LICHEN SURVEY OF BOCKHANGER WOOD

& PART OF HATCH PARK

KENT

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For Plantlife

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Cover Photographs: left Photo 2021-08-24-24 on a on a big Hornbeam pollard on bank on northern edge (Tree BPH037, Tag 08323) showing a close up of the internationally rare *Enterographa elaborata* (above and right) and common *Enterographa crassa* (centre left). Right, an enormous Hornbeam pollard (Tree BPH134, Tag 07147) of about 6.1m girth), with occasional *Enterographa elaborata*. This is the largest Hornbeam seen in Bockhanger Wood; an interesting feature is that this magnificence behemoth has clearly been recut at successively higher levels over the centuries.

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1.0 INTRODUCTION

1.1 Background & Brief

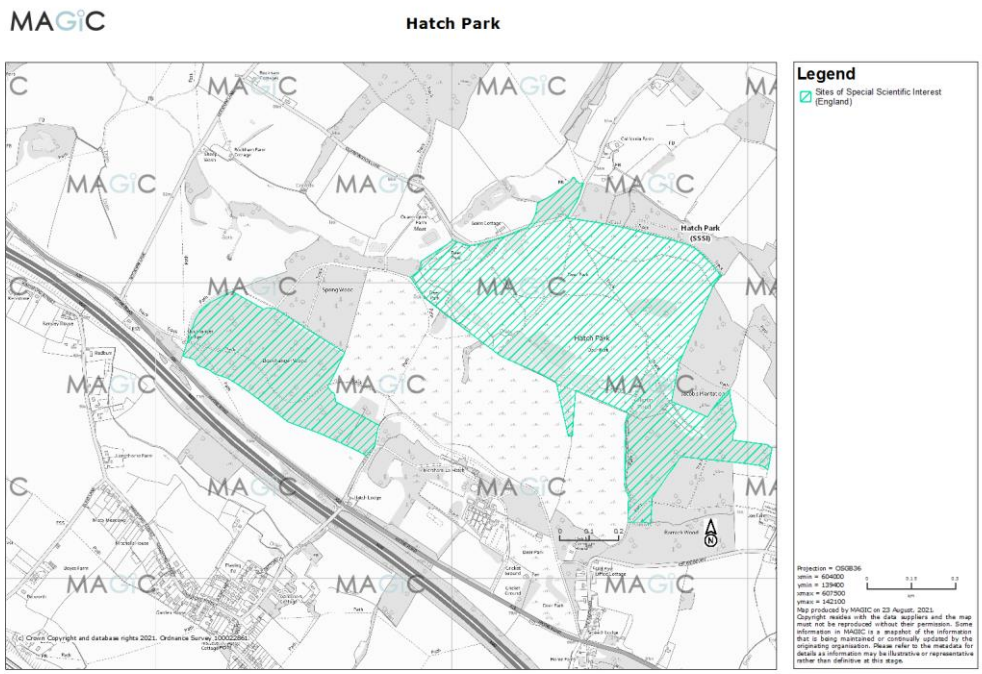
1.1.1 Background

Bockhanger Wood is an ancient pollarded Hornbeam pasture woodland next to the deer park of Hatch Park, both are included within Hatch Park SSSI (**Map 1**). Bockhanger Wood is a remarkable survival of an actively pollarded wood with hundreds of ancient actively cut Hornbeam pollards. It is owned by Mersham Hatch Estate. This unique wood supports a very interesting lichen assemblage, although the importance was only recently full realised. In 2014, a visit by the British Lichen Society (Palmer & Blatchley, 2015) discovered a population of the rare lichen *Enterographa elaborata*. This is assessed as Critically Endangered in Britain and previously the only extant populations known in Britain were in the New Forest on ancient Beeches (Sanderson, 2009). The species is an internationally rare lichen of humid southern temperate woodlands found in scattered locations in western Europe from Denmark and Ireland to Iberia, Macaronesia, relic humid ravine sites by the Mediterranean and warm temperate rainforests by the Black Sea. An initial survey of Bockhanger Wood for *Enterographa elaborata* and other lichen interest was carried out by Davey (2015), which recorded the lichen on 31 trees and made some management recommendations. He also examined an area of Hornbeam pollarded woodland to the east in a fenced off section of Hatch Park (called Barrack Wood in his report but actually the historic Barrack Wood is east of this and the pollarded area is simply a part of Hatch Park).

1.1.2 Brief

Plantlife contracted Neil Sanderson, Botanical Survey & Assessment, to carry out a survey of the epiphytic lichen assemblage of Bockhanger Wood and the pollards by Barrack Wood funded under the Back from the Brink project Ancients of the Future project. This was intended to fully survey the lichen assemblage of the veteran trees, and to give advice on management. Continuing pollarding in particular has been problematic for the estate in recent years and discussions were held during the survey by the author with the owner Michael-John Knatchbull and these discussions were taken further by D. Lamacraft of Plantlife on potential help from the Back from the Brink project Ancients of the Future towards the continuity of management.

MAP 1
Hatch Park SSSI



2.0 METHODS

2.1 Survey Methods

2.1.1 Timing, Conditions & Personnel

The survey was carried out over four days from the 24th to 27th August 2021. The weather was mainly dry and sunny, with limited drizzle on one morning, and conditions were good for lichen survey.

2.1.2 Areas Surveyed

The survey route is shown on **Maps 2** & **3** derived from the track logs of a GPS receiver. The survey concentrated on the area of Bockhanger Wood with veteran trees, spending the majority of the time here. The far east of the SSSI here is recorded as lacking Hornbeam pollards (Davey, 2015) and was found to be impenetrable due to Bramble growth when reached in 2021. The area of Hatch Park densely set with Hornbeam pollards by Barrack Wood was looked over in one afternoon.

Within both woods, it was not possible to visit every veteran tree, but it was soon possible to pick out the most interesting trees by their situation (mostly the trunks not heavily shaded) and visual clues on the bark and most of these were visited. A lichen-rich acid grassland within Hatch Park was also briefly looked at.

2.1.3 Species Recording

All species of lichens found were recorded to a minimum resolution of a six figure national grid reference when first encountered. Further occurrences of species of interest were recorded at least to a six-figure grid reference accuracy. The locations of the most interesting trees were recorded as waypoints (**Maps 2**, **3, 30** & **31**). The latter included all trees with *Enterographa elaborata*, all other Threatened or Near Threatened lichens found plus a selection of regionally rare species of ecological interest. The species recorded systematically were:

Species	SOWI	Conservation Status	Habitat
Bellicidia incompta		VU (NS/S41)	Wound track
Chaenothecopsis nigra		Nb (NS)	Dry dead wood
Coenogonium confusum	1	NT (NS/IR)	
Enterographa elaborata		CR (NR/IR/S41)	Flushed bark
Lecanographa lyncea	1	Nb (IR)	Dry Bark
Microcalicium ahlneri		Nb (NS)	Dry dead wood
Pachyphiale carneola	1		Flushed bark
Phlyctis agelaea		NT (NS)	Flushed bark
Rinodina roboris		Nb (IR)	Flushed bark
Syncesia myrticola, sorediate morph	1	NT (NS/IR/S41)	Dry Bark

The distributions of these individual species are mapped by waypoints in **Annex 3** along with other species of conservation interest, which were mapped on a 100m grid and a few on a 10m grid, using the TomBio plugin in QGIS (**Maps 7 – 29**). The density of species of interest was mapped using TomBio (**Map 4**) and the conservation interest mapped using the trees of high interest recorded as waypoints (**Map 6**)

Field notes were made on an iPhone have been edited and reproduced in **Annex 1**. The species recorded for the woods are listed in **Annex 2**.

For *Enterographa elaborata*, at first detailed records were made of the populations found, including associated species, aspect and photographing colonies with the extent marked out with pins. However, as the survey progressed it became obvious that Davey (2015) had massively underestimated the numbers of trees with *Enterographa elaborata* and detailed recording had to stop. This leaves the first trees recorded as detailed monitored trees. The distribution by pollards or maidens was mapped using QGIS (**Map 5**). When trees photographed by Davey (2015) were refound the photos were retaken for monitoring purposes.

2.1.4 Trees

The terms used to describe the physiological age of the tree are explained below. These are based on Harding & Alexander (1993):

- Mature: a tree that has reached its full height and is still vigorous, heart rot likely to be absent.
- Post-mature: a tree that is no longer vigorous and has started retrenching by branch die back. Heart rot will have commenced but will not be easily visible.
- Ancient: a tree with major branch die back and or extensive and visible heart rot.

The term 'veteran tree' is taken to include both post-mature and ancient trees. This classification reflects the natural processes that older trees go through as a response to balancing their increasing size with the photosynthetic area available. The commencement of heart rot indicates the end of the commercial usefulness of timber

2.2 Data Analysis

2.2.1 Nomenclature

The nomenclature largely follows Sanderson et al (2018) for lichens and lichenicolous fungi. This, however, is a period of rapid nomenclature changes, with the publishing of volumes the new lichen flora, Revisions of British and Irish Lichens <https://www.britishlichensociety.org.uk/content/lgbi3>. Changes in recently published volumes from Woods & Coppins (2012) are listed in **Annex 2**.

2.2.2 Conservation Assessment

For lichens the conservation assessment follows Sanderson et al (2018). The following index is potentially relevant to the area

- **Southern Oceanic Woodland Index (SOWI)**: applies to oceanic temperate woodland south of the Scottish Highlands. Sanderson (in press a) regarded sites with an index score of 20 or more as being national significance, while sites with scoring more than 30 are regarded to be as likely to be of international significance. Such woods are usually old growth stands with a strong continuity of veteran trees. In Kent, it is recommended that a score of 20 be used as the threshold for considering sites for SSSI status (Sanderson et al,

2018), but due to the impact of pollution such rich sites may not have survived. Sites with 10 – 19 can be regarded as of county importance.

In terms of rare species, significant populations of threatened species (Vulnerable or higher) or Near Threatened species, which are also International Responsibility species either nationally or within SSSI areas of search can be considered as nationally significant and as potentially notifiable features of an SSSI (Sanderson et al, 2018).

For lichens, 'Notable species' replaces 'Nationally Rare and Scarce' for species for assessment, for species that are neither Threatened or Near Threatened species. Notable species include all other Least Concern or Data Deficient species, which were Nationally Rare, Nationally Scarce or International Responsibility species, and were judged to be of conservation interest (Sanderson et al, 2018). This excluded Nationally Rare and Scarce lichens that were clearly under-recorded common species or ruderal species of limited conservation value.

Sanderson et al (2018) provide an alternative scoring system to that of Hodgetts (1992) (Threatened, Near Threatened and Notable (TNTN) scoring). The score is calculated as follows:

GB Threatened (CR, EN, VU) – scores 4 points.

GB Near Threatened – scores 2 points.

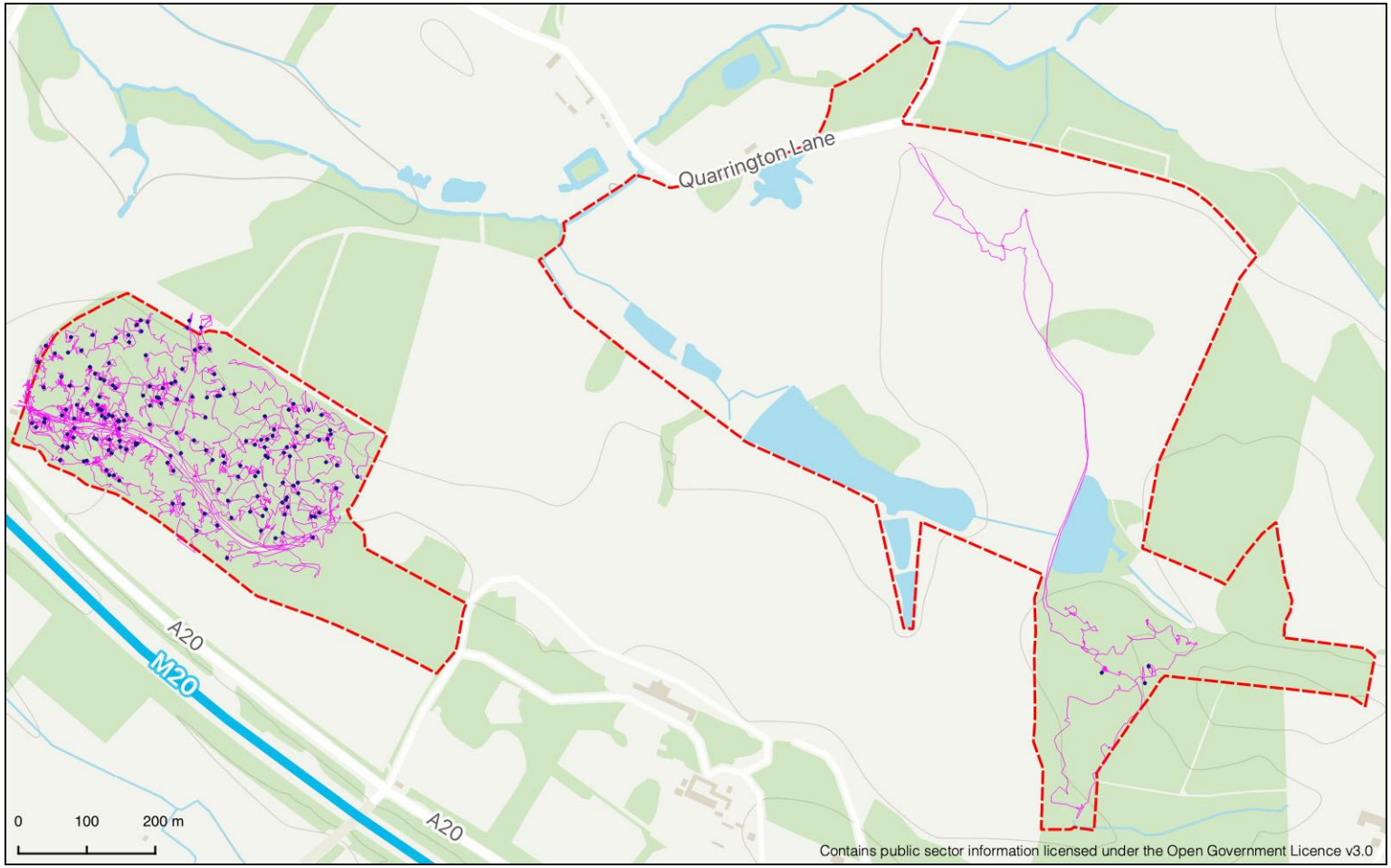
Notable – scores 1 point.

None of the above – scores nil.

2.2.3 Old Data

Recent data from 2014 (Palmer & Blatchley, 2015) and 2015 (Davey, 2015) is incorporated into **Species List 1** in **Annex 2**. Some older data, was obtained by Plantlife from Natural England, a record card by Francis Rose dated 1967 – 68 and a list from 2003 by Peter James. Neither listed species of conservation interest that were not refound by later surveys. The Rose record card covers both the park and the Bockhanger Wood without distinguishing between them.

MAP 2
Survey Route & Waypoints, Hatch Park SSSI, OS Map



Key. Dotted red line = SSSI boundary, Magenta line = survey route & Blue dot = Waypoint made at tree of high lichen interest

MAP 3
Survey Route & Waypoints, Hatch Park SSSI, Google

Key. Dotted red line = SSSI boundary, Magenta line = survey route & Blue dot = Waypoint made at tree of high lichen interest

3.0 SURVEY

3.1 Lichen Assemblage

3.1.1 Totals and Species of Interest

The total list of lichen and associated fungi species list recorded since 2014, including the 2021 survey, are given in **Species List 1** in **Annex 2**. The numbers recorded are summarised below in **Table 1**. The density of lichen species of interest (the species are mapped individually in **Annex 3**) is mapped in **Map 4**.

TABLE 1
Total Biodiversity Measures for Lichens,
Bockhanger Wood & Part of Hatch Park, 2014 – 21

Biodiversity Measure\Location & Date	Bockhanger Wood		Barrack Wood		Total	
	2014-21	2021	2014-21	2021	2014-21	2021
Total taxa	105	67	46	43	115	77
Southern Oceanic Woodland Index score	13	10	9	8	15	12
Critically Endangered	1	1	0	0	1	1
Vulnerable	0	0	1	1	1	1
Near Threatened	4	4	1	1	4	4
Notable	13	10	4	4	14	11
International Responsibility Species	12	10	3	3	12	10
Section 41 species	3	3	2	2	4	4
TNTN score	25	22	10	10	30	27
Nationally Rare	2	2	0	0	2	2
Nationally Scarce	15	13	5	5	17	15

The 2021 survey concentrated on lower trunk habitats, the habitat of the lichens of conservation interest, while the 2014 BLS survey recorded other habitats such as twigs in more detail. This accounts for the higher totals for total taxa over 2014 to 2021 compared to 2021 but much closer total for lichens of conservation interest.

The numbers of Southern Oceanic Woodland Index (SOWI) species are not high over all; probably reflecting losses to past air pollution. Numbers of rare species, however, are much more significant, including the spectacular population of *Enterographa elaborata* CR (NR/IR/S41), which was found on 163 trees in 2021 (**Maps 5** & **13**). This is discussed in more detail in the section **3.1.3**.

Other Threatened and Near Threatened species found in 2021 were:

Bellicidia incompta Vulnerable (NS/S41) (syn. *Bacidia incompta*): was a widespread if uncommon, crust forming species found on old Elms, and occasionally other species, in wound tracks and inside hollow trees. It grew on both field and wayside trees and within old growth woodlands. It is now near extinct on Elm due to Dutch Elm disease destroying veteran Elms. The New Forest is the only place it has been recorded frequently in recent decades, here on Beech and Holly. Otherwise, it is still found on a

thin scatter of trees in southern England, but had no recent records from Kent. In 2021, it was found inside a hollow Hornbeam pollard (**Map 8**) in the pollarded woodland by Barrack Wood in Hatch Park, which is the first recent record for Kent.

Coenogonium confusum Near Threatened (NS/IR) (*Porina rosei* auct. br. pro maxima parte): a crust forming lichen of base rich bark on old trees (Base Rich Bark Community, *Lobarion*) in very sheltered conditions. This taxa was confused with *Porina rosei* in the past, but that has proved to be a very rare species. *Coenogonium confusum* is a southern and western species that is frequent in the New Forest but a rather scarce species beyond. It is an old growth dependant species, which is largely confined to veteran trees. In 2021, it was found on two large hollow Hornbeam pollards in Bockhanger Wood (**Map 11**), new to Kent.

Phlyctis agelaea Near Threatened (NS): is a crust forming lichen, which is a very pollution sensitive species. It did occur widely in the east of England in the 19th century but now mainly survives in the west where air is cleaner. It is a species found in the Shaded Mature Mesic Bark Community (*Pertusarietum amarae*) and transitions to the *Lobarion*. The lichen had not been recorded east of the New Forest recently and there were only 19th century records from the south east. In 2021, it was recorded on three Hornbeam pollards in Bockhanger Wood (**Map 22**), new to Kent

***Syncesia myrticola*, sorediate morph** Near Threatened (NS/IR/S41) (syn. *Enterographa sorediata*): a rare crust forming lichen formerly known as *Enterographa sorediata* and recently shown by DNA sequencing to be, remarkably, a sterile sorediate morph of *Syncesia myrticola* NT (NS/IR/S7) which is itself a very rare lichen of dry overhangs on sea cliffs and rarely dry bark on trees by the coast (Ertz et al, 2018). In Britain the sorediate morph is confined to the Ancient Dry Bark Community (*Lecanactidetum premneae*) almost entirely on ancient Oaks. It is confined to the south, from Cornwall to Hampshire with outliers in Norfolk and Wales. It is limited to sites with well-developed and high quality *Lecanactidetum premneae* communities on veteran trees. In 2021, found on four trees in Bockhanger Wood, on a Hornbeam pollard and three veteran Oaks. These were the first records from Kent and the first record of the lichen from Hornbeam.

Zwackhia prosodea Near Threatened (NS/IR/S41) (*Opegrapha prosodea*): an extremely southern crust forming lichen, which is not found north of the Thames. It is confined to dry bark mainly on ancient Oak and sometimes Yew in the Ancient Dry Bark Community (*Lecanactidetum premneae*). It has a preference for the sunnier and more nutrient enriched stands of this community and is characteristic of field trees and trees in landscape parks. It is rare throughout this range and is a S41 species. The species was previously recorded from Bockhanger Wood, where in 2021 it was found to be especially frequent on the old Hornbeam in Bockhanger and occurred more rarely in the pollards by Barrack Wood in Hatch Park (**Map 29**).

Other significant species included several that are rare in Kent. On wetter bark, mainly on the Hornbeam pollards, these include *Bacidia biatorina*, *Pachyphiale carneola*, *Porina borreri* Nb (NS), *Rinodina roboris* var. *roboris* Nb (IR), *Thelopsis corticola* Nb (IR) (*Opegrapha corticola*) and *Thelotrema lepadinum*. Other habitats include drier

bark, on both the Oaks and the Hornbeams with *Cresponea premnea* Nb (IR), *Lecanographa lyncea* Nb (IR), *Milospium graphideorum* Nb (NS) and *Sporodophoron cretaceum* Nb (IR). While Oak dead wood in the pollarded woodland by Barrack Wood added *Chaenothecopsis nigra* Nb (NS) and *Microcalicium ahlneri* Nb (NS) and acid Oak bark here also supported *Loxospora elatina*.

Three lichens of conservation interest were recorded in 2014 or 2015, but were not refound in 2021: *Chaenotheca hispidula* Nb (NS), *Schizotrema quercicola* Nb (IR) (*Schismatomma quercicola*) and *Snippocia nivea* Nb (IR) (*Schismatomma niveum*). All are probably still present.

3.1.2 Lichen Habitat

Bockhanger Wood consists of groves of in-cycle ancient and post-mature Hornbeam pollards (**Photos 1 – 4**) plus mature to post mature maiden Hornbeam, out-of-cycle pollards and maiden post mature Pedunculate Oak along with abundant Sycamore regeneration. Much of the latter has been coppiced by cutting back, aimed at keeping the wood open. There are also areas of open Bracken glades and planted poplar. Although the Hornbeam pollards are still in-cycle, they have not been cut for a few years as grant aid had run out and the process is very expensive; £10,000 does 18 – 20 pollards (but can be up to 30 with different techniques).


Photos 1 – 4, Pollards Forms Trees BPH134, BPH007, BPH158 & BPH004: in-cycle Hornbeam pollards in Bockhanger Wood, all with *Enterographa elaborata* CR (NR/IR/S41), ranging from a majestic behemoth of about 6.1m girth (top left), to quite young pollard, presumably started relatively recently (top right). Pollarding greatly extends the life span of Hornbeam and the lower two pollards would soon collapse of not regularly recut. The current pollarding does not cut right back to the pollard (bottom left) but this has a long tradition, the behemoth (top right) has clearly been recut at successively higher levels over the centuries.

There are a few out-of-cycle Hornbeam pollards but these appear to readily collapse if left uncut for a long time (**Photo 5**) and the pollarding is likely vital in maintaining the population of veteran Hornbeams.

Photo 5, Collapsed Pollard: a lapsed Hornbeam pollard on south edge of hollow way on the southwest edge of the wood. Uncut overstood Hornbeam pollards are often not very long lived and easily collapse, as seen here.

In spite of the continued pollarding, the woodland is no longer grazed and does not appear to have been grazed for a long time, although it must once have been as there would be no point to the pollarding if there had not originally been grazing. Bockhanger Wood is outside the historic park as shown on late 18th century maps, such as the 1797 Hythe Ordnance Survey Drawing. Either the park was much larger in the medieval period, or there was an attached enclosed pasture woodland. The latter situation was a quite typical for mediaeval parks. The pollarded wood by Barrack Wood however is a part of the historic park and is still deer grazed at present. The difference is evident, with the grazed wood more open, not suffering from Sycamore overgrowth and with the trunks better lit. The latter is because the browsing creates a browse line leading to less shading of the trunks (**Photos 6 – 8**).

The woodland at Bockhanger Wood is more sheltered and on less acid soils than the woodland by Barrack Wood and has been much less impacted by past acidifying pollution. With far more species-poor trees with acidified bark at the latter wood and a significantly poorer lichen assemblage. Of the two main tree species present Hornbeam has naturally less acidic bark than Oak and has been less severely impacted by acidifying pollution than the Oak. There is a far higher percentage of species-poor acidified Oaks than there are Hornbeams. Within the current woods the strongest factor determining lichen richness appears to be shade. The better-lit trees, as long as at least partly shaded and not right out in the open, are invariably richer. Hornbeams in the most densely set areas are invariably less rich in lichen species. The pollarding helps with maintaining open conditions and is another reason that it is vital to maintain the hornbeams pollards in their pollard cycle.

Rhododendron was a threat to light conditions within the wood but it was evident from photographs repeated from 2015 that a very successful programme of Rhododendron control had been completed (**Photos 9 & 10**).

Photo 6, Pollarded woodland by Barrack Wood: deer grazing in this area has prevented the canopy descent seen in Bockhanger Wood, giving a browse line.

Photos 7 & 8, Tree BPH157: a big Hornbeam pollard in open area, with ***Enterographa elaborata***, the pictures show canopy descent since 2015. Left 2021, right 2015 (Davey, 2015). Browsing this wood is keeping the trunk better lit.

Photos 9 & 10 Tree BPH052, Hornbeam pollard on edge of grove of Hornbeam, with abundant ***Enterographa elaborata***. Left 2021, right 2015 (Davey, 2015), showing the successful control of *Rhododendron* since 2015. The *Rhododendron* is being replaced by the native invasive species Bramble, however, due to the lack of grazing and this could be problematic in the future.

Although there is a lot of Sycamore regeneration, which is cut back maintaining openness, there was little sign of Hornbeam or Oak regeneration. There has been some Hornbeam planting, however, which will help with continuity.

The woodland by Barrack Wood in Hatch Park is a more open Hornbeam – Oak pasture woodland on drier and more acid soils with in-cycle Hornbeam pollards. It is deer fenced but seems to have a significant number of deer inside and has a definite browse line. Some Hornbeam planting has been carried out. *Rhododendron* control underway but is not complete. In contrast to Bockhanger Wood, standing and fallen Oak dead wood lichen habitat is better developed.

In both woods, Hornbeam and the Oak are the main trees supporting lichen interest. The Hornbeams are dominated by well-developed flushed bark communities on less acid bark. These are widely dominated by the common oceanic species *Enterographa crassa*, along with mesic bark species such as *Pertusaria hymenea* and *Pyrenula chlorospila*. Species of conservation interest found in this community include the outstanding population of *Enterographa elaborata* CR (NR/IR/S41), along with the

rare species *Phlyctis agelaea* NT (NS) and *Coenogonium confusum* NT (NS/IR) (*Porina rosei* auct. br. pro maxima parte) and regionally uncommon species mainly western species, such as *Enterographa hutchinsiae*, *Pachyphiale carneola*, *Porina borreri* Nb (NS)*, Rinodina roboris var. roboris* Nb (IR), *Thelopsis corticola* Nb (IR) (*Opegrapha corticola*) and *Thelotrema lepadinum*. Also of interest are *Aquacida viridifarinosa (Bacidia viridifarinosa*), *Coniocarpon cinnabarinum* (*Arthonia cinnabarina*), *Lichenodiplis pertusariicola* [NS] (on *Pertusaria leioplaca*), *Phaeographis dendritica*, *Porina byssophila* Nb (NS/DD) and *Strigula taylorii* Nb (NS/IR). A few of the species of moister base rich bark such as *Rinodina roboris* var. *roboris* Nb (IR) and *Thelopsis corticola* Nb (IR) (*Opegrapha corticola*) survive on Oak in Bockhanger but mostly the bark on most of the old Oaks has been too acidified to support this assemblage.

The other main habitat in Bockhanger Wood is dry bark on old trees. This is best preserved on Oaks but also occurs on the Hornbeams with some characteristic species surprisingly widespread on Hornbeam, especially *Cresponea premnea* Nb (IR), *Sporodophoron cretaceum* Nb (IR) (*Schismatomma cretaceum*) and *Zwackhia prosodea* NT (NS/IR/S41) (*Opegrapha prosodea*). The more specialist species *Lecanographa lyncea* Nb (IR) and *Syncesia myrticola*, sorediate morph NT (NS/IR/S41) (*Enterographa sorediata*) are more frequent on Oak, but also have surprising occurrences on Hornbeam as well. The partial parasite *Milospium graphideorum* Nb (NS) occurred on *Lecanographa lyncea* as a parasite and once as an independent lichen.

Two habitats were better developed in the pollarded stand by Barrack Wood, lignum on dead wood and wound track on old Hornbeams. The former habitat is much better lit in this wood and the species are more tolerant of acidifying pollution. Species of interest recorded here included *Chaenotheca trichialis*, *Cladonia parasitica*, *Chaenothecopsis nigra* Nb (NS), *Microcalicium ahlneri* Nb (NS). The other habitat, wound tracks on veteran less acid trees, was expected to be found in Bockhanger Wood, but was not well developed for reasons that are not clear. However, the occurrence of *Bellicidia incompta* VU (NS/S41) (*Bacidia incompta*) inside a hollow Hornbeam at the Hatch Park site at its only known extant Kent site showed the potential of tis habitat here.

On one afternoon a quick look was taken at Hatch Park on the way to the pollards by Barrack Wood. The parched acid grasslands in and around the old sand pit were found to be lichen rich and interesting. This was not outstanding as a lichen assemblage but was an interesting feature in a high quality area of acid grassland. The trees seen along the path were species poor and impacted by past acidifying pollution and current ammonia pollution. A wider search would probably find some lichen interest but the habitat would be too exposed for *Enterographa elaborata*.

3.1.3 *Enterographa elaborata*

The ecology of *Enterographa elaborata* CR (NR/IR/S41), in the only other extant British site, the New Forest was studied in detail by Sanderson (2009) (curiously not quoted in Davey (2015)), where it occurs on Beech. The results are summarised and updated below:

- In 2008 Sanderson (2009) recorded *Enterographa elaborata* from 18 trees in seven discrete sites and estimated that the species could be on about 60 trees. It has since been found at two more sites and many more trees and there are now recent records from over 30 trees, with evident active colonisation of new trees recorded. The majority of the trees recorded in 2008 were maiden trees including naturally damaged, leaning and twisted trees. Sanderson (2009) concluded that *Enterographa elaborata* requires little disturbed woodland with numerous leaning, twisted, damaged or suppressed trees supporting frequent rain tracks. It requires good indirect illumination but with protection from more than short periods of exposure to sunshine. Very large areas of old growth woodland may be required to support viable populations due to the apparent high niche specificity. Ideal conditions are probably produced in minimal intervention old growth pasture woodlands rich in veteran Beech or Ash trees.

The population at Bockhanger Wood is on Hornbeam rather than Beech but both trees have smooth and hard bark, are slow growing when old and share very similar lichen assemblages. A major difference is that Hornbeam tends to have naturally higher pH bark than Beech. The lichen shares a lot of ecological characteristics in both woods, mainly in the micro-ecology but there are marked differences too, especially in the wider ecology. The most obvious is the exceptionally high density of *Enterographa elaborata* in Bockhanger Wood. The 2021 survey found the lichen on 163 trees (with 31 recorded in the partial survey by Davey (2015)), with all but five on actively cut pollards (Photo11). The other five were on older maiden Hornbeams (Photo 13) (Maps 5 & 13). This is more than five times the numbers of *Enterographa elaborata* recorded in the New Forest, in a far smaller area. There are probably two factors involved. First *Enterographa elaborata* needs a high bark pH and Hornbeam has a naturally higher pH than Beech, so there are far more suitable trees within the population of Hornbeam. Also in the New Forest *Enterographa elaborata* is mainly dependent of naturally damaged, leaning or twisted veteran trees, which are found at a much lower density than the actively pollarded Hornbeam at Bockhanger Wood. At Bockhanger nearly all the Hornbeams are veterans, while in unpollarded old growth woodlands, veteran trees are, from the necessity of mortality and tree replacement, thinner on the ground. The density of *Enterographa elaborata* at Bockhanger Wood appears exceptional in a world context, no other reports of the species at anything like this density was found by Sanderson (2009) anywhere within the lichen's range.

At both sites, evidence of recent active colonisation has been observed suggesting healthy populations. At Bockhanger Wood these were small young thalli on maiden Hornbeams and colonising thalli in pioneer communities on some of the pollards.

Beyond the density differences, the ecology of the species was very similar in the two areas. It avoids direct expose to sunshine and needs sheltered conditions. Map 5 shows the species avoiding the wood edges, and the lichen also tends to avoid the south sides of trees, with a similar pattern also seen in the New Forest (Charts 1 & 2).

The habitat and associated species are also similar in both areas, both grow in flushed bark, which is wetted regularly but not enough for dense bryophyte growth (**Photos 12** & **14**). Of the associated lichens *Enterographa crassa* is a constant associated species in both sites (**Tables 1** & **2**). This is a widespread oceanic species of damp shaded bark. There are no other constants at Bockhanger Wood, but *Pertusaria hymenea* was also a constant in the New Forest, but also present at lower levels at Bockhanger Wood. Both sites share the characteristic rain track species *Pyrenula chlorospila* occurring regularly at constancy level III. Another characteristic shared species is *Coniocarpon cinnabarinum* (*Arthonia cinnabarina*), also a rain track species in the south and east.

The New Forest associated species list is longer and has more associated rare species, reflecting the wider geographic range here and a richer lichen assemblage in the less polluted woodland. The New Forest associated species are largely strictly flushed bark species, while in Bockhanger Wood there is a greater number of species of drier bark such as *Cresponea premnea* Nb (IR), *Dendrographa decolorans*, *Sporodophoron cretaceum* Nb (IR) and *Zwackhia prosodea* NT (NS/IR/S41). What appears to be happening is that in the New Forest *Enterographa elaborata* is often strictly confined to sharply defined rain tracks running through more acid drier bark. On Hornbeam, the generally higher bark pH means that community boundaries are less well defined with more gradation into less acid drier bark communities (**Photo 17**).

Another shared feature is that the communities are mosaics of crust forming later succession lichens that remain locked in unshifting patterns once the thalli have all met, often with black antagonism lines between the individual thalli. At both sites a very typical situation is that a scatter of large *Enterographa elaborata* thalli are set in a sea of small *Enterographa crassa* thalli (**Photo 17**). A likely explanation of this is that a few *Enterographa elaborata* establish faster than the *Enterographa crassa*, so get a chance to grow larger. Later there is a mass colonisation by *Enterographa crassa*, which are so numerous that only small individual thalli can grow before the mosaic is locked. At both *Enterographa elaborata* sites, actively colonising thalli over-growing early pioneer lichens and bare bark with prominent white fimbriate prothallus on the growing edge have been observed establishing before the *Enterographa crassa* comes into the new habitat (**Photos 21 – 24)**

One obvious conclusion is that the conditions at Bockhanger Wood strongly favour *Enterographa elaborata*. Like lichen diversity in general, however, the species is strongest on Hornbeam pollards near small to moderate sized glades where there is more indirect light on the trunks (**Photos 11 – 14**) but is less frequent deeper into groves of pollards where conditions are more shaded.

CHART 1
Aspect of Bockhanger Wood *Enterographa elaborata* Populations

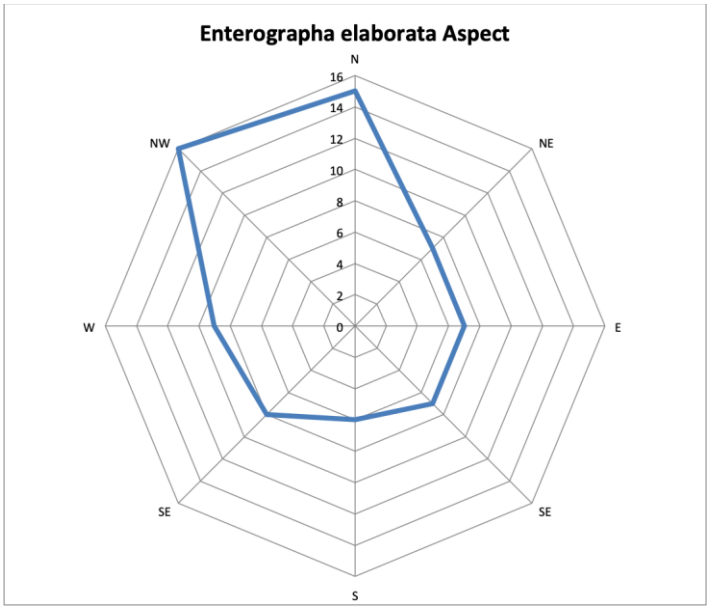
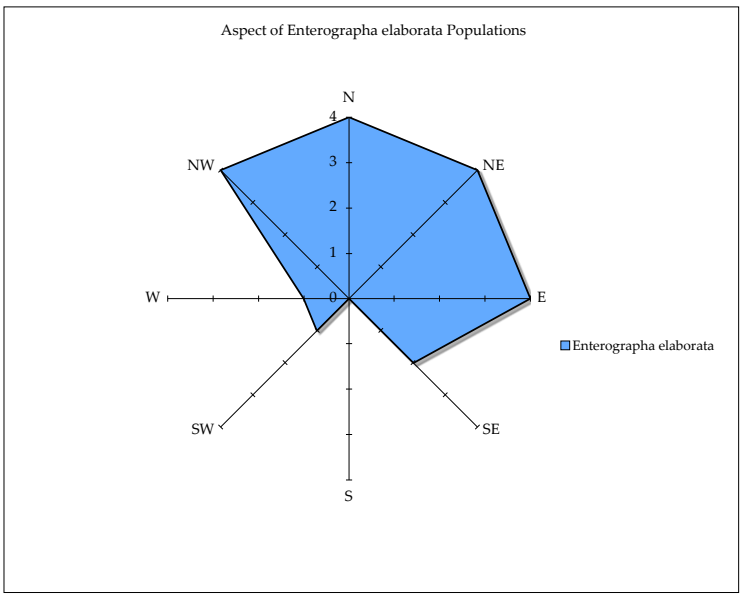


CHART 2
Aspect of New Forest Enterographa elaborata Populations



From Sanderson, (2009)

TABLE 2
Constancy Table for Bockhanger Stands with *Enterographa elaborata*

Species	Constancy
Enterographa elaborata	**V**
Enterographa crassa	V
Pyrenula chlorospila	III
Sporodophoron cretaceum	III
Cresponea premnea	II
Dendrographa decolorans	II
Pertusaria hymenea	II
Alyxoria culmigena	I
Bacidia biatorina	I
Coniocarpon cinnabarinum	I
Lecanora argentata	I
Opegrapha vulgata	I
Phlyctis argena	I
Pyrrhospora quernea	I
Zwackhia prosodea	I

TABLE 3
Constancy Table for New Forest Stands with *Enterographa elaborata*

Species	Constancy
Enterographa elaborata	**V**
Enterographa crassa	V
Pertusaria hymenea	IV
Pyrenula chlorospila	III
Alyxoria varia *	II
Coniocarpon cinnabarinum	II
Lepraria finkii	II
Metzgeria furcata	II
Porina aenea *	II
Bacidia phacodes *	I
Caloplaca ulcerosa *	I
Cliostomum griffithii	I
Dactylospora parasitica	I
Enterographa hutchinsiae	I
Francisrosea bicolor *	I
Graphis scripta	I
Isothecium myosuroides	I
Lecanactis abietina	I
Lecanora chlarotera s. lat.	I
Lecanora expallens	I
Opegrapha atra	I
Opegrapha vermicellifera *	I
Opegrapha vulgata *	I
Phlyctis argena	I
Reichlingia zwackhii	I

Strigula phaea	I
Strigula sp A	I
Strigula tagananae	I
Strigula taylorii *	I
Thelopsis corticola	I
Thelotrema lepadinum	I
Zygodon rupesteris	I

* = Pioneer wound track species
From Sanderson, (2009)

Photos 11 – 14 Trees BPH004 & BPH013, *Enterographa elaborata* is mainly found on old pollards (top), but has also started colonising maiden Hornbeams as they mature (bottom). It grows best on trunks that are well lit by indirect or dappled light and are not exposed to much direct sunshine or are too deeply shaded (right top and bottom, *Enterographa elaborata* extent marked by pins).


Photos 15 & 16 Trees BPH037 & BPH140, there are three different *Enterographa* species in Bockhanger Wood, but they can be separated by the shape of their apothecia. In the very rare *Enterographa elaborata* (left hand picture, centre top and right), the apothecia are very elongated and angular and rather reminiscent of cuneiform letters. The western *Enterographa hutchinsiae* (right hand picture), which is rare in the lowlands, the apothecia are elongated but not angular. Finally the common *Enterographa crassa* (left hand picture, centre left) has small dotted apothecia, which grow in rows. The angular apothecia of *Enterographa elaborata* are so distinctive that the lichen can be identified from a tiny piece of thallus with a single apothecia.

Photos 17 & 18 Tree BPH141, showing the same area of bark in 2021 (top) and 2015 (below) (Davey, 2015). In the lower picture Davey has applied the chemical Pd (para-phenylenediamine) to confirm the identity of the *Enterographa elaborata* thallus. This produces a yellow reaction in the thallus of *Enterographa elaborata* but not the other *Enterographa* species. This is a useful test when *Enterographa elaborata* is first encountered to confirm it but should be used sparingly, as can be seen in the 2021 picture the chemical kills the area of thallus it is in contact with.

Photos 17 and 18 above also show the typical mosaics of crust forming lichens that *Enterographa elaborata* grows in. These are communities of late succession species locked together, without any detectable change after six years. As is typical, *Enterographa elaborata* is set in a widespread mosaic of smaller *Enterographa crassa* thalli. The bark is probably wetter to the right, with an *Enterographa elaborata – Enterographa crassa* mosaic, but drier to the left with *Dendrographa decolorans* (paler) abundant.

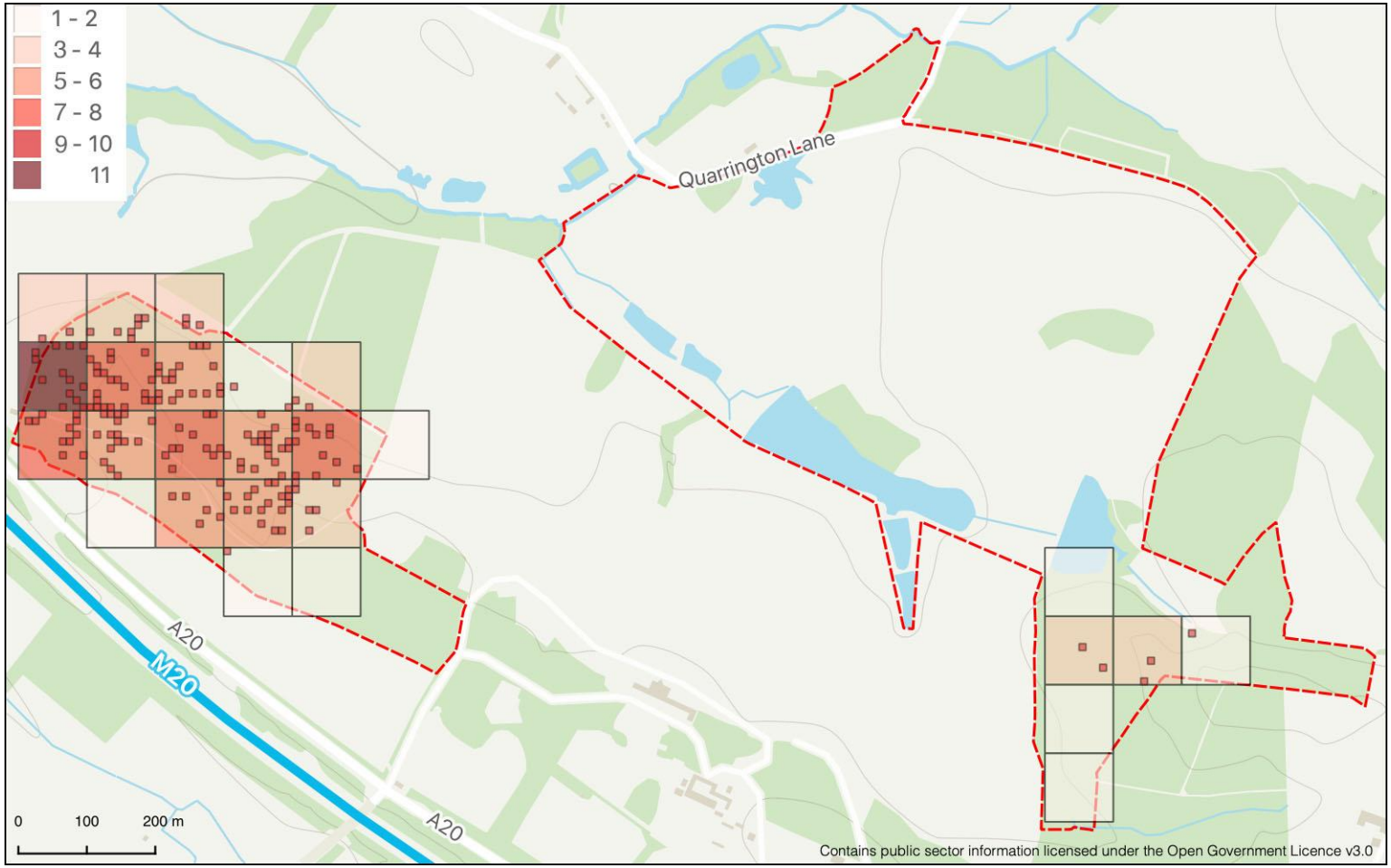
Photos 19 & 20 Tree BPH013, maiden Hornbeam by partial glade, with a small *Enterographa elaborata* colony between the two pins and isolated thalli to the right by pin in a typical *Enterographa* dominated community. A close up of a *Enterographa elaborata* to the right, with *Enterographa crassa* thalli to the left and *Cresponea premnea* Nb (IR) to the right.

Photos 21 & 22, Trees BPH064 & BPH007, two ***Enterographa elaborata*** thalli, showing black antagonism lines where locked against other late succession lichen lichens, but expanding thalli edges where not locked, a prothallus is visible on the left hand thallus.

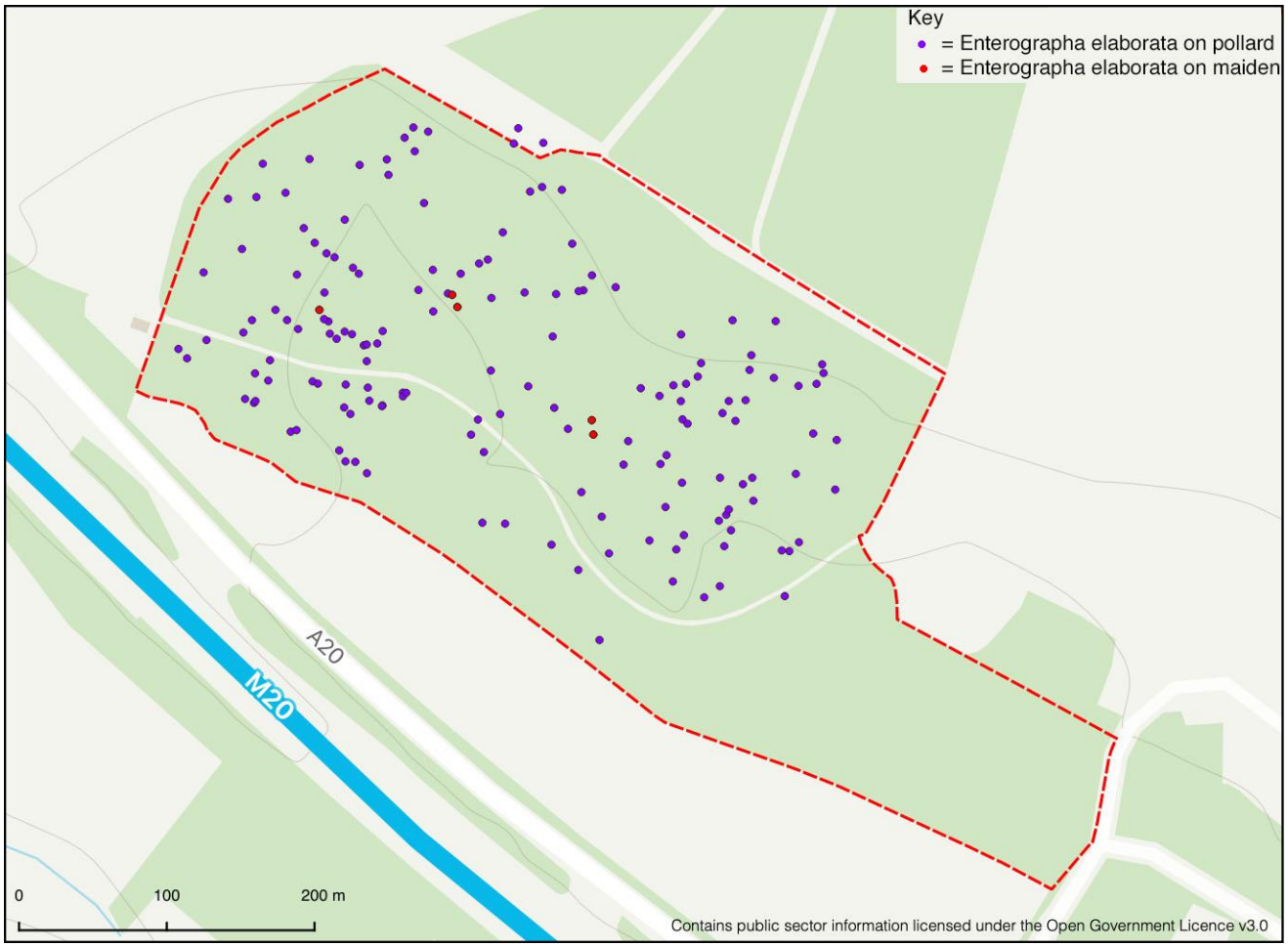
Photos 23 & 24 Tree BPH166, Hornbeam pollard near glade, with colonising *Enterographa elaborata*. Top thallus in 2021, bottom thallus in 2015 (Davey, 2015). The thallus is not "sick and probably moribund" as suggested by Davey (2015), but the opposite, as the white fringe is a prothallus of an actively expanding colonising thallus, which is very healthy. Unlike *Enterographa elaborata* when it is locked in lichen mosaics, some thallus expansion is visible

over six years in the *Enterographa elaborata* thallus and in the *Enterographa crassa* thallus below centre.

MAP 4
Density of Species of Interest Recorded in 2021, Hatch Park SSSI



MAP 5
Distribution of Enterographa elaborata at Bockhanger Wood 2021



MAP 6
Lichen Conservation Interest at Bockhanger Wood 2021

4.0 NATURE CONSERVATION VALUE AND MANAGEMENT

4.1 Nature Conservation Value

4.1.1 Value of Lichen Assemblage

Hatch Park SSSI scores 15 using the SOWI (Southern Oceanic Woodland Index) for all data and 12 for the 2021 survey. The threshold for SSSI quality for this index in this area is 20 (Sanderson et al, 2018). Although the scores are low in terms of national scores, these are likely to among be the highest in Kent. The area also supports many species of conservation interest in their own right. These are listed below (# = species that qualify for SSSI site selection in their own right, • = Section 41 species. In the Survey column; 1 = Seen 2021 & 0 = Recorded 2014 or 15 but not seen 2021):

One Critically Endangered RDB species:

Species	Status	Survey	Synonym
Enterographa elaborata #•	NR	1	
Total number CR species 2021		**1**	

One Vulnerable RDB species:

Species	Status	Survey	Synonym
Bellicidia incompta #•	NS	1	*Bacidia incompta*
Total number VU species 2021		**1**	

Four Near Threatened RDB species:

Species	Status	Survey	Synonym
Coenogonium confusum #	NS IR	1	*Porina rosei* auct. br.
Phlyctis agelaea	NS	1	
Syncesia myrticola, sorediate morph #•	NS IR	1	*Enterographa sorediata*
Zwackhia prosodea #•	NS IR	1	*Opegrapha prosodea*
Total number NT species 2021		**1**	

Fourteen Notable species:

Species	Status	Survey	Synonym
Chaenotheca hispidula	NS	0	
Chaenothecopsis nigra	NS	1	
Cresponea premnea	IR	1	
Lecanographa lyncea	IR	1	
Microcalicium ahlneri	NS	1	
Milospium graphideorum	NS	1	
Porina borreri	NS	1	
Porina byssophila	NS DD	1	
Rinodina roboris var. roboris	IR	1	
Schizotrema quercicola	IR	0	*Schismatomma quercicola*
Snippocia nivea	IR	0	*Schismatomma niveum*
Sporodophoron cretaceum	IR	1	*Schismatomma cretaceum*
Strigula taylorii	NS IR	1	
Thelopsis corticola	IR	1	*Opegrapha corticola*
Total number Nb species 2021		**11**	

More significant are species that qualify for SSSI site selection in their own right as Threatened lichens in Britain. These are either Vulnerable or higher threatened species, or Near Threatened species that are also International Responsibility species. Species that qualify are the Critically Endangered *Enterographa elaborata*, the Vulnerable *Bellicidia incompta* (*Bacidia incompta*), and the Near Threatened and International Responsibility species *Coenogonium confusum* (*Porina rosei* auct. br. pro maxima parte), *Syncesia myrticola*, sorediate morph (*Enterographa sorediata*) and *Zwackhia prosodea* (*Opegrapha prosodea*). Of these *Enterographa elaborata* has not only the largest population in Britain, but the largest known in the world, so easily qualifies as and SSSI feature. Of the others, all have significant populations for the Weald and would also hence be of national importance.

4.1.2 Distribution of Interest

The distribution of systematically surveyed lichens in 2021 is mapped on **Map 6**. This shows the major concentration of interest within the main body of Bockhanger Wood, but some interest in the drier and more exposed area of Hornbeam pollards by Barrack Wood in Hatch Park.

4.2 Management

4.2.1 Comments on the Management of Pollarded Woods at Hatch Park

The actively pollarded woods at Hatch Park are a remarkable survival of national importance. No other pasture woods have a continuous history of pollarding in Britain. This alone is a unique feature of national importance and it was surprising to find that the funding of the re-pollarding was so fragile. If at all possible more secure found should be obtained for the continuous programme of pollard recutting.

Added to the cultural-ecological importance of the only continuous functioning pollarded pasture woodland in GB, are the internationally important populations of lichens. These include the largest population of the Critically Endangered *Enterographa elaborata* known in the world, along with other nationally important populations of lichens. These have clearly prospered in the wood as it has been managed by pollarding for centuries and the most obvious advice is to continue as before and maintain the pollarding. Without pollarding the woods will become rapidly too dark and in time the old Hornbeams will start collapsing. Bockhanger Wood, however, is not perfect as it is; in particular the lack of grazing is not ideal. Possible changes are discussed below.

4.2.2 Recommendations on Management of Pollarded Woods at Hatch Park

The following recommendation are made for future management in Bockhanger Wood:

Maintain the Pollarding Cycle: groups of Hornbeam pollards should be regularly recut to maintain a cycle in which all the pollards are maintained as working pollards.

Restore Grazing: the ecological functioning of the wood for lichens would be much improved if grazing could be re-introduced. The browsing would maintain a browse-line, letting more dappled light into the trunks. Browsing will also reduce the issue of

dense Sycamore, which currently needs regular coppicing to maintain openness, and reduce Bramble growth. Browsing will reduce the amount of regeneration by the grazing-sensitive Sycamore and may allow some regeneration by the more grazing-resistant Hornbeam and Oak that are currently largely absent. The most practical way to introduce grazing would be to fence in the wood with a deer fence and open it to the deer park to the east. Retaining the eastern deer fence with the park but opening a gate, would allow a degree of control to be maintained over grazing. The Hornbeam pollard wood by Barrack Wood in Hatch Park appears to be already managed in this manner.

Cut New Pollards: the actively worked pollards seem to have a very low death rate but will need replacement over time. New Hornbeam pollards should be cut where there are young trees. This may need some planting if Hornbeam does not regenerate. Other young trees could equally be cut, especially Oaks and even species such as Sycamore.

Management of Other Tree Species: until increased browsing has controlled dense regeneration, halo thinning around the pollards should continue. Non-native trees such as Sycamore and Poplar cultivars should not be allowed to shade or over-top the existing pollards, but they do not need to be eradicated. Sycamore, in particular could be included in the new pollards. It is a good habitat for lichens when older and is similar to Ash in the species it supports. Dense areas of young trees, mostly not Hornbeam, away from the existing pollards, could be thinned and pollarded to produce new pollard stands.

Maintain the SSSI as *Rhododendron* Free: *Rhododendron* has been nearly eliminated from Bockhanger Wood and control is under way in the pollards by Barrack Wood in Hatch Park. Any regrowth should be eliminated.

5.0 REFERENCES

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ANNEX 1 Field Notes

Key:

General
Coll. = Collected to confirm identity. Herb. = Collected specimen retained in author's herbarium. fr. = fertile.

Substrates
Ap = Sycamore, Cb = Hornbeam, Co = Hazel, Q = Oak, L = Lignum (as prefix) (LDf = Lignum on fallen dead tree or branch & LTr = Lignum on live trunk), Tw = twigs & branches & T = Terricolous.

Hosts for lichenicolous fungi
Z0533 = *Graphis scripta* s. lat. & Z1079 = *Pertusaria leioplaca*.

A1 Bockhanger Wood 24/8/2021

A1.1 Weather
Dry and sunny

A1.2 Bockhanger Wood, TR0540

TR051 408
Groves of in-cycle Hornbeam pollards plus maiden Hornbeam, pollard and maiden Pedunculate Oak, abundant Sycamore regeneration (has been cut back)

BHP001 (TR05128 40878, 60m): Hornbeam pollard near edge of wood. Tag 08003

Thelopsis corticola	LCb LTr O		Inside hollow
Also			
Enterographa hutchinsiae	Cb	One thallus	
Porina borreri	Cb		
Pyrenula chlorospila	Cb		

BPH003 (TR05153 40891, 52m): Hornbeam pollard in maintained glade. Tag 08087

Facing 80°			
Enterographa elaborata	Cb	Many small thalli in gully between upper pins, larger lower down pin, 80°	
Associated Species			
Cresponea premnea	Cb		
Enterographa crassa	Cb		
Facing 290°			
Enterographa elaborata	Cb	O	Between pins
Associated Species			
Cresponea premnea	Cb		
Dendrographa decolorans	Cb		
Enterographa crassa	Cb		
Pyrenula chlorospila	Cb		
Sporodophoron cretaceum	Cb		
On south west side			

Phlyctis agelaea	Cb	Single large thallus
Also on tree		
Pyrenula chlorospila	Cb	
Sporodophoron cretaceum	Cb	
Zwackhia prosodea	Cb	

Photos 2021-08-24-01 – 3 & 20

Photos 2021-08-24-01 – 3: **BPH003** Hornbeam pollard in maintained glade, ***Enterographa elaborata*** colony in the upper pictures with the pins in the right hand photo indicating the location of the ***Enterographa elaborata*** thalli. Lower picture shows the side of the tree with ***Phlyctis agelaea***.

Photos 2021-08-24-20: **BPH003**, a close up of part of the ***Phlyctis agelaea*** thallus.

BHP004 (TR05136 40841, 57m): Hornbeam pollard by partial glade. Tag 08061

Enterographa elaborata	Cb		Two small thalli facing 320°
Associated Species			
Enterographa crassa			
Also			
Cresponea premnea	Cb		

BHP005 (TR05162 40857, 66m): group of three Hornbeam pollards, western tree (no tag but seems to be SD 08132, it is next to a tree with this tag)

Enterographa elaborata	Cb	O	Between pins facing 360°
Associated Species			
Enterographa crassa	Cb		
Pertusaria hymenea	Cb		
Pyrenula chlorospila	Cb		

Photos 2021-08-24-05 & 6


Photos 2021-08-24-05 – 6: **BPH004**, Hornbeam pollard by partial glade, ***Enterographa elaborata*** colony between the pink pins in the right hand photo.

BHP006 (TR05174 40843, 60m): Hornbeam pollard by a glade. Tag 08186 is listed as an SD tree but the tree SD recorded is an adjacent tree. Rhododendron gone. On part of trunk with tag:

Lecanographa lyncea	Cb	O
Syncesia myrticola, **sorediate morph**	Cb	F

Also on tree

Cresponea premnea	Cb	
Milospium graphideorum	Cb, Z0600	
Thelotrema lepadinum	Cb	A

Photos 2021-08-24-07 & 8


Photos 2021-08-24-07 – 8: **BPH006**, Hornbeam pollard by a glade, the dry bark supports ***Syncesia myrticola*, sorediate morph** (pale grey-brown on the left of the left hand photo, with the Pd+ rust red spot test visible) and ***Lecanographa lyncea*** (with black flecks on the right of the left hand photo).

BHP007 (TR05199 40839, 62m): Hornbeam pollard by partial glade. Tag 08223

Enterographa elaborata	Cb	O	Between pins facing 85°. Three larger thalli with smaller ones
Associated Species			
Enterographa crassa	Cb		
Also on tree			
Cresponea premnea	Cb		

Photos 2021-08-24-09, 10 & 21

Photos 2021-08-24-09, 10 & 21: **BPH007**, Hornbeam pollard by a glade, ***Enterographa elaborata*** between the pins facing, three larger thalli with smaller ones, with one photographed below.

BHP014 (TR05193 40809, 67m): big Hornbeam pollard by partial glade. Tag 08254
Enterographa elaborata Cb R Facing 270°
Photos 2021-08-24-14 & 17 in the background of both

Photos 2021-08-24-09, 15 – 17: **BPH015 (BHP014)**, burry Hornbeam pollard by glade, with frequent ***Enterographa elaborata*** on the sides photographed above. BHP014 in the background to the left.

BHP015 (TR05185 40816, 66m): burry Hornbeam pollard by glade. Tag 08221

Enterographa elaborata	Cb	F	Facing 310° & 40°
Associated Species			
Cresponea premnea	Cb		

Enterographa crassa	Cb		
Sporodophoron cretaceum	Cb		
Zwackhia prosodea	Cb		

Photos 2021-08-24-15 – 17

BHP023 (TR05191 40895, 65m): Hornbeam pollard in rather shaded grove. Tag 08090

Enterographa elaborata	Cb	R	Facing 10°

BHP024 (TR05172 40892, 64m): Hornbeam pollard in rather shaded grove. Tag 08085 SD tree

Enterographa elaborata	Cb	Facing 120°

Also

Cresponea premnea	Cb	
Zwackhia prosodea	Cb	

TR051 408

Species of Interest

Bacidia biatorina	Cb	TR0512 4088 sterile
Cresponea premnea	Q, Cb, LCb LTr	
Enterographa hutchinsiae	Cb	TR0517 408
Lecanographa lyncea	Cb	
Milospium graphideorum	Cb, Z0600	
Phaeographis dendritica	Cb	
Phlyctis agelaea	Cb	
Porina borreri	LCb LTr, Cb	
Sporodophoron cretaceum	Cb	
Strigula taylorii	Ap	
Syncesia myrticola, sorediate morph	Cb	
Thelopsis corticola	LCb LTr	
Thelotrema lepadinum	Cb	Hornbeam maiden TR0517 4082
Zwackhia prosodea	Cb, LCb LTr	Coll. 1

Other Species

Alyxoria culmigena	Cb	
Arthonia atra	Cb	
Arthonia radiata	Cb	
Cliostomum griffithii	Q	
Coenogonium pineti	LCb LTr	
Coniocarpon cinnabarinum	Cb	
Dendrographa decolorans	Q, Cb	
Diarthonis spadicea	LCb LTr	
Enterographa crassa	Q, Cb, Ap	
Graphis betulina	Cb, Ap	
Graphis pulverulenta	Cb	
Lecanactis abietina	Cb, Q	
Lecanora hybocarpa	Cb	Coll 2 TR0513 4089
Lecidella elaeochroma f. *elaeochroma*		Cb, Ap
Lepraria finkii	Q	
Micarea prasina s. lat.	LCb LTr	

Opegrapha vermicellifera	Cb
Opegrapha vulgata	Q
Pachnolepia pruinata	Cb Coll. 1, Q
Pertusaria hymenea	Cb, Ap, Q
Pertusaria pertusa	Cb
Phlyctis argena	Cb, Ap
Pyrenula chlorospila	Cb
Pyrrhospora quernea	Q, Ap, Cb
Zwackhia sorediifera	Cb

TR051 409

BPH002 (TR05139 40902, 57m): Hornbeam pollard near edge of wood. Tag 08012

Thelopsis corticola	O	LCb LTr	Inside hollow trunk

Also

Cresponea premnea	Cb
Sporodophoron cretaceum	Cb
Zwackhia prosodea	Cb

BPH025 (TR05176 40914, 62m): Hornbeam pollard in denser pollard grove, SD Tree. Tag 08081

Enterographa elaborata	Cb	F	Facing 330° under hanging bark, poorly grown

Also

Sporodophoron cretaceum	Cb

Photo 2021-08-24-18


Photo 2021-08-24-18: **BPH025**, Hornbeam pollard in denser pollard grove, with frequent ***Enterographa elaborata***. Left 2021, right 2015 (Davey, 2015)

TR051 409

Species of Interest

Cresponea premnea	Cb, Q
Enterographa elaborata	Cb
Sporodophoron cretaceum	Cb
Thelopsis corticola	LCb LTr
Zwackhia prosodea	Cb

Other Species

Pachnolepia pruinata	Cb
Pyrenula chlorospila	Cb

TR051 407

Species of Interest

Strigula taylorii	Ap
Cresponea premnea	Q

TR052 408

BHP08 (TR05204 40871, 63m): Hornbeam pollard? Looks cut one once, might just be damaged, out-of-cycle if cut. No tag but next to 08187.

Enterographa elaborata	Cb	O scattered mostly facing 40°, some 150° where shaded

Associated Species

Coniocarpon cinnabarinum	Cb
Cresponea premnea	Cb
Enterographa crassa	Cb
Pyrenula chlorospila	Cb
Pyrrhospora quernea	Cb

Photo 2021-08-24-11

Also on tree

Sporodophoron cretaceum	Cb

Photo 2021-08-24-11: **BPH008**, Hornbeam pollard? Looks cut just once, might just be damaged, out-of-cycle if cut, with occasional ***Enterographa elaborata***.

BHP009 (TR05211 40861, 64m): Hornbeam pollard fairly closed conopy but well lit. Tag 08226

Enterographa elaborata	Cb	O	Facing 10°
Associated Species			
Enterographa crassa	Cb		
Sporodophoron cretaceum	Cb		
Also			
Cresponea premnea	LCb LTr, Cb		
Zwackhia prosodea	Cb		

BHP010 (TR05219 40854, 65m): Adjacent leaning Hornbeam pollard. Tag 08225

Enterographa elaborata	Cb	O	On under hanging bark facing 230°

BHP011 (TR05218 40827, 66m): Hornbeam pollard by glade. Tag 08257

Enterographa elaborata	Cb	R	Facing 100° on rib left of tag
Also			
Cresponea premnea	LCb LTr, Cb		
Sporodophoron cretaceum	Cb		

BHP012 (TR05221 40808, 66m): Hornbeam pollard by glade. Tag 08255 Tree

Enterographa elaborata	Cb	A below tag facing 150°. F on other trunk facing 220°	
Associated Species			
Enterographa crassa	Cb		

Lecanora argentata	Cb
Pyrenula chlorospila	Cb

BHP013 (TR05214 40815, 68m): near BHP012, maiden Hornbeam by partial glade. Tag 08286

Enterographa elaborata	O	Facing 20° between two pins and isolated thalli to right by pin

Associated Species

Cresponea premnea	Cb
Enterographa crassa	Cb
Pertusaria hymenea	Cb
Pyrrhospora quernea	Cb

Also

Sporodophoron cretaceum	Cb

Photos 2021-08-24-12 – 14, 22 & 23


Photos 2021-08-24-12 & 13: **BPH013**, maiden Hornbeam by partial glade, with colonising ***Enterographa elaborata*** between two pins and isolated thalli to right by pin. BHP014 in the background to the right.

Photos 2021-08-24-11, 22 & 23: **BPH013**, maiden Hornbeam by partial glade, with colonising ***Enterographa elaborata*** between two pins and isolated thalli to right by pin. Individual colonising thalli, the one below has a black antagonism lines where it has meet and stopped growing by late succession species *Cresponea premnea* and *Enterographa crassa* but an actively expanding prothallus over poorly colonised bark to the left.

BHP016 (TR05200 40803, 65m): Hornbeam pollard by glade near track. Tag 08284
Enterographa elaborata Cb F Facing 320°

Associated Species

Enterographa crassa	Cb
Pertusaria hymenea	Cb
Pyrenula chlorospila	Cb

Also

Thelopsis corticola	Cb

BHP017 (TR05218 40809, 67m): Hornbeam pollard by glade, SD tree

Enterographa elaborata	Cb	F on more than one area, facing 10°, 220° & 130° (below tag)

Also

Cresponea premnea	Cb
Sporodophoron cretaceum	Cb

BHP018 (TR05231 40801, 70m): Hornbeam pollard near glade. Tag 08559

Enterographa elaborata	Cb	R	Facing 190°

Also

Aquacida viridifarinosa	LCb LTr
Cresponea premnea	Cb

BHP019 (TR05237 40844, 70m): broken Hornbeam pollard by glade. Tag 08259

Enterographa elaborata	Cb	F	Facing 300°

Also

Cresponea premnea	Cb
Sporodophoron cretaceum	Cb

BHP020 (TR05241 40840, 71m): small Hornbeam pollard in open stand. Tag 08260

Enterographa elaborata	Cb	R	Facing 330°

Also

Cresponea premnea	Cb	
Graphis pulverulenta	Cb	Coll.

BHP021 (TR05225 40851, 70m): Hornbeam pollard in open stand. Tag 08220

Enterographa elaborata	Cb	R	Facing 220°

BHP022 (TR05232 40877, 70m): Hornbeam pollard in open stand. Tag 08194

Enterographa elaborata	Cb	F	Facing 130°, 20° & 320°

BHP41 (TR05285 40888, 64m): Hornbeam pollard in more open area. Tag 08238

Enterographa elaborata	Cb	O	Facing 330°

TR052 408

Species of Interest

Cresponea premnea	Cb
Enterographa elaborata	Cb
Sporodophoron cretaceum	Cb
Strigula taylorii	Cb
Thelopsis corticola	Cb

Thelotrema lepadinum	Q	TR0523 4088
Zwackhia prosodea	Cb	

Other Species

Aquacida viridifarinosa	LCb LTr	
Coniocarpon cinnabarinum	Cb	
Enterographa crassa	Cb	
Graphis pulverulenta	Cb	
Lecanora argentata	Cb	
Pertusaria hymenea	Cb	
Pyrenula chlorospila	Cb	
Pyrrhospora quernea	Cb	

TR052 409

BHP026 (TR05208 40918, 64m): Hornbeam pollard by slight glade. Tag 08100

Enterographa elaborata	Cb	R	Facing 320°

Also

Cresponea premnea	Cb		

BHP027 (TR05242 40914, 66m): Hornbeam pollard by glade. Tag 08151

Enterographa elaborata	Cb	R	Facing 230°

BHP028 (TR05261 40907): Hornbeam pollard by glade. Tag 08159

Enterographa elaborata	Cb	R	Facing 230°

Also

Cresponea premnea	Cb		

BHP029 (TR05260 40917, 63m): Hornbeam pollard by glade. Tag 08161

Enterographa elaborata	Cb	F	Facing 290°

Also

Cresponea premnea	Cb		

BHP030 (TR05279 40923, 61m): Hornbeam pollard near glade. Tag 08166 (separate stem)

Enterographa elaborata	Cb	R	Facing 350°

Also

Cresponea premnea	Cb		

BHP031 (TR05272 40932, 59m): Hornbeam pollard by glade and conifers. Tag 08118

Enterographa elaborata	Cb	R	Facing 10°
Thelopsis corticola	Cb	O	

Also

Cresponea premnea	Cb, LCb LTr		
Zwackhia prosodea	Cb		

BHP032 (TR05278 40939, 59m): big Hornbeam pollard by glade. Tag 08119

Enterographa elaborata	Cb	O	Facing 330° & 90°

Also

Cresponea premnea	Cb		

Sporodophoron cretaceum	Cb		

BHP033 (TR05288 40936, 54m): big Hornbeam pollard by glade and conifer. Tag 08120

Enterographa elaborata	Cb	O	Facing 340°

Also

Cresponea premnea	Cb
Sporodophoron cretaceum	Cb

TR052 409

Species of Interest

Cresponea premnea	Cb, Q
Enterographa elaborata	Cb
Sporodophoron cretaceum	Cb
Thelopsis corticola	Cb
Zwackhia prosodea	Cb

Other Species

Dendrographa decolorans	Cb
Enterographa crassa	Cb
Opegrapha vermicellifera	Cb
Pyrenula chlorospila	Cb

TR053 409

BHP035 (TR05346 40928, 54m): Hornbeam pollard by partial glade. Tag 08279

Enterographa elaborata	Cb	R	Facing 270°

Also

Cresponea premnea	Cb

BHP036 (TR05349 40938, 55m): small Hornbeam pollard on northern edge. Tag 08281

Enterographa elaborata	Cb	R	Facing 60°

Also

Enterographa hutchinsiae	Cb

BHP037 (TR05366 40929, 57m): big Hornbeam pollard on bank on northern edge. Tag 08323

Enterographa elaborata	Cb	O	Facing 190°

Also

Cresponea premnea	Cb
Sporodophoron cretaceum	Cb

Photo 2021-08-24-24

Photo 2021-08-24-24: **BPH037**, on a big Hornbeam pollard on bank on northern edge, close up of ***Enterographa elaborata*** (above and right) and *Enterographa crassa* (centre left).

TR053 409

Species of Interest

Cresponea premnea	Cb, Q	
Enterographa elaborata	Cb	
Enterographa hutchinsiae	Cb	
Sporodophoron cretaceum	Cb	

Other Species

Dendrographa decolorans	Cb	
Enterographa crassa	Cb	
Pertusaria leioplaca	Cb	
Taeniolella punctata	Cb, Z1079	On *Pertusaria leioplaca*

TR053 408

BHP034 (TR05357 40896, 54): Hornbeam pollard by partial glade. Tag 08320

Enterographa elaborata	Cb	R	Facing 90° single thallus
Also			
Cresponea premnea	Cb		

BHP038 (TR05379 40897, 57m): Hornbeam pollard by glade. Tag 08321

Enterographa elaborata	Cb	A	Facing 270°
Also			
Cresponea premnea	Cb		
Sporodophoron cretaceum	Cb		

BHP039 (TR05365 40899, 59m): part shaded Hornbeam pollard. Tag 08322

Enterographa elaborata	Cb	R	Facing 340°
Also			
Cresponea premnea	Cb		

BHP040 (TR05339 40868, 60m): Hornbeam pollard on edge of shaded Hornbeam grove. Tag 08314

Enterographa elaborata	Cb	O	Facing 340°
Also			
Cresponea premnea	Cb		

BPH042 (TR05310 40840, 67m): big Hornbeam pollard by glade, mossy. Tag 08346

Coenogonium confusum	Cb, LCb LTr		F
Enterographa elaborata	Cb	O	Facing 60°
Thelopsis corticola	Cb	R	
Also			
Cresponea premnea	Cb		
Porina leptalea	Cb	Red perithecia morph	
Sporodophoron cretaceum	Cb		

Photo 2021-08-24-19

Photo 2021-08-24-19: **BPH042**, a big Hornbeam pollard by glade, mossy and damp bark with ***Coenogonium confusum*** and ***Thelopsis corticola*** on the wettest bark and ***Enterographa elaborata*** on less mossy but still flushed bark

BPH043 (TR05323 40847, 74m): big leaning Hornbeam pollard near glade. Tag 08348

Coenogonium confusum	LCb LTr	O	
Enterographa elaborata	Cb	F	Facing 360° & 110°
Thelopsis corticola	Cb	O	
Also			

Cresponea premnea	Cb
Porina borreri	LCb LTr
Sporodophoron cretaceum	Cb

BPH044 (TR05328 40850, 61m): Hornbeam pollard in shady grove. Tag 08307

Enterographa elaborata	Cb	R

Also

Coniocarpon cinnabarinum	Cb
Cresponea premnea	Cb

BPH045 (TR05331 40824, 63m): Hornbeam pollard by track. Tag 08368

Enterographa elaborata	Cb	F	Facing 320°

BPH046 (TR05301 40827, 66m): Hornbeam pollard on edge of Hornbeam grove

Enterographa elaborata	Cb	A	Facing 260° to 330°

Also

Cresponea premnea	Cb

TR053 408

Species of Interest

Coenogonium confusum	Cb, LCb LTr	
Cresponea premnea	Cb, Q	
Enterographa elaborata	Cb	
Porina borreri	LCb LTr	
Sporodophoron cretaceum	Cb, Q	
Thelopsis corticola	Cb	
Thelotrema lepadinum	Cb	TR0530 4085
Thelotrema lepadinum	Q	TR0532 4081

Other Species

Anisomeridium biforme	Q	
Anisomeridium polypori	Ap	
Aquacida viridifarinosa	LCb LTr	
Enterographa crassa	Cb	
Graphis betulina	Cb	
Porina leptalea	Cb	Red perithecia morph
Taeniolella punctata	Cb, Z0533	On *Graphis betulina*

A2 Bockhanger Wood 25/8/2021

A2.1 Weather

Dry and sunny

A2.2 Bockhanger Wood, TR0540

TR051 408

BPH047 (TR05169 40809, 79m): split Hornbeam pollard by glade. Tag 08178

Enterographa elaborata	Cb	R	Facing 350° single thallus on western half, O on eastern half
Associated Species			
Enterographa crassa	Cb		
Sporodophoron cretaceum	Cb		
Also			
Cresponea premnea	Cb		
Pachnolepia pruinata	Cb		

BHP048 (TR05163 40800, 76m): Hornbeam pollard by track. SD Tree. Tag 08219

Enterographa elaborata	Cb	A	Facing 320° & 30° section of trunk with *Enterographa elaborata* dead?
Associated Species			
Dendrographa decolorans	Cb		
Enterographa crassa	Cb		
Zwackhia prosodea	Cb	Coll. 1	

Photo 2021-08-25-01

Photo 2021-08-25-01: **BPH048**, Hornbeam pollard by track, with abundant ***Enterographa elaborata***. Left 2021, right 2015 (Davey, 2015)

TR051 408

Species of Interest

Cresponea premnea	Cb
Enterographa elaborata	Cb
Sporodophoron cretaceum	Cb
Zwackhia prosodea	Cb

Other Species

Enterographa crassa	Cb
Pachnolepia pruinata	Cb

TR051 407

BHP049 (TR05181 40796, 74m): Pedunculate Oak pollard north of track in glade. Tag 08252

Microcalicium ahlneri	LQ LTr	O	

Also

Cresponea premnea	Q

TR051 407

Species of Interest

Cresponea premnea	Q
Microcalicium ahlneri	LQ LTr

Other Species

Pertusaria hymenea	Q
Dendrographa decolorans	Q

TR052 407

BPH050 (TR05226 40796, 74m): Hornbeam pollard near track, SD tree. Tag 08289

Enterographa elaborata	Cb	O	Facing 280° & 350°

Associated Species

Enterographa crassa	Cb
Pyrenula chlorospila	Cb

Photo 2021-08-25-02

Photo 2021-08-25-02: **BPH050**, Hornbeam pollard near track, with occasional ***Enterographa elaborata***. Left 2021, right 2015 (Davey, 2015).

BPH051 (TR05221 40799, 76m): strongly leaning Hornbeam pollard, SD tree. Tag 08290

Enterographa elaborata	Cb	F	Facing 300°
Associated Species			
Cresponea premnea	Cb		
Enterographa crassa	Cb		
Pyrenula chlorospila	Cb		
Sporodophoron cretaceum	Cb		

Photo 2021-08-25-03

Photo 2021-08-25-03: **BPH050**, strongly leaning Hornbeam pollard, with frequent ***Enterographa elaborata***. Above 2021, below 2015 (Davey, 2015).

BPH052 (TR05244 40792, 77m): Hornbeam pollard on edge of grove of Hornbeam, SD tree, Rhododendron dead. Tag 08330

Enterographa elaborata	Cb	A	Facing 30°, 220° & 190°
Associated Species			
Dendrographa decolorans	Cb		
Enterographa crassa	Cb		

Opegrapha vulgata	Cb
Sporodophoron cretaceum	Cb

Photo 2021-08-25-04

Photo 2021-08-25-04: **BPH052**, Hornbeam pollard on edge of grove of Hornbeam, with abundant ***Enterographa elaborata***. Left 2021, right 2015 (Davey, 2015).

BPH053 (TR05236 40799, 75m): Hornbeam pollard in shaded Hornbeam grove. Tag 08331

Enterographa elaborata	Cb	O	Facing 330°

BPH054 (TR05246 40792, 77m): fairly small Hornbeam pollard in shaded Hornbeam grove. Tag 08332

Enterographa elaborata	Cb	A	Facing 280° to 40°

Associated Species

Alyxoria culmigena	Cb
Coniocarpon cinnabarinum	Cb
Dendrographa decolorans	Cb
Enterographa crassa	Cb
Pertusaria hymenea	Cb
Phlyctis argena	Cb
Pyrenula chlorospila	Cb

BPH055 (TR05254 40793, 76m): Hornbeam pollard in shaded Hornbeam grove. Tag 07334

Enterographa elaborata	Cb	O	Facing 80°

Also

Cresponea premnea	Cb

Graphis pulverulenta	Cb
Phaeographis dendritica	Cb

BPH056 (TR05291 40787, 72m): post mature Pedunculate Oak by open area. No tag

***Syncesia myrticola*, sorediate morph**	Q	O

Also

Cresponea premnea	Q
Sporodophoron cretaceum	Q

TR052 407

Species of Interest

Cresponea premnea	Cb, LCb LTr, Q
Enterographa elaborata	Cb
Phaeographis dendritica	Cb
Sporodophoron cretaceum	Cb, Q
Syncesia myrticola, sorediate morph	Q

Other Species

Alyxoria culmigena	Cb
Anisomeridium biforme	Cb
Coniocarpon cinnabarinum	Cb
Dendrographa decolorans	Cb
Enterographa crassa	Cb, Q
Graphis betulina	Cb
Graphis pulverulenta	Cb
Lecanactis abietina	Q
Opegrapha vulgata	Cb
Pertusaria hymenea	Cb
Phlyctis argena	Cb
Pyrenula chlorospila	Cb

TR052 408

BHP059 (TR05291 40814, 66m): Hornbeam pollard, by glade. Tag 08344

Enterographa elaborata	Cb	A	Facing 140°, 320° & 350°

Also

Cresponea premnea	Cb
Sporodophoron cretaceum	Cb

BPH060 (TR05291 40843, 63m): Hornbeam pollard in Hornbeam grove. Tag 08301

Enterographa elaborata	Cb	O	Facing 80°

Associated Species

Bacidia biatorina	Cb
Enterographa crassa	Cb
Pyrenula chlorospila	Cb

BPH061 (TR05281 40829, 64m): split Hornbeam pollard in Hornbeam grove

Enterographa elaborata	Cb	F	Facing. 170°

BPH062 (TR05257 40801, 65m): Hornbeam pollard in Hornbeam grove. Tag 08339

Enterographa elaborata	Cb	F	Facing 330° & 190°

Also

Sporodophoron cretaceum	Cb		

TR052 408

Species of Interest

Bacidia biatorina	Cb	
Chaenotheca trichialis	Q	TR0528 4081
Cresponea premnea	Cb, Q	
Enterographa elaborata	Cb	
Enterographa hutchinsiae	Cb	TR0525 4083 maiden
Pertusaria hymenea	Cb	
Sporodophoron cretaceum	Cb	
Strigula taylorii	Ap	

Other Species

Coniocarpon cinnabarinum	Cb	
Dendrographa decolorans	Q, Cb	
Enterographa crassa	Cb, Q	
Graphis pulverulenta	Cb	
Pertusaria hymenea	Cb	
Pyrenula chlorospila	Cb	
Varicellaria hemisphaerica	Cb	
Zwackhia sorediifera	Cb	fr.

TR053 408

BHP057 (TR05308 40817, 64m): maiden Hornbeam at edge of big glade. No tag

Enterographa elaborata	Cb	R	Facing 270° two thalli

Also

Cresponea premnea	*Cb*		
Lecanora argentata	*Cb*		
Pyrenula chlorospila	Cb		

Photo 2021-08-25-05 left

Photo 2021-08-25-05: **BPH057** (left) **& 58** (right), two maiden Hornbeams pollard on edge of big glade, both with rare ***Enterographa elaborata***.

BHP058 (TR05304 40826, 66m): maiden Hornbeam at edge of big glade, next maiden west from BHP057. No tag

Enterographa elaborata	Cb	R	Facing 310° two thalli
Pachyphiale carneola	Cb	R	

Also

Porina byssophila	Cb		
Sporodophoron cretaceum	Cb		

Photo 2021-08-25-05 right

BHP063 (TR05353 40827, 60m): Hornbeam pollard on edge of infilling glade. Tag 08385

Enterographa elaborata	Cb	R	Facing 210°
Thelopsis corticola	Cb		

Also

Aquacida viridifarinosa	Cb		
Cresponea premnea	Cb		

BHP070 (TR05393 40829, 58m): Hornbeam pollard in shady grove of Hornbeam. Tag 08409

Enterographa elaborata	Cb	R	

BHP071 (TR05390 40828, 59m): Hornbeam pollard, cage like, on edge of Hornbeam grove. Tag 08411

Enterographa elaborata	Cb	O	

BHP072 (TR05375 40826, 60m): Hornbeam pollard in shady Hornbeam grove. Tag 08412

Enterographa elaborata	Cb	R

BHP073 (TR05399 40839, 61m): Hornbeam pollard in shady Hornbeam grove. Tag 08414

Enterographa elaborata	Cb	R

BHP074 (TR05386 40860, 62m): Hornbeam pollard in shady Hornbeam grove. Tag 08373 & 08372 (two tags on same nail)

Enterographa elaborata	Cb	R
Also		
Pyrenula chlorospila	Cb	Coll. 3, hymenium K –; spores match

TR053 408

Species of Interest

Cresponea premnea	Cb	
Enterographa elaborata	Cb	
Pachyphiale carneola	Cb	
Porina byssophila	Cb	
Sporodophoron cretaceum	Cb	
Thelopsis corticola	Cb	
Thelotrema lepadinum	Cb	TR0530 4086
Zwackhia prosodea	Cb	

Other Species

Aquacida viridifarinosa	Cb	
Enterographa crassa	Cb	
Lecanora argentata	Cb	
Lepra albescens var. *albescens*	Cb	
Pyrenula chlorospila	Cb	

TR053 407

BHP064 (TR05372 40798, 61m): Hornbeam pollard on edge of infilling glade, SD tree. Tag 08400

Enterographa elaborata	Cb	A	Facing 120°
Thelopsis corticola	Cb	O	
Also			
Cresponea premnea	Cb		
Porina borreri	Cb		
Sporodophoron cretaceum	Cb		

Photo 2021-08-25-09

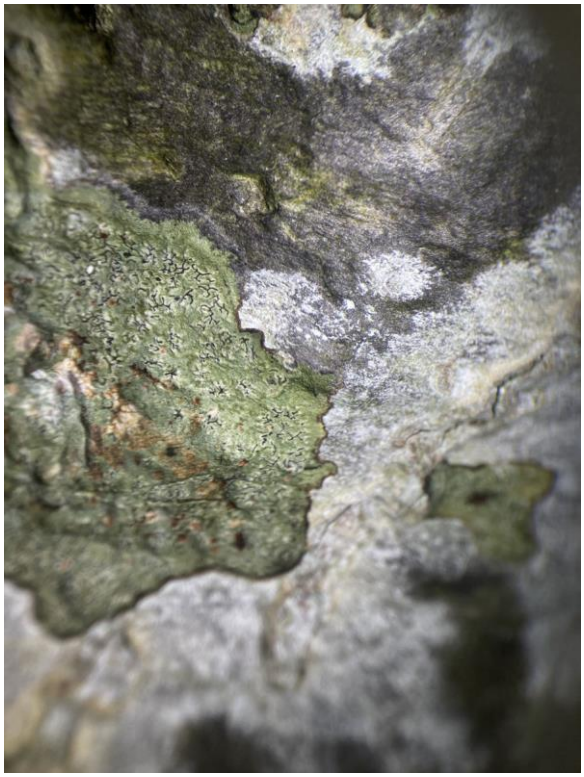


Photo 2021-08-25-09: BPH064, Hornbeam pollard on edge of infilling glade, a close up of an *Enterographa elaborata* thallus, showing antagonism lines where locked against other late succession lichen species, but a prothallus indicating an expanding thallus where the bark is bare.

BPH065 (TR05330 40774, 63m): Hornbeam pollard in more open area. SD tree. Tag 08399

Enterographa elaborata	Cb	A	Facing 230° & 330°
Thelopsis corticola	Cb	O	

Also

Sporodophoron cretaceum	Cb		
Porina borreri	Cb		

BPH066 (TR05356 40764, 60m): Hornbeam pollard by glade. Tag 08429

Enterographa elaborata	Cb	O	F facing 190°

BHP067 (TR05373 40749, 59m): Hornbeam pollard by partial glade. Tag 08462

Enterographa elaborata	Cb	O	
Thelopsis corticola	Cb, LCb LTr	O	

Also

Aquacida viridifarinosa	Cb		
Enterographa hutchinsiae	Cb		

BHP068 (TR05383 40735, 59m): Hornbeam pollard by glade. SD tree. Tag 08464

Enterographa elaborata	Cb	O	

BHP069 (TR05399 40741, 59m): maiden Hornbeam in open woodland

Enterographa elaborata	Cb	R	
Thelopsis corticola	Cb	O	

BHP075 (TR05337 40745, 73m): Hornbeam pollard by track. Tag 08428

Enterographa elaborata	Cb	R

TR053 407

Species of Interest

Cresponea premnea	Cb, LCb LTr, Q	
Enterographa elaborata	Cb	
Enterographa hutchinsiae	Cb	
Porina borreri	Cb	
Sporodophoron cretaceum	Cb, Q	
Strigula taylorii	Co	
Thelopsis corticola	Cb, LCb LTr	
Thelotrema lepadinum	Cb	TR0538 4079

Other Species

Aquacida viridifarinosa	Cb	
Arthonia atra	Cb	
Coniocarpon cinnabarinum	Cb	
Enterographa crassa	Cb, Co, LCb LTr	
Graphis betulina	Co	
Porina byssophila	Co	

TR053 406

BHP076 (TR05392 40692, 73m): Hornbeam pollard. Tag 08524

Enterographa elaborata	Cb	R

TR053 406

Species of Interest

Cresponea premnea	Cb
Enterographa elaborata	Cb

Other Species

Enterographa crassa	Cb
Porina byssophila	LCb LTr
Pyrenula chlorospila	Cb

TR054 406

At this point it was clear that *Enterographa elaborata* was far more abundant than was described in SD and more rapid recording was instituted of *Enterographa elaborata* trees.

BHP077 (TR05410 40651, 74m): Hornbeam pollard. Tag 08594

Enterographa elaborata	Cb	R

BHP078 (TR05449 40682, 69m): Hornbeam pollard in glade in Sycamore coppice stand. Tag 08603

Enterographa elaborata	Cb	F

BHP079 (TR05406 40676, 71m): Hornbeam pollard. Tag 08564

Enterographa elaborata	Cb	O

BHP080 (TR05460 40699, 67m): Hornbeam pollard. Tag 08609
Enterographa elaborata Cb R

BHP081 (TR05485 40673, 72m): Hornbeam pollard. Tag 07023
Enterographa elaborata Cb O

BHP082 (TR05461 40663, 67m): Hornbeam pollard in Hornbeam grove. Tag 08656
Enterographa elaborata Cb O
Pachyphiale carneola Cb R

BHP083 (TR05456 40653, 68m): Hornbeam pollard in grove. Tag 08655
Enterographa elaborata Cb O

BHP084 (TR05438 40659, 67m): Hornbeam pollard. Tag 08653
Enterographa elaborata Cb R

BHP085 (TR05454 40632, 67m): Hornbeam pollard. Tag 07007
Enterographa elaborata Cb R

BHP086 (TR05475 40621, 69m): Hornbeam pollard. Tag 07066
Enterographa elaborata Cb O

BHP087 (TR05486 40629, 70m): big Hornbeam pollard. Tag 07067
Enterographa elaborata Cb O

BHP088 (TR05489 40656, 68m): Hornbeam pollard shaded grove. Tag 07064
Enterographa elaborata Cb R

BHP089 (TR05493 40666, 68m): Hornbeam pollard. Tag 07017
Enterographa elaborata Cb R

BHP090 (TR05490 40677, 66m): Hornbeam pollard. Tag 07022
Enterographa elaborata Cb R

BHP091 (TR05492 40680, 66m): Hornbeam pollard. Tag 07023
Enterographa elaborata Cb O

TR054 406
Species of Interest

Cresponea premnea	Cb, LCb LTr, Q	
Enterographa elaborata	Cb	
Pachyphiale carneola	Cb	
Porina byssophila	Cb	
Sporodophoron cretaceum	Cb	
Strigula taylorii	Cb	
Thelotrema lepadinum	Ap	TR0543 4067
Thelotrema lepadinum	Cb	TR0547 4069
Zwackhia prosodea	Cb	

Other Species

Aquacida viridifarinosa	LCb LTr

Coniocarpon cinnabarinum	Cb
Enterographa crassa	Cb, Q
Pyrenula chlorospila	Cb

TR054 407

BPH092 (TR05486 40702, 61m): Hornbeam pollard. Tag 08673

Enterographa elaborata	Cb	R

BHP093 (TR05496 40740, 57m): big Hornbeam pollard. Tag 08616

Enterographa elaborata	Cb	O

BHP094 (TR05487 40746, 56m): Hornbeam pollard. Tag 08622

Enterographa elaborata	Cb	F

BHP095 (TR05492 40754, 55m): Hornbeam pollard. Tag 08632

Enterographa elaborata	Cb	O

BHP096 (TR05460 40741, 55m): Hornbeam pollard. Tag 08627

Enterographa elaborata	Cb	O

BHP097 (TR05464 40738, 53m): Hornbeam pollard. Tag 08570

Enterographa elaborata	Cb	R

BHP098 (TR05445 40711, 53m): Hornbeam pollard. Tag 08567

Enterographa elaborata	Cb	R
Thelopsis corticola	Cb	O

BHP099 (TR05449 40717, 54m): Hornbeam pollard. Tag 08529. This is SD tree Tag 08528

Enterographa elaborata	Cb	A

Photo 2021-08-25-07

Photo 2021-08-25-07: **BPH099**, Hornbeam pollard, with abundant ***Enterographa elaborata***. Left 2021, right 2015 (Davey, 2015).

BHP100 (TR05420 40711, 54m): big Hornbeam pollard SD tree. Tag 08525
Enterographa elaborata Cb O
Photo 2021-08-25-06

Photo 2021-08-25-06: **BPH100**, Hornbeam pollard, with occasional ***Enterographa elaborata***. Left 2021, right 2015 (Davey, 2015).

BHP101 (TR05423 40727, 55m): Hornbeam pollard. Tag 08502
Enterographa elaborata Cb O

BHP102 (TR 05400 40731, 57m): well-lit Hornbeam maiden by large glade. No tag. Next too 08499

Enterographa elaborata	Cb	O
Pachyphiale carneola	Cb	F

Photo 2021-08-25-08

Photo 2021-08-25-08: **BPH102**, well-lit Hornbeam maiden by large glade, with occasional *Enterographa elaborata*.

BHP103 (TR05432 40762, 58m): Hornbeam pollard. Tag 08537

Enterographa elaborata	Cb	O

BHP104 (TR05454 40764, 54m): Hornbeam pollard. Tag 08540

Enterographa elaborata	Cb	R

BHP105 (TR05445 40757, 54m): Hornbeam pollard. Tag 07536

Enterographa elaborata	Cb	O
Thelopsis corticola	Cb	R

BHP106 (TR05459 40754, 55m): cage like Hornbeam pollard. Tag 08535

Enterographa elaborata	Cb	R

BHP107 (TR05463 40765, 55m): Hornbeam pollard. Tag 08572

Enterographa elaborata	Cb	O
Thelopsis corticola	Cb	R

BHP108 (TR05473 40779): Hornbeam pollard. Tag 08579

Enterographa elaborata	Cb	F

BHP109 (TR05471 40770, 55m): split Hornbeam pollard. Tag 08580

Enterographa elaborata	Cb	O

BHP110 (TR05459 40799, 57m): Hornbeam pollard. Tag 08548

Enterographa elaborata	Cb	R

TR054 407

Species of interest

Chaenotheca trichialis	Q	TR0546 4075
Cresponea premnea	Cb, Q, Ap	
Enterographa elaborata	Cb	
Pachyphiale carneola	Cb	
Porina borreri	Cb	
Porina byssophila	Cb	
Sporodophoron cretaceum	LCb LTr, Cb	
Thelopsis corticola	Cb	
Thelotrema lepadinum	Q	TR0547 4072

Other Species

Aquacida viridifarinosa	Cb, Q
Coniocarpon cinnabarinum	Cb
Enterographa crassa	Cb
Lecanora argentata	Cb
Opegrapha vermicellifera	Cb
Varicellaria hemisphaerica	Cb

TR054 408

BHP111 (TR05494 40808, 57m): Hornbeam pollard near remaining Rhododendron. Tag 08643

Enterographa elaborata	Cb	R

BHP112 (TR05415 40831, 60m): Hornbeam pollard. Tag 08440

Enterographa elaborata	Cb	O

TR054 408

Species of Interest

Cresponea premnea	Cb, Q
Enterographa elaborata	Cb

Other Species

Aquacida viridifarinosa	Cb
Coniocarpon cinnabarinum	Cb
Enterographa crassa	Cb, Q
Pyrenula chlorospila	Cb

TR055 408

BHP113 (TR05501 40817, 59m): split Hornbeam pollard by partial glade. Tag 08645 & 08644

Phlyctis agelaea	Cb	O

Thelopsis corticola	Cb	R
Also		
Opegrapha vulgata	Cb	Coll. 4
Sporodophoron cretaceum	Cb	

BHP114 (TR05523 40808, 57m): Hornbeam pollard. Tags 08693 & 08694 (same nail)

Enterographa elaborata	Cb	O
Rinodina roboris var. ***roboris***	LCb LTr	

BHP115 (TR05542 40801, 54m): Hornbeam pollard. Tag 07057

Phlyctis agelaea	Cb	R	Two thalli

TR055 408

Species of Interest

Cresponea premnea	LCb LTr
Enterographa elaborata	Cb
Phlyctis agelaea	Cb
Rinodina roboris var. *roboris*	LCb LTr
Sporodophoron cretaceum	Cb
Thelopsis corticola	Cb

Other Species

Aquacida viridifarinosa	Cb, LCb LTr
Enterographa crassa	Cb
Opegrapha vulgata	Cb

TR056 407

Other Species

Cresponea premnea	Cb
Enterographa crassa	Cb
Pyrenula chlorospila	Cb

TR055 407

BHP116 (TR05594 40711, 56m): huge ancient Pedunculate Oak at edge of wood. Tag 07167

Lecanographa lyncea	Q	O
Syncesia myrticola**, sorediate morph**	Q	R
Also		
Chaenotheca trichialis	Q	
Cresponea premnea	Q	

BHP117 (TR05507 40785, 51m): Hornbeam pollard shady. Tag 08691

Enterographa elaborata	Cb	O

BHP118 (TR05506 40775, 52m): Hornbeam split partly leaning pollard. Tag 08687

Enterographa elaborata	Cb	O

BHP119 (TR05503 40754, 53m): Hornbeam pollard. Tag 08636

Enterographa elaborata	Cb	F

BHP120 (TR05522 40770, 54m): Hornbeam pollard. Tag not found 5m north of 07047

Enterographa elaborata	Cb	R
Thelopsis corticola	Cb	R

BHP121 (TR05555 40779, 56m): Hornbeam pollard. Tag 07100

Enterographa elaborata	Cb	O

BHP122 (TR05556 40773, 59m): Hornbeam pollard. Tag not found

Enterographa elaborata	Cb	O

BHP123 (TR05551 40765, 60m): Hornbeam pollard. Tag 07095

Enterographa elaborata	Cb	O
Also		
Bacidia biatorina	Cb	

BHP124 (TR05539 40764, 60m): Hornbeam pollard. Tag 07094

Enterographa elaborata	Cb	R

BHP125 (TR05508 40702, 64): Hornbeam pollard. Tag 07030

Enterographa elaborata	Cb	F

BHP126 (TR05565 40727): Hornbeam pollard by track. Tag 07126

Enterographa elaborata	Cb	O

BHP127 (TR05549 40732, 58m): Hornbeam pollard. Tag 07093

Enterographa elaborata	Cb	O

BHP128 (TR05537 40705, 61m): Hornbeam pollard. Tag 07087

Enterographa elaborata	Cb	O

TR055 407

Species of Interest

Bacidia biatorina	Cb
Chaenotheca trichialis	Q
Cresponea premnea	Q, LCb LTr
Enterographa elaborata	Cb
Lecanographa lyncea	Q
Porina byssophila	Cb
Sporodophoron cretaceum	Cb, Q
Syncesia myrticola, sorediate morph	Q
Thelopsis corticola	Cb

Other Species

Aquacida viridifarinosa	Cb, LCb LTr
Enterographa crassa	Q, Cb
Pyrenula chlorospila	Cb
Varicellaria hemisphaerica	Q

A3 Bockhanger Wood 26/8/2021

A3.1 Weather

Starting with light drizzle, but dry latter

A3.2 Bockhanger Wood, TR0540

TR055 406
North of track

BHP129 (TR05533 40652, 71m): small Hornbeam pollard by path. Tag 07113
Enterographa elaborata Cb O

BHP130 (TR05527 40653, 72m): next too BHP128, Hornbeam pollard by path. Tag 06112
Enterographa elaborata Cb O

BHP131 (TR05539 40658, 70m): multi stemmed Hornbeam pollard. Tag 07140
Enterographa elaborata Cb R

BHP132 (TR05501 40698, 70m): Hornbeam pollard. Tag 07025
Enterographa elaborata Cb R

BHP133 (TR05508 40686, 70m): next to BHP131 Hornbeam pollard. Tag 07026
Enterographa elaborata Cb R

BHP134 (TR05564 40694, 66m): enormous Hornbeam pollard by track (c6.1m girth). Tag 07147
Enterographa elaborata Cb O
Photo 2021-08-26-15

Photo 2021-08-26-15: **BPH134**, an enormous Hornbeam pollard by track (c6.1m girth), with occasional ***Enterographa elaborata***.

TR055 406
Species of Interest

Cresponea premnea	Cb
Enterographa elaborata	Cb
Sporodophoron cretaceum	Cb

Other Species

Arthonia radiata	Cb
Coniocarpon cinnabarinum	Cb
Enterographa crassa	Cb
Pertusaria hymenea	Q
Phlyctis argena	Q
Pyrenula chlorospila	Cb

South of track working west

TR055 406
South of track

BHP135 (TR05529 40622, 73m): small Hornbeam pollard by track. Tag not found next to 08724

Enterographa elaborata	Cb	R

TR055 406
Species of Interest

Cresponea premnea	Cb, LCb LTr
Enterographa elaborata	Cb

Sporodophoron cretaceum	Cb
Zwackhia prosodea	LCb LTr, Cb
Other Species	
Enterographa crassa	Cb, LCb LTr

TR055 405
Few pollards here

TR055 405

Species of Interest	
Calicium glaucellum	LCs LTr
Zwackhia prosodea	Cb
Other Species	
Enterographa crassa	Cb
Pyrenula chlorospila	Cb
Chrysothrix flavovirens	LCs LTr
Cladonia coniocraea	LCs LTr

TR054 405
Few Hornbeam pollard and what there were mostly lichen poor

BHP136 (TR05404 40592, 68m): Hornbeam pollard to south. Tag 08762

Enterographa elaborata	Cb	R	single thallus

TR054 405

Species of Interest	
Cresponea premnea	Cb
Enterographa elaborata	Cb
Sporodophoron cretaceum	Q
Other Species	
Enterographa crassa	Cb
Pyrenula chlorospila	Cb
Varicellaria hemisphaerica	Q

TR054 406

Species of Interest	
Cresponea premnea	Cb
Zwackhia prosodea	Cb
Other Species	
Enterographa crassa	Cb
Pyrenula chlorospila	Cb

TR053 406

BHP137 (TR05360 40632, 71m): maiden Pedunculate Oak by glade. No tag nearest Hornbeam Tag 08784

Thelopsis corticola	Q	O

Also

Cresponea premnea	Q

Sporodophoron cretaceum Q
Photo 2021-08-26-02

Photo 2021-08-26-02: **BPH137**, a maiden Oak by glade, with occasional ***Thelopsis corticola*** on relic base rich bark.

BHP138 (TR05390 40640, 69m): big split Hornbeam pollard by track. Tag 08772

Enterographa elaborata	Cb	R	Single thallus

BHP139 (TR05372 40657, 69m): Hornbeam pollard near track, SD tree. Tag 08795

Enterographa elaborata	Cb	F
Also		
Cresponea premnea	Cb	
Enterographa hutchinsiae	Cb	On new bark by hollow
Sporodophoron cretaceum	Cb	

Photos 2021-08-26-03, 16 & 17

BHP140 (TR05340 40671, 69m): Hornbeam pollard in glade. Tag 08815

Enterographa elaborata	Cb	R	Single thallus
Also			
Enterographa hutchinsiae	Cb	O	On new bark by hollow
Cresponea premnea	Cb		

Photo 2021-08-26-18

Photo 2021-08-26-18: **BPH140**, Hornbeam pollard in glade, an *Enterographa hutchinsiae* thallus.

BHP141 (TR05325 40671, 68m): Hornbeam pollard on edge of grove of Hornbeam, SD tree. SD photographed thallus located, Pd damage evident. Tag 08818
Enterographa elaborata Cb O
Photos 2021-08-26-04, 5 & 19

Photo 2021-08-26-04: **BPH141**, Hornbeam pollard on edge of grove of Hornbeam, with occasional ***Enterographa elaborata***. Left 2021, right 2015 (Davey, 2015).

Photo 2021-08-26-19: **BPH141**, Hornbeam pollard on edge of grove of Hornbeam, with occasional ***Enterographa elaborata***. Close up shows application of Pd as a spot test in 2015 below (Davey, 2015) and the resulting damage to the thallus seen in 2021 above.

TR053 406

Species of Interest

Cresponea premnea	Cb, Q, LCb LTr
Enterographa elaborata	Cb
Enterographa hutchinsiae	Cb
Sporodophoron cretaceum	Cb, LCb LTr, Q
Thelopsis corticola	Q
Zwackhia prosodea	LCb LTr

Other Species

Coniocarpon cinnabarinum	Cb	
Enterographa crassa	Cb	
Lecanora argentata	Q	
Lecanora chlarotera s. str.	Cb	Coll.
Pachnolepia pruinata	Cb	
Pyrenula chlorospila	Cb	
Zwackhia sorediifera	Q	

TR053 407

BHP142 (TR05326 40719, 68m): Hornbeam pollard near track. Tag 08832

Enterographa elaborata	Cb	O

Also

Cresponea premnea	Cb, LCb LTr
Sporodophoron cretaceum	Cb
Zwackhia prosodea	Cb, LCb LTr

BHP143 (TR05317 40731, 69m): leaning Hornbeam pollard by glade. Tag 08834

Enterographa elaborata	Cb	R	single thallus
Also			
Cresponea premnea	Cb		
Enterographa hutchinsiae	Cb	R	On new bark by hollow
Sporodophoron cretaceum	Cb		

BHP144 (TR05322 40741, 68m): Hornbeam pollard by track. Tag 08837

Enterographa elaborata	Cb	O
Also		
Sporodophoron cretaceum	Cb	

TR053 407

Species of Interest

Cresponea premnea	Cb, LCb LTr
Enterographa elaborata	Cb
Enterographa hutchinsiae	Cb
Sporodophoron cretaceum	Cb
Zwackhia prosodea	Cb, LCb LTr

Other Species

Enterographa crassa	Cb
Pyrenula chlorospila	Cb

TR052 406

Species of Interest

Cresponea premnea	Cb
Porina byssophila	Cb

Other Species

Cliostomum griffithii	Fx
Enterographa crassa	Cb
Lecanora expallens	Fx
Lepra albescens var. *corallina*	Fx
Pertusaria hymenea	Fx
Phlyctis argena	Fx
Pseudoschismatomma rufescens	Fx
Pyrenula chlorospila	Cb
Pyrrhospora quernea	Fx

TR052 407

BHP145 (TR05228 40720, 70m): Hornbeam pollard in shady Hornbeam pollard grove. Tag 08898? (Being enveloped by bark)

Enterographa elaborata	Cb	R

BHP146 (TR05232 40713, 72m): sickly Hornbeam pollard in pollard in shady Hornbeam pollard grove. Tag not found, adjacent to 08884

Enterographa elaborata	Cb	R

BHP147 (TR05239 40713, 73m): next to BHP145, pollard in shady Hornbeam pollard grove. Tag 08884

Enterographa elaborata	Cb	R

BHP148 (TR05247 40705, 73m): Hornbeam pollard on edge of Hornbeam grove. Tag 08887

Enterographa elaborata	Cb	O

BHP149 (TR05235 40745, 76m): Hornbeam pollard in grove. Tag 08896

Enterographa elaborata	Cb	O

BHP150 (TR05231 40749, 76m): Hornbeam pollard in grove. Tag 08905

Enterographa elaborata	Cb	R	Single thallus

Adjacent Hornbeam Tag 08904

Enterographa hutchinsiae	Cb

BHP151 (TR05232 40765, 72m): Hornbeam pollard on edge of hornbeam grove. Tag 08922

Enterographa elaborata	Cb	A

Also

Cresponea premnea	Cb
Sporodophoron cretaceum	Cb

BHP152 (TR05247 40763, 73m): big Hornbeam pollard by glade, SD tree, canopy descent due to there being no browsing since SD picture. Tag 08903

Enterographa elaborata	Cb	F
Also		
Cresponea premnea	Cb	
Sporodophoron cretaceum	Cb	

Photo 2021-08-26-06

Photo 2021-08-26-06: **BPH152**, big Hornbeam pollard by glade, with frequent ***Enterographa elaborata***. Left 2021, right 2015 (Davey, 2015).

BHP153 (TR05271 40759, 70m): big Hornbeam pollard in open area, SD tree. Tag 08891

Enterographa elaborata	Cb	F
Also		
Sporodophoron cretaceum	Cb	

Photo 2021-08-26-07

Photo 2021-08-26-06: **BPH153**, a big Hornbeam pollard in open area, with frequent ***Enterographa elaborata***. Left 2021, right 2015 (Davey, 2015).

BHP154 (TR05257 40751, 71m): smaller Hornbeam pollard in open stand. Tag 08873

Enterographa elaborata	Cb	R
Also		
Cresponea premnea	Cb	

BHP155 (TR05248 40754, 70m): smaller Hornbeam pollard in open stand. Tag 08894

Enterographa elaborata	Cb	R

BHP156 (TR05257 40750, 69m): Hornbeam pollard in open stand. Tag 08872

Enterographa elaborata	Cb	R
Also		
Lichenodiplis pertusariicola	Cb, Z1079 Coll. 2	On *Pertusaria leioplaca*

BHP157 (TR05271 40757, 68m): big Hornbeam pollard in open area, SD tree, canopy descent. Tag 08870

Enterographa elaborata	Cb	
Also		
Sporodophoron cretaceum	Cb	As in SD photo

Photo 2021-08-26-08

Photo 2021-08-26-08: **BPH157**, a big Hornbeam pollard in open area, with ***Enterographa elaborata***, the pictures show canopy descent since 2015, with *Sporodophoron cretaceum* visible as white thalli on the trunk, with the same distribution in 2015 and 2021. Left 2021, right 2015 (Davey, 2015).

BHP158 (TR05273 40759, 70m): big pollard Hornbeam pollard by track, SD tree. Tag 08868

Enterographa elaborata	Cb	F
Also		
Coniocarpon cinnabarinum	Cb	
Cresponea premnea	Cb	
Sporodophoron cretaceum	Cb	
Pyrenula chlorospila	Cb	Coll. 2 K – hymenium; spores correct shape

Photo 2021-08-26-09

Photo 2021-08-26-09: **BPH158**, a big pollard Hornbeam pollard by track, with frequent ***Enterographa elaborata***. Left 2021, right 2015 (Davey, 2015).

BHP159 (TR05246 40781, 70m): big Hornbeam pollard by track, SD tree. Tag 08902
Enterographa elaborata Cb F
Also
Sporodophoron cretaceum Cb
Photo 2021-08-26-10

Photo 2021-08-26-10: **BPH159**, a big pollard Hornbeam pollard by track, with frequent ***Enterographa elaborata***. Left 2021, right 2015 (Davey, 2015).

BHP160 (TR05210 40767, 70m): big Hornbeam pollard by glade, SD tree, canopy descent. Tag 08920

Enterographa elaborata	Cb	O

Also

Cresponea premnea	Cb

Photo 2021-08-26-11

Photo 2021-08-26-11: **BPH160**, a big pollard Hornbeam pollard by glade, with occasional ***Enterographa elaborata***. Left 2021, right 2015 (Davey, 2015), the pictures show canopy descent since 2015.

BHP161 (TR05213 40766, 70m): smaller Hornbeam pollard in denser Wood. Tag 08935

Enterographa elaborata	Cb	0

TR052 407

Species of Interest

Cresponea premnea	Cb, Q, LCb LTr	
Enterographa elaborata	Cb	
Enterographa hutchinsiae	Cb	
Sporodophoron cretaceum	Cb	
Zwackhia prosodea	Cb	

Other Species

Coniocarpon cinnabarinum	Cb	
Enterographa crassa	Cb, Q	
Lichenodiplis pertusariicola	Cb, Z1079	On *Pertusaria leioplaca*
Micarea viridileprosa	Q	
Pertusaria leioplaca	Cb	

Pyrenula chlorospila	Cb

A3.3 Hatch Park, TR0641 & TR0940

In the Afternoon a quick look at Hatch Park and Barrack Wood was made. The parched acid grasslands in and around the old sand pit were interesting and lichen rich. The trees seen along the path were species poor and impacted by past acidifying pollution and current ammonia pollution. A wider search would probably find some lichen interest but the habitat would be too exposed for Enterographa elaborata.

TR0641

TR064 410

Parched acid grassland (U1b) with high lichen cover

Cladonia coniocraea	T
Cladonia furcata subsp. *furcata*	T

TR065 410

Cetraria aculeata	T
Cladonia cervicornis	T
Cladonia ciliata var. *tenuis*	T
Cladonia diversa	T
Cladonia foliacea	T
Cladonia furcata subsp. *furcata*	T
Cladonia portentosa	T
Peltigera hymenina	T
Placynthiella icmalea	T

TR0940

TR066 400

Cladonia ciliata var. *tenuis*	T
Cladonia coniocraea	T
Cladonia furcata subsp. *furcata*	T
Cladonia ramulosa	T
Peltigera hymenina	T

A3.4 By Barrack Wood, TR0640

Fairly open Hornbeam – Oak pasture woodland on dry acid soil with in-cycle Hornbeam pollards. Deer fenced but seems to have a significant number of deer in sides and has a definite browse line. Some Hornbeam planting. Rhododendron control but not complete. Good standing and fallen Oak dead wood. (Note this is actually a fenced off section of Hatch Park; Barrack Wood is strictly the unpollarded wood to the east.)

Photo 2021-08-26-14

Photo 2021-08-26-14: **Pollarded woodland by Barrack Wood**, deer grazing in this area has prevented the canopy descent seen in Bockhanger Wood, giving a browse line.

TR0640

TR066 405

Species of Interest

Chaenotheca trichialis	LQ LDs	
Cresponea premnea	Cb, Q, LCb LTr	
Sporodophoron cretaceum	Cb	

Other Species

Alyxoria culmigena	Cb	
Arthonia atra	Cb	
Arthonia radiata	Cb	
Cliostomum griffithii	Q	
Coniocarpon cinnabarinum	Cb	
Dendrographa decolorans	Cb, Q	
Enterographa crassa	Cb,LCb LTr	
Graphis betulina	Cb	
Lecanora expallens	LQ LDs	
Lichenodiplis pertusariicola	Cb, Z1079	On *Pertusaria leioplaca*
Pachnolepia pruinata	Cb	
Pertusaria hymenea	Cb	
Pertusaria leioplaca	Cb	
Pyrenula chlorospila	Cb	
Pyrrhospora quernea	Cb	

TR066 404

BPH164 (TR06682 40425, 69m): hollow Hornbeam pollard in Bracken. Tag 00412

Bellicidia incompta	LCb LTr O
Also	
Aquacida viridifarinosa	LCb LTr
Gyalecta truncigena	LCb LTr Coll. large muriform spores with numerous cells visible in optical section
On bark	
Cresponea premnea	Cb
Sporodophoron cretaceum	Cb

Photos 2021-08-26-13, 20 & 21

Photo 2021-08-26-13, 20 & 21: **BPH164**, a hollow Hornbeam pollard in Bracken, with ***Bellicidia incompta*** inside the hollow trunk; extent indicated by the red line bottom right.

TR066 404

Species of Interest

Bacidia biatorina	Cb	TR0665 4045 Tag 00404
Cresponea premnea	Cb	
Sporodophoron cretaceum	Cb	

Other Species

Enterographa crassa	Cb	
Hypocenomyce scalaris	LQ LDs	
Lecanora argentata	Cb	
Lecidella elaeochroma f. *elaeochroma*		Cb
Pachnolepia pruinata	Cb	
Phlyctis argena	Cb	

TR067 404

BHP162 (TR06751 40434, 76m): ancient Pedunculate Oak with exposed lignum. Tag 00455

Microcalicium ahlneri	LQ LTr

Also

Thelotrema lepadinum	Q

Photos 2021-08-26-12

Photo 2021-08-26-12: **BPH162**, an ancient Pedunculate Oak with exposed lignum, which supported ***Microcalicium ahlneri***.

BHP163 (TR06745 40409, 76m): ancient Oak pollard with exposed lignum

Chaenothecopsis nigra	LQ LTr R	Coll. 3 Spores 1 septate, septa darker than the cell wall. New to VC15

TR067 404

Species of Interest

Calicium glaucellum	LQ LDf	
Chaenothecopsis nigra	LQ LTr	
Cladonia parasitica	LQ LDf	
Cresponea premnea	Q	
Loxospora elatina	Q	TR0679 4047 Tag 00580
Microcalicium ahlneri	LQ LTr	
Sporodophoron cretaceum	Q	
Thelotrema lepadinum	Q	

Other Species

Cladonia macilenta	LQ LDs
Cliostomum griffithii	Cb
Enterographa crassa	Cb
Lecanactis abietina	Q
Pertusaria pertusa	Cb
Varicellaria hemisphaerica	Q

TR067 405

Species of Interest

Cladonia parasitica	LQ LDf

Other Species

Cladonia coniocraea	Q	
Cladonia digitata	LQ LDf	
Cladonia polydactyla var. *polydactyla*	LQ LDf	
Parmotrema perlatum	Q	
Pertusaria hymenea	Q	
Pertusaria pertusa	Q	
Trapeliopsis granulosa	LQ LDf	

TR068 404

Species of Interest

Cresponea premnea	Q	
Loxospora elatina	Q	TR0681 4047 Tag. 00586
Thelotrema lepadinum	Q	TR0681 4047 Tag. 00586

Other Species

Pyrrhospora quernea	Q	

TR066 403

Species of Interest

Cresponea premnea	Cb, LCb LTr
Sporodophoron cretaceum	Cb
Zwackhia prosodea	LCb LTr

Other Species

Enterographa crassa	Cb
Pyrenula chlorospila	Cb

TR066 402

Species of Interest

Cresponea premnea	LCb LTr
Sporodophoron cretaceum	Cb

Other Species

Enterographa crassa	Cb
Graphis pulverulenta	Cb
Pyrenula chlorospila	Cb

A4 Bockhanger Wood 27/8/2021

A4.1 Weather
Dry and sunny

A4.2 Bockhanger Wood, TR0540
Meet Michael-John Knatchbull at gate at 9.00am

TR0540

TR051 407
Checking branches for pollution levels, looked at Oak branches with binoculars, just within wood by the lodge.

Evernia prunastri	Q Tw	R
Flavoparmelia caperata	Q Tw	

Grey *Parmelia* spp
No *Xanthoria parietina* visible

Notes of conversation with Michael-John Knatchbull. Grants dried up, very expensive, £10,000 does 18 – 20 pollards (but can be up to 30 with different techniques) trees. No grant aid for some time, hopes of ELMs money.

Then finished surveying the south west corner of the wood.

TR051 407

BHP165 (TR05181 40781, 61m): Hornbeam pollard near track. Tag 08941

Enterographa elaborata	Cb	O

Also

Cresponea premnea	Cb, LCb LTr

BHP166 (TR05171 40773, 67m): Hornbeam pollard near glade, SD tree. Colonising thallus refound and confirmed as such. Also a few more established thalli found higher to right. Tag 08943

Enterographa elaborata	Cb	R Colonising thallus facing 0° and is growing with:
Pyrenula chlorospila	Thin thallus dominating	

Along with

Alyxoria culmigena	Cb
Dendrographa decolorans	Cb
Enterographa crassa	Cb

Also

Cresponea premnea	Cb

Photos 2021-08-27-01 – 2 & 5 – 7

Photos 2021-08-27-02, 6 & 7: **BPH166**, Hornbeam pollard near glade, with rare colonising ***Enterographa elaborata***. Top Left 2021, right 2015 (Davey, 2015). The bottom pictures show the location and the thallus pictured by Davey (2015).

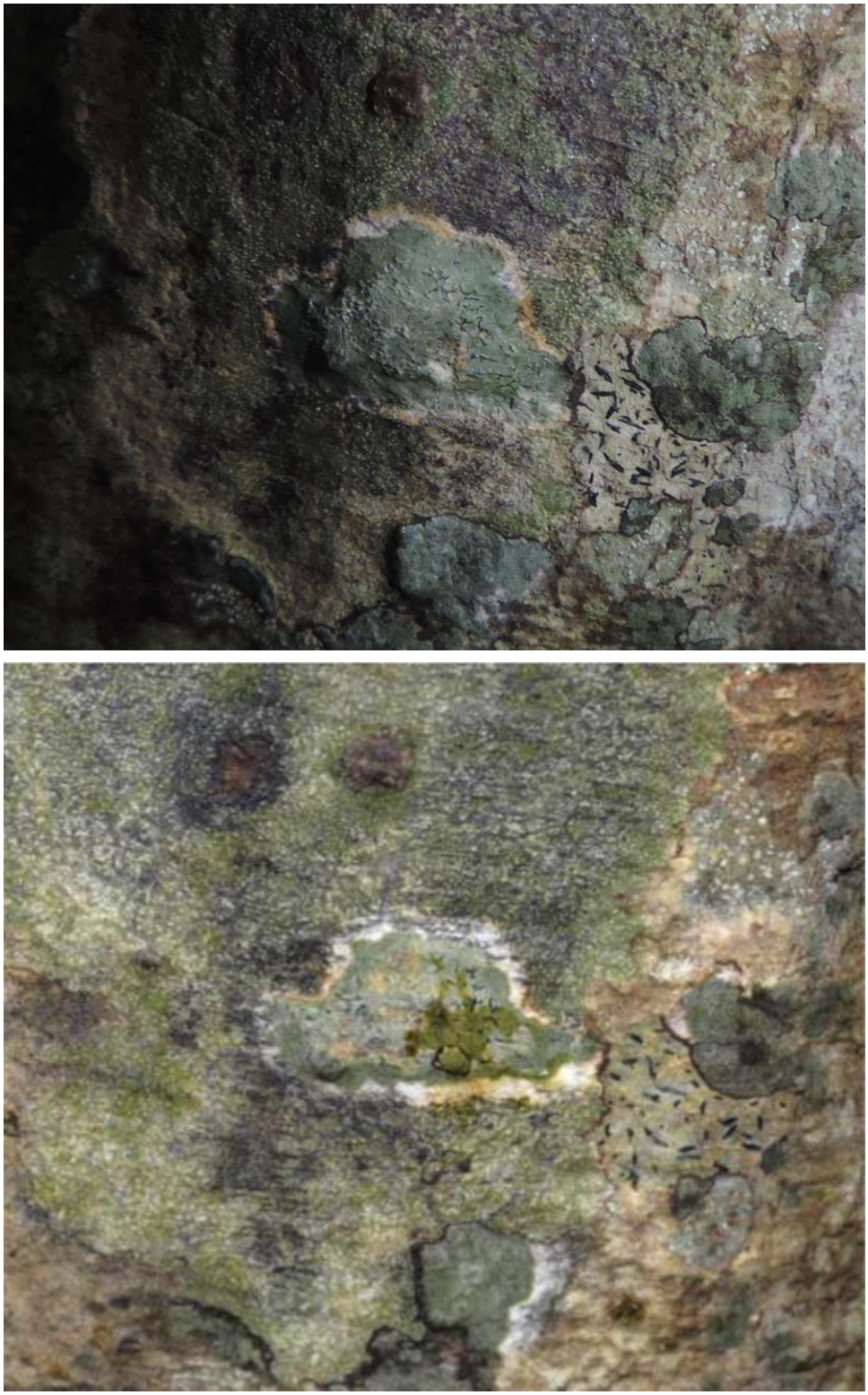


Photo 2021-08-27-01: BPH166, Hornbeam pollard near glade, with rare colonising *Enterographa elaborata*. Top thallus in 2021, bottom thallus in 2015 (Davey, 2015). The thallus is not "sick and probably moribund" as suggested by Davey, but the opposite, as the white fringe is a prothallus of an actively expanding thallus colonising thallus, which is very healthy.

BHP167 (TR05180 40768, 68m): big Hornbeam pollard by glade. Tag 08944
Enterographa elaborata Cb O
Also

Zwackhia prosodea Cb

BHP168 (TR05137 40790, 66m): open cage like Hornbeam pollard by glade. Tag 08964

Thelopsis corticola	LCb LTr	R
Also		
Pachnolepia pruinata	Cb	
Porina borreri	LCb LTr	
Zwackhia prosodea	Cb	

BHP169 (TR05138 40795, 66m): Hornbeam pollard by glade. Tag 08968

Enterographa elaborata	Cb	F
Also		
Cresponea premnea	LCb LTr	
Milospium graphideorum	Cb	Coll. 1 Not clear what this was parasitising
Sporodophoron cretaceum	Cb	
Zwackhia prosodea	Cb, LCb LTr	

BHP170 (TR05125 40783, 66m): Hornbeam pollard by glade. Tag 08969

Enterographa elaborata	Cb	R

BHP171 (TR05119 40789, 66m): Hornbeam pollard near entrance. Tag 08975

Enterographa elaborata	Cb	F
Thelopsis corticola	Cb	
Also		
Porina borreri	LCb LTr	

BHP172 (TR05164 40755, 69m): Hornbeam pollard on edge of hollow. Tag 08951

Enterographa elaborata	Cb	R	One thallus

BHP173 (TR05170 40753, 69m): youngish Hornbeam pollard on edge of hollow. Tag not found next tree east of 08951

Enterographa elaborata	Cb	O

BHP174 (TR05171 40754, 65m): Hornbeam pollard on shelf in hollow. Tag 08948

Enterographa elaborata	Cb	F

BHP175 (TR05195 40733, 69m): Hornbeam pollard by hollow way. Tag 08930

Enterographa elaborata	Cb	F

BHP176 (TR05199 40734, 69m): Hornbeam pollard near hollow way. Tag 08927

Enterographa elaborata	Cb	F

BHP177 (TR05160 40735, 68m): big post mature Pedunculate Oak on south edge of hollow way. No tag

***Syncesia myrticola*, sorediate morph**	Q	O
***Rinodina roboris* var. roboris**	Q	R
Also		
Cresponea premnea	Q	

Pachnolepia pruinata Q
Photo 2021-08-27-03

Photo 2021-08-27-03: **BPH177**, a big post mature Pedunculate Oak on south edge of hollow way on the wood edge, with occasional ***Syncesia myrticola*, sorediate morph** and rare ***Rinodina roboris* var. *roboris***.

Collapsing uncut Hornbeam
Photo 2021-08-27-04

Photo 2021-08-27-04: a lapsed Hornbeam pollard on south edge of hollow way on the wood edge. Uncut overstood Hornbeam pollards are often not very long lived and easily collapse as seen here.

TR051 407

Species of interest

Cresponea premnea	Cb, LCb LTr, Q	
Diploicia canescens	Q	Edge Oak
Enterographa elaborata	Cb	
Porina borreri	LCb LTr	
Rinodina roboris var. *roboris*	Q	
Sporodophoron cretaceum	Cb, Q	
Syncesia myrticola, sorediate morph	Q	
Thelopsis corticola	LCb LTr	
Zwackhia prosodea	Cb	

Other Species

Aquacida viridifarinosa	LCb LTr	
Coniocarpon cinnabarinum	Cb	
Enterographa crassa	Cb	
Pachnolepia pruinata	Cb, Q	

TR051408

Finally looked at more twigs with binoculars. Edge Oak by cottage. Lacks *Xanthoria parietina* but *Physcia* spp present and looks quite frequent to the Oak looked at inside the wood

Ash outside of wood (TR050408) with strong growths of *Xanthoria parietina*

ANNEX 2 Species List

General Key

Species

s. str. = In the strict sense, a recently split up species, recorded in the new tighter definition

Species Not Refound in 2021

\+ = Recorded by the BLS in 2014, not refound 2021 (but some may not have been recorded with the SSSI)

++ = Recorded by S. Davey in 2015, not refound 2021

SOWI

1 = Species used to calculate the Southern Oceanic Woodland Index (based on the former NIEC with minor modifications)

Conservation Status

CR = Critically Endangered

VU = Vulnerable

NT = Near Threatened

Nb = Notable species (NR, NS, or IR species of conservation significance which are not RDB NT or higher)

NR = Nationally Rare

IR = International Responsibility species

(NS) = Nationally Scarce species not regarded as a Notable species, an under recorded or ruderal species of limited conservation significance

[NR] = Nationally Rare lichenicolous (fungal parasite of a lichen), likely to be very under recorded

[NS] = Nationally Scarce lichenicolous (fungal parasite of a lichen), likely to be very under recorded

Substrates for Species Recorded 2021

Ap = Sycamore, Cb = Hornbeam, Co = Hazel, Q = Oak, L = Lignum (as prefix) (LDf = Lignum on fallen dead tree or branch & LTr = Lignum on live trunk), Tw = twigs & branches & T = Terricolous.

Hosts for lichenicolous fungi

Z0533 = *Graphis scripta* s. lat. & Z1079 = *Pertusaria leioplaca*.

SPECIES LIST 1
Bockhanger Wood & Hatch Park, 2014 – 21

Species	Bockhanger	Barrack Wood	SOWI	Conservation Status
Alyxoria culmigena	Cb	Cb		
Alyxoria ochrocheila	+			
Amandinea punctata	+			
Anisomeridium biforme	Q, Cb			
Anisomeridium polypori	Ap			
Aquacida viridifarinosa	LCb LTr, Cb, Q	LCb LTr		
Arthonia atra	Cb	Cb		
Arthonia didyma	+	++		
Arthonia radiata	Cb	Cb		
Bacidia biatorina	Cb	Cb	1	

Species	Bockhanger	Barrack Wood	SOWI	Conservation Status
Bellicidia incompta		LCb LTr		VU (NS/S41)
Calicium glaucellum	LCs LTr	LQ LDf		
Candelariella xanthostigmoides	+			
Catillaria nigroclavata	+			(NS)
Chaenotheca ferruginea	+			
Chaenotheca hispidula	+		1	Nb (NS)
Chaenotheca trichialis	Q	LQ LDs	1	
Chaenothecopsis nigra		LQ LTr		Nb (NS)
Chrysothrix candelaris	+			
Chrysothrix flavovirens	LCs LTr			
Cladonia coniocraea	LCs LTr	Q		
Cladonia digitata		LQ LDf		
Cladonia macilenta		LQ LDs		
Cladonia parasitica		LQ LDf	1	
Cladonia polydactyla var. polydactyla		LQ LDf		
Cliostomum griffithii	Q, Fx	Q, Cb		
Coenogonium confusum	Cb, LCb LTr			NT (NS/IR)
Coenogonium pineti	LCb LTr			
Coniocarpon cinnabarinum	Cb	Cb		
Cresponea premnea	Q, Cb, LCb LTr, Ap	Cb, Q, LCb LTr	1	Nb (IR)
Dendrographa decolorans	Q, Cb	Cb, Q		
Diarthonis spadicea	LCb LTr			
Diploicia canescens	Q			
Enterographa crassa	Q, Cb, Ap, Co, LCb LTr	Cb,LCb LTr		
Enterographa elaborata	Cb			CR (NR/IR/S41)
Enterographa hutchinsiae	Cb			
Evernia prunastri	Q Tw			
Flavoparmelia caperata	Q Tw			
Fuscidea lightfootii	+			
Graphina anguina	+			
Graphis betulina	Cb, Ap, Co	Cb		
Graphis elegans	+			
Graphis pulverulenta	Cb	Cb		
Gyalecta truncigena		LCb LTr		
Hypocenomyce scalaris		LQ LDs		
Hypotrachyna afrorevoluta	+			
Hypotrachyna revoluta s. str.	+			
Lecanactis abietina	Cb, Q	Q		
Lecania cyrtella	+			
Lecania cyrtellina	+			
Lecanographa lyncea	Cb, Q		1	Nb (IR)
Lecanora argentata	Cb, Q	Cb		(NS)
Lecanora barkmaniana	+			
Lecanora carpinea	+			
Lecanora chlarotera s. str.	Cb			

Species	Bockhanger	Barrack Wood	SOWI	Conservation Status
Lecanora compallens	+			
Lecanora expallens	Fx	LQ LDs		
Lecanora hybocarpa	Cb			(NS)
Lecidella elaeochroma f. elaeochroma	Cb, Ap	Cb		
Lepra albescens var. albescens	Cb			
Lepra albescens var. corallina	Fx			
Lepra amara	+			
Lepraria finkii	Q	++		
Lepraria incana s. str.	+			
Lichenodiplis pertusariicola	Cb, Z1079	Cb, Z1079		[NS]
Loxospora elatina		Q	1	
Melanelixia glabratula	+			
Melanelixia subaurifera	+			
Melanohalea laciniatula	+			
Micarea prasina s. lat.	LCb LTr			
Micarea viridileprosa	Q			(NS)
Microcalicium ahlneri	LQ LTr	LQ LTr		Nb (NS)
Milospium graphideorum	Cb, Z0600			Nb (NS)
Normandina pulchella	+			
Opegrapha vermicellifera	Cb			
Opegrapha vulgata	Q, Cb			
Pachnolepia pruinata	Cb, Q	Cb		
Pachyphiale carneola	Cb	Q	1	
Parmotrema perlatum	+			
Parmotrema reticulatum	+			
Pertusaria hymenea	Cb, Ap, Q, fx	Q, Cb		
Pertusaria leioplaca	Cb	Cb		
Pertusaria pertusa	Cb	Cb, Q		
Phaeographis dendritica	Cb	++	1	
Phaeophyscia orbicularis	+			
Phlyctis agelaea	Cb			NT (NS)
Phlyctis argena	Cb, Ap, Q, Fx	Cb		
Physcia adscendens	+			
Physcia tenella	+			
Porina borreri	LCb LTr, Cb			Nb (NS)
Porina byssophila	Cb, Co, LCb LTr			Nb (NS/DD)
Porina leptalea	Cb			
Pseudoschismatomma rufescens	Fx			
Psoroglaena stigonemoides	+			
Punctelia jeckeri	+			
Punctelia subrudecta s. str.	+			
Pyrenula chlorospila	Cb	Cb		
Pyrrhospora quernea	Q, Ap, Cb, Fx	Cb, Q		
Ramalina farinacea	+			
Ramalina fastigiata	+			
Rinodina oleae	+			
Rinodina roboris var. roboris	Q, LCb LTr			Nb (IR)

Species	Bockhanger	Barrack Wood	SOWI	Conservation Status
Schizotrema quercicola	++		1	Nb (IR)
Snippocia nivea	++		1	Nb (IR)
Sporodophoron cretaceum	Cb, LCb LTr, Q	Cb, Q		Nb (IR)
Strigula taylorii	Ap, Cb, Co			Nb (NS/IR)
Syncesia myrticola, sorediate morph	Q, Cb		1	NT (NS/IR/S41)
Taeniolella punctata	Cb, Z1079, Z0533			[NR]
Thelopsis corticola	Cb, LCb LTr, Q		1	Nb (IR)
Thelotrema lepadinum	Cb, Q, Ap	Q	1	
Trapeliopsis granulosa		LQ LDf		
Varicellaria hemisphaerica	Cb, Q	Q		
Xanthoria parietina	+			
Zwackhia prosodea	Cb, LCb LTr	LCb LTr	1	NT (NS/IR/S41)
Zwackhia sorediifera	Cb, Q			

Biodiversity Measure\Location & Date	Bockhanger Wood		Barrack Wood		Total	
	2014-21	2021	2014-21	2021	2014-21	2021
Total taxa	105	67	46	43	115	77
Southern Oceanic Woodland Index score	13	10	9	8	15	12
Critically Endangered	1	1	0	0	1	1
Vulnerable	0	0	1	1	1	1
Near Threatened	4	4	1	1	4	4
Notable	13	10	4	4	14	11
International Responsibility Species	12	10	3	3	12	10
Section 41 species	3	3	2	2	4	4
TNTN score	25	22	10	10	30	27
Nationally Rare	2	2	0	0	2	2
Nationally Scarce	15	13	5	5	17	15

Rejected Records

The record of *Enterographa hutchinsiae* from Barrack wood by Davey (2015) is not accepted as the photograph is clearly not *Enterographa hutchinsiae* and no *Enterographa hutchinsiae* was found here in 2021.

Synonyms

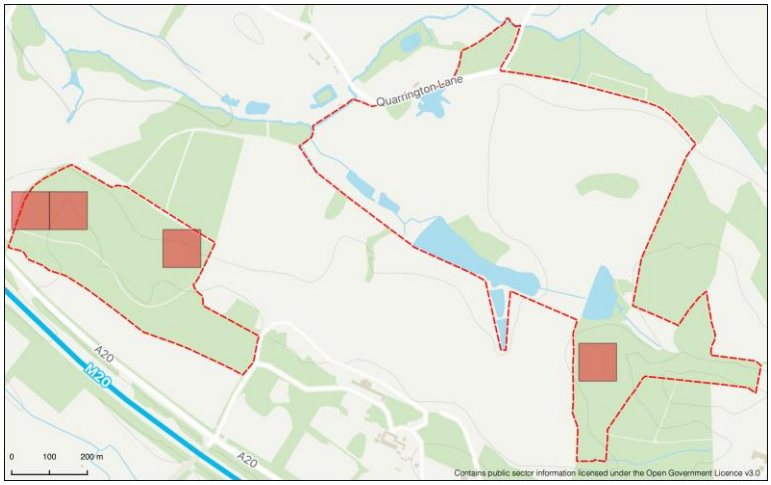
Old Name	New Name
Arthonia cinnabarina	*Coniocarpon cinnabarinum*
Arthonia spadicea	*Diarthonis spadicea*
Bacidia incompta	*Bellicidia incompta*
Bacidia viridifarinosa	*Aquacida viridifarinosa*
Candelariella reflexa	*Candelariella xanthostigmoides*
Dimerella pineti	*Coenogonium pineti*
Enterographa sorediata	*Syncesia myrticola*, sorediate morph
Graphis scripta s. lat.	*Graphis betulina*
Graphis scripta s. lat.	*Graphis pulverulenta*
Laeviomyces pertusariicola	*Lichenodiplis pertusariicola*
Lepraria lobificans	*Lepraria finkii*

Opegrapha atra	*Arthonia atra*
Opegrapha corticola	*Thelopsis corticola*
Opegrapha herbarum	*Alyxoria culmigena*
Opegrapha ochrocheila	*Alyxoria ochrocheila*
Opegrapha prosodea	*Zwackhia prosodea*
Opegrapha rufescens	*Pseudoschismatomma rufescens*
Opegrapha sorediifera	*Zwackhia sorediifera*
Pertusaria albescens var. *albescens*	*Lepra albescens* var. *albescens*
Pertusaria albescens var. *corallina*	*Lepra albescens* var. *corallina*
Pertusaria amara	*Lepra amara*
Pertusaria hemisphaerica	*Varicellaria hemisphaerica*
Porina rosei auct. br. pro maxima parte	*Coenogonium confusum*
Schismatomma cretaceum	*Sporodophoron cretaceum*
Schismatomma niveum	*Snippocia nivea*
Schismatomma quercicola	*Schizotrema quercicola*

New Name	Old Name
Alyxoria culmigena	*Opegrapha herbarum*
Alyxoria ochrocheila	*Opegrapha ochrocheila*
Aquacida viridifarinosa	*Bacidia viridifarinosa*
Arthonia atra	*Opegrapha atra*
Bellicidia incompta	*Bacidia incompta*
Candelariella xanthostigmoides	*Candelariella reflexa*
Coenogonium confusum	*Porina rosei* auct. br. pro maxima parte
Coenogonium pineti	*Dimerella pineti*
Coniocarpon cinnabarinum	*Arthonia cinnabarina*
Diarthonis spadicea	*Arthonia spadicea*
Graphis betulina	*Graphis scripta* s. lat.
Graphis pulverulenta	*Graphis scripta* s. lat.
Lepra albescens var. *albescens*	*Pertusaria albescens* var. *albescens*
Lepra albescens var. *corallina*	*Pertusaria albescens* var. *corallina*
Lepra amara	*Pertusaria amara*
Lepraria finkii	*Lepraria lobificans*
Lichenodiplis pertusariicola	*Laeviomyces pertusariicola*
Pseudoschismatomma rufescens	*Opegrapha rufescens*
Schizotrema quercicola	*Schismatomma quercicola*
Snippocia nivea	*Schismatomma niveum*
Sporodophoron cretaceum	*Schismatomma cretaceum*
Syncesia myrticola, sorediate morph	*Enterographa sorediata*
Thelopsis corticola	*Opegrapha corticola*
Varicellaria hemisphaerica	*Pertusaria hemisphaerica*
Zwackhia prosodea	*Opegrapha prosodea*
Zwackhia sorediifera	*Opegrapha sorediifera*

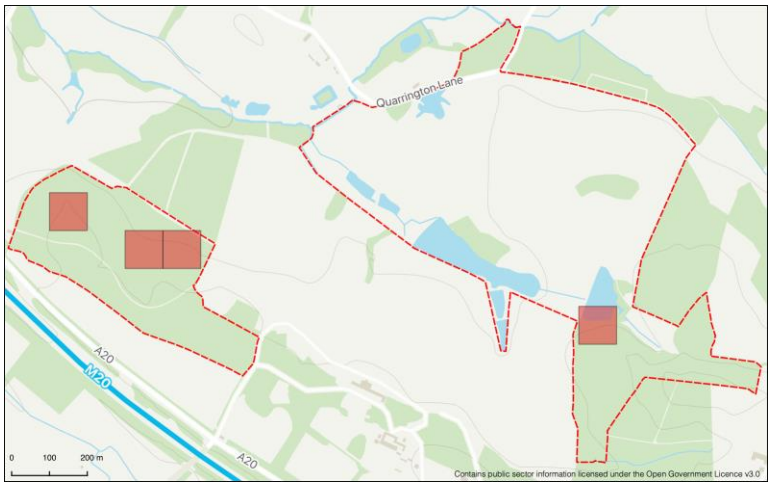
ANNEX 3 Other Maps

Species Maps



Map 7 ***Bacidia biatorina***. SOWI species, new to site in 2021.

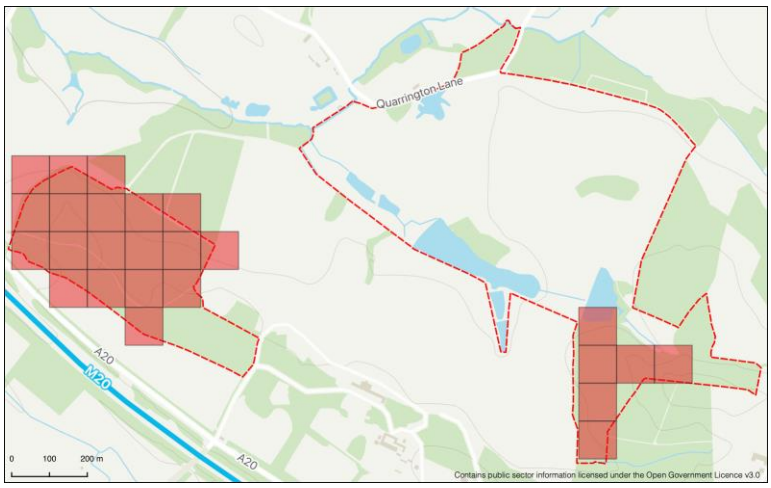
Map 8 ***Bellicidia incompta*** **VU (NS/S41)**. New to site in 2021.



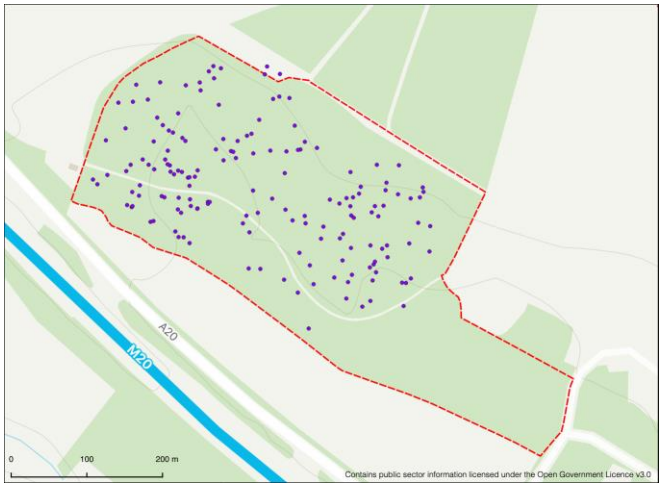
Map 9 ***Chaenotheca trichialis***. SOWI species.

Map 10 ***Chaenothecopsis nigra*** **Nb (NS)**. New to site in 2021.

Map 11 ***Coenogonium confusum*** **NT (NS/IR)**. SOWI species, new to site in 2021.



Map 12 ***Cresponea premnea*** **Nb (IR)**. SOWI species.



Map 13 *Enterographa elaborata* CR (NR/IR/S41).

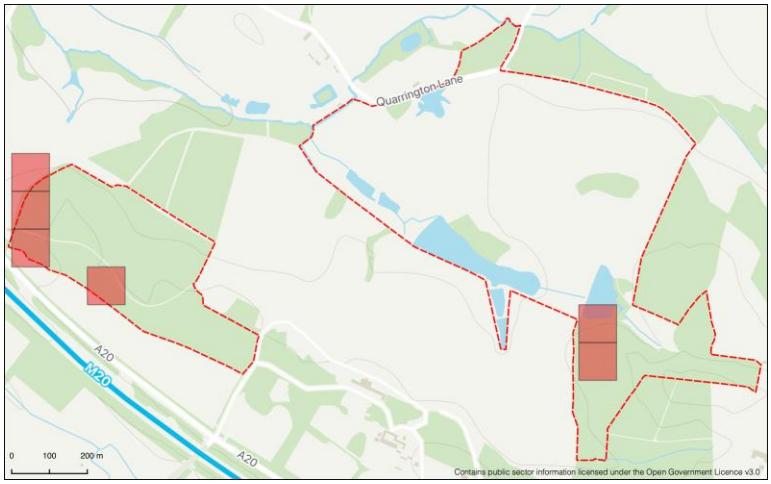
Map 14 *Enterographa hutchinsiae*.

Map 15 Lecanographa lyncea Nb (IR). SOWI species.

Map 16 ***Loxospora elatina***. SOWI species, first recent records from park.

Map 17 ***Microcalicium ahlneri*** **Nb (NS).** New to site in 2021.

Map 18 ***Milospium graphideorum*** **Nb (NS)**. A fungal parasite of *Lecanographa lyncea*



Map 19 *Pachnolepia pruinata*. A lichen typical of nutrient enriched dry bark on old trees, At Bockhanger confined to Hornbeam pollards near the edge of the wood.

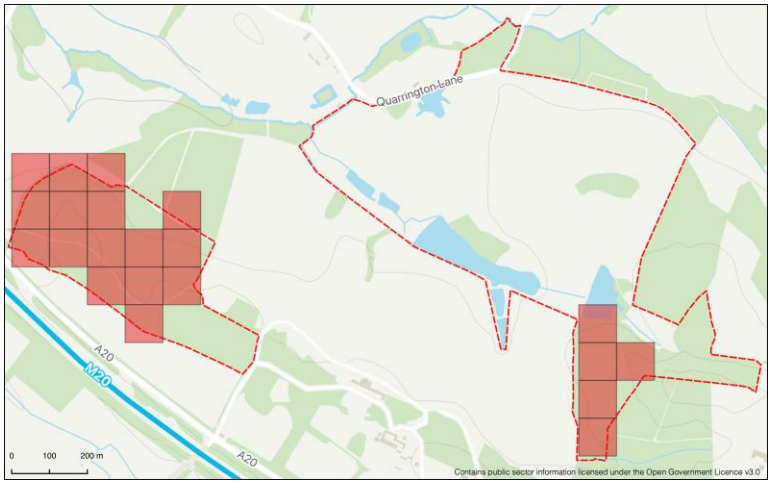
Map 20 *Pachyphiale carneola*. SOWI species, new to site in 2021.

Map 21 *Phaeographis dendritica*. SOWI species.

Map 22 ***Phlyctis agelaea*** **NT (NS)**. New to site and Kent in 2021.

Map 23 ***Porina borreri*** **Nb (NS)**. New to site and Kent in 2021.

Map 24 ***Rinodina roboris*** **Nb (IR)**. First recent records from park.

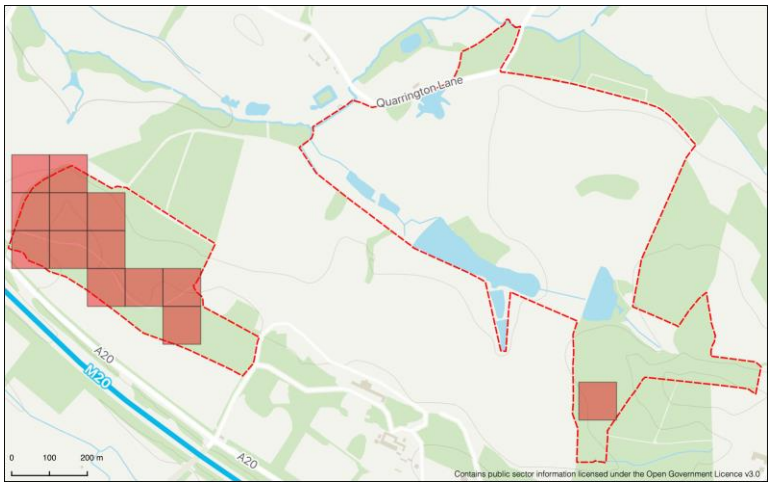


Map 25 *Sporodophoron cretaceum* Nb (IR).

Map 26 *Strigula taylorii* Nb (NS/IR). New to site in 2021.

Map 27 *Syncesia myrticola*, sorediate morph NT (NS/IR/S41). New to site and Kent in 2021.

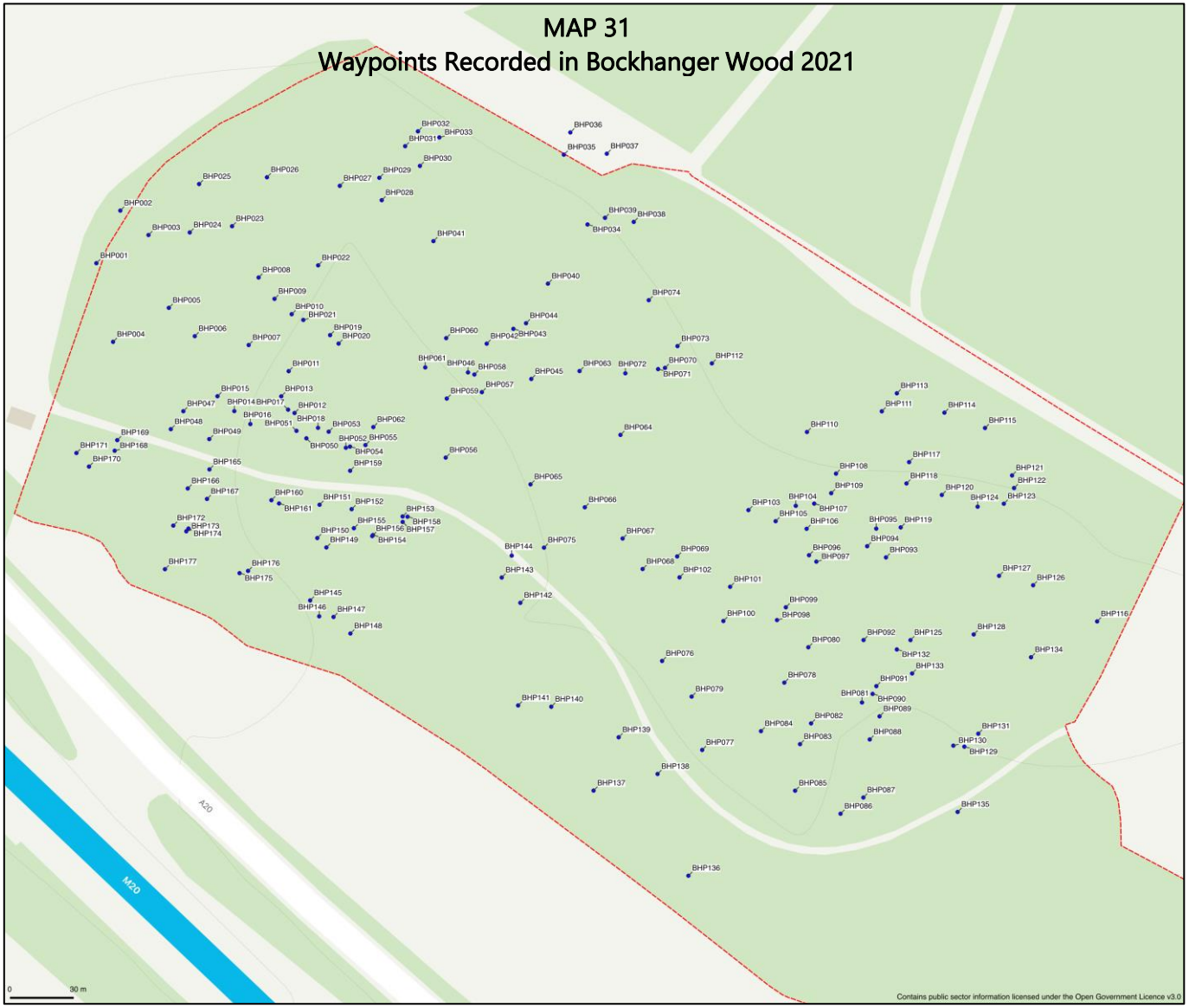
Map 28 *Thelotrema lepadinum*. SOWI species.



Map 29 *Zwackhia prosodea* NT (NS/IR/S41).

Waypoint Maps

MAP 30
Waypoints Recorded in the Pollarded Wood by Barrack Wood 2021


MAP 31
Waypoints Recorded in Bockhanger Wood 2021
BHP001
BHP002
BHP003
BHP004
BHP005
BHP006
BHP007
BHP008
BHP009
BHP010
BHP011
BHP012
BHP013
BHP014
BHP015
BHP016
BHP017
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BHP168
BHP169
BHP170
BHP171
BHP172
BHP173
BHP174
BHP175
BHP176
BHP177
A20
M20
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