>	Ash	7	–
<i>Hedera helix</i>	Common ivy	1	–
<i>Quercus petraea</i>	Sessile oak	89	12
<i>Sambucus nigra</i>	Elder	1	–

Additional data recorded in association with saproxylic invertebrates during this survey are summarised in Appendix 4.

3.6 Fungus species where saproxylic invertebrates were recorded at Alfoxton Park

The number of saproxylic invertebrate species recorded from each fungus species sampled at Alfoxton Park in 2022 is summarised in Table 11 on the following page. The fungi were not subject to equal sampling intensity, and the data are based on adult specimens which may not have developed in the fungus where these were recorded.

Table 11. The number of saproxylic invertebrates recorded at different fungus species at Alfoxton Park in 2022

Fungus scientific name	Fungus host	Saproxylic species	Saproxylic species with conservation status
<i>Armillaria mellea</i>	<i>Quercus petraea</i>	1	–
<i>Daldinia concentrica</i>	<i>Fraxinus excelsior</i>	1	1
<i>Ganoderma australe</i>	<i>Corylus avellana</i>	2	1
<i>Ganoderma australe</i>	<i>Fagus sylvatica</i>	3	0
<i>Hypholoma fasciculare</i>	<i>Quercus petraea</i>	1	0
<i>Laetiporus sulphureus</i>	<i>Quercus petraea</i>	3	0
<i>Oudemansiella mucida</i>	<i>Fagus sylvatica</i>	1	0
<i>Pleurotus</i> sp.	<i>Fagus sylvatica</i>	1	0
<i>Polyporus squamosus</i>	<i>Acer pseudoplatanus</i>	32	4
<i>Stereum gausapatum</i>	<i>Quercus petraea</i>	1	1
<i>Stereum hirsutum</i>	<i>Fagus sylvatica</i>	8	–
<i>Trametes versicolor</i>	<i>Fagus sylvatica</i>	5	1

Casual records of saprotrophic fungi in Alfoxton Park by Nicola Bacciu are included in Appendix 5.

3.7 Habitat features for saproxylic invertebrates at Alfoxton Park

The eastern part of Alfoxton Park contains a stand of mature sessile oak. Four trees in this area were measured with dbh range 68 – 116 cm. There are also mature ash with dbh range 45 – 57 cm. Three smaller oaks on the west side of the hill have dbh range 14 – 16 cm. No seedling trees were seen. Red-rot decay fungi on oak in this area were *Fistulina hepatica* and *Laetiporus sulphureus*. One tree at ST 1502 4126 (see Photo A1.13) has split with extensive red-rot in the standing and fallen sections of the trunk. The fallen section produced the rare soldier beetle *Malthodes crassicornis*, and the long-legged fly *Systemus leucurus* as new to Somerset. This area is continuous with Alfoxton Wood to the east of the park, which has more mature and post-mature sessile oak with dbh range 80 – 138 cm. A hollow oak on the park boundary here (see Photos A1.18) produced the mould

beetle *Dienerella vincenti* as new to Somerset and also supports the cave spider *Meta menardi*. The uncommon phloiophilid beetle *Phloiophilus edwardsi* was found on the dead aerial branches of a lapsed oak pollard with dbh 214 cm, in association with crust fungus *Stereum gausapterum*. Overall, it suggests that dead wood habitat will continue to be available for the oak-associated fauna in the medium term, although the current lack of younger oaks is a threat in the longer term.

Immediately west of the oak-dominated hill is an area of ash and sycamore. A standing dead sycamore with brackets of *Polyporus squamosus* (see Photo A1.20) was a very productive habitat between July and November, including for the uncommon beetles *Pseudotriphyllus suturalis*, *Triphyllus bicolor* and *Xylostiba bosnica*. The zopherid beetle *Synchita humeralis* was also recorded as new to Somerset. On the northern edge of this stand is a newly fallen beech tree (see Photo A1.9), and a well-rotten fallen beech trunk (see Photo A1.11). These were among the best features for saproxylic invertebrates during this survey. The uncommon beetles *Platyrhinus resinosus* and *Quedius xanthopus* were recorded from the newly-fallen tree. The rare beetle *Ptenidium turgidum* and the uncommon beetles *Orchesia minor* and *Sphindus dubius* were recorded from the well-rotted trunk. The timber is being left to undergo natural decay which provides the widest possible range of niches for development of saproxylic invertebrates. The root-plate of the newly fallen tree (see photo A1.21) is also a valuable feature for ground-nesting solitary bees and wasps and has been colonised by the solitary wasp *Odynerus spinipes* which makes nest chimneys (see photo A1.22).

The eastern side of the park contains two fine mature sessile oak. One hollowing tree produced the uncommon click beetle *Calambus bipustulatus*. The false click beetle *Microrhagus pygmaeus* was also recorded in this area. Nearer to Alfoxton House is the largest oak in the park, a lapsed pollard with dbh 305 cm. This has numerous sap-runs, and a liquid-filled pool on a root buttress contained a larva of the beetle *Prionocyphon serricornis* which is a specialist in this habitat. Further up the slope are mature and over-mature beech trees. One beech snag supported the rare beetle *Ptenidium turgidum*, and the uncommon flies *Clusia tigrina*, *Mycetophila lastovkai* and *Pherbellia annulipes*. There are also over-mature sweet chestnuts, but few saproxylic invertebrates were found in association with these. This area has some younger and mature oaks with dbh range 33 – 86 cm. These trees are considerably threatened by competition from younger silver birch and sweet chestnut, which should be thinned to encourage the future development of oak. No seedling trees were seen.

The centre of the park contains beech, horse chestnut, oak, and sycamore, planted in small groups for aesthetic reasons. These trees are starting to develop dead wood features and add to the overall diversity of saproxylic habitats in the park. There is also hawthorn scrub which in areas outside the canopy of veteran trees provides an important nectar source for saproxylic invertebrates. Again, there are no seedling trees which is surprising on the edge of treed areas and suggests that the deer which graze in the park are currently limiting natural regeneration. Tree planting is the easiest way to address this and should focus on sessile oak and beech of local provenance as these trees support

most of the saproxylic invertebrates in Alfoxton Park. Open grassland at ST 149 413 is well established based on yellow meadow ant *Laisus flavus* mounds and trees should not be planted in this area. Bracken-dominated areas such as ST 1454 4125, ST 1467 4119 and ST 1479 4126 would be more suitable for tree planting if the bracken dominance can be reduced.

Summary

Alfoxton Park currently contains many good features for saproxylic invertebrates, which is reflected in the range of conservation significant invertebrate species recorded. Dead wood including white-rotten and red-rotten heartwood and wood mould is available in open, semi-shaded, and shaded situations across the park. This includes standing and fallen dead trees, boughs, and branches. Currently, as is good practice, the majority of this has not been cut up or removed from the site. One tree with sap-runs on the trunk was noted. In sunny situations, galleries of wood-boring beetles in hard timber have been colonised by solitary bees and wasps. Open-grown hawthorns and sycamore provide nectar sources for saproxylic invertebrates, and to a lesser extent holly and bramble, although these are mostly shaded.

The largest number of saproxylic species were associated with beech and sessile oak. Lesser numbers of conservation significant species were recorded from sycamore, and other commoner species were encountered on ash, common ivy, elder, hawthorn, hazel, horse chestnut, silver birch, and sweet chestnut. Saproxylic invertebrates were collected from 12 species of wood decay fungi, with *Polyporus squamosus* being most productive, and species with conservation status were also recorded from *Daldinia concentrica*, *Ganoderma australe*, *Stereum gausapterum* and *Trametes versicolor*.

4. Conservation management

Many rarer saproxylic invertebrates occur on just a few suitable trees even where veteran trees are numerous (Whitehead, 2003). Sustainable management therefore requires maintaining good conditions around larger numbers of both veteran and maturing trees (Sanderson, 2017).

Tree age classes

A key issue for saproxylic invertebrates at Alfoxton Park is to ensure that varied age classes of different tree species continue to be present in future. The park should be considered as part of the local tree landscape with Willoughby Cleeve and Alfoxton Wood, which may change the assessment of age structure. Nonetheless it will be desirable to establish young open-grown trees at Alfoxton, as some saproxylic invertebrates may not be able to disperse easily to more distant trees. A larger and more diverse veteran tree

population in future should also result in a greater probability of associated species maintaining viable populations (Read, 2000).

Oak trees in Alfoxton Park are present in most size classes in the dbh range 14 – 165 cm, with a few larger trees, although no seedlings were seen. Young oaks are only found occasionally in the park, and there are few clear opportunities for these to mature into open-grown veteran trees due to the development of secondary woodland. There is limited age structure for beech in the areas surveyed, and most trees have dbh above 70 cm. There are currently at least 480 deer in the northern half of the Quantocks (Quantock Deer Management and Conservation Group, 2022) and deer are often present in Alfoxton Park, as this is less disturbed than the surrounding hills. The deer browse tree foliage which is probably preventing natural establishment of tree seedlings. It is possible to create regeneration in grazing exclosures, but this requires considerable follow-up management and planting individual trees is recommended instead.

Saproxyllic invertebrate interest at Alfoxton Park is primarily associated with sessile oak and beech (see Table 10). Although beech is not regarded as locally native, this has significant value and should be treated the same as native broadleaved tree species (Castle & Mileto, 2005). Planting should therefore be a mixture of sessile oak and beech (7:3 ratio, taking account of the greater prevalence of beech on the land adjacent to Alfoxton Park), ideally from acorns and nuts collected on site. It is impossible to recommend planting ash in view of the prevalence of ash dieback, though if disease-resistant trees become available these should be included. Different tree species might also be needed if this would help the lichen interest. Planting should follow the principles set out in Hodgetts (1989):

“Planting must be considered in relation to existing trees and should be done close enough to existing trees to maximise colonisation but not so close that new trees cast too much shade on the old ones. The new trees should be planted directly to the north of existing ones or shading will occur. It is best to plant 3 or 4 trees of the same species or of species with a potentially similar epiflora around an existing old tree in a semicircle avoiding the south side. If planted to the north of the existing tree they should be planted far enough away from it to ensure they are not shaded by it. The distance between old and new should be flexible depending on the size and shape of the canopies.”

To establish open-grown oak and beech can mean a minimum planting distance of 30 metres (see Photo A1.24). This could be reduced to 15 metres to create more humid shaded conditions, although most stands at Alfoxton Park already have this structure. Creating diversity in planting density is the key, without negatively effecting existing open-grown trees. Trees should not be planted close together, as these will grow up towards the light without good lateral branch development. Trees will have to be planted in wooden enclosures for protection from grazing damage. There are large open areas currently dominated by bracken that might be suitable for planting. The dense bracken litter is probably preventing tree seedlings from becoming established. It is recommended that the dominance of bracken is reduced over several years to try and make it easier to plant new

trees. Infill planting is inappropriate as this will reduce the light available to existing trees and does not encourage young trees to develop an open-grown form. There should be no tree planting in the meadow at ST 149 413 as this is a long-established grassland with flowers that complements the treed areas nearby. Opportunities for planting in adjacent pasture should also be explored.

Stand structure

A second issue at Alfoxton Park is to ensure that the current stand structure does not change to closed canopy woodland. Where young oak trees have developed in the park, these are at risk of competition from other tree species. Some of the young oaks are likely to die soon because of shading from neighbouring trees (see Photo A1.25). Future open-grown trees need to be selected and the surroundings opened. Competition is also a threat to the veteran oaks, with the risk of shading to the lower trunk and lateral branches. If the crown of a mature oak retrenches below the height of the secondary woodland canopy, the tree is likely to die prematurely. Sweet chestnut and birch on the west side of the park are a particular problem in this respect.

Thorn scrub and bramble protect young trees from grazing, although in some situations these are preventing young oaks from developing an open-grown form. Plants including hawthorn, elder, holly, bramble and ivy are also valuable nectar sources for some invertebrates but this is greater in open, sunny situations. Where these species grow close to or on veteran trees, there is the potential to cause severe shade, which is particularly detrimental to the lichen interest (Sanderson, 2017). This type of vegetation should be removed where it is encroaching on veteran trees, or open-grown trees that could develop into veteran trees in future. This is likely to be a continuous process, as regrowth can be rapid. The number of veteran and especially potential future open-grown trees at Alfoxton Park is limited, and the need for similar action should also be assessed for The Quantocks SSSI Units 38 (Alfoxton Wood) and 49 (Willoughby Cleeve) which are adjacent to Alfoxton Park. Alfoxton Wood contains mature sessile oaks and over-mature holly, and Willoughby Cleeve contains lapsed sessile oak pollards.

Dead wood

The simplest rule about dead wood is that it should be left undisturbed to undergo natural decay processes (Kirby, 1992). Freshly-cut sound material arising from management will have no dead wood fauna and its removal will make no difference provided sufficient dead wood is left on the site. If material is to be removed, this should be done quickly otherwise invertebrates associated with dead wood will begin to colonise it. Partly decayed timber should never be removed or burned. If ash trees are lost due to ash dieback *Hymenoscyphus fraxineus* these should be left to decay in situation, which should be possible as the trees in the park are not near public rights of way.

Grazing

At present only deer and occasional stray sheep are grazing in Alfoxton Park. These are not tackling bramble which is now engulfing much of the fallen dead wood (see Photo A1.23) and in some locations is even growing into the lower canopy of veteran trees (see Photo A1.26). Entirely shaded timber may be difficult for invertebrates to find and too cold and damp for the development of some species (Kirby, 1992). Mechanical clearance of bramble in these situations will be necessary on an ongoing basis, and if possible additional heavier rough grazers (either ponies or cattle) should be considered. The best practice is to leave all dead wood undisturbed but fallen branches can block access for grazing animals. It may be necessary to cut through some branches to allow grazers to reach the vegetation, or to create access for mechanical control.

Monitoring

Habitat condition monitoring based on specialist survey tends to produce long intervals between management advice. It would be preferable to visit the site more regularly (at least every 3 years) to check for potential negative factors affecting veteran trees, or trees identified as potential future veterans, including:

1. Ivy climbing the tree trunk.
2. Bramble encroaching on the tree trunk or canopy.
3. Bramble engulfing fallen dead wood.
4. Shading woody species (e.g. hawthorn, blackthorn, elder, or holly) growing by the tree trunk.
5. Competing tree species around the tree canopy in a 180-degree arc encompassing east, south, and west.
6. Presence of *Rhododendron ponticum*, or other invasive species.
7. Bark rubbing from grazing.
8. Soil compaction and eutrophication around the tree.

Appendix 1 – Photographs



Photo A1.1. Vane trap locations 1 and 2. A beech snag at ST 1468 4135.

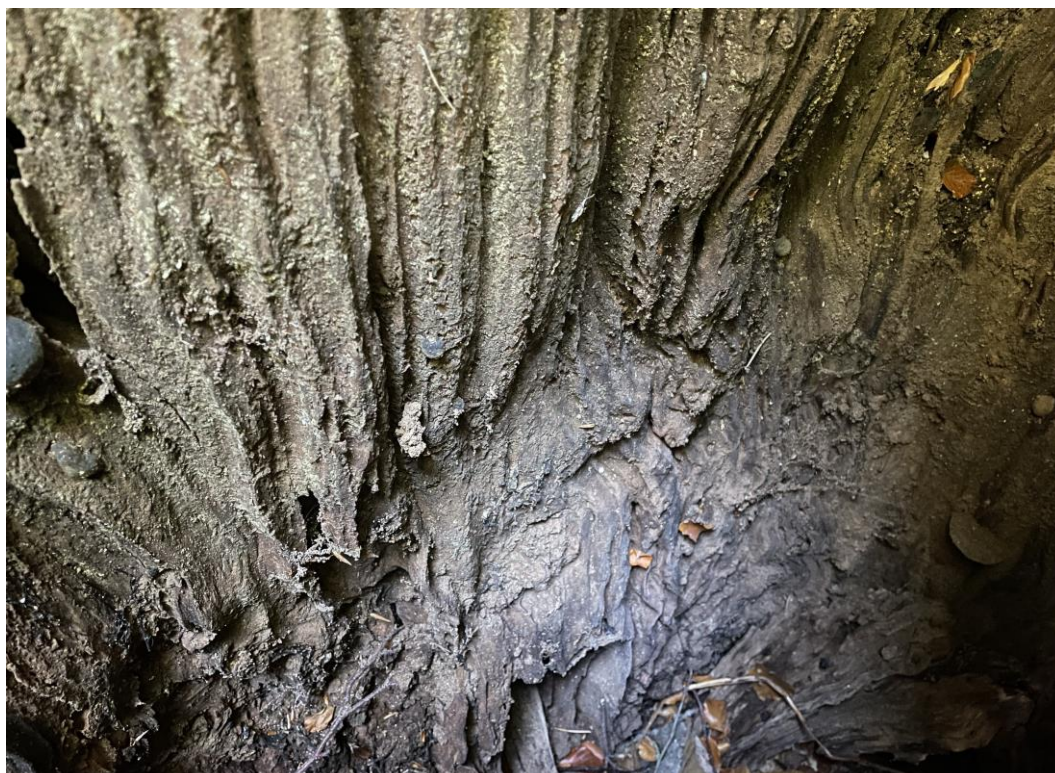


Photo A1.2. Vane trap location 1. The interior of the beech snag at ST 1468 4135 where a 4-bottle trap was operated.



Photo A1.3. Vane trap location 2. The white-rotten exterior of the beech snag at ST 1468 4135 where a 4-bottle trap was operated.



Photo A1.4. Vane trap location 3. A maiden sweet chestnut at ST 1466 4134.



Photo A1.5. Vane trap location 3. The red-rotten trunk of the sweet chestnut at ST 1466 4134 where a 4-bottle trap was operated.



Photo A1.6. Vane trap locations 4 and 5. A maiden sessile oak at ST 1468 4126.



Photo A1.7. Vane trap location 4. The red-rotten interior of the sessile oak at ST 1468 4126 where a 1-bottle trap was operated.



Photo A1.8. Vane trap location 5. The red-rotten interior of the sessile oak at ST 1468 4126 where a 1-bottle trap was operated.



Photo A1.9. Vane trap location 6. A fallen maiden beech at ST 1495 4118.



Photo A1.10. Vane trap location 6. The rotten base of the fallen beech at ST 1495 4118. where a 4-bottle trap was operated.



Photo A1.11. Vane trap location 7. A fallen beech trunk at ST 1495 4117.



Photo A1.12. Vane trap location 7. The white-rotten fallen beech trunk at ST 1495 4117 where a 4-bottle trap was operated.



Photo A1.13. Vane trap location 8. A fallen sessile oak trunk at ST 1502 4126.



Photo A1.14. Vane trap location 8. The red-rotten fallen sessile oak at ST 1502 4126 where a 4-bottle trap was operated.



Photo A1.15. Vane trap locations 9 and 10. The split trunk of a maiden sessile oak at ST 1502 4126.



Photo A1.16. Vane trap location 9. The base of the split sessile oak trunk at ST 1502 4126 where a 4-bottle trap was operated.



Photo A1.17. Vane trap location 10. The rotten trunk of the sessile oak at ST 1502 4126. where a 1-bottle trap was operated.



Photo A1.18. Vane trap location 11. A hollow sessile oak at ST 1505 4111. The original growth form is unclear as the trunk has snapped although is now self-pollarded.



Photo A1.19. Vane trap location 11. The hollow interior of the sessile oak at ST 1505 4111 where a 4-bottle trap was operated.



Photo A1.20. A standing dead sycamore at ST 1497 4125 with brackets of *Polyporus squamosus* on the trunk.



Photo A1.20. *Phymatodes testaceus* found beneath delaminating beech bark on a fallen tree at ST 1495 4118.



Photo A1.21. The root plate of a newly fallen beech tree at ST 1495 4118 is a valuable feature for ground-nesting solitary bees and wasps.



Photo A1.22. Nest chimney of the solitary wasp *Odynerus spinipes* on the root plate of a newly fallen beech tree at ST 1495 4118.



Photo A1.23. Bramble is engulfing limbs of a newly fallen beech tree at ST 1495 4118 and requires mechanical clearance due to inaccessibility to grazing animals.



Photo A1.24. Two mature sessile oak at Lanhydrock Park in Cornwall. The trunks of these trees are separated by 32 metres, in a line from south to north. This distance has allowed the lateral branches of both trees to develop fully.



Photo A1.25. A young sessile oak at ST 1503 4132 is being out-competed by adjacent holly growth, resulting in the trunk diverting towards the limited light that is available.



Photo A1.26. Bramble is encroaching some of the veteran trees in the park, as at ST 1468 4126 where it has climbed into the lower canopy of a sessile oak.

Appendix 2 – Conservation status of invertebrates

Old Red Data lists

Categories in the first Red Data Book for insects in Britain (Shirt, 1987) were based on criteria established by the International Union for Conservation of Nature (IUCN). Some of the criteria were expanded in subsequent Red List publications (Hyman and Parsons, 1994) and the categorisation is outlined in Table A2.1.

Table A2.1. Red Data Book categories based on criteria in Shirt (1987) and Hyman and Parsons (1994).

Categorisation	Definition	Criteria
Red Data Book Category 1 (RDB1)	Taxa in danger of extinction and whose survival is unlikely if the causal factors continue operating.	<ul style="list-style-type: none"> Species which are known or believed to occur as only a single population with one 10 km square of the National Grid. Species which occur only in habitats known to be especially vulnerable. Species which have shown a rapid or continuous decline over the last twenty years and are now estimated to exist in five or fewer 10 km squares. Species which are possibly extinct but have been recorded this century and if rediscovered would need protection.
Red Data Book Category 2 (RDB2)	Taxa believed likely to move into the Endangered category in the near future if the causal factors continue operating.	<ul style="list-style-type: none"> Species declining throughout their range. Species in vulnerable habitats.

Categorisation	Definition	Criteria
Red Data Book Category 3 (RDB3)	Taxa with small populations that are not at present Endangered or Vulnerable, but are at risk.	<ul style="list-style-type: none"> Species which are estimated to exist in only fifteen or fewer post 1970 10 km squares. This criterion may be relaxed where populations are likely to exist in over fifteen 10 km squares but occupy small areas of especially vulnerable habitat.
Red Data Book Category K (RDBK)	Species that are suspected but not definitely known to belong to another Red Data Book category, because of lack of information.	<ul style="list-style-type: none"> Taxa recently discovered or recognised in Britain which may prove to be more widespread in the future. Taxa with very few or perhaps only a single locality but which belong to poorly recorded or taxonomically difficult groups. Species with very few or perhaps only a single locality, inhabiting inaccessible or infrequently sampled but widespread habitats. Species with very few or perhaps only a single locality and of questionable native status, but not clearly falling into the category of recent colonist, vagrant or introduction.
Nationally Scarce Category A (Na)	Taxa which do not fall within RDB categories but which are none-the-less uncommon in Great Britain.	<ul style="list-style-type: none"> Species thought to occur within the range of 16 and 30 10 km squares of the National Grid.
Nationally Scarce Category B (Nb)	Taxa which do not fall within RDB categories but which are none-the-less uncommon in Great Britain.	<ul style="list-style-type: none"> Species thought to occur within the range of 31 and 100 10 km squares of the National Grid.

Categorisation	Definition	Criteria
Nationally Notable (N)	Taxa which do not fall within RDB categories but which are none-the-less uncommon in Great Britain.	<ul style="list-style-type: none"> Species which are estimated to occur within the range of 16 to 100 10 km squares. The subdividing of this category into Notable A and Notable B has not been attempted for some species.

Current IUCN Red Lists

The IUCN Red List Guidelines have been revised (IUCN, 2001; IUCN, 2012) and species assessments are based on five criteria:

- A.** Reduction in population size.
- B.** Limited geographic range in the form of either B1 (extent of occurrence) OR B2 (area of occupancy) OR both.
- C.** Small population size and declining.
- D.** Very small population size; or D2. Very small area of occupancy.
- E.** Probability of extinction.

Qualifying thresholds for the criteria are used to assign species to seven categories which are described fully in the IUCN Guidelines (IUCN, 2001; IUCN, 2012). Critically Endangered, Endangered and Vulnerable species are collectively classified as Threatened. More recent Red Lists for invertebrates in Britain use these categories, which are abbreviated as listed below. There is no equivalence between the old and new systems.

- CE** – Critically Endangered.
- EN** – Endangered.
- VU** – Vulnerable.
- NT** – Near Threatened.
- DD** – Data Deficient.
- LC** – Least Concern.

Finally, at the national level, countries are permitted under the IUCN guidelines to refine the definitions. Some reviews therefore additionally classify species as Nationally Rare (NR) or Nationally Scarce (NS), based on the number of 10 km squares the species is known from in a specified period, usually 30 years preceding the assessment. Nationally Rare species are recorded from 15 or fewer hectads of the Ordnance Survey national grid in Great Britain. Nationally Scarce species are recorded from 16 to 100 hectads of the Ordnance Survey national grid in Great Britain.

Appendix 3 – Indices for saproxylic beetles

Table A3.1. Saproxylic beetles recorded at Alfoxton Park with the year of last record and scores for the Saproxylic Quality Index and the Index of Ecological Continuity

Family	Taxon	Year	SQI Score	IEC Group
Anobiidae	<i>Anobium inexpectatum</i>	2022	8	0
Anobiidae	<i>Anobium punctatum</i>	2022	1	0
Anobiidae	<i>Dorcatoma chrysomelina</i>	2022	4	3
Anobiidae	<i>Grynobius planus</i>	2022	2	0
Anobiidae	<i>Ochina ptinoides</i>	2022	2	0
Anobiidae	<i>Ptilinus pectinicornis</i>	2022	1	0
Anthribidae	<i>Platyrhinus resinosus</i>	2022	4	3
Biphyllidae	<i>Biphyllus lunatus</i>	2022	4	3
Biphyllidae	<i>Diplocoelus fagi</i>	2022	8	3
Cantharidae	<i>Malthinus balteatus</i>	2022	8	0
Cantharidae	<i>Malthinus seriepunctatus</i>	2022	2	0
Cantharidae	<i>Malthodes crassicornis</i>	2022	24	1
Cantharidae	<i>Malthodes marginatus</i>	2022	1	0
Cantharidae	<i>Malthodes minimus</i>	2022	1	0
Cerambycidae	<i>Clytus arietis</i>	2022	1	0
Cerambycidae	<i>Grammoptera ruficornis</i>	2022	1	0
Cerambycidae	<i>Phymatodes testaceus</i>	2022	4	3
Cerambycidae	<i>Pogonocherus hispidus</i>	2022	2	0
Cerambycidae	<i>Rhagium bifasciatum</i>	2022	1	0
Cerambycidae	<i>Rhagium mordax</i>	2022	1	0
Cerambycidae	<i>Rutpela maculata</i>	2022	1	0
Cerambycidae	<i>Stenocorus meridianus</i>	2022	2	0
Cerambycidae	<i>Tetrops praeustus</i>	2022	2	0
Cerylonidae	<i>Cerylon ferrugineum</i>	2022	2	0
Ciidae	<i>Cis bidentatus</i>	2022	2	0

Family	Taxon	Year	SQL Score	IEC Group
Ciidae	<i>Cis boleti</i>	2022	1	0
Ciidae	<i>Cis castaneus</i>	2022	2	0
Ciidae	<i>Cis fagi</i>	2022	2	0
Ciidae	<i>Cis festivus</i>	2022	2	0
Ciidae	<i>Octotemnus glabriculus</i>	2022	1	0
Cleridae	<i>Thanasimus formicarius</i>	2022	4	3
Cryptophagidae	<i>Cryptophagus dentatus</i>	2022	1	0
Cucujidae	<i>Pediacus dermestoides</i>	2022	4	3
Curculionidae	<i>Dryocoetes villosus</i>	2022	2	0
Elateridae	<i>Calambus bipustulatus</i>	2022	8	3
Elateridae	<i>Denticollis linearis</i>	2022	1	0
Elateridae	<i>Stenagostus rhombeus</i>	2022	4	3
Erotylidae	<i>Dacne rufifrons</i>	2022	2	0
Eucnemidae	<i>Epiphanis cornutus</i>	2022	8	0
Eucnemidae	<i>Microrhagus pygmaeus</i>	2022	8	3
Histeridae	<i>Abraeus perpusillus</i>	2022	4	0
Histeridae	<i>Aeletes atomarius</i>	2022	16	1
Histeridae	<i>Paromalus flavicornis</i>	2022	2	0
Histeridae	<i>Plegaderus dissectus</i>	2022	8	2
Latridiidae	<i>Enicmus testaceus</i>	2022	2	0
Latridiidae	<i>Enicmus testaceus</i>	2022	1	0
Leiodidae	<i>Anisotoma humeralis</i>	2022	2	0
Leiodidae	<i>Anisotoma humeralis</i>	2022	8	0
Leiodidae	<i>Anisotoma orbicularis</i>	2022	2	0
Leiodidae	<i>Nemadus colonoides</i>	2022	2	0
Lucanidae	<i>Dorcus parallelipipedus</i>	2022	2	0
Lucanidae	<i>Sinodendron cylindricum</i>	2022	2	0
Lycidae	<i>Platycis minutus</i>	2022	8	3

Family	Taxon	Year	SQL Score	IEC Group
Malachiidae	<i>Malachius bipustulatus</i>	2022	1	0
Melandryidae	<i>Orchesia minor</i>	2022	8	0
Monotomidae	<i>Rhizophagus bipustulatus</i>	2022	1	0
Monotomidae	<i>Rhizophagus dispar</i>	2022	1	0
Monotomidae	<i>Rhizophagus ferrugineus</i>	2022	2	0
Monotomidae	<i>Rhizophagus nitidulus</i>	2022	4	3
Mycetophagidae	<i>Litargus connexus</i>	2022	2	0
Mycetophagidae	<i>Mycetophagus atomarius</i>	2022	2	3
Mycetophagidae	<i>Mycetophagus quadripustulatus</i>	2022	2	0
Mycetophagidae	<i>Pseudotriphyllus suturalis</i>	2022	4	3
Mycetophagidae	<i>Triphyllus bicolor</i>	2022	4	2
Nitidulidae	<i>Epuraea biguttata</i>	2022	2	0
Nitidulidae	<i>Epuraea marseuli</i>	2022	1	0
Oedemeridae	<i>Oedemera femoralis</i>	2022	8	0
Phloiophilidae	<i>Phloiophilus edwardsii</i>	2022	8	3
Platypodidae	<i>Platypus cylindrus</i>	2022	8	3
Ptiliidae	<i>Ptenidium turgidum</i>	2022	16	2
Pyrochroidae	<i>Pyrochroa serraticornis</i>	2022	1	0
Salpingidae	<i>Vincenzellus ruficollis</i>	2022	2	0
Scirtidae	<i>Prionocyphon serricornis</i>	2022	8	3
Scraptiidae	<i>Anaspis fasciata</i>	2022	2	0
Scraptiidae	<i>Anaspis frontalis</i>	2022	1	0
Scraptiidae	<i>Anaspis lurida</i>	2022	2	0
Scraptiidae	<i>Anaspis rufilabris</i>	2022	1	0
Sphindidae	<i>Aspidiphorus orbiculatus</i>	2022	2	0
Sphindidae	<i>Sphindus dubius</i>	2022	8	0
Staphylinidae	<i>Acrulia inflata</i>	2022	2	0
Staphylinidae	<i>Agaricochara latissima</i>	2022	2	0

Family	Taxon	Year	SQL Score	IEC Group
Staphylinidae	<i>Atheta liturata</i>	2022	2	0
Staphylinidae	<i>Bibloporus bicolor</i>	2022	2	0
Staphylinidae	<i>Bolitochara tecta</i>	2022	2	0
Staphylinidae	<i>Dinaraea aequata</i>	2022	1	0
Staphylinidae	<i>Gabrius splendidulus</i>	2022	1	0
Staphylinidae	<i>Gyrophaena congrua</i>	2022	8	0
Staphylinidae	<i>Gyrophaena manca</i>	2022	8	0
Staphylinidae	<i>Leptusa pulchella</i>	2022	2	0
Staphylinidae	<i>Leptusa ruficollis</i>	2022	1	0
Staphylinidae	<i>Phloeonomus punctipennis</i>	2022	2	0
Staphylinidae	<i>Quedius maurus</i>	2022	4	0
Staphylinidae	<i>Quedius xanthopus</i>	2022	4	3
Staphylinidae	<i>Scaphisoma agaricinum</i>	2022	2	0
Staphylinidae	<i>Scaphisoma boleti</i>	2022	8	0
Staphylinidae	<i>Sepedophilus littoreus</i>	2022	2	0
Tenebrionidae	<i>Eledona agricola</i>	2022	4	3
Tenebrionidae	<i>Pseudocistela ceramboides</i>	2022	8	2
Tetratomidae	<i>Tetratoma fungorum</i>	2022	2	0
Zopheridae	<i>Bitoma crenata</i>	2022	4	3

Appendix 4 – Additional data for saproxylic invertebrate records

Table A4.1. Additional data for saproxylic invertebrate records in the Alfoxton Park survey in 2022.

Family	Taxon	Count	Tree species	Tree DBH	DBH if not on trunk	Description of capture location	Method
ARANEAE							
Amaurobiidae	<i>Amaurobius fenestralis</i>	1	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T6. Beating
Amaurobiidae	<i>Amaurobius fenestralis</i>	3	<i>Castanea sativa</i>	98.7	N/A	Newly-split trunk with red-rotten heartwood	4-bottle trap
Amaurobiidae	<i>Amaurobius fenestralis</i>	2	<i>Quercus petraea</i>	119.8	N/A	Red-rotten wood in split trunk	1-bottle trap
Amaurobiidae	<i>Amaurobius fenestralis</i>	1	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Amaurobiidae	<i>Amaurobius fenestralis</i>	1	<i>Quercus petraea</i>	161.1	N/A	Hollow trunk interior with red-rotten lining	1-bottle trap
Amaurobiidae	<i>Amaurobius fenestralis</i>	1	<i>Quercus petraea</i>	161.1	N/A	Red-rotten wood mould	T8. Sieve and sort
Amaurobiidae	<i>Amaurobius fenestralis</i>	1	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Amaurobiidae	<i>Amaurobius fenestralis</i>	2	<i>Quercus petraea</i>	165	N/A	Hollow trunk	4-bottle trap
Araneidae	<i>Nuctenea umbratica</i>	1	<i>Fagus sylvatica</i>	164	50.1	Delaminating bark on branch	Active searching
Dysderidae	<i>Harpactea hombergi</i>	1	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T6. Beating
Dysderidae	<i>Harpactea hombergi</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Wood mould	T8. Sieve and sort
Dysderidae	<i>Harpactea hombergi</i>	1	<i>Quercus petraea</i>	161.1	N/A	Red-rotten wood mould	T8. Sieve and sort
Linyphiidae	<i>Lepthyphantes minutus</i>	1	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T6. Beating
Linyphiidae	<i>Lepthyphantes minutus</i>	5	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T6. Beating
Linyphiidae	<i>Lepthyphantes minutus</i>	1	<i>Quercus petraea</i>	114	N/A	Laetiporus sulphureus	T8. Sieve and sort
Linyphiidae	<i>Lepthyphantes minutus</i>	2	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk exterior with white-rotten wood mould	4-bottle trap
Tetragnathidae	<i>Meta menardi</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk interior with white-rotten wood mould	4-bottle trap
COLEOPTERA							
Anobiidae	<i>Anobium inexpectatum</i>	1	<i>Fraxinus excelsior</i>	102.3	N/A	Foliage	T5. Sweeping
Anobiidae	<i>Anobium punctatum</i>	3	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Anobiidae	<i>Anobium punctatum</i>	1	<i>Quercus petraea</i>	161.1	N/A	Hollow trunk interior with red-rotten lining	1-bottle trap
Anobiidae	<i>Anobium punctatum</i>	1	<i>Quercus petraea</i>	N/A	87.8	Red-rotten wood in fallen trunk	4-bottle trap

Family	Taxon	Count	Tree species	Tree DBH	DBH if not on trunk	Description of capture location	Method
Anobiidae	<i>Dorcatoma chrysomelina</i>	11	<i>Quercus petraea</i>	119.8	N/A	Red-rotten wood in split trunk	1-bottle trap
Anobiidae	<i>Dorcatoma chrysomelina</i>	19	<i>Quercus petraea</i>	N/A	87.8	Red-rotten wood in fallen trunk	4-bottle trap
Anobiidae	<i>Grynobius planus</i>	2	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Anobiidae	<i>Grynobius planus</i>	2	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Anobiidae	<i>Grynobius planus</i>	2	N/A	N/A	N/A	Open oak woodland	T5. Sweeping
Anobiidae	<i>Ochina ptinoides</i>	2	<i>Hedera helix</i>	10.6	N/A	Foliage	T5. Sweeping
Anobiidae	<i>Ptilinus pectinicornis</i>	1	<i>Fraxinus excelsior</i>	72.6	36	Lignum	Active searching
Anobiidae	<i>Ptilinus pectinicornis</i>	4	<i>Acer pseudoplatanus</i>	73.3	N/A	Delaminating bark on trunk	Active searching
Anobiidae	<i>Ptilinus pectinicornis</i>	2	<i>Quercus petraea</i>	119.8	N/A	Red-rotten wood in split trunk	1-bottle trap
Anobiidae	<i>Ptilinus pectinicornis</i>	3	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Anobiidae	<i>Ptilinus pectinicornis</i>	3	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk exterior with white-rotten wood mould	4-bottle trap
Anobiidae	<i>Ptilinus pectinicornis</i>	8	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Anobiidae	<i>Ptilinus pectinicornis</i>	1	<i>Quercus petraea</i>	201	N/A	Foliage	T5. Sweeping
Anobiidae	<i>Ptilinus pectinicornis</i>	1	N/A	N/A	N/A	Open oak woodland	T5. Sweeping
Anthribidae	<i>Platyrhinus resinosus</i>	1	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Anthribidae	<i>Platyrhinus resinosus</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk exterior with white-rotten wood mould	4-bottle trap
Anthribidae	<i>Platyrhinus resinosus</i>	1	<i>Fagus sylvatica</i>	164	45.3	Daldinia concentrica	Active searching (night)
Anthribidae	<i>Platyrhinus resinosus</i>	1	<i>Fagus sylvatica</i>	164	46.9	Daldinia concentrica	Active searching (night)
Biphyllidae	<i>Biphyllus lunatus</i>	1	<i>Quercus petraea</i>	157.2	2.5	Dead twigs	T6. Beating
Biphyllidae	<i>Diplocoelus fagi</i>	1	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T6. Beating
Biphyllidae	<i>Diplocoelus fagi</i>	1	<i>Fagus sylvatica</i>	164	?	Trametes versicolor	T6. Beating
Biphyllidae	<i>Diplocoelus fagi</i>	1	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Cantharidae	<i>Malthinus balteatus</i>	1	<i>Fagus sylvatica</i>	58.3	N/A	Around tree with heartwood decay	T5. Sweeping
Cantharidae	<i>Malthinus balteatus</i>	1	N/A	N/A	N/A	Jacobaea vulgaris flowers	Active searching
Cantharidae	<i>Malthinus seriepunctatus</i>	1	<i>Quercus petraea</i>	111.5	N/A	Foliage	T5. Sweeping
Cantharidae	<i>Malthinus seriepunctatus</i>	1	<i>Quercus petraea</i>	158.3	N/A	Foliage	T5. Sweeping
Cantharidae	<i>Malthodes crassicornis</i>	1	<i>Quercus petraea</i>	N/A	87.8	Red-rotten wood in fallen trunk	4-bottle trap
Cantharidae	<i>Malthodes marginatus</i>	1	<i>Quercus petraea</i>	305.5	N/A	Under tree canopy	T5. Sweeping

Family	Taxon	Count	Tree species	Tree DBH	DBH if not on trunk	Description of capture location	Method
Cantharidae	<i>Malthodes marginatus</i>	3	<i>Crataegus monogyna</i>	N/A	N/A	Flowers	T6. Beating
Cantharidae	<i>Malthodes minimus</i>	1	<i>Quercus petraea</i>	158.3	N/A	Foliage	T5. Sweeping
Carabidae	<i>Calodromius spilotus</i>	1	<i>Crataegus monogyna</i>	42.6	4.8	Dead branch	T6. Beating
Carabidae	<i>Dromius agilis</i>	1	<i>Crataegus monogyna</i>	42.6	1.2	Dead twigs	T6. Beating
Carabidae	<i>Dromius quadrimaculatus</i>	1	<i>Corylus avellana</i>	111.8	N/A	Ganoderma australe	T6. Beating
Cerambycidae	<i>Clytus arietis</i>	1	<i>Fagus sylvatica</i>	164	50.3	Delaminating bark on branch	Active searching
Cerambycidae	<i>Grammoptera ruficornis</i>	3	<i>Fagus sylvatica</i>	164	2.6	Dead twigs	T6. Beating
Cerambycidae	<i>Grammoptera ruficornis</i>	6	<i>Crataegus monogyna</i>	N/A	N/A	Flowers	T6. Beating
Cerambycidae	<i>Phymatodes testaceus</i>	4	<i>Quercus petraea</i>	119.8	N/A	On bark of recently snapped oak trunk	Active searching (night)
Cerambycidae	<i>Phymatodes testaceus</i>	1	<i>Fagus sylvatica</i>	164	59.1	Delaminating bark on trunk	Active searching
Cerambycidae	<i>Pogonocherus hispidus</i>	1	<i>Quercus petraea</i>	157.2	2.5	Dead twigs	T6. Beating
Cerambycidae	<i>Rhagium bifasciatum</i>	1	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Cerambycidae	<i>Rhagium mordax</i>	1	<i>Quercus petraea</i>	119.8	N/A	Red-rotten wood in split trunk	1-bottle trap
Cerambycidae	<i>Rhagium mordax</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk exterior with white-rotten wood mould	4-bottle trap
Cerambycidae	<i>Rhagium mordax</i>	1	<i>Quercus petraea</i>	305.5	N/A	Sap run	T5. Sweeping
Cerambycidae	<i>Rhagium mordax</i>	1	<i>Crataegus monogyna</i>	N/A	N/A	Flowers	T6. Beating
Cerambycidae	<i>Rutpela maculata</i>	1	<i>Quercus petraea</i>	119.2	N/A	Foliage	T5. Sweeping
Cerambycidae	<i>Rutpela maculata</i>	1	N/A	N/A	N/A	In flight	Active searching
Cerambycidae	<i>Rutpela maculata</i>	1	N/A	N/A	N/A	Jacobaea vulgaris flowers	Active searching
Cerambycidae	<i>Stenocorus meridianus</i>	1	<i>Fagus sylvatica</i>	164	N/A	Root plate of fallen tree	Active searching
Cerambycidae	<i>Tetrops praeustus</i>	1	<i>Crataegus monogyna</i>	39.1	1.6	Dead twigs	T6. Beating
Cerylonidae	<i>Cerylon ferrugineum</i>	1	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Cerylonidae	<i>Cerylon ferrugineum</i>	1	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Ciidae	<i>Cis bidentatus</i>	1	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T6. Beating
Ciidae	<i>Cis bilamellatus</i>	3	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T6. Beating
Ciidae	<i>Cis bilamellatus</i>	5	<i>Quercus petraea</i>	119.8	N/A	Red-rotten wood in split trunk	1-bottle trap
Ciidae	<i>Cis bilamellatus</i>	3	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Ciidae	<i>Cis bilamellatus</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk exterior with white-rotten wood mould	4-bottle trap

Family	Taxon	Count	Tree species	Tree DBH	DBH if not on trunk	Description of capture location	Method
Ciidae	<i>Cis bilamellatus</i>	1	<i>Fagus sylvatica</i>	164	78.5	Stereum hirsutum	T6. Beating
Ciidae	<i>Cis bilamellatus</i>	1	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Ciidae	<i>Cis boleti</i>	4	<i>Betula pendula</i>	10.9	8.2	Dead sapling	T6. Beating
Ciidae	<i>Cis boleti</i>	1	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Ciidae	<i>Cis boleti</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk exterior with white-rotten wood mould	4-bottle trap
Ciidae	<i>Cis boleti</i>	3	<i>Fagus sylvatica</i>	164	78.5	Stereum hirsutum	T6. Beating
Ciidae	<i>Cis boleti</i>	1	<i>Fagus sylvatica</i>	164	?	Trametes versicolor	T6. Beating
Ciidae	<i>Cis boleti</i>	6	<i>Quercus petraea</i>	N/A	?	Fungus on base of log	Active searching
Ciidae	<i>Cis castaneus</i>	2	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T6. Beating
Ciidae	<i>Cis castaneus</i>	20	<i>Fagus sylvatica</i>	126	N/A	Ganoderma australe	T8. Sieve and sort
Ciidae	<i>Cis castaneus</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk interior with white-rotten wood mould	4-bottle trap
Ciidae	<i>Cis castaneus</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Wood mould	T8. Sieve and sort
Ciidae	<i>Cis fagi</i>	1	<i>Quercus petraea</i>	119.8	N/A	Red-rotten wood in split trunk	1-bottle trap
Ciidae	<i>Cis fagi</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk interior with white-rotten wood mould	4-bottle trap
Ciidae	<i>Cis festivus</i>	1	<i>Corylus avellana</i>	111.8	N/A	Ganoderma australe	T6. Beating
Ciidae	<i>Octotemnus glabriculus</i>	1	<i>Betula pendula</i>	10.9	8.2	Dead sapling	T6. Beating
Ciidae	<i>Octotemnus glabriculus</i>	15	<i>Fagus sylvatica</i>	164	78.5	Stereum hirsutum	T6. Beating
Ciidae	<i>Octotemnus glabriculus</i>	1	<i>Fagus sylvatica</i>	164	?	Trametes versicolor	T6. Beating
Cleridae	<i>Thanasimus formicarius</i>	29	<i>Quercus petraea</i>	119.8	N/A	Bark of recently snapped trunk	Active searching (night)
Cleridae	<i>Thanasimus formicarius</i>	1	<i>Quercus petraea</i>	119.8	N/A	Hollow base of red-rotten trunk	4-bottle trap
Cleridae	<i>Thanasimus formicarius</i>	4	<i>Quercus petraea</i>	119.8	N/A	Red-rotten wood in split trunk	1-bottle trap
Corylophidae	<i>Orthoperus nigrescens</i>	1	<i>Quercus petraea</i>	161.1	N/A	Hollow trunk interior with red-rotten lining	1-bottle trap
Cryptophagidae	<i>Cryptophagus dentatus</i>	4	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T6. Beating
Cryptophagidae	<i>Cryptophagus scanicus</i>	3	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T6. Beating
Cryptophagidae	<i>Cryptophagus scanicus</i>	1	<i>Quercus petraea</i>	119.8	N/A	Hollow base of red-rotten trunk	4-bottle trap
Cryptophagidae	<i>Cryptophagus scanicus</i>	1	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Cryptophagidae	<i>Cryptophagus scanicus</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk exterior with white-rotten wood mould	4-bottle trap
Cryptophagidae	<i>Cryptophagus scanicus</i>	3	<i>Quercus petraea</i>	161.1	N/A	Hollow trunk interior with red-rotten lining	1-bottle trap

Family	Taxon	Count	Tree species	Tree DBH	DBH if not on trunk	Description of capture location	Method
Cryptophagidae	<i>Cryptophagus scanicus</i>	1	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Cryptophagidae	<i>Cryptophagus scanicus</i>	5	<i>Quercus petraea</i>	165	N/A	Hollow trunk	4-bottle trap
Cucujidae	<i>Pediacus dermestoides</i>	1	<i>Quercus petraea</i>	N/A	87.8	Red-rotten wood	Active searching
Curculionidae	<i>Acalles ptinoides</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk interior with white-rotten wood mould	4-bottle trap
Curculionidae	<i>Acalles ptinoides</i>	1	<i>Quercus petraea</i>	161.1	19.3	Lignum on limb	Active searching (night)
Curculionidae	<i>Dryocoetes villosus</i>	1	<i>Quercus petraea</i>	119.8	N/A	Bark of standing dead trunk	Active searching (night)
Curculionidae	<i>Dryocoetes villosus</i>	3	<i>Quercus petraea</i>	119.8	N/A	Hollow base of red-rotten trunk	4-bottle trap
Curculionidae	<i>Dryocoetes villosus</i>	8	<i>Quercus petraea</i>	119.8	N/A	Red-rotten wood in split trunk	1-bottle trap
Curculionidae	<i>Dryocoetes villosus</i>	1	<i>Fagus sylvatica</i>	164	46.1	Delaminating bark on branch	Active searching (night)
Curculionidae	<i>Dryocoetes villosus</i>	1	<i>Quercus petraea</i>	N/A	87.8	Red-rotten wood in fallen trunk	4-bottle trap
Curculionidae	<i>Euophryum confine</i>	1	<i>Acer pseudoplatanus</i>	73.3	N/A	Delaminating bark on trunk	Active searching
Curculionidae	<i>Euophryum confine</i>	1	<i>Quercus petraea</i>	119.8	N/A	Hollow base of red-rotten trunk	4-bottle trap
Curculionidae	<i>Euophryum confine</i>	1	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Curculionidae	<i>Euophryum confine</i>	3	<i>Quercus petraea</i>	161.1	N/A	Hollow trunk interior with red-rotten lining	1-bottle trap
Curculionidae	<i>Euophryum confine</i>	3	<i>Quercus petraea</i>	161.1	N/A	Red-rotten wood mould	T8. Sieve and sort
Curculionidae	<i>Euophryum confine</i>	1	<i>Quercus petraea</i>	165	N/A	Hollow trunk	4-bottle trap
Curculionidae	<i>Euophryum confine</i>	1	<i>Quercus petraea</i>	N/A	87.8	Red-rotten wood	Active searching
Elateridae	<i>Calambus bipustulatus</i>	1	<i>Quercus petraea</i>	161.1	N/A	Hollow trunk interior with red-rotten lining	1-bottle trap
Elateridae	<i>Denticollis linearis</i>	3	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Elateridae	<i>Denticollis linearis</i>	1	<i>Quercus petraea</i>	N/A	87.8	Red-rotten wood	Active searching
Elateridae	<i>Melanotus castanipes</i>	1	<i>Quercus petraea</i>	119.8	N/A	Red-rotten wood in split trunk	1-bottle trap
Elateridae	<i>Melanotus castanipes</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Delaminating bark on trunk	Active searching
Elateridae	<i>Melanotus castanipes</i>	1	<i>Quercus petraea</i>	167.9	N/A	Bark of trunk	Active searching (night)
Elateridae	<i>Melanotus villosus</i>	4	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Elateridae	<i>Stenagostus rhombeus</i>	2	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Erotylidae	<i>Dacne rufifrons</i>	13	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T6. Beating
Eucnemidae	<i>Epiphanis cornutus</i>	1	<i>Quercus petraea</i>	N/A	87.8	Red-rotten wood in fallen trunk	4-bottle trap
Eucnemidae	<i>Microthagus pygmaeus</i>	1	<i>Quercus petraea</i>	158.3	N/A	Foliage	T5. Sweeping

Family	Taxon	Count	Tree species	Tree DBH	DBH if not on trunk	Description of capture location	Method
Histeridae	<i>Abraeus perpusillus</i>	1	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Histeridae	<i>Abraeus perpusillus</i>	7	<i>Fagus sylvatica</i>	129.9	N/A	Wood mould	T8. Sieve and sort
Histeridae	<i>Aeletes atomarius</i>	1	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Histeridae	<i>Paromalus flavicornis</i>	1	<i>Quercus petraea</i>	119.8	N/A	Hollow base of red-rotten trunk	4-bottle trap
Histeridae	<i>Paromalus flavicornis</i>	1	<i>Quercus petraea</i>	119.8	N/A	Red-rotten wood in split trunk	1-bottle trap
Histeridae	<i>Paromalus flavicornis</i>	1	<i>Fagus sylvatica</i>	126	N/A	Ganoderma australe	T8. Sieve and sort
Histeridae	<i>Paromalus flavicornis</i>	3	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk interior with white-rotten wood mould	4-bottle trap
Histeridae	<i>Paromalus flavicornis</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Lignum	Active searching (night)
Histeridae	<i>Paromalus flavicornis</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Wood mould	T8. Sieve and sort
Histeridae	<i>Paromalus flavicornis</i>	1	<i>Fagus sylvatica</i>	164	50.1	Delaminating bark on branch	Active searching
Histeridae	<i>Paromalus flavicornis</i>	1	<i>Fagus sylvatica</i>	164	43.5	Delaminating bark on branch	T6. Beating
Histeridae	<i>Paromalus flavicornis</i>	3	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Histeridae	<i>Paromalus flavicornis</i>	5	<i>Quercus petraea</i>	N/A	47.5	Under bark on fallen bough	Active searching
Histeridae	<i>Plegaderus dissectus</i>	1	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Histeridae	<i>Plegaderus dissectus</i>	4	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk interior with white-rotten wood mould	4-bottle trap
Histeridae	<i>Plegaderus dissectus</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Wood mould	T8. Sieve and sort
Histeridae	<i>Plegaderus dissectus</i>	4	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Latridiidae	<i>Dienerella vincenti</i>	1	<i>Quercus petraea</i>	165	N/A	Hollow trunk	4-bottle trap
Latridiidae	<i>Enicmus testaceus</i>	1	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T6. Beating
Latridiidae	<i>Enicmus testaceus</i>	13	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Latridiidae	<i>Enicmus testaceus</i>	2	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk interior with white-rotten wood mould	4-bottle trap
Latridiidae	<i>Enicmus testaceus</i>	1	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Leiodidae	<i>Anisotoma humeralis</i>	3	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Leiodidae	<i>Anisotoma humeralis</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk exterior with white-rotten wood mould	4-bottle trap
Leiodidae	<i>Nemadus colonoides</i>	1	<i>Quercus petraea</i>	165	N/A	Hollow trunk	4-bottle trap
Lucanidae	<i>Dorcus parallelipipedus</i>	3	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Lucanidae	<i>Dorcus parallelipipedus</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk interior with white-rotten wood mould	4-bottle trap
Lucanidae	<i>Dorcus parallelipipedus</i>	1	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap

Family	Taxon	Count	Tree species	Tree DBH	DBH if not on trunk	Description of capture location	Method
Lucanidae	<i>Dorcus parallelipedus</i>	1	<i>Quercus petraea</i>	305.5	N/A	Bark of trunk	Active searching (night)
Lucanidae	<i>Sinodendron cylindricum</i>	1	<i>Fraxinus excelsior</i>	72.6	36	Lignum	Active searching
Lucanidae	<i>Sinodendron cylindricum</i>	1	<i>Quercus petraea</i>	305.5	N/A	Sawn log	T5. Sweeping
Lucanidae	<i>Sinodendron cylindricum</i>	1	<i>Fagus sylvatica</i>	N/A	16.3	Fallen branch	Active searching
Lycidae	<i>Platycis minutus</i>	2	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Lycidae	<i>Platycis minutus</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk exterior with white-rotten wood mould	4-bottle trap
Malachiidae	<i>Malachius bipustulatus</i>	1	<i>Quercus petraea</i>	114.1	N/A	Around dead fallen tree	T5. Sweeping
Melandryidae	<i>Orchesia minor</i>	1	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Monotomidae	<i>Rhizophagus bipustulatus</i>	1	<i>Crataegus monogyna</i>	42.6	1.2	Dead twigs	T6. Beating
Monotomidae	<i>Rhizophagus bipustulatus</i>	1	<i>Fagus sylvatica</i>	164	45.9	Delaminating bark on branch	Active searching
Monotomidae	<i>Rhizophagus bipustulatus</i>	1	<i>Fagus sylvatica</i>	164	50.1	Delaminating bark on branch	Active searching
Monotomidae	<i>Rhizophagus bipustulatus</i>	1	<i>Fagus sylvatica</i>	164	50.9	Delaminating bark on branch	Active searching
Monotomidae	<i>Rhizophagus bipustulatus</i>	2	<i>Fagus sylvatica</i>	164	43.5	Delaminating bark on branch	T6. Beating
Monotomidae	<i>Rhizophagus dispar</i>	1	<i>Quercus petraea</i>	119.8	N/A	Hollow base of red-rotten trunk	4-bottle trap
Monotomidae	<i>Rhizophagus dispar</i>	1	<i>Quercus petraea</i>	161.1	N/A	Hollow trunk interior with red-rotten lining	1-bottle trap
Monotomidae	<i>Rhizophagus dispar</i>	1	<i>Fagus sylvatica</i>	164	43.5	Delaminating bark on branch	T6. Beating
Monotomidae	<i>Rhizophagus ferrugineus</i>	3	<i>Quercus petraea</i>	119.8	N/A	Hollow base of red-rotten trunk	4-bottle trap
Monotomidae	<i>Rhizophagus ferrugineus</i>	1	<i>Fagus sylvatica</i>	164	50.1	Delaminating bark on branch	Active searching
Monotomidae	<i>Rhizophagus ferrugineus</i>	1	<i>Quercus petraea</i>	N/A	87.8	Red-rotten wood in fallen trunk	4-bottle trap
Monotomidae	<i>Rhizophagus nitidulus</i>	1	<i>Quercus petraea</i>	119.8	N/A	Hollow base of red-rotten trunk	4-bottle trap
Mycetophagidae	<i>Litargus connexus</i>	1	<i>Fagus sylvatica</i>	164	45	Delaminating bark on branch	Active searching (night)
Mycetophagidae	<i>Litargus connexus</i>	2	<i>Fagus sylvatica</i>	164	?	Trametes versicolor	T6. Beating
Mycetophagidae	<i>Mycetophagus atomarius</i>	1	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Mycetophagidae	<i>Mycetophagus atomarius</i>	2	<i>Fagus sylvatica</i>	164	26.9	Delaminating bark on branch	Active searching
Mycetophagidae	<i>Mycetophagus atomarius</i>	1	<i>Fagus sylvatica</i>	164	30.7	Delaminating bark on branch	Active searching
Mycetophagidae	<i>Mycetophagus atomarius</i>	1	<i>Fagus sylvatica</i>	164	50.9	Delaminating bark on branch	Active searching
Mycetophagidae	<i>Mycetophagus atomarius</i>	1	<i>Fagus sylvatica</i>	164	38.9	Delaminating bark on branch	T6. Beating
Mycetophagidae	<i>Mycetophagus atomarius</i>	1	<i>Fagus sylvatica</i>	164	46.1	Delaminating bark on trunk	Active searching

Family	Taxon	Count	Tree species	Tree DBH	DBH if not on trunk	Description of capture location	Method
Mycetophagidae	<i>Mycetophagus atomarius</i>	1	<i>Fagus sylvatica</i>	164	N/A	Root plate of fallen tree	Active searching
Mycetophagidae	<i>Mycetophagus atomarius</i>	1	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Mycetophagidae	<i>Mycetophagus atomarius</i>	1	<i>Quercus petraea</i>	305.5	N/A	On bark of tree trunk	Active searching (night)
Mycetophagidae	<i>Mycetophagus quadripustulatus</i>	71	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T6. Beating
Mycetophagidae	<i>Mycetophagus quadripustulatus</i>	1	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Mycetophagidae	<i>Pseudotriphyllus suturalis</i>	17	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T6. Beating
Mycetophagidae	<i>Triphyllus bicolor</i>	1	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T6. Beating
Nitidulidae	<i>Epuraea aestiva</i>	1	<i>Fagus sylvatica</i>	164	43.5	Delaminating bark on branch	T6. Beating
Nitidulidae	<i>Epuraea aestiva</i>	12	<i>Crataegus monogyna</i>	N/A	N/A	Flowers	T6. Beating
Nitidulidae	<i>Epuraea biguttata</i>	3	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T6. Beating
Nitidulidae	<i>Epuraea marseuli</i>	1	<i>Quercus petraea</i>	119.8	N/A	Hollow base of red-rotten trunk	4-bottle trap
Oedemeridae	<i>Oedemera femoralis</i>	1	<i>Quercus petraea</i>	305.5	N/A	Bark of trunk	Active searching (night)
Phloiophilidae	<i>Phloiophilus edwardsii</i>	3	<i>Quercus petraea</i>	214	3.3	Stereum gausapatum	T6. Beating
Platypodidae	<i>Platypus cylindrus</i>	1	<i>Quercus petraea</i>	119.8	N/A	Hollow base of red-rotten trunk	4-bottle trap
Ptiliidae	<i>Ptenidium formicetorum</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Wood mould	T8. Sieve and sort
Ptiliidae	<i>Ptenidium turgidum</i>	3	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood	T8. Sieve and sort
Ptiliidae	<i>Ptenidium turgidum</i>	3	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Ptiliidae	<i>Ptenidium turgidum</i>	25	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk interior with white-rotten wood mould	4-bottle trap
Ptiliidae	<i>Ptenidium turgidum</i>	25	<i>Fagus sylvatica</i>	129.9	N/A	Wood mould	T8. Sieve and sort
Ptiliidae	<i>Ptenidium turgidum</i>	6	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Pyrochroidae	<i>Pyrochroa serraticornis</i>	1	<i>Fagus sylvatica</i>	N/A	16.3	Fallen branch	Active searching
Salpingidae	<i>Vincenzellus ruficollis</i>	1	<i>Quercus petraea</i>	119.8	N/A	Hollow base of red-rotten trunk	4-bottle trap
Salpingidae	<i>Vincenzellus ruficollis</i>	1	<i>Fagus sylvatica</i>	164	36.5	Delaminating bark on branch	Active searching (night)
Scirtidae	<i>Prionocyphon serricornis</i>	2	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Scirtidae	<i>Prionocyphon serricornis</i>	1	<i>Quercus petraea</i>	305.5	N/A	Dendrotelm in buttress on trunk	Active searching
Scraptiidae	<i>Anaspis fasciata</i>	2	<i>Crataegus monogyna</i>	N/A	N/A	Flowers	T6. Beating
Scraptiidae	<i>Anaspis frontalis</i>	5	<i>Crataegus monogyna</i>	N/A	N/A	Flowers	T6. Beating
Scraptiidae	<i>Anaspis garneysi</i>	3	<i>Quercus petraea</i>	119.8	N/A	Hollow base of red-rotten trunk	4-bottle trap

Family	Taxon	Count	Tree species	Tree DBH	DBH if not on trunk	Description of capture location	Method
Scraptiidae	<i>Anaspis garneysi</i>	1	<i>Quercus petraea</i>	119.8	N/A	Red-rotten wood in split trunk	1-bottle trap
Scraptiidae	<i>Anaspis garneysi</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk exterior with white-rotten wood mould	4-bottle trap
Scraptiidae	<i>Anaspis garneysi</i>	1	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Scraptiidae	<i>Anaspis garneysi</i>	2	<i>Crataegus monogyna</i>	N/A	N/A	Flowers	T6. Beating
Scraptiidae	<i>Anaspis lurida</i>	1	<i>Quercus petraea</i>	157.2	2.5	Dead twigs	T6. Beating
Scraptiidae	<i>Anaspis maculata</i>	1	<i>Quercus petraea</i>	161.1	19.3	Lignum on limb	Active searching (night)
Scraptiidae	<i>Anaspis maculata</i>	1	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Scraptiidae	<i>Anaspis maculata</i>	1	<i>Sambucus nigra</i>	N/A	N/A	Flowers	T6. Beating
Scraptiidae	<i>Anaspis maculata</i>	61	<i>Crataegus monogyna</i>	N/A	N/A	Flowers	T6. Beating
Scraptiidae	<i>Anaspis regimbarti</i>	1	<i>Crataegus monogyna</i>	N/A	N/A	Flowers	T6. Beating
Scraptiidae	<i>Anaspis rufilabris</i>	1	<i>Crataegus monogyna</i>	N/A	N/A	Flowers	T6. Beating
Sphindidae	<i>Aspidiphorus orbiculatus</i>	3	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Sphindidae	<i>Aspidiphorus orbiculatus</i>	1	<i>Quercus petraea</i>	N/A	87.8	Red-rotten wood in fallen trunk	4-bottle trap
Sphindidae	<i>Sphindus dubius</i>	3	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Staphylinidae	<i>Acrulia inflata</i>	1	<i>Fagus sylvatica</i>	164	78.5	Stereum hirsutum	T6. Beating
Staphylinidae	<i>Agaricochara latissima</i>	9	<i>Betula pendula</i>	10.9	8.2	Dead sapling	T6. Beating
Staphylinidae	<i>Agaricochara latissima</i>	1	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T6. Beating
Staphylinidae	<i>Agaricochara latissima</i>	1	<i>Fagus sylvatica</i>	164	78.5	Oudemansiella mucida	T6. Beating
Staphylinidae	<i>Agaricochara latissima</i>	1	<i>Fagus sylvatica</i>	164	78.5	Stereum hirsutum	T6. Beating
Staphylinidae	<i>Atrecus affinis</i>	1	<i>Quercus petraea</i>	119.8	N/A	Hollow base of red-rotten trunk	4-bottle trap
Staphylinidae	<i>Atrecus affinis</i>	1	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Staphylinidae	<i>Atrecus affinis</i>	1	<i>Fagus sylvatica</i>	164	49.9	Delaminating bark on branch	Active searching (night)
Staphylinidae	<i>Atrecus affinis</i>	1	<i>Quercus petraea</i>	N/A	87.8	Red-rotten wood	Active searching
Staphylinidae	<i>Autalia impressa</i>	3	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T6. Beating
Staphylinidae	<i>Autalia longicornis</i>	6	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T6. Beating
Staphylinidae	<i>Bibloporus bicolor</i>	1	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Staphylinidae	<i>Bolitochara bella</i>	1	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T6. Beating
Staphylinidae	<i>Bolitochara obliqua</i>	14	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T6. Beating

Family	Taxon	Count	Tree species	Tree DBH	DBH if not on trunk	Description of capture location	Method
Staphylinidae	<i>Bolitochara obliqua</i>	1	<i>Fagus sylvatica</i>	164	34.9	Delaminating bark on branch	Active searching
Staphylinidae	<i>Bolitochara tecta</i>	1	<i>Fagus sylvatica</i>	164	?	Trametes versicolor	T6. Beating
Staphylinidae	<i>Dinaraea aequata</i>	4	<i>Fagus sylvatica</i>	164	43.5	Delaminating bark on branch	T6. Beating
Staphylinidae	<i>Gabrius splendidulus</i>	1	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Staphylinidae	<i>Gabrius splendidulus</i>	5	<i>Fagus sylvatica</i>	164	34.9	Delaminating bark on branch	Active searching
Staphylinidae	<i>Gabrius splendidulus</i>	1	<i>Fagus sylvatica</i>	164	43.5	Delaminating bark on branch	T6. Beating
Staphylinidae	<i>Gyrophaena congrua</i>	1	<i>Quercus petraea</i>	N/A	87.8	Red-rotten wood in fallen trunk	4-bottle trap
Staphylinidae	<i>Gyrophaena manca</i>	4	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T6. Beating
Staphylinidae	<i>Holobus apicatus</i>	1	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T6. Beating
Staphylinidae	<i>Holobus apicatus</i>	1	<i>Fagus sylvatica</i>	164	78.5	Stereum hirsutum	T6. Beating
Staphylinidae	<i>Leptusa pulchella</i>	4	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T6. Beating
Staphylinidae	<i>Leptusa pulchella</i>	1	<i>Fagus sylvatica</i>	164	78.5	Stereum hirsutum	T6. Beating
Staphylinidae	<i>Leptusa ruficollis</i>	1	<i>Betula pendula</i>	10.9	8.2	Dead sapling	T6. Beating
Staphylinidae	<i>Leptusa ruficollis</i>	2	<i>Fagus sylvatica</i>	164	78.5	Stereum hirsutum	T6. Beating
Staphylinidae	<i>Leptusa ruficollis</i>	1	<i>Quercus petraea</i>	N/A	67.2	Armillaria mellea	T8. Sieve and sort
Staphylinidae	<i>Phloeonomus punctipennis</i>	1	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T6. Beating
Staphylinidae	<i>Phloeonomus punctipennis</i>	1	<i>Quercus petraea</i>	N/A	71.2	Hypholoma fasciculare	T8. Sieve and sort
Staphylinidae	<i>Phloeonomus punctipennis</i>	1	<i>Quercus petraea</i>	N/A	40.2	Laetiporus sulphureus on fallen bough	T8. Sieve and sort
Staphylinidae	<i>Quedius maurus</i>	1	<i>Quercus petraea</i>	165	N/A	Hollow trunk	4-bottle trap
Staphylinidae	<i>Quedius xanthopus</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Wood mould	T8. Sieve and sort
Staphylinidae	<i>Quedius xanthopus</i>	1	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Staphylinidae	<i>Scaphisoma agaricinum</i>	2	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T6. Beating
Staphylinidae	<i>Scaphisoma agaricinum</i>	1	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Staphylinidae	<i>Scaphisoma boleti</i>	1	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Staphylinidae	<i>Sepedophilus littoreus</i>	1	N/A	N/A	N/A	Open oak woodland	T5. Sweeping
Staphylinidae	<i>Xylostiba bosnica</i>	1	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T6. Beating
Tenebrionidae	<i>Eledona agricola</i>	2	<i>Quercus petraea</i>	114	N/A	Laetiporus sulphureus	T8. Sieve and sort
Tenebrionidae	<i>Eledona agricola</i>	1	<i>Quercus petraea</i>	N/A	40.2	Laetiporus sulphureus on fallen bough	T8. Sieve and sort

Family	Taxon	Count	Tree species	Tree DBH	DBH if not on trunk	Description of capture location	Method
Tenebrionidae	<i>Nalassus laevioctostriatus</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk interior with white-rotten wood mould	4-bottle trap
Tenebrionidae	<i>Nalassus laevioctostriatus</i>	1	<i>Quercus petraea</i>	N/A	87.8	Red-rotten wood in fallen trunk	4-bottle trap
Tenebrionidae	<i>Pseudocistela ceramoides</i>	2	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Tetratomidae	<i>Tetratoma fungorum</i>	4	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T6. Beating
Zopheridae	<i>Bitoma crenata</i>	1	<i>Fagus sylvatica</i>	164	50.1	Delaminating bark on branch	Active searching
Zopheridae	<i>Bitoma crenata</i>	1	<i>Fagus sylvatica</i>	164	50.9	Delaminating bark on branch	Active searching
Zopheridae	<i>Bitoma crenata</i>	2	<i>Fagus sylvatica</i>	164	55.9	Delaminating bark on branch	Active searching
Zopheridae	<i>Bitoma crenata</i>	4	<i>Fagus sylvatica</i>	164	?	Delaminating bark on branch	Active searching
Zopheridae	<i>Pycnomerus fuliginosus</i>	1	<i>Fraxinus excelsior</i>	100.1	11	Dead branch	T6. Beating
Zopheridae	<i>Pycnomerus fuliginosus</i>	3	<i>Fraxinus excelsior</i>	102.3	12.8	Under bark of dead branch	Active searching
Zopheridae	<i>Pycnomerus fuliginosus</i>	1	<i>Quercus petraea</i>	119.8	N/A	Hollow base of red-rotten trunk	4-bottle trap
Zopheridae	<i>Pycnomerus fuliginosus</i>	4	<i>Quercus petraea</i>	119.8	N/A	On bark of recently snapped oak trunk	Active searching (night)
Zopheridae	<i>Pycnomerus fuliginosus</i>	3	<i>Quercus petraea</i>	119.8	N/A	Red-rotten wood in split trunk	1-bottle trap
Zopheridae	<i>Pycnomerus fuliginosus</i>	3	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Zopheridae	<i>Pycnomerus fuliginosus</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk exterior with white-rotten wood mould	4-bottle trap
Zopheridae	<i>Pycnomerus fuliginosus</i>	3	<i>Fagus sylvatica</i>	164	50.1	Delaminating bark on branch	Active searching
Zopheridae	<i>Pycnomerus fuliginosus</i>	1	<i>Fagus sylvatica</i>	164	?	Delaminating bark on branch	Active searching
Zopheridae	<i>Pycnomerus fuliginosus</i>	3	<i>Fagus sylvatica</i>	164	46.1	Delaminating bark on branch	Active searching (night)
Zopheridae	<i>Pycnomerus fuliginosus</i>	3	<i>Fagus sylvatica</i>	164	43.5	Delaminating bark on branch	T6. Beating
Zopheridae	<i>Pycnomerus fuliginosus</i>	1	<i>Fagus sylvatica</i>	164	45.9	Delaminating bark on trunk	Active searching
Zopheridae	<i>Pycnomerus fuliginosus</i>	5	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Zopheridae	<i>Synchita undata</i>	1	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T6. Beating
DIPTERA							
Anisopodidae	<i>Sylvicola cinctus</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk exterior with white-rotten wood mould	4-bottle trap
Anisopodidae	<i>Sylvicola cinctus</i>	1	<i>Acer pseudoplatanus</i>	N/A	N/A	Flowers	T5. Sweeping
Carnidae	<i>Meoneura neottiophila</i>	8	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T5. Sweeping
Clusiidae	<i>Clusia tigrina</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk exterior with white-rotten wood mould	4-bottle trap
Clusiidae	<i>Clusia tigrina</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	On bark of dead beech snag	T5. Sweeping

Family	Taxon	Count	Tree species	Tree DBH	DBH if not on trunk	Description of capture location	Method
Clusiidae	<i>Clusia tigrina</i>	1	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Clusiidae	<i>Clusiodes albimanus</i>	1	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Clusiidae	<i>Clusiodes albimanus</i>	1	<i>Acer pseudoplatanus</i>	?	?	Fallen dead tree with <i>Armillaria mellea</i>	T5. Sweeping
Clusiidae	<i>Clusiodes gentilis</i>	3	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Ditomyiidae	<i>Symmerus annulatus</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk exterior with white-rotten wood mould	4-bottle trap
Ditomyiidae	<i>Symmerus annulatus</i>	1	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Dolichopodidae	<i>Australachalcus melanotrichus</i>	1	<i>Quercus petraea</i>	119.8	N/A	Red-rotten wood in split trunk	1-bottle trap
Dolichopodidae	<i>Neurigona quadrifasciata</i>	1	<i>Quercus petraea</i>	161.1	N/A	Hollow trunk interior with red-rotten lining	1-bottle trap
Dolichopodidae	<i>Neurigona quadrifasciata</i>	1	N/A	N/A	N/A	Open oak woodland	T5. Sweeping
Dolichopodidae	<i>Sciapus platypterus</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk exterior with white-rotten wood mould	4-bottle trap
Dolichopodidae	<i>Sciapus platypterus</i>	1	<i>Quercus petraea</i>	158.3	N/A	Foliage	T5. Sweeping
Dolichopodidae	<i>Sciapus platypterus</i>	1	<i>Castanea sativa</i>	?	N/A	On bark of dead fallen bough	Active searching
Dolichopodidae	<i>Systemus leucurus</i>	1	<i>Quercus petraea</i>	N/A	87.8	Red-rotten wood in fallen trunk	4-bottle trap
Drosophilidae	<i>Drosophila confusa</i>	31	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T5. Sweeping
Drosophilidae	<i>Drosophila phalerata</i>	2	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T5. Sweeping
Drosophilidae	<i>Hirtodrosophila trivittata</i>	1	<i>Quercus petraea</i>	119.8	N/A	Red-rotten wood in split trunk	1-bottle trap
Drosophilidae	<i>Hirtodrosophila trivittata</i>	1	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Drosophilidae	<i>Hirtodrosophila trivittata</i>	22	<i>Fagus sylvatica</i>	?	?	<i>Pleurotus</i> sp.	T6. Beating
Drosophilidae	<i>Leucophenga maculata</i>	4	<i>Acer pseudoplatanus</i>	72.5	N/A	Polyporus squamosus	T5. Sweeping
Drosophilidae	<i>Leucophenga maculata</i>	2	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Drosophilidae	<i>Leucophenga maculata</i>	2	<i>Quercus petraea</i>	305.5	N/A	Sap run	T5. Sweeping
Fanniidae	<i>Fannia aequilineata</i>	1	<i>Quercus petraea</i>	119.8	N/A	Red-rotten wood in split trunk	1-bottle trap
Fanniidae	<i>Fannia aequilineata</i>	2	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk exterior with white-rotten wood mould	4-bottle trap
Fanniidae	<i>Fannia aequilineata</i>	1	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Fanniidae	<i>Fannia aequilineata</i>	1	<i>Quercus petraea</i>	N/A	87.8	Red-rotten wood in fallen trunk	4-bottle trap
Fanniidae	<i>Piezura graminicola</i>	1	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Fanniidae	<i>Piezura graminicola</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk exterior with white-rotten wood mould	4-bottle trap
Heleomyzidae	<i>Suillia bicolor</i>	1	<i>Quercus petraea</i>	119.2	N/A	Foliage	T5. Sweeping

Family	Taxon	Count	Tree species	Tree DBH	DBH if not on trunk	Description of capture location	Method
Heleomyzidae	<i>Suillia bicolor</i>	1	<i>Quercus petraea</i>	158.3	N/A	Foliage	T5. Sweeping
Hybotidae	<i>Oedalea holmgreni</i>	1	<i>Aesculus hippocastanum</i>	109.4	14.2	Dead branch	Active searching
Hybotidae	<i>Tachypeza nubila</i>	1	<i>Quercus petraea</i>	119.8	N/A	Red-rotten wood in split trunk	1-bottle trap
Hybotidae	<i>Tachypeza nubila</i>	1	<i>Castanea sativa</i>	?	N/A	On bark of dead fallen bough	Active searching
Keroplastidae	<i>Cerotelion striatum</i>	10	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Keroplastidae	<i>Cerotelion striatum</i>	1	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Keroplastidae	<i>Cerotelion striatum</i>	1	<i>Quercus petraea</i>	N/A	87.8	Red-rotten wood in fallen trunk	4-bottle trap
Keroplastidae	<i>Keroplatus testaceus</i>	1	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Keroplastidae	<i>Keroplatus testaceus</i>	1	<i>Quercus petraea</i>	305.5	N/A	On bark of tree trunk	Active searching (night)
Keroplastidae	<i>Orfelia fasciata</i>	1	<i>Fagus sylvatica</i>	?	N/A	Around dead beech stump	T5. Sweeping
Keroplastidae	<i>Platyura marginata</i>	1	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Keroplastidae	<i>Platyura marginata</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk exterior with white-rotten wood mould	4-bottle trap
Lauxaniidae	<i>Peplomyza litura</i>	1	<i>Fraxinus excelsior</i>	102.3	N/A	Foliage	T5. Sweeping
Lauxaniidae	<i>Pseudolyciella stylata</i>	1	<i>Fraxinus excelsior</i>	102.3	N/A	Foliage	T5. Sweeping
Limoniidae	<i>Achyrolimonia decemmaculata</i>	1	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Limoniidae	<i>Austrolimnophila ochracea</i>	1	<i>Fagus sylvatica</i>	164	N/A	Around root plate of fallen tree	T5. Sweeping
Limoniidae	<i>Neolimonia dumetorum</i>	1	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Limoniidae	<i>Neolimonia dumetorum</i>	1	<i>Quercus petraea</i>	165	N/A	Hollow trunk	4-bottle trap
Limoniidae	<i>Rhipidia maculata</i>	1	<i>Quercus petraea</i>	119.2	N/A	Foliage	T5. Sweeping
Limoniidae	<i>Rhipidia maculata</i>	1	<i>Fagus sylvatica</i>	164	N/A	Around root plate of fallen tree	T5. Sweeping
Limoniidae	<i>Rhipidia maculata</i>	1	<i>Quercus petraea</i>	201	N/A	Foliage	T5. Sweeping
Lonchaeidae	<i>Lonchaea mallochi</i>	1	<i>Aesculus hippocastanum</i>	109.4	14.2	Dead branch	Active searching
Lonchaeidae	<i>Lonchaea mallochi</i>	1	N/A	N/A	N/A	Open oak woodland	T5. Sweeping
Lonchaeidae	<i>Lonchaea sylvatica</i>	2	<i>Fagus sylvatica</i>	164	51.4	Delaminating bark on branch	Active searching
Lonchaeidae	<i>Lonchaea sylvatica</i>	1	<i>Fagus sylvatica</i>	164	51.3	Delaminating bark on branch	T6. Beating
Muscidae	<i>Phaonia pallida</i>	1	<i>Quercus petraea</i>	119.8	N/A	Hollow base of red-rotten trunk	4-bottle trap
Muscidae	<i>Phaonia pallida</i>	1	<i>Quercus petraea</i>	119.8	N/A	Red-rotten wood in split trunk	1-bottle trap
Muscidae	<i>Phaonia pallida</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk exterior with white-rotten wood mould	4-bottle trap

Family	Taxon	Count	Tree species	Tree DBH	DBH if not on trunk	Description of capture location	Method
Muscidae	<i>Phaonia pallida</i>	6	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Muscidae	<i>Phaonia palpata</i>	1	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Muscidae	<i>Phaonia palpata</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk exterior with white-rotten wood mould	4-bottle trap
Muscidae	<i>Phaonia subventa</i>	1	<i>Acer pseudoplatanus</i>	?	?	Fallen dead tree with Armillaria mellea	T5. Sweeping
Mycetophilidae	<i>Acnemio amoena</i>	1	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Mycetophilidae	<i>Acnemio amoena</i>	1	N/A	N/A	N/A	Open oak woodland	T5. Sweeping
Mycetophilidae	<i>Apolephthisa subincana</i>	1	<i>Acer pseudoplatanus</i>	N/A	N/A	Flowers	T5. Sweeping
Mycetophilidae	<i>Exechia fusca</i>	1	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Mycetophilidae	<i>Mycetophila formosa</i>	1	N/A	N/A	N/A	Open oak woodland	T5. Sweeping
Mycetophilidae	<i>Mycetophila fraterna</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk exterior with white-rotten wood mould	4-bottle trap
Mycetophilidae	<i>Mycetophila ocellus</i>	1	<i>Fagus sylvatica</i>	164	N/A	Around root plate of fallen tree	T5. Sweeping
Mycetophilidae	<i>Mycetophila ornata</i>	1	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Mycetophilidae	<i>Mycomya marginata</i>	1	N/A	N/A	N/A	Open oak woodland	T5. Sweeping
Mycetophilidae	<i>Saigusaia flaviventris</i>	3	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Mycetophilidae	<i>Saigusaia flaviventris</i>	2	N/A	N/A	N/A	Open oak woodland	T5. Sweeping
Mycetophilidae	<i>Tamania fenestralis</i>	1	<i>Quercus petraea</i>	119.8	N/A	Hollow base of red-rotten trunk	4-bottle trap
Mycetophilidae	<i>Tetragoneura sylvatica</i>	1	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Mycetophilidae	<i>Tetragoneura sylvatica</i>	4	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk exterior with white-rotten wood mould	4-bottle trap
Mycetophilidae	<i>Tetragoneura sylvatica</i>	2	<i>Quercus petraea</i>	N/A	N/A	Foliage	T5. Sweeping
Psilidae	<i>Chyliza leptogaster</i>	1	<i>Quercus petraea</i>	305.5	N/A	Foliage	T5. Sweeping
Psychodidae	<i>Trichomyia urbica</i>	4	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Rhinophoridae	<i>Paykullia maculata</i>	1	<i>Quercus petraea</i>	165	N/A	Hollow trunk	4-bottle trap
Scatopsidae	<i>Ectactia clavipes</i>	1	<i>Quercus petraea</i>	161.1	N/A	Hollow trunk interior with red-rotten lining	1-bottle trap
Scatopsidae	<i>Scatopse notata</i>	1	<i>Quercus petraea</i>	119.8	N/A	Hollow base of red-rotten trunk	4-bottle trap
Sciomyzidae	<i>Pherbellia annulipes</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk exterior with white-rotten wood mould	4-bottle trap
Stratiomyidae	<i>Pachygaster leachii</i>	1	<i>Acer pseudoplatanus</i>	73.3	N/A	Delaminating bark on trunk	Active searching
Stratiomyidae	<i>Pachygaster leachii</i>	1	<i>Fraxinus excelsior</i>	102.3	N/A	Foliage	T5. Sweeping
Syrphidae	<i>Brachyopa insensilis</i>	1	<i>Quercus petraea</i>	305.5	N/A	Sap run	T5. Sweeping

Family	Taxon	Count	Tree species	Tree DBH	DBH if not on trunk	Description of capture location	Method
Syrphidae	<i>Brachypalpoides lentus</i>	1	<i>Quercus petraea</i>	305.5	N/A	Sap run	T5. Sweeping
Syrphidae	<i>Brachypalpus laphriformis</i>	2	<i>Quercus petraea</i>	305.5	N/A	Dead bough	T5. Sweeping
Syrphidae	<i>Brachypalpus laphriformis</i>	1	<i>Quercus petraea</i>	305.5	N/A	Sap run	T5. Sweeping
Syrphidae	<i>Criorhina berberina</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Hollow trunk exterior with white-rotten wood mould	4-bottle trap
Syrphidae	<i>Ferdinandea cuprea</i>	3	<i>Quercus petraea</i>	305.5	N/A	Sap run	T5. Sweeping
Syrphidae	<i>Xylota segnis</i>	1	<i>Fagus sylvatica</i>	?	N/A	Around dead beech stump	Active searching
Syrphidae	<i>Xylota sylvarum</i>	1	<i>Fagus sylvatica</i>	164	N/A	Around root plate of fallen tree	T5. Sweeping
Tipulidae	<i>Dictenidia bimaculata</i>	1	<i>Quercus petraea</i>	N/A	87.8	Red-rotten wood	Active searching
Tipulidae	<i>Tipula irrorata</i>	1	<i>Quercus petraea</i>	N/A	87.8	Red-rotten wood in fallen trunk	4-bottle trap
HEMIPTERA							
Anthocoridae	<i>Xylocoris cursitans</i>	1	<i>Fagus sylvatica</i>	126	N/A	Ganoderma australe	T8. Sieve and sort
Anthocoridae	<i>Xylocoris cursitans</i>	1	<i>Fagus sylvatica</i>	164	?	Delaminating bark on branch	Active searching
HYMENOPTERA							
Crabronidae	<i>Crossocerus annulipes</i>	1	<i>Fagus sylvatica</i>	129.9	N/A	Around standing dead beech trunk	Active searching
Crabronidae	<i>Crossocerus annulipes</i>	2	<i>Fagus sylvatica</i>	164	N/A	Around root plate of fallen tree	T5. Sweeping
Crabronidae	<i>Crossocerus annulipes</i>	1	<i>Quercus petraea</i>	N/A	87.8	Red-rotten wood in fallen trunk	4-bottle trap
Crabronidae	<i>Crossocerus dimidiatus</i>	1	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Crabronidae	<i>Crossocerus megacephalus</i>	3	<i>Fagus sylvatica</i>	164	N/A	Around root plate of fallen tree	T5. Sweeping
Crabronidae	<i>Crossocerus podagricus</i>	1	<i>Quercus petraea</i>	114.1	29.3	Fallen dead tree	T5. Sweeping
Crabronidae	<i>Crossocerus podagricus</i>	5	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Crabronidae	<i>Crossocerus podagricus</i>	1	<i>Quercus petraea</i>	N/A	87.8	Red-rotten wood in fallen trunk	4-bottle trap
Crabronidae	<i>Ectemnius cavifrons</i>	1	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Crabronidae	<i>Ectemnius cephalotes</i>	1	<i>Quercus petraea</i>	119.8	N/A	Hollow base of red-rotten trunk	4-bottle trap
Crabronidae	<i>Ectemnius cephalotes</i>	1	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Crabronidae	<i>Ectemnius cephalotes</i>	8	<i>Fagus sylvatica</i>	164	N/A	White-rotten base of fallen trunk	4-bottle trap
Crabronidae	<i>Ectemnius lituratus</i>	3	<i>Fagus sylvatica</i>	164	N/A	Around root plate of fallen tree	T5. Sweeping
Crabronidae	<i>Mimumesa dahlbomi</i>	4	<i>Quercus petraea</i>	114.1	N/A	Fallen dead tree	T5. Sweeping
Crabronidae	<i>Pemphredon lugubris</i>	4	<i>Fagus sylvatica</i>	164	N/A	Around root plate of fallen tree	T5. Sweeping

Family	Taxon	Count	Tree species	Tree DBH	DBH if not on trunk	Description of capture location	Method
Vespidae	<i>Vespa crabro</i>	1	<i>Castanea sativa</i>	98.7	N/A	Newly-split trunk with red-rotten heartwood	4-bottle trap
Vespidae	<i>Vespa crabro</i>	1	<i>Quercus petraea</i>	119.8	N/A	Hollow base of red-rotten trunk	4-bottle trap
Vespidae	<i>Vespa crabro</i>	1	<i>Quercus petraea</i>	119.8	N/A	Red-rotten wood in split trunk	1-bottle trap
LEPIDOPTERA							
Cossidae	<i>Zeuzera pyrina</i>	1	N/A	N/A	N/A	N/A	125W MV Light Trap
Oecophoridae	<i>Esperia sulphurella</i>	6	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap
Tineidae	<i>Nemapogon cloacella</i>	1	<i>Fagus sylvatica</i>	126	N/A	White-rotten wood mould on fallen trunk	4-bottle trap

Appendix 5 – Saprotrophic fungi records

Table A5.1. Saprotrophic fungi records in Alfoxton Park in 2022.

Species	Host	Substrate
<i>Armillaria mellea</i>	<i>Quercus petraea</i>	Live roots (parasite)
<i>Auricularia auricula-judae</i>	<i>Acer pseudoplatanus</i>	Dead aerial branches
<i>Crepidotus applanatus</i>	<i>Fraxinus excelsior</i>	Dead fallen twig
<i>Daldinia concentrica</i>	<i>Fraxinus excelsior</i>	Dead fallen and aerial branches
<i>Exidia nucleata</i>	<i>Acer pseudoplatanus</i>	Dead fallen branch
<i>Fistulina hepatica</i>	<i>Quercus petraea</i>	Live trunk
<i>Ganoderma australe</i>	<i>Quercus petraea</i>	Live trunk
<i>Ganoderma australe</i>	<i>Fagus sylvatica</i>	Live trunk, dead trunk
<i>Ganoderma australe</i>	<i>Corylus avellana</i>	Live trunk
<i>Gymnopus fusipes</i>	<i>Quercus petraea</i>	Live roots (parasite)
<i>Hypholoma fasciculare</i>	<i>Quercus petraea</i>	Fallen dead trunk
<i>Hypoxylon fragiforme</i>	<i>Fagus sylvatica</i>	Dead fallen trunk and branches
<i>Laetiporus sulphureus</i>	<i>Quercus petraea</i>	Dead fallen branch, live trunk
<i>Laetiporus sulphureus</i>	<i>Acer pseudoplatanus</i>	Live trunk
<i>Mycena haematopus</i>	<i>Corylus avellana</i>	Dead stump
<i>Mycena pseudocorticola</i>	<i>Acer pseudoplatanus</i>	Live mossy trunk
<i>Mycena speirea</i>	<i>Quercus petraea</i>	Live trunk on bark
<i>Peziza micropus</i>	<i>Fagus sylvatica</i>	Dead wood in root plate
<i>Phlebiella sulphurea</i>	<i>Fagus sylvatica</i>	Dead well-rotted trunk
<i>Pluteus aurantiorugosus</i>	<i>Fagus sylvatica</i>	Dead wood in root plate
<i>Pluteus cervinus</i>	<i>Fagus sylvatica</i>	Dead fallen branch
<i>Pluteus salicinus</i>	<i>Fagus sylvatica</i>	Dead well-rotted trunk
<i>Pleurotus ostreatus</i>	<i>Fagus sylvatica</i>	Dead fallen trunk and branches

Species	Host	Substrate
<i>Polyporus squamous</i>	<i>Acer pseudoplatanus</i>	Dead standing and fallen trunk
<i>Psathyrella microrrhiza</i>	Broadleaved tree	Dead twig (partly buried)
<i>Schizophyllum commune</i>	<i>Fagus sylvatica</i>	Dead branch
<i>Skeletocutis nivea</i>	<i>Fraxinus excelsior</i>	Dead fallen twig
<i>Skeletocutis nivea</i>	<i>Corylus avellana</i>	Dead fallen twig
<i>Stereum gausapatum</i>	<i>Quercus petraea</i>	Dead attached branch
<i>Stereum hirsutum</i>	<i>Fagus sylvatica</i>	Dead stump and branches
<i>Trametes versicolor</i>	<i>Fagus sylvatica</i>	Dead fallen trunk
<i>Tremella mesenterica</i>	<i>Fraxinus excelsior</i>	Dead aerial branch (parasite)

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