Bernwood Invertebrate Surveys 2021

Saproxylic and Hymenoptera focused surveys in Ham Home-cum-Hamgreen Woods SSSI and Grendon and Doddershall Woods SSSI, Buckinghamshire.

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Foreword

Natural England has been working on amending the SSSI designations at Bernwood, Buckinghamshire. Bernwood is a largely agricultural landscape of woodlands, pastures and ancient hedgerows situated between Bicester and Aylesbury in north Buckinghamshire. Natural England are looking to expand the designation to protect Bechstein's bat maternity colonies present in the area, but also notify for woodland and invertebrate interest features. As part of this work Natural England required further data on hymenoptera and saproxylic species at key sites in the area.

Natural England commission a range of reports from external contractors to provide evidence and advice to assist us in delivering our duties. The views in this report are those of the authors and do not necessarily represent those of Natural England.

Executive summary

Surveys in 2021 produced 217 taxa (including 9 with conservation status) at Grendon and Doddershall Woods SSSI, and 226 taxa (including 8 with conservation status) at Ham Home-cum-Hamgreen Woods SSSI. The list includes a number of species new to the SSSI lists, and some that are new for Buckinghamshire.

The previous surveys in 2017–2018 (Boardman, 2019) for these two sites took place earlier in the year and focused on a somewhat different range of invertebrate taxa. However, the habitat associations and species assemblages recorded in the earlier survey and the current survey have many similarities, which suggests that both surveys were robust in sampling the habitats and species present.

At Grendon and Doddershall Woods, Pantheon analysis reported Favourable condition for the scrub edge Species Assemblage Types (SAT) in 2021; it is likely that if the 2021 species lists were combined with the 2017–2018 lists the flower rich resource SAT would also reach Favourable condition, and possible that the bark and sapwood decay SAT would also do so.

At Ham Home-cum-Hamgreen Woods, Pantheon analysis reported Favourable condition for the scrub edge SAT and the bark and sapwood decay SAT in 2021 (the latter was also Favourable in the 2017–2-18 survey); it is possible that the heartwood decay SAT would also be reported as favourable if the lists from the two surveys were combined.

If the species assemblages for both sites in 2021 are combined, Favourable condition thresholds are reached for three SATs: bark and sapwood decay, scrub edge, and flower rich resource. This is the same result as was reported for all seven Bernwood woodlands combined in the 2017–2018 surveys and provides further evidence for the importance of the woodland SSSIs for supporting the wide range of species associated with these habitat features.

Both SSSIs were assessed by the author as containing a valuable range of habitats for invertebrates, with a mix of mature woodland and good edge structure along the rides and clearings.

At Grendon and Doddershall Woods there is plenty of dead wood resource high up in the standing trees, but relatively little at ground level. It is likely that this contributed to the smaller range of saproxylic species recorded here. The rides are flower-rich and supported some scarce bees, as well as the butterflies for which the wood is well known. They would benefit from having a more varied edge structure, with scallops and more of a gradation from open ride through scrub to mature woodland. But the site is supporting a valuable range of species and many of them were seen in large numbers.

At Ham Home-cum-Hamgreen Woods the active woodland management in parts of the site made it easier to find a range of saproxylic species, some of which were associated with stacks of felled timber at the ride sides. The area in the centre of the site that is currently not designated as SSSI has recently had extensive management to remove conifers and provides a more open structure with plenty of dead wood and some standing trees now growing in more open conditions. This adds to the range of habitats available to support invertebrate populations. Three species with conservation status were found in the non-SSSI area, and the author would recommend including this area within the SSSI designation if the boundaries are reviewed.

Contents

1. Introduction

Natural England are reviewing the SSSI designations in the Bernwood complex, Buckinghamshire. Bernwood is a largely agricultural landscape of woodlands, pastures and ancient hedgerows situated between Bicester and Aylesbury in north Buckinghamshire. The designation may be expanded to protect Bechstein's bat maternity colonies present in the area, but also to notify for woodland and invertebrate interest features. As part of this work NE require further data on Hymenoptera and saproxylic species at key sites in the area.

1.1 Survey aims

Natural England commissioned invertebrate survey work at Ham Home cum Hamgreen Woods SSSI (including an area that is currently outside the SSSI boundary) and Grendon and Doddershall Woods SSSI in summer 2021. The work was to provide an assessment of the aculeate Hymenoptera interest of flower-rich ride edge habitat and similar habitat features, plus saproxylic invertebrates associated with deadwood in woodland areas.

The outputs required are a list of species for each site (suitable for further analysis using Pantheon), an assessment of current habitat suitability for the two groups based on the findings, and a brief assessment of the relative importance of the sites for the two groups, highlighting particularly notable species found. Outputs have been provided in the form of this brief report setting out the survey methodology, survey results and summary in Word format, plus a full list of species in Excel spreadsheet format.

2. Sampling methods

The two SSSI sites were visited in 2021 in July (both sites), August (one site) and September (both sites). Sampling was carried out in fairly good weather on each visit (warm and dry), but with less sunshine than would have been ideal. The lack of sunshine in July 2021 is likely to have reduced the number of aculeate Hymenoptera species recorded (in the author's experience numbers of aculeates were generally low in summer 2021).

Species were recorded using a mixture of spot observations, sweep-netting and beating, plus direct searching of saproxylic habitats such as fallen/stacked tree trunks, rot-holes in standing trees, and wood with fungal fruiting bodies evident (such as bracket fungi). See Table 1, Table 2, Map 1 and Map 2 for the locations sampled.

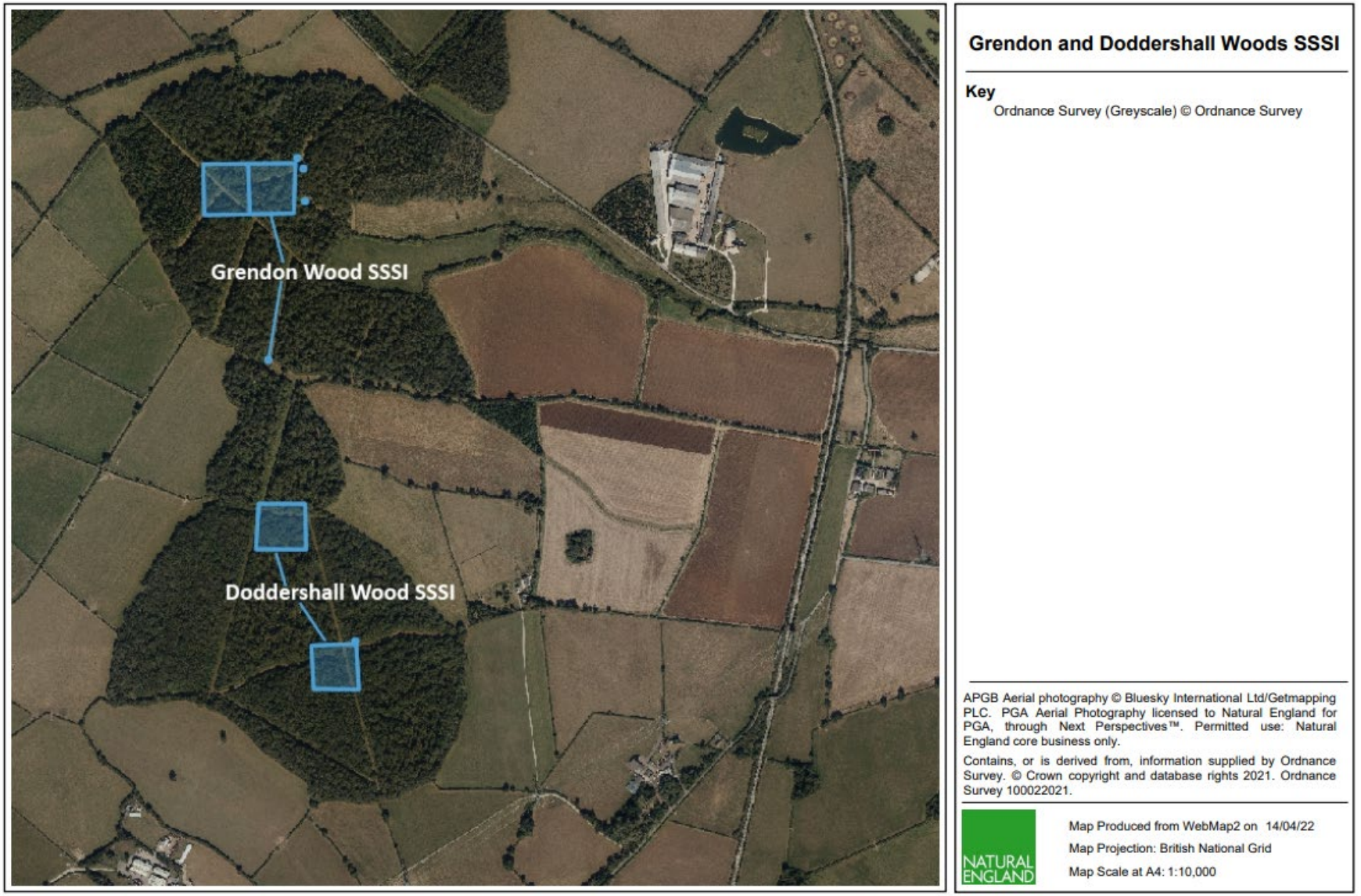
Distinctive species were identified in the field, with specimens being retained for microscopic examination in all other cases, and dissections carried out for the critical species. Voucher specimens have been retained by the author for many of the species, including the critical ones.

Table 1: Sites sampled

SSSI Name	Dates sampled	Recording locations	Grid reference
Ham Home cum Hamgreen Woods SSSI	8th July and 16th September 2021	Ham Home Wood	SP693191
		Ham Home Wood edge	SP695189
		Hamgreen Wood	SP697190, SP699191
		Oxford Lane	SP698189, SP700191
Non-SSSI	8th July and 16th September 2021	Hamgreen non-SSSI	SP696188, SP696189
		Hamgreen non-SSSI: log stack	SP69551872
		Hamgreen non-SSSI: south edge	SP69491877
Grendon and Doddershall Woods SSSI	15th July, 15th August and 18th September 2021	Doddershall Wood	SP699206, SP700203, SP70092039
		Grendon Wood	SP698213, SP699213, SP69922099, SP69982142, SP70012139, SP70022131

Table 2: Summary of weather conditions

SSSI Name	Dates visited	Weather summary
Ham Home cum Hamgreen Woods SSSI/non-SSSI	8th July 2021	Cloudy, sunny intervals, 18–22 °C, light wind
	16th September 2021	Mostly sunny, 17–22 °C, light wind
Grendon and Doddershall Woods SSSI	15th July 2021	Cloudy, sunny intervals, 18–22 °C, moderate wind
	15th August 2021	Cloudy, sunny intervals, 17–21 °C, moderate wind
	18th September 2021	Mostly sunny, 18–24 °C, moderate wind



Map 1: Grendon and Doddershall Woods SSSI – sites sampled

Map 2: Ham Home cum Hamgreen Woods SSSI – sites sampled

3. Results

3.1 Summary of species recorded

The sampling at Grendon and Doddershall Woods SSSI produced 267 records of 217 taxa (Table 3), and at Ham Home cum Hamgreen Woods SSSI 291 records of 226 taxa (Table 4). A summary species list is provided in Appendix 1, and full record details have been added to the Natural England surveys dataset on iRecord from where they are accessible to relevant national recording schemes, local environmental records centres and are shared with the NBN Atlas. Record details have also been provided to Natural England as a spreadsheet.

Table 3: Species groups recorded at Grendon and Doddershall Woods SSSI

Order	Taxa	Records
Diptera (flies)	79	101
Coleoptera (beetles)	48	56
Hemiptera (true bugs)	33	40
Lepidoptera (butterflies, moths)	30	36
Hymenoptera (ants, bees, wasps)	17	21
Neuroptera (lacewings)	3	3
Isopoda (woodlice)	2	2
Orthoptera (grasshoppers, crickets)	2	3
Dermaptera (earwigs)	1	2
Polyxenida (millipedes)	1	2
Pulmonata (snails)	1	1
Totals	**217**	**267**

Table 4: Species groups recorded at Ham Home cum Hamgreen Woods SSSI

Order	Taxa	Records
Diptera (flies)	82	116
Coleoptera (beetles)	61	73
Hemiptera (true bugs)	30	37
Lepidoptera (butterflies, moths)	26	31
Hymenoptera (ants, bees, wasps)	17	24
Orthoptera (grasshoppers, crickets)	4	4
Neuroptera (lacewings)	2	2
Araneae (spiders)	1	1
Dermaptera (earwigs)	1	1
Polyxenida (millipedes)	1	1
Psocoptera (barkflies)	1	1
Totals	**226**	**291**

Across the two sites, 352 species were recorded in total, of which 92 were found at both SSSIs, 125 were found only at Grendon and Doddershall, and 134 only at Ham Home/Hamgreen.

3.2 Rare and scarce species

Species with a conservation status are described in 3.2.1 to 3.2.13, and summarised in Table 5 and Table 6. Pantheon (Webb, et al., 2018) is a database tool to analyse invertebrate sample data, linking species lists to the habitats and resources with which they are associated.

Statuses are based on the Pantheon database (Webb, et al., 2018). Section 41 “research only” species are not included here.

Table 5: Species with conservation status at Grendon and Doddershall Woods SSSI - Statuses in square brackets are regarded as out of date in the Pantheon database, as these species have become more widespread in recent years.

Order	Family	Taxon	Status
Coleoptera	Buprestidae	*Trachys minuta*	Nationally Rare; Near Threatened
Diptera	Dolichopodidae	*Dolichopus virgultorum*	Nationally Scarce
Diptera	Lauxaniidae	*Homoneura interstincta*	[a recently described species that is regarded as rare in Gibbs 2004 but was not assessed in Falk *et al*. 2016]
Diptera	Stratiomyidae	*Eupachygaster tarsalis*	Nationally Scarce
Hymenoptera	Apidae	*Eucera longicornis*	Section 41 Priority Species; [Nationally Scarce/Na]*
Hymenoptera	Formicidae	*Lasius brunneus*	[Nationally Scarce/Na]*
Hymenoptera	Halictidae	*Lasioglossum pauxillum*	[Nationally Scarce/Na]*
Hymenoptera	Halictidae	*Lasioglossum puncticolle*	Nationally Scarce/Nb
Lepidoptera	Nymphalidae	*Limenitis camilla*	Section 41 Priority Species; Vulnerable

Table 6: Species with conservation status at Ham Home cum Hamgreen Woods SSSI - Statuses in square brackets are regarded as out of date in the Pantheon database, as these species have become more widespread in recent years.

Order	Family	Taxon	Status
Coleoptera	Anthribidae	*Platyrhinus resinosus*	[Nationally Scarce/Nb]*
Coleoptera	Mordellidae	*Mordellistena humeralis*	Nationally Scarce
Coleoptera	Mordellidae	*Mordellistena variegata*	Nationally Scarce
Coleoptera	Silvanidae	*Uleiota planatus*	[Nationally Scarce/Na]*
Diptera	Dolichopodidae	*Dolichopus virgultorum*	Nationally Scarce
Diptera	Syrphidae	*Mallota cimbiciformis*	Nationally Scarce
Hymenoptera	Formicidae	*Lasius brunneus*	[Nationally Scarce/Na]*
Hymenoptera	Tiphiidae	*Tiphia minuta*	[Nationally Scarce/Nb]*

3.2.1 *Trachys minuta* (Coleoptera: Buprestidae, a jewel beetle)

Categorised as Nationally Rare and Near Threatened. The majority of UK records come from enclosed and ungrazed ancient semi-natural woodlands which have a history of management as coppice or coppice-with-standards. Larvae are leaf-miners in *Salix* spp and *Carpinus betulus* in Britain (Alexander, 2014). At Grendon Wood one adult was beaten from broadleaved *Salix* scrub at the ride edge.

3.2.2 *Dolichopus virgultorum* (Diptera: Dolichopodidae, a fly)

Categorised as Nationally Scarce. UK records are scattered in southern England and Wales, from damp woodlands and coastal sites. Larvae may be semiaquatic predators (Falk & Crossley, 2005). Two individuals were swept at each of Grendon and Doddershall Woods, with a further individual from the non-SSSI part of Ham Green. It seems likely that the fly is using damp habitats throughout these woodlands.

3.2.3 *Homoneura interstincta* (Diptera: Lauxaniidae, a fly)

No current status, but this fly was regarded by (Gibbs, 2004) as being rarer than the similar *H. mediospinosa*, which is listed as Nationally Scarce in (Falk, et al., 2016). Records are scattered in southern England and are from damp woodlands and wetlands. One individual from Grendon Wood.

3.2.4 *Eupachygaster tarsalis* (Diptera: Stratiomyidae, Scarce Black soldierfly)

Categorised as Nationally Scarce, with rather few scattered records in south-east England. Its larvae develop in rot-holes in deciduous trees, especially Oak (*Quercus*). (Drake, 2017) (Harvey, 2018) At Grendon Wood an adult was swept, and a larva was found in a small rot-hole at about 2 metres off the ground in a fairly small *Quercus robur* trunk, the rot-hole having developed where a small branch had fallen or been cut from the tree. These appear to be the first records for this species in Buckinghamshire.

3.2.5 *Eucera longicornis* (Hymenoptera: Apidae, Long-horned Bee)

Listed as a Section 41 Priority Species, and currently categorised as Nationally Scarce/Na, although its range has spread in recent years and it may no longer qualify for Na status. It remains very local in southern England and Wales, but can be numerous where it occurs. It is found in open woodlands, coastal sites and sometimes on heathlands. Females collect pollen from a range of flowers in the pea family, and nests are in burrows in sparsely vegetated soil. A range of other flowers are visited for nectar. Find further information about Long-horned Bees at the following website BWARS website.

One female was swept from ride side flowers in Grendon Wood. There have been several records from the Bernwood area in recent years.

3.2.6 *Lasius brunneus* (Hymenoptera: Formicidae, Brown Ant)

Currently categorised as Nationally Scarce/Na, although its range has spread in recent years and no longer qualifies for Na status. It is now widespread in south-east England and stretches into Wales. Associated with woodlands, and with nests usually within mature but still living trees (they have also been found in stumps, hedgerows and timber framed buildings). Find further information about Brown Ants at the following website BWARS website. Workers of this species were numerous in Grendon Wood and also seen in the non-SSSI part of Ham Green. The ant is likely to be widespread in these woods.

3.2.7 *Lasioglossum pauxillum* (Hymenoptera: Halictidae, Lobe-spurred Furrow Bee)

Currently categorised as Nationally Scarce/Na, although its range has spread in recent years and no longer qualifies for Na status. It is now widespread in south-east England

and stretches into Wales. This bee visits a wide range of flowers for pollen and nectar, and nests in small to large aggregations, mainly on level, sparsely vegetated soil. Find further information on Lobe-spurred Furrow Bees at the following website BWARS website. One individual was swept in Grendon Wood.

3.2.8 *Lasioglossum puncticolle* (Hymenoptera: Halictidae, Ridge-cheeked Furrow Bee)

Categorised as Nationally Scarce/Nb, and largely confined to south-east England. Often found in open, broad-leaved woodland but also associated with coastal habitats. Wild Carrot seems to be the main source for pollen, although other plants have been recorded on the continent, and a wider range of flowers is visited for nectar. Find further information on Ridge-cheeked Furrow Bees at the following website BWARS website. Single individuals were swept from the rides in Grendon Wood and in Doddershall Wood.

3.2.9 *Limenitis camilla* (Lepidoptera: Nymphalidae, White Admiral)

Listed as a Section 41 Priority Species, and categorised as Vulnerable on the Red List. Larvae feed on honeysuckle (*Lonicera periclymenum*) growing in partially shaded positions on the edges of woodland. Adults require plentiful flowers for nectar, and are especially frequent visitors to Bramble (*Rubus*). (Eeles, 2019) Well-known as a resident of Grendon Wood, with many historical records.

3.2.10 *Platyrhinus resinosus* (Coleoptera: Anthribidae, Cramp-ball Fungus Weevil)

Categorised as Nationally Scarce/Nb, but now known to be widespread in England and local in Wales, and probably no longer qualifies as scarce. Larvae develop in Cramp Ball fungus *Daldinia concentrica*, usually where it is growing on old ash trees or ash timber. Found on stacked wood on the non-SSSI part of Ham Green.

3.2.11 *Mordellistena humeralis* (Coleoptera: Mordellidae, a tumbling flower beetle)

Categorised as Nationally Scarce (Alexander, 2014). Larvae are in decaying wood including Oak, and adults are often seen at flowers, especially Apiaceae. Local and scarce in central and south-east England. (Duff, 2020) One individual found in Ham Home Wood.

3.2.12 *Mordellistena variegata* (Coleoptera: Mordellidae, a tumbling flower beetle)

Categorised as Nationally Scarce (Alexander, 2014). Similar in appearance and habits to the previous species. Very local and scarce in southern England. (Duff, 2020) Two found, in Ham Home Wood and at the wood edge in Oxford Lane.

3.2.13 *Uleiota planatus* (Coleoptera: Silvanidae, a beetle)

Categorised as Nationally Scarce/Na, but has increased in recent years and probably no longer warrants this status. Likely to have been a 19th century introduction to Britain, now widespread in England and spreading into Wales. Found under bark of dead trees. (Duff, 2020) Four found under bark of felled trunks stacked at the ride edges in the non-SSSI part of Ham Green Woods.

3.2.14 *Mallota cimbiciformis* (Diptera: Syrphidae, a hoverfly)

Categorised as Nationally Scarce. A woodland and parkland species that is associated with over-mature trees with water-filled rot holes. The larvae are filter-feeders that have been found in rot holes in Beech *Fagus* and Horse Chestnut *Aesculus*. (Ball & Morris, 2014) One found among mature trees in Hamgreen Wood.

3.2.13 *Tiphia minuta* (Hymenoptera: Tiphiidae, a solitary wasp)

Categorised as Nationally Scarce/Nb, but is widely scattered in the southern half of Britain, and is likely to be more widespread than records indicate. Habitats include open woodland, and also heathland, downland and other types of grassland, and coastal dunes. The wasp's larvae are parasitoids of soil-dwelling dung beetle larvae. Adult wasps visit a range of Apiaceae flowers. Find further information on Solitary wasps at the following website BWARS website. One found in Hamgreen Wood.

3.3 Pantheon analysis

3.3.1 Specific Assemblage Types

These are assemblages characterised by ecologically restricted species, as defined within Pantheon. Pantheon provides an assessment of the condition of each SAT, based on whether the total species assigned to the SAT meet a predefined threshold.

The SAT results for Grendon and Doddershall are shown in Table 7, with the results from the 2017-2018 surveys (Boardman, 2019) added for comparison. Favourable condition is highlighted in green and was reported for the scrub edge SAT in 2021. It is likely that if the species lists were combined for the two surveys, the flower rich resource SAT would also reach Favourable condition, and possible that the bark and sapwood decay SAT would also do so.

Table 7: SATs and reported condition at Grendon and Doddershall Woods, rows in green mark favourable condition. Some cells are intentionally left blank.

SAT	Code	No. of species	SQI	Species with conservation status	Reported condition based on 2021 surveys	Reported condition based on 2017-18 surveys
Heartwood decay	A211	2	250	1	Unfavourable (2 of 6 species)	Unfavourable (2 of 6 species)
Bark and sapwood decay	A212	14	146	1	Unfavourable (14 of 19 species)	Unfavourable (14 of 19 spp.)
Fungal fruiting bodies	A213	1	100		Unfavourable (1 of 7 species)	not reported
Epiphyte fauna	A215	1	100		Unfavourable (1 of 3 species)	not reported
Scrub edge	F001	12	125		Favourable (threshold is 11 species)	Unfavourable (8 of 11 species)
Rich flower resource	F002	12	150	3	Unfavourable (12 of 15 species)	Unfavourable (4 of 15 species)
Open short sward	F112	1	100		Unfavourable (1 of 13 species)	not reported
Scrub-heath and moorland	F003	0			not found	Unfavourable (3 of 9 species)
Bare sand and chalk	F111	0			not found	Unfavourable (2 species)

The SAT results for Ham Home and Hamgreen are shown in Table 8, also with the results from the 2017-2018 surveys (Boardman, 2019) added for comparison. Favourable

condition was reported for the bark and sapwood decay SAT in both 2017-2018 and 2021, and the scrub edge SAT in 2021. It is possible that the heartwood decay SAT would also be reported as favourable if the lists from the two surveys were combined.

Table 8: SATs and reported condition at Ham Home and Hamgreen Woods, rows in green mark favourable condition. Some cells are intentionally left blank.

SAT	Code	No. of species	SQI	Species with conservation status	Reported condition based on 2021 surveys	Reported condition based on 2017-18 surveys
Heartwood decay	A211	3	300	2	Unfavourable (3 of 6 species)	Unfavourable (4 of 6 species)
Bark and sapwood decay	A212	25	125	1	Favourable (threshold is 19 species)	Favourable (25 – threshold is 19 species)
Fungal fruiting bodies	A213	5	175	1	Unfavourable (5 of 7 species)	not reported
Epiphyte fauna	A215	2	100		Unfavourable (2 of 3 species)	not reported
Scrub edge	F001	13	123		Favourable (threshold is 11 species)	Unfavourable (5 of 11 species)
Rich flower resource	F002	11	100		Unfavourable (11 of 15 species)	Unfavourable (4 of 15 species)

Table.9 shows the data for Grendon/Doddershall and Hamgreen/Ham Home combined. Favourable condition thresholds are reached for three SATs: bark and sapwood decay, scrub edge, and flower rich resource. This is the same result as was reported for all seven woodlands combined in Boardman 2019 (see table 10 in that report).

Table 9: SATs and reported condition for Grendon/Doddershall combined with Ham Home/Hamgreen, rows in green mark favourable condition. Some cells are intentionally left blank.

SAT	Code	No. of species	SQI	Species with conservation status	Reported condition based on 2021 surveys
Heartwood decay	A211	3	300	2	Unfavourable (3 of 6 species)
Bark and sapwood decay	A212	30	131	2	Favourable (threshold is 19 species)
Fungal fruiting bodies	A213	6	160	1	Unfavourable (6 of 7 species)
Epiphyte fauna	A215	2	100		Unfavourable (2 of 3 species)
Scrub edge	F001	17	118		Favourable (threshold is 11 species)
Flower rich resource	F002	18	133	3	Favourable (threshold is 15 species)
Open short sward	F112	1	100		Unfavourable (1 of 13 species)

3.4 Habitat associations

Table 10 shows the species lists combined for both SSSIs categorised by Pantheon's broad biotope, for comparison with Table 9 in Boardman 2019.

Table 10: Proportion of species in each broad biotope category

Broad biotope	No. of species	Species with conservation status
Open habitats	153 (47%)	6
Tree-associated	143 (44%)	12
Wetland	31 (9%)	1
Total	**327**	**19**

The proportion of species linked to each broad biotope is comparable to the proportions record in the previous surveys, and as stated by Boardman 2019 it would be easy to overlook the contributions made by the wetter elements of the woodland habitats. The 2021 survey did not specifically target aquatic species or streamside habitats, but even so 9% of the species found have an association with wet habitats (often as larvae).

Associations at the finer habitat level (using Pantheon's definitions of habitat) are shown in Figure 1 and Figure 2. At both SSSIs the largest proportion of species recorded are associated with the "tall sward and scrub" habitat. This habitat supports many common, generalist insect species, and it often produces the highest total in general surveys.

The other habitats supporting high proportions of the species found are a range of woodland-related habitats: arboreal, decaying wood, and shaded woodland floor. The relatively damp nature of these mid-Bucks woodlands is also shown by the species associated with acid and sedge peats, marshland, running water and wet woodland.

The range of habitats represented is similar at both SSSIs sampled, with the main difference being that Grendon and Doddershall Woods produced more "arboreal" species and fewer "decaying wood" species, with the results for these two habitats reversed at Ham Home-cum-Hamgreen Woods. To some extent this reflects the greater ease of sampling dead wood habitats at Ham Home and Hamgreen, see discussion below.

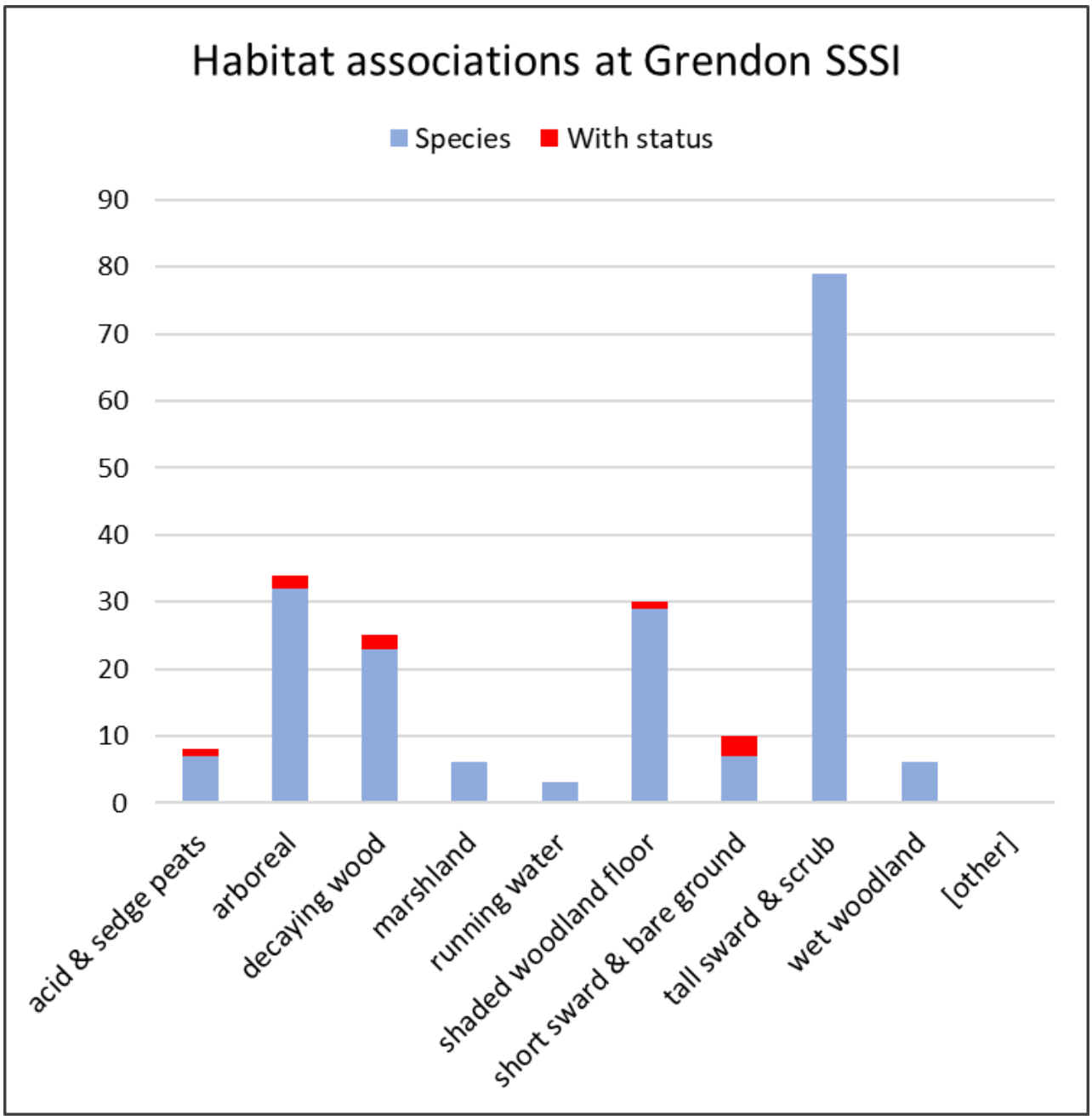


Figure 1: Habitat associations at Grendon and Doddershall Woods SSSI

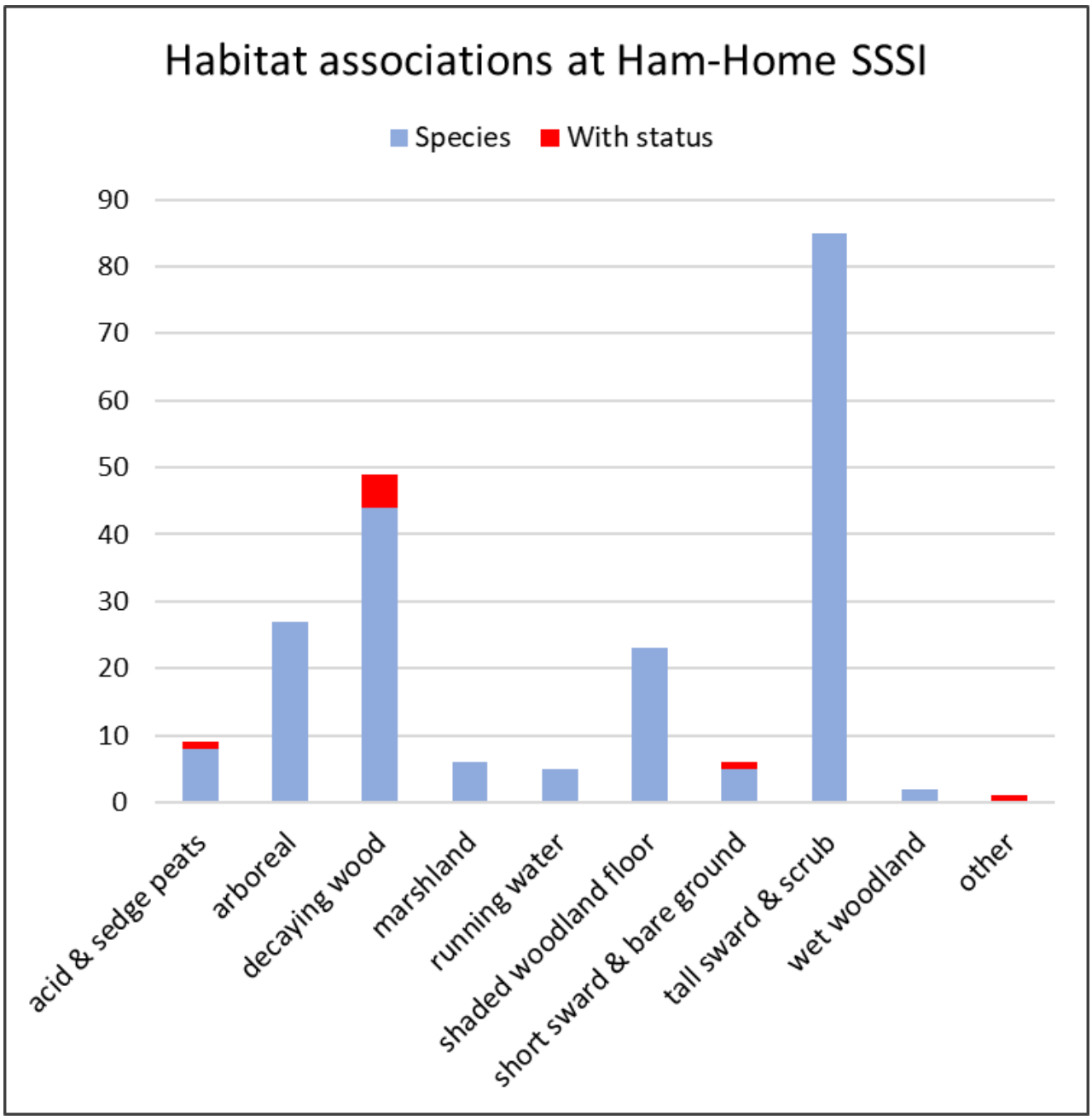


Figure 2: Habitat associations at Ham Home-cum-Hamgreen Woods SSSI

4 Discussion

The results of the 2021 surveys build on the results of the previous surveys (Boardman, 2019). The 2017–2018 surveys were carried out in the earlier parts of those years, and targeted different taxon groups to some extent, and there is not a great deal of overlap between the lists of rarer species from the two surveys. However, the habitat associations and species assemblages found are to a large degree comparable, and this suggests that the survey approaches in both time periods have sampled the woodland in a consistent way.

The current survey provided an opportunity to focus on insects associated with dead and decaying wood, with scrub edge structures, and with flowers as a pollen and nectar resource, and across the two sites it was shown that these three targeted associations produced enough specialist species to reach the threshold for Favourable condition for three related Specific Assemblage Types.

A range of species with conservation status was recorded (section 3.2), and in combination with the habitat specialist species as shown in the SATs there is good evidence that both woodland SSSIs are supporting a valuable and healthy mix of species, and making a significant contribution to conserving biodiversity in this part of Buckinghamshire. The mix of mature trees, woodland edge and scrub, and more open rides and clearings provide many niches for insects to utilise and support the different requirements that many insects have at different parts of their life-cycle. The flower-rich rides and edges are particularly welcome and will be providing resources for pollinators within the SSSI boundaries as well as those dispersing from the surrounding countryside. The damp nature of the clay soils and the streams, ponds and muddy areas within the woods provide further resources and are especially important for those species with aquatic or semi-aquatic larvae.

The woods contain plenty of saproxylic (dead wood) habitat, but have few really ancient trees, and over time it would be good to allows parts of the woodland, or even particular individual trees, to continue the life cycle into late maturity, which would add to the range of saproxylic habitats available and could support further specialist species.

4.1 Grendon and Doddershall Woods SSSI

At a very broad this woodland consists of large areas of relatively uniform high canopy woodland, with relatively wide rides cutting through the woodland blocks. Oaks predominate, with quite a lot of variety of other tree and shrub species. There is plenty of saproxylic habitat in the standing trees, but much of it is high in the canopy and therefore inaccessible to the entomologist on the ground, which partly explains why Grendon and Doddershall produced fewer saproxylic species than Ham Home/Hamgreen. The use of flight interception traps would undoubtedly add to the list of saproxylic species for this woodland.

The rides are very flowery, and despite the lack of sunny weather during the survey visits, and the relatively poor year for bees and wasps in the author's experience in 2021, a reasonable number of species was recorded, including a number of rarities. This, in combination with the well-known importance of the wood for butterflies such as Purple Emperor, White Admiral and some of the hairstreaks, suggests that the combination of flower-rich rides alongside the woodland is supporting an important fauna. The sheer number of individuals of some of the common butterflies and other insects including hoverflies and some beetles was also noticeable, and very welcome.

The structure of the woodland does have plenty of variety across the site as a whole, but there are few really old trees, and many areas are relatively uniform, with tall, straight tree trunks and a fairly closed canopy, and relatively little open space within the wood. It would be desirable to allow a more natural and varied mix of tree ages and structures over time.

Similarly, although the rides are supporting a good fauna, they are mostly straight-edged, with a relatively abrupt transition into the adjoining woodland. The addition of more scallops along the edges would add structure and shelter features that would be of benefit to many insects.

4.2 Ham Home cum Hamgreen Woods SSSI and non-SSSI

The mature woodland here has many similarities with Grendon and Doddershall, but across the site as a whole there is a bit more variation in structure in the rides and woodland edges, and the rides are less straight, with more 'porous' edges grading into scrub and woodland in many places. The active management in the non-SSSI block in the centre of the site has added to this variety. Consequently, the site produced a slightly longer species list than Grendon and Doddershall, despite being visited on two occasions as opposed to three for the latter site. Some of the saproxylic species were easier to record at Ham Home/Hamgreen, due to the presence of more felled and fallen tree trunks that were accessible for survey. The Oxford Lane track running along the east side of the woodland added another element, with species rich scrub and hedge.

The non-SSSI area in the middle of the two woodlands has had a lot of timber felled recently, and part of it is therefore much more open, with occasional standing trees. Three of the conservation status species recorded in the Ham Home/Ham Green complex were in the non-SSSI area. There is also a flower-rich woodland edge on the south side of the non-SSSI area, which is sheltered and open to the sun. The open habitats have the potential to support their own specialists over time, and the area as whole could add a pasture-woodland element to the mix of woodlands, and the author would recommend that it be included as part of the SSSI during any review of the designated boundaries.

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Appendices:

Appendix 1: Summary of species list – Some cells are left blank intentionally.

Order	Family	Taxon	Status	SAT	SSSI
Araneae	Araneidae	*Nuctenea umbratica*			Ham
Coleoptera	Anobiidae	*Anobium fulvicorne*		A212	Ham
Coleoptera	Anobiidae	*Anobium punctatum*		A212	Grendon
Coleoptera	Anthribidae	*Platyrhinus resinosus*	[Nationally Scarce/Nb]	A213	Ham
Coleoptera	Apionidae	*Cyanapion spencii*			Grendon
Coleoptera	Apionidae	*Eutrichapion ervi*			both
Coleoptera	Apionidae	*Eutrichapion viciae*			Ham
Coleoptera	Apionidae	*Holotrichapion aethiops*			Grendon
Coleoptera	Apionidae	*Oxystoma subulatum*			Grendon
Coleoptera	Apionidae	*Protapion fulvipes*			both
Coleoptera	Buprestidae	*Agrilus cyanescens*			both
Coleoptera	Buprestidae	*Trachys minuta*	Nationally Rare; Near Threatened		Grendon
Coleoptera	Byturidae	*Byturus ochraceus*		F001	Ham
Coleoptera	Cantharidae	*Malthinus seriepunctatus*		A212	Ham
Coleoptera	Cantharidae	*Malthodes minimus*		A212	Ham
Coleoptera	Cantharidae	*Rhagonycha fulva*			both
Coleoptera	Carabidae	*Calodromius spilotus*			Ham
Coleoptera	Carabidae	*Dromius quadrimaculatus*			both

Order	Family	Taxon	Status	SAT	SSSI
Coleoptera	Carabidae	*Notiophilus biguttatus*			Ham
Coleoptera	Carabidae	*Ocys harpaloides / tachysoides agg.*			Grendon
Coleoptera	Carabidae	*Paradromius linearis*			both
Coleoptera	Carabidae	*Philorhizus melanocephalus*			Ham
Coleoptera	Carabidae	*Platynus assimilis*			Grendon
Coleoptera	Carabidae	*Pterostichus madidus*			Ham
Coleoptera	Cerambycidae	*Alosterna tabacicolor*		A212	Ham
Coleoptera	Cerambycidae	*Grammoptera ruficornis*		A212	both
Coleoptera	Cerambycidae	*Pseudovadonia livida*			both
Coleoptera	Cerambycidae	*Rutpela maculata*		A212	both
Coleoptera	Cerambycidae	*Stenurella melanura*		A212	Grendon
Coleoptera	Cerylonidae	*Cerylon histeroides*		A212	Ham
Coleoptera	Chrysomelidae	*Bruchus loti*			Grendon
Coleoptera	Chrysomelidae	*Bruchus rufimanus*			Grendon
Coleoptera	Chrysomelidae	*Chaetocnema arida*			Ham
Coleoptera	Chrysomelidae	*Crepidodera aurata*			Grendon
Coleoptera	Chrysomelidae	*Crepidodera aurea*			both
Coleoptera	Chrysomelidae	*Crepidodera fulvicornis*			Grendon
Coleoptera	Chrysomelidae	*Gastrophysa viridula*			Ham
Coleoptera	Chrysomelidae	*Lochmaea caprea*			Grendon
Coleoptera	Chrysomelidae	*Longitarsus parvulus*			Ham

Order	Family	Taxon	Status	SAT	SSSI
Coleoptera	Chrysomelidae	*Phyllotreta undulata*			Ham
Coleoptera	Chrysomelidae	*Psylliodes chrysocephala*			Ham
Coleoptera	Chrysomelidae	*Pyrrhalta viburni*			Grendon
Coleoptera	Ciidae	*Cis boleti*		A213	Ham
Coleoptera	Ciidae	*Cis vestitus*		A213	Ham
Coleoptera	Ciidae	*Ennearthron cornutum*		A213	Grendon
Coleoptera	Ciidae	*Sulcacis affinis*		A213	Ham
Coleoptera	Coccinellidae	*Adalia decempunctata*			Grendon
Coleoptera	Coccinellidae	*Calvia quattuordecimguttata*			Grendon
Coleoptera	Coccinellidae	*Coccinella septempunctata*			both
Coleoptera	Coccinellidae	*Exochomus quadripustulatus*			both
Coleoptera	Coccinellidae	*Halyzia sedecimguttata*			Grendon
Coleoptera	Coccinellidae	*Harmonia axyridis*			Ham
Coleoptera	Coccinellidae	*Propylea quattuordecimpunctata*			both
Coleoptera	Coccinellidae	*Tytthaspis sedecimpunctata*			Ham
Coleoptera	Curculionidae	*Anthonomus rubi*		F001	Grendon
Coleoptera	Curculionidae	*Ceutorhynchus typhae*			Grendon
Coleoptera	Curculionidae	*Curculio glandium*			Grendon
Coleoptera	Curculionidae	*Dorytomus taeniatus*			Grendon
Coleoptera	Curculionidae	*Dryocoetes villosus*		A212	Grendon
Coleoptera	Curculionidae	*Euophryum confine*			Grendon

Order	Family	Taxon	Status	SAT	SSSI
Coleoptera	Curculionidae	*Orchestes signifer*			Ham
Coleoptera	Curculionidae	*Polydrusus pterygomalis*			Grendon
Coleoptera	Curculionidae	*Rhamphus oxyacanthae*			Grendon
Coleoptera	Curculionidae	*Sciaphilus asperatus*			Ham
Coleoptera	Curculionidae	*Sitona lineatus*			both
Coleoptera	Dermestidae	*Anthrenus fuscus*			Ham
Coleoptera	Elateridae	*Agriotes obscurus*			Ham
Coleoptera	Elateridae	*Agriotes sputator*			Grendon
Coleoptera	Latridiidae	*Cortinicara gibbosa*			Ham
Coleoptera	Malachiidae	*Axinotarsus marginalis*		A212	both
Coleoptera	Malachiidae	*Malachius bipustulatus*		A212	both
Coleoptera	Melandryidae	*Orchesia undulata*		A212	Ham
Coleoptera	Monotomidae	*Rhizophagus dispar*		A212	Ham
Coleoptera	Mordellidae	*Mordellistena humeralis*	Nationally Scarce		Ham
Coleoptera	Mordellidae	*Mordellistena variegata*	Nationally Scarce		Ham
Coleoptera	Mordellidae	*Mordellochroa abdominalis*		A212	Ham
Coleoptera	Mycetophagidae	*Eulagius filicornis*		A213	Ham
Coleoptera	Nitidulidae	*Epuraea melanocephala*			Grendon
Coleoptera	Oedemeridae	*Oedemera nobilis*			both
Coleoptera	Pyrochroidae	*Pyrochroa coccinea*		A212	Ham
Coleoptera	Rhynchitidae	*Involvulus caeruleus*			Ham

Order	Family	Taxon	Status	SAT	SSSI
Coleoptera	Scraptiidae	*Anaspis garneysi*		A212	Ham
Coleoptera	Scraptiidae	*Anaspis maculata*		A212	Ham
Coleoptera	Silphidae	*Silpha atrata*			Ham
Coleoptera	Silvanidae	*Uleiota planatus*	[Nationally Scarce/Na]	A212	Ham
Coleoptera	Staphylinidae	*Gabrius splendidulus*			both
Coleoptera	Staphylinidae	*Leptacinus pusillus*			Ham
Coleoptera	Staphylinidae	*Philonthus cognatus*			Ham
Coleoptera	Staphylinidae	*Quedius levicollis*			Ham
Coleoptera	Tenebrionidae	*Lagria hirta*			Grendon
Coleoptera	Throscidae	*Trixagus obtusus*			Grendon
Coleoptera	Zopheridae	*Bitoma crenata*		A212	Ham
Dermaptera	Forficulidae	*Forficula auricularia*			both
Diptera	Anisopodidae	*Sylvicola cinctus*			Grendon
Diptera	Anisopodidae	*Sylvicola punctatus*			Grendon
Diptera	Anthomyiidae	*Botanophila fugax*			Grendon
Diptera	Anthomyiidae	*Hylemya vagans*			Ham
Diptera	Anthomyiidae	*Hylemyza partita*			both
Diptera	Anthomyiidae	*Pegoplata aestiva*			Grendon
Diptera	Asilidae	*Choerades marginatus*		A212, F001	both
Diptera	Asilidae	*Leptogaster cylindrica*			both
Diptera	Calliphoridae	*Calliphora vomitoria*			Ham

Order	Family	Taxon	Status	SAT	SSSI
Diptera	Calliphoridae	*Melanomya nana*			both
Diptera	Calliphoridae	*Protocalliphora azurea*			Ham
Diptera	Chamaemyiidae	*Chamaemyia aridella*			Grendon
Diptera	Clusiidae	*Clusiodes albimanus*			Grendon
Diptera	Culicidae	*Culiseta annulata*			Grendon
Diptera	Dolichopodidae	*Campsicnemus curvipes*			Ham
Diptera	Dolichopodidae	*Chrysotus gramineus*			Grendon
Diptera	Dolichopodidae	*Dolichopus festivus*			both
Diptera	Dolichopodidae	*Dolichopus griseipennis*			both
Diptera	Dolichopodidae	*Dolichopus virgultorum*	Nationally Scarce		both
Diptera	Dolichopodidae	*Dolichopus wahlbergi*			both
Diptera	Dolichopodidae	*Hercostomus germanus*			Ham
Diptera	Dolichopodidae	*Medetera saxatilis*			Ham
Diptera	Dolichopodidae	*Medetera truncorum*			Ham
Diptera	Dolichopodidae	*Poecilobothrus nobilitatus*			both
Diptera	Dolichopodidae	*Scellus notatus*			Ham
Diptera	Dolichopodidae	*Sciapus longulus*			Grendon
Diptera	Dolichopodidae	*Syntormon denticulatum*			Ham
Diptera	Empididae	*Empis aestiva*			both
Diptera	Empididae	*Empis albinervis*			Ham
Diptera	Empididae	*Empis livida*			both

Order	Family	Taxon	Status	SAT	SSSI
Diptera	Empididae	*Empis lutea*			both
Diptera	Empididae	*Empis volucris*		F001	Grendon
Diptera	Ephydridae	*Hydrellia griseola*			Ham
Diptera	Ephydridae	*Hydrellia maura*			Ham
Diptera	Ephydridae	*Parydra coarctata*			Ham
Diptera	Fanniidae	*Fannia parva*			Grendon
Diptera	Fanniidae	*Fannia pauli*			Grendon
Diptera	Fanniidae	*Fannia polychaeta*			Grendon
Diptera	Hybotidae	*Bicellaria vana*			Ham
Diptera	Hybotidae	*Hybos culiciformis*			both
Diptera	Hybotidae	*Ocydromia glabricula*			Grendon
Diptera	Hybotidae	*Tachypeza nubila*			Ham
Diptera	Lauxaniidae	*Homoneura interstincta*			Grendon
Diptera	Lauxaniidae	*Meiosimyza platycephala*			Grendon
Diptera	Lauxaniidae	*Minettia fasciata*			Grendon
Diptera	Lauxaniidae	*Sapromyza sexpunctata*			Grendon
Diptera	Limoniidae	*Molophilus ochraceus*			Grendon
Diptera	Limoniidae	*Ormosia nodulosa*			Ham
Diptera	Muscidae	*Coenosia agromyzina*			Grendon
Diptera	Muscidae	*Graphomya maculata*			Grendon
Diptera	Muscidae	*Hebecnema nigricolor*			Grendon

Order	Family	Taxon	Status	SAT	SSSI
Diptera	Muscidae	*Hebecnema umbratica*			Grendon
Diptera	Muscidae	*Helina depuncta*			both
Diptera	Muscidae	*Helina evecta*			Grendon
Diptera	Muscidae	*Helina lasiophthalma*			Grendon
Diptera	Muscidae	*Hydrotaea similis*			Grendon
Diptera	Muscidae	*Mesembrina meridiana*			Ham
Diptera	Muscidae	*Morellia aenescens*			Ham
Diptera	Muscidae	*Musca autumnalis*			both
Diptera	Muscidae	*Phaonia palpata*			Ham
Diptera	Muscidae	*Phaonia tuguriorum*			Ham
Diptera	Muscidae	*Phaonia valida*			both
Diptera	Muscidae	*Polietes lardarius*			Ham
Diptera	Opomyzidae	*Geomyza tripunctata*			Ham
Diptera	Opomyzidae	*Opomyza germinationis*			both
Diptera	Opomyzidae	*Opomyza petrei*			both
Diptera	Psilidae	*Chamaepsila rosae preocc.*			Ham
Diptera	Rhagionidae	*Chrysopilus asiliformis*			Grendon
Diptera	Rhinophoridae	*Rhinophora lepida*			both
Diptera	Sarcophagidae	*Sarcophaga subvicina*			Ham
Diptera	Sarcophagidae	*Sarcophaga variegata*			Ham
Diptera	Scathophagidae	*Scathophaga stercoraria*			both

Order	Family	Taxon	Status	SAT	SSSI
Diptera	Sciomyzidae	*Coremacera marginata*			Ham
Diptera	Sciomyzidae	*Ilione albiseta*			Ham
Diptera	Sepsidae	*Nemopoda nitidula*			Ham
Diptera	Sepsidae	*Sepsis orthocnemis*			Ham
Diptera	Sepsidae	*Sepsis punctum*			Ham
Diptera	Stratiomyidae	*Chloromyia formosa*			Ham
Diptera	Stratiomyidae	*Chorisops tibialis*			Grendon
Diptera	Stratiomyidae	*Eupachygaster tarsalis*	Nationally Scarce	A212	Grendon
Diptera	Syrphidae	*Baccha elongata*			both
Diptera	Syrphidae	*Cheilosia proxima*			Ham
Diptera	Syrphidae	*Cheilosia soror*		F001	both
Diptera	Syrphidae	*Chrysogaster solstitialis*			Grendon
Diptera	Syrphidae	*Chrysotoxum bicinctum*			both
Diptera	Syrphidae	*Epistrophe grossulariae*			both
Diptera	Syrphidae	*Episyrphus balteatus*			both
Diptera	Syrphidae	*Eristalis nemorum*			Ham
Diptera	Syrphidae	*Eristalis pertinax*			both
Diptera	Syrphidae	*Helophilus pendulus*			both
Diptera	Syrphidae	*Leucozona laternaria*			Ham
Diptera	Syrphidae	*Mallota cimbiciformis*	Nationally Scarce	A211	Ham
Diptera	Syrphidae	*Melanostoma mellinum*			both

Order	Family	Taxon	Status	SAT	SSSI
Diptera	Syrphidae	*Melanostoma scalare*			both
Diptera	Syrphidae	*Meliscaeva auricollis*			Grendon
Diptera	Syrphidae	*Myathropa florea*		A211	both
Diptera	Syrphidae	*Pipizella viduata*			Ham
Diptera	Syrphidae	*Pipizella virens*			Ham
Diptera	Syrphidae	*Platycheirus albimanus*			both
Diptera	Syrphidae	*Platycheirus angustatus*			Ham
Diptera	Syrphidae	*Platycheirus clypeatus*			Grendon
Diptera	Syrphidae	*Rhingia campestris*			Grendon
Diptera	Syrphidae	*Sphaerophoria scripta*			both
Diptera	Syrphidae	*Sphaerophoria taeniata*			Grendon
Diptera	Syrphidae	*Syritta pipiens*			both
Diptera	Syrphidae	*Syrphus ribesii*			both
Diptera	Syrphidae	*Syrphus vitripennis*			Ham
Diptera	Syrphidae	*Volucella bombylans*			Grendon
Diptera	Syrphidae	*Volucella pellucens*			both
Diptera	Syrphidae	*Xylota segnis*			Ham
Diptera	Syrphidae	*Xylota sylvarum*		A212	both
Diptera	Tabanidae	*Haematopota pluvialis*			Grendon
Diptera	Tabanidae	*Hybomitra distinguenda*			Grendon
Diptera	Tabanidae	*Tabanus bromius*			Ham

Order	Family	Taxon	Status	SAT	SSSI
Diptera	Tachinidae	*Eriothrix rufomaculata*			Grendon
Diptera	Tachinidae	*Eumea linearicornis*			both
Diptera	Tachinidae	*Nowickia ferox*			Ham
Diptera	Tachinidae	*Phania funesta*			both
Diptera	Tachinidae	*Siphona geniculata*			Ham
Diptera	Tachinidae	*Tachina fera*			Grendon
Diptera	Tephritidae	*Xyphosia miliaria*			Grendon
Diptera	Tipulidae	*Tipula paludosa*			both
Hemiptera	Anthocoridae	*Cardiastethus fasciiventris*		A215	Ham
Hemiptera	Anthocoridae	*Orius (Orius) laevigatus*			Ham
Hemiptera	Anthocoridae	*Temnostethus (Montandoniella) gracilis*			Grendon
Hemiptera	Anthocoridae	*Xylocoris (Xylocoris) cursitans*		A212	Ham
Hemiptera	Aphrophoridae	*Aphrophora alni*			both
Hemiptera	Aphrophoridae	*Philaenus spumarius*			both
Hemiptera	Cicadellidae	*Allygus mixtus*		F001	Ham
Hemiptera	Cicadellidae	*Cicadella viridis*			Ham
Hemiptera	Cicadellidae	*Eurhadina pulchella*			Ham
Hemiptera	Cicadellidae	*Euscelis incisus*			Grendon
Hemiptera	Cicadellidae	*Iassus lanio*			Ham
Hemiptera	Cicadellidae	*Lamprotettix nitidulus*			Ham

Order	Family	Taxon	Status	SAT	SSSI
Hemiptera	Cicadellidae	*Ribautiana tenerrima sensu stricto*			Ham
Hemiptera	Cicadellidae	*Zyginidia scutellaris*			Grendon
Hemiptera	Cixiidae	*Tachycixius pilosus*			Grendon
Hemiptera	Coreidae	*Coreus marginatus*			Ham
Hemiptera	Delphacidae	*Dicranotropis hamata*			Grendon
Hemiptera	Lygaeidae	*Heterogaster urticae*			Ham
Hemiptera	Lygaeidae	*Kleidocerys resedae*			Ham
Hemiptera	Miridae	*Apolygus spinolae*			Grendon
Hemiptera	Miridae	*Campyloneura virgula*			Grendon
Hemiptera	Miridae	*Capsus ater*			Ham
Hemiptera	Miridae	*Charagochilus (Charagochilus) gyllenhalii*		F112	Grendon
Hemiptera	Miridae	*Closterotomus norwegicus*			Ham
Hemiptera	Miridae	*Deraeocoris (Deraeocoris) ruber*			both
Hemiptera	Miridae	*Deraeocoris (Knightocapsus) lutescens*			Ham
Hemiptera	Miridae	*Grypocoris (Lophyromiris) stysi*			Ham
Hemiptera	Miridae	*Heterotoma planicornis*			both
Hemiptera	Miridae	*Leptopterna dolabrata*			both
Hemiptera	Miridae	*Liocoris tripustulatus*			Ham
Hemiptera	Miridae	*Lygus rugulipennis*			both

Order	Family	Taxon	Status	SAT	SSSI
Hemiptera	Miridae	*Megaloceroea recticornis*			both
Hemiptera	Miridae	*Neolygus viridis*			Grendon
Hemiptera	Miridae	*Orthops (Orthops) campestris*			both
Hemiptera	Miridae	*Orthotylus (Orthotylus) marginalis*			Grendon
Hemiptera	Miridae	*Phylus (Phylus) coryli*			Grendon
Hemiptera	Miridae	*Phylus (Phylus) melanocephalus*			Ham
Hemiptera	Miridae	*Plagiognathus (Plagiognathus) arbustorum*			both
Hemiptera	Miridae	*Plagiognathus (Plagiognathus) chrysanthemi*			Grendon
Hemiptera	Miridae	*Psallus (Mesopsallus) ambiguus*			Grendon
Hemiptera	Miridae	*Stenodema (Brachystira) calcarata*			Grendon
Hemiptera	Miridae	*Stenotus binotatus*			Grendon
Hemiptera	Nabidae	*Nabis (Dolichonabis) limbatus*			Grendon
Hemiptera	Pentatomidae	*Dolycoris baccarum*			Grendon
Hemiptera	Pentatomidae	*Palomena prasina*			both
Hemiptera	Pentatomidae	*Pentatoma rufipes*			both
Hemiptera	Reduviidae	*Empicoris vagabundus*			Grendon
Hemiptera	Rhopalidae	*Rhopalus (Rhopalus) subrufus*		F001	Grendon

Order	Family	Taxon	Status	SAT	SSSI
Hemiptera	Scutelleridae	*Eurygaster testudinaria*			Grendon
Hemiptera	Tingidae	*Physatocheila dumetorum*		A215	both
Hemiptera	Tingidae	*Tingis (Tingis) cardui*			Grendon
Hymenoptera	Andrenidae	*Andrena minutula*		F002	Ham
Hymenoptera	Apidae	*Bombus campestris*		F002	Grendon
Hymenoptera	Apidae	*Bombus hortorum*		F002	Ham
Hymenoptera	Apidae	*Bombus hypnorum*		F002	Ham
Hymenoptera	Apidae	*Bombus lapidarius*		F002	Grendon
Hymenoptera	Apidae	*Bombus pascuorum*		F002	both
Hymenoptera	Apidae	*Bombus sylvestris*		F002	Grendon
Hymenoptera	Apidae	*Bombus terrestris*		F002	both
Hymenoptera	Apidae	*Bombus vestalis*		F002	Ham
Hymenoptera	Apidae	*Eucera longicornis*	[Nationally Scarce/Na];Section 41 Priority Species	F002	Grendon
Hymenoptera	Bethylidae	*Bethylus fuscicornis*			Grendon
Hymenoptera	Colletidae	*Hylaeus communis*		F002	both
Hymenoptera	Colletidae	*Hylaeus confusus*		A212, F001, F002	both
Hymenoptera	Crabronidae	*Ectemnius continuus*		A212, F001	Grendon
Hymenoptera	Crabronidae	*Ectemnius lituratus*		A212, F001	both
Hymenoptera	Crabronidae	*Trypoxylon clavicerum*		F001	Ham

Order	Family	Taxon	Status	SAT	SSSI
Hymenoptera	Formicidae	*Lasius brunneus*	[Nationally Scarce/Na]	A211	both
Hymenoptera	Halictidae	*Lasioglossum albipes*		F002	Grendon
Hymenoptera	Halictidae	*Lasioglossum pauxillum*	[Nationally Scarce/Na]	F002	Grendon
Hymenoptera	Halictidae	*Lasioglossum puncticolle*	Nationally Scarce/Nb	F002	Grendon
Hymenoptera	Megachilidae	*Chelostoma florisomne*		A212, F002	Ham
Hymenoptera	Megachilidae	*Hoplitis claviventris*		F002	Ham
Hymenoptera	Megachilidae	*Megachile versicolor*		A212, F002	both
Hymenoptera	Tiphiidae	*Tiphia minuta*	[Nationally Scarce/Nb]		Ham
Hymenoptera	Vespidae	*Symmorphus gracilis*		A212, F001	Ham
Hymenoptera	Vespidae	*Vespa crabro*			both
Isopoda	Oniscidae	*Oniscus asellus*			Grendon
Isopoda	Porcellionidae	*Porcellio scaber*			Grendon
Lepidoptera	Argyresthiidae	*Argyresthia bonnetella*			Grendon
Lepidoptera	Choreutidae	*Anthophila fabriciana*			Ham
Lepidoptera	Crambidae	*Agriphila straminella*			Grendon
Lepidoptera	Crambidae	*Agriphila tristella*			Grendon
Lepidoptera	Crambidae	*Chrysoteuchia culmella*			Grendon
Lepidoptera	Erebidae	*Euproctis similis*			both

Order	Family	Taxon	Status	SAT	SSSI
Lepidoptera	Gelechiidae	*Psoricoptera gibbosella*			Ham
Lepidoptera	Gelechiidae	*Syncopacma larseniella*			Ham
Lepidoptera	Geometridae	*Scotopteryx chenopodiata*			Grendon
Lepidoptera	Geometridae	*Timandra comae*			Ham
Lepidoptera	Glyphipterigidae	*Glyphipterix simpliciella*			Ham
Lepidoptera	Heliozelidae	*Antispila treitschkiella*			Grendon
Lepidoptera	Hesperiidae	*Ochlodes sylvanus*			both
Lepidoptera	Hesperiidae	*Thymelicus sylvestris*			Grendon
Lepidoptera	Lasiocampidae	*Euthrix potatoria*			Grendon
Lepidoptera	Lycaenidae	*Lycaena phlaeas*			Grendon
Lepidoptera	Lycaenidae	*Polyommatus icarus*			Grendon
Lepidoptera	Noctuidae	*Autographa gamma*			Ham
Lepidoptera	Noctuidae	*Dryobotodes eremita*			Ham
Lepidoptera	Notodontidae	*Furcula furcula*			Grendon
Lepidoptera	Nymphalidae	*Aglais io*			Grendon
Lepidoptera	Nymphalidae	*Aphantopus hyperantus*			both
Lepidoptera	Nymphalidae	*Argynnis paphia*		F001	both
Lepidoptera	Nymphalidae	*Limenitis camilla*	Section 41 Priority Species; Vulnerable		Grendon
Lepidoptera	Nymphalidae	*Maniola jurtina*			both
Lepidoptera	Nymphalidae	*Melanargia galathea*			both
Lepidoptera	Nymphalidae	*Pararge aegeria*		F001	both

Order	Family	Taxon	Status	SAT	SSSI
Lepidoptera	Nymphalidae	*Polygonia c-album*			Ham
Lepidoptera	Nymphalidae	*Pyronia tithonus*		F001	both
Lepidoptera	Nymphalidae	*Vanessa atalanta*			Ham
Lepidoptera	Pieridae	*Gonepteryx rhamni*			Grendon
Lepidoptera	Pieridae	*Pieris brassicae*			Ham
Lepidoptera	Pieridae	*Pieris napi*			both
Lepidoptera	Pieridae	*Pieris rapae*			both
Lepidoptera	Psychidae	*Luffia ferchaultella*			Ham
Lepidoptera	Tineidae	*Infurcitinea argentimaculella*			Grendon
Lepidoptera	Tortricidae	*Celypha lacunana*			Ham
Lepidoptera	Tortricidae	*Ditula angustiorana*			Grendon
Lepidoptera	Tortricidae	*Eudemis profundana*			Grendon
Lepidoptera	Tortricidae	*Gypsonoma dealbana*			Grendon
Lepidoptera	Tortricidae	*Hedya ochroleucana*			Ham
Lepidoptera	Tortricidae	*Notocelia uddmanniana*			Grendon
Lepidoptera	Tortricidae	*Pammene aurana*			Ham
Lepidoptera	Tortricidae	*Tortrix viridana*			Grendon
Lepidoptera	Tortricidae	*Zeiraphera isertana*			Ham
Lepidoptera	Ypsolophidae	*Ypsolopha ustella*			Ham
Neuroptera	Chrysopidae	*Chrysopa perla*			Ham
Neuroptera	Chrysopidae	*Chrysoperla carnea group*			Grendon

Order	Family	Taxon	Status	SAT	SSSI
Neuroptera	Hemerobiidae	*Hemerobius humulinus*			both
Neuroptera	Hemerobiidae	*Hemerobius lutescens*			Grendon
Orthoptera	Acrididae	*Chorthippus albomarginatus*			Ham
Orthoptera	Acrididae	*Chorthippus parallelus*			both
Orthoptera	Meconematidae	*Meconema thalassinum*		F001	Ham
Orthoptera	Phaneropteridae	*Leptophyes punctatissima*		F001	both
Polyxenida	Polyxenidae	*Polyxenus lagurus*			both
Psocoptera	Stenopsocidae	*Stenopsocus stigmaticus*			Ham
Pulmonata	Patulidae	*Discus (Gonyodiscus) rotundatus*			Grendon

Appendix 2: Photos

Photo 1: Ham Home Wood, by Martin Harvey – ride at west; 8 July 2021

Photo 2: hoverflies (*Episyrhpus balteatus*) abundant on ride side flowers; Ham Home Wood, by Martin Harvey 8 July 2021

Photo 3: hoverfly ,*Volucella pellucens,* on Hogweed – one of many visitors to this important flower resource; Ham Home Wood, by Martin Harvey 8 July 2021

Photo 4: grass bug *Capsus ater*; Ham Home Wood, by Martin Harvey 8 July 2021

Photo 5: open-grown Oak with dead wood resources; Ham Home Wood, by Martin Harvey 8 July 2021

Photo 6: flower-rich woodland edge at south of Hamgreen non-SSSI, , by Martin Harvey 8 July 2021

Photo 7: longhorn beetle *Rutpela maculata*; Hamgreen Wood, by Martin Harvey 8 July 2021

Photo 8: varied sward heights and scrub edge; Oxford Lane, by Martin Harvey 8 July 2021

Photo 9: Golden-haired Robberfly, *Choerades marginatus*, Oxford Lane, by Martin Harvey 8 July 2021

Photo 10: Silver-washed Fritillary, *Argynnis paphia*, feeding on Marsh Thistle flowers; Hamgreen Wood, by Martin Harvey 8 July 2021

Photo 11: hoverfly *Mallota cimbiciformis*, Hamgreen Wood, by Martin Harvey 8 July 2021

Photo 12: Cramp-ball Weevil, *Platyrhinus resinosus*; Ham Green non-SSSI, by Martin Harvey 8 July 2021

Photo 13: Grendon Wood wide ride at north, by Martin Harvey 15 July 2021

Photo 14: Grendon Wood ride with long straight edges and abrupt transition to woodland, by Martin Harvey 15 July 2021

Photo 15: Marbled White, *Melanargia galathea*, on flowers of Marsh Thistle; Grendon Wood, by Martin Harvey 15 July 2021

Photo 16: dead wood resource on woodland floor; Doddershall Wood, by Martin Harvey 15 August 2021

Photo 17: dead wood resource in the tree canopy; Doddershall Wood, by Martin Harvey 15 August 2021

Photo 18: Ten-spot Ladybird, *Adalia decempunctata*, Doddershall Wood, by Martin Harvey 15 August 2021

Photo 19: micro-moth *Infurcitinea argentimaculella* which feed on lichens on tree trunks - this is only the second record for Buckinghamshire; Doddershall Wood, by Martin Harvey 15 August 2021

Photo 20: open-grown oaks with dead wood resources at the northern end of Oxford Lane, by Martin Harvey 16 September 2021

Photo 21: Speckled Wood, *Pararge aegeria*, feeding from blackberries - fruit-bearing shrubs provide important resources for insects; Oxford Lane, , by Martin Harvey 16 September 2021

Photo 22: larva of a cardinal beetle, *Pyrochoa sp.*, from under bark in Hamgreen Wood, , by Martin Harvey 16 September 2021

Photo 23: part of the log stacks in the non-SSSI part of Ham Green Wood, by Martin Harvey 16 September 2021

Photo 24: beetle *Uleiota planatus* from under the bark of a stacked log; Ham Green non-SSSI, by Martin Harvey 16 September 2021

Photo 25: non-SSSI part of Ham Green where some trees have been removed, leaving a mix of more open habitats and standing trees, by Martin Harvey 16 September 2021

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