Lichen survey of Pixton Park, Exmoor Somerset 2017

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LICHEN SURVEY OF PIXTON PARK, EXMOOR SOMERSET, 2017

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LICHEN SURVEY OF PIXTON PARK, EXMOOR SOMERSET, 2017

Summary

Survey

Past Survey: the lichen assemblage of Pixton Park was first surveyed by the Exmoor Woodland Lichens Survey in 1986 and 1987. This surveyed all the woods in the Pixton area but found the woodland and open parkland with ancient trees within Pixton Park to be particularly rich in epiphytic lichens. They recorded a total of 128 lichen taxa from the park and Steart Wood. The Southern Oceanic Woodland Index (SOWI), an index using indicator species to evaluate sites, score for their data was 34, a high total indicating a site of high nature conservation importance for lichens.

Current survey: Neil Sanderson, Botanical Survey & Assessment, was contracted by Natural England to carry out the lichen survey of Pixton Park. The purpose of the survey was to provide a baseline for evaluation of possible SSSI status.

The survey divided the area into four recording compartments determined by land use history. In these compartments all lichens encountered within the boundaries of Pixton Park and Steart Wood were recorded to a six figure grid reference, but with only the first instance of common species recorded. Further occurrences of species of interest were recorded at least to at least six figure grid reference accuracy and a selection of the most significant species had their distributions fully mapped by recording each occurrence as GPS waypoints. For the Red Data Book species encountered the tree was also photographed and for some macro-lichens the lichen population was also photographed. The primary aim was to be able to map out the lichen interest and relate this to habitat conditions and management requirements.

Results

History: a brief assessment the history of Pixton Park was made from easily available sources. These indicated that the park was created in the mid to late 18th century from enclosed farmland and woodland. The oldest trees in the park are Pedunculate Oaks that stood on the pre emparkment field boundaries and these trees still pick out the lines of the old boundaries. In the steep slopes in the south west of the park the old Sessile Oaks in contrast appear to be inherited from a northern extension of Steart Wood, which was incorporated into the park. Nineteenth century maps show a deer park within the same boundaries as the current park. The whole park is shown as a single unit with no internal fencing and was much more open than now, but did include areas set more densely with trees, especially on the south west slopes. The south of Steart Wood remained an enclosed woodland. The landscaping of the park included the planting several introduced species including Beech, Turkey Oak, Sycamore, Oriental Plane and specimen conifers.

In the twentieth the park has been subdivided and grazing episodically withdrawn eastwards and up onto the higher ground, with stock grazing withdrawn from the hilltop parkland and replaced with mowing in about the last 10 years. There has also been a great deal of conifer planting on the lower slopes.

Species Totals: since 1986 a total of 213 lichens and associated fungal taxa have been recorded from Pixton Park, of which 192 were seen in 2017. Eight six taxa were new discoveries in 2017, while 21 taxa recorded in the 1980s were not refound.

The Southern Oceanic Woodland Index (SOWI) scores 45 for all the data and 41 for the 2017 survey. Sites of international significance can be expected to score more than 30.

The park is also rich in threatened and uncommon species, which include six section 41 species, all but one seen in 2017. A total of 10 Red Data Book species and 36 Notable species have been recorded since 1986 from the park, with the 2017 totals being nine Red Data Book species and 32 Notable species. These are high totals.

Lichen Assemblages: the importance of the lichen assemblage at Pixton Park reflects a mixture of good examples of several epiphytic habitats in close proximity, rather than any one habitat being outstanding. Within the wider Barle Valley context it provides a habitat for lichens of older veteran trees that is rare upstream.

The most important individual habitats and assemblages contributing strongly to this international significance are:

Base Rich Bark on Veteran Trees (*Lobarion pulmonariae*): lichen assemblages of old trees and shrubs which are best developed in oceanic old growth woodlands and include some large leafy species as well as smaller crust forming lichens. This element is richest in the more wooded areas in well lit and sheltered locations, but there are also significant trees in the open parkland higher on the hill. The habitat is rich in species that are declining in a European context due to air pollution and loss of old growth woodland. At Pixton Park the 1987 data suggest some losses due to increased shade and tree loss but the assemblage is still rich. Native Oaks were the most frequent substrate but Ash and Sallow were also important and Hazel and Oriental Plane Tree supported some important stands. Turkey Oak is of limited interest.

Dry Bark and Lignum on Veteran Oaks and Lignum on Fallen and Standing Dead (*Lecanactidetum premneae* & *Calicietum abietinae*): the Ancient Dry Bark Community is an internationally rare community for which Britain has a special responsibility. It is characteristic of dry bark on veteran Oaks in warm humid oceanic climates and is confined to the south and west of England and Wales in Britain. The habitat was found wherever there were veteran native Oaks, but is most diverse on the more sheltered trees lower in the western and northern parts of the park. The assemblage is rare on Ash and Turkey Oak. Dead wood associated with the veteran trees adds lichen interest, including some rare species. This habitat is otherwise rare in the Barle valley.

Sheltered Twigs and Branches in More Open Areas (*Usneetum articulato-floridae* var. *ceratinae*): sheltered but well lit canopies in the park support two Red Data Book species, *Heterodermia obscurata* and String of Sausages Lichen *Usnea articulata*, which have declined nationally due to air pollution in the past. This is a widespread habitat, and high quality examples can occur in suitable shelter locations in less intensively managed farmland away from ancient woodland. Pixton Park, however, has a particularly well developed example of this assemblage, which is here associated with other rich habitats.

Wound Assemblages on Ancient Sycamores in Parkland (*Gyalectinetum carneoluteae*): wound tracks on veteran trees, especially Elm, supported a distinctive assemblage of specialist lichens. These were characteristic lichens of open parkland with old Elm trees, and were always uncommon. Now, however, several species are very rare due to the loss of old Elm trees to Dutch Elm disease. The habitat was not recorded in 1987, but in 2017, two hollow veteran Sycamores

were recorded supporting single colonies of the Vulnerable *Bacidia incompta* and the Endangered *Collema fragrans*. These are important records and Pixton is a very significant relic site for this habitat. This habitat is otherwise unknown in the Barle valley.

Other important habitats include moist acid and mesic bark of older trees within the more wooded and sheltered locations in the western part of the park. These include some rare old woodland species but not as many as the above habitats. The acid bark specialist lichens are especially well developed in the south west of the park, where they pick out the area of the park that was more densely treed in the 19th century.

Distribution of Interest: the lichen interest mapped in 2017 shows a strongly clumped distribution. These include three concentrations of interest with the lower wooded slopes to the west, the old Oaks along the northern boundary and two areas of interest in the open park on top of the hill. In the open parkland habitats in the northern and eastern sections of the park, the areas of interest simply marked out areas with veteran Oak, Ash and Sycamore or old Hawthorn bushes. Areas of the upper park that are of lower interest are either treeless or dominated by Beech. In the wooded western park some areas with lower interest do have frequent veteran trees but these are heavily shaded. In the more wooded park the areas of high interest represent a combination of frequent veteran trees associated with more open areas.

Management

Management Requirements of Woodland and Parkland Lichen Assemblages: the most favourable conditions for rich epiphytic lichen assemblages are found stands with numerous veteran trees of which many are well lit. Sheltered conditions in open woodlands support the highest numbers of rare species, but other species require the higher light levels found in more open parklands. Deeply shaded trees in dense woodland have poor assemblages and lack rare species. High levels of nitrogen deposition from intensively managed farmland can also greatly reduced diversity.

Management Issues for Lichens at Pixton Park: Pixton Park was a single management unit in the late 19th century and into the early 20th century. The entire surveyed area, except for Steart Wood, was a grazed deer park. Since then different areas have diverged. The northern and eastern sections have undergone less changes and are still essentially open landscape park. There are issues over the levels of grazing, with currently little outside of the deer enclosure and rather too much inside it. The western section, was always more treed but has largely been converted into woodland. This has both increased the shelter and humidity to the benefit of the diverse woodland lichen assemblage found here, but has also increased the shade, which where very heavy, is detrimental.

Maintaining Favourable Conditions with the Wooded Areas: in the wooded park the lichen assemblage is best developed where there are combinations of old trees and glades, which let in more light. The unique character of the park is gradually being lost from conifer plantations, veteran trees being submerged in dense broadleaved infill, Ivy growth up veteran tree trunks and Rhododendron invasion. Action to maintain the parkland character and the internationally significant lichen assemblage is required. This would maintain the wooded nature of the habitat that has evolved in the last century, but develop areas of pasture woodland habitats, to conserve the veteran trees and their associated biota. Options for maintaining and

restoring more open conditions are discussed and listed in the report. These include thinning around the veteran trees, cutting Ivy on veteran trees, eliminating Rhododendron and creating new glades. Red Deer browsing in combination with active management many be sufficient to maintain open condition in the lichen rich areas but in the longer term other options could be considered.

Maintaining Favourable Conditions with the Open Area (Areas 3 & 4): this area has more conventional open parkland habitat. It supports rich lichen assemblages on the veteran trees and on old Hawthorn bushes. In the northern section of the park, the rich veteran Oaks along the northern boundary are currently well managed, with mowing between and around the old trees replacing grazing.

The main area of the park is no longer grazed, but the grassland is still mown, although not inside the formerly grazed groves of trees. Inside the fenced deer enclosure, in contrast, the level of deer grazing is high with bark browsing damage to young Ash and Holly. The removal of stock grazing from the main park, however, has also resulted in intensive grassland management being stopped, which is beneficial. There has been some local tree planting in parts of the open park but this is below replacement rate and does not include some important species such as Pedunculate Oak and Sycamore.

Restoring light grazing and potentially extend the area fenced to contain deer grazing is suggested along with carrying out more tree planting, including species such as Pedunculate Oak, Sycamore and Hawthorn.

Ash Dieback: the impact of Chalara (*Hymenoscyphus pseudoalbidus*) Ash dieback disease on Ash trees and the associated lichen assemblages is not yet clear, but the loss of old Ash within the park would have a negative impact. A few special species are strongly dependent on old Ash in the park. The potential for mitigating this impact is discussed in the report.

1.0 Introduction

1.1 Background & Brief

1.1.1 Background

Pixton Park (**Map 1**) is a former deer park and landscape park on the south east fringes of Exmoor in the Barle Valley. The valley as a whole, up stream from the Park, is known to have an internationally important assemblage of epiphytic lichens. The epiphytic lichen assemblage Pixton Park was surveyed by the Exmoor Woodland Lichens Survey (Wolseley & O'Dare, 1989) and was known to be of considerable significance, with 128 taxa recorded from the core area of the park. This scored 34 in the Southern Oceanic Woodland Index (SOWI) (or 33 in the NIEC index that the SOWI replaces). The list of species recorded in the 1980s include several species not recorded in the wider Barle Valley, especially species typical of veteran Oaks. These are a feature of Pixton Park but rare in the upper Barle Valley (Sanderson, 2009).

To assess the significance of Pixton Park, Exmoor for its lichens, a survey was required to provide a baseline for evaluation of possible SSSI status. The park is currently part of three Local Wildlife Sites but has no other protection.

1.1.2 Brief

Neil Sanderson, Botanical Survey & Assessment, was contracted by English Nature to carry out the lichen survey of Pixton Park. The instructions were:

- To survey the site for lichens
- To collate all existing records from published and unpublished sources
- To evaluate the significance of the site for lichens against SSSI criteria and contribute to the overall evaluation of the site as a SSSI parkland with multiple interests.
- Provide management recommendations to protect and enhance the lichen interest for the benefit of the landowners

2.0 Methods

2.1 Survey Methods

2.1.1 Timing & Conditions

The survey was carried out over four days from 18th to 21st September 2017. Conditions were generally good to begin with, but a band of ran came over at the end of the third day and faded out in the beginning of the last morning. The poorer weather at in the latter part of the survey did not significant interfere with the completion of the survey.

2.1.2 Areas Surveyed

The survey route is shown on **Maps 2 & 3**, derived from the route as record by the GPS track records. To aid description the site was broken up into three recording compartments (**Map 4**) partly based Exmoor Woodland Survey compartments used by Wolseley & O'Dare (1989) (**Map 5**). Exmoor Woodland Survey were based on the Tithe Map compartments. In the case of the boundary between Area 2 and 4, this is appears to be an attempt to separate the more densely treed park on the lower slopes (Area 2) from the more open park above (Area 4), as shown on 19th century maps (**Maps 6** & **7**), presumably derived from the Tithe Map. Unfortunately to the south this boundary is now not discernable and to the north it no longer makes ecological sense as woodland has spread further up slope. For the 2017 survey the boundary between Areas 2 and 4 was drawn along the boundary between grazed or recently grazed parkland high on the hill (Area 4) and the predominantly wooded areas below. This is further up hill than the now indistinct boundary used by Wolseley & O'Dare (1989) and this needs to be borne in mind in interpreting the 1980s data.

Recording Compartments:

Area 1: Steart Wood, a woodland extending south of the park proper.

Area 2: The wooded part of the main park to the west, long ungrazed. The bulk is in the original deer park (the Carling Ownership) but some adjacent infilled former wet meadows at the base of the slope (Dru Ownership) are included.

Area 3: The north of the park, predominantly long ungrazed or mown parkland, with Beech the dominant tree.

Area 4: The more open part of the main park to the east and higher on the hill. Most of the areas grazed until recently or still grazed within the deer enclosure . Tree assemblage much more varied than the northern part of the park.

Complete species lists were made for the four recording compartments (**Annex 2**).

2.1.3 Locating Trees of Interest

The survey method was to make transects across the habitat looking for interesting trees, diverting to examine promising looking trees. The density of interest found determined the intensity of the survey, with most trees looked at in the richest areas. A map of veteran trees made by J Smith in 2014-15 was supplied by Natural England was useful in indicating promising areas. It was not relied on, and had missed some areas with of veteran trees, these included two very large Oaks at waypoint PX044,

scattered post mature Sessile Oaks on the steep slopes in the south west of the park and the high cut Ash pollard at PX068 lower down on the south west slopes.

The locations of trees particular interest supporting rare species which were recorded systematically (see section **2.1.4** for definition) were located as waypoints using a Garmin GPSmap 64s (**Maps 10 – 11 & 13 – 63** & **Annex 4**). This is an extremely accurate GPS receiver, which uses the GLONASS satellites as well as GPS satellites, and works well in woodland in normal conditions. All waypoints were recorded at an indicated accuracy of ±3m to ± 5m.

The codes used for the waypoints were PX and then a sequential waymark number, e.g. PX001 etc. The data on the GPS recorder was downloaded to Garmin BaseMap software and manipulated in this software, with the field notes added to the waymarks. The final data was then exported as GPX files to MapGPS Pro, which allows the mapping of GPS data onto raster format maps, which in this case was an OS map supplied by Natural England.

For each tree recorded, the tree species, physiological age and habitat was noted

2.1.4 Species Recording

All epiphytic lichen species and associated fungi visible from the ground were recorded (Species Lists in **Annex 2**, including species recorded by previous surveys but not refound in 2016). As such the concentration was on the lower trunk habitats, especially on older trees and bushes, particularly in sheltered areas; the typical habitat of species of conservation interest. Habitats that contribute considerably to the lichen diversity, but are normally dominated by commonplace species, such as twigs and branches, inevitably were not so closely examined. As a result the species list produced will not be complete but woodland species and those on veteran trees of nature conservation interest will have been more thoroughly recorded. Work in Sweden has shown that surveying the bottom 2m of trunks of the fallen trees only recorded about a quarter of the lichens species of conservation interest on the whole trunk (Fritz, 2009). However, he found that most the missed species of interest could be found within 2m of the ground on other trees within the site if an extensive survey was carried out. This indicates that extensive ground based surveys will be likely to adequately sample the total assemblage of lichens of conservation interest, but could significantly under estimate populations numbers.

Twigs are rapidly colonised by highly mobile species and this can be informative. The composition of the lichen assemblage on the twigs gives an indication of the recent air chemistry, which is not confused by residual effects of past pollution as can occur on trunks (Wolseley et al, 2006). Oak is the best species to observe this, both because of its widespread distribution and its naturally acid bark allows the clear expression of current nitrogen pollution. Where possible the lichen assemblage of Oak twigs was checked to estimate current air pollution levels.

All species recorded, were recorded to a minimum resolution of a six figure national grid reference when first encountered within a recording unit. Further occurrences of species of interest were recorded at least to at least six figure grid reference accuracy. A selection of species, which were either very rare and threatened (i.e. all national RDB at Near Threatened or higher or provisional English RDB species at Vulnerable or higher) or are more easily recorded Near Threatened, Notable or species of ecological significance, were systematically mapped, by recording GPS waypoints. It was not possible to systematically record all provisional English RDB or national Notable species as there were so many of them and some are not easy to record systematically. A few local species of ecological significance were also

recorded systematically. All other species of nature conservation interest (i.e. ancient woodland indicators and Nb species not systematically recorded) present were also recorded at each waypoint.

All trees with systematically recorded species were located using a GPS receiver and mapped as a broad brush monitoring exercise (**Maps 10 – 11 & 13 – 63** & **Annex 1 & 4**). For these species the frequency of occurrence was estimated as C = Common, A = Abundant, F = Frequent, O = Occasional and R = Rare. The data was entered into a matrix in the Excel spreadsheet <Pixton GPS Waypoints.xlsx>.

Photographs were taken of some of the more significant trees and the associated macrolichens, which are included in **Annex 1**.

Systematically Recorded Species:

Species	Conservation status	Habitats
Arthonia invadens	NT (NR/IR/S41)	Acid Bark Woodland
Bacidia incompta	VU (NS/S41)	Wound Track
Chaenotheca brunneola		Ancient Dry Bark & Lignum
Chaenotheca trichialis		Ancient Dry Bark & Lignum
Chaenothecopsis nigra	Nb (NS)	Lignum
Cresponea premnea	Nb (IR)	Ancient Dry Bark
Chaenothecopsis savonica	NT (NR)	Lignum
Fuscopannaria mediterranea	Nb (NS)	Base Rich Bark Woodland
Heterodermia obscurata	NT (NS)	Canopy
Lecanographa lyncea	Nb (IR)	Ancient Dry Bark
Lobaria pulmonaria	Nb (IR)	Base Rich Bark Woodland
Lobaria scrobiculata	Nb (IR)	Base Rich Bark Woodland
Microcalicium ahlneri	Nb (NS)	Lignum
Mycobilimbia epixanthoides		Base Rich Bark Woodland
Mycobilimbia pilularis		Base Rich Bark Woodland
Opegrapha corticola	Nb (IR)	Base Rich Bark Woodland
Pannaria conoplea	Nb (IR)	Base Rich Bark Woodland
Phlyctis agelaea	NT (NS)	Mesic Bark
Phyllopsora rosei	Nb (NS/IR)	Base Rich Bark Woodland
Porina coralloidea	Nb (NS/IR)	Base Rich Bark Woodland
Rinodina roboris var. roboris	Nb (IR)	Base Rich Bark
Sticta ciliata	[Nb (IR)]	Base Rich Bark Woodland
Sticta limbata	Nb (IR)	Base Rich Bark Woodland
Thelopsis rubella		Base Rich Bark Woodland
Taeniolella toruloides	(NR)	Acid Bark Woodland
Usnea articulata	NT (IR/S41)	Canopy
Wadeana dendrographa	NT (NS/IR/S41)	Base Rich Bark Woodland
Xerotrema quercicola	NT (NR/IR)	Lignum

No systematic attempt was made to identify the individual species within the *Lepraria incana* s. str. group. Records confirmed by collection are indicated in **Annex 1** by the abbreviation “Coll.”The site notes were made on an iPhone in the field and the field notes have been edited and added to the report as **Annex 1**. The species recorded are given in **Species Lists 1 – 4, Annex 2** and the data was converted into a BLS Recorder import spreadsheet to allow importation into the NBN via the BLS database <BLS_General_v6d_Pixton 2017.xlsx>. The waymark grid references from each location and the comments in **Annex 1** were transferred to a spreadsheet <Pixton GPS Waypoints.xlsx> (**Annex 4**). The waypoint data was also exported as <Pixton Park.csv>, <Pixton Park.GDB>, <Pixton Park.kml> and <Pixton Park.GPX> files.

2.1.5 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 trees and, in managed woodlands such trees, and their associated biodiversity, are likely to be rare features.

2.2 Data Analysis

2.2.1 Nomenclature

The nomenclature mainly follows Woods & Coppins (2012) for lichens and lichenicolous fungi. For one species *Pertusaria hemisphaerica*, the newer name *Varicellaria hemisphaerica* is used.

Woods & Coppins (2012) and the new Lichens of Great Britain and Ireland (Smith et al, 2009) introduces considerable changes from the previous checklist (Coppins, 2002) and very many from the original edition of the flora (Purvis et al, 1992). The synonyms, and the many more changes to come, can be tracked at the BLS website in their taxon dictionary <http://www.britishlichensociety.org.uk/resources/lichen-taxon-database>.

Many further changes are likely to be applied as modern DNA sequencing elucidates the actual evolutionary relationships between the lichens. Some names of species of interest had been changed recently but were not used in the report:

Old Name	New Name
Collema fragrans	*Scytinium fragrans*
Dimerella lutea	*Coenogonium luteum*
Lecanactis subabietina	*Inoderma subabietinum*
Leptogium lichenoides	*Scytinium lichenoides*
Leptogium teretiusculum	*Scytinium teretiusculum*
Lobaria scrobiculata	*Lobarina scrobiculata*
Pachyphiale carneola	*Gyalecta carneola*
Pertusaria amara f. *pulvinata*	*Lepra pulvinata*
Schismatomma cretaceum	*Sporodophoron cretaceum*
Schismatomma niveum	*Snipocia niveum*

A change that was used is the newly described division of *Sticta fuliginosa* s. lat. into four separate species by Magain & Sérusiaux (2015). This is a major change in the ionic *Sticta* genus, leafy lichens characteristic of rich *Lobarion* communities. The 2017 survey found only one of the three species know known from Britain. A guide to the new species can be viewed at <http://wessexlichengroup.org/Species/Sticta_fuliginosa_s_lat/>.

2.2.2 Ancient Woodland Indicators

Dr Francis Rose (Rose, 1992 & Coppins & Coppins, 2002a) devised several indicator lists that can be used to assess the diversity and conservation value of woodland epiphytic lichen assemblages in different climatic areas. These replaced an earlier more general indicator list the 'Relative Index of Ecological Continuity' (RIEC) Rose (1976). The indices are ideally applied to about 100ha of woodland. The indices were recently reviewed (Sanderson, 2017a), mainly with the main aim of simplifying the application of the indices, by removing multiple choices. The thresholds for considering sites for SSSIs were also reviewed and updated in preparation for the soon to be updated SSSI selection criteria for lichens. Some minor changes were also made to the species used. To reflect the changes the indices were given new more informative names.

These lists indicate habitat quality; the total number of species found is the important parameter. The indicator species are associated with late succession stands with veteran trees (old growth stands i.e. stands more than 200 years old), especially those stands with a past continuity of old trees (Alexander et al, 2002). Woods that have been clear felled, but regenerated, within the last 200 years (young growth stands) are therefore likely to be poorer in lichen indicator species than less disturbed stands. The lichen ancient woodland indicator lists are different from similar ancient woodland indicator lists composed of vascular plants or bryophytes. The latter reflect ancient sites rather than stands and are much less effected by the management of the trees.

The main appropriate list for southern England is the Southern Oceanic Woodland Index (SOWI) (formerly the New Index of Ecological Continuity, NIEC). This is designed for oceanic temperate woodland south of the Scottish Highlands.

The SOWI list consists 85 species and Sanderson (2017a) 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. Below this, as a rough guide, woods with a score of 10 to 19 could be regarded as of county importance and those with a score of 5 to 9 are of high local significance for their woodland lichen assemblage. In south west England, it was recommended that a score of 30 or more was used as the threshold for considering sites for SSSI status.

A second index was also used, the Upland Rainforest Index (URI) (formerly the Eu-oceanic Calcifuge Index of Ecological Continuity, EUOCIEC). This covers acidic and leached woodlands in very high rainfall areas in hyper-oceanic to eu-oceanic climates. The assemblage represented by this index is best developed in higher and wetter woods, i.e. high altitude cloud forest, than the SOWI. Elements of the assemblage, however, extend into the lowlands and significant assemblages can occur in humid sheltered locations.

The URI list consists of 37 species and Sanderson (2017a) regarded sites with an index score of 10 or more as being national significance, while sites with scoring more than 15 are regarded to be as likely to be of international significance. In south west England, it was recommended that a score of 10 or more was used as the threshold for considering sites for SSSI status.

2.2.3 Rarity & Threat

The definitions of Red Data Book (RBD) status follows Woods & Coppins, (2012), who also added a concept of International Responsibility Species:

- **International Responsibility Species**: this is a new category that recognises that some species are commoner in Britain than elsewhere. They are absent, rare or threatened in the rest of Europe and are thought, on existing data, to have 10% or more of their European or World population in Britain. These could be considered as more important than some Red Data Book species, which are common elsewhere in the world. The significance of these species depends on their actual British and local rarity but special attention needs to be paid to them in management.

The Nationally Rare and Nationally Scarce status in Woods & Coppins (2012) are now out of date and updated assessments were obtained from the BLS web site at <http://www.britishlichensociety.org.uk/resources/lichen-taxon-database>.

Notable Species: Sanderson (2011 & 2017b) has reviewed the measurement of rarity for species not assessed as threatened, or as Near Threatened, species in the RDB. Many declining lichens or those restricted to vulnerable habitats, which are Nationally Scarce, have now been assessed as Threatened or Near Threatened lichen species. In contrast, several ephemeral Nationally Rare species of ruderal habitats are now assessed as least concern. As such the old Nationally Rare/Nationally Scarce assessment was not thought useful any more. As an alternative Sanderson (2011) proposed that all species Least Concern or Data Deficient species which were Nationally Rare Nationally Scarce or International Responsibility species be put in a single category "Notable species" (Nb). Sanderson (2017b) reviewed the potential Notable species and excluded those that were clearly under recorded common species or ruderal species of limited conservation interest. This list is followed in this report.

Sanderson (2017b) suggested 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.

This scoring system can be used in woodland habitats, but is considered less useful than the woodland indices in this habitat and is recommended mainly for habitats lacking suitable habitat indices.

Section 41 Species. The former BAP list (Biodiversity Reporting and Information Group, 2007) and provided the basis of the lichens listed under Section 41 of the Natural Environment & Rural Communities (NERC) Act 2006. Species on this list are considered to be of "principal importance for conservation of biological diversity in England".

The BAP list was revised (Biodiversity Reporting and Information Group, 2007) and, unlike the earlier list, is a reasonably comprehensive list of those lichen species likely to be under particular stress and amenable to conservation action to reverse this. Conservation of these species is regarded as being an important contribution to Britain's obligations under the Rio Convention on Biodiversity. Collectively, however, they are not an objective tool for assessing conservation importance, RDB assessments and the list of Notable species provide this.

Abbreviations used in the text and tables are listed below:

RDB = Red Data Book Species, (CR, EN, VU & NT Species)
CR = Critically Endangered Red Data Book species
EN = Endangered Red Data Book species
VU = Vulnerable Red Data Book species
NT = Near Threatened Red Data Book species
DD = Species listed as Data Deficient in the Red Data Book
Nb = Notable species (NR, NS, IR or S41 species of conservation interest not RDB NT or higher)
NR = Nationally Rare
[NR] = Nationally Rare lichenicolous parasite, or undescribed lichen species, likely to be very under recorded
Nb (NS) = Nationally Scarce regarded by Sanderson (2017b) as being of significant conservation interest
(NS) = Nationally Scarce lichen not regarded by Sanderson (2017b) as being of significant conservation interest
[NS] = Nationally Scarce lichenicolous parasite, likely to be very under recorded
IR = International Responsibility species
S41 = Section 41 species

***A Lichen Red Data List for England*.**
A lichen Red Data List for England, is in initial draft. The differences for the national list lists reflects the high level of threat to many epiphytic species, especially those of the Base Rich Bark Woodland Community (*Lobarion*), which still have strong populations in western Scotland, but are threatened further south. Many species recorded at Pixton Park, which are of Least Concern in the British Red List, are likely to be given at least Near Threatened status in England. Of species found at Pixton Park, the following national Least Concern species are listed as potentially Near Threatened: *Lecanographa lyncea*, *Lobaria pulmonaria*, *Microcalicium ahlneri*, *Pannaria conoplea*, *Parmotrema crinitum*, *Phyllopsora rosei*, *Sticta fuliginosa* s. lat. and *Sticta limbata*. Two currently national Near Threatened species *Chaenothecopsis savonica* and *Wadeana dendrographa* are listed as Vulnerable in the provisional England Red List.

2.2.4 Communities
Most lichens species have limited tolerances of bark and habitat conditions. This allows the formation of distinctive communities (James et al, 1977). Simple English names have been invented with the technical names given in brackets.

2.2.5 SSSI Selection Criteria
The current SSSI selection criteria for lichens (Hodgetts, 1992) are now very old and of low utility. A new version, which is much changed, has passed its final technical review. Two studies contracted as technical support for the new criteria (Sanderson, 2017a & 2017b) have been incorporated into the final version and are referred for SSSI selection criteria.

2.2.6 Mapping the Quality of Lichen Interest
The conservation interest of the lichen assemblage at the waypoints was assessed and mapped, with different symbols assigned to different levels of interest in Garmin BaseCamp. The national RDB (Woods & Coppins, 2013) and draft English Lichen Red Data List for England were used to define four classes of conservation value. Each tree was classified by threat status of the most threatened systematically recorded species recorded on the tree.

Purple: location with systematically recorded species which are Vulnerable or higher in either the British RDB or the draft English Lichen Red Data List for England.

Red: location with systematically recorded species which are Near Threatened in either the British RDB or the draft English Lichen Red Data List for England.

Green: location with other systematically recorded Notable species.

Blue: location with other systematically recorded species of ecological significance.

In addition, the distributions of individual lichen communities (**Maps 13** – **19**) and systematically recorded species (**Maps 32** – **58**) were mapped. The habitats supporting systematically recorded species were also mapped (**Map 20** – **31**).

2.2.7 Existing Data

The site has not been visited often but was subject to more than one survey in the 1980s as part of the Exmoor Woodland Lichens Survey. This is summarised in Wolseley & O'Dare (1989) and detailed field notes from the Pixton survey were supplied by Natural England (Wolseley & O'Dare, 1988). Not all the original species lists were obtained from Natural England files, but these have been digitalised and included within the British Lichen Society (BLS) database and detailed species lists were supplied by Janet Simkin, the data officer of the BLS.

Internet sources were consulted for historic maps to gain an insight into the historic development of the park and a brief search of the internet was made for other information:

- The 1802, Ordnance Surveyor's Drawing, Tiverton, Devon, (OSD 41) (https://www.bl.uk/onlinegallery/onlineex/ordsurvdraw/index.html, accessed 17/9/2017), (**Map 6**).
- The earliest 6" Ordnance Survey map: Somerset LXVII.NE, surveyed 1887–1888 and published 1898 (**Map 7**) (http://maps.nls.uk/view/101461972, accessed 25/10/2017).
- An extract by Mary Siraut from the Victoria County History website, giving the history of the house and park, from the research files for Siraut (2009) (https://www.victoriacountyhistory.ac.uk/explore/items/pixton-park, accessed 27/10/2017).

3.0 Exisiting data

3.1 History

3.1.1 Extract from the Siraut (2009) Research Papers

The extract from the research papers for Siraut (2009), states “Colonel John Acland (d. 1778) and his wife, Lady Harriot may have built the new house at Pixton and laid out the park”. In describing the earlier history it is stated that Pixton estate “was acquired by Sir William Bonville in 1440. The fields of the estate survive as areas of ridge and furrow in the later park.”

This dates the park to the mid to late 18th century and implies that the park was created from enclosed farmland. The field survey found supporting evidence for this distribution of the older Oak trees. These are found on the outer park boundary (as in Area 3) or often aligned in rows inside park, where they are likely to mark the locations of pre emparkment field boundaries. Trees PX102 – 104 (Area 4, **Map 62**) are old three Oaks aligned on a surviving field boundary outside of the park and are strong proof of this. The oldest trees in the park are probably farmland boundary trees pre-dating the park.

The park is likely to post date 1735, which is the general date given for the introduction of Turkey Oak, as this tree obviously forms and important part of the original landscaping of the park.

3.1.2 Map Evidence

The early 19th century 1802, Ordnance Surveyor’s Drawing (**Map 6**), shows a clear depiction of a deer park (a pale is depicted on the boundary) contained within he same boundaries as the current park. From this map it appears that, as well as, incorporating enclosed farmland, the park included existing woodland. This was a northern extension of Steart Wood (Area 1) and occupied the southern part of the western slopes (south west of Area 2) within the park.

The latter 1887 – 88 6" OS map (**Map 7**) is much more accurate and shows the distribution of trees within the park in detail. The more treed area on the site of the northern extension of Steart Wood is still obvious. Other areas are shown as more open but with concentrations of open stands of trees and some clearly defined clumps. The lower slopes to the west were more densely set with trees than the higher ground to the east. Interestingly three small circular fences with conifer symbols inside can be related to at least two surviving Douglas Fir trees. The whole park is shown as a single unit with no internal fencing and Wolseley & O’Dare (1989) quote a reference to 1892 when the park was 168 acres and had 200 fallow deer.

3.2 Past Lichen Survey

3.2.1 Surveys

The site report for the Exmoor Woodland Lichens Survey (Wolseley & O’Dare, 1988), reports the following visits, some of which can be dated from data in the BLS:

- 13th April 1986, Steart Wood (EWS1.1): visited by Dr Francis Rose, not revisited, except at far northern end.
- 17th and 18th June 1987: visited by P. A. Wolseley, A. M. O'Dare
- Visited 20th October 1987: visited by P A Wolseley, A. M. O'Dare, Dr Francis Rose, Rob Jarman (NT) and W. Butcher (STNC)

A date of 1988 for a record of *Megalospora tuberculosa* from Pixton Park - central part in the BLS database appears to be an error for the record made in 17/06/1987 from Pixton - Central Pixton Park (EWS 4). There is no evidence of any other lichen recording within Pixton Park before or since.

3.2.2 1980s Lichen Assemblage

The maps covering the core area of Pixton Park are reproduced, with the original comments as **Maps 8** & **9** and the total species list given in **Species List 2**, **Annex 1**. A total of 128 taxa were recorded from the park and Steart Wood. The Southern Oceanic Woodland Index (SOWI) score for the 1980s survey was 34 and the Upland Rainforest Index (URI) five. Two Near Threatened species were recorded; the pollution sensitive canopy species *Usnea articulata* NT (IR/S41) and *Usnea florida* NT (S41).

The main areas of the parkland, covered by Areas 2 and 4 (**Map 8**, EWS2 & 4), are described together as being "outstanding interest for their lichen" assemblage. They described a rich Base Rich Bark Woodland Community (*Lobarion pulmonariae*) assemblage. This included *Lobaria pulmonaria* Nb (IR) occurring on two plane trees in sheets and abundantly on Ash (**Map 8**, a & b), frequently on Beech (**Map 8**, c), and occasionally on Sycamore. *Lobaria scrobiculata* Nb (IR) was found once on the parkland Ash (**Map 8**, b). *Lobaria pulmonaria* was not found on Oak. Other species recorded from this assemblage in Areas 2 and 4 *Sticta limbata* Nb (IR), *Sticta fuliginosa* s. lat. Nb (IR), *Sticta sylvatica* Nb (IR), *Pannaria conoplea* Nb (IR), *Fuscopannaria mediterranea*[1], Nb (IR), *Parmeliella triptophylla* Nb (IR), *Leptogium lichenoides*, *Parmotrema crinitum*[2], *Punctelia reddenda*[3], *Peltigera collina* Nb (IR), *Peltigera horizontalis*, *Porina coralloidea* Nb (IR/NS), *Mycobilimbia epixanthoides*[4], *Mycobilimbia pilularis*[5].

In addition to the Base Rich Bark Woodland Community, they describe the Ancient Dry Bark Community (*Lecanactidetum premneae*), characteristic of dry bark on old veteran Oaks, as abundant on the ancient drier bark surfaces. Typical species recorded *Cresponea premnea*[6] Nb (IR), *Lecanographa lyncea*[7] Nb (IR), *Lecanactis subabietina* Nb (IR), *Schismatomma niveum* Nb (IR), *Schismatomma cretaceum*[8] Nb (IR).

These are the main habitats of interest reported but *Usnea articulata* NT (IR/S41) festoons an old hawthorn in the Sheltered Canopy Community (*Usneetum articulato-floridae* var *ceratinae*). As trees with more nutrient rich bark (Nutrient Rich Bark Community *Xanthorion*) higher in the park (on or in the region of **Map 8** (b)) also add diversity but no rare species were recorded. *Diploicia canescens*, a species characteristic rather acidified over enriched bark (*Buellietum punctiformis*) was described as frequent here.

Steart Wood, Area 1 (**Map 8**, EWS 1) was looked at by Francis Rose in 1986, but was found to be largely species poor with Rhododendron dominating the shrub layer.

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[1] Recorded as *Parmeliella mediterranea*
[2] Recorded as *Parmelia crinita*
[3] Recorded as *Parmelia reddenda*
[4] Recorded as *Bacidia epixanthoides*
[5] Recorded as *Catillaria sphaeroides*
[6] Recorded as *Lecanactis premnea*
[7] Recorded as *Lecanactis lyncea*
[8] Recorded as *Schismatomma virgineum*

In 1987 however *Lobaria pulmonaria* Nb (IR) was observed in the upper fork of an ash tree c8 m from the ground in the far north of the wood near the boundary with the park (**Map 8**, e)

Finally the north of the park (**Map 9**, EWS 3) was described as dominated by large straight beech trees that had been thinned out recently. These had a rather uninteresting lichen assemblage but *Usnea* species were also frequent including *Usnea ceratina* (**Map 9**, K). The rest of this, area was not visited in 1978.

The 1988 Summary for the Pixton complex (Wolseley & O'Dare, 1988)
Although the whole Pixton promontory supports 125[9] epiphytic lichen species, including many that are associated with ancient woodlands, the latter are sparsely distributed and of a relic nature except in the Park and Park Wood EWS compartments 2 and 4. In these areas we have the combination of ancient trees in a wood pasture situation together with damp valleys and a diversity of epiphytic habitats that are maintained by the present management routine. In this situation introduced free species are sometimes also hosts for ancient woodland lichen species as *Lobaria pulmonaria* on plane trees and on beech trees. This combination of trees and habitats gives Pixton a great diversity of lichen flora, with 34 species associated with ancient woodlands.

[9] The BLS database has 128 taxa recorded in the 1980s from Areas 1 – 4

4.0 Survey

4.1 Lichen Assemblage

4.1.1 Totals

The combined lichen species list recorded since 1986 for the whole site, is given in **Species List 1**, **Annex 2**. The totals recorded from the Pixton Park from 1986 – 1987, 2017 and the overall totals listed in **Table 1**. A total of 213 taxa have been recorded from the park; of these 188 were lichens, 16 lichen parasites and seven associated non-lichenised fungi.

Lichen species of interest recorded including 1986 for the whole of the park included 45 Southern Oceanic Woodland Index (SOWI) while 10 Upland Rainforest Indicators (URI) have also been recorded. In addition, one Endangered (CR), one Vulnerable (VU) and eight Near Threatened (NT) Red Data Book species have been found. A total six Nationally Rare (NR) and 22 Nationally Scarce (NS) species were recorded along with 26 International Responsibility species (IR). In summary, 10 Red Data Book species and 36 Notable (Nb) species are known from the site. These are high totals.

TABLE 1
Total Numbers of Lichens Recorded from Pixton Park 1986–2017

Measure/Years	1986–87	2017	1986–2017
Total taxa	128	192	213
SOWI Indicator Score	34	41	45
URI Indicator Score	5	9	10
Endangered RDB spp	0	1	1
Vulnerable RDB spp	0	1	1
Near Threatened RDB spp	2	7	8
Notable species	20	32	36
International Responsibility spp	18	23	26
S41 spp	2	5	6

Over the park a total of 86 new taxa were added in 2017, while 21 taxa recorded in the 1980s were not refound. Species new to the site included the highly threatened species *Collema fragrans* EN (NR/IR/S41) and *Bacidia incompta* VU (NS/S41) and the Near Threatened *Arthonia invadens* NT (NR/IR/S41), *Chaenothecopsis savonica* NT (NR), *Heterodermia obscurata* NT (NS), *Phlyctis agelaea* NT (NS), *Wadeana dendrographa* NT (NS/IR/S41) and *Xerotrema quercicola* NT (NR/IR). New Notable species include *Biatora britannica* Nb (NS), *Chaenothecopsis nigra* Nb (NS), *Cladonia cyathomorpha* Nb (NS), *Cliostomum flavidulum* Nb (NS), *Microcalicium ahlneri* Nb (NS), *Opegrapha corticola* Nb (IR), *Opegrapha xerica* Nb (NS), *Pertusaria amara* f. *pulvinata* Nb (NR), *Porina borreri* Nb (NS), *Porina byssophila* Nb (NR) and *Rinodina roboris* var. *roboris* Nb (IR). Additional new species of interest included *Chaenotheca brunneola*, *Chaenotheca trichialis* and *Thelopsis rubella*. Also, *Sticta fuliginosa* s. lat. Nb (IR) was refound and was determined here to consist only of the newly described segregate *Sticta ciliata*.

Lichens of conservation interest not refound in 2017 included three large Base Rich Bark Woodland Community (*Lobarion pulmonariae*) species *Parmeliella triptophylla* Nb (IR), *Peltigera collina* Nb (IR) and *Sticta sylvatica* Nb (IR). The large bushy *Usnea florida* NT (S41) characteristic of the Sheltered Canopy Community (*Usneetum articulato-floridae* var. *ceratinae*) was also not refound. A smaller less obvious species *Rinodina griseosoralifera* Nb (NS) was also not refound.

The 2017 survey totals by individual recording compartments (**Map 4**) are given in **Table 2**.

TABLE 2
Numbers of Lichens Recorded from Pixton Park 2017

Measure/Years	Area 1	Area 2	A1 & 2	Area 3	Area 4	A3 & 4	Total
Total taxa	29	131	133	76	128	152	192
SOWI Indicator Score	12	38	38	9	23	25	41
URI Indicator Score	2	8	8	3	3	6	9
Endangered RDB spp	0	0	0	0	1	1	1
Vulnerable RDB spp	0	0	0	0	1	1	1
Near Threatened RDB spp	0	7	7	1	2	2	7
Notable species	8	24	24	8	15	21	32
International Responsibility spp	7	18	18	4	11	12	23
S41 spp	0	3	3	1	3	3	5

Area 1 Steart Wood
Area 2 The wooded part of the main park
Area 3 The north of the park
Area 4 The more open part of the main park to the east higher on the hill

The two large recording compartments, Area 2 and 4, were both lichen rich, with high totals of species of conservation interest. The lower and more wooded habitat of Area 2, however, was distinctly richer for lichens of conservation interest, with the exception of threatened species, which were confined to the more open higher parts of the park. The northern section of the park (Area 3) is much less rich, but the old Oaks along the northern boundary contribute significantly to the total interest of the park. Finally the bulk of Steart Wood (Area 1) is very species poor, except for a small patch of old growth woodland, not invaded by Rhododendron in the north. This is similar to the lichen rich woodland to the north and is essentially an extension of this.

Areas 1 and 2 and Areas 3 and 4 can be combined as two areas of more wooded and more open habitat respectively derived from the parkland. The better lit open parkland is richer overall in lichens but, with the exception of threatened species is less rich in species of conservation interest. The greater richness of the open parkland is probably due a mixture habitat and recording. The better lit conditions favours a diverse assemblage of common lichens but also the common canopy lichens are much more easily recorded than in the more wooded parts of the park. The open park also has two highly threatened parkland specialist lichens absent from the wooded area. However, the open park has a lower diversity of Near Threatened, Notable and ancient woodland species compared to the more wooded parts of the park.

4.1.2 Lichen Communities

The communities or assemblages contributing to the lichen interest are described below. The two major and most extensive habitats of interest are the Base Rich Bark Woodland Community (*Lobarion pulmonariae*) and the Ancient Dry Bark Community (*Lecanactidetum premneae*). In addition, significant interest is added by the Sheltered Canopy Community (*Usneetum articulato-floridae* var *ceratinae*), Dry Lignum Communities (*Calicietum abietinae*), Acid Bark Woodland Community (*Parmelion laevigatae*), Mature Mesic Bark Community (*Pertusarietum amarae*) and Wound Track Assemblage (*Gyalectinetum carneoluteae*). The occurrences of systematically recorded species characteristic of the different habitats are mapped

on **Maps 13** – **19**. Smooth Bark Community (*Graphidetum scriptae*) also supports some Notable species but is not as significant as the above.

Base Rich Bark Woodland Community (*Lobarion pulmonariae*): a very rich habitat best developed on veteran trees with base rich bark. Typically found on bark that is flushed by base rich water from above. Unlike many other communities the basic community is composed of ancient woodland species so any occurrence is of interest.

On damp bark with a high pH, base demanding mosses are usually prominent. This moss community can occur in both shady and exposed conditions and in both situations the *Lobarion* lichens are absent. However, in intermediate light conditions a rich community of ancient woodland lichens can develop. There is a critical balance between light and humidity, which varies from east to west. Further west in humid climates light levels become more critical than shelter from summer sun. In western areas as well as old canopy trees the leafy species can also occur older bushes such as Sallow and Hazel. These are much younger than old canopy trees. The requirement for high pH bark has made the community vulnerable to bark acidification caused by air pollution and some of the most sensitive species have declined drastically over the 20th century.

The habitat shows a strong north to south gradient, with classic large leafy species dominant with fewer crust forming species in the north west (*Lobarion pulmonariae*), while to the south west the habitat is much richer in crust forming species (*Agonimion octosporae*). The latter community replaces the *Lobarion* in shaded humid woods in oceanic Mediterranean and southern Atlantic climates. At Pixton, the assemblage is dominated by species characteristic of the *Lobarion pulmonariae* with a more limited contribution from southern Atlantic – Mediterranean species. The latter include *Opegrapha corticola*, *Porina coralloidea*, *Rinodina roboris* var. *roboris*, *Thelopsis rubella* and *Wadeana dendrographa*. The former include characteristic species such as the leafy *Lobaria pulmonaria*, *Lobaria scrobiculata*, *Pannaria conoplea*, *Parmeliella triptophylla*, *Peltigera collina*, *Sticta ciliata*, *Sticta limbata* and *Sticta sylvatica*. Other crust forming species include *Mycobilimbia epixanthoides*, *Mycobilimbia pilularis* and *Phyllopsora rosei*.

This assemblage was well recorded in the 1980s (Wolseley & O'Dare, 1988) and some evidence of decline was seen in the 2017 resurvey. Some recorded *Lobaria pulmonaria* populations could not be found and only one new colony was found. Losses appeared to be due to both increased shade in the wood and the direct loss of old trees. Also not refound at all were *Parmeliella triptophylla*, *Peltigera collina* and *Sticta sylvatica*.

A total of 24 species of conservation interest have been recorded from this habitat, of which three were not refound in 2017. These include one species on the RDB list (*Wadeana dendrographa*). Twenty nine locations were waymarked as supporting systematically recorded species characteristic of this habitat (**Map 13**) in 2017. The distribution largely reflects the distribution of sheltered veteran trees and old Sallow bushes lower down in the wood but there are also a few important trees in more exposed locations in the upper park (Area 4).

Species recorded in the Base Rich Bark Woodland Community (*Lobarion pulmonariae*):

Species	Conservation Status	2017
Bacidia biatorina	n	1
Biatora britannica	Nb (NS)	1
Catinaria atropurpurea	n	1
Fuscopannaria mediterranea	Nb (NS), n	1
Leptogium lichenoides	n	1
Leptogium teretiusculum	n	1
Lobaria pulmonaria	Nb (IR), n	1
Lobaria scrobiculata	Nb (IR), n	1
Mycobilimbia epixanthoides	n	1
Mycobilimbia pilularis	n	1
Opegrapha corticola	Nb (IR), n	1
Pachyphiale carneola	n	1
Pannaria conoplea	Nb (IR), n	1
Parmeliella triptophylla	Nb (IR), n	0
Peltigera collina	Nb (IR), n	0
Peltigera horizontalis	n	1
Phyllopsora rosei	Nb (NS/IR), n	1
Porina coralloidea	Nb (NS/IR), n	1
Rinodina roboris var. roboris	Nb (IR)	1
Sticta ciliata	Nb (IR), n	1
Sticta limbata	Nb (IR), n	1
Sticta sylvatica	Nb (IR), n	0
Thelopsis rubella	n	1
Wadeana dendrographa	NT (NS/IR/S41), n	1

n = SOWI species

Native Oaks were the most frequent substrate for significant stands in this assemblage (10 GPS waypoints), but Ash and Sallow were important too (eight GPS waypoints each). Hazel and Plane Tree also supported some important stands (two GPS waypoints each). Despite of its abundance in the park, Turkey Oak only once supported a systematically surveyed specialist species of this community.

This is a rich occurrence of the habitat with significant records such as the Ash specialist *Wadeana dendrographa* and species that are now very rare in England including *Lobaria scrobiculata* and *Fuscopannaria mediterranea*. The habitat, however, does not quite match the richest stands in the south west.

Ancient Dry Bark Community (*Lecanactidetum premneae*): community occupies the dry sides of ancient Oaks and rarely other tree species. The community is strongly associated with veteran Oaks and old growth woodland. It is internationally very rare, and otherwise known only from a few sites in France, but is widespread in southern Britain (James et al, 1977). Several characteristic species are hence International Responsibility species, and the community is of great conservation importance. This is a community of highly stressed habitats and it is not species rich but supports a high proportion of species of interest. In the New Forest evidence of chronosequences indicates that this community takes over 400 years to fully recolonise clear felled sites (Sanderson, 1996). The Ancient Dry Bark Community is a southern oceanic community, typical of warm moist, but not too wet, areas. The lichens grow on bark only occasionally reached by stem flow and mainly absorb water from dew.

The widespread lichen species *Schismatomma decolorans* usually dominates with *Enterographa crassa* often frequent. The characteristic specialist lichen species present here include *Cresponea premnea*, which is very widespread, along with less frequent species including *Lecanactis subabietina*, *Lecanographa lyncea*, *Milospium*

graphideorum (parasitic on *Lecanographa lyncea*), *Opegrapha xerica*, *Schismatomma cretaceum* and *Schismatomma niveum*.

A total of nine species of conservation interest were been recorded from this habitat, all of which were seem in 2017. Sixty four trees were waymarked as supporting systematically recorded species characteristic of this habitat (**Map 14**) in 2017. The community is strongly associated with Oak (61 GPS waypoints) but was also recorded on three Turkey Oaks and on one Ash tree. The distribution reflects the distribution of veteran Oaks. These are mainly either boundary trees on the edge of the park, from former field boundary trees within the trees or trees within the former northern extension Steart Wood within the south west of the park (Area 2). This is a substantial occurrence of this assemblage, including a large population of *Lecanographa lyncea* on 12 Oaks, a strong population for a species with nearly all its European population in England. It does not, however, quite match the richest stands, such as in the New Forest, Hampshire (Sanderson, 2010) or Horner Combe, Exmoor (Sanderson, 2017c).

Species recorded in the Ancient Dry Bark Community (*Lecanactidetum premneae*):

Species	Conservation Status	2017
Chaenotheca brunneola	n	1
Chaenotheca trichialis	n	1
Cresponea premnea	Nb (IR), n	1
Lecanactis subabietina	Nb (IR), n	1
Lecanographa lyncea	Nb (IR), n	1
Milospium graphideorum	Nb (NS)	1
Opegrapha xerica	Nb (NS)	1
Schismatomma cretaceum	Nb (IR)	1
Schismatomma niveum	Nb (IR), n	1

n = SOWI species

Sheltered Canopy Community (*Usneetum articulato-floridae* var. *ceratinae*): sheltered, strongly lit and moderately acidic mid trunk and upper branches can support communities with Tree Beard *Usnea* species abundant. Most species present are rapidly colonising widespread species but some uncommon species can occur. These are either pollution sensitive species or edge of range species. In woodland situations the ancient woodland species *Usnea ceratina* is characteristic on upper trunks. The pollution sensitive Near Threatened RBD species *Usnea articulata* and *Usnea florida* are characteristic of branches. The former was especially sensitive to acidifying pollution and is now increasing again, the latter was less sensitive to acidifying pollution but is more sensitive to ammonia levels and is currently declining (Wolseley et al, 2006). In especially sheltered and humid locations the southern species *Heterodermia obscurata* can also occur.

In 2017 substantial populations of *Usnea articulata* and *Heterodermia obscurata* were recorded, with 22 locations supporting systematically recorded species characteristic of this habitat (**Map 15**) in 2017. Sheltered Canopy Communities of high conservation interest were mainly found on well lit branches and twigs higher in the park, with *Heterodermia obscurata* confined to the more sheltered example. *Usnea articulata* was more widespread and occurred in more exposed sections as well. *Usnea ceratina*, which was not mapped, was local in the woods but was not found on the higher ground.

The assemblage is quite dynamic and appears to have changed considerably since 1987. *Usnea articulata* was recorded, but appears more widespread than then and the substantial population of *Heterodermia obscurata* seen in 2017 was not recorded at all in 1987. In contrast *Usnea dasypoga* and *Usnea florida*, recorded in 1987, were not refound in 2017. The twig assemblage in the woodlands indicated low ammonia deposition, with somewhat higher levels in the open park. The background levels of ammonia in the general area of the park are shown as just exceeding the critical threshold for lichens on the APSI website but they appear lower within the park that this, which is currently not intensively managed. Probably at about the threshold in the open park and somewhat below in the woods. The pattern of species occurrence suggests a positive response from the acid sensitive *Usnea articulata* and *Heterodermia obscurata* and a decline from the exceptionally ammonia sensitive *Usnea florida*. The latter is likely to require lower levels that are currently found in the open park at present due the background ammonia levels.

The current very low intensity management of the park implies that recent declines within the park in ammonia levels are likely to have occurred. This is why the lichen assemblage indicates a lower level of pollution than the local recorded back ground level. One species indicative of localised eutrophication, *Diploicia canescens*, recorded as frequent on trunks in the upper park in 1987, was rare in 2017, which is strongly indicative of declines in local point source pollution with the park.

A total of five species of conservation interest have been recorded from this habitat, of which three were not refound in 2017. These include three species on the RDB list. Twenty two trees were waymarked as supporting systematically recorded species characteristic of this habitat (**Map 15**) in 2017. The community is strongly associated with Hawthorn on the edge of woods (13 GPS waypoints) but was also found on the branches of many other trees and shrubs mainly higher in the park, including Ash, Beech, Hazel, Oak, Sycamore, Poplar, Sallow and Turkey Oak. The population of *Heterodermia obscurata* is particularly large and healthy.

Species recorded in the Sheltered Canopy Community (*Usneetum articulato-floridae* var. *ceratinae*)

Species	Conservation Status	2017
Heterodermia obscurata	NT (NS), n u	1
Usnea articulata	NT (IR/S41)	1
Usnea ceratina	n	1
Usnea dasypoga	u	0
Usnea florida	NT (S41), n	0

n = SOWI species
u = URI species

Dry Lignum (*Calicietum abietinae*) & Damp Lignum (*Cladonietum coniocraeae*) Communities: a variety of species poor communities develop on bare wood (lignum), both on live trees and dead trees. Where large pieces of dead wood or very dry bark on old trees occur, as is typical in old growth stands, uncommon specialist species can occur. The most widespread community (Damp Lignum Community) is found on damper dead wood and stumps with the lichens *Cladonia* species dominant and crust forming *Trapeliopsis* species, which is found beyond the old growth stands. This community is visually striking but not usually of great interest. However, can support species of interest, including *Cladonia incrassata* and *Cladonia caespiticia* found on fallen trunks in the woods.

A more specialist habitat occurs on acid dry wood on vertical surfaces of either standing dead wood or the sides and undersides of very large fallen logs (Dry Lignum Community). Characteristic lichen species include several Pin Head lichens and fungi. At Pixton Park, a total of eight species of conservation interest have been recorded from this habitat, which include two Near Threatened species *Chaenothecopsis savonica* and *Xerotrema quercicola*, both new finds for the park in 2017.

Five locations were waymarked as supporting systematically recorded species characteristic of lignum (**Map 16**) in 2017. These include two standing dead Oaks, a fallen Oak, a standing dead Pine and a standing dead Sweet Chestnut. Four of the locations are in the wooded lower park (Area 2) and one, the dead Sweet Chestnut, was in a Beech plantation within the north of the park (Area 3). The assemblage is much more limited in the upper park, where there is much less dead wood.

Dry Lignum (Calicietum abietinae) & Damp Lignum (*Cladonietum coniocraeae*) Communities

Species	Conservation Status	2017
Chaenotheca brunneola	n	1
Chaenotheca trichialis	n	1
Chaenothecopsis nigra	Nb (NS)	1
Chaenothecopsis savonica	NT (NR)	1
Cladonia caespiticia	n	1
Cladonia parasitica	n	1
Microcalicium ahlneri	Nb (NS)	1
Xerotrema quercicola	NT (NR/IR)	1

n = SOWI species

Acid Bark Woodland Community (*Parmelion laevigatae*): distinctive communities develop on well lit but sheltered acid bark in woodlands in oceanic areas. The best known form (*Parmelietum laevigatae*) is characteristic of old growth high altitude "cloud forest" in very wet areas but a less well known lowland form occurs on lower ground in wet areas and into drier lowland sites (*Cladonia – Thelotrema* Community, Sanderson, 1998 & 2010) on Oak, Beech, Holly and Alder. In old growth stands it can be very rich in uncommon species and the community appears very sensitive to woodland management. Many species, which are quite mobile in areas with large areas of surviving habitat, can become rare in areas without large undisturbed refugia. In contrast to the Base Rich Bark Woodland community, this assemblage appears less able to survive on individual veteran trees.

At Pixton Park there is a moderately rich assemblage, with 15 species of conservation interest recorded from this habitat. A single Near Threatened species, *Arthonia invadens*, was recorded. The assemblage is dominated by typically widespread species with few very uncommon species than some other assemblages of interest. The two uncommon species mapped systematically *Arthonia invadens* and *Taeniolella toruloides* were confined to single locations in the old growth in the north of Steart Wood (Area 1) and in the location of the former extension of Steart Wood within the main park (Area 1) (**Map 17**). Of the nationally more widespread species, some species such as *Anisomeridium ranunculosporum*, *Megalaria pulverea* and *Thelotrema lepadinum* are widespread but others are very localised. These include *Cladonia cyathomorpha*, *Micarea doliiformis*, *Mycoblastus caesius*, *Schismatomma niveum*, *Schismatomma quercicola* and *Trapelia corticola*. These are predominately found in the more humid locations lower down in the west of the

park (Area 1). These were also mainly more frequent in the south west of the park. There were also scattered records from the north of the park (Area 3) and the higher ground (Area 4). The assemblage mainly found on Oak, but also occurs on Alder, Holly and Birch as well as rarely on damp lignum of Oak and Sweet Chestnut.

Acid Bark Woodland Community (*Parmelion laevigatae*)

Species	Conservation Status	2017
Anisomeridium ranunculosporum	n	1
Arthonia invadens	NT (NR/IR/S41), u	1
Cladonia caespiticia	n	1
Cladonia cyathomorpha	Nb (NS)	1
Cliostomum flavidulum	Nb (NS)	1
Japewiella tavaresiana	u	1
Loxospora elatina	n, u	1
Megalaria pulverea	u	1
Micarea doliiformis	Nb (NS), u	1
Mycoblastus caesius	u	1
Schismatomma niveum	Nb (IR), n	1
Schismatomma quercicola	Nb (IR), n	1
Taeniolella toruloides	[NR]	1
Thelotrema lepadinum	n	1
Trapelia corticola	u	1

n = SOWI species
u = URI species

Mature Mesic Bark Community (*Pertusarietum amarae*): found on mature and less acidic bark on the wet side of mature trees in sheltered conditions. The basic community is composed of widespread lichen species, especially *Pertusaria* species including *Pertusaria hymenea*, *Pertusaria pertusa*, *Pertusaria amara* f. *amara* and *Pertusaria flavida*, along with *Phlyctis argena*. This community occurs widely through the countryside on older trees but additional ancient woodland species can occur in older woodland stands and in parks, especially on veteran trees. On well lit bark, the dominant crust forming lichens are partly displaced by leafy "*Parmelia*" species (Well Lit Mature Bark Community, *Parmelietum revolutae*). On woodland margins there can are also a few old woodland "*Parmelia*" species (*Parmotrema crinitum* and *Punctelia reddenda*) but typically this latter community is poorer in species of conservation interest.

At Pixton Park the community is widespread and well developed in the more open areas and contributes many species to the total diversity of the park, but species of conservation interest as some other communities. A total of 15 species of conservation interest have been recorded from this habitat. A single Near Threatened species, *Phlyctis agelaea*, was recorded on Sallow in humid location on the western edge of the park (**Map 18**). The rare *Pertusaria amara* f. *pulvinata* was also found in the wooded western part of the park. The other species of conservation interest are more typically found higher in the park in the more open areas and include *Cliostomum flavidulum* and *Parmotrema crinitum*. The park has a particularly impressive collection of fungal parasites of the genus *Pertusaria*, including *Cyphelium sessile*, *Dactylospora parasitica*, *Sphinctrina turbinata*, *Tremella pertusariae* and an apparently rare undescribed *Roselliniella*.

Mature Mesic Bark Community (*Pertusarietum amarae*)

Species	Conservation Status	2017
Arthonia vinosa	n	1
Cliostomum flavidulum	Nb (NS)	1
Cyphelium sessile	Nb (NS)	1
Dactylospora parasitica	[NS]	1
Lecanora jamesii	n	1
Mycoporum antecellens	n	1
Parmotrema crinitum	n	1
Pertusaria amara f. *pulvinata*	Nb (NR)	1
Pertusaria multipuncta	n	1
Phaeographis dendritica	n	1
Phlyctis agelaea	NT (NS)	1
Punctelia reddenda	n	1
Sphinctrina turbinata	Nb (NS)	1
Thelotrema lepadinum	n	1
Tremella pertusariae	[NR]	1

Wound Assemblages (*Gyalectinetum carneoluteae*): wound tracks and well developed rain tracks on base rich trees can support a series of specialist species that tend to occur in single species stands. This assemblage was best developed on veteran Elms so has obviously seriously declined in recent years. Many characteristic species are now Red Data Book and S41 species due to the total loss of veteran Elms. Two of these species were recorded in Pixton Woods in 2017, *Bacidia incompta* and *Collema fragrans* (**Map 19**). The latter is now very rare outside of the New Forest (Edwards, 2006b), where an internationally important meta-population survives on Beeches. The lichen survives less than eight sites outside of the New Forest, mainly on Ash, but also once on Oak, Sweet Chestnut and Field Maple. It was new to the park in 2017 and had never been previously been recorded from south Somerset. For *Bacidia incompta*, it similarly has its largest British meta-population surviving on Beeches in the New Forest (Edwards, 2006b), but it survives more widely in the south west, if still very rare, typically on Sycamore, Horse Chestnut or Ash. It was also a new record to Pixton Park. Some additional more widespread species of conservation interest were also recorded, also mainly on Sycamore, but also on an Ash and a Tulip Tree.

The whole assemblage is strongly associated with open parkland trees higher in the east of the park.

Wound Assemblages (*Gyalectinetum carneoluteae*)

Species	Conservation Status	2017
Bacidia incompta	VU (NS/S41)	1
Collema fragrans	EN (NR/IR/S41)	1
Porina borreri	Nb (NS)	1
Porina byssophila	Nb (NR)	1
Strigula taylorii	Nb (NS/IR)	1

Smooth Bark Communities (*Graphidion: Graphidetum scriptae*, *Arthpyrenietum punctiformis* & *Pyrenula chlorospila – Pyrenula macrospora* nodum): communities found on smooth bark of shrubs, especially Hazel, Rowan and Holly, and smooth barked trees in sheltered woodland conditions. The basic communities are composed of widespread species, especially on young vigorous trees or bushes. On ancient Hazels and Holly, and slow growing suppressed young trees, however, ancient woodland and uncommon species can occur. Several distinct communities occur and in southern Britain these include the *Arthpyrenietum punctiformis* a pioneer community of non-lichenised species occupying the younger branches; the species rich *Graphidetum scriptae* of lichenised species on older stems in better lit and well aerated conditions and a generally species poor

undescribed community dominated by *Pyrenula* species in shaded and damp humid conditions (*Pyrenula chlorospila – Pyrenula macrospora* nodum). In stands of conservation interest the *Graphidetum scriptae* is typically richest in species of interest.

At Pixton Park, the habitat is widespread, especially on Hazel, Holly and younger Ash trees in the wooded slopes. This assemblage contributes to the lichen diversity of the sites, but supports few uncommon species. The assemblage is typical of the south west, where Smooth Bark Communities rich in rare species in undisturbed woodlands are very localised. The shrub layers have been more disturbed than canopy trees in this area, even in pasture woodlands. There are some rich old Hollies in the small old growth area in the north of Steart Wood. These, however, are have acidic bark and do not support typical Smooth Bark Communities. A few uncommon species were recorded on Hazel and Holly:

Smooth Bark Communities (*Graphidetum scriptae*)

Species	Conservation Status	2017
Eopyrenula grandicula	Nb (NS/IR)	1
Mycoporum antecellens		1
Stenocybe septata	Nb (IR)	1
Thelotrema lepadinum		1

Nutrient Rich Bark Communities (*Xanthorion*): naturally nutrient enriched bark habitats exist and are exploited by specialist species that can include some rare and threatened species. Modern agriculture, however, has massively increased the extent of nutrient rich bark and communities of rapidly colonising species are now widespread and replacing more diverse lichen assemblages. Nutrient enriched assemblages with leafy lichens frequent (Nutrient Rich Bark Community, *Physcietum ascendentis*) can include a rich variant in mildly enriched situations and can be of conservation interest, but also include species poor communities in highly enriched areas. Crust dominated communities, particular with *Diploicia canescens* abundant develop where nutrient levels are very high and or the bark is somewhat acidified as well (Hyper Eutrophicated Bark Community, *Buellietum punctiformis*).

At Pixton Park in the 1980s Wolseley & O'Dare (1988) describe "the *Xanthorion* was present in the park but was not particularly rich, probably due to pasture improvement as many of the trunks were algae covered". This was observed in the central of park on the high ground. Among the frequent species in this area were *Amandinea punctata*, *Diploicia canescens*, *Physcia aipolia* and *Physcia adscendens*. In 2017 the extent and intensity of nutrient enriched communities was considerably reduced on the description given of the 1987 survey. The conspicuous *Diploicia canescens* was only found on a single Oak tree, *Amandinea punctata* and *Physcia adscendens* were not refound and *Physcia aipolia* was rare in this area. The characteristic *Xanthoria parietina* was very rare on twigs. This implies that there has been a considerable reduction in the intensity of management with nitrogen enrichment has reduced with in the open parkland. There is no evidence that this assemblage ever occurred within the wooded area of the park.

There are still some distinctive nutrient dependant species that are typical of less intensively managed farmland such as *Parmelina pastillifera*, *Parmelina tiliacea*, *Pertusaria coccodes* and *Physconia perisidiosa* but these are occurring in mildly nutrient enriched versions of the Mature Mesic Bark Community (*Pertusarietum amarae*) and Well Lit Mature Bark Community, *Parmelietum revolutae*). These are

typical features of trees in farmland and characteristic of less wooded habitats with parks.

4.1.3 Lichen Species of Interest

The number of locations at which systematically recorded species were recorded is given in **Table 4**. The GPS waymarks where these species were recorded are shown at a large scale on **Maps 61** – **63**).

The most important species recorded in Pixton Park are described below, including all national RDB and Notable species and other significant notable and old woodland species.

The number of locations at which systematically recorded species were recorded is given in **Table 11**. The GPS waymarks where these species were recorded are mapped on **Maps 1 & 32** – **60**).

TABLE 3
Number of Locations at which Systematically Recorded Species were Recorded

Species	Pixton Park	Area 1	Area 2	Area 3	Area 4
Arthonia invadens	1	0	1	0	0
Bacidia incompta	1	0	0	0	1
Chaenotheca brunneola	3	0	2	0	1
Chaenotheca trichialis	5	0	1	3	1
Chaenothecopsis nigra	1	0	0	1	0
Chaenothecopsis savonica	2	0	2	0	0
Cresponea premnea	63	1	44	10	8
Collema fragrans	1	0	0	0	1
Fuscopannaria mediterranea	1	0	1	0	0
Heterodermia obscurata	6	0	3	0	3
Lecanographa lyncea	12	0	10	2	0
Lobaria pulmonaria	3	1	1	0	1
Lobaria scrobiculata	1	0	0	0	1
Microcalicium ahlneri	2	0	1	1	0
Mycobilimbia epixanthoides	3	0	2	0	1
Mycobilimbia pilularis	5	0	4	0	1
Opegrapha corticola	1	0	0	0	1
Pannaria conoplea	1	0	1	0	0
Phlyctis agelaea	2	0	2	0	0
Phyllopsora rosei	6	2	4	0	0
Porina coralloidea	3	1	2	0	0
Rinodina roboris var. roboris	1	0	0	0	1
Sticta ciliata	11	0	11	0	0
Sticta limbata	1	0	1	0	0
Taeniolella toruloides	1	1	0	0	0
Thelopsis rubella	3	0	3	0	0
Usnea articulata	20	0	4	1	15
Wadeana dendrographa	1	0	1	0	0
Xerotrema quercicola	1	0	1	0	0
Waypoints	106	3	66	11	26

Red Data Book Lichen Species:

Arthonia invadens (Near Threatened, NR/IR/S41) is a fungal parasite confined to the Ancient Woodland Indicator *Schismatomma quercicola* Nb (IR), a species of older trees with acid bark. It is only found in sites with high populations of the host species. In the New Forest Sanderson (2001) only recorded it from old growth grazed high forest stands with *Schismatomma quercicola* occupying 60 trees per ha or more. It is a Nationally Rare endemic species, until the early 2000s recorded only from southern England and south west Ireland, but subsequently was discovered in the western Highlands and north Wales. In Pixton Park, *Arthonia invadens* was found on a post mature Oak (PX004) in the south west of the wooded lower slopes (**Map 32**), where it was frequent on *Schismatomma quercicola*. The tree had recently been opened up by Rhododendron clearance. It was new to the park, but is known from higher up the Barle Valley (Sanderson, 2009a).

Bacidia incompta (Vulnerable, NS/S41) was a widespread crust forming species on old Elms, and occasionally other species, in wound tracks and inside hollow trees (Wound and Rain Tracks Assemblages, *Gyalectinetum carneoluteae*). It grew on both field and wayside trees and within old growth woodlands. It is now extinct on Elm due to Dutch Elm disease destroying veteran Elms. The New Forest has been

the only place it has been recorded frequently in recent decades. Here it has been found mainly on old Beech and Holly. Otherwise, it is still found on thin scatter of trees in southern England, with Edwards (2006b) only recording eight sites as having two or more trees in, the total is now likely to be about 20 sites. It is typically found on Sycamore, Horse Chestnut or Ash in the south west. In Pixton Park, *Bacidia incompta* was discovered, new to the site, inside a hollow Sycamore (PX010) on Pixton Hill (**Map 33**). An important find, the only other recent records from the wider Exmoor area are from Arlington Court to the west (Sanderson, 2017c).

Chaenothecopsis savonica (Near Threatened, NR) a tiny pin head lichen confined to dry lignum and occasionally bark on ancient Oak trees but recorded once on Ash lignum. Rarely recorded from the Scottish Highlands, North Wales and southern and western England. At Pixton Park *Chaenothecopsis savonica*, was discovered, new to the site on lignum on a fallen Oak trunk (PX016) and a standing dead Pine (PX052) within the lower wooded section of the park (**Map 37**). The latter appears to be the first record from Pine lignum. The species also occurs deeper into Exmoor, including higher up the Barle Valley.

Collema fragrans EN (NS/IR/S42) is a lichen confined to wound tracks on old trees, which was especially characteristic of old Elm trees. It was always an uncommon southern species, but since the loss of old Elm trees it has drastically declined and is now assessed as Endangered and is a S41 species. It still survives on wound tracks on other tree species such as Beech, Sycamore and Ash, especially in the New Forest, and on a scatter of trees in the south west. It appears extinct in eastern England and Wales. It may now be a Nationally Rare species and Edwards (2006a) found only four recent records outside of the New Forest, all single trees. Since then about four more trees have been found outside of the New Forest, but some of the trees known to Edwards (2006a) have been lost. In the New Forest it is still widespread, if rare, on Beech and a survey found it on 2.8% of Beech trees with wound tracks as opposed to *Bacidia incompta* which was found on 6.7% of Beech trees with wound tracks (Sanderson, 2009b). This suggests a greater habitat specificity for *Collema fragrans* than *Bacidia incompta*. This explains the low number of surviving populations of *Collema fragrans* outside of the New Forest. At Pixton Park *Collema fragrans*, was discovered, new to the site, inside a hollow Sycamore (PX106) within the deer enclosure (**Map 38**). This supported a sizable population and was a very significant record, which was also new for the South Somerset vice-county.

Heterodermia obscurata (synonym *Heterodermia japonica*) (Near Threatened, NS) is a leafy lichen typical of sheltered well lit acid boughs and branches, which is sometime also found on trunks. It is highly pollution sensitive species that has declined and is generally of sparse occurrence across its range. It is a south western species with strong holds in South West England and in the south west Highlands. At Pixton Park, it was found, new to the site, at six locations, three high in the wooded area of the park (Area 1) and three on a row of sheltered Hawthorn on Pixton Hill (Area 4) (**Map 41**). A strong population of a thinly scattered species in the south west, which has clearly increased in, or colonised, the park since the 1980s.

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 but now only 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*. At Pixton Park, it was found, new to the site, at two locations, on Sallow on the lower western edge of the park (**Map 50**). Both sites were within scrub that has infilled former wet fields just outside of the park.

Usnea articulata (Near Threatened, IR/S41) is a canopy species, typically growing draped over branches and twigs, as very striking strings of white 'sausages'. In woods finding it can depend on wind blown material from high up and it can easily be missed. Its conservation status is the result of its exceptional sensitivity to pollution, which has caused a massive contraction of its range in the last two centuries. It is less sensitive to ammonia concentrations, however, than *Usnea florida* NT (S41) and is showing some signs of recovery probably in response to declines in acidifying pollution. This lichen is still abundant in clean air areas in the south west of England. Recorded in 1987, although it is not clear how widespread the lichen was at this time, although the description implies it was locally abundant on Hawthorn. In 2017 it was locally frequent in the higher ground in the south of the park (**Map 58**), especially on old Hawthorn bushes in well light but somewhat sheltered locations. Rare to the north of the park. As well as Hawthorn bushes the lichen was also recorded on occasionally on Oak and on single Ash, Beech, Hazel, Poplar, Sycamore and Turkey Oak. The species has a strong population at Pixton park and may have increased since the 1980s.

Usnea florida (Near Threatened, S41) this distinctive shrubby species was until recently a widespread species, typical of the canopy in sheltered woodlands and less often on shrub twigs in humid locations. It was less sensitive than *Usnea articulata* NT (IR/S41) to acidifying pollution and was more widespread in the late 20th century. However, it appears even more sensitive to ammonia pollution than *Usnea articulata* and a large scale decline is being experienced by lichenologists in areas with high ammonia concentrations (Wolseley et al, 2006). Recorded in 1987 without comment from EWS 4 (all of Area 4). Not refound in 2017, but easily over looked as a canopy species, but a decline due to regionally high ammonia levels would match the general pattern in the south west.

Wadeana dendrographa (Near Threatened, NS/IR/S41) a crust forming lichen is a specialist species of occasionally flushed dry bark on ancient senescent Ash trees, which is scattered along the south coast, with a few sites in the Lake District and the Western Highlands. It is generally found in transitions between the Base Rich Bark Woodland Community (*Lobarion*) and Wound and Rain Tracks Assemblages (*Opegraphetum fuscellae*). This Ash specialist is extremely rare on Oak and may be highly threatened by Ash dieback (Elis et al, 2012). In 2017 a strong population was recorded on a high cut Ash pollard standing as a relic tree (PX068) in a planation to the south west in the wooded section of the park (**Map 59**). New to a the park and an important find of a species which is rare in Exmoor, and it is only known from a single Oak upstream in the Barle Valley (Sanderson, 2009a).

Xerotrema quercicola (Near Threatened, NR) this recently described tiny crust forming fungi, is restricted to lignum on standing dead Oaks, in old woodland in the west. These can occur quite small diameter self thinned trees in dense woodland or maturing 19th century Oak plantations but it mainly occurs on large hulks of standing dead Oak in old growth woodlands or large bits of fallen wood. In 2017 it was found on a fallen dead branch from an Oak (PX047) known to be interesting in the 1980s survey, low down in the north west of the wooded party of the park (**Map 60**). New to the park and the second record from Exmoor (Sanderson, 2009a).

Notable Lichen Species:

Biatora britannica (Notable, NS) a green, normally sterile, and sorediate crust, that has been recorded quite widely from base rich bark in old growth woodlands since 1994 from southern England. Recent finds of fertile specimens have confirmed this as the recently described *Biatora britannica*. A south western species which appears to be quite widespread on sheltered base rich bark in humid locations on older Oak,

Ash and Field Maple in lichen rich woodlands. It is found in disturbed 19th century stands as well as old growth woodlands. In 2017, found thinly scattered in more shaded areas of wooded sections on Ash, Plane Tree and Wych Elm in the lower wooded section (Areas 1 & 2) and on Ash in a wooded area in the deer enclosure (Area 4). New to the park, with scattered records for Exmoor.

Chaenothecopsis nigra (Notable, NS) is a 'pin head' species found in the Dry Lignum Community (*Calicietum abietini*) on dry vertical or overhanging lignum on standing dead Oaks or large fallen Oaks. It is a widespread Nationally Scarce species, which is probably under recorded, but clearly confined to old growth stands. In 2017 recorded on exposed lignum on an ancient boundary Oak (PX070) on the northern boundary of the park (**Map 36**). New to the park in 2017 and local in Exmoor, mainly in the northern combes and rare in the upper Barle valley.

Cladonia cyathomorpha (Notable, NS) a western oceanic Pixie Cup, mainly found on shaded damp rock but also on old trees and damp dead wood. Mainly recorded from Wales and the Lake District, rarer, but probably under recorded, in south west England and Scotland and generally over looked in old growth woodland in the lowlands. In 2017, recorded on an old Beech high in the south of the western section of the park. New to the park and second record for Somerset and Exmoor.

Cliostomum flavidulum (Notable, NS) a yellow sorediate and normally sterile crust forming lichen. It has probably been much overlooked for other common yellow sorediate crusts and it is likely to be under recorded but is an old woodland species. It appears to be characteristic of mildly acidic bark on Oak, Beech and Alder in less disturbed woodlands mainly in Mature Mesic Bark (*Pertusarietum amarae*), Well Lit Mature Bark (*Parmelietum revolutae*) and Mature Dry Bark (*Lecanactidetum abietinae*) communities. It can also be found in less extreme examples of the Acid Bark Woodland Community (*Parmelion laevigatae*). It is found in a range of exposures from glade edge to deeper into high forests and is not confined to old growth stands. In 2017, recorded occasionally on Oak and turkey Oak in both the wooded and open parts of the park (Areas 2 & 4) in acid and mesic bark.

Cresponea premnea (Notable, IR) is a widespread crust forming lichen in southern Britain that defines the Ancient Dry Bark Community (*Lecanactidetum premneae*). It is very rare in the rest of Europe and is hence an International Responsibility species. Recorded at 63 locations (**Map 39**) and is strongly associated with Oak (61 GPS waypoints) but was also recorded on two Turkey Oaks and on one Ash tree. The distribution reflects the distribution of veteran Oaks. These are mainly either boundary trees on the edge of the park, from former field boundary trees within the trees or trees within the former northern extension Steart Wood within the south west of the park (Area 2).

Cyphelium sessile (Notable, NS) local southern fungal parasite of the widespread lichen *Pertusaria coccodes*, a species of mature slightly nutrient enriched trees in pasture. In 2017, found to be rare in the open parkland (Area 4), on *Pertusaria coccodes* on Oak and Poplar. In 1980, also recorded in the lower slopes.

Eopyrenula grandicula (Notable, NS/IR) is poorly lichenised fungus, which is a specialist of old Hazel stems in Smooth Bark Communities (*Graphidetum scriptae*). It is widespread in western Britain. Recorded from Hazel stems in the lower wooded section of the park (Area 2), new to the park in 2017.

Fuscopannaria mediterranea (Notable, NS) is a small leafy species found on Base Rich Bark Woodland Communities (*Lobarion*) on old trees in woodlands. It is a widespread species in the Scottish Highlands, where is reaches far into the eastern Highlands but is rare and local in the rest of western Britain. It is now very rare in the

south west, with few modern records, and is likely to have greatly declined in this area. Recorded from the park in 1987 on an old Oak low down in the north west of the park (**Map 40**). This tree (PX047) was refound in 2017, and still supported a good pollution of this rare species, but the tree had unfortunately just died. The potential to translocate the species should be considered.

Lecanactis subabietina (Notable, IR) is a crust forming lichen that is widespread on the dry bark of old trees (*Lecanactidetum premneae* and other communities) in the south. It can be a strong coloniser close to the coast but generally confined to old growth stands and veteran trees inland. Recorded in 1987 from the park (area EWS 2) and refound in 2017 on a single Oak (PX021) in the side valley rich in old Oak in the centre west of the park (Area 2).

Lecanographa lyncea (Notable, IR) is a crust forming lichen that is widespread in the Ancient Dry Bark Community (*Lecanactidetum premneae*) in the south of England but is very rare in Europe (James et al, 1977). It is a strongly old growth and veteran tree dependant species. Recorded in 1987 from the park (area EWS 2) and was refound on 12 trees, 11 Oaks and one Turkey Oak (**Map 42**) in 2017. These were confined to the centre and north west of the wooded lower park (Area 2 and the northern boundary of the park (Area 3). This is a strong population of a lichen, which is rare in Exmoor.

Lobaria pulmonaria (Notable, IR) (known as Lungwort) is a large leafy lichen and old woodland species. The International Responsibility status reflects the large stable populations in western and northern Britain, especially Scotland, while it is threatened across most of Europe, including England and Wales. It is declining due to both air pollution and the loss of old growth conditions. It is characteristic of base rich bark on old trees (*Lobarion*) in well lit situations but where it is not exposed to hot summer sun for more than a few hours. Parkland trees with wide canopies are sufficient shelter in the west of Britain. This striking lichen was well recorded by the 1987 survey. They recorded *Lobaria pulmonaria* on four Beech trees, three Ash trees, two Plane trees and occasionally on Sycamore. Most of the trees were located on their map but not all. Of these trees, none of the *Lobaria* colonies on Beech were located: the trees were still present, although some may have fallen, but the stand indicated had become much more shaded by conifer planting and the regeneration of broadleaved trees. Two Ash trees were refound, one in Steart Wood, with a small amount high up (PX006) on a shaded Ash and one tree high up in the centre of the upper park (PX086). The latter was in open park and unshaded and still had a very strong and vigorous colony. The third Ash could not be relocated, but was somewhere about the bottom boundary of the deer enclosure , probably below it. It had either fallen over or become shaded. Of the Plane trees, the mapped one was located and now had no surviving *Lobaria*; it was shaded by young trees and Ivy. A second tree, however, was found with *Lobaria* to the north of the lower park (PX065), and this could have been the second tree. No *Lobaria* was refound on Sycamore, and some very suitable looking trees at SS927 266, were now deeply shaded by adjacent conifers. The nine plus trees with *Lobaria pulmonaria* in 1987 had been reduced to three trees in 2017 (**Map 43**). The losses were mainly due to increased shade but some trees may have been lost to tree fall too. The species is still widespread but local and declining in Exmoor, which has one of England's larger surviving populations

Lobaria scrobiculata (Notable, IR) is a large leafy lichen and old woodland species. The International Responsibility status reflects the large stable populations in western and northern Britain, especially Scotland, while it is threatened across most of Europe, including England and Wales. It is declining due to both air pollution and the loss of old growth conditions. It is characteristic of base rich bark on old trees

(*Lobarion*) in very sheltered and reasonably well lit situations. Unlike the other *Lobaria* species blue-green bacteria are the thallus partner algae, rather than green algae. This the most sensitive of the *Lobaria* species and has retreated further to the north west than the other species, as a result. It is highly threatened in England. In 1897, it was recorded on a single Ash (**Map 44**) high up in the centre of the upper park (PX086). The *Lobaria scrobiculata* was refound on this tree but only as a single small thallus among vigorous *Lobaria pulmonaria*. It is very vulnerable at Pixton, probably due to the impact of past pollution. Very rare now in Exmoor, with few surviving populations.

Micarea doliiformis (Notable, NS) is a crust forming species found on acid bark and lignum on old trees in the south west. Its original habitat appears to have been on ancient Oaks, especially the lignum inside hollow trees, but it has spread to old conifers locally and may have benefited from mild acidification. In 2017 it was found occasionally on Oak in the south west of the lower wooded section of the park (Area 2) and rarely on old Douglas Firs. It was also found one on Sweet Chestnut in the far north of the park (Area 3). New to the park in 2017 and quite widespread in he south west.

Microcalicium ahlneri (Notable, NS) is a Pinhead fungus species found in the Dry Lignum Community (*Calicietum abietini*) on dry vertical lignum on live or standing dead Oaks, or in Scotland, Pines, where it probably parasites algae. It is a widespread Nationally Scarce species, which is probably under recorded, but clearly confined to old growth stands and veteran trees, in both broadleaved woodlands and native Pinewoods. It is widespread in the New Forest but is otherwise rare in southern England. In 2017, recorded on two dead trees (**Map 45**); a fallen Oak in the rich side valley in the wooded part of the park (PX016) and a standing dead Sweet Chestnut is the north of the park (PX084). New to the park in 2017 and it is rare in Exmoor, and otherwise confined to the northern combes

Opegrapha corticola (Notable, IR) is a lichen of base rich flushed bark on ancient trees. It is characteristic of veteran trees in sheltered, and often quite shaded woodlands, in the south west of England and Wales. In 2017, found on a single parkland Oak (PX085) high in the centre north of the park outside of the deer enclosure (**Map 48**). New to the park in 2017.

Opegrapha xerica (Notable, NS) is a lichen of dry bark on old trees, typically in Ancient Dry bark Communities (*Lecanactidetum premneae*) in the south and west of England and Wales and in western Scotland. In 2017 found rarely on old Oak and Ash in the rich side valley in the wooded part of the park (PX016) and an old Oak in the north of the park (PX072). New to the park in 2017 and very rare in the Barle Valley, but occasional in the northern Exmoor combes.

Pannaria conoplea (Notable, IR) is a large leafy lichen and old woodland species. The International Responsibility status reflects the large stable populations in western and northern Britain, while it is threatened across most of Europe. It is declining due to both air pollution and the loss of old growth conditions. It is characteristic of base rich bark on old trees (*Lobarion*) in very sheltered reasonably well lit situations. It is now very rare in the lowlands and probably nearly extinct there. Recorded in 1987, but the location was not indicated. In 2017, a strong population was found on an Ash (PX041) by a glade above the northern side valley in the lower wooded park (**Map 49**). This is probably the 1987 tree. A now local and declining species in Exmoor.

Parmeliella triptophylla (Notable, IR) is a low growing leafy lichen and old woodland species. The International Responsibility status reflects the large stable

populations in western and northern Britain, while it is threatened across most of Europe. It is declining due to both air pollution and the loss of old growth conditions. It is characteristic of base rich bark on old trees (*Lobarion*) in very sheltered reasonably well lit situations. Recorded in 1987, but the location was not indicated. Not refound in 2017 and is a slightly surprising loss, as it is generally doing well in Exmoor.

Peltigera collina (Notable, IR) is a large leafy lichen, which is an Ancient Woodland Indicator. The International Responsibility status reflects the large stable populations in western and northern Britain, especially Scotland, while it is threatened across most of Europe, including England and Wales. It is declining due to both air pollution and the loss of old growth conditions. It is characteristic of base rich bark on old trees (*Lobarion*) in very sheltered reasonably well lit situations. Recorded in 1987, but the location was not indicated. Not refound in 2017 and now rather rare in the south west.

Pertusaria amara f. pulvinata (Notable, NR) a crust forming lichen that has identical chemistry to the very common *Pertusaria amara f. amara* but with a very different appearance and ecology. The latter would suggest that this taxa deserves a higher rank than form, and it has recently been raised to species rank as *Lepra pulvinata* (Hafellner & Türk, 2016). Found on well lit but sheltered trunk of veteran trees in Old growth woodland and parkland. Also on coastal rocks in the south west. Frequent in the New Forest, but rare beyond. In 2017 recorded once at PX016 on an Oak and an Ash in the rich side valley in the wooded part of the park. New to the park in 2017, and with only a single other record from Exmoor.

Phyllopsora rosei (Notable, NS/IR) is a crust forming lichen typical of the Base Rich Woodland Community (*Lobarion*) in sheltered and humid old woodlands. It is quite acid tolerant, however, and can occur in transitional communities to the *Lobarion* as well. It is a widespread oceanic species found from the New Forest to Skye. Recorded in 1987, but the location was not indicated. In 2017, found locally in at six locations sheltered humid areas on older trees in the western lower section of the park (Areas 1 & 2) (**Map 51**). It was recorded on Oak, Turkey Oak, Ash and Sallow.

Porina borreri (Notable, NS) is a crust forming lichen, which is widespread in rain tracks on old trees in woods or parks in the south and west. In 2017 rare in the park, recorded from a Sycamore and an Ash in both the wooded (Area 2) and open areas of the park (Area 4). New to the park in 2017.

Porina byssophila (Notable, NR) a crust forming lichen, until recently thought to be a rare specialist of shaded limestone outcrops. Now know also to occur in wound tracks on older trees. It appears to be widespread but local in this newly discovered habitat. New to the park in 2017, when it was found in a wound track on a rich Sycamore (PX106) in pen parkland in the deer enclosure .

Porina coralloidea (Notable, NS/IR) is a crust forming lichen and old woodland species. This a lichen of base rich bark on old trees (*Lobarion*) in very sheltered conditions. It is a southern species, which is frequent in the New Forest but an uncommon western species beyond. Recorded in 1987, but the location was not indicated. In 2017, found rarely on three Oaks (**Map 52**) sheltered humid areas on older trees in the western lower section of the park (Areas 1 & 2). Rare in Exmoor.

Rinodina griseosoralifera (Notable, NS) is a small inconspicuous species of base rich bark on older trees in sheltered well lit situations. So far recorded from the south west of England, east Wales and south eastern Scotland. Recorded in 1987 from Oak in the central section of the park (EWS 4). Not refound in 2017.

Rinodina roboris (Notable, IR) is a crust forming lichen, which is a specialist species of rough bark on quite well lit old Oaks, which is widespread in open woodland, parks and wayside trees in southern England. It is a western European endemic that is rare outside of Britain, hence the International Responsibility status. It is still widespread and locally plentiful in clean area areas with frequent old trees. In 2017 found on a single Oak (PX105) in the deer enclosure in open parkland (**Map 53**). New to the park in 2017 and a lowland species which is uncommon in Exmoor.

Schismatomma cretaceum (Notable, IR) is a crust forming lichen, which is widespread along the south coast but is scarcer to the north. It is confined to dry bark on old trees especially in Ancient Dry Bark Community (*Lecanactidetum premneae*). Recorded in 1987, but the locations were not indicated. Recorded in 1987, as a component of the Ancient Dry Bark Community, but the locations were not indicated. In 2017, widespread on veteran Oak in wooded and open areas of the park (Areas 2, 3 & 4).

Schismatomma niveum (Notable, IR) is a crust forming old woodland lichen that is widespread in the south, but rare beyond, and otherwise only known from Brittany. It is a species of acid to mesic dryish bark in sheltered well lit high forest stands. It can reach high densities in undisturbed pasture woodlands, with densities of over 80 trees per ha recorded in the New Forest (Sanderson, 2001) but becomes a rare species to the north. Recorded in 1987 as a component of the Ancient Dry Bark Community, but the locations were not indicated. In 2017, found to be local and mainly found in the south west of the wooded park, in the north of Steart Wood (Area 1) and the former area of Steart Wood incorporated into the park (Area 2). Rare beyond this area, recorded once on a Turkey Oak in the wooded section of the deer enclosure (Area 4). Found in both acid bark and dry bark communities.

Schismatomma quercicola (Notable, IR) is a crust forming endemic species and hence an International Responsibility species. It is a southern and western species of acid bark in woodlands, which is commoner in the New Forest than anywhere else. There it does colonise 19th century Oak stands but is commonest in old growth stands, where it can reach densities of over 60 trees per ha (Sanderson, 2001). In most of the rest of England it is much more uncommon and is often a relic species. Recorded in 1987, but the locations were not indicated. In 2017, found to be occasional on acid bark on Oak and Holly in the south west of the wooded park, in the north of Steart Wood (Area 1) and the former area of Steart Wood incorporated into the park (Area 2).

Sphinctrina turbinata (Notable, NS) an obligate fungal parasite of *Pertusaria* species, mainly *Pertusaria pertusa*. It is a mainly south western species which is rather sparsely recorded. In 2017 found, new to the park, on an Ash and a Beech in open parkland in the deer enclosure (Area 4)

Stenocybe septata (Notable, IR) a southern and western a Pin Head fungus confined to the bark of old Hollies (Smooth Bark Community *Graphidetum scriptae*). Recorded in 1987, but the locations were not indicated. In 2017, found to be are on older Hollies, scattered in Areas 1 and 2 and on a boundary Holly in Area 4.

Sticta fuliginosa s. lat. (Notable, IR) is a large leafy lichen and old woodland species. The International Responsibility status reflects the large surviving populations in western Britain, especially Scotland, while it is threatened across most of Europe, including England and Wales. It is declining due to both air pollution and the loss of old growth conditions. It is characteristic of base rich bark on old trees (*Lobarion*) in reasonably well lit situations but where exposure summer sun is very limited. Much more shade tolerant than *Lobaria* species and typically rarer than

Sticta sylvatica Nb (IR) (W–NT) except in ravines. The aggregate species has now been split up into four species, of which three have been recorded in Britain. Recorded in 1987 as occurring in the Sallow scrub about the small lake in the north west of the wooded part of the park. The species is still widespread but local and declining in Exmoor.

Sticta ciliata: this appears to be the most widespread segregate of *Sticta fuliginosa* s. lat. in Britain, and can be abundant in ravines and shaded woods. This was the only segregate found at Pixton Park in 2017. It was refound in the Sallow scrub about the small lake but was also very locally frequent on Sallow and rarely Ash and Hazel to the south of the pond as well (**Map 54**), so may have increased since 1987.

Sticta limbata (Notable, IR) is a large leafy lichen and old woodland species. The International Responsibility status reflects the large stable populations in western Britain, especially Scotland, while it is threatened across most of Europe, including England and Wales. It is declining due to both air pollution and the loss of old growth conditions. It is characteristic of base rich bark on old trees (*Lobarion*) in reasonably well lit situations where it is not exposed too much summer sun. Recorded in 1987 as occurring in the Sallow scrub about the small lake in the north west of the wooded part of the park. In 2017, not refound by the lake but a small colony was found to the south on a Hazel (PX047) (**Map 55**). The species is still widespread but local and declining in Exmoor.

Sticta sylvatica (Notable, IR) is a large leafy lichen which is an NIEC Ancient Woodland Indicator. The International Responsibility status reflects the large stable populations in western Britain, especially Scotland, while it is threatened across most of Europe. It is declining due to both air pollution and the loss of old growth conditions, including England and Wales. It is characteristic of base rich bark on old trees (*Lobarion*) in reasonably well lit situations where exposed summer sun is limited. More shade tolerant than *Lobaria* species. Recorded in 1987 as occurring in the Sallow scrub about the small lake in the north west of the wooded part of the park. In was not definitively refound in 2017, but young material is not easy to spot and the species may still be present among the large *Sticta ciliata* population.

Strigula taylorii (Notable, NS) is a mainly south western, crust forming lichen confined to rain and wound tracks on base rich bark on sheltered, mainly woodland trees. It can easily be over looked as the common *Porina aenea* unless the surveyor has got an eye in for this species. It is clearly under recorded but is of conservation interest. In 2017, found in wound tracks on Ash and a Tulip Tree in the more wooded part of the deer enclosure .

Other Species of Interest:

Chaenotheca brunneola is a widespread Pin Head lichen and old woodland species, which is characteristic of Very Dry Lignum & Bark Communities (*Calicietum abietini*) and sometimes Ancient Dry bark Communities (*Lecanactidetum premneae*) on ancient trees, especially on Pine and Oak. In 2017, *Chaenotheca brunneola* was found at three locations (**Map 34**) in both the wooded section of the park (Area 2) and the higher open park habitat (Area 4). It was found on Oak bark and lignum and on Pine lignum. New to the park in 2017.

Chaenotheca trichialis is a reasonably conspicuous Pin Head lichen and old woodland species, with a strong eastern distribution. It is characterising of very dry bark, and rarely lignum, on the leaning sides of old trees, both broad leaves and conifers (*Calicietum abietini* & *Calicium hyperelli*) but which was largely lost from areas effected by heavy sulphur dioxide pollution. In 2017, *Chaenotheca trichialis*

was found at five locations (**Map 35**) in both the wooded section of the park (Area 2), old Oak on the northern boundary (Area 3) and the higher open park habitat (Area 4). It was found on mainly on Oak bark but also on lignum. New to the park in 2017.

Mycobilimbia epixanthoides is a crust forming old woodland species. It is found growing on moss in Base Rich Bark Woodland Communities (*Lobarion*) on moist sheltered old trees in old growth woodlands. It is a widespread western and northern species, which is mainly found sterile and is probably under recorded and is usually more frequent than the always fertile *Mycobilimbia pilularis* with which it often grows. Recorded in 1987, but the locations were not indicated. In 2017, found at three locations on two Oaks and an Ash around the rich central side valley in the wooded park and the wooded section of the Deer Park (**Map 46**).

Mycobilimbia pilularis is a crust forming old woodland species. It is found growing on moss in Base Rich Bark Woodland Communities (*Lobarion*) on very sheltered and shaded in moist locations on old trees in old growth woodlands, often with *Mycobilimbia epixanthoides*. This is one the most shade dependant *Lobarion* species. Recorded in 1987, but the locations were not indicated. In 2017, found at five locations on three Oaks, a Plane Tree and an Ash around the rich central side valley in the wooded park and the wooded section of the Deer Park (**Map 47**).

Parmotrema crinitum is a leafy Ancient Woodland Indicator that is a mainly western species. It is infrequent and declining in the south and south west outside of the New Forest, where it is frequent. It is a species of well lit old trees in ancient woodland in the Well Lit Mature Bark Community (*Parmelietum revolutae*). Recorded in 1987, including a tree in the south west of the park, which was not refound. In 2017 found on four trees, one Turkey Oak lower down in Area 2 and two Oaks and a Beech in the open park above (Area 4).

Taeniolella toruloides: (Nationally Rare) a strict fungal parasite of the widespread old woodland species *Thelotrema lepadinum*, which has been recently identified from Britain. Frequent in New Forest woods with large populations of the host but appears rare beyond this. In 2017, the parasite was found on *Thelotrema* on an old Holly (PX007) in the north of Steart Wood (**Map 56**). This was the first record for Exmoor.

Thelopsis rubella is a widespread crust forming species of the Base Rich Bark Community (*Lobarion*) in old growth stands in the south and west of Britain. In 2017, found on three Oaks (**Map 57**) in the wooded lower parts of the park, one of which had recently died. New to the park in 2017, and rather rare in Exmoor.

4.2 Description of Recording Compartments

4.2.1 Introduction

The lichen species of interest, communities and structure of the compartments are described below.

4.2.2 Steart Wood (Area 1)

Habitat: an ancient woodland south of the park and never included inside it. The bulk of the wood is derived from over stood coppice, with much Sweet Chestnut former coppice. In the bulk of the wood the oldest trees are mature Oak and thee are no post mature or ancient trees. The exception was a small pocket of old growth woodland with post mature Ash, Sessile Oak and Holly present with a rich lichen assemblage similar to that of the wooded parkland to the north. The upper most slopes have been planted with conifers. Below, the coppice derived young growth

woodland below has partly been felled and replanted with broadleaves. Large areas of the lower slopes are over run by Rhododendron.

The old growth pocket is quite shaded, but is browsed and maintained by deer.

Lichens: the small old growth patch is rich for its size and included Base **Rich Bark Woodland Communities** on Ash and Oak with *Biatora britannica* Nb (NS), *Lobaria pulmonaria* Nb (IR), *Phyllopsora rosei* Nb (NS/IR) and *Porina coralloidea* Nb (NS/IR). Well developed **Acid Bark Woodland Community** on old Hollies, including *Schismatomma niveum* Nb (IR), *Schismatomma quercicola* Nb (IR) and *Taeniolella toruloides* [NR], the latter parasitising *Thelotrema lepadinum*. Old Oaks also support **Ancient Dry Bark Communities** with *Cresponea premnea* Nb (IR) but are heavily shaded and lack other specialist species. The *Lobaria pulmonaria* Nb (IR) population was recorded in 1987 and was relocated on the same Ash, but is very high up the tree and threatened by shade.

South of this small area of old growth woodland, the lichen assemblages only supports a few more mobile old woodland species.

Totals:

Measure/Years	1986-2017	2017
Total Taxa	43	29
SOWI	12	12
URI	2	2
EN	0	0
VU	0	0
NT	0	0
Nb	8	8
IR	7	7
S41	0	0

Conservation: the small area of old growth needs to be conserved, and is probably best left untouched. Conditions within the old stand could be improved by thinning or glade creation in the younger stands adjacent to let in more light. There may be more veteran trees lower down on the lower slopes within the dense Rhododendron. Ideally this should be cleared but is not has high a priority as the remaining Rhododendron in Area 2.

4.2.3 Western Wooded Section of Park (Area 2)

Habitat: This was all grazed parkland in the 19th century but locally had patches more densely set with trees than the parkland higher up the slopes. This was especially so to the south, where in the park probably incorporated a northern extension of Steart Wood (**Map 7**). Area 2 covers those parts of the park on the western slopes that have been long ungrazed. The woodland includes widespread veteran trees surviving from the grazed park along with some still open Bracken glades. There is however, a great deal of 20th century infill, including both naturally regenerated younger trees and shrubs and areas of conifer plantation. The younger trees include native Oaks, Turkey Oak, Ash, Beech, Sycamore and Birch along with the shrubs Hazel, Hawthorn, Holly and Sallow. Hawthorn scrub dominate some of the areas from which grazing has been withdrawn most recently. Rhododendron has locally spread out of control, but has recently begun to be controlled. The conifer plantations include both larger uniform blocks of planting and small patches planted in between older stands. In addition, adjacent former wet fields in the Dru ownership on the western margin of the park are now wooded and include wet Sallow scrub, some of which is of lichen interest.

The veteran trees are patchily distributed, **Map 10** shows the distribution of trees of lichen interest, but there are also sections with veteran trees, which are too shaded too be of interest. A distinctive feature of the park is the frequency of old Turkey Oaks in the park and this species was clearly an important component of the initial landscaping of the park. To the south west, above the track, the probable site of the northern end of Steart Wood, mainly has post mature Sessile Oak, with a distinctive lichen assemblage. There are also some large old Douglas Firs here. Rhododendron control is under way here. Above this are parkland groves of Beech and Sycamore, now marooned in conifer planation and infill. Below the track are few trees of interest, but a very special high cut Ash pollard was found. South of this a steep area of Dru ownership is over run by Rhododendron but does have some inaccessible veteran trees.

North of this southern concentration of interest is an area of lower interest with fewer and shaded old trees. The next area of high interest is in an area around two side valleys. The southern of these has a row of old Pedunculate Oak, likely to represent the remnant of a boundary pre-dating emparkment. These are of great lichen

significance and are accompanied by old Ash and parkland exotics such as Turkey Oak and Plane Tree that have also been colonised by lichen interest along with Lime, Horse Chestnut and Sweet Chestnut, of lower lichen interest. There is still a large open Bracken glade here and old Sallows of interest occur in damp open areas. The northern valley lacks the frequent old Pedunculate Oaks of the southern valley but some large rich trees occur along with an important Ash at the upper end and two huge old Oaks. Lower down in the northern side valley there is a good selection of exotic parkland trees, including Plane Trees with base rich bark, but this area is very shaded.

This shaded area continues to the north, with a Plane Tree located which formerly supported a lungwort *Lobaria pulmonaria* colony, recorded as large in 1987, now lost to increased shade from adjacent trees and Ivy.

To the north a more open deer browsed area is reached with a scatter of old Oak, especially around the small lake to the north and quite extensive areas of rich old Sallow scrub. The latter is found around the lake and in open wet glades to the south. The later extend into a former wet field in the Dru ownership. There is also an important old Plane Tree and the curiosity of some surviving Wych Elm here. Rhododendron is locally a problem and has still not been treated by the lake, where it is shading old Oaks. Some other old trees are being shaded by young infill and planted conifers.

In the far north there is a large area of failed young conifer plantation with abundant dense young Sallow. East of this there are surviving parkland trees, but these are deeply shaded by younger trees and of no lichen interest.

Stock grazing has progressively been removed from the lower slopes of the park, presumably from some time in the earlier part of the 20th century. The last areas abandoned, south of the deer enclosure , are still stock fenced and are dominated by Hawthorn scrub.

There is a great deal of mature Ivy invasion up the trunks of veteran trees and much young Hawthorn and Hazel. These point to past low browsing pressures, but currently red deer numbers are high. This is actually browsing back some Ivy, killing the old vines and is maintaining the scatter of surviving glades, all beneficial to the conservation of the lichen assemblage.

Lichens: the lichen assemblage is rich and varied, with the main interest on the older parkland trees but also locally on old Sallows (which, although old for Sallows, are much younger). This interest is best developed where the woodland is not too dense and a decline from increased shade is evident in comparisons with the data from 1987 (Wolseley & O'Dare, 1988). The interest is mainly found in Base Rich Bark Woodland Community and Ancient Dry Bark Community but with locally significant interest in the Acid Bark Woodland Community, along with some rare species in Sheltered Canopy Community and Mature Mesic Bark Community.

The **Base Rich Bark Woodland Community** diversity is concentrated in the central and northern areas of interest (**Map 13**). The exception in the southern area is the important discovery of *Wadeana dendrographa* NT (NS/IR/S41) on a high cut Ash pollard. The Beech groves high above were recorded as having four *Lobaria pulmonaria* Nb (IR) colonies in 1987 but these appeared to have been lost to shading by 2017. Some more mobile species, such as *Bacidia biatorina*, *Biatora britannica* Nb (NS) and *Pachyphiale carneola* did occur occasionally.

The central area around the northern and southern side valleys includes several rich Oaks but interest is also found on Ash, Plane, Sallow and Turkey Oak. Species here included a strong colony of *Pannaria conoplea* Nb (IR) on Ash, along with species such as *Leptogium teretiusculum*, *Mycobilimbia epixanthoides*, *Mycobilimbia pilularis*, *Phyllopsora rosei* Nb (NS/IR), *Porina coralloidea* Nb (NS/IR) and *Thelopsis rubella* along with the more mobile *Bacidia biatorina*, *Biatora britannica* Nb (NS) *Dimerella lutea*, *Catinaria atropurpurea* and *Pachyphiale carneola*. In addition, the rare **Mature Mesic Bark Community** species *Pertusaria amara* f. *pulvinata* Nb (NR) was also found on a rich Oak and Ash in the southern valley.

To the north the rich area with old Oak accompanied by younger Ash trees, a Plane Tree of interest and old open Sallow scrub has well developed *Lobarion* assemblages. The Sallow habitat extends into the former wet field in the Dru ownership. The *Lobarion* included *Fuscopannaria mediterranea* Nb (NS) and *Thelopsis rubella*, on a recently dead Oak, *Lobaria pulmonaria* Nb (IR) on a Plane Tree and *Porina coralloidea* Nb (NS/IR) on an Oak a by the lake. The Sallows and associated Hazel and young Ash supported a strong population of *Sticta ciliata* Nb (IR) and some *Sticta limbata* Nb (IR). Also present in the area were *Bacidia biatorina*, *Biatora britannica*, *Leptogium lichenoides*, *Pachyphiale carneola* and *Peltigera horizontalis*. The Sallows also supported the rare **Mature Mesic Bark Community** species *Phlyctis agelaea* NT (NS). A second area of old Sallow habitat occurs on a second former field to the south in the Dru ownership. This is not nearly so rich but includes *Phlyctis agelaea* NT (NS) and *Leptogium lichenoides*.

Two sensitive species recorded in 1987 from this area were not refound in 2017; *Sticta sylvatica* Nb (IR) and *Parmeliella triptophylla* Nb (IR). *Peltigera collina* Nb (IR) may also have been found in this area in 1987, but this is not clear. These lichens are most likely lost, or reduced to a condition that they are difficult to find, by either shade or tree loss.

The **Ancient Dry Bark Community** is strongly developed in all areas with frequent old Oak (**Map 14**), but the diversity within the community varies. In the south in the probable location of the former northern extension of Steart Wood, the habitat is widespread but has low diversity with mainly *Cresponea premnea* Nb (IR) only present on the mainly rather shaded trees. *Schismatomma niveum* Nb (IR), however, is more frequent in this habitat here than other areas.

To the north the central area about the southern side valley, the frequent old Oaks are better lit and have much richer Ancient Dry Bark Communities, with the community also occurring rarely on Ash. As well as the widespread *Cresponea premnea* Nb (IR), there s a strong population of the internationally rare *Lecanographa lyncea* Nb (IR) and its associated parasite *Milospium graphideorum* Nb (NS), occasional *Schismatomma cretaceum* Nb (IR), along with rare occurrences of *Chaenotheca trichialis*, *Lecanactis subabietina* Nb (IR) and *Opegrapha xerica* Nb (NS). Shade increases as a threat lower down the stream valley.

The final concentration is in the north west about the small lake. Here *Cresponea premnea* Nb (IR) is also widespread but there is a good population of *Lecanographa lyncea* Nb (IR) along with its parasite *Milospium graphideorum* Nb (NS), with *Chaenotheca brunneola* and *Schismatomma cretaceum* Nb (IR) also recorded. Shade is also a problem here caused by Rhododendron, young broadleaved trees and conifers.

Dry Lignum species of interest are associated with the areas with frequent old Oak but are generally infrequent compared to the dry bark specialists (**Map 16**). The

central area includes *Chaenothecopsis savonica* NT (NR) and *Microcalicium ahlneri* Nb (NS) on large fallen Oak, while *Chaenothecopsis savonica* NT (NR), *Xerotrema quercicola* NT (NR/IR) and *Chaenotheca brunneola* were found to the north. The **Damp Lignum** species *Cladonia caespiticia* and *Cladonia parasitica* occur occasionally on fallen dead wood.

Of much more localised interest are **Sheltered Canopy Community** assemblages on sheltered well lit branches on glade and wood edges higher on the slope (**Map 15**). In these situations two rare species *Heterodermia obscurata* NT (NS) and *Usnea articulata* NT (IR/S41) were located. The more widespread *Usnea ceratina* was also recorded, typically deeper into the wood than the RDB species.

Characteristic **Acid Bark Woodland Community** assemblage species are widespread on acid Oak trees and Alders and also occur on Beech, Sweet Chestnut and Turkey Oak. There are no strong concentrations but the rarest species *Arthonia invadens* NT (NR/IR/S41) parasitising *Schismatomma quercicola* Nb (IR) is found in the south on the site of the former extension Steart Wood (**Map 17**). Several species are also more frequent in this area than in other areas of Area 2, including *Loxospora elatina*, *Schismatomma niveum* Nb (IR) and *Schismatomma quercicola* Nb (IR), with *Cladonia cyathomorpha* Nb (NS) only found in the south. More widespread species include *Anisomeridium ranunculosporum*, *Cliostomum flavidulum* Nb (NS), *Japewiella tavaresiana*, *Megalaria pulverea*, *Micarea doliiformis* Nb (NS), *Mycoblastus caesius* and *Thelotrema lepadinum*.

Totals:

Measure/Years	1986-2017	2017
Total Taxa	147	131
SOWI	40	38
URI	210	8
EN	0	0
VU	0	0
NT	6	6
Nb	27	24
IR	19	17
S41	3	3

Conservation: the lower now wooded part of the park locally supports rich lichen assemblages. This is best developed where there are combinations of old trees and glades, which let in more light. Comparisons with the 1987 data indicates declines in sections of the park that were likely to have more open conditions then. The increasing woodland cover will have benefited old woodland lichens that require sheltered humid conditions, as long as glades survived. However, increasing shade with full canopy closure negatively impacts these species.

The unique character of the park is gradually being lost from conifer plantations and veteran trees being submerged in dense broadleaved infill. Action to maintain the parkland character is required to conserve the lichen interest. Thinning around veteran trees, maintaining and creating glades, removal of conifer crops, cutting off Ivy from veteran trees and eliminating Rhododendron could all contribute to maintaining and restoring good conditions for the lichen assemblage. Ideally, grazing would be restored to the whole area, but if this is not possible the level of red deer browsing should help maintain more open conditions when combined with some glading and conifer felling.

4.2.4 Northern Section of Park (Area 3)

Habitat: this area was part of the wider grazed park in the 19th century (**Map 7**), but most has long been ungrazed appear apart from two fields in the Bell ownership. One to the south west has few trees, to the north horse grazed field, fenced off with electric fence tape is fringed by old trees. Much of the area consists of beech plantations with older Beeches and open parkland with veteran Beech set in mown parkland. All of this was a poor lichen habitat. The exception was the north boundary where, there are frequent veteran Oaks along the northern boundary in the Bell ownership adjacent to the tapped of horse field. The parkland around the trees is maintained by mowing. There is also an area of unmanaged woodland in the Goschen ownership with some shaded old trees and some relic Wych Elm trees.

Lichens: the general lichen assemblage is of limited interest, the Beech trees here are of lower interest than others in the park. The main exceptions are the veteran Oaks along the northern boundary in the Bell ownership. These do support a well developed **Ancient Dry Bark Community (*Lecanactidetum premneae*)** (**Map 14**) along with some associated species of interest. As is typical *Cresponea premnea* Nb (IR) is abundant, along with two trees with *Lecanographa lyncea* Nb (IR) with its parasite *Milospium graphideorum* Nb (NS), a strong population of *Chaenotheca trichialis*, *Opegrapha xerica* Nb (NS) and *Schismatomma cretaceum* Nb (IR). Associated exposed lignum (**Dry Lignum Community*, Calicietum abietinae***) supports *Chaenotheca trichialis* and *Chaenothecopsis nigra* Nb (NS) (**Map 16**). Here there was also a minor concentration of **Acid Bark Woodland Community (*Parmelion laevigatae*) species** on the bark and lignum of a few of the older Sweet Chestnuts, with *Micarea doliiformis* Nb (NS), *Mycoblastus caesius* and *Trapelia corticola.* The Base Rich Bark Woodland Community (*Lobarion pulmonariae*) assemblage was very limited with only *Bacidia biatorina* and *Pachyphiale carneola* found. A Turkey Oak in the adjacent field also supported the **Sheltered Canopy Community (*Usneetum articulato-floridae* var. *ceratinae*)** specialist *Usnea articulata* NT (IR/S41).

The only other significant interest in the north of the park found in 2017 was a standing dead Sweet Chestnut in a Beech stand, which supported the dry lignum specialist *Microcalicium ahlneri* Nb (NS). Otherwise beyond the rich northern boundary Oaks, the dominant Beeches predominantly support Mature Mesic Bark Community (*Pertusarietum amarae*), white a limited conservation interest. There are scattered occurrences of *Mycoporum antecellens*, *Pertusaria multipuncta*, *Phaeographis dendritica* and *Thelotrema lepadinum*, along with the local parasite of *Pertusaria hymenea*, *Dactylospora parasitica* [NS]. *Pachyphiale carneola* was the only base rich bark species recorded. In 1987, the Sheltered Canopy Community *Usnea ceratina* was recorded on Beech but was not refound in 2017.

Totals:

Measure/Years	1986-2017	2017
Total Taxa	152	128
SOWI	31	23
URI	5	3
EN	1	1
VU	1	1
NT	3	2
Nb	23	16
IR	17	11
S41	4	3

Conservation: the rich boundary Oaks on the northern boundary are already well managed, with mowing substituting for grazing. This a practical treatment in this small site and should be continued, but could equally be replaced by grazing. Their lower trunks will become shaded by the planted beech on the boundary bank at the northern end, which may have unfortunately replaced hazels representing remnants of the medieval boundary.

4.2.5 Open Area of Park (Area 4)

Habitat: the upper eastern section of the park remains in the open condition that characterised the whole of the park in the 19th century (**Map 7**). Area 4 covers those areas of the park that are still grazed, or were grazed in the last decade. In the north part, the park is enclosed within deer fences and supports a deer enclosure . The rest was grazed with stock until about eight years ago (F. Ulf-Hansen, pers. com.), but the accessible grassland outside the enclosure is now only mown. The park is dominated by open habitat with scattered trees. The oldest of these are Pedunculate Oaks, and at least one Ash, inherited from old fields removed to create the park. Trees planted as part of the original landscaping of the park, include Beech, Sycamore, Turkey Oak, Ash and specimen conifers. The Beech planting includes groves of old Beech, especially on Pixton Hill to the south. There are some areas of younger woodland, especially in the valley in the deer enclosure , with much Ash. These include some older trees, which are hence in more woodland conditions. A particular significant lichen habitat are the scatter of old Hawthorns, especially where in sheltered situations. To the south east there is a conifer plantation within the former area of the grazed part, which has been partly planted on the location of a former grove.

The grassland within the main area of the park is now mown not grazed. The deer enclosure is in contrast quite densely stocked with red deer and fallow deer, to the extent that there is a great deal of browse damage on Ash and Holly, including ring barked trees. Dead wood in the open park appears to have been largely removed in the past.

Lichens: the overall lichen assemblage is rich, but with more common species and a fewer specialist species than the wooded park below. The species of conservation interest are found on the older trees and the Hawthorn bushes. The latter is the most widespread habitat (**Sheltered Canopy Community, *Usneetum articulato-floridae* var. *ceratina***), with strong populations of *Heterodermia obscurata* NT (NS) and *Usnea articulata* NT (IR/S41), with the latter also found on the branches of other trees. The ammonia sensitive *Usnea florida* NT (S41) was recorded in 1987 but was not refound in 2017.

The older trees support similar range of communities to the tree below in the more wooded park, but with a different balance of light demanding to shade dependant species. The most diverse community is the **Base Rich Bark Woodland Community (*Lobarion pulmonariae*)** (**Map 13**). This includes a spectacular Ash with an exceptionally strong colony of *Lobaria pulmonaria* Nb (IR) and a rather relic colony of the regionally threatened *Lobaria scrobiculata* Nb (IR). Two typical parkland species of base rich bark *Opegrapha corticola* Nb (IR) and *Rinodina roboris* var. *roboris* Nb (IR) were found on the older Oaks, which were not recorded in the wooded section of the park, while the widespread species *Bacidia biatorina* and *Pachyphiale carneola* were scattered on the older open trees. Otherwise the other species of interest are restricted to the more wooded area within the deer enclosure section: *Biatora britannica* Nb (NS), *Leptogium lichenoides*, *Mycobilimbia epixanthoides* and *Mycobilimbia pilularis*.

The Ancient Dry Bark Community (*Lecanactidetum premneae*) assemblage is confined to the older Oaks predating the formation of the park (**Map 14**). The assemblage here is more limited than the trees in the lower parts of the park, all the trees support *Cresponea premnea* Nb (IR), with *Schismatomma cretaceum* Nb (IR) on two trees and rare *Chaenotheca trichialis*. Associated Dry Lignum Community (*Calicietum abietinae*) habitats include *Chaenotheca brunneola*.

Along with the Sheltered Canopy Community, the other community of importance, which was best developed here was the **Wound Assemblages (*Gyalectinetum carneoluteae*)**. The richest examples are very important and were on two ancient hollow Sycamores (**Map 19**). These support two threatened and declining species *Bacidia incompta* VU (NS/S41) and *Collema fragrans* EN (NR/IR/S41) along with the characteristic species *Porina byssophila* Nb (NR), *Strigula taylorii* Nb (NS/IR), *Caloplaca obscurella* and *Caloplaca ulcerosa*. *Porina borreri* Nb (NS) was also recorded on Ash. The community is rare but of high conservation significance, with the occurrence on Sycamore also important. Many other surviving examples of this assemblage are on Ash and therefore threatened by Ash dieback.

The most widespread and diverse habitat in the open park is the **Mature Mesic Bark Community (*Pertusarietum amarae*)**. This lacks any RDB species and is not very rich in old woodland species but supports many local species and adds to the diversity and interest of the park. Species of interest include *Arthonia vinosa*, *Cliostomum flavidulum* Nb (NS), *Lecanora jamesii*, *Mycoporum antecellens*, *Parmotrema crinitum*, *Pertusaria multipuncta*, *Punctelia reddenda*, *Schismatomma niveum* Nb (IR) and *Thelotrema lepadinum*. This part of the park has a particularly impressive collection of fungal parasites of the genus *Pertusaria*, including *Cyphelium sessile* Nb (NS), *Dactylospora parasitica* [NS], *Sphinctrina turbinata* Nb (NS), *Tremella pertusariae* [NR] and an apparently rare undescribed *Roselliniella* species.

The acid **Acid Bark Woodland Community (*Parmelion laevigatae*)** and **Smooth Bark Communities (*Graphidion*)** are limited in this less humid section of the park.

There are some species of local interest typical of **Nutrient Rich Bark Community, *Physcietum ascendentis*** but no species of special interest.

Totals:

Measure/Years	1986-2017	2017
Total Taxa	153	128
SOWI	31	23
URI	5	3
EN	1	1
VU	1	1
NT	3	2
Nb	23	16
IR	17	11
S41	4	3

Conservation: trees of lichen importance are scattered through this area. The grassland in the open park habitat is no longer intensively managed. This is likely to account for the reduced cover since 1987 of common lichens species indicative of damagingly high nitrogen deposition. Although this is a very positive development, the current grazing management of the park is not ideal. Outside of the deer enclosure area, the park is no longer grazed but is mown and apparently the

cuttings are not collected but left, which will not promote diversity nor reduce the need to mow as frequently. This is maintaining the grassland, but this will not have the full impact of grazing in keeping the more wooded areas open and in good condition. Within the deer enclosure the land has a high stocking rate of deer, with severe bark browsing on Ash and Holly resulting in ring barking. Some kind of rebalancing between the under grazed bulk of the park and the heavily browsed deer enclosure would be extremely beneficial. There has been past removal of dead wood, ideally this should be left in situ in the future where possible and certainly all larger, non-headwood and rotten branchwood.

5.0 Nature conservation value and management

5.1 Nature Conservation Value

5.1.1 Value of Lichen Assemblage

Pixton Park scores 45 using the Southern Oceanic Woodland index (SOWI) for all data, with a score of 41 using the 2017 data only. The threshold for national interest assessed by Sanderson (2017a) is 30, which was also the recommended threshold for considering sites for SSSI notification in south west England. In contrast, the Upland Rainforest Index (URI) scored 10 for all data and nine for the 2017. For URI threshold for national interest assessed by Sanderson (2017a) is 10, which was also the recommended threshold for considering sites for SSSI notification in south west England. The park also supports many species of conservation interest in their own right. The nationally significant species are:

One Endangered RDB species, one seen in 2017: Surveys

Species	Status	1987	2017
Collema fragrans•	NR/IR	0	1
Total number EN species		**0**	**1**

One Vulnerable RDB species, one seen in 2017: Surveys

Species	Status	1987	2008
Bacidia incompta•	NS	0	1
Total number VU species		**0**	**1**

Eight Near Threatened RDB species, 7 seen in 2017:Surveys

Species	Status	1987	2017
Arthonia invadens •	NR/IR	0	1
Chaenothecopsis savonica	NR	0	1
Heterodermia obscurata	NS	0	1
Phlyctis agelaea	NS	0	1
Usnea articulata •	IR	1	1
Usnea florida •		1	0
Wadeana dendrographa •	NS/IR	0	1
*Xerotrema quercicola*NS	NS/IR	0	1
Total number NT species		**2**	**7**

Thirty six Notable species, 32 seen in 2017:

Species	Status	1987	2017
Biatora britannica	Nb (NS)		1
Chaenothecopsis nigra	Nb (NS)		1
Cladonia cyathomorpha	Nb (NS)		1
Cliostomum flavidulum	Nb (NS)		1
Cresponea premnea	Nb (IR)	1	1
Cyphelium sessile	Nb (NS)	1	1
Eopyrenula grandicula	Nb (NS/IR)		1
Fuscopannaria mediterranea	Nb (NS)	1	1
Lecanactis subabietina	Nb (IR)	1	1
Lecanographa lyncea	Nb (IR)	1	1
Lobaria pulmonaria	Nb (IR)	1	1
Lobaria scrobiculata	Nb (IR)	1	1
Micarea doliiformis	Nb (NS)		1
Microcalicium ahlneri	Nb (NS)		1

Milospium graphideorum	Nb (NS)		1
Opegrapha corticola	Nb (IR)		1
Opegrapha xerica	Nb (NS)		1
Pannaria conoplea	Nb (IR)	1	1
Parmeliella triptophylla	Nb (IR)	1	0
Peltigera collina	Nb (IR)	1	0
Pertusaria amara f. *pulvinata*	Nb (NR)		1

Notable species cont.

Species	Status	1987	2017
Phyllopsora rosei	Nb (NS/IR)	1	1
Porina borreri	Nb (NS)		1
Porina byssophila	Nb (NR)		1
Porina coralloidea	Nb (NS/IR)	1	1
Rinodina griseosoralifera	Nb (NS)	1	0
Rinodina roboris var. *roboris*	Nb (IR)		1
Schismatomma cretaceum	Nb (IR)	1	1
Schismatomma niveum	Nb (IR)	1	1
Schismatomma quercicola	Nb (IR)	1	1
Sphinctrina turbinata	Nb (NS)		1
Stenocybe septata	Nb (IR)	1	1
Sticta ciliata	Nb (IR)	1	1
Sticta limbata	Nb (IR)	1	1
Sticta sylvatica	Nb (IR)	1	0
Strigula taylorii	Nb (NS/IR)		1
Total number Nb species		**11**	**28**

• = Section 41 species

A total of two Threatened, eight Near Threatened and 36 Notable species have been recorded since 1986, with two Threatened, six Near Threatened and 321 Notable in 2017. This gives a TNTN scoring of 56 and 52 respectively, a high total that supports the high assessment given by the SOWI index score.

The importance of the lichen assemblage at Pixton Park reflects a mixture of good examples of several epiphytic habitats in close proximity, rather than any one habitat being outstanding. Within the wider Barle Valley context it provides a habitat for lichens of older veteran trees that is otherwise rare or absent upstream (Sanderson, 2009a).

The most important individual habitats and assemblages contributing strongly to this international significance are:

Base Rich Bark on Veteran Trees (*Lobarion pulmonariae*): assemblages of old trees and shrubs which are best developed in oceanic old growth woodlands. This element is richest in the more wooded areas in well lit and sheltered locations, but there are also significant trees in the open parkland higher on the hill (**Map 13**). The habitat is rich in species that are declining in a European context due to air pollution and loss of old growth woodland. At Pixton Park the 1987 data suggest some losses due to increased shade and tree loss but the assemblage is still rich. The characteristic lichens recorded include the RDB species *Wadeana dendrographa* NT (NS/IR/S41). Other significant species include *Fuscopannaria mediterranea* Nb (NS), *Lobaria pulmonaria* Nb (IR), *Lobaria scrobiculata* Nb (IR), *Mycobilimbia pilularis*, *Phyllopsora rosei* Nb (NS/IR), *Porina coralloidea* Nb (NS/IR), *Sticta ciliata* Nb (IR), *Sticta limbata* Nb (IR) and *Thelopsis rubella*. Several of the crust forming species are rare or absent in the rest of the Barle Valley. Native Oaks were the most frequent substrate but Ash and Sallow were also important and Hazel and Plane Tree supported some important stands. Turkey Oak only supported a systematically surveyed specialist species of this community once, despite the frequency of the tree in the park.

Dry Bark and Lignum on Veteran Oaks and Lignum on Fallen and Standing Dead (*Lecanactidetum premneae* & *Calicietum abietinae*): the Ancient Dry Bark Community (*Lecanactidetum premneae*) is an internationally rare community for

which Britain has a special responsibility, while the other habitats are closely associated with this community and the veteran Oaks it overwhelmingly occurs on. The *Lecanactidetum premneae* is characteristic of dry bark on veteran Oaks in warm humid oceanic climates and is confined to the south and west of England and Wales. The Ancient Dry Bark Community was recorded on 64 trees in 2017, a large stand, but not outstanding compared to those in the north Exmoor Coombes. It is, however, easily the largest stand in the Barle valley (Sanderson, 2009a). The habitat was found wherever there were veteran native Oaks, but is most diverse on the more sheltered trees lower in the western and northern parts of the park (**Maps 14**). The assemblage is rare on Ash and Turkey Oak. The significant species on bark included *Cresponea premnea* Nb (IR), *Lecanactis subabietina* Nb (IR), *Lecanographa lyncea* Nb (IR), *Milospium graphideorum* Nb (NS), *Opegrapha xerica* Nb (NS), *Schismatomma cretaceum* Nb (IR) and *Schismatomma niveum* Nb (IR). Associated lignum habitat (**Maps 16**) supports two RDB species *Chaenothecopsis savonica* NT (NR) and *Xerotrema quercicola* NT (NR/IR) along with the Notable *Chaenothecopsis nigra* Nb (NS) and *Microcalicium ahlneri* Nb (NS).

Sheltered Twigs and Branches in More Open Areas (*Usneetum articulato-floridae* var. *ceratinae*): sheltered but well lit canopies in the park support two RDB species, *Heterodermia obscurata* NT (NS) and *Usnea articulata* NT (IR/S41), which have declined nationally due to air pollution in the past. One of these, *Heterodermia obscurata*, was not recorded in 1987, but now has a strong population, which may have increased since 1987. The other *Usnea articulata* NT (IR/S41) has a very strong population. Another species, however, *Usnea florida* NT (S41), was recorded in 1987 but was not found in 2017. This is a widespread habitat, and high quality examples can occur in suitable shelter locations in less intensively managed farmland away from ancient woodland. Pixton Park, however, has a particularly well developed example of this assemblage associated with other rich habitats.

Wound Assemblages on Ancient Sycamores in Parkland (*Gyalectinetum carneoluteae*): wound tracks on veteran trees, especially Elm, supported a distinctive assemblage of specialist lichens. These were characteristic lichens of open parkland with old Elm trees, and were always uncommon. Now, however, several species are very rare due to the loss of old Elm trees to Dutch Elm disease. The habitat was not recorded in 1987, but in 2017, two hollow veteran Sycamores were recorded supporting single colonies of *Bacidia incompta* VU (NS/S41) and *Collema fragrans* EN (NR/IR/S41). These are important records and Pixton is a very significant relic site for this habitat. This habitat is unknown in the Barle valley.

Habitats that are also significant but not as rich and as important as the above habitats:

Acid Bark Woodland Community (*Parmelion laevigatae*): an oceanic community best developed in larger woods in high rainfall areas on acid soils. The assemblage also extends into more lowland situations, in particularly sheltered and humid locations. This assemblage adds significantly to the interest of Pixton Park but is not as well developed as the habitats listed above. The RDB species *Arthonia invadens* NT (NR/IR/S41), however, was recorded once and other notable species include *Cladonia cyathomorpha* Nb (NS), *Cliostomum flavidulum* Nb (NS), *Micarea doliiformis* Nb (NS), *Schismatomma niveum* Nb (IR), *Schismatomma quercicola* Nb (IR) and *Taeniolella toruloides* [NR]. The assemblage is richest in the lower wooded part of the park, especially to the south west, where the parkland had incorporated part of Steart Wood.

Mature Mesic Bark Community (*Pertusarietum amarae* & *Parmelietum revolutae*): a widespread habitat on mature trees, but with some uncommon species found on older trees. At Pixton Park the habitat is common and especially important in the open parkland. The RDB species *Phlyctis agelaea* NT (NS) was found in the wooded park on Sallow and *Pertusaria amara* f. *pulvinata* Nb (NR) on old Ash and Oak in association with Base Rich Bark on Veteran Trees (*Lobarion pulmonariae*). In the open park no national RDB species were recorded but a good range of typical parkland species was recorded, including *Cyphelium sessile* Nb (NS) and *Sphinctrina turbinata* Nb (NS).

5.1.2 Distribution of Interest

The distribution of locations supporting systematically recorded species of conservation interest in Pixton Park is shown **Map 11**. This shows a strongly clumped distribution in the lichen interest. These include three concentrations of interest with the lower wooded slopes to the west, the old Oaks along the northern boundary and two areas of interest in the open park on top of the hill. In the open parkland habitats in the northern (Area 3) and eastern (Area 4) sections of the park, the areas of interest simply marked out areas with veteran Oak, Ash and Sycamore or old Hawthorn bushes. Areas of lower interest are either treeless or dominated by Beech. In the wooded western park some areas with lower interest do have frequent veteran trees but these are heavily shaded. In the more wooded park the areas of high interest represent a combination of frequent veteran trees associated with more open areas.

5.2 Management

5.2.1 Management Requirements of Woodland and Parkland Lichen Assemblages

The best conditions for woodland lichen assemblages are typically found in extensively grazed pasture woodland with a mixture of open high forest, glades and savanna like stands (Sanderson & Wolseley, 2001). The main positive features appear to be:

- Many trees surviving to senescence.
- Varying, but generally good light levels (with different lichen species having widely different tolerances).
- Shelter producing humid conditions.
- Slow woodland dynamics.

The basic mechanism driving this is a varying browsing pressure on tree regeneration that suppresses regeneration for long periods. A major interaction is between the shrub layer and the browsers; this can rapidly and drastically change the light and humidity levels without immediately altering the canopy layer (Coppins & Coppins 1998). Interactions between browsers and the canopy are much more long term, but frequent glades are required. Glades need to be dynamic but permanent features and slow dynamics are crucial. Coppins & Coppins (2002b), as an initial guide, suggest a requirement for at least 30% glades within the canopy of lichen rich woodlands and that the glades have a permanence of at least 30 years. In contrast, tree cover of less than 20 to 30% will result in the loss of woodland conditions and the resultant reduction in the diversity of the old growth dependent lichen assemblages. Exceptions to the latter are found in parklands with veteran trees with wide spreading crowns in very sheltered valley bottoms or humid areas. In very wet oceanic areas, woodland conditions can also be maintained with less

shelter and more open areas. In these special conditions woodland lichen assemblages can survive in more open conditions.

There is no reason why such conditions could not be created by management outside of pasture woodlands, but this would not be easy. In particular it is important to appreciate the scale of management required. Rare lichens typically have very low rates of occupation, as they require specialised niches found on only a few veteran trees. As a result they tend to occur on very small numbers of trees within large populations of veteran trees. Each veteran tree will have different combinations of niches. Rather than just maintaining a few especially rich trees, sustainable management requires the maintenance of good conditions around dozens or hundreds of trees (depending of the size of the site), both veteran and maturing. To imitate browsing impacts fully, management would also be required to be annual. Without browsing, coppice regrowth around haloed veteran trees (trees with shrubs and maturing trees cut from around them) can cast a very dense shade on the lower trunks within three years or so. Extensive grazing appears to be the only practical method of maintaining large blocks of nationally or internationally important lichen rich woodland in the long term. Suitable conditions are unlikely to be found in woodlands managed efficiently for timber. Neither are they likely to be found within true non-intervention woodland with low browsing levels.

Parklands are artificial habitats that maintain conditions similar to those found in the more open parts of pasture woodlands. They also provide habitats for specialist lichens of very well lit veteran field trees that are now rare in the general countryside. The main difference with woodland habitats is that natural regeneration is unlikely to occur and new generations of trees need to be provided by tree planting. Alternatively parks could be rewilded and managed more extensively to allow natural regeneration. The latter would often be beneficial for lichens but would usually be in conflict with the preservation of designed landscapes.

5.2.2 Management Issues for Lichens at Pixton Park

Pixton Park was a single management unit in the late 19th century and presumably into the early 20th century. The entire site, except for Steart Wood (Area 1), was a grazed deer park. Since then different areas have diverged. The northern (Area 3) and eastern (Area 4) sections have undergone less changes and are still essentially open landscape park. There are issues over the levels of grazing, with currently little outside of the deer enclosure in Area 4 and rather too much inside it. The western section (Area 4), was always more treed but has largely been converted into woodland. This has both increased the shelter and humidity to the benefit of the diverse woodland lichen assemblage found here but has also increased the shade, which where very heavy, is detrimental.

Maintaining Favourable Conditions with the Wooded Areas (Areas 1 & 2): in the wooded park the lichen assemblage is best developed where there are combinations of old trees and glades, which let in more light. The unique character of the park is gradually being lost from conifer plantations, veteran trees being submerged in dense broadleaved infill, Ivy growth up veteran tree trunks and Rhododendron invasion. Action to maintain the parkland character and the internationally significant lichen assemblage is required. This would maintain the wooded nature of the habitat that has evolved in the last century, but develop areas of pasture woodland habitats, to conserve the veteran trees and their associated biota. **Map 12** summarises the suggested priorities for treatment.

An important factor is the longer term maintenance of both the open nature of surviving open areas and also any restored pasture woodland habitats. This requires

some form of extensive grazing. This could be done by introducing cattle grazing, or restoring the deer park, but in the shorter term, the current level of red deer browsing is high enough to maintain openness if combined with some manual cutting.

Maintaining openness:

- In the shorter term maintain red deer browsing at present or higher levels.
- In the long term consider introduce cattle grazing to a restored pasture woodland habitat.
- An alternative could be to deer fence the perimeter and fully restore the deer park. This would allow higher deer browsing, without impact on adjacent land.

There are various ways of restoring more open conditions:

- Thinning around the veteran trees, removing younger trees, both broadleaved and conifers, to let in more light (**Map 12**). Initially small clearances of up to 10m from each tree are advisable to reduce the danger of windblow or shock from sudden changes in exposure to the old trees. Smaller clearances also reduce the vigour of any understorey regrow.
- Cut Ivy on veteran trees (**Map 12**). The current level of deer browsing is actively reducing the amount of Ivy growing up trees, but it is important to remove most Ivy off the older trees. It should be left on younger trees, as Ivy on trees does have some biodiversity value.
- Eliminate Rhododendron (**Map 12**). This is already under way but needs to be completed. The recent work was combined with glade creation, which is beneficial.
- Create new glades, by clearing young broadleaves or conifers near to existing veteran trees of areas of interest (**Map 12**).
- Eventually remove the conifer plantations and replace with broadleaves and glades. All conifers near (c20m) veteran trees should be removed in the near future. Other stands could replaced when it is economical to do so.
- In the far north west there is a failed conifer plantation, now a mixture of dense young Sallow and relic conifers (**Map 12**). The structure of this should be diversified, both converted to a more diverse broadleaved woodland and to created patches of more open gladed Sallow scrub. The latter habitat is relatively rapidly colonised by some leafy Base Rich Bark Woodland Community (*Lobarion pulmonariae*) species, especially *Sticta* species.

Other actions of benefit for the conservation of the lichen assemblage are listed below:

- Ensure a succession of veteran trees. There has been plenty of regeneration within the wooded area, so long term replacement of veteran trees is straightforward. In the case of Turkey Oak, this is of lower value for lichens, and wildlife in general, than the native Oaks and the Turkey Oak should be thinned out and native Oaks promoted. In the park Sycamore is a long established part of the landscape and is a good substrate for lichens and should be treated as a native tree. Planting of some of the exotic species used in the original landscaping is acceptable, with the Plane tree used (Oriental Plane?), an especially good substrate for base rich bark demanding lichen.

- Consider transplanting some threatened leafy Base Rich Bark Woodland Community (*Lobarion pulmonariae*) lichens. These have declined due to shade and tree loss and some are threatened by Ash dieback disease. The highest priority is *Fuscopannaria mediterranea* Nb (NS), which is only known on a recently dead Oak (PX047). Other possibilities are *Lobaria pulmonaria* Nb (IR), *Lobaria scrobiculata* Nb (IR) and *Pannaria conoplea* Nb (IR). This s skilled job and would need to be carried out by a lichenologist.

Maintaining Favourable Conditions with the Open Area (Areas 3 & 4): this area has more conventional open parkland habitat. It supports rich lichen assemblages on the veteran trees and on old Hawthorn bushes. It does lack some woodland specialists found lower down the slopes but also supports some very rare parkland specialists absent from the wooded areas. In the northern section of the park (Area 3), the rich veteran Oaks along the northern boundary are currently well managed, with mowing between and around the old trees replacing grazing.

The main area of the park is no longer grazed, but the grassland is still mown, although not inside the formerly grazed groves of trees. Inside the fenced deer enclosure, in contrast, the level of deer grazing is high with bark browsing damage to young Ash and Holly. The removal of stock grazing from the main park, however, has also resulted in intensive grassland management being stopped, which is beneficial. There has been some local tree planting in parts of the open park but this is below replacement rate and does not include some important species such as Pedunculate Oak and Sycamore.

For the main area of open parkland (Area 4) the following issues should be considered:

- Restore light grazing to the ungrazed area, but without intensive grassland management.
- Reduce the grazing pressure within the deer enclosure . There is potential to greatly increase the area fenced to contain deer grazing.
- Carry out more tree planting, including species such as Pedunculate Oak, Sycamore and Hawthorn.

4.2.3 Ash Dieback

The impact of Chalara (*Hymenoscyphus pseudoalbidus*) Ash dieback disease on Ash trees and the associated lichen assemblages is not yet clear. Information on the potential impact of Ash epiphytic lichens assemblages can be found at the BLS website <www.britishlichensociety.org.uk/about-lichens/habitats-conservation/ash-chalara-dieback-and-lichens>. The rapid loss of younger sub-canopy Ash trees seems inevitable but older Ash trees are likely to survive for decades. Reported deaths of older Ash appear to be mainly from secondary infections such as honey fungus, presumably due to stress. Some resistance in Ash is reported but at low levels.

At Pixton Park, numerically Ash is not a frequent substrate for the more significant lichen species, but it does provide a preferential substrate for some important species. These are all Base Rich Bark Woodland Community (*Lobarion pulmonariae*) species. Ash was the tree of interest at nine locations where systematically recorded lichens of conservation were found, out of a total of 106, that is 8% of the waypoints (**Table 4**). Three lichens had all occurrences on ash trees, while seven others had part of their population on Ash.

The threatened species include both large leafy species and smaller crust forming species. The former can potentially be translocated but the latter can not. The crusts include the important species *Wadeana dendrographa* NT (NS/IR/S41). In the worst case scenario, translocation of leafy species from dying Ash trees to other suitable trees may be the only possible rapid mitigation measure. At Pixton Park, more base rich Oak, Sallow, Sycamore and Plane Tree are the best existing potential translocation trees. Otherwise, ensuring that suitable alternative fast maturing substrates such as Sallows and Hazels are promoted, in open locations should help in the medium term. To be effective substrates for *Lobarion* lichens on bushes, both Hazel and Sallow need to have no or limited over canopy of tall trees. There are also some very promising Sycamores that are currently deeply shaded, as on the north west side of Pixton Hill (SS927 266). Opening up these would increase the area of suitable habitat for the Ash dependent leafy species, for both colonisation and translocation. In the very long term any resistant local Ash should be retained and promoted, including potentially collecting seed and locally growing on, for planting out.

TABLE 4
The Importance of Ash for Lichens of Conservation Interest at Pixton Park 2017

Species	Ash	Total No. Waypoints	% on Ash
Ash	9	106	8%
Lobaria scrobiculata	1	1	100%
Pannaria conoplea	1	1	100%
Wadeana dendrographa	1	1	100%
Lobaria pulmonaria	2	3	67%
Mycobilimbia epixanthoides	1	3	33%
Phyllopsora rosei	2	6	33%
Sticta ciliata	3	11	27%
Mycobilimbia pilularis	1	5	20%
Usnea articulata	1	20	5%
Cresponea premnea	1	63	2%
Arthonia invadens	0	1	0
Bacidia incompta	0	1	0
Chaenotheca brunneola	0	3	0
Chaenotheca trichialis	0	5	0
Chaenothecopsis nigra	0	1	0
Chaenothecopsis savonica	0	2	0
Collema fragrans	0	1	0
Fuscopannaria mediterranea	0	1	0
Heterodermia obscurata	0	6	0
Lecanographa lyncea	0	12	0
Microcalicium ahlneri	0	2	0
Opegrapha corticola	0	1	0

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Annex 1 Field Notes

All photographs can be attributed to the author.

Key:

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

Substrates
Ae = Horse Chestnut, Al = Alder, Ap = Sycamore, Apl = Norway Maple, Bt = Birch, Cf = Conifer, Co = Hazel, Cs = Sweet Chestnut, Ct = Hawthorn, Fg = Beech, Fx = Ash, Ix = Holly, Li = Tulip Tree, No = Nothofagus, Pp = Poplar cultivar, Pra = Cherry, Q = Oak (native species), Qc = Turkey Oak, Qr = Red Oak, Sx = Sallow, U = Wych Elm, L = Lignum (as prefix), Tw = twigs & branches & SS = Rock.

Hosts for lichenicolous fungi: Z0533 = *Graphis scripta*, Z0592 = *Lecanactis abietina*, Z0987 = *Flavoparmelia caperata*, Z1015 = *Parmelia saxatilis*, Z1064 = *Pertusaria coccodes*, Z1075 = *Varicellaria hemisphaerica*, Z1076 = *Pertusaria hymenea*, Z1087 = *Pertusaria pertusa*, Z1079 = *Pertusaria leioplaca*, Z1120 = *Physcia tenella*, Z1315 = *Schismatomma decolorans*, Z1410 = *Thelotrema lepadinum*, Z1585 = *Schismatomma quercicola*, Z1471 = *Usnea subfloridana*.

Species in bold = systematically recorded species

A1 Pixton Park 18/9/2017

A1.1 Weather

Dry, mostly overcast, the bark locally damp. Survey conditions good.

A1.2 Western Wooded Section of Park (A2), SS9226 South West

High forest mature Oak over Hazel, Ash, Turkey Oak and Beech, with patches conifer plantation, generally shaded, the woodland developed by infilling more open pasture woodland on the slopes. Rhododendron invasion had occurred locally. Infilled parkland above. A wide scatter of post mature Sessile Oak, Turkey Oak, Beech and Sycamore and some conifers, including large Douglas Firs inherited from the old park. Generally dark and shaded and there has been a lot of Turkey Oak regeneration. Recent Rhododendron control has opened up glades around the older trees, with thin Oak planting in the glades. Red deer number high.

SS925 264

PX001 (SS92557 26432, 140m): post mature Oak by recently opened up glade, formerly very shaded

Cresponea premnea	Q	R
Also		
Schismatomma niveum	Q	
Thelotrema lepadinum	Q	

PX002 (SS92549 26409, 127m): post mature Oak above track, recently opened up

Cresponea premnea	Q	O
Also		
Micarea doliiformis	Q	
Thelotrema lepadinum	Q	
Micarea viridileprosa	Q	

SS925 264

Lichens of Interest

Cladonia caespiticia	LQ	
Cladonia parasitica	LQ	
Cresponea premnea	Q	
Eopyrenula grandicula	Co	Coll.
Micarea doliiformis	Cf, Q	
Micarea viridileprosa	Q	
Schismatomma niveum	Q	
Skyttea nitschkei	Q, Z1410	
Thelotrema lepadinum	Q, Bt, Co, Ix	

Other Species

Abrothallus microspermus	Q Tw, Z0987	
Arthonia elegans	Co	
Arthopyrenia salicis	Co	Coll.
Chrysothrix candelaris	Bt	
Cladonia polydactyla var. *polydactyla*		LQ
Evernia prunastri	Q Tw	
Flavoparmelia caperata	Q Tw	
Graphis elegans	Q Tw	
Graphis scripta	Co, Ix	
Lecanactis abietina	Bt, Q	
Lecanora chlarotera	Q Tw	
Melanelixia subaurifera	Q Tw	
Micarea prasina s. lat.	LQ	
Normandina pulchella	Co	
Opegrapha vulgata	Q,	Co
Parmelia sulcata	Q Tw	
Pertusaria hymenea	Q	
Schismatomma decolorans	Q	
Trapeliopsis pseudogranulosa	LQ	
Usnea cornuta	Q	

SS925 263

PX003 (SS92578 26326, 117m): post mature Oak below track shaded by Rhododendron, Ivy invaded

Cresponea premnea	Q	F

Also

Thelotrema lepadinum	Q

PX004 (SS92587 26340, 126m): post mature Sessile Oak in recently opened up area above track

Arthonia invadens	Q, Z1585	F

Also

Anisomeridium ranunculosporum	Q
Schismatomma quercicola	Q
Thelotrema lepadinum	Q

Photo 2017-09-18-01
(Neil Sanderson)

Photo 2017-09-18-01. PX004: post mature Oak opened up by recent Rhododendron control work. The now well lit side of the tree supports a large colony of ***Arthonia invadens*** NT (NR/IR/S41) parasitising *Schismatomma quercicola* Nb (IR). New to Pixton Park in 2017.

SS925 263

Species of Interest

Anisomeridium ranunculosporum	Q	
Arthonia invadens	Q, Z1585	
Cresponea premnea	Q	
Mycoporum antecellens	Ix	
Schismatomma quercicola	Q	SS9258 2638
Thelotrema lepadinum	Q, Ix	

Other Species

Arthonia cinnabarina	Fx, Co
Graphis scripta	Fx
Opegrapha vulgata	Fx
Pertusaria hymenea	Fx
Phlyctis argena	Fx
Pyrenula chlorospila	Fx
Pyrenula macrospora	Fx
Stigmidium microspilum	Fx, Z0533

SS926 263

Species of Interest

Bacidia biatorina	Fx	SS9266 2635
Biatora britannica	Fx	SS9266 2635
Micarea doliiformis	Q	
Pachyphiale carneola	Fx	SS9266 2635
Schismatomma niveum	Q	
Schismatomma quercicola	Ix	
Stenocybe septata	Ix	
Thelotrema lepadinum	Q, Fx, Ix	

Other Species

Enterographa crassa	Fx, Co
Hypotrachyna afrorevoluta	Q Tw
Parmelia saxatilis	Q Tw

A1.3 Steare Wood (A1), South West SS9226

Lower slopes broadleaved woodland, conifer planation above access track. In the north there was a small pocket of old growth woodland with post mature Ash, Sessile Oak and Holly present. There are large areas of Rhododendron below this. To the south much of the lower broadleaved woodland had been felled and replanted, the remaining older areas seen were dull with mature Sessile Oak and much Sweet Chestnut former coppice

SS926 263

The old growth pocket was of considerable interest.

PX005 (SS92643 26330, 145m): small suppressed Oak by track just inside wood

Phyllopsora rosei	Q	O	
Porina coralloidea	Q	O	
Also			
Anisomeridium ranunculosporum	Q, Ix		
Biatora britannica	Q		
Loxospora elatina	Q		
Skyttea nitschkei	Q, Z1410		
Thelotrema lepadinum	Q		

PX006 (SS92634 26331, 148m): post mature Ash just inside wood, below track, probably the 1980s tree, lower trunk very shaded.

Lobaria pulmonaria	Fx	R	Small amount just visible by fork high up

PX007 (SS92626 26308, 145m): grove of post mature Ash, Oak and Holly below track, shaded

Phyllopsora rosei	Fx	O	
Post mature oak to south west			
Cresponea premnea	Q	R	
Old Holly			
Taeniolella toruloides	Ix, Z1410		Coll. Herb. Sanderson 2305, new to Somerset. Parasitic on Thelotrema lepadinum; conidiophores unbranched; conidia 0 – 2 septate
Also			
Thelotrema lepadinum	Fx, Ix		

Photo 2017-09-18-05. PX007: a micrograph of ***Taeniolella toruloides*** (NR) conidia and conidiophores parasitising *Thelotrema lepadinum*. A newly described fungal parasite of an

ancient woodland lichen. It appears rare and confined to sites with large populations of the host. New to Somerset and Exmoor.

SS926 263 Old Growth Pocket
Species of Interest

Anisomeridium ranunculosporum	Q, Ix	
Biatora britannica	Q	
Cresponea premnea	Q	
Lobaria pulmonaria	Fx	
Loxospora elatina	Q	
Phyllopsora rosei	Q, Fx	
Porina coralloidea	Q	
Schismatomma niveum	Ix	
Schismatomma quercicola	Ix	
Skyttea nitschkei	Q, Z1410	
Stenocybe septata	Ix	
Taeniolella toruloides	Ix, Z1410	Coll. Herb. Sanderson 2305, new to Somerset
Thelotrema lepadinum	Q, Pra, Ix, Fx	

Other Species

Arthonia cinnabarina	Co
Arthonia spadicea	Ix
Chrysothrix candelaris	Q
Cliostomum griffithii	Fx
Enterographa crassa	Q, Fx, Ix, Co
Graphis scripta	Fx
Hypogymnia physodes	Q Tw
Lecanactis abietina	Ix
Opegrapha vulgata	Co
Pertusaria amara f. *amara*	Q
Varicellaria hemisphaerica	Q

SS926 262
Old trees fade out

SS926 262
Species of Interest

Phaeographis dendritica	Ap
Schismatomma niveum	Ix, Ap
Skyttea nitschkei	Ix, Z1410
Thelotrema lepadinum	Ix

Other Species

Chrysothrix candelaris	Ix
Pertusaria hymenea	Ap, Fx
Phlyctis argena	Fx
Pyrenula macrospora	Fx

SS927 260
Much felled and replanted, surviving older pockets with mature Sessile Oak, no post mature trees

SS927 260
Species of Interest

Phaeographis dendritica	Q

Schismatomma niveum	Q
Thelotrema lepadinum	Q

SS928 260

Species of Interest

Bacidia biatorina	Q
Schismatomma niveum	Q
Stenocybe septata	Ix
Thelotrema lepadinum	Q, Ix

Other Species

Pyrrhospora quernea	Q

A1.4 Western Wooded Section of Park (A2), SS9226 South East

Back in the wooded slopes of the park woodland highly shaded, with much conifer planting. Some areas opened up by Rhododendron control. Old trees present, including Oak, Beech and Sycamore.

SS926 264

Much conifer, some more open areas with Rhododendron control, only mature trees

SS926 264

Species of Interest

Thelotrema lepadinum	Fx, Q, Co

SS927 264 Wooded Park

As above but rare post mature Oak survives. Higher up old Beech groves

PX008 (SS92708 26423, 189m): shaded post mature Oak

Cresponea premnea	Q	F

Also

Schismatomma niveum	Q
Thelotrema lepadinum	Q

PX009 (SS92708 26471, 192m): ancient Sessile Oak by partial glade but still shaded

Cresponea premnea	Q	O

Also

Schismatomma niveum	Q
Thelotrema lepadinum	Q

Adjacent dead Sycamore twig

Heterodermia obscurata	Ap Tw	One thallus

SS927 264 Wooded Park

Species of Interest

Cresponea premnea	Q
Heterodermia obscurata	Ap Tw
Schismatomma niveum	Q
Thelotrema lepadinum	Q, Co, Ap, Fg

Other Species

Anisomeridium polypori	Ap
Enterographa crassa	Ap
Lecanora chlarotera	Ap
Opegrapha vulgata	Q
Parmotrema perlatum	Ap Tw
Pertusaria hymenea	Ap, Fg
Pertusaria pertusa	Ap, Fg

Phlyctis argena	Ap
Physcia tenella	Ap Tw
Ramalina farinacea	Al Tw

A1.5 Eastern Open Section of Park (A2), SS9226 Pixton Hill

The area around Pixton Hill is still open parkland, although mown and no longer grazed. The area includes lichen interest old Beech groves, occasional old Sycamore and marginal thorn stands.

SS927 264 Open Park

This grid square also includes part of the groves of old Beeches

SS927 264 Open Park

Species of Interest

Dactylospora parasitica	Fg, Z1076	[SS9276 2641] SS92782641
Punctelia reddenda	Fg	
Roselliniella sp	Fg, Z1087	SS92763 26406, Coll. Herb. Sanderson 2309

Other Species

Arthonia cinnabarina	Fg
Cladonia pyxidata	Fx
Enterographa crassa	Fg
Graphis scripta	Fg
Lecidella elaeochroma f. *elaeochroma*	Fg
Normandina pulchella	Fg
Opegrapha atra	Fg
Pyrrhospora quernea	Fg

SS928 264

Pixton Hill, open high forest in corner of field. Field not currently grazed, but is mown. Old Beech grove in centre with younger Turkey Oak, Beech and Ash around

SS928 264

Species of Interest

Dactylospora parasitica	Fg, Z1076
Punctelia reddenda	Fg
Thelotrema lepadinum	Fx, Fg

Other Species

Opegrapha vulgata	Fg
Pertusaria hymenea	Fg
Pyrenula chlorospila	Fg
Varicellaria hemisphaerica	Fg

SS929 264

Pixton Hill parkland continued

SS929 264

Species of Interest

Thelotrema lepadinum	Fg, Qc

Other Species

Lecanactis abietina	Qc
Normandina pulchella	Qc
Opegrapha sorediifera	Qc
Pyrrhospora quernea	Qc, Fx
Schismatomma decolorans	Fx

Usnea cornuta	Qc

SS929 265
Pixton Hill continued; this section includes an old Sycamore of importance, with *Bacidia incompta*.

PX010 (SS92939 26518, 220m): ancient hollow Sycamore in open Bracken area
Bacidia incompta LAp O
Photo 2017-09-18-02
(Neil Sanderson)

Photo 2017-09-18-02. PX010: a hollow Sycamore in an open area on Pixton Hill. A would track on the lignum inside the hollow supports ***Bacidia incompta*** VU (NS/S41). This was a wide spread species on old Elm trees but has had its population drastically reduced since the loss of old Elms to Dutch Elm Disease. This was the first record from Pixton Park. (Neil Sanderson)

SS929 265

Species of Interest	
Bacidia incompta	LAp
Megalaria pulverea	Qc
Punctelia reddenda	Qc
Thelotrema lepadinum	Qc, Ct
Other Species	
Hypogymnia physodes	Qc Tw
Hypogymnia tubulosa	Qc Tw
Lecanactis abietina	Ct
Lecanora chlarotera	Ap
Lecanora expallens	Ap
Melanohalea laciniatula	Qc tw
Opegrapha atra	Ap
Opegrapha varia	LAp
Opegrapha vulgata	LAp
Phlyctis argena	Qc

Platismatia glauca Qc Tw

SS928 265
Pixton Hill parkland continued, includes significant Hawthorns with strong populations of *Heterodermia obscurata* and *Usnea articulata*.

PX011 (SS92798 26509, 214m): Hawthorn at edge of field with rich twig assemblage
Heterodermia obscurata Ct Tw R
Usnea articulata Ct Tw F
Photo 2017-09-18-03
(Neil Sanderson)

Photos 2017-09-18-03 & 04. PX011 & 12: old Hawthorn bushes along the edge of the wooded part of the park on Pixton Hill (PX011 toleft & PX012 to right), with a rich assemblage of canopy lichens. These include two pollution sensitive southern oceanic lichens *Heterodermia obscurata* NT (NS) and *Usnea articulata* NT (IR/S41). A well developed thallus of the *Heterodermia* is shown in the lower picture, this species was new to the park in 2017.

PX012 (SS92814 26535, 214m): Hawthorn at edge of field with rich twig assemblage, continuing north of PX011.

Heterodermia obscurata	Ct Tw	O	Coll from dead twig for DNA sequencing, Herb Sanderson 2306
Usnea articulata	Ct Tw	O	
Also			
Punctelia reddenda	Ct Tw		

Photos 2017-09-18-03 & 04

PX013 (SS92826 26573, 216m): isolated Hawthorn bush in field

Heterodermia obscurata	Ct Tw	R
Usnea articulata	Ct Tw	R

SS928 265

Species of Interest	
Heterodermia obscurata	Ct Tw
Lecanora jamesii	Qc Tw
Punctelia reddenda	Ct Tw
Usnea articulata	Ct tw
Other Species	
Abrothallus microspermus	Ct Tw
Candelariella reflexa	Ct Tw
Flavoparmelia caperata	Ct Tw
Hypogymnia tubulosa	Ct Tw
Hypotrachyna afrorevoluta	Ct Tw
Hypotrachyna afrorevoluta	Qc Tw
Hypotrachyna revoluta s.str.	Ct Tw
Melanohalea laciniatula	Ct Tw
Parmelia saxatilis	Ct Tw
Parmotrema perlatum	Ct Tw
Parmotrema reticulatum	Ct Tw
Physcia tenella	Ct Tw
Pseudevernia furfuracea var. *ceratea*	Ct Tw, Qc, Tw
Ramalina farinacea	Ct Tw
Ramalina fastigiata	Ct Tw

SS928 266

Further north in the on Pixton Hill, few trees

PX014 (SS92869 26622, 213m): Beech in field, with lichen interest on branches

Usnea articulata	Fg Tw	O
Also		
Punctelia reddenda	Fg Tw	

SS928 266

Species of Interest	
Punctelia reddenda	Fg Tw
Usnea articulata	Fg Tw
Other Species	

Hypotrachyna afrorevoluta Fg Tw
Lecidella elaeochroma f. *elaeochroma* Fg Tw
Marchandiomyces aurantiacus Fg Tw Z1120
Melanelixia subaurifera Fg Tw
Melanohalea laciniatula Fg Tw
Parmelia sulcata Fg Tw
Parmotrema perlatum Fg Tw
Pertusaria albescens var. *albescens* Fg
Physcia tenella Fg Tw
Punctelia subrudecta s. str. Fg Tw
Ramalina farinacea Fg Tw
Xanthoria parietina Fg Tw

SS928 267
Further north in the on Pixton Hill, few trees, an old fence strainer post added some diversity

SS928 267
Species of Interest
Calicium glaucellum WT
Hypocenomyce scalaris WT
Lecanora expallens WT
Melanelixia glabratula WT
Ochrolechia androgyna WT

A1.6 Western Wooded Section of Park (A2), SS9226 Higher Ground to South

Back in wooded section, traversed across the higher ground to the south, Beech groves, in which Lobaria pulmonaria was recorded in the 1980s, now shaded by planted conifers and very shaded groves of old Sycamore. Dense Hawthorn scrub infilling an area grazed until relatively recently, to the north.

SS927 265
Old Beech in 1980s Lobaria pulmonaria recorded, now too shaded by conifers?

SS927 265
Species of Interest
Cladonia cyathomorpha Fg SS9272 2654
Skyttea nitschkei Fg, Z1410
Thelotrema lepadinum Ac
Other Species
Bacidia delicata Ap
Caloplaca obscurella Fg
Cladonia coniocraea Fg
Thelotrema lepadinum Fg

SS927 266
North through wood higher up, grove of very base rich Sycamore, potentially very rich, but strongly shaded by adjacent conifers.

SS927 266
Species of Interest
Porina borreri Ap
Thelotrema lepadinum Qc
Other Species
Acrocordia gemmata Ap

Bacidia viridifarinosa	Ap
Gyalecta truncigena	Ap
Lecania cyrtellina	Ap
Opegrapha vermicellifera	Ap
Pyrenula chlorospila	Ap

SS926 267
Hawthorn scrub to north, grazed until quite ecently, and still fenced, much young Turkey Oak.

SS926 267
Species of Interest

Anisomeridium ranunculosporum	Ct
Thelotrema lepadinum	Ct

Other Species

Cladonia polydactyla var. *polydactyla*	Ct
Graphis scripta	Ct
Micarea prasina s. lat.	Ct
Normandina pulchella	Ct
Trapeliopsis flexuosa	Ct

SS927 268
Rather overgrown park, some big exotics in Hawthorn - Bracken and Turkey Oak, extends into SS926 268.

PX015 (SS92746 26845, 173m): Hawthorn by track, interest on twigs

Usnea articulata	Ct Tw	O

SS927 268
Species of Interest

Usnea articulata	Ct Tw

A1.7 Western Wooded Section of Park (A2), SS9226 Side Valley with Old Oak

The southern side valley consists of longer ungrazed parkland and includes a line of old Oaks stretching down the southern bank of the stream. This is likely to be an old boundary feature predating the park. The old trees are very lichen rich and an important feature of the park.

SS926 268
Includes rather overgrown park but the main lichen interest is to north in small side valleys older infilled area with rich old trees

PX016 (SS92622 26841, 154m): grove of one ancient Ash and two Oak and fallen dead Oak by stream

Chaenothecopsis savonica	LQ	R	Coll.
Cresponea premnea	Fx, Q, LQ		F
Microcalicium ahlneri	LQ	R	

Also

Arthonia pruinata	Fx, Q
Bacidia biatorina	Q
Cladonia caespiticia	LQ
Milospium graphideorum	Q, Z1315
Opegrapha xerica	Fx, Q
Pertusaria amara f. *pulvinata*	Fx, Q
Schismatomma decolorans	Q

Schismatomma cretaceum Q

PX018 (SS92612 26824, 152m): smaller post mature Oak near stream

Cresponea premnea	Q	A
Also		
Thelotrema lepadinum	Q	

PX019 (SS92610 26808, 152m): old Sallow in flush in side valley

Heterodermia obscurata	Sx Tw	R
Phyllopsora rosei	Sx	O
Also		
Thelotrema lepadinum	Sx	

SS926 268

Species of Interest

Bacidia biatorina	Fx, Q
Biatora britannica	Pl
Chaenothecopsis savonica	LQ
Cladonia caespiticia	LQ
Cresponea premnea	Fx, Q
Heterodermia obscurata	Sx
Microcalicium ahlneri	LQ
Milospium graphideorum	Q, Z1315
Mycoblastus caesius	LQ
Opegrapha xerica	Fx, Q
Pachyphiale carneola	Fx
Pertusaria amara f. *pulvinata*	Fx, Q
Phyllopsora rosei	Sx
Schismatomma cretaceum	Q
Thelotrema lepadinum	Ix, Q, Sx
Other Species	
Arthonia pruinata	Fx, Q
Bacidia rubella	Fx
Bacidia viridifarinosa	Fx, Q, LQ
Cliostomum griffithii	Q
Dimerella pineti	Ix
Lecanactis abietina	Cs
Melanelixia glabratula	Fx
Micarea prasina s. lat.	Cs
Opegrapha vermicellifera	Fx
Schismatomma decolorans	Q

SS925 268

Ungrazed parkland, much open dense Bracken in large glade, one of the more interesting Turkey Oaks on the edge of the glade.

PX017 (SS92591 26872, 158m): post mature Turkey Oak on edge of Bracken glade

Cresponea premnea	Qc	R
Phyllopsora rosei	Qc	O
Also		
Arthonia vinosa	Qc	
Bacidia biatorina	Qc	
Thelotrema lepadinum	Qc	

SS925 268

Species of Interest

Arthonia vinosa	Qc
Cresponea premnea	Qc
Phyllopsora rosei	Qc
Thelotrema lepadinum	Qc

Other Species

Arthonia spadicea	Qc
Chrysothrix candelaris	Qc
Pyrrhospora quernea	Qc

SS926 269

Ungrazed park. The 1980s Tree a was in this area somewhere. Some big Ash tree but now shaded and no *Lobaria pulmonaria*.

SS926 269

Species of Interest

Bacidia biatorina	Q
Catinaria atropurpurea	Q
Megalaria pulverea	Qr
Thelotrema lepadinum	Qr, Q

Other Species

Acrocordia gemmata	Fx
Anisomeridium biforme	Q
Calicium viride	Q
Ochrolechia subviridis	Fx
Parmotrema perlatum	Fx

SS925 267

Infilled parkland in side valley

PX020 (SS92588 26789, 154m) ancient Plane Tree just below track

Mycobilimbia pilularis	Pl	O

Also

Thelotrema lepadinum	Pl

PX024 (SS92542 26791, 148m): post mature Oak in open woodland in stream valley

Cresponea premnea	Q	F

Also

Lecanactis abietina	Q
Milospium graphideorum	Q, Z0592
Thelotrema lepadinum	Q

PX026 (SS92531 26797, 143m): post mature Oak in open woodland in stream valley

Cresponea premnea	Q	O

SS925 267

Species of Interest

Cresponea premnea	Q
Milospium graphideorum	Q, Z0592
Mycobilimbia pilularis	Pl
Thelotrema lepadinum	Pl, Q, Cs, Co, Qc

Other Species

Lecanactis abietina	Q

SS925 268

Infilled parkland along stream

PX021 (SS92581 26808, 150m): ancient Oak pollard in stream valley

Cresponea premnea	Q	F
Mycobilimbia pilularis	Q	O
Thelopsis rubella	Q	R
Also		
Arthonia vinosa	Q	
Lecanactis subabietina	Q	
Schismatomma cretaceum	Q	
Thelotrema lepadinum	Q	

PX022 (SS92566 26815, 148m): two post mature pasture woodland by stream

Cresponea premnea	Q	F
Also		
Arthonia pruinata	Q	

PX023 (SS92558 26820, 147m): big leaning post mature Oak in steam valley in open woodland

Cresponea premnea	Q	F
Mycobilimbia epixanthoides	Q	R
Mycobilimbia pilularis	Q	F
Also		
Lecanactis abietina	Q	
Milospium graphideorum	Q, Z0592	

PX025 (SS92533 26812, 142m): smaller post mature Sessile Oak by stream

Phyllopsora rosei	Q	R
Cresponea premnea	Q	O
Also		
Dimerella lutea	Q	
Pachyphiale carneola	Q	
Schismatomma cretaceum	Q	

SS925 268

Species of Interest

Anisomeridium ranunculosporum	Qc	
Arthonia vinosa	Q	
Cliostomum flavidulum	Qc	
Cresponea premnea	Q	
Dimerella lutea	Q	
Milospium graphideorum	Q, Z0592	
Mycobilimbia epixanthoides	Q	
Mycobilimbia pilularis	Q	
Pachyphiale carneola	Q	
Parmotrema crinitum	Qc	SS9257 2680
Phyllopsora rosei	Q	
Schismatomma cretaceum	Q	
Thelopsis rubella	Q	
Thelotrema lepadinum	Qc, Q	

Other Species

Arthonia pruinata	Q	
Bacidia rubella	Q	
Gyalecta truncigena	Q	
Lecanactis abietina	Q	

Ochrolechia androgyna Qc
Ochrolechia subviridis Q
Pyrenula macrospora Pl
Taeniolella sp A Qc, Z1075
Varicellaria hemisphaerica Qc

Further down stream valley with old Oaks continuing

SS924 268

PX027 (SS92497 26806, 136m): ancient Sessile Oak by stream above track
Cresponea premnea Q F
Also
Schismatomma cretaceum Q

SS924 267
Oaks along stream lower down slope

PX028 (SS92479 26804, 135m): big post mature Oak by stream below track
Cresponea premnea Q O
Porina coralloidea Q O
Thelopsis rubella Q
Also
Thelotrema lepadinum Q

PX029 (SS92448 26797, 129m): big post mature Oak by stream, rather shade by Holly
Cresponea premnea Q F
Lecanographa lyncea Q F
Also
Milospium graphideorum Q, Z0600

PX030 (SS92435 26765, 128m): ancient Oak by stream
Cresponea premnea Q O
Lecanographa lyncea Q F
Also
Milospium graphideorum Q, Z0600

PX031 (SS92415 26767, 127m): ancient Oak by stream at base of slope
Cresponea premnea Q O
Lecanographa lyncea Q O
Also
Micarea doliiformis Q
Milospium graphideorum Q, Z0600
Thelotrema lepadinum Q

SS924 267 Lower slopes in park
Species of Interest
Cresponea premnea Q
Eopyrenula grandicula Co Coll.
Lecanographa lyncea Q
Micarea doliiformis Q
Milospium graphideorum Q, Z0600
Porina coralloidea Q

Thelopsis rubella	Q
Thelotrema lepadinum	Q, Pl, Ti
Other Species	
Arthonia elegans	Ti, Co
Arthopyrenia salicis	Co
Lecanora chlarotera	Ti
Pertusaria hymenea	Ti
Pertusaria leioplaca	Ti

A1.8 Western Wooded Section of Park (A2), SS9226 Below Park Proper

An area of woodland developed in an old field below the original park. Includes a well structured Sallow swamp with some interest, but not as rich as the wet woodland to the north

SS924 267

Swampy Sallow scrub below park, nice structure but not rich.

PX032 (SS92422 26730, 127m): collapsed and regrowing Sallow

Phlyctis agelaea	Sx
Also	
Leptogium lichenoides	Sx
Megalaria pulverea	Sx

SS924 267 Swampy Sallow scrub

Species of Interest	
Bacidia biatorina	Q
Lecanora jamesii	Sx
Leptogium lichenoides	Sx
Megalaria pulverea	Sx
Phlyctis argena	Sx
Thelotrema lepadinum	Co, Sx
Other Species	
Peltigera membranacea	Sx
Peltigera praetextata	Sx

SS924 266

Swampy woodland below park continued

SS924 266

Species of Interest	
Megalaria pulverea	Al
Thelotrema lepadinum	Al

SS923 266

Patch old older Oak by swampy woodland below park

SS923 266

Species of Interest	
Arthonia vinosa	Q
Dimerella lutea	Q

A1.9 Western Wooded Section of Park (A2), SS9226, Lower Slopes to South

Back in Park

SS924 266
Back in park, a young Hornbeam tree

SS924 266
Species of Interest

Loxospora elatina	Cb
Thelotrema lepadinum	Cb

Other Species

Arthonia elegans	Cb
Graphis scripta	Cb
Lepraria lobificans	Cb
Pertusaria leioplaca	Cb
Pertusaria hymenea	Cb

SS925 265
Traversing south through lower slopes in park below main track, shady woodland with no old trees.

SS925 265
Species of Interest

Thelotrema lepadinum	Q

A2 Pixton 19/9/2017

A2.1 Weather
Dry, sunny, the bark largely dry. Survey conditions good.

A2.2 Western Wooded Section of Park (A2), SS9226 South West
Covered areas of infilled parkland, with some recent clearance for Rhododendron clearance, north of the areas looked at the day before. Similar habitat; once more open pasture woodland with older Oak, now much infilled with younger trees and conifer planting.

SS925 265
Above road, formerly shaded post mature Oaks opened up

PX033 (SS92557 26556, 152m): post mature Pedunculate Oak above road, formerly shaded

Cresponea premnea	Q	O

Also

Schismatomma niveum	Q
Thelotrema lepadinum	Q

PX034 (SS92577 26555, 159m): post mature Sessile Oak, recently opened up

Cresponea premnea	Q	R

Also

Thelotrema lepadinum	Q

SS925 265
Species of Interest

Cresponea premnea	Q	
Micarea doliiformis	Cf	(Douglas Fir)
Schismatomma niveum	Q	
Thelotrema lepadinum	Q	

Other Species

Lepraria lobificans Q

SS926 265
Higher up hill, scattered post mature Oak but very shaded

PX035 (SS92641 26556, 174m): post mature Pedunculate Oak on quarry spoil tip
Cresponea premnea Q O

PX036 (SS92610 26531, 175m): shaded post mature Sessile Oak on slope south of quarry
Cresponea premnea Q F
Also
Pachyphiale carneola Q
Thelotrema lepadinum Q

PX037 (SS92631 26507, 180m): post mature Sessile Oak by small glade
Cresponea premnea Q O
Also
Schismatomma niveum Q
Thelotrema lepadinum Q

PX038 (SS92633 26527, 185m): post mature Sessile Oak higher on slope, a bit less shaded
Cresponea premnea Q F
Also
Micarea doliiformis Q
Thelotrema lepadinum Q

PX039 (SS92657 26534, 188m): post mature Sessile Oak on top lip of quarry, shaded by dense Beech regeneration
Cresponea premnea Q O
Also
Skyttea nitschkei Q, Z1410
Thelotrema lepadinum Q

SS926 265
Species of Interest
Anisomeridium ranunculosporum Bt
Cresponea premnea Q
Mycoporum antecellens Bt
Pachyphiale carneola Q
Skyttea nitschkei Q, *Thelotrema lepadinum*
Thelotrema lepadinum Q, Bt, Co, Qc, Ap
Usnea ceratina Q Tw Windblown
Other Species
Amandinea punctata Ap Coll.
Cladonia coniocraea Bt
Gyalecta truncigena Ap Coll.
Megalaria pulverea Bt
Micarea doliiformis Q
Schismatomma niveum Q

Through conifer belt to north

SS925 266

More recently infilled park, old Oak by track but mostly young wood and scrub

PX040 (SS92559 26674, 161m): big forked post mature Sessile Oak above track

Cresponea premnea	Q	R
Also		
Pachyphiale carneola	Q	

SS925 266

Species of Interest	
Cresponea premnea	Q
Pachyphiale carneola	Q
Thelotrema lepadinum	Ct, Qc
Other Species	
Acrocordia gemmata	Q
Opegrapha vermicellifera	Q

SS925 267

More recently infilled park, mostly young wood and scrub

SS925 267

Thelotrema lepadinum	Cs
Other Species	
Arthonia elegans	Cs
Graphis elegans	Cs

SS924 267

Below track, shaded wood with scattered veteran exotics, not lichen rich

SS924 267

Species of Interest	
Bacidia biatorina	Qc
Other Species	
Enterographa crassa	Ti

A2.3 Western Wooded Section of Park (A2), SS9226 Northern Side Valley

SS924 268

North of rich stream valley, older trees mainly mature Oak. Older exotics, Sweet Chestnut, Turkey Oak and Plane Tree, in northern side valley. Not very lichen rich.

SS924 268

Species of Interest	
Bacidia biatorina	Q, Fx
Biatora britannica	Fx
Catinaria atropurpurea	Fx
Cladonia parasitica	LCs
Thelotrema lepadinum	Cs, Ae, Qc, Ct
Other Species	
Arthonia cinnabarina	Cs
Dendrothele acerina	Ac
Enterographa crassa	Ae, Pl
Graphis scripta	Ap, Cs
Opegrapha vermicellifera	Ap, Pl
Pertusaria hymenea	Ae
Stigmidium microspilum	Ap, Z0533

Trapeliopsis pseudogranulosa	LCs

SS925 268
Ridge between the side valleys, with old Sweet Chestnut and Turkey Oak, not lichen rich.

SS925 268
Species of Interest

Bacidia biatorina	Qc
Loxospora elatina	Cs
Thelotrema lepadinum	Qc

SS925 269
Northern side valley, mainly old exotic trees in infilled park, but with a very rich Ash and other tree of interest.

PX041 (SS92537 26943, 161m): ancient Ash on valley side in open pasture woodland on the edge of a Bracken glade.

Mycobilimbia epixanthoides	Fx	R	
Mycobilimbia pilularis	Fx	R	
Pannaria conoplea	Fx	F	A few small thalli low down, F on limbs high up
Phyllopsora rosei	Fx	O	Higher up
Also			
Leptogium lichenoides	Fx		
Leptogium teretiusculum	Fx		
Pertusaria multipuncta	Fx		
Schismatomma cretaceum	Fx		
Thelotrema lepadinum	Fx		
Photos 2017-09-19-01 & 02			
Adjacent young Ash			
Usnea articulata	Fx	O	
Also			
Usnea ceratina	Fx		

Photos 2017-09-19-01 & 02. **PX041**: an ancient Ash on valley side in open pasture woodland on the edge of a Bracken glade. This support the only population of ***Pannaria conoplea*** Nb (IR) found in 2017, sparse lower down the trunk, but with larger patches of thalli higher up (white arrows in lower picture). This may be the same tree as recorded in the 1980s, but no location details are given in Wolsey & O'Dare (1988).

SS925 269
Species of Interest

Anisomeridium ranunculosporum	Ct
Arthonia vinosa	Qc

Catinaria atropurpurea	Q
Leptogium lichenoides	Fx, Pl
Leptogium teretiusculum	Fx
Mycobilimbia epixanthoides	Fx
Mycobilimbia pilularis	Fx
Pannaria conoplea	Fx
Pertusaria multipuncta	Fx, Ct
Schismatomma cretaceum	Fx
Thelotrema lepadinum	Ap, Qc, Fx, Cs, Pl, Ct
Usnea articulata	Fx Tw
Usnea ceratina	Fx

Other Species

Acrocordia gemmata	Fx
Anisomeridium biforme	Q
Bacidia delicata	Q
Bacidia viridifarinosa	Fx
Laeviomyces pertusariicola	Fx, Z1079
Lepraria lobificans	Cs
Normandina pulchella	Cs
Opegrapha vermicellifera	Fx, Pl
Peltigera membranacea	Fx
Peltigera praetextata	Fx, Cs
Pertusaria leioplaca	Fx
Pyrenula chlorospila	Fx
Pyrenula macrospora	Fx

SS926 269

Head of northern valley, mainly exotic species and not very rich.

SS926 269

Species of Interest

Bacidia biatorina	Fx
Cladonia parasitica	LCs
Mycoblastus caesius	LCs
Thelotrema lepadinum	He

SS924 269

Northern side valley, valley bottom, some interest in humid valley.

SS924 269

Species of Interest

Bacidia biatorina	Sx
Leptogium lichenoides	Sx, Fx, Pp
Megalaria pulverea	Fx, Pp
Peltigera horizontalis	LFx
Thelotrema lepadinum	Fx, Pp, Qc

SS923 269

North of northern side valley. The 1987 Tree i not found but candidate Plane Tree seen but shaded, formerly Ivy grown and now of no interest.

SS923 268

Species of Interest

Bacidia biatorina	Fx, Q
Biatora britannica	Fx

Leptogium lichenoides	Fx
Pachyphiale carneola	Fx, Q
Peltigera horizontalis	Fx, Ti
Thelotrema lepadinum	Ae, Q
Other Species	
Enterographa crassa	Ae
Opegrapha rufescens	Fx

A2.4 Western Wooded Section of Park (A2), SS9227 Northern Side Valley

SS925 270
North side of northern side of side valley, two huge old Oaks and some scrub of interest.

PX042 (SS92541 27010, 146m): old Hawthorn by sheltered glade, with interest on twigs

Usnea articulata	Ct Tw	O

PX043 (SS92565 27027, 147m): old Hawthorn by sheltered glade, with interest on twigs

Heterodermia obscurata	Ct Tw	R

PX044 (SS92511 27018, 147m): two huge ancient Pedunculate Oak on north side of valley

Cresponea premnea	Q	F	2 trees
Chaenotheca trichialis	Q	O	
Lecanographa lyncea	Q	F	2 trees
Usnea articulata	Q Tw		Windblown
Also			
Milospium graphideorum	Q, Z0600		
Schismatomma cretaceum	Q		

SS925 270

Species of Interest	
Chaenotheca trichialis	Q
Cresponea premnea	Q
Heterodermia obscurata	Ct Tw
Lecanographa lyncea	Q
Megalaria pulverea	Sx
Milospium graphideorum	Q, Z0600
Pertusaria multipuncta	Sx, Ae Tw
Schismatomma cretaceum	Q
Thelotrema lepadinum	Sx, Ct
Usnea articulata	Ct Tw, Q Tw
Other Species	
Chrysothrix candelaris	Q
Cladonia coniocraea	Sx
Cladonia polydactyla var. *polydactyla*	Ct
Flavoparmelia caperata	Sx, Ct, Ae
Graphis scripta	Ct Tw
Homostegia piggotii	Ct Tw, Z1015
Hypotrachyna afrorevoluta	Ct Tw
Lecanactis abietina	Q, Ct
Lepraria lobificans	Ct
Micarea prasina s. lat.	Ct

Normandina pulchella	Sx
Parmelia saxatilis	Ct Tw
Parmotrema perlatum	Ct Tw
Peltigera membranacea	Ae
Peltigera praetextata	Ae
Pertusaria amara f. amara	Sx
Pertusaria hymenea	Q
Platismatia glauca	Ct Tw
Schismatomma decolorans	Q

SS924 270
Northern side of northern valley, limited interest

SS924 270
Species of Interest

Pachyphiale carneola	Fg
Thelotrema lepadinum	Fg

Other Species

Enterographa crassa	Fg
Evernia prunastri	Ct Tw
Pertusaria hymenea	Fg

A2.5 Western Wooded Section of Park (A2), SS9227, North West

After a rather dull shaded area north of the northern side valley there is a more open area of richer woodland, with Lobarion base rich bark communities developed on Sallow, Ash and Hazel with a large *Sticta ciliata* population. A very interesting old base rich Oak (the 1980s Tree j) had sadly just died, but still retained its interest, including *Fuscopannaria mediterranea*. Other Oaks to the north have ancient dry bark communities around the pond with Sallows with *Sticta ciliata*. The area is maintained by high deer browsing and the interest extends off the park proper into an adjacent infilled field.

SS923 270
Lower slopes

PX045 (SS92325 26990, 128m): mature rather shaded Ash in young Hawthorn

Sticta ciliata	Fx	R

Also

Leptogium lichenoides	Fx

PX046 (SS92317 27084, 132m): young Ash tree by glade

Sticta ciliata	Fx	R

Also

Pachyphiale carneola	Fx

PX047 (SS92309 27075, 131m): Hazel bush in glade by dead Oak

Sticta ciliata	Co	O
Sticta limbata	Co	O

Also

Leptogium lichenoides	Co
Peltigera horizontalis	Co
Phaeographis dendritica	Co

Adjacent fallen Oak branch

Xerotrema quercicola	LQ	O

Dead Oak (is 1980s Tree j)

Cresponea premnea	Q	O
Fuscopannaria mediterranea	Q	O
Thelopsis rubella	Q	R

Also

Leptogium lichenoides	Q

Photo 2017-09-19-03
(Neil Sanderson)

Photo 2017-09-19-03. **PX047**: a Hazel bush in glade by a recently dead Oak. The Hazel bush supports ***Sticta ciliata*** Nb (IR) and ***Sticta limbata*** Nb (IR), the latter in the only location found in 2017. The dead Oak is the 1980s Tree j, and still supports ***Fuscopannaria mediterranea*** Nb (IR), at its only known location in the park and ***Thelopsis rubella***. Fallen dead wood has been colonised by ***Xerotrema quercicola***, new to the park in 2017.

PX048 (SS92306 27046, 135m): old tall Sallow by swampy glade and young suppressed Ash saplings.

Sticta ciliata	Sx, Fx	R

Also

Leptogium lichenoides	Sx

SS923 270
Species of Interest

Bacidia biatorina	Fx	
Cladonia caespiticia	Al	
Cliostomum flavidulum	Qc, Q	SS9231 2705 (Qc), Q PX046
Cresponea premnea	Q	
Fuscopannaria mediterranea	Q	
Leptogium lichenoides	Fx, Co, Q, Sx	
Loxospora elatina	Qc	
Megalaria pulverea	Al	
Pachyphiale carneola	Fx	
Peltigera horizontalis	Fx, Co	
Pertusaria multipuncta	Fx	
Phaeographis dendritica	Co	
Sticta ciliata	Fx, Co, Sx	

Sticta limbata	Co
Thelopsis rubella	Q
Thelotrema lepadinum	Fx, Qc, Q, Co, Al
Xerotrema quercicola	LQ
Other Species	
Arthonia cinnabarina	Co
Arthonia spadicea	Q
Bacidia viridifarinosa	Q
Evernia prunastri	Qc Tw
Graphis scripta	Co
Lecanora chlarotera	Fx
Normandina pulchella	Co
Opegrapha rufescens	Fx
Opegrapha vulgata	Co
Peltigera praetextata	Fx, Ti, Co
Pertusaria pertusa	Fx
Pertusaria pertusa	Fx
Pyrenula chlorospila	Fx
Ramalina farinacea	Qc Tw
Varicellaria hemisphaerica	Q

SS922 270
The strip of infilled field below the park proper, this has some rich Sallow

PX049 (SS92286 27049, 134m): leaning Sallow and several more to north, in glade in strip below park proper, also interest on young Ash

Phlyctis agelaea	Sx	R
Sticta ciliata	Sx, Fx	F

Also

Japewiella tavaresiana	Sx
Lecanora jamesii	Sx
Leptogium lichenoides	Sx

Photo 2017-09-19-04
(Neil Sanderson)

Photo 2017-09-19-04. **PX049**: a leaning Sallow and several more to north in an infilled former wet field below the old park proper. Frequent ***Sticta ciliata*** Nb (IR) and rare ***Phlyctis agelaea*** NT (NS) were recorded on the Sallow. The latter was new to the park in 2017 and is a typical species of old undisturbed wet Sallow stands.

PX050 (SS92267 27045, 132m): collapsed and regenerating Sallow, in strip of infilled field below park proper

Sticta ciliata	Sx	R	Colonising
Also			
Megalaria pulverea	Sx		

PX054 (SS92262 27091, 137m): post mature Sessile Oak on park boundary

Cresponea premnea	Q	O
Also		
Thelotrema lepadinum	Q	

SS922 270

Species of Interest

Catinaria atropurpurea	Fx
Cresponea premnea	Q
Japewiella tavaresiana	Sx
Lecanora jamesii	Sx
Leptogium lichenoides	Sx
Megalaria pulverea	Sx
Peltigera horizontalis	Fx
Phlyctis agelaea	Sx
Stenocybe septata	Ix
Sticta ciliata	Sx, Fx
Thelotrema lepadinum	Q, Ix

Other Species

Arthonia cinnabarina	Ix	
Gyalecta truncigena	Fx	
Lecidella elaeochroma f. *elaeochroma*		Sx
Schismatomma decolorans	Q	

SS922 271 some interesting trees along pond dam but Rhododendron is problem

PX051 (SS92292 27106, 136m): big post mature Sessile Oak on bank

Cresponea premnea	Q	O
Lecanographa lyncea	Q	F
Also		
Milospium graphideorum	Q, Z0600	

PX052 (SS92278 27134, 139m): standing dead Scots Pine by pond, interest on lignum

Chaenotheca brunneola	LPs	O	
Chaenothecopsis savonica	LPs	R	Coll.

PX053 (SS92273 27101, 136m): ancient pollard Sessile Oak on park boundary

Cresponea premnea	Q	F
Also		
Schismatomma cretaceum	Q	
Thelotrema lepadinum	Q	

PX055 (SS92263 27134, 138m): post mature Sessile Oak on pond dam

Cresponea premnea	Q	F	
Lecanographa lyncea	Q	R	Colonist?
Also			
Bacidia biatorina	Q		
Milospium graphideorum	Q, Z0600		
Pachyphiale carneola	Q		
Thelotrema lepadinum	Q		

PX056 (SS92250 27179, 135m): ancient Oak on pond dam, heavily shaded by Rhododendron

Cresponea premnea	Q	F

East side of pond

PX063 (SS92264 27185, 139m): post mature Pedunculate Oak above pond, Rhododendron threat

Cresponea premnea	Q	F
Porina coralloidea	Q	R
Also		
Pachyphiale carneola	Q	

PX064 (SS92296 27172, 140m): post mature Turkey Oak above pond

Cresponea premnea	Q	R
Also		
Thelotrema lepadinum	Q	

SS922 271

Species of Interest

Bacidia biatorina	Q	
Chaenotheca brunneola	LPs	
Chaenothecopsis savonica	LPs	
Cliostomum flavidulum	Q	SS9226 2712
Cresponea premnea	Q, Qc	
Lecanographa lyncea	Q	
Loxospora elatina	Q	
Megalaria pulverea	Qc	
Milospium graphideorum	Q, Z0600	
Pachyphiale carneola	Q	
Porina coralloidea	Q	
Schismatomma cretaceum	Q	
Schismatomma niveum	Q	
Schismatomma quercicola	Q	SS9224 2715
Skyttea nitschkei	Q, Z1410	
Thelotrema lepadinum	Qc, Q, Ix, Co, Bt	

Other Species

Chrysothrix candelaris	Q	
Lecanora chlarotera	Q	
Tremella pertusariae	Q, Z1076	SS92245 2715
Usnea cornuta	Q	

SS922 272

North end of pond, old oaks on the western pond margin and Sallow with Sticta ciliata on the northern and eastern margins.

PX057 (SS92223 27206, 135m): post mature Oak on dam bank part Rhododendron shaded

Cresponea premnea	Q	R

PX058 (SS92216 27214, 136m): post mature Oak pollard by pond

Chaenotheca brunneola	Q	R
Cresponea premnea	Q	O
Lecanographa lyncea	Q	O
Also		
Schismatomma cretaceum	Q	
Milospium graphideorum	Q, Z0600	

PX059 (SS92222 27215, 137m): post mature Pedunculate Oak

Cresponea premnea	Q	F
Lecanographa lyncea	Q	O
Also		
Micarea viridileprosa	Q	
Milospium graphideorum	Q, Z0600	

PX060 (SS92221 27227, 137m): collapsed and regrowing Sallow at end of pond

Sticta ciliata	Sx	A

PX061 (SS92236 27248, 140m): leaning Sallow on pond bank east side

Sticta ciliata	Sx	F

PX062 (SS92254 27221, 141m): collapsed and regrowing Sallow on east side of pond

Sticta ciliata	Sx	F

SS922 272

Species of Interest

Bacidia biatorina	Q
Chaenotheca brunneola	Q
Cresponea premnea	Q
Lecanographa lyncea	Q
Micarea viridileprosa	Q
Milospium graphideorum	Q, Z0600
Pachyphiale carneola	Q
Schismatomma cretaceum	Q
Sticta ciliata	Sx

Other Species

Lecanora expallens	Q
Peltigera hymenina	Sx
Peltigera praetextata	Sx

SS923 271

Top edge of the wood, Plane Tree with *Lobaria pulmonaria* and some regrowing Wych Elm

PX065 (SS92322 27181, 144m): big post mature Plane Tree by track

Lobaria pulmonaria	Pl	F	Few thalli at c 4m, shaded by Lime, scattered health thalli larger higher up tree.

SS923 271

Species of Interest

Bacidia biatorina	U
Biatora britannica	U
Lobaria pulmonaria	Pl
Pachyphiale carneola	U
Thelotrema lepadinum	U

Other Species

Enterographa crassa	Pl
Graphis scripta	U
Peltigera praetextata	U
Pertusaria hymenea	U
Phlyctis argena	U

SS921 272
North west of pond

PX066 (SS92169 27256, 140m): post mature Oak on park boundary
Cresponea premnea Q O

PX067 (SS92171 27249, 140m): post mature pollard Oak on park boundary
Cresponea premnea Q O

SS921 272
Species of Interest

Cresponea premnea	Q
Dimerella lutea	Q

Other Species

Varicellaria hemisphaerica	*Q*

Back south

SS9226
Made a transect down the lower slopes to the south west. Mostly dense woodland with limited old trees. One remarkable old Ash pollard was found but little else. In the far south west the southern most strip in Dru ownership is densely overgrown with Rhododendron, there are some older trees in hear but they are currently inaccessible.

SS924 265

PX068 (SS92493 26529, 132m): an extraordinary high cut Ash pollard above old track
Wadeana dendrographa Fx O, F frequent on the south west side
Photo 2017-09-19-05
(Neil Sanderson)

Photo 2017-09-19-05. **PX068**: a high cut Ash pollard in rather shaded woodland, with an important record of the old Ash specialist ***Wadeana dendrographa*** NT (NS/IR/S41), new to the park in 2017. The lichen was in a streak on low trunk to the right.

SS924 264
A small cliff by an old track supported a few lichens.

SS924 264

Bacidia viridifarinosa	SS
Porina chlorotica f. *chlorotica*	SS

A3 Pixton 20/9/2017

A3.1 Weather
Dry, overcast, with the bark largely dry, until later in the afternoon, when rain arrived. Survey conditions good until the rain arrived.

A3.2 Sir Edward Goschen Ownership (A3), SS9227, Northern Field
Old Elms by road, several large Turkey Oak inside with younger Beech, Ash, Hazel and Holly, limited lichen diversity.

SS926 275

Species of Interest	
Thelotrema lepadinum	Co
Other Species	
*Anisomeridium polypo*ri	U
Arthonia spadicea	U
Graphis scripta	U, Fg
Lecanora chlarotera	Fx
Lecidella elaeochroma f. *elaeochroma*	Fx
Lepraria lobificans	U
Normandina pulchella	U, Sx

Opegrapha atra	Fx
Opegrapha vulgata	Co, Fx
Parmotrema perlatum	Sx
Pertusaria albescens var. *corallina*	Sx
Pertusaria hymenea	Fg, Fx, U
Phlyctis argena	Fx
Pyrrhospora quernea	U

SS926 276
Species of Interest

Thelotrema lepadinum	Qc

Other Species

Cladonia coniocraea	Qc
Cliostomum griffithii	Qc
Lecanactis abietina	Qc
Pyrrhospora quernea	Qc
Varicellaria hemisphaerica	Qc

A3.3 Bell Ownership (A3), SS9227, Northern Field

Horse grazed in the centre, separated from the edge by electric fencing, with mown treed parkland on northern edge, with old Lime, Pedunculate Oak, Sweet Chestnut along with young Ash, Hazel, Turkey Oak and Beech. Dry bark interest on old Oaks along the parkland boundary.

SS926 276
Other Species

Enterographa crassa	Ti	
Lecanora chlarotera	Fx	
Lecidella elaeochroma f. *elaeochroma*		Fx
Opegrapha herbarum	Qc	Coll.
Opegrapha vulgata	Fx, Ti	
Opegrapha vulgata	Qc	Coll.
Pertusaria hymenea	Fx	
Phlyctis argena	Fx	
Pyrrhospora quernea	Fx	

SS925 276

PX069 (SS92551 27631, 170m): ancient Pedunculate Oak on boundary. In mown parkland, logs pilled at the base of tree

Cresponea premnea	Q	O

Also

Schismatomma cretaceum	Q

PX070 (SS92516 27603, 167m): ancient Pedunculate Oak on boundary. In mown parkland, logs pilled at the base of tree

Chaenotheca trichialis	LQ, Q	O	
Chaenothecopsis nigra	LQ	R	Coll. spores one septate, septa darker than cell walls
Cresponea premnea	Q	F	
Lecanographa lyncea	Q	R	

Also

Schismatomma cretaceum	Q
Milospium graphideorum	Q, Z0600

Photo 2017-09-20-01
(Neil Sanderson)

Photo 2017-09-20-01. **PX070**: an ancient Pedunculate Oak on the former northern boundary of the park. Such trees probably predate the park. The tree supports a rich dry bark assemblage with ***Chaenotheca trichialis***, ***Chaenothecopsis nigra***, ***Cresponea premnea*** and ***Lecanographa lyncea***. ***Chaenotheca trichialis*** and ***Chaenothecopsis nigra*** were new to the park in 2017**.**

SS925 276
Species of Interest

Chaenotheca trichialis	LQ, Q
Chaenothecopsis nigra	LQ Coll
Cresponea premnea	Q
Lecanographa lyncea	Q
Milospium graphideorum	Q, Z0600
Schismatomma cretaceum	Q

Other Species

Chrysothrix candelaris	Q, Sc
Chrysothrix flavovirens	LCs, Cs
Cladonia polydactyla var. *polydactyla*	Q
Cliostomum griffithii	Q, Cs
Lecanactis abietina	LQ, Q, Cs, LCs
Lecanora expallens	Q
Opegrapha vermicellifera	Ti
Pertusaria hymenea	Q
Schismatomma decolorans	Q

SS924 276

PX071 (SS92483 27603, 167m): dead Oak on boundary in mown park

Cresponea premnea	Q O

SS924 276
Species of Interest

Cresponea premnea	Q	
Other Species		
Enterographa crassa	Q	

SS924 275

PX072 (SS92477 27576, 166m): ancient Pedunculate Oak in boundary in mown park

Cresponea premnea	Q	O
Also		
Opegrapha xerica	Q	
Schismatomma cretaceum	Q	

PX073 (SS92464 27576, 166m): ancient Pedunculate Oak in mown park near spring and pond

Chaenotheca trichialis	Q	O
Cresponea premnea	Q	F
Also		
Schismatomma cretaceum	Q	

PX074 (SS92411 27580, 161m): post mature Pedunculate Oak on boundary bank in mown park

Cresponea premnea	Q	O

PX075 (SS92423 27517, 175m): post mature Turkey Oak in grove in grazed area of park

Cresponea premnea	Q	O
Usnea articulata	Qc Tw	O
Also		
Bacidia rubella	Qc	
Dactylospora parasitica	Qc, Z1076	
Pertusaria hymenea	Qc	

SS924 275

Species of Interest	
Chaenotheca trichialis	Q
Cladonia parasitica	LCs
Cresponea premnea	Q, Qc
Dactylospora parasitica	Qc, Z1076
Megalaria pulverea	Qc
Mycoblastus caesius	LCs, Cs
Mycoporum antecellens	Fg
Opegrapha xerica	Q
Schismatomma cretaceum	Q
Thelotrema lepadinum	Fg
Trapelia corticola	LCs
Usnea articulata	Qc Tw
Usnea wasmuthii	Qc Tw
Other Species	
Abrothallus microspermus	Qc Tw, Z0987
Acrocordia gemmata	Q
Anisomeridium biforme	Qc
Bacidia rubella	Qc
Bacidia viridifarinosa	Q
Chrysothrix candelaris	Qc
Chrysothrix flavovirens	LQ

Cladonia polydactyla var. *polydactyla* LCs
Cladonia pyxidata Qc
Enterographa crassa Fg, Ac
Evernia prunastri Q Tw, Qc Tw
Flavoparmelia caperata Qc Tw
Gyalecta truncigena Q
Gyalecta truncigena Qc
Hypogymnia physodes Q Tw
Hypotrachyna afrorevoluta Qc Tw
Lecanora chlarotera Qc
Lecanora expallens Qc
Marchandiomyces corallinus Qc Tw, Z1471
Normandina pulchella Qc
Opegrapha varia Fg
Opegrapha vulgata Fg
Parmelia sulcata Q Tw
Parmelia sulcata Qc Tw
Parmotrema perlatum Qc Tw
Pertusaria albescens var. *corallina* Qc
Pertusaria hymenea Ac
Pertusaria hymenea Fg
Pyrrhospora quernea Qc
Ramalina farinacea Qc Tw
Ramalina fastigiata Qc Tw
Schismatomma decolorans Qc
Trapeliopsis flexuosa LCs
Usnea subfloridana Qc Tw

SS923 275
West of field

PX076 (SS92379 27575, 157m): ancient Pedunculate Oak on boundary bank of mown park
Cresponea premnea Q O
Also
Schismatomma cretaceum Q

PX077 (SS92354 27566, 155m): ancient Pedunculate Oak on boundary bank of mown park
Chaenotheca trichialis Q R
Cresponea premnea Q F
Lecanographa lyncea Q O
Also
Bacidia biatorina Q
Milospium graphideorum Q, Z0600
Schismatomma cretaceum Q

PX078 (SS92334 27553, 155m): ancient Pedunculate Oak pollard on boundary bank of mown park
Cresponea premnea Q F
Also
Arthonia pruinata Q
Schismatomma cretaceum Q

SS923 275

Species of Interest

Arthonia pruinata	Q
Bacidia biatorina	Fx, Q
Chaenotheca trichialis	Q
Cresponea premnea	Q
Lecanographa lyncea	Q
Micarea doliiformis	Cs
Milospium graphideorum	Q, Z0600
Pachyphiale carneola	Fx
Schismatomma cretaceum	Q

Other Species

Dendrothele acerina	Ac
Lecanactis abietina	Ix
Ochrolechia subviridis	Fx
Opegrapha atra	Q
Opegrapha varia	Ac
Pertusaria amara f. *amara*	Fx
Usnea cornuta	Q

A3.4 Western Wooded Section of Park (A2), SS9227, Far North West

Into Carling ownership, in the northern most section of main woods. Shaded with old Lime, Plane Tree and Turkey Oak, dull. Upper slopes conifers. No lichen interest

In north west corner, a large area of Sallow invaded young conifer plantation.

SS921 274

Species of Interest

Thelotrema lepadinum	Q

SS922 274

Species of Interest

Thelotrema lepadinum	Co, Ct

SS922 273

PX079 (SS92253 27310, 150m): post mature Turkey Oak below track and on edge of plantation, shaded

Cresponea premnea	Qc	O

SS922 273

Species of Interest

Cresponea premnea	Qc
Thelotrema lepadinum	Ti, Ct, Cs

Other Species

Opegrapha ochrocheila	Qc

Further south the surveyed into the edge of the area of interest see the day before. Shaded old Pedunculate Oak with surviving interest and collapsed Sallow with *Sticta ciliata*.

SS922 272

PX080 (SS92281 27251, 150m): big post mature Pedunculate Oak below track, very shaded

Cresponea premnea	Q	F

PX081 (SS92286 27245, 150m): big post mature Pedunculate Oak below track, a bit less shaded than PX080 and richer.

Cresponea premnea	Q	F
Lecanographa lyncea	Q	R

Also

Arthonia vinosa	Q
Milospium graphideorum	Q, Z0600
Thelotrema lepadinum	Q

Photo 2017-09-20-02
(Neil Sanderson)

Photo 2017-09-20-02. **PX081**: a big post mature Pedunculate Oak below track (centre background), it is a bit less shaded than PX080 just to the north and richer. The tree supports a dry bark assemblage with ***Cresponea premnea*** and ***Lecanographa lyncea***. The latter lichen is in poor condition due to the shade.

PX082 (SS92285 27203, 146m): collapsed and regrowing Sallow by glade

Sticta ciliata	Sx	O

SS922 272

Species of Interest

Arthonia vinosa	Q
Cresponea premnea	Q
Lecanographa lyncea	Q
Milospium graphideorum	Q, Z0600
Pachyphiale carneola	Co
Sticta ciliata	Sx
Thelotrema lepadinum	Co, Q, Ct, Sx

SS922 271

PX083 (SS92295 27197, 146m): old Hazel bush by small glade

Sticta ciliata	Co	O

Also

Thelotrema lepadinum	Co

SS922 271

Species of Interest	
Sticta ciliata	Co
Thelotrema lepadinum	Co

A3.5 Bell Ownership (A3), SS9227, Beech Plantation

Back into Bell ownership; the Beech stands on the hill have some old Beech trees but these are of limited lichen interest.

Old Beech and some Turkey Oak set in younger Beech dominated woods. Open areas along drive

SS923 273

Species of Interest		
Dactylospora parasitica	Fg, Z1087	SS9236 2733
Phaeographis dendritica	Fg	
Thelotrema lepadinum	Fg	
Other Species		
Enterographa crassa	Ap	
Enterographa crassa	Fg	
Opegrapha atra	Fg	
Pertusaria pertusa	Fg	

SS924 273

Species of Interest	
Thelotrema lepadinum	Fg, Qc

SS924 274

Species of Interest	
Pachyphiale carneola	Fg
Thelotrema lepadinum	Fg
Other Species	
Melanohalea laciniatula	Fg Tw
Hypotrachyna revoluta s. str.	Fg Tw
Opegrapha sorediifera	Fg

A3.6 Carling Ownership (A3), SS9227, Beech Parkland

Back in north of Carling land in the northern section of the hill top parkland, dominated by Beech plantations, both closed canopy and parkland.

Big Beech, Lime set in younger Beech

SS926 275

Species of Interest	
Pachyphiale carneola	Fg
Thelotrema lepadinum	Fg
Other Species	
Enterographa crassa	Fg
Opegrapha atra	Fg
Opegrapha sorediifera	Fg
Peltigera hymenina	Fg
Punctelia subrudecta s. str.	Fg Tw

Xanthoria parietina Fg Tw R

SS926 274

PX084 (SS92635 27484, 198m): standing dead Sweet Chestnut in Beech stand
Microcalicium ahlneri LCs R

SS926 274
Species of Interest
Microcalicium ahlneri LCs

Into more open mown park with big Beeches

SS925 274
Species of Interest
Thelotrema lepadinum Fg

SS924 274
Species of Interest
Pachyphiale carneola Fg
Thelotrema lepadinum Fg

SS924 273
Species of Interest
Pertusaria multipuncta Fg
Phaeographis dendritica Fg
Thelotrema lepadinum Fg

A3.7 Eastern Open Section of Park (A2), SS9227, North Outside of the Deer Enclosure

Hill top park outside of deer enclosure , some old Pedunculate Oak plus Turkey Oak and Beech, with locally significant lichen interest.

SS927 272

PX085 (SS92713 27293, 205m): ancient Pedunculate Oak with three trunks
Cresponea premnea Q R
Opegrapha corticola Q O
Also
Pachyphiale carneola Q
Punctelia reddenda Q
Schismatomma cretaceum Q
Thelotrema lepadinum Q
Photo 2017-09-20-03
(Neil Sanderson)

Photo 2017-09-20-03. **PX085**: ancient Pedunculate Oak with three trunks in the open park high up on the hill. It supports a rich lichen assemblage, including ***Cresponea premnea*** on dry bark and ***Opegrapha corticola*** on base rich bark. The latter was not recorded elsewhere in 2017 and was new to the park.

PX082 (SS92285 27203, 146m): collapsed and regrowing Sallow by glade

Sticta ciliata	Sx	O

SS927 272 (all record from tree PX085)

Species of Interest		
Cresponea premnea	Q	
Opegrapha corticola	Q	
Pachyphiale carneola	Q	
Punctelia reddenda	Q	
Schismatomma cretaceum	Q	
Thelotrema lepadinum	Q	
Other Species		
Arthonia radiata	Q	
Chrysothrix candelaris	Q, LQ	
Chrysothrix flavovirens	LQ	
Cladonia coniocraea	LQ	
Enterographa crassa	Q	
Evernia prunastri	Q Tw	
Flavoparmelia caperata	Q	
Lecanactis abietina	Q	
Lecanora chlarotera	Q	
Lecidella elaeochroma f. *elaeochroma*		Q Tw
Melanelixia subaurifera	Q Tw	
Melanohalea exasperatula	Q Tw	
Normandina pulchella	Q	
Ochrolechia subviridis	Q	
Parmelia saxatilis	LQ	
Parmelia sulcata	Q Tw	

Pertusaria albescens var. *corallina*	Q	
Pertusaria pertusa	Q	
Platismatia glauca	LQ	
Punctelia subrudecta s. str.	Q Tw	
Pyrrhospora quernea	Q	
Ramalina farinacea	Q Tw	
Ramalina fastigiata	Q Tw	
Schismatomma decolorans	Q	
Usnea cornuta	LQ	
Varicellaria hemisphaerica	Q Tw	

SS927 273

Species of Interest		
Cliostomum flavidulum	Q	SS9278 2731
Mycoporum antecellens	Qc	
Parmotrema crinitum	Q	SS9278 2731
Thelotrema lepadinum	Qc	
Other Species		
Arthonia punctiformis	Qc Tw	
Chaenotheca ferruginea	Q	
Hypogymnia physodes	Qc	
Phlyctis argena	Qc	

SS928 273

Species of Interest		
Mycoporum antecellens	Fg	
Parmotrema crinitum	Fg	SS9282 2730
Thelotrema lepadinum	Fg, Qc	

SS928 272

Species of Interest		
Bacidia biatorina	Q	
Pachyphiale carneola	Q	
Other Species		
Anisomeridium biforme	Q	

SS928 271

Other Species		
Physcia aipolia	WT	

SS929 271

Species of Interest		
Thelotrema lepadinum	Qc, Fg	
Other Species		
Lecanora expallens	Qc	

SS929 270

PX094 (SS92911 27014, 198m): mature Pedunculate Oak in parkland

Usnea articulata	Q Tw	O

SS929 270

Species of Interest		
Usnea articulata	Q Tw	
Other Species		

Physconia perisidiosa	Q Tw	

SS930 270

Melanelixia glabratula	Q	

A3.8 Eastern Open Section of Park (A2), SS9226, Centre Outside of the Deer Enclosure

Similar to park to the north outside of the deer enclosure

SS929 279

PX086 (SS92949 26959, 197m): ancient Ash in dip in top, in grassland

Lobaria pulmonaria	Fx	A	Large thalli up trunk on west side up to major fork
Lobaria scrobiculata	Fx	R	Single thallus

Also

Bacidia biatorina	Fx
Lecanora jamesii	Fx
Leptogium lichenoides	Fx
Porina borreri	Fx

Photos 2017-09-20-04 – 09
(Neil Sanderson)

Photos 2017-09-20-06 & 09: an ancient Ash in a dip on the plateau, with a very large and heathy population of ***Lobaria pulmonaria***. The location of the main patches outlined in red in right hand picture.

Photos 2017-09-20-04 & 05: a close up of the lower colonies of ***Lobaria pulmonaria***.

Photos 2017-09-20-07 & 08: close ups f the lowest ***Lobaria pulmonaria*** colony, with the single ***Lobaria scrobiculata*** thallus. The location of the ***Lobaria scrobiculata*** thallus indicated by a white arrow in the top picture.

SS929 269 (all from PX086)
Species of Interest

Bacidia biatorina	Fx
Lecanora jamesii	Fx
Leptogium lichenoides	Fx
Lobaria pulmonaria	Fx
Lobaria scrobiculata	Fx

Other Species

Acrocordia gemmata	Fx
Lecanora chlarotera	Fx
Ochrolechia subviridis	Fx
Opegrapha rufescens	Fx
Opegrapha varia	Fx
Pertusaria albescens var. *corallina*	Fx
Pertusaria hymenea	Fx
Pyrrhospora quernea	Fx

SS923 269

Parkland: an old Holly on boundary bank of some interest and part of a *Usnea articulata* population on Hawthorn

PX087 (SS93031 26907, 199m): Hawthorn bush in corner of park, sheltered by wood
Usnea articulata Ct Tw F

PX088 (SS93004 26923, 196m): poorly grown Hawthorn bush, with rare interest on adjacent Hazel Bush, in corner of park, sheltered by wood
Usnea articulata Ct Tw F

SS930 269

Species of Interest

Loxospora elatina	LCf
Skyttea nitschkei	Ix, Z1410
Stenocybe septata	Ix
Thelotrema lepadinum	Ix, Co
Usnea articulata	Ct Tw, Co Tw

Other Species

Enterographa crassa	Ix
Graphis scripta	Ix
Lecanactis abietina	Ix
Platismatia glauca	Ct Tw
Porina leptalea	Ix
Punctelia subrudecta s. str.	Co

Wood to south: this has rare old Beech and Ash shaded, no lichen interest.

SS928 268

PX089 (SS92869 26865, 200m): Hawthorn bush in grassland by wood edge
Usnea articulata, Ct Tw R

PX090 (SS92883 26882, 200m): Hawthorn bush in grassland by wood edge
Usnea articulata Ct Tw O

PX091 (SS92906 26884, 204m): Hawthorn bush in grassland by wood edge
Usnea articulata Ct Tw O

PX092 (SS92917 26893, 202m): Hawthorn bush in grassland by wood edge
Usnea articulata Ct Tw R

SS928 269

PX093 (SS92858 26902, 193m): isolated Hawthorn bush in grassland in dip in plateau

Usnea articulata	Ct	F
Also		
Buellia griseovirens	Ct Tw	
Lecanora albella	Ct Tw	
Lecanora jamesii	Ct Tw	
Melanohalea exasperatula	Ct Tw	
Parmelina pastillifera	Ct Tw	

A4 Pixton 21/9/2017

A4.1 Weather

Heavy rain over night faded out in the beginning of the morning, with clearer weather in the afternoon.

A4.2 Western Wooded Section of Park (A2), SS9226 Side Valley with Old Oak

Parts of the site that had already been surveyed were walked with Fleming Ulf-Hansen of NE. During this one tree in an already visited area was recorded. This was in the western wooded park in the southern side valley with frequent old Oak.

PX095 (SS92590 26801, 154m): post mature Turkey Oak in damp glade with good colonisation

Lecanographa lyncea	Qc	O
Also		
Anisomeridium ranunculosporum	Qc	
Bacidia biatorina	Qc	
Milospium graphideorum	Qc, Z0600	
Thelotrema lepadinum	Qc	
Usnea ceratina	Qc	

A4.3 Eastern Park, Inside the Deer Enclosure (A4), SS9226, South

The upper section is open park with old Turkey Oak, Pedunculate Oak and Beech. The dead wood appears to have been removed in the past.

Lower down the slopes is a wooded area. The older trees are mainly Turkey Oak, but there is one big Sessile Oak. Infilled with younger trees but much barking by the deer of Ash and Holly. Dead wood cut up.

SS928 929

Open parkland.

PX096 (SS92866 26941, 193m) Pedunculate Oak in deer grazed parkland

Usnea articulata	Q Tw	F
Also		
Anisomeridium ranunculosporum	Q	
Calicium salicinum	Q	
Cyphelium sessile	Q, Z1064	
Pertusaria coccodes	Q	
Pertusaria multipuncta	Q	

SS268 929

Species of Interest

Anisomeridium ranunculosporum	Q
Bacidia biatorina	Qc
Cliostomum flavidulum	Qc SS9280 2691, SS9287 2698
Cyphelium sessile	Q, Z1064
Dimerella lutea	Qc
Pachyphiale carneola	Qc
Pertusaria multipuncta	Q
Punctelia reddenda	Qc
Thelotrema lepadinum	Qc, Q
Usnea articulata	Q Tw

Other Species

Calicium salicinum	Q

Chaenotheca ferruginea	Qc	
Ochrolechia subviridis	Qc	
Pertusaria amara f. *amara*	Qc	
Pertusaria coccodes	Q	
Pertusaria multipuncta	Q	
Phlyctis argena	Qc	

SS926 269
Wooded area lower down slope

SS926 269
Species of Interest

Bacidia biatorina	Li	
Biatora britannica	Fx	
Cliostomum flavidulum	Q	SS9264 2693
Megalaria pulverea	Qc, Fx, Q	
Strigula taylorii	Li, Fx	SS9266 2691
Thelotrema lepadinum	Qc, Fx, Li, Q	

SS926 268
Wooded area lower down slope, lichen interest on older Oaks.

PX098 (SS92692 26882, 160m): post mature Pedunculate Oak in hollow, much deer trampling about tree

Cresponea premnea	Q	F

Also

Agonimia tristicula	Q
Bacidia biatorina	Q

SS927 268
Wooded area lower down slope, lichen interest on older Oaks.

PX099 (SS92729 26891, 165m): ancient Pedunculate Oak on edge of wood

Cresponea premnea	Q	F
Mycobilimbia epixanthoides	Q	
Mycobilimbia pilularis	Q	O

PX100 (SS92754 26890, 169m): Grey Poplar stand on edge of wood

Usnea articulata	Pp Tw	F

Also

Cyphelium sessile	Pp, Z1064
Megalaria pulverea	Pp
Pertusaria coccodes	Pp
Usnea rubicunda	Pp

SS927 268
Species of Interest

Cliostomum flavidulum	Qc	SS9271 2687
Cresponea premnea	Q	
Cyphelium sessile	Pp, Z1064	
Megalaria pulverea	Pp	
Mycobilimbia epixanthoides	Q	
Mycobilimbia pilularis	Q	O
Schismatomma niveum	Qc	
Thelotrema lepadinum	Qc, Bt	

Usnea ceratina	Qc
Other Species	
Acrocordia gemmata	Q
Bacidia viridifarinosa	Q
Pertusaria coccodes	Pp
Usnea cornuta	Pp
Usnea rubicunda	Pp

SS927 269
In wooded area lower down

PX101 (SS92700 26940, 168m): ancient Pedunculate Oak with two trunks

Chaenotheca brunneola	LQ	R
Chaenotheca trichialis	Q	R
Cresponea premnea	Q	R

SS927 269

Species of Interest		
Chaenotheca brunneola	LQ	R
Chaenotheca trichialis	Q	
Cresponea premnea	Q	
Other Species		
Psoroglaena stigonemoides	Fx	

A4.4 Eastern Park, Inside Deer Enclosure (A4), SS9226, North

Includes a small area of the lower wooded areas but most in open parkland similar to that to the south. Here most interest is on the old Pedunculate Oak, but young Norway Maples add to the lichens diversity.

SS927 270
Southern field in SS9227 both open and partly in the wooded area

PX097 (SS92776 27008, 186m) post mature Sycamore in southern field

Usnea articulata	Ap Tw	O

SS927 270

Species of Interest	
Lecanora jamesii	Fx
Thelotrema lepadinum	Fx, Qc
Usnea articulata	Ap Tw
Other Species	
Arthonia radiata	Fx
Parmelina tiliacea	Ap
Usnea cornuta	Q, Fx

North field in deer enclosure

SS926 270
North field, lower down, big old Ash and dead Ash

SS926 270

Species of Interest	
Leptogium lichenoides	Fx
Sphinctrina turbinata	Fx, Z1076, Z1087
Thelotrema lepadinum	Ct

Other Species

Pertusaria hymenea	Fx
Pertusaria multipuncta	Fx
Pertusaria pertusa	Fx
Pyrenula chlorospila	Fx

SS927 271

Open parkland in northern field, two big Pedunculate Oak plus young trees of Norway Maple, *Nothofagus* and other exotic species. Species on Oak include *Rinodina roboris* var. *roboris*, new to the park and the only tree seen in 2017 with the nutrient demanding common species *Diploicia canescens*; often abundant in parks with high nitrogen deposition.

PX105 (SS92782 27174, 190m): ancient Pedunculate Oak in open parkland

Cresponea premnea	Q	F	
Rinodina roboris* var. *roboris	Q	O	
Also			
Calicium viride	Q		
Caloplaca obscurella	Q		
Diploicia canescens	Q		
Parmotrema crinitum	Q		
Schismatomma cretaceum	Q		
Taeniolella sp A	Q, Z1075		Coll. Herb. Sanderson 2307
Varicellaria hemisphaerica	Q		

Photo 2017-09-21-04 & 09 (Neil Sanderson)

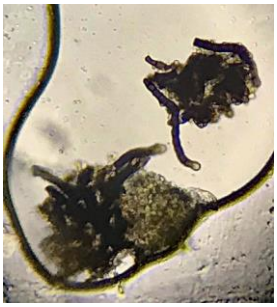


Photo 2017-09-21-04 & 09: an ancient Pedunculate Oak in open parkland in the deer enclosure , with the red deer stags in foreground. This tree supporters and interesting assemblage with the light demanding base rich bark specialist ***Rinodina roboris* var. *roboris*** found new to the park in 2017. The small picture shows the conidiophores of an undescribed *Taeniolella* parasite of the lichen *Varicellaria hemisphaerica*.

SS927 271
Species of Interest

Arthonia pruinata	Q
Cresponea premnea	Q
Lecanora argentata	Apl Coll.
Parmotrema crinitum	Q
Pertusaria multipuncta	Apl
Punctelia reddenda	Q
Rinodina roboris var. *roboris*	Q
Roselliniella sp	Apl, Z1087
Schismatomma cretaceum	Q

Other Species

Amandinea punctata	No
Calicium viride	Q
Caloplaca obscurella	Q
Diploicia canescens	Q
Lecanora albella	Exotic
Lecanora intumescens	Apl
Melanohalea laciniatula	No
Parmelina tiliacea	Apl
Pertusaria pertusa	Apl
Placynthiella icmalea	Q
Taeniolella sp A	Q, Z1087
Varicellaria hemisphaerica	Q

SS927 272
Open parkland in northern field

SS927 272
Other Species

Lepraria incana s. str.	Giant Redwood

SS928 272
Open parkland in northern field

SS928 272
Other Species

Arthopyrenia analepta	Ct Tw
Melanohalea laciniatula	Qc Tw

Pertusaria albescens var. *corallina*	Qc
Trapeliopsis flexuosa	Ct

SS928 271
Open parkland in northern field, lichen interest on old Pedunculate oaks on former field boundary.

PX102 (SS92893 27122, 200m): broken hollow ancient Pedunculate Oak in open parkland

Cresponea premnea	Q	R	
Also			
Cliostomum flavidulum	Q		
Lecanora jamesii	Q		
Megalaria pulverea	Q		

PX103 (SS92852 27121, 197m): younger post mature Pedunculate Oak in open parkland

Cresponea premnea	Q	R	A very small amount, recent colonist?

PX104 (SS92821 27113, 193m): ancient Pedunculate Oak with two trunks, in open parkland, on old boundary bank?

Cresponea premnea	Q	O
Also		
Thelotrema lepadinum	Q	

SS928 271
Species of Interest

Arthonia vinosa	Qc	
Cliostomum flavidulum	Q, Qc	SS9288 2713
Cresponea premnea	Q	
Lecanora jamesii	Q	
Megalaria pulverea	Q	
Thelotrema lepadinum	Fg	
Other Species		
Chrysothrix flavovirens	LQ	
Cladonia pyxidata	Q	
Varicellaria hemisphaerica	Q	

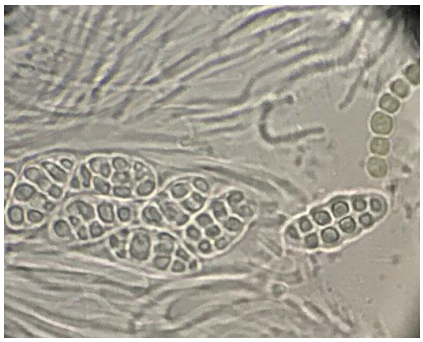
SS928 270
Open Park mainly in northern field, also southern field, important Sycamore in northern field

PX106 (SS92838 27044, 191m): ancient hollow Sycamore in open parkland

Collema fragrans	LAp, ApO		Coll. Herb Sanderson 2308, no lower cortex; spores muriform 19 – 24 x 11 – 12µm
Also			
Caloplaca ulcerosa	LAp		
Lecania cyrtellina	Ap	Coll.	Simple spores 8 – 11 x 3µm
Porina byssophila	Ap	Coll.	Perithecia wall K + blue-grey

Photos 2017-09-21-05 – 08
(Neil Sanderson)



Photos 2017-09-21-05 – 08: a habitat photograph of Collema fragrans on an ancient hollow Sycamore in open parkland. A former specialist of wound tracks on old Elms, but now very rare. New to the park and south Somerset in 2017. Micrographs show a cross-section of the thallus and an apothecia, showing the lack of a defined cortex, separating this species from the similar *Leptogium subtile*, and pictures of the spores.

SS928 270

Species of Interest

Collema fragrans	LAp, Ap	
Pachyphiale carneola	Ap, Fg	
Pertusaria multipuncta	Ap	
Porina byssophila	Ap	
Punctelia reddenda	Fg	
Sphinctrina turbinata	Fg, Z1076	SS9283 2700

Other Species

Caloplaca ulcerosa	LAp
Lecania cyrtellina	Ap
Lecanora chlarotera	Ap
Ochrolechia subviridis	Ap
Pertusaria amara f. amara	Ap
Pertusaria hymenea	Ap, Fg
Pertusaria pertusa	Ap

ANNEX 2 Species List

General Key

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

Areas
X = Species recorded in the 1980s, not refound in 2017

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

URI
1 = Species used to calculate the Upland Rainforest Index (based on the former EUOCIEC with moderate modifications)

Conservation Status
EN = Endangered Red Data Book species
VU = Vulnerable Red Data Book species
NT = Near Threatened Red Data Book species
Nb = Notable species (NR, NS, IR or S42 species not RDB NT or higher. Includes species listed as DD in the RBD)
NR = Nationally Rare
NS = Nationally Scarce
IR = International Responsibility species
S41 = Section 41 species

Survey Area
Area 1 = Steare Wood
Area 2 = The wooded section of the park within Carling ownership
Area 3 = The northern section of the park, including all of Sir Edward Goschen and Bell ownerships and the far north of the Carling Ownership in the long ungrazed area, dominated by Beech wood and parkland
Area 4 = The upper open section of the park in the Carling Ownership, which was still grazed until recently

Substrates
Ae = Horse Chestnut, Al = Alder, Ap = Sycamore, Apl = Norway Maple, Bt = Birch, Cf = Conifer, Co = Hazel, Cs = Sweet Chestnut, Ct = Hawthorn, Fg = Beech, Fx = Ash, Ix = Holly, Li = Tulip Tree, No = Nothofagus, Pp = Poplar cultivar, Pra = Cherry, Q = Oak (native species), Qc = Turkey Oak, Qr = Red Oak, Sx = Sallow, U = Wych Elm, L = Lignum (as prefix), Tw = twigs & branches & SS = Rock.

Hosts for lichenicolous fungi: Z0533 = *Graphis scripta*, Z0592 = *Lecanactis abietina*, Z0987 = *Flavoparmelia caperata*, Z1015 = *Parmelia saxatilis*, Z1064 = *Pertusaria coccodes*, Z1075 = *Varicellaria hemisphaerica*, Z1076 = *Pertusaria hymenea*, Z1087 = *Pertusaria pertusa*, Z1079 = *Pertusaria leioplaca*, Z1120 = *Physcia tenella*, Z1315 = *Schismatomma decolorans*, Z1410 = *Thelotrema lepadinum*, Z1585 = *Schismatomma quercicola*, Z1471 = *Usnea subfloridana*.

SPECIES LIST 1
Pixton Park, 1986 – 87 & 2017 Surveys

Taxa	Area 1	Area 2	A1 & 2	Area 3	Area 4	SOWI	URI	Conservation Status
Abrothallus microspermus		Q Tw, Z0987	1	Qc Tw, Z0987	Ct Tw			[NS]
Acrocordia gemmata		Ap, Fx, Q	1	Q	Fx, Q			
Agonimia tristicula					Q			
Amandinea punctata		Ap	1		No			
Anisomeridium biforme		Q	1	Qc	Q			
Anisomeridium polypori		Ap	1	U				
Anisomeridium ranunculosporum	Q, Ix	Q, Ct, Qc, Bt	1		Q	1		
Arthonia cinnabarina	Co	Fx, Co, Cs, Co, Ix	1		Fg			
Arthonia didyma					X			
Arthonia elegans		Ti, Co, Cb, Cs	1					
Arthonia invadens		Q, Z1585	1				1	NT (NR/IR/S41)
Arthonia pruinata		Fx, Q	1	Q	Q			
Arthonia punctiformis					Qc Tw			
Arthonia radiata		X	0		Q, Fx			
Arthonia spadicea	Ix	Qc. Q	1	U				
Arthonia vinosa	X	Qc. Q	1		Qc	1		
Arthopyrenia analepta					Ct Tw			
Arthopyrenia salicis		Co	1					
Arthopyrenia punctiformis		X	0					
Bacidia biatorina	Q	Fx, Q, Qc, Sx, U	1	Q	Q, Fx, Qc, Li	1		
Bacidia incompta					LAp			VU (NS/S41)
Bacidia delicata		Ap, Q	1					
Bacidia rubella		Fx, Q	1	Qc				
Bacidia viridifarinosa		Ap, Fx, Q, LQ, Ap, SS	1	Q	Q			
Biatora britannica	Q	Fx, Pl, U	1		Fx			Nb (NS)
Buellia disciformis					X			
Buellia griseovirens					Ct Tw			
Calicium glaucellum					WT			
Calicium salicinum					Q			
Calicium viride		Q	1		Q			
Caloplaca obscurella		Fg	1		Q			
Caloplaca ulcerosa					LAp			
Candelariella reflexa					Ct Tw			
Candelariella vitellina f. vitellina					X			
Catinaria atropurpurea		Q, Fx	1			1		
Chaenotheca brunneola		LPs, Q	1		LQ	1		
Chaenotheca ferruginea					Q, Qc			
Chaenotheca trichialis		Q	1	LQ, Q	Q	1		
Chaenothecopsis nigra				LQ				Nb (NS)
Chaenothecopsis savonica		LQ, LPs	1					NT (NR)
Chrysothrix candelaris	X	Bt, Qc. Q	1	Q, Sc, Qc	Q, LQ			
Chrysothrix flavovirens				LCs, Cs, LQ	LQ			
Cladonia caespiticia		LQ, Al	1			1		

Taxa	Area 1	Area 2	A1 & 2	Area 3	Area 4	SOWI	URI	Conservation Status
Cladonia chlorophaea s. lat.					X			
Cladonia coniocraea		Fg, Bt, Sx	1	Qc	LQ			
Cladonia cyathomorpha		Fg	1					Nb (NS)
Cladonia floerkeana					X			
Cladonia parasitica		LQ, LCs	1			1		
Cladonia polydactyla var. polydactyla		LQ, Ct	1	LCs, Q				
Cladonia pyxidata				Qc	Fx, Q			
Cladonia ramulosa					X			
Cladonia squamosa s. lat.		X	0					
Cliostomum flavidulum		Qc, Q	1		Q, Qc			Nb (NS)
Cliostomum griffithii	Fx	Q	1	Q, Cs, Qc	X			
Collema fragrans					LAp, Ap			EN (NR/IR/S41)
Cresponea premnea	Q	Fx, Q, LQ, Qc	1	Q	Q	1		Nb (IR)
Cyphelium sessile		X	0		Q, Pp, Z1064			Nb (NS)
Dactylospora parasitica				Fg, Qc, Z1087	Fg, Z1076			[NS]
Dendrothele acerina		Ac	1	Ac				
Dimerella lutea		Q	1		Qc			
Dimerella pineti		Ix	1					
Diploicia canescens					Q			
Enterographa crassa	Q, Fx, Ix, Co	Fx, Co, Ap, Ti, Ae, Pl, Fg	1	Fg, Ac, Q, Ti	Fg, Q, Ix			
Eopyrenula grandicula		Co	1					Nb (NS/IR)
Evernia prunastri		Q Tw, Ct Tw, Qc Tw	1	Q Tw, Qc Tw	Q Tw			
Flavoparmelia caperata	X	Q Tw, Sx, Ct, Ae	1	Qc Tw	Ct Tw, Q			
Fuscidea lightfootii					X			
Fuscopannaria mediterranea		Q	1			1		Nb (NS)
Graphis elegans		Q Tw, Cs	1	U, Fg				
Graphis scripta	Fx	Co, Ix, Fx, Cb, Ap, Cs, Ct Tw, Co, U	1		Fg Ix			
Gyalecta truncigena		Ap, Q, Fx	1	Q, Qc	X			
Heterodermia obscurata		Ap Tw, Sx Tw, Ct Tw	1		Ct Tw	1	1	NT (NS)
Homostegia piggotii		Ct Tw, Z1015	1					
Hypocenomyce scalaris					WT			
Hypogymnia physodes	Q Tw	X	1	Q Tw	Qc Tw			
Hypogymnia tubulosa					Qc Tw, Ct Tw			
Hypotrachyna afrorevoluta		Q Tw, Ct Tw	1	Qc Tw	Ct Tw, Qc Tw, Fg Tw			
Hypotrachyna revoluta s.str.				Fg Tw	Ct Tw			
Japewiella tavaresiana		Sx	1				1	
Laeviomyces pertusariicola		Fx, Z1079	1					
Lecanactis abietina	Ix	Bt, Cs, Q, Ct	1	LQ, Q, Cs, LCs, Ix, Qc	Qc, Ct, Q, Ix			
Lecanactis subabietina		Q	1			1		Nb (IR)
Lecania cyrtellina		Ap	1		Ap			
Lecanographa lyncea		Q, Qc	1	Q		1		Nb (IR)
Lecanora albella					Ct Tw, Exotic			(NS)
Lecanora argentata					Apl			(NS)
Lecanora chlarotera	X	Q, Q Tw, Ap, Ti, Fx	1	Fx, Qc	Ap, Q, Fx			
Lecanora confusa		X	0					
Lecanora conizaeoides f. conizaeoides					X			
Lecanora expallens		Q	1	Q, Qc	Ap, WT, Qc			
Lecanora intumescens					Apl			
Lecanora jamesii		Sx	1		Qc Tw, Fx, Ct Tw, Q	1		
Lecidella elaeochroma f. elaeochroma		Sx	1	Fx	Fg, Fg Tw, Q Tw			
Lepraria incana s. str.					Cf			
Lepraria lobificans		Cb, Q, Cs, Ct	1	U				
Leptogium lichenoides		Fx, Co, Q, Sx, Pl, Pp	1		Fx	1		
Leptogium teretiusculum		Fx	1			1		
Lobaria pulmonaria	Fx	Pl	1		Fx	1		Nb (IR)
Lobaria scrobiculata					Fx	1		Nb (IR)
Loxospora elatina	Q	Cb, Cs, Qc, Q	1		LCf	1	1	
Marchandiomyces aurantiacus					Fg Tw, Z1120			
Marchandiomyces corallinus				Qc Tw, Z1471				
Megalaria pulverea		Qr, Sx, Al, Bt, Fx, Pp, Qc	1		Qc, Fx, Q, Pp, Q		1	
Melanelixia glabratula	X	Fx	1	Qc	WT, Q			
Melanelixia subaurifera	X	Q Tw	1		Fg Tw, Q Tw			
Melanohalea exasperatula					Q Tw, Ct Tw			
Melanohalea laciniatula				Fg Tw	Qc tw, Ct Tw, Fg Tw, No			
Micarea doliiformis		Cf, Q	1	Cs			1	Nb (NS)
Micarea prasina s. lat		LQ, Ct, Cs	1					
Micarea viridileprosa		Q	1					(NS)
Microcalicium ahlneri		LQ	1	LCs				Nb (NS)
Milospium graphideorum		Qc, Q, Z1315, Z0592, Z0600	1	Q, Z0600				Nb (NS)
Mycobilimbia epixanthoides		Q, Fx	1		Q	1		
Mycobilimbia pilularis		Pl, Q, Fx	1		Q	1		
Mycoblastus caesius		LQ, LCs	1	LCs, Cs			1	
Mycoporum antecellens		Ix, Bt	1	Fg	Qc, Fg	1		

Taxa	Area 1	Area 2	A1 & 2	Area 3	Area 4	SOWI	URI	Conservation Status
Normandina pulchella		Co, Ct, Cs, Sx	1	U, Sx, Qc	Fg, Qc, Q			
Ochrolechia androgyna		Qc	1		WT			
Ochrolechia subviridis		Fx, Q	1	Fx	Q, Fx, Qc, Ap			
Opegrapha atra	X	X	0	Fg, Fx, Q	Fg, Ap			
Opegrapha corticola					Q	1		Nb (IR)
Opegrapha herbarum				Qc				
Opegrapha ochrocheila		Qc	1					
Opegrapha rufescens		Fx	1		Fx			
Opegrapha sorediifera		X	0	Fg	Qc			
Opegrapha varia		X	0	Ac, Fg	LAp, Fx			
Opegrapha vermicellifera		Q, Fx, Ap, Pl	1	Ti				
Opegrapha vulgata	Co	Q, Co, Fx, Co	1	Co, Fx, Ti, Qc, Fg	Fg, LAp			
Opegrapha xerica		Fx, Q	1	Q				Nb (NS)
Pachyphiale carneola		Fx, Q, Fg, U, Co	1	Fg, fx	Q, Qc, Ap, Fg	1		
Pannaria conoplea		Fx	1		X	1		Nb (IR)
Parmelia saxatilis		Q Tw, Ct Tw	1		Ct Tw, LQ			
Parmelia sulcata	X	Q Tw	1	Q Tw, Qc Tw	Fg Tw, Q Tw			
Parmeliella triptophylla		X	0			1		Nb (IR)
Parmelina pastillifera					Ct Tw			
Parmelina tiliacea					Ap, Apl			
Parmotrema crinitum		Qc	1		Q, Fg	1		
Parmotrema perlatum	X	Ap Tw, Fx, Ct tw	1	Qc Tw, Sx	Ct Tw, Fg Tw			
Parmotrema reticulatum					Ct Tw			
Peltigera collina					X	1		Nb (IR)
Peltigera horizontalis		LFx, Fx, Ti, Co	1			1		
Peltigera hymenina		Sx	1	Fg				
Peltigera membranacea		Sx, Fx, Ae	1		X			
Peltigera praetextata		Sx, Fx, Cs, Ae, Ti, Co, U	1		X			
Pertusaria albescens var. albescens	X		0		Fg			
Pertusaria albescens var. corallina				Qc, Sx	Q, Fx, Qc			
Pertusaria amara f. amara	Q	Sx	1	Fx	Qc, Ap			
Pertusaria amara f. pulvinata		Fx, Q	1					Nb (NR)
Pertusaria coccodes					Pp, Q			
Pertusaria hymenea	Ap, Fx	Q, Fx, Ap, Ti, Cb, Ae, Fg, U	1	Fg, Fx, U, Ac, Q, Qc	Ap, Fg, Fx			
Pertusaria leioplaca		Ti, Cb, Fx	1					
Pertusaria multipuncta		Fx, Ct, Sx, Ae Tw	1	Fg	Q, Fx, Apl, Ap	1		
Pertusaria pertusa	X	Ap, Fg, Fx	1	Fg	Q, Fx, Apl, Ap			
Phaeographis dendritica	Ap, Q	Co	1	Fg		1		
Phlyctis agelaea		Sx	1					NT (NS)
Phlyctis argena	Fx	Fx, Ap, U	1	Fx	Qc			
Phyllopsora rosei	Q, Fx	Sx, Qc, Q, Fx	1		X	1		Nb (NS/IR)
Physcia adscendens					X			
Physcia aipolia					WT			
Physcia tenella		Ap Tw	1		Ct Tw, Fg Tw			
Physconia distorta					X			
Physconia perisidiosa					Q Tw			
Placynthiella icmalea					Q			
Platismatia glauca		Ct Tw	1		Qc Tw, LQ, Ct Tw			
Porina borreri		Ap	1		Fx			Nb (NS)
Porina byssophila					Ap			Nb (NR)
Porina chlorotica f. chlorotica		Sax	1		Ix			
Porina coralloidea	Q	Q	1		X	1		Nb (NS/IR)
Pseudevernia furfuracea var. ceratea					Ct Tw, Qc, Tw			
Pseudevernia furfuracea var. furfuracea		X	0					
Psoroglaena stigonemoides					Fx			
Punctelia reddenda					Fg, Qc, Ct Tw, Fg Tw, Q	1		
Punctelia subrudecta s. str.		X	0	Fg Tw	Fg Tw, Q Tw, Co			
Pyrenula chlorospila	X	Fx, Ap	1		Fg, Fx			
Pyrenula macrospora	Fx	Fx, Pl	1					
Pyrrhospora quernea	Q	Qc	1	Fx, Qc, U	Qc, Fx, Q, Fx			
Ramalina calicaris					X			
Ramalina farinacea	X	Ap Tw, Qc Tw	1	Qc Tw	Ct Tw, Fg Tw, Q Tw			
Ramalina fastigiata					Ct Tw, Q Tw			
Rinodina griseosoralifera					X			Nb (NS)
Rinodina roboris var. roboris					Q			Nb (IR)
Roselliniella sp					Fg, Apl, Z1087			
Schismatomma cretaceum		Q, Fx	1	Q	Q			Nb (IR)
Schismatomma decolorans		Q	1	Q, Qc	Fx, Q			
Schismatomma niveum	Ix, Ap, Q	Q	1		Qc	1		Nb (IR)
Schismatomma quercicola	Ix	Q, Ix	1		X	1	1	Nb (IR)
Skyttea nitschkei	Q, Ix, Z1410	Q, Z1410, Fg, Z1410	1		Ix, Z1410			
Sphinctrina turbinata					Fx,Fg, Z1076, Z1087			Nb (NS)
Stenocybe septata	Ix	Ix	1		Ix	1		Nb (IR)
Sticta ciliata		Sx, Fx, Co	1			1		Nb (IR)

Taxa	Area 1	Area 2	A1 & 2	Area 3	Area 4	SOWI	URI	Conservation Status
Sticta limbata		Co	1		X	1		Nb (IR)
Sticta sylvatica		X	0			1		Nb (IR)
Stigmidium microspilum		Fx, Ap, Z0533	1					
Strigula taylorii					Li, Fx			Nb (NS/IR)
Taeniolella sp A		Qc, Z1075	1		Q, Z1075			
Taeniolella toruloides	Ix, Z1410		1					[NR]
Thelopsis rubella		Q	1			1		
Thelotrema lepadinum	Q, Pra, Ix, Fx	Q, Bt, Co, Ix, Fx, Ap, Fg, Ac, Qc, Ct, Sx, Qr, Pl, Cs, Ti, Al, Cb, He, Pp, U	1	Fg, Qc, Co	Fx, Fg, Qc, Ct, Q, Ix, Co, Li, Bt, Ct	1		
Trapelia corticola		X	0	LCs			1	
Trapeliopsis flexuosa		Ct	1	LCs	Ct			
Trapeliopsis pseudogranulosa		LQ, LCs	1					
Tremella pertusariae		Q, Z1076	1					[NR]
Usnea articulata		Ct Tw, Fx Tw, Q Tw	1	Qc Tw	Fg Tw, Q Tw, Ct Tw, Co Tw, Pp Tw, Ap Tw			NT (IR/S41)
Usnea ceratina		Q Tw, Fx, Qc	1	X	X	1		
Usnea cornuta		Q	1	Q	Qc, LQ, Q, Fx			
Usnea dasypoga		X	0		X		1	
Usnea florida					X	1		NT (S41)
Usnea rubicunda					Pp			
Usnea subfloridana	X	X	0	Qc Tw	X			
Usnea wasmuthii				Qc Tw				
Varicellaria hemisphaerica	Q	Qc, Q	1	Qc	Fg, Q Tw, Q			
Wadeana dendrographa		Fx	1			1		NT (NS/IR/S41)
Xanthoria parietina				Fg Tw	Fg Tw			
Xanthoria polycarpa					X			
Xerotrema quercicola		LQ	1					NT (NR/IR)

SPECIES LIST 2
Cumulative List from Pixton Park, 1986 – 87 Surveys

Pixton Park Total	SOWI	URI	Conservation Status
Acrocordia gemmata			
Amandinea punctata			
Anisomeridium biforme			
Arthonia didyma			
Arthonia radiata			
Arthonia spadicea			
Arthonia vinosa	1		
Arthopyrenia punctiformis			
Bacidia biatorina	1		
Bacidia viridifarinosa			
Buellia disciformis			
Calicium viride			
Candelariella vitellina f. vitellina			
Catinaria atropurpurea	1		
Chrysothrix candelaris			
Cladonia chlorophaea s. lat.			
Cladonia coniocraea			
Cladonia floerkeana			
Cladonia parasitica	1		
Cladonia pyxidata			
Cladonia ramulosa			
Cladonia squamosa s. lat.			
Cliostomum griffithii			
Cresponea premnea	1		Nb (IR)
Cyphelium sessile			Nb (NS)
Dactylospora parasitica			[NS]
Dimerella lutea			
Dimerella pineti			
Diploicia canescens			
Enterographa crassa			
Evernia prunastri			
Flavoparmelia caperata			
Fuscidea lightfootii			
Fuscopannaria mediterranea	1		Nb (NS)
Graphis elegans			
Graphis scripta			
Gyalecta truncigena			
Hypogymnia physodes			
Hypogymnia tubulosa			
Hypotrachyna revoluta sensu auct. p.p.			
Lecanactis abietina			
Lecanactis subabietina	1		Nb (IR)
Lecanographa lyncea	1		Nb (IR)
Lecanora chlarotera			
Lecanora confusa			
Lecanora conizaeoides f. conizaeoides			
Lecanora expallens			
Lecanora jamesii	1		
Lecidella elaeochroma f. elaeochroma			
Lepraria incana s. lat.			
Leptogium lichenoides	1		
Lobaria pulmonaria	1		Nb (IR)
Lobaria scrobiculata	1		Nb (IR)

Pixton Park Total	SOWI	URI	Conservation Status
Loxospora elatina	1		
Melanelixia glabratula			
Melanelixia subaurifera			
Melanohalea laciniatula			
Mycobilimbia epixanthoides	1		
Mycobilimbia pilularis	1		
Mycoblastus caesius		1	
Normandina pulchella			
Ochrolechia androgyna			
Opegrapha atra			
Opegrapha herbarum			
Opegrapha ochrocheila			
Opegrapha sorediifera			
Opegrapha varia			
Opegrapha vermicellifera			
Opegrapha vulgata			
Pachyphiale carneola	1		
Pannaria conoplea	1		Nb (IR)
Parmelia saxatilis			
Parmelia sulcata			
Parmeliella triptophylla	1		Nb (IR)
Parmelina tiliacea			
Parmotrema crinitum	1		
Parmotrema perlatum			
Peltigera collina	1		Nb (IR)
Peltigera horizontalis	1		
Peltigera hymenina			
Peltigera membranacea			
Peltigera praetextata			
Pertusaria albescens var. albescens			
Pertusaria albescens var. corallina			
Pertusaria amara			
Pertusaria coccodes			
Pertusaria hemisphaerica			
Pertusaria hymenea			
Pertusaria leioplaca			
Pertusaria multipuncta	1		
Pertusaria pertusa			
Phlyctis argena			
Phyllopsora rosei	1		Nb (NS/IR)
Physcia adscendens nom. cons.			
Physcia aipolia			
Physconia distorta			
Platismatia glauca			
Porina coralloidea	1		Nb (NS/IR)
Pseudevernia furfuracea var. furfuracea			
Punctelia reddenda	1		
Punctelia subrudecta s. lat.			
Pyrenula chlorospila			
Pyrenula macrospora			
Pyrrhospora quernea			
Ramalina calicaris			
Ramalina farinacea			
Ramalina fastigiata			
Rinodina griseosoralifera			Nb (NS)
Schismatomma cretaceum			Nb (IR)
Schismatomma decolorans			

Pixton Park Total	SOWI	URI	Conservation Status
Schismatomma niveum	1		Nb (IR)
Schismatomma quercicola	1	1	Nb (IR)
Stenocybe septata	1		Nb (IR)
Sticta fuliginosa	1		Nb (IR)
Sticta limbata	1		Nb (IR)
Sticta sylvatica	1		Nb (IR)
Thelotrema lepadinum	1		
Trapelia corticola		1	
Trapeliopsis pseudogranulosa			
Usnea articulata			NT (IR/S41)
Usnea ceratina	1		
Usnea cornuta			
Usnea dasypoga		1	
Usnea florida	1		NT (S41)
Usnea rubicunda			
Usnea subfloridana			
Xanthoria parietina			
Xanthoria polycarpa			

Doubtful Records

Cladonia macilenta: rejected, as *Cladonia polydactyla* was not recorded but the latter was frequent in 2017, including forms without cups.

Megalospora tuberculosa: a Near Threatened, NS, IR & S41 species, which potentially could occur, but is easily confused with the widespread *Megalaria pulverea*. As Megalaria pulverea was not recorded in the 1980s, but proved to be widespread in 2017, the record of *Megalospora tuberculosa* requires conformation [consultation under way].

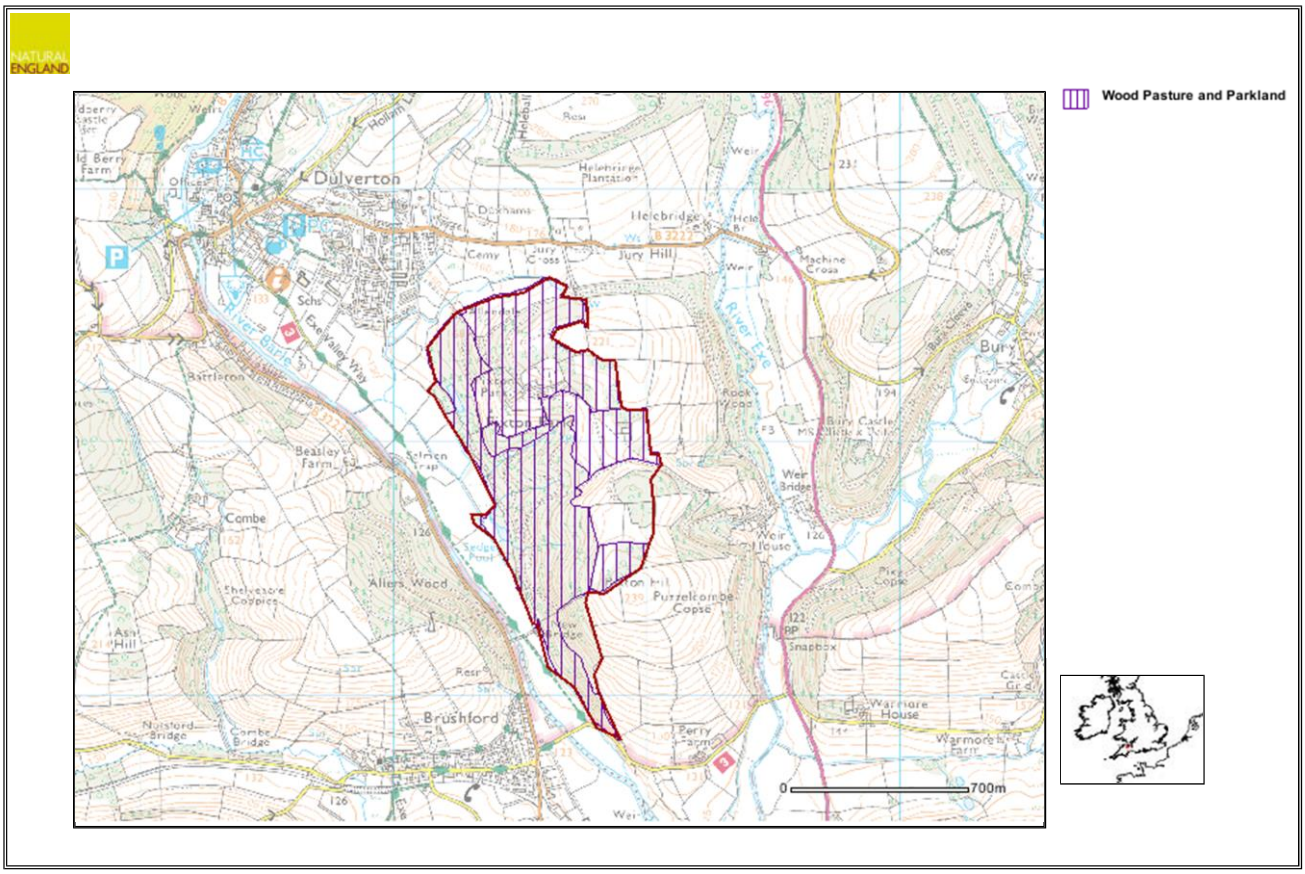
ANNEX 3 Maps

B1 General Maps

Botanical Survey and Assessment
3 Green Close, Woodlands, SO40 7HU
023 8029 3671

Pixton Park Lichen

Location **Map 1**



Pixton Park survey area

Scale 1:20388, © Crown Copyright and database rights 2014. Ordnance Survey 100022021.

Area: 83.8 hectares

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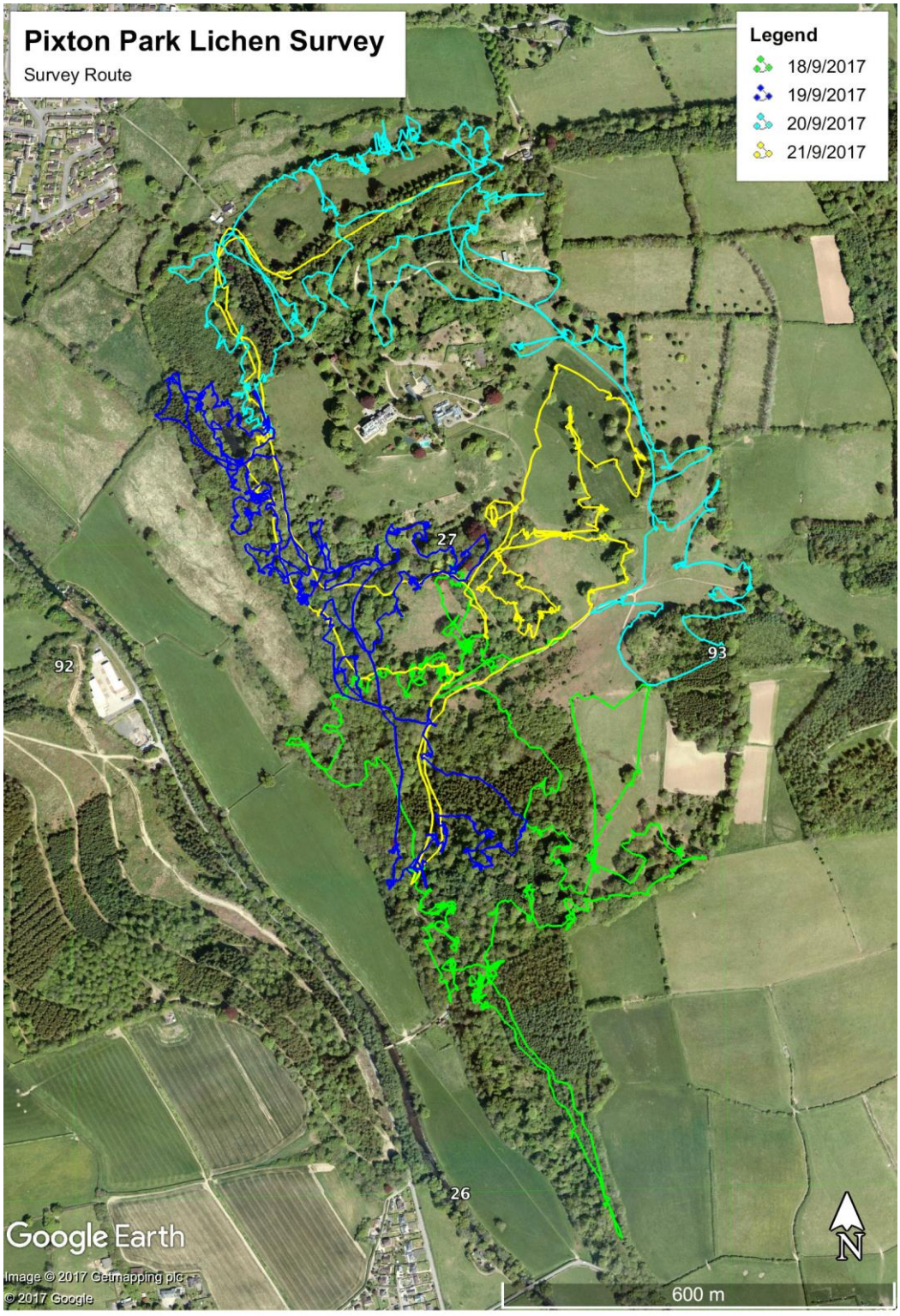
Pixton Park Lichen

Survey Route on Google Earth Map 2



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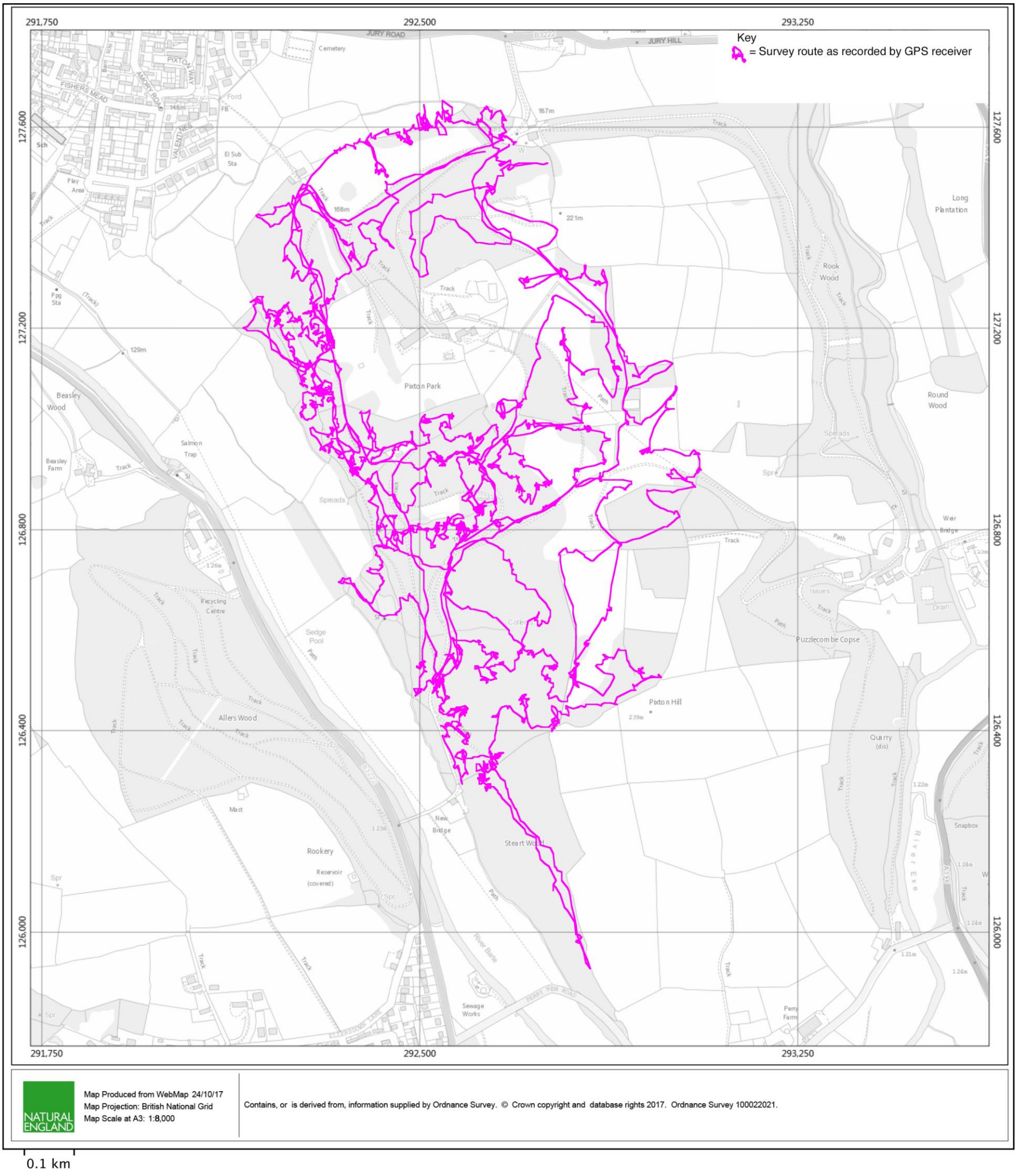
Pixton Park Lichen

Survey Route on OS Map — Map 3



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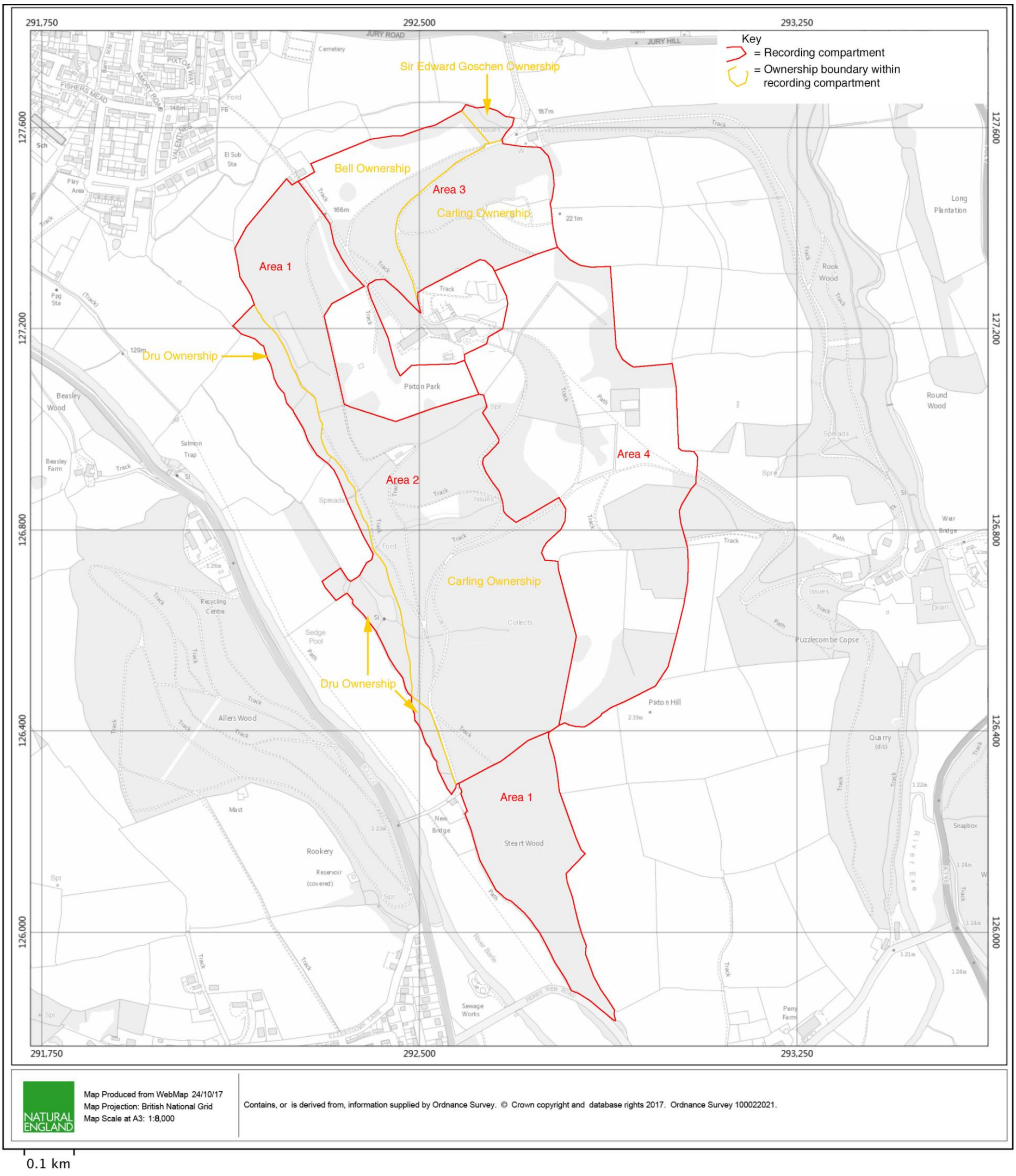
Pixton Park Lichen

Recording Compartments — Map 4



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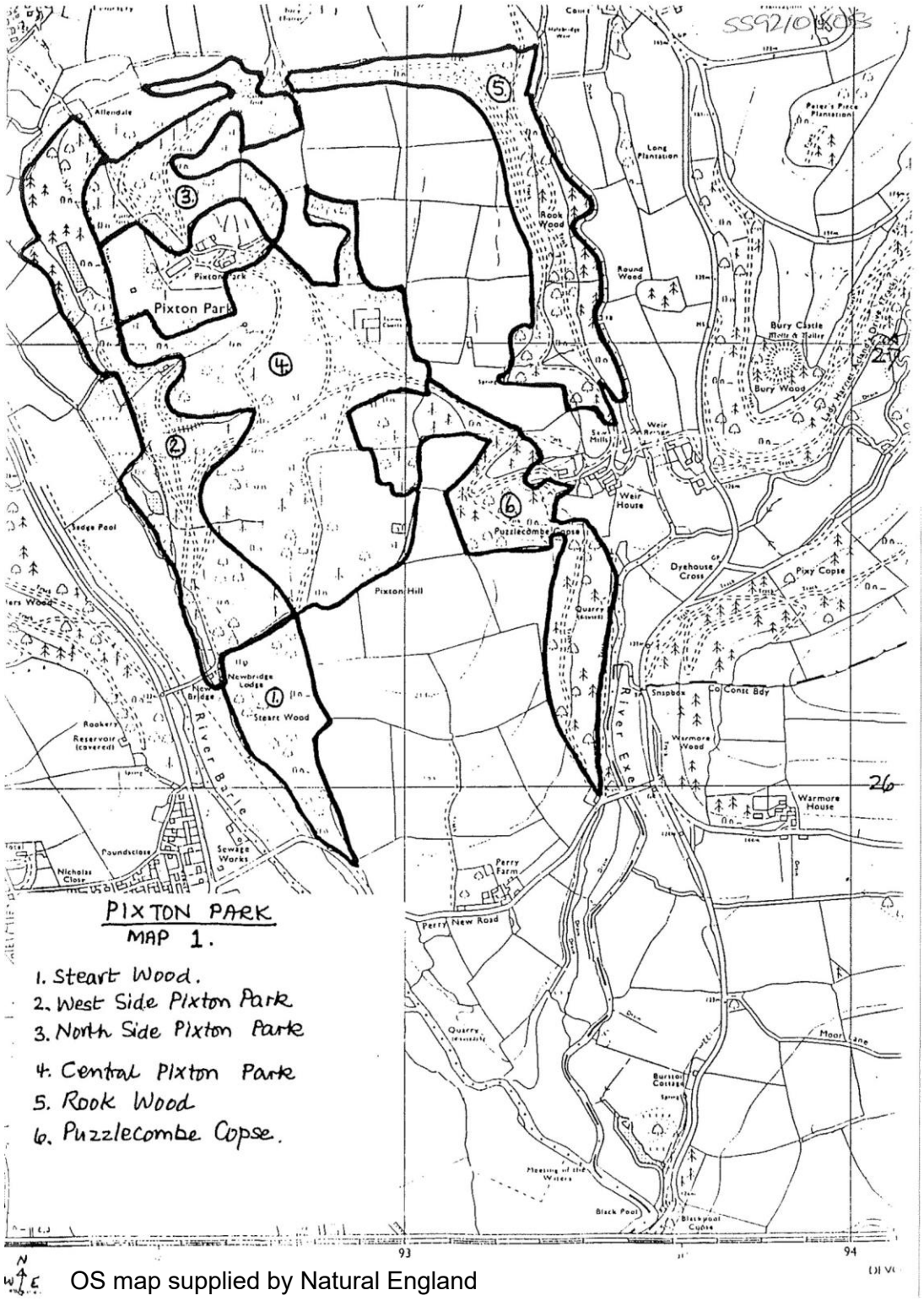
Pixton Park Lichen

1980s Recording Compartments Map 5



OS map supplied by Natural England

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Pixton Park Lichen

1802 OS Surveyors drawing Map 6

Zoomify image: Tiverton, Devon

Source: British Library

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Pixton Park Lichen

1887 – 88 OS 6" OS Map Map 7

National Library of Scotland
Leabharlann Nàiseanta na h-Alba

Somerset LXVII.NE (includes: Brompton Regis; Brushford; Dulverton; Morebath.)
Surveyed: 1887 to 1888
Published: 1889

Source: National Library of Scotland

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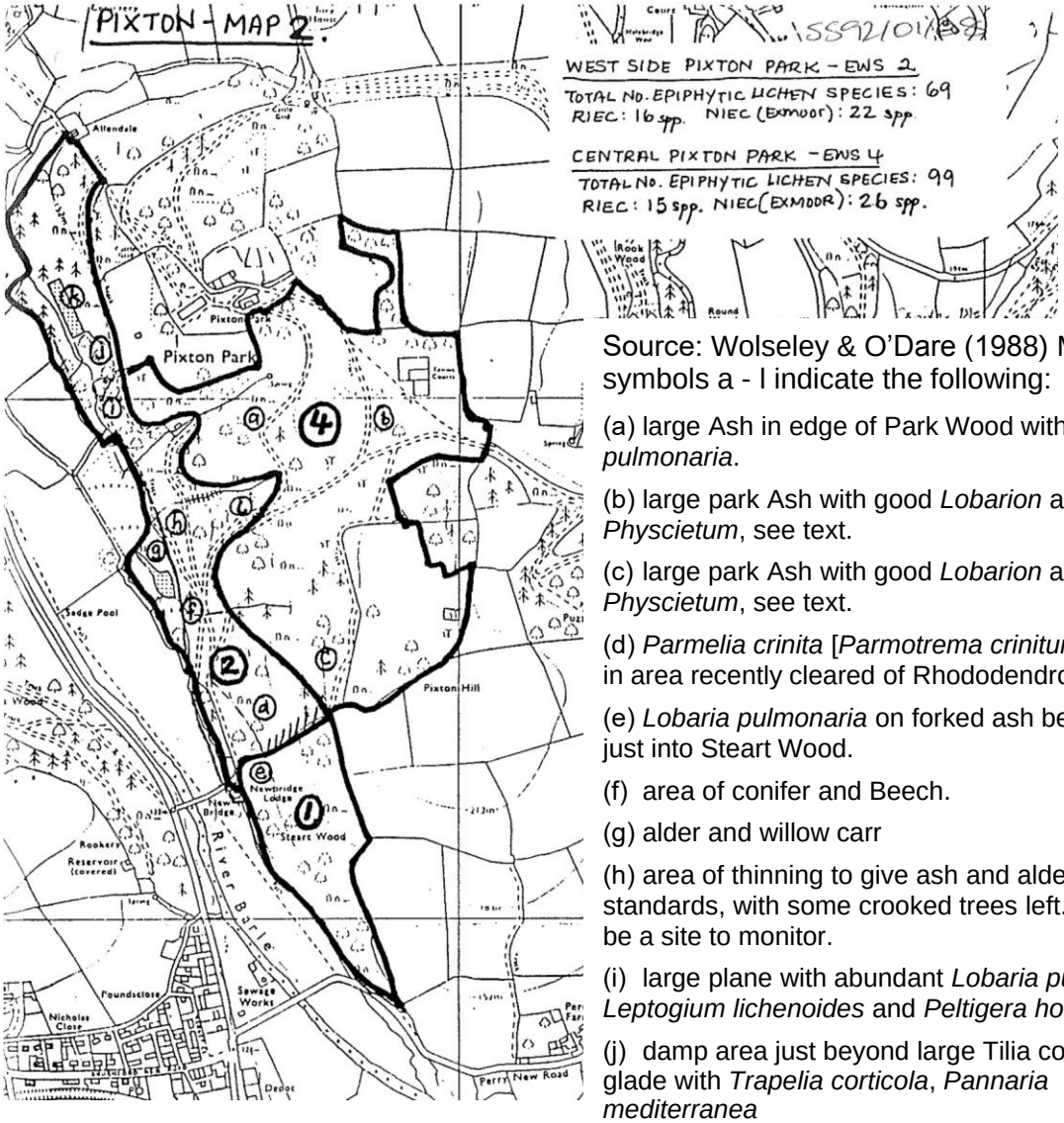
Pixton Park Lichen

1987 Survey, Areas 1, 2 & 4 **Map 8**



Source: Wolseley & O'Dare (1988) Map 2, symbols a - l indicate the following:

(a) large Ash in edge of Park Wood with *Lobaria pulmonaria*.

(b) large park Ash with good *Lobarion* and *Physcietum*, see text.

(c) large park Ash with good *Lobarion* and *Physcietum*, see text.

(d) *Parmelia crinita* [*Parmotrema crinitum*] on oak in area recently cleared of Rhododendron.

(e) *Lobaria pulmonaria* on forked ash below path just into Steart Wood.

(f) area of conifer and Beech.

(g) alder and willow carr

(h) area of thinning to give ash and alder standards, with some crooked trees left... it would be a site to monitor.

(i) large plane with abundant *Lobaria pulmonaria*, *Leptogium lichenoides* and *Peltigera horizontalis*.

(j) damp area just beyond large Tilia cordata in glade with *Trapelia corticola*, *Pannaria mediterranea*

(k) [*Fuscopannaria mediterranea*] and *Opegrapha sorediifera* on *Quercus petraea*.

(l) willow carr around artificial lake with *Sticta* spp.

(m) Hawthorn with *Usnea articulata* and *Pseudevernia furfuracea* var *furfuracea*.

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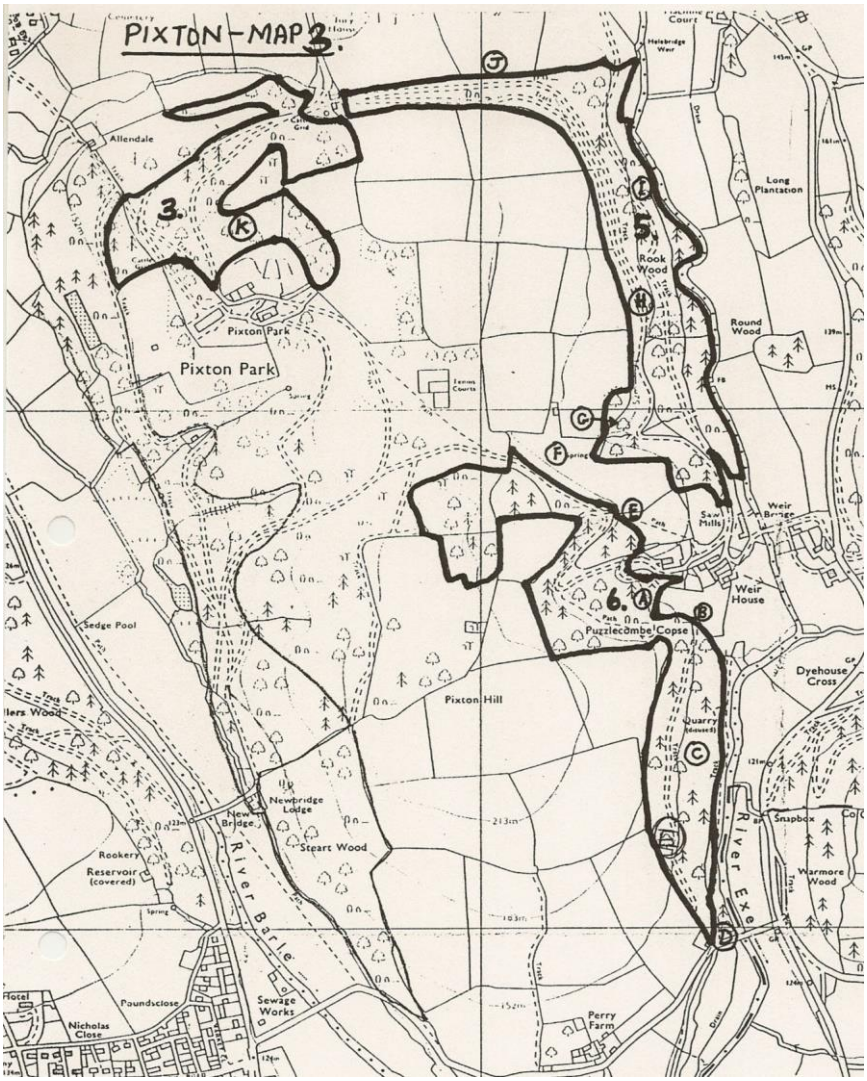
Pixton Park Lichen

1987 Survey, Area 3 **Map 9**



Source: Wolseley & O'Dare (1988) Map 3, symbol K indicates the following: K *Usnea* spp. are also frequent including *U. ceratina*

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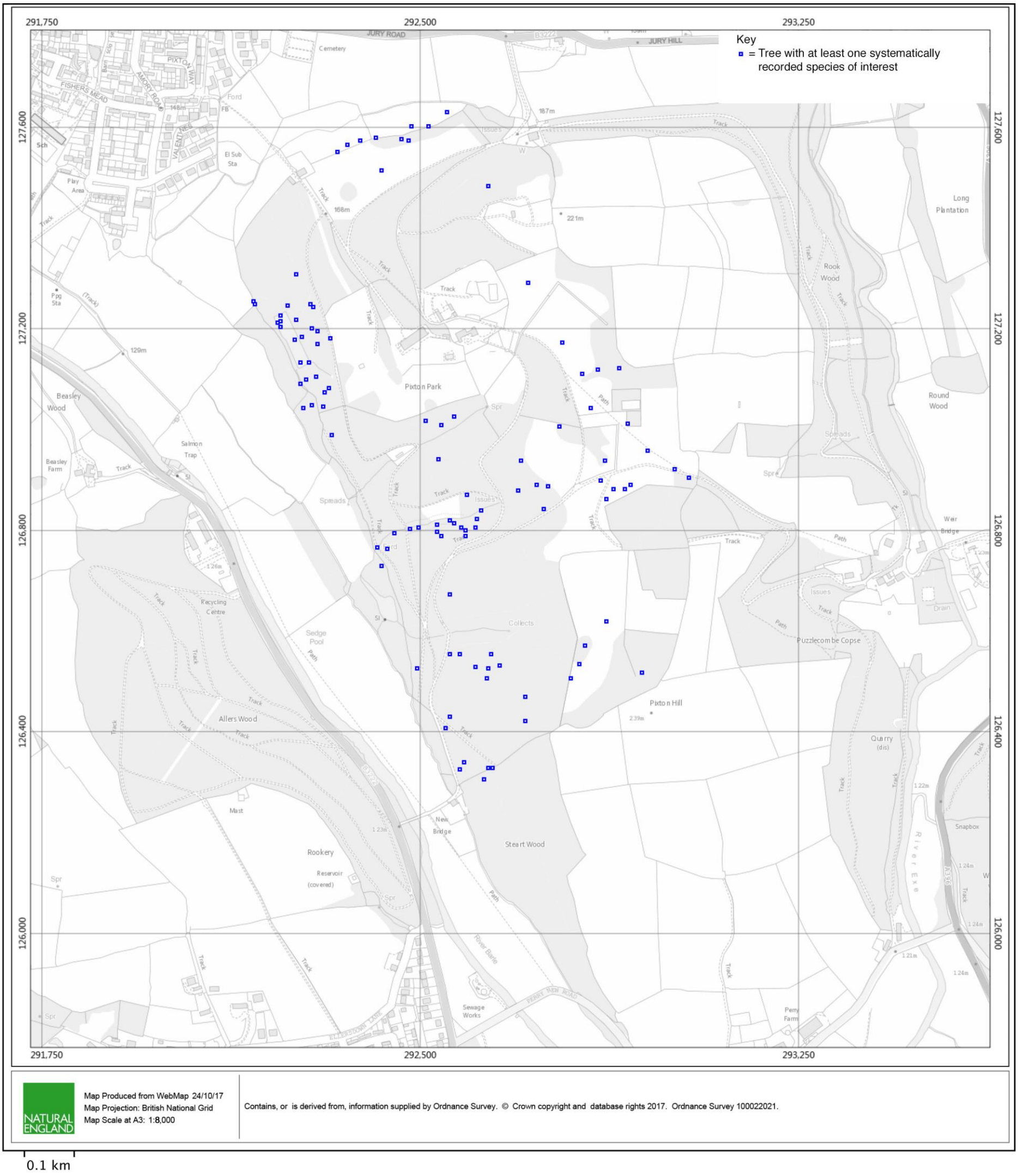
Pixton Park Lichen

Waypoints Recorded 2017 Map 10



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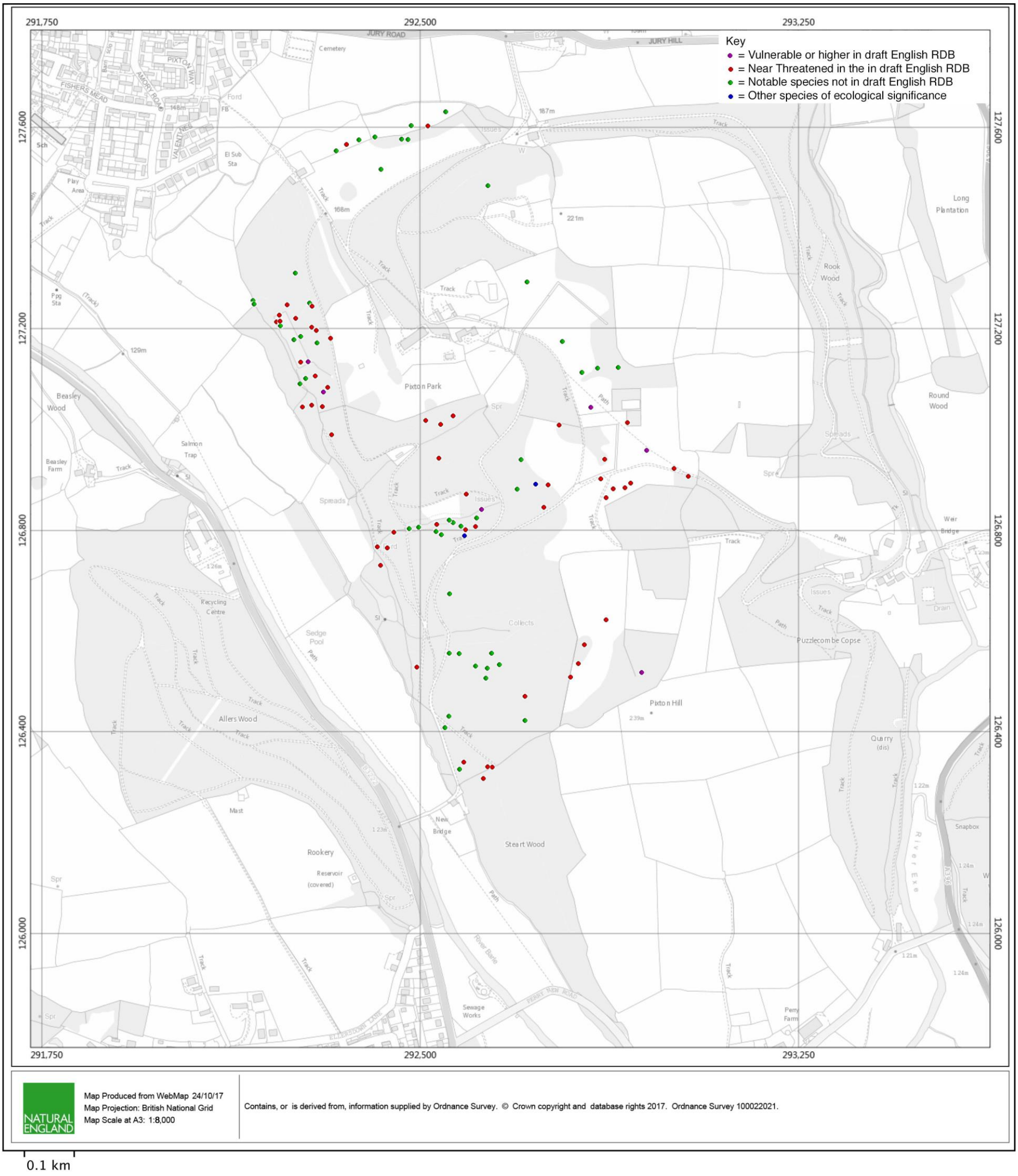
Pixton Park Lichen

Conservation Value — Map 11



Map Produced from WebMap 24/10/17
Map Projection: British National Grid
Map Scale at A3: 1:8,000

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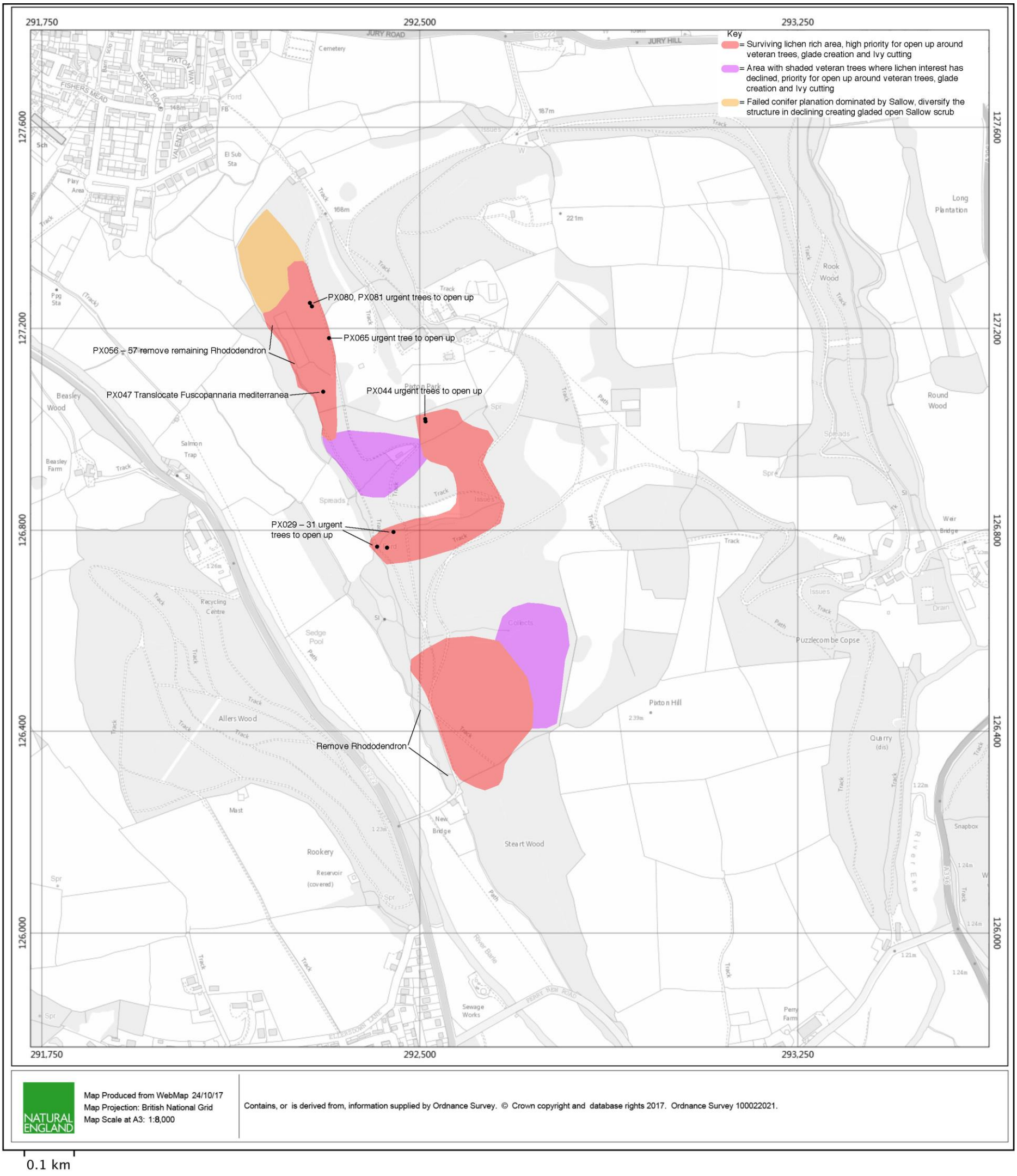
Pixton Park Lichen

Management Recommendations Map 12



B2 Community Maps

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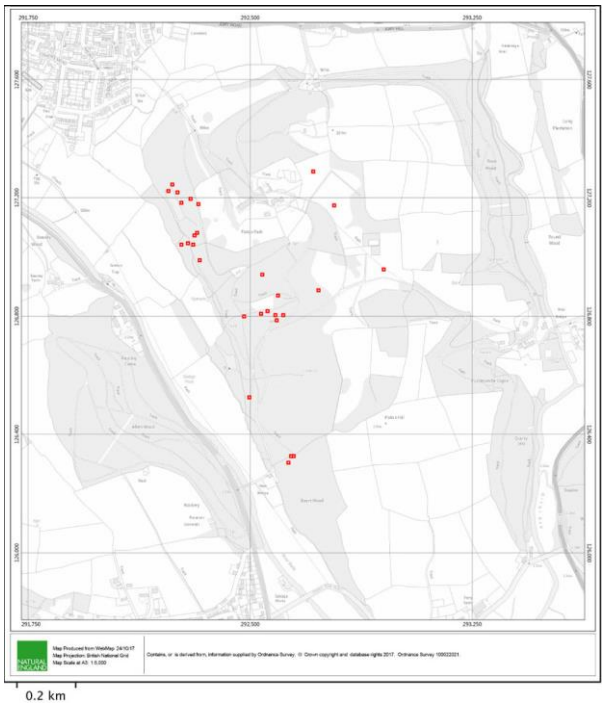
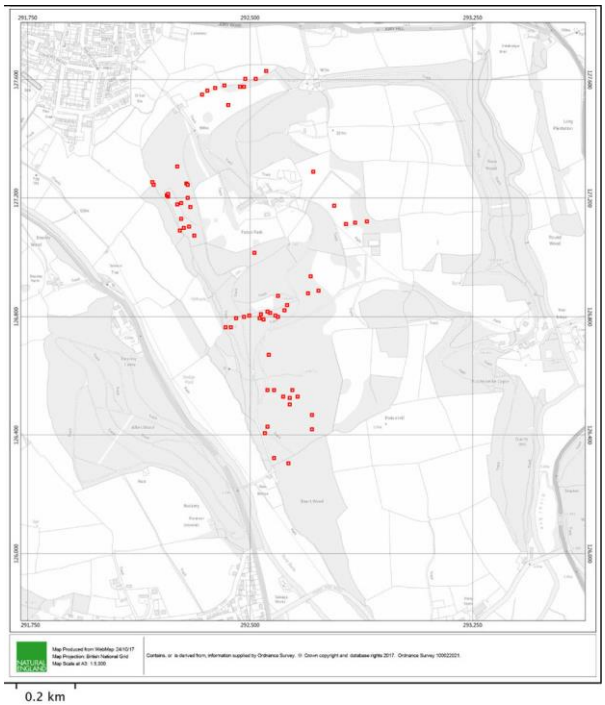
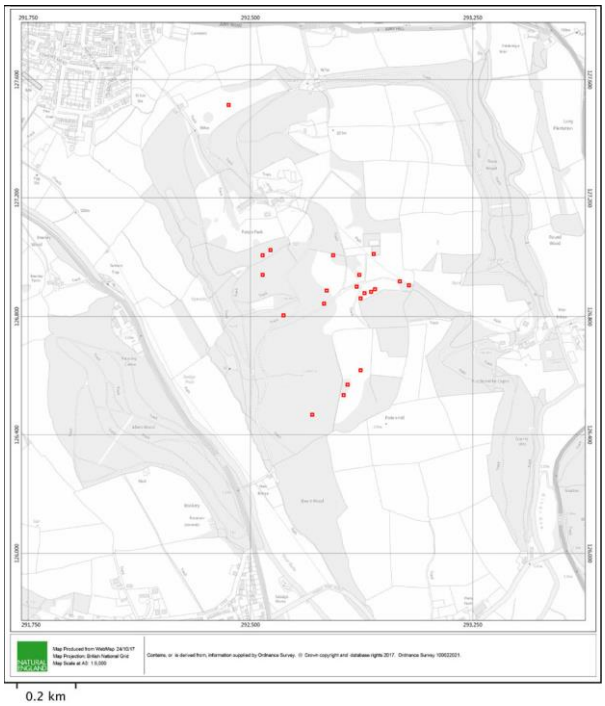


Map 13 Trees with Base Rich Bark Assemblages

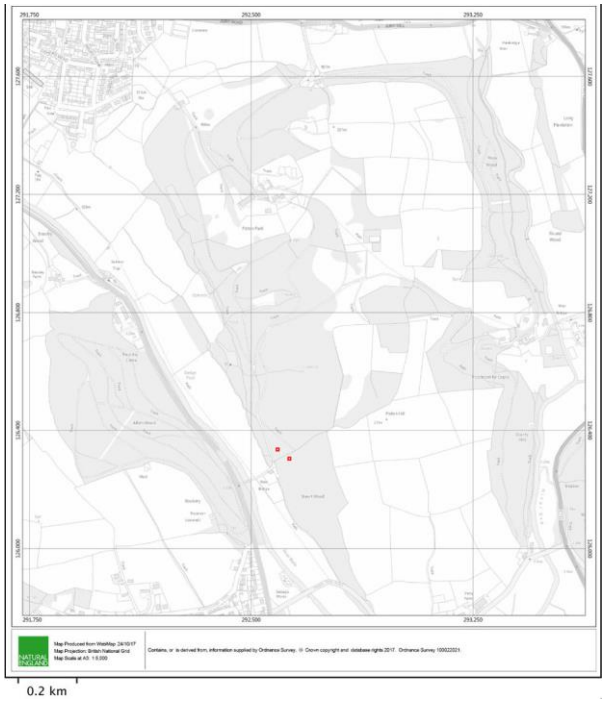


Map 14 Trees with Dry Bark Assemblages

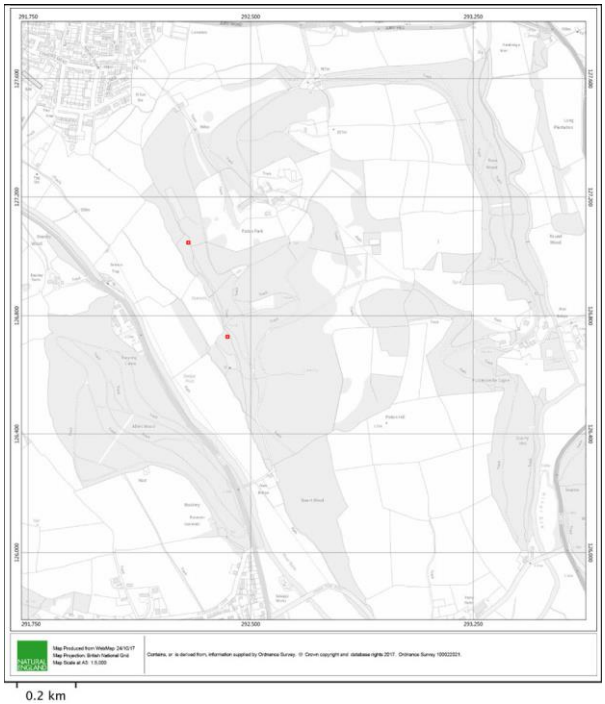


Map 15 Trees with Canopy Assemblages

Map 16 Trees with Lignum Assemblages



Map 17 Trees with Acid Bark Assemblages



Map 18 Trees with Mesic Bark Assemblages

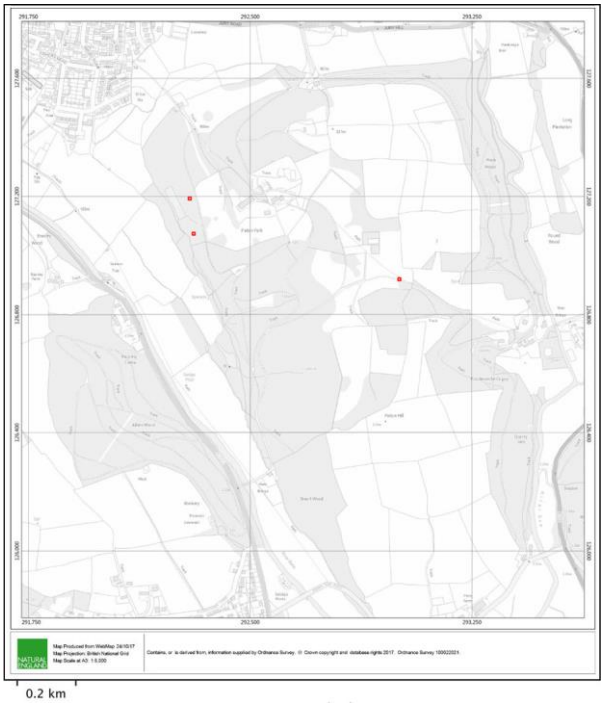
Map 19 Trees with Wound Track Assemblages

B3 Habitat Maps

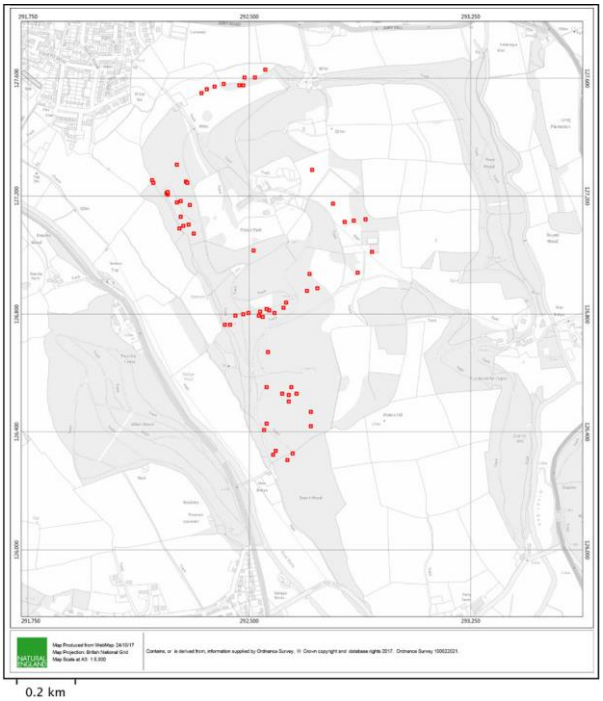
Map 20 Ash with systematically recorded spp

Map 21 Beech with systematically recorded spp

Map 22 Hawthorn with systematically recorded sp

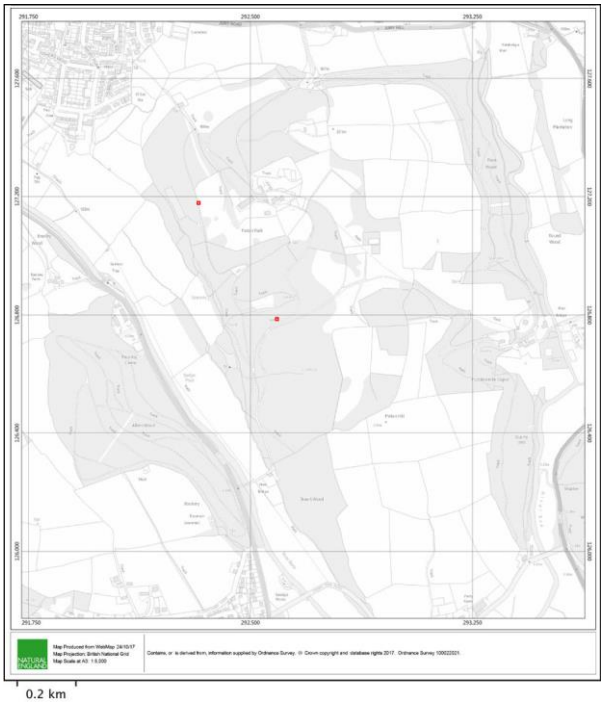


Map 23 Hazel with systematically recorded spp

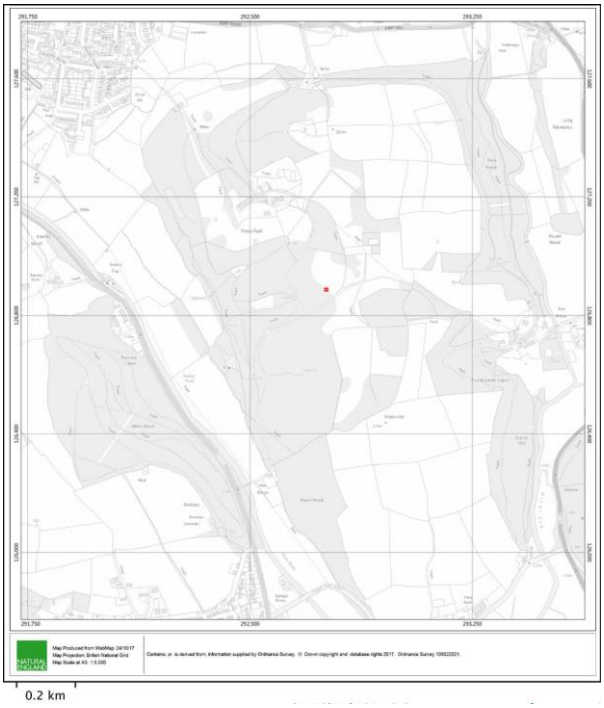


Map 24 Oak with systematically recorded spp

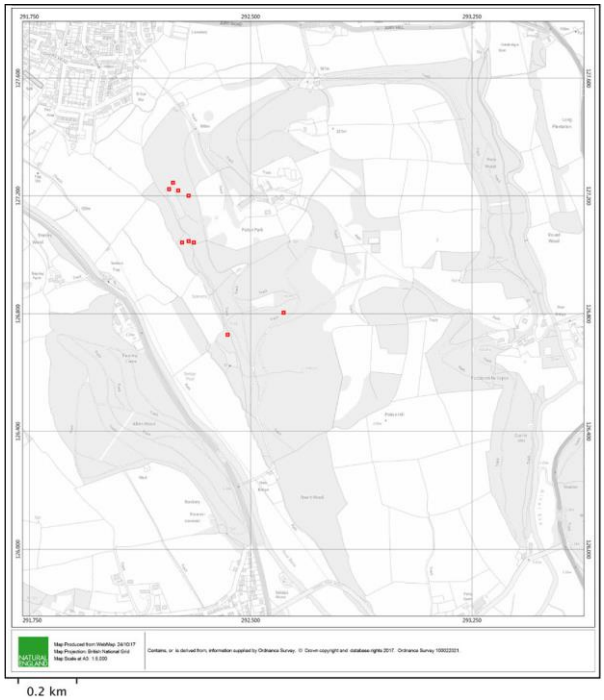
Map 25 Pine with systematically recorded spp



Map 26 Plane with systematically recorded spp

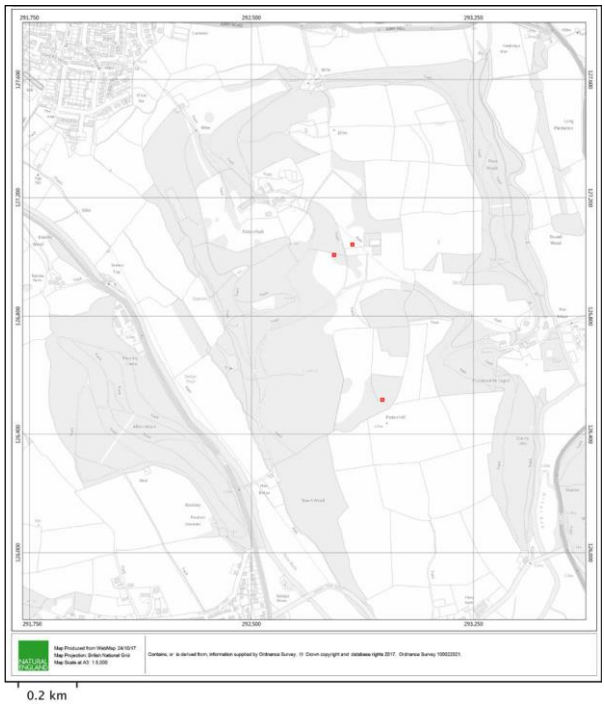


Map 27 Poplar with systematically recorded spp

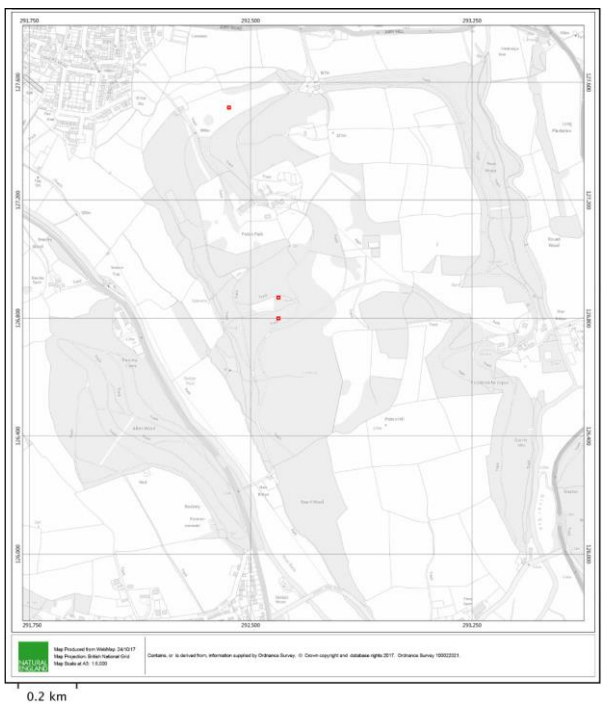


Map 28 Sallow with systematically recorded spp

Map 29 Sweet Chestnut with recorded spp

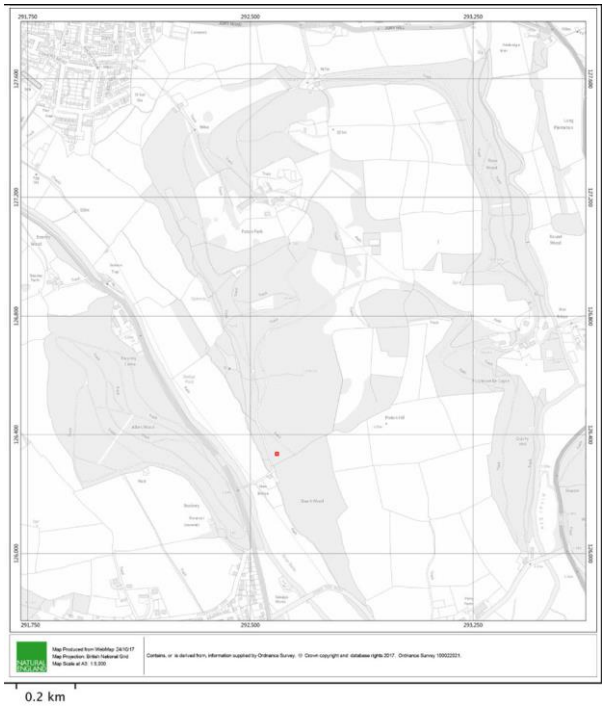


Map 30 Sycamore with recorded spp



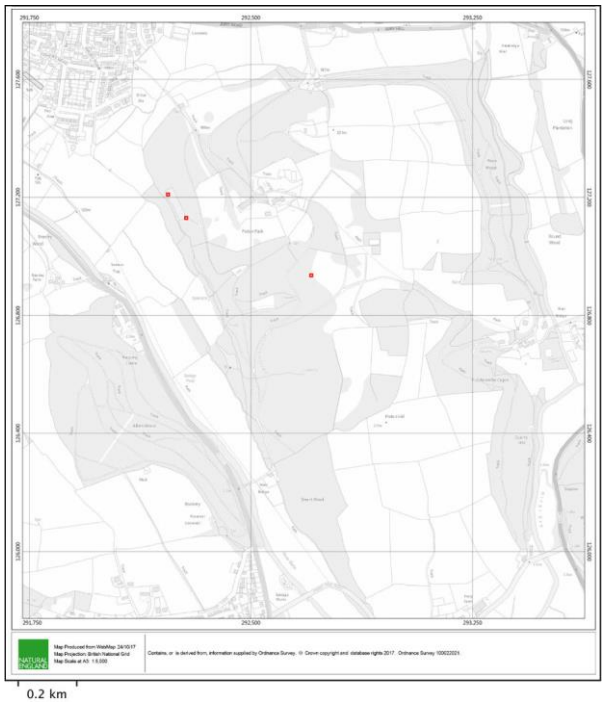
Map 31 Turkey Oak with recorded spp

B4 Species Maps



Map 32 *Arthonia invadens*

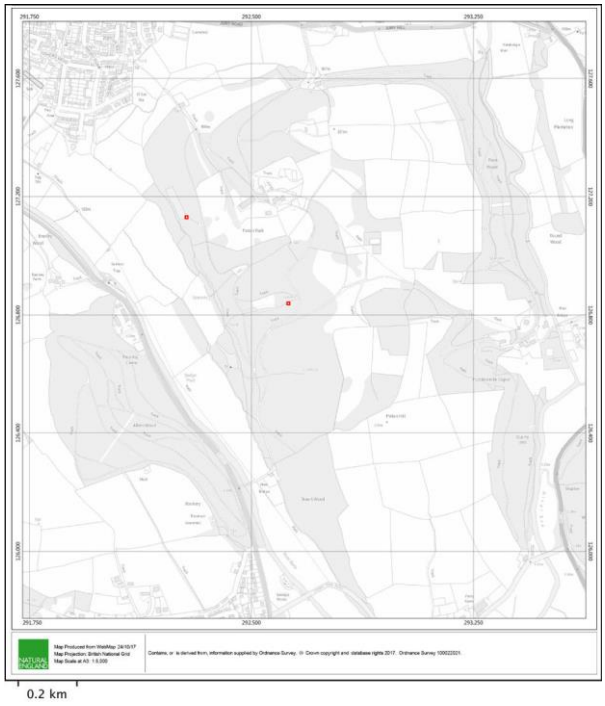
Map 33 *Bacidia incompta*



Map 34 *Chaenotheca brunneola*

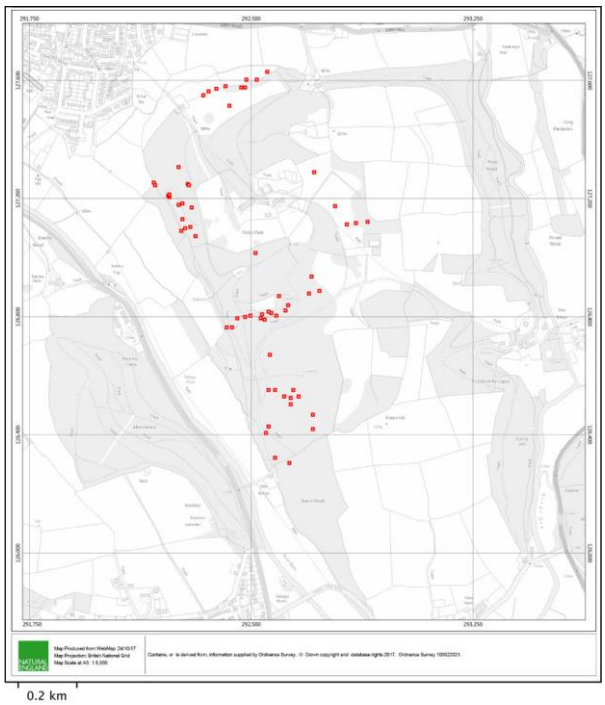
Map 35 *Chaenotheca trichialis*

Map 36 *Chaenothecopsis nigra*



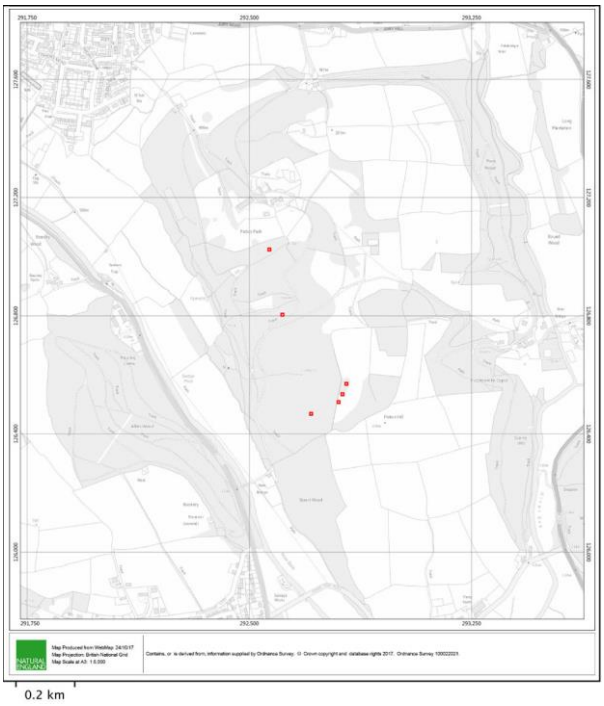
Map 37 *Chaenothecopsis savonica*

Map 38 *Collema fragrans*

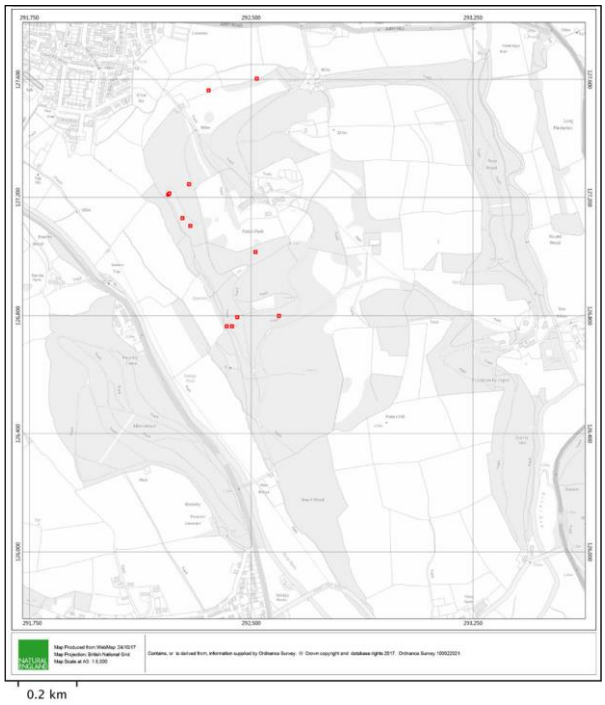


Map 39 *Cresponea premnea*

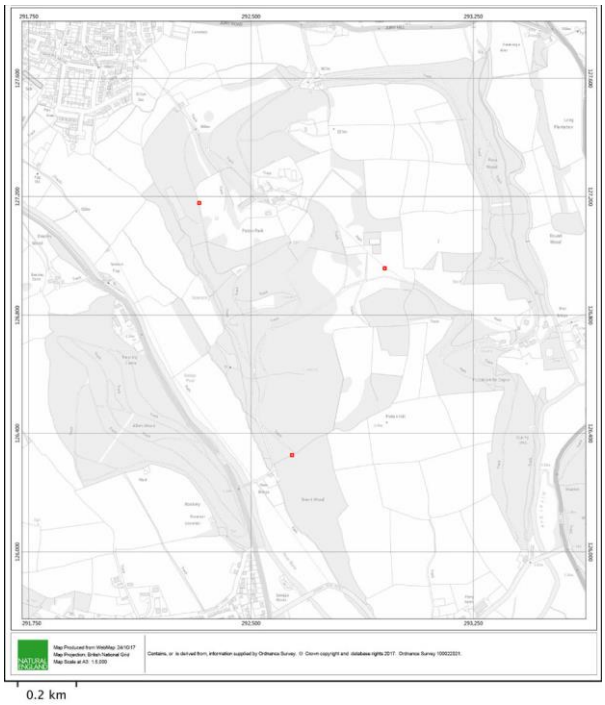
Map 40 *Fuscopannaria mediterranea*



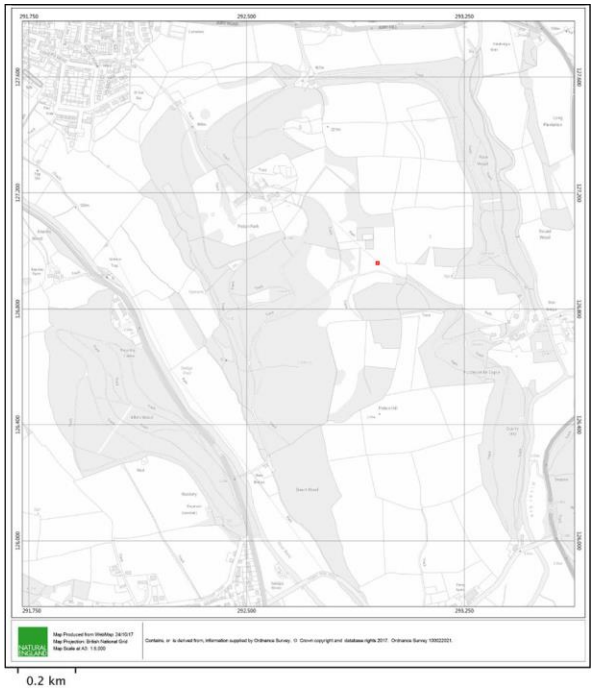
Map 41 *Heterodermia obscurata*



Map 42 *Lecanographa lyncea*

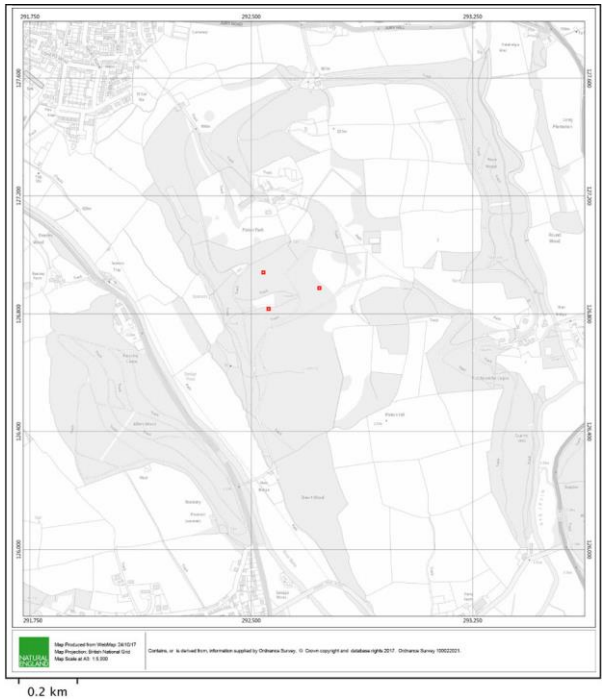


Map 43 *Lobaria pulmonaria*

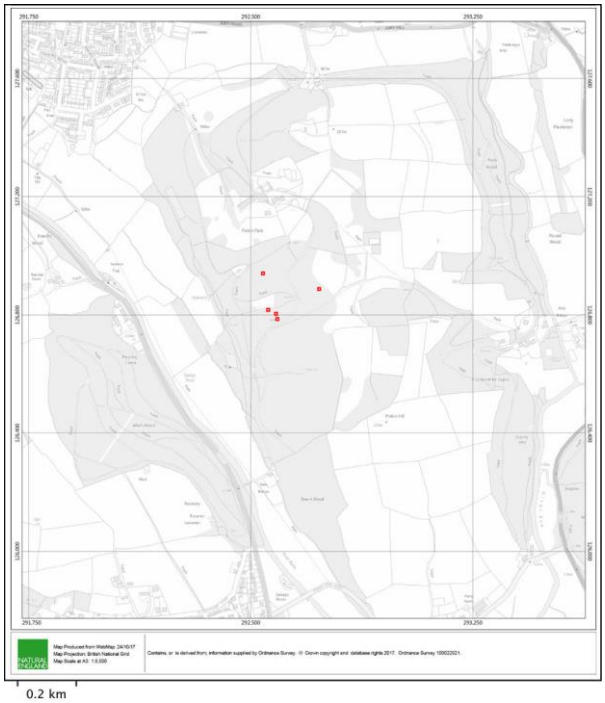


Map 44 *Lobaria scrobiculata*

Map 45 *Microcalicium ahlneri*

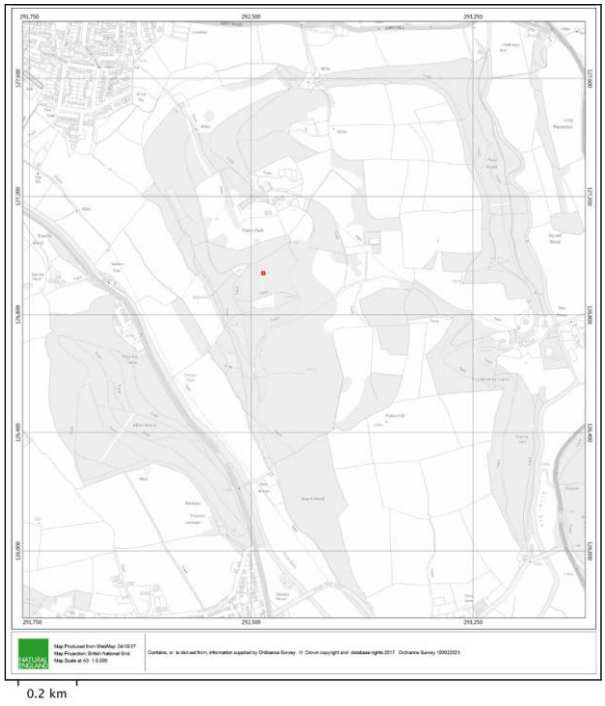


Map 46 *Mycobilimbia epixanthoides*

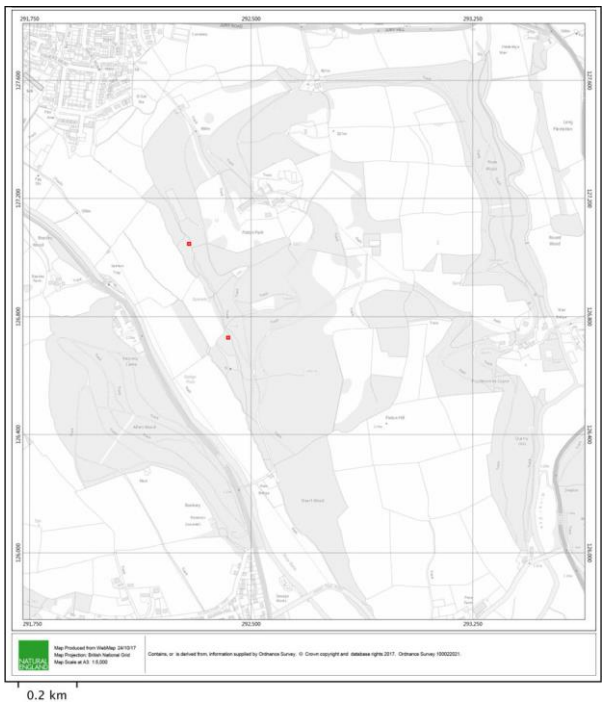


Map 47 *Mycobilimbia pilularis*

Map 48 *Opegrapha corticola*



Map 49 *Pannaria conoplea*

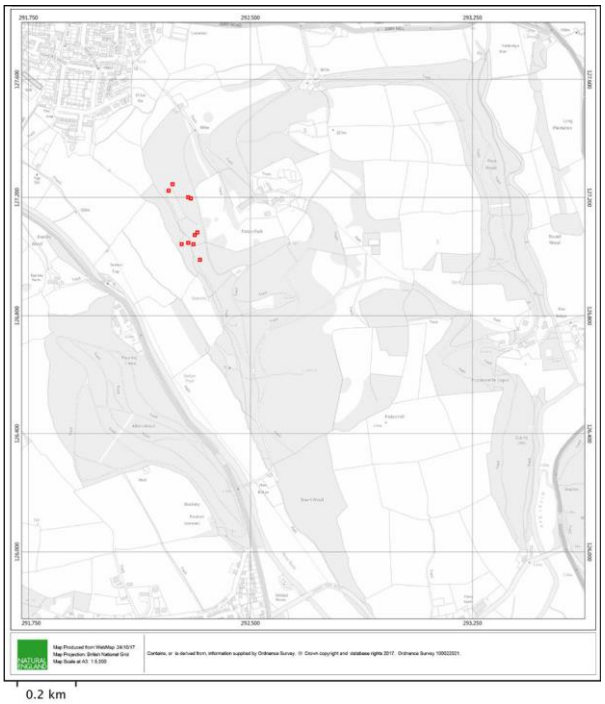


Map 50 *Phlyctis agelaea*

Map 51 *Phyllopsora rosei*

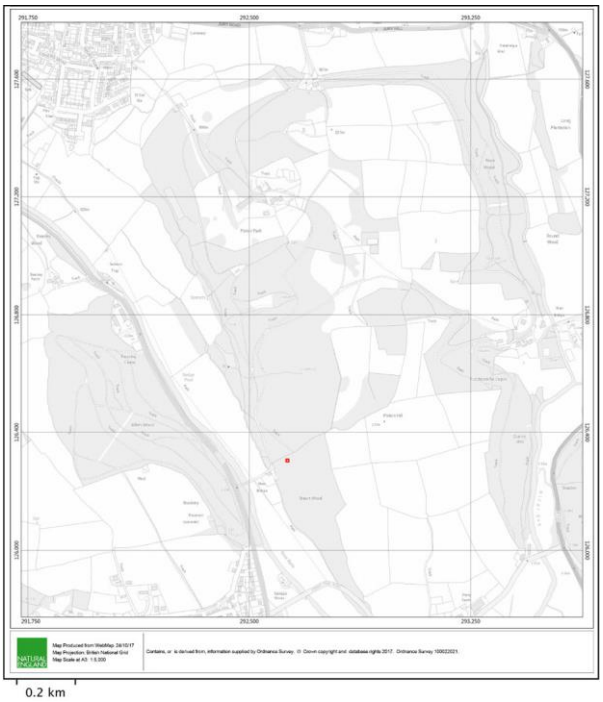
Map 52 *Porina coralloidea*

Map 53 *Rinodina roboris* var. *roboris*

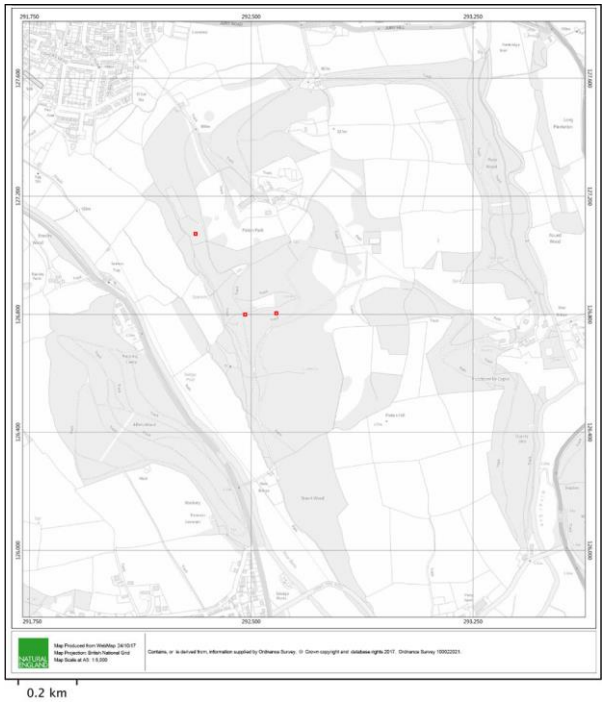


Map 54 *Sticta ciliata*

Map 55 *Sticta limbata*



Map 56 *Taeniolella toruloides*



Map 57 *Thelopsis rubella*

Map 58 *Usnea articulata*

Map 59 *Wadeana dendrographa*

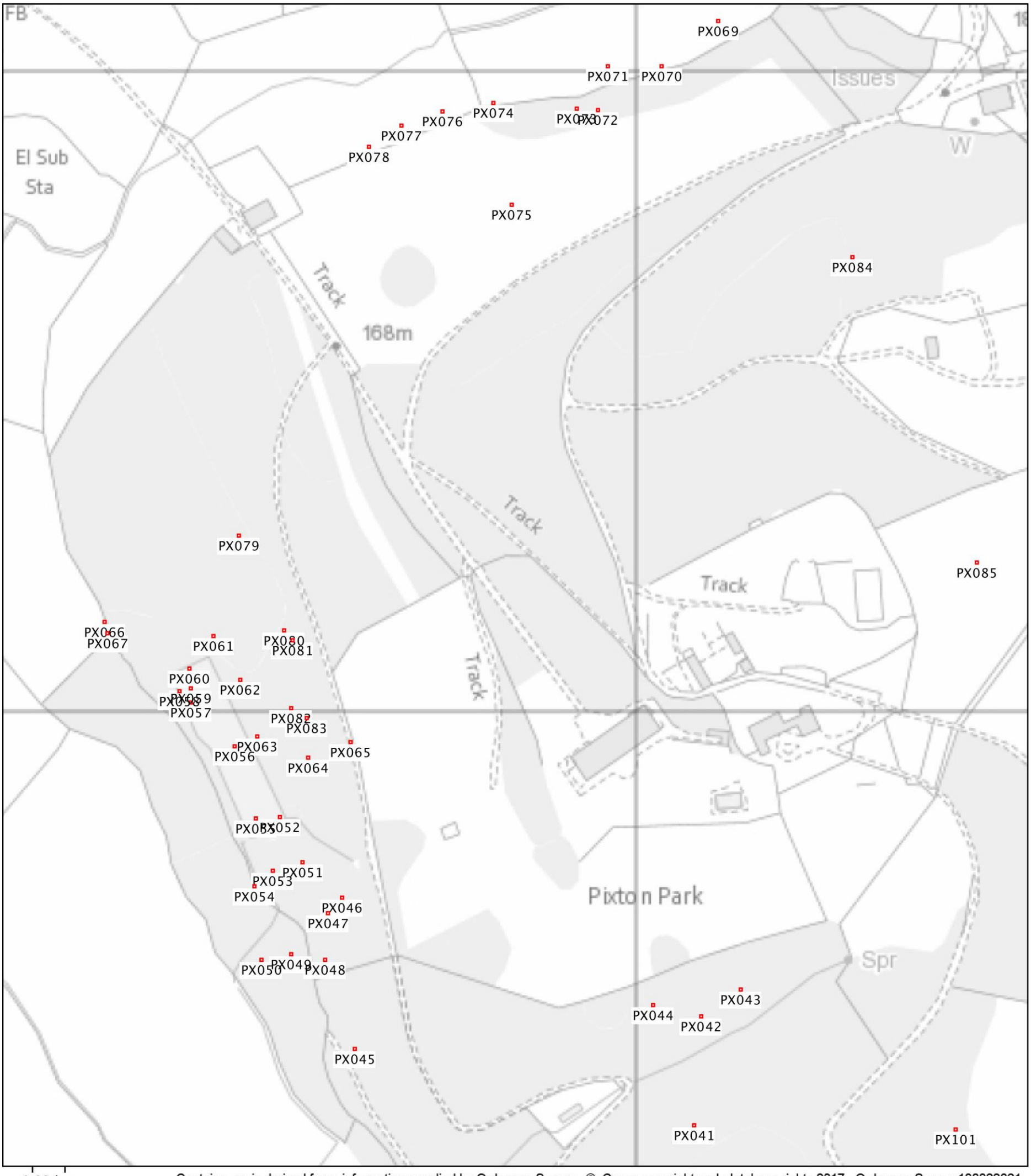
Map 60 *Xerotrema quercicola*

B5 Waypoint Maps

Botanical Survey and Assessment
3 Green Close, Woodlands, SO40 7HU
023 8029 3671

Pixton Park Lichen

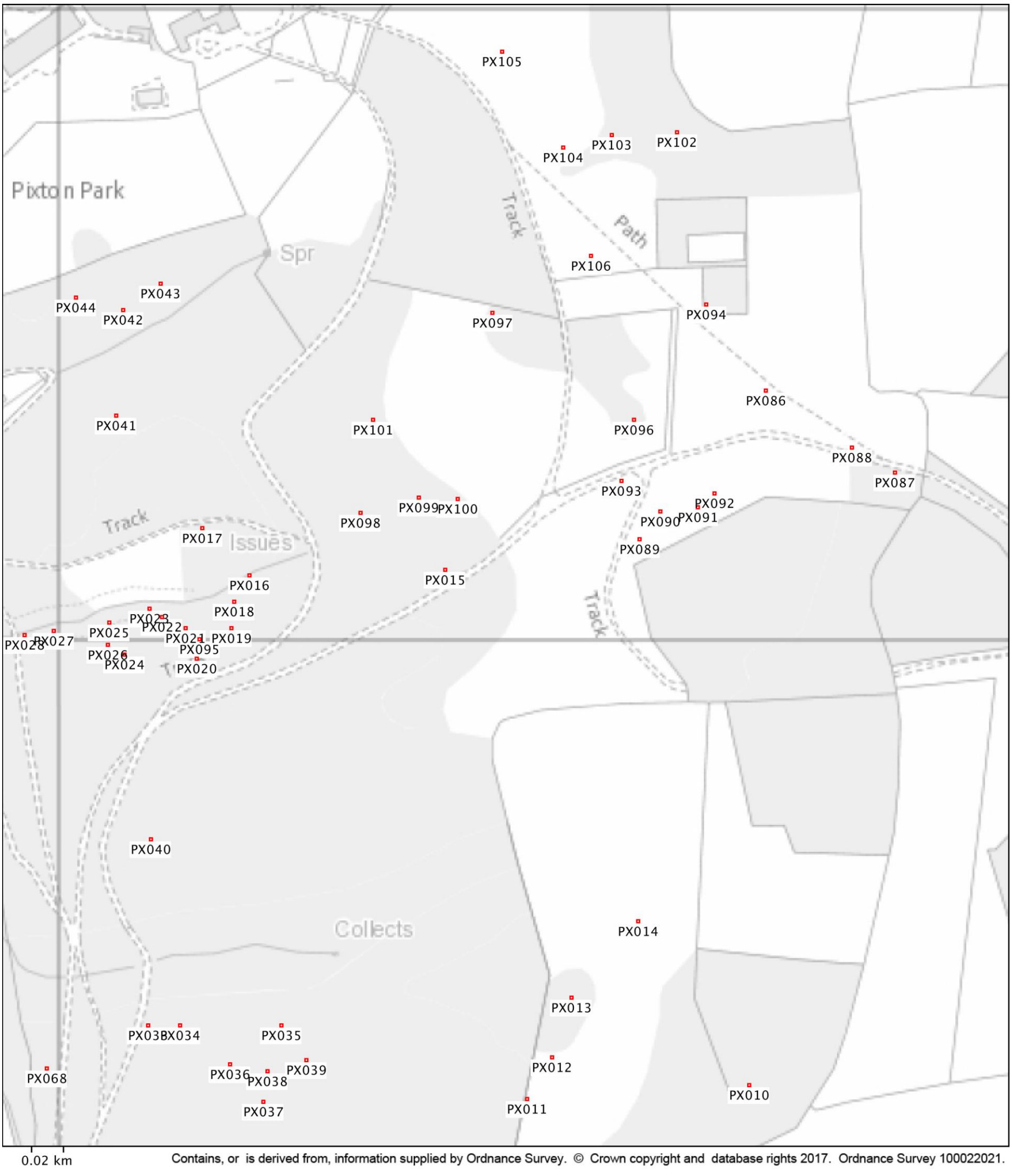
Waypoints North West **Map 61**



Botanical Survey and Assessment
3 Green Close, Woodlands, SO40 7HU
023 8029 3671

Pixton Park Lichen

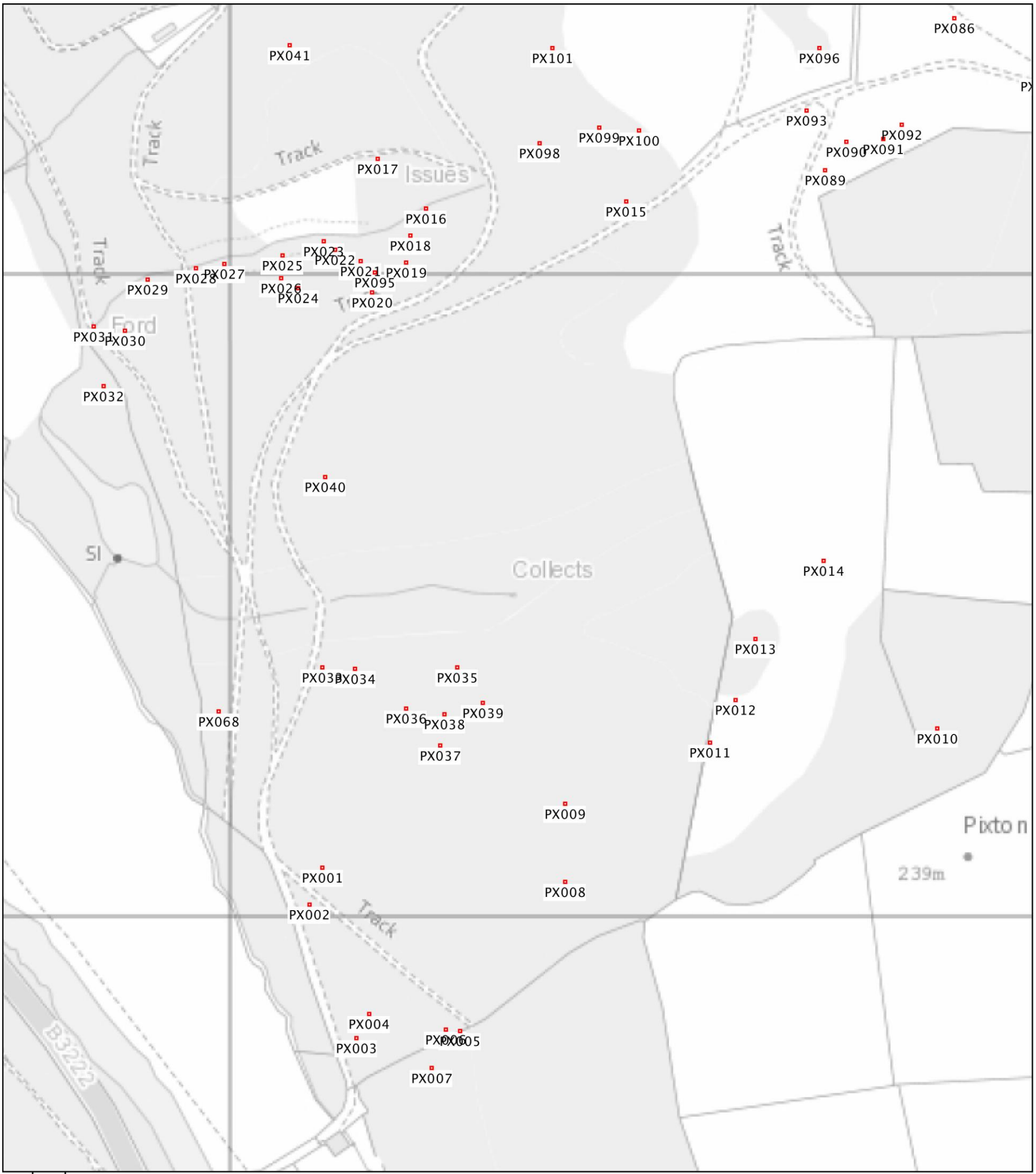
Waypoints East **Map 62**



Botanical Survey and Assessment
3 Green Close, Woodlands, SO40 7HU
023 8029 3671

Pixton Park Lichen

Waypoints South West **Map 63**



ANNEX 4 Waypoints Tabulated

TABLE 5
Pixton Park Park 2016 Waypoints

Name	GR	Alt	Date	Comment
PX001	SS92557 26432	140	18/09/17	Post mature Oak by recently opened up glade, formerly very shaded, Cresponea premnea R, also Schismatomma niveum, Thelotrema lepadinum
PX002	SS92549 26409	127	18/09/17	Post mature Oak above track, recently opened up, Cresponea premnea O, also Micarea doliiformis, Micarea viridileprosa, Thelotrema lepadinum
PX003	SS92578 26326	117	18/09/17	Post mature Oak below track shaded by Rhododendron, Ivy invaded, Cresponea premnea F, also Thelotrema lepadinum
PX004	SS92587 26340	126	18/09/17	Post mature Oak in recently opened up area above track, Arthonia invadens ZZ1585 F, also Anisomeridium ranunculosporum, Schismatomma quercicola, Thelotrema lepadinum. Photo 2017-09-18-01
PX005	SS92643 26330	145	18/09/17	Small suppressed Oak by track just inside wood, Phyllopsora rosei O, Porina coralloidea O, also Anisomeridium ranunculosporum Q, Ix, Biatora britannica, Loxospora elatina, Skyttea nitschkei Z1410, Thelotrema lepadinum
PX006	SS92634 26331	148	18/09/17	Post mature Ash just inside wood, below track, probably the 1980s tree, lower trunk very shaded, Lobaria pulmonaria R, small amount just visible by fork high up
PX007	SS92626 26308	145	18/09/17	Grove of post mature Ash, Oak and Holly below track, shaded Phyllopsora rosei Fx O, Cresponea premnea Q R, Taeniolella toruloides Ix, Z1410, Coll. Herb. Sanderson 2305, new to Somerset, also Thelotrema lepadinum Fx, Ix
PX008	SS92708 26423	189	18/09/17	Shaded post mature Oak Cresponea premnea F, also Schismatomma niveum, Thelotrema macrosporum
PX009	SS92708 26471	192	18/09/17	Ancient Oak by partial glade but still shaded Cresponea premnea O, also Schismatomma niveum, Thelotrema lepadinum. Adjacent dead Sycamore twig Heterodermia obscurata Ap Tw, one thallus
PX010	SS92939 26518	220	18/09/17	Ancient hollow Sycamore in open Bracken area, Bacidia incompta LAp. Photo 2017-09-18-02
PX011	SS92798 26509	214	18/09/17	Hawthorn at edge of field with rich twig assemblage, Heterodermia obscurata R, Usnea articulata F. Photo 2017-09-18-03
PX012	SS92814 26535	214	18/09/17	Hawthorn at edge of field with rich twig assemblage, continuing north of PX011. Heterodermia obscurata O, Coll from dead twig for DNA sequencing, Herb Sanderson 2306, Usnea articulata O, also Punctelia reddenda. Photos 2017-09-18-03 & 04
PX013	SS92826 26573	216	18/09/17	Isolated Hawthorn bush in field, Heterodermia obscurata R, Usnea articulata R
PX014	SS92869 26622	213	18/09/17	Beech in field, with lichen interest on branches, Usnea articulata O, also Punctelia reddenda
PX015	SS92746 26845	173	18/09/17	Hawthorn by track, interest on twigs, Usnea articulata O
PX016	SS92622 26841	154	18/09/17	Grove of one ancient Ash and two Oak and fallen dead Oak by stream, Chaenothecopsis savonica LQ R Coll., Cresponea premnea Fx, Q, LQ F, Microcalicium ahlneri LQ R, also Arthonia pruinata Fx, Q, Bacidia biatorina Q, Cladonia caespiticia LQ, Milospium graphideorum Q Z1315, Opegrapha xerica Fx, Q, Pertusaria amara f. pulvinata Fx, Q, Schismatomma cretaceum Q, Schismatomma decolorans Q

Name	GR	Alt	Date	Comment
PX017	SS92591 26872	158	18/09/17	Post mature Turkey Oak on edge of Bracken glade, Cresponea premnea R, Phyllopsora rosei O, also Arthonia vinosa, Bacidia biatorina, Thelotrema lepadinum
PX018	SS92612 26824	152	18/09/17	Smaller post mature Oak near stream Cresponea premnea A, also Thelotrema lepadinum
PX019	SS92610 26808	152	18/09/17	Old Sallow in flush in side valley, Heterodermia obscurata Tw R, Phyllopsora rosei O, also Thelotrema lepadinum
PX020	SS92588 26789	154	18/09/17	Ancient Plane Tree just below track, Mycobilimbia pilularis O, also Thelotrema lepadinum
PX021	SS92581 26808	150	18/09/17	Ancient Oak pollard in stream valley, Cresponea premnea F, Thelopsis rubella R, Mycobilimbia pilularis O, also Schismatomma cretaceum Q, Arthonia vinosa Q, Lecanactis subabietina Q, Thelotrema lepadinum Q
PX022	SS92566 26815	148	18/09/17	Two post mature pasture woodland by stream, Cresponea premnea F, also Arthonia pruinata
PX023	SS92558 26820	147	18/09/17	Big leaning post mature Oak in steam valley in open woodland, Cresponea premnea F, Mycobilimbia epixanthoides R, Mycobilimbia pilularis F, also Milospium graphideorum Z0592, Lecanactis abietina
PX024	SS92542 26791	148	18/09/17	Post mature Oak in open woodland in stream valley, Cresponea premnea F, also Milospium graphideorum Z0592, Thelotrema lepadinum
PX025	SS92533 26812	142	18/09/17	Smaller post mature Oak by stream, Phyllopsora rosei R, Cresponea premnea O, also, Dimerella lutea, Pachyphiale carneola, Schismatomma cretaceum
PX026	SS92531 26797	143	18/09/17	Post mature Oak in open woodland in stream valley, Cresponea premnea O
PX027	SS92497 26806	136	18/09/17	Ancient Oak by stream above track, Cresponea premnea F, also Schismatomma cretaceum
PX028	SS92479 26804	135	18/09/17	Big post mature Oak by stream below track, Cresponea premnea O, Porina coralloidea O, Thelopsis rubella R, also Thelotrema lepadinum
PX029	SS92448 26797	129	18/09/17	Big post mature Oak by stream, rather shade by Holly, Cresponea premnea F, Lecanographa lyncea F, also Milospium graphideorum Z0600
PX030	SS92435 26765	128	18/09/17	Ancient Oak by stream, Cresponea premnea O, Lecanographa lyncea F, also Milospium graphideorum Z0600
PX031	SS92415 26767	127	18/09/17	Ancient Oak by stream at base of slope, Cresponea premnea O, Lecanographa lyncea O, also Micarea doliiformis, Milospium graphideorum Z0600, Thelotrema lepadinum
PX032	SS92422 26730	127	18/09/17	Collapsed and regrowing Sallow, Phlyctis agelaea, also Leptogium lichenoides, Megalaria pulverea
PX033	SS92557 26556	152	19/09/17	Post mature Pedunculate Oak above road, formerly shaded Cresponea premnea O, also Schismatomma niveum, Thelotrema lepadinum
PX034	SS92577 26555	159	19/09/17	Post mature Sessile Oak, recently opened up, Cresponea premnea R, also Thelotrema lepadinum
PX035	SS92641 26556	174	19/09/17	Post mature Pedunculate Oak on quarry spoil tip, Cresponea premnea O
PX036	SS92610 26531	175	19/09/17	Shaded post mature Sessile Oak on slope south of quarry, Cresponea premnea F, also Pachyphiale carneola, Thelotrema lepadinum
PX037	SS92631 26507	180	19/09/17	Post mature Sessile Oak by small glade, Cresponea premnea O, also Thelotrema lepadinum, Schismatomma niveum
PX038	SS92633 26527	185	19/09/17	Post mature Sessile Oak higher on slope, a bit less shaded Cresponea premnea F, also Micarea doliiformis, Thelotrema lepadinum

Name	GR	Alt	Date	Comment
PX039	SS92657 26534	188	19/09/17	Post mature Sessile Oak on top lip of quarry, shaded by dense Beech regeneration, Cresponea premnea O, also Skyttea nitschkei Z1410, Thelotrema lepadinum
PX040	SS92559 26674	161	19/09/17	Big forked post mature Sessile Oak above track, Cresponea premnea R, also, Pachyphiale carneola
PX041	SS92537 26943	161	19/09/17	Ancient Ash on valley side in open pasture woodland on the edge of a Bracken glade, Mycobilimbia epixanthoides R, Mycobilimbia pilularis R, Pannaria conoplea F a few small thalli low down, F on limbs high up, Phyllopsora rosei O higher up, also Leptogium lichenoides, Leptogium teretiusculum, Pertusaria multipuncta, Schismatomma cretaceum, Thelotrema lepadinum. Photos 2017-08-19-01 & 02. Adjacent young Ash, Usnea articulata O, also Usnea ceratina
PX042	SS92541 27010	146	19/09/17	Old Hawthorn by sheltered glade, with interest on twigs, Usnea articulata O
PX043	SS92565 27027	147	19/09/17	Old Hawthorn by sheltered glade, with interest on twigs, Heterodermia obscurata R
PX044	SS92511 27018	147	19/09/17	Two huge ancient Pedunculate Oak on north side of valley, Chaenotheca trichialis O, 1 tree, Cresponea premnea F, 2 trees, Lecanographa lyncea F, 2 trees, Usnea articulata Tw, Windblown, also Milospium graphideorum, Z0600
PX045	SS92325 26990	128	19/09/17	Mature rather shaded Ash in young Hawthorn , Sticta ciliata R, also Leptogium lichenoides
PX046	SS92317 27084	132	19/09/17	Young Ash tree by glade, Sticta ciliata R, also Pachyphiale carneola
PX047	SS92309 27075	131	19/09/17	Hazel bush in glade by dead Oak, Sticta ciliata O, Sticta limbata O, also Leptogium lichenoides Co, Peltigera horizontalis Co, Phaeographis dendritica Co. Adjacent fallen Oak branch, Xerotrema quercicola LQ O. Dead Oak (is 1980s Tree j), Cresponea premnea O, Fuscopannaria mediterranea O, Thelopsis rubella R, also, Leptogium lichenoides. Photo 2017-09-19-03
PX048	SS92306 27046	135	19/09/17	Old tall Sallow by swampy glade and young suppressed Ash saplings. Sticta ciliata Sx, Fx R, also Leptogium lichenoides
PX049	SS92286 27049	134	19/09/17	Leaning Sallow and several more to north, in glade in strip below park proper, also interest on young Ash, Phlyctis agelaea Sx R, Sticta ciliata Sx, Fx F, also Japewiella tavaresiana Sx, Lecanora jamesii Sx, Leptogium lichenoides Sx. Photo 2017-09-19-04
PX050	SS92267 27045	132	19/09/17	Collapsed and regenerating Sallow, in strip of infilled field below park proper Sticta ciliata R colonising, also Megalaria pulverea
PX051	SS92292 27106	136	19/09/17	Big post mature Sessile Oak on bank, Cresponea premnea O, Lecanographa lyncea F, also Milospium graphideorum, Z0600
PX052	SS92278 27134	139	19/09/17	Standing dead Scots Pine by pond, interest on lignum, Chaenotheca brunneola O, Chaenothecopsis savonica R
PX053	SS92273 27101	136	19/09/17	Ancient pollard Sessile Oak on park boundary, Cresponea premnea F, also Schismatomma cretaceum, Thelotrema lepadinum
PX054	SS92262 27091	137	19/09/17	Post mature Sessile Oak on park boundary, Cresponea premnea O, also Thelotrema lepadinum
PX055	SS92263 27134	138	19/09/17	Post mature Sessile Oak on pond dam, Cresponea premnea, F, Lecanographa lyncea R Colonist?, also Bacidia biatorina, Milospium graphideorum Z0600, Pachyphiale carneola, Thelotrema lepadinum
PX056	SS92250 27179	135	19/09/17	Ancient Oak on pond dam, heavily shaded by Rhododendron, Cresponea premnea F

Name	GR	Alt	Date	Comment
PX057	SS92223 27206	135	19/09/17	Post mature Sessile Oak on dam bank part Rhododendron shaded, Cresponea premnea R
PX058	SS92216 27214	136	19/09/17	Post mature Oak pollard by pond, Chaenotheca brunneola R, Cresponea premnea O, Lecanographa lyncea, O, also Schismatomma cretaceum, Milospium graphideorum Z0600
PX059	SS92222 27215	137	19/09/17	Post mature Pedunculate Oak, Cresponea premnea F, Lecanographa lyncea O, also Micarea viridileprosa, Milospium graphideorum Z0600
PX060	SS92221 27227	137	19/09/17	Collapsed and regrowing Sallow at end of pond, Sticta ciliata A
PX061	SS92236 27248	140	19/09/17	Leaning Sallow on pond bank east side, Sticta ciliata F
PX062	SS92254 27221	141	19/09/17	Collapsed and regrowing Sallow on east side of pond, Sticta ciliata F
PX063	SS92264 27185	139	19/09/17	Post mature Pedunculate Oak above pond, Rhododendron threat Cresponea premnea F, Porina coralloidea R, also Pachyphiale carneola
PX064	SS92296 27172	140	19/09/17	Post mature Turkey Oak above pond, Cresponea premnea R, also Thelotrema lepadinum
PX065	SS92322 27181	144	19/09/17	Big post mature Plane Tree by track, Lobaria pulmonaria F, few thalli at c 4m, shaded by Lime, scattered health thalli larger higher up tree.
PX066	SS92169 27256	140	19/09/17	Post mature Oak on park boundary, Cresponea premnea O
PX067	SS92171 27249	140	19/09/17	Post mature Oak on park boundary, Cresponea premnea O
PX068	SS92493 26529	132	19/09/17	An extraordinary high cut Ash pollard above old track, Wadeana dendrographa O, frequent on the south west side. Photo 2017-09-19-05
PX069	SS92551 27631	170	20/09/17	Ancient Pedunculate Oak on boundary. In mown parkland, logs pilled at the base of tree, Cresponea premnea O, also Schismatomma cretaceum
PX070	SS92516 27603	167	20/09/17	Ancient Pedunculate Oak on boundary. In mown parkland, logs pilled at the base of tree, Chaenotheca trichialis LQ, Q O, Chaenothecopsis nigra LQ R, spores one septate, septa darker than cell walls, Cresponea premnea F, Lecanographa lyncea R, also Milospium graphideorum Z0600, Schismatomma cretaceum Photo 2017-09-20-01
PX071	SS92483 27603	167	20/09/17	Dead Oak on boundary in mown park, Cresponea premnea O
PX072	SS92477 27576	166	20/09/17	Ancient Pedunculate Oak in boundary in mown park, Cresponea premnea O, also Opegrapha xerica, Schismatomma cretaceum
PX073	SS92464 27576	166	20/09/17	Ancient Pedunculate Oak in mown park near spring and pond, Chaenotheca trichialis O, Cresponea premnea F, also Schismatomma cretaceum
PX074	SS92411 27580	161	20/09/17	Post mature Pedunculate Oak on boundary bank in mown park, Cresponea premnea O
PX075	SS92423 27517	175	20/09/17	Post mature Turkey Oak in grove in grazed area of park, Cresponea premnea O, Usnea articulata Tw O, also Bacidia rubella, Dactylospora parasitica Z1076, Pertusaria hymenea
PX076	SS92379 27575	157	20/09/17	Ancient Pedunculate Oak on boundary bank of mown park, Cresponea premnea O, also Schismatomma cretaceum
PX077	SS92354 27566	155	20/09/17	Ancient Pedunculate Oak on boundary bank of mown park, Cresponea premnea F, Lecanographa lyncea O, Chaenotheca trichialis R, also Schismatomma cretaceum, Milospium graphideorum Z0600, Bacidia biatorina

Name	GR	Alt	Date	Comment
PX078	SS92334 27553	155	20/09/17	Ancient Pedunculate Oak on boundary bank of mown park, Cresponea premnea F, also Arthonia pruinata, Schismatomma cretaceum
PX079	SS92253 27310	150	20/09/17	Post mature Turkey Oak below track and on edge of plantation, shaded, Cresponea premnea O
PX080	SS92281 27251	150	20/09/17	Big post mature Pedunculate Oak below track, very shaded, Cresponea premnea F
PX081	SS92286 27245	150	20/09/17	Big post mature Pedunculate Oak below track, a bit less shaded, a bit less shaded than PX080 and richer, Cresponea premnea F, Lecanographa lyncea R, also Thelotrema lepadinum, Arthonia vinosa, Milospium graphideorum Z0600. Photo 2017-09-20-02
PX082	SS92285 27203	146	20/09/17	Collapsed and regrowing Sallow by glade, Sticta ciliata O
PX083	SS92295 27197	146	20/09/17	Old Hazel bush by small glade, Sticta ciliata O, also Thelotrema lepadinum
PX084	SS92635 27484	198	20/09/17	Standing dead Sweet Chestnut in Beech stand, interest on lignum, Microcalicium ahlneri R
PX085	SS92713 27293	205	20/09/17	Ancient Pedunculate Oak with three trunks, Cresponea premnea R, Opegrapha corticola O, also Pachyphiale carneola, Punctelia reddenda, Schismatomma cretaceum, Thelotrema lepadinum. Photo 2017-09-20-03
PX086	SS92949 26959	197	20/09/17	Ancient Ash in dip in top, in grassland, Lobaria pulmonaria A, large thalli up trunk on west side up to major fork, Lobaria scrobiculata R, single thallus, also Bacidia biatorina, Lecanora jamesii, Leptogium lichenoides, Porina borreri. Photos 2017-09-20-04 – 09
PX087	SS93031 26907	199	20/09/17	Hawthorn bush in corner of park, sheltered by wood, interest on twigs, Usnea articulata F
PX088	SS93004 26923	196	20/09/17	Poorly grown Hawthorn bush, with rare interest on adjacent Hazel Bush, in corner of park, sheltered by wood, Usnea articulata F
PX089	SS92869 26865	200	20/09/17	Hawthorn bush in grassland by wood edge, interest on twigs, Usnea articulata R
PX090	SS92883 26882	200	20/09/17	Hawthorn bush in grassland by wood edge, interest on twigs, Usnea articulata O
PX091	SS92906 26884	204	20/09/17	Hawthorn bush in grassland by wood edge, interest on twigs, Usnea articulata R
PX092	SS92917 26893	202	20/09/17	Hawthorn bush in grassland by wood edge, interest on twigs, Usnea articulata R
PX093	SS92858 26902	193	20/09/17	Isolated Hawthorn bush in grassland in dip in plateau, interest on twigs, Usnea articulata F, also Lecanora jamesii, Lecanora albella, Buellia griseovirens, Melanohalea exasperatula, Parmelina pastillifera
PX094	SS92911 27014	198	20/09/17	Mature Pedunculate Oak in parkland, interest on branches, Usnea articulata O
PX095	SS92590 26801	154	21/09/17	Post mature Turkey Oak in damp glade with good colonisation, Lecanographa lyncea O, also Anisomeridium ranunculosporum, Bacidia biatorina, Milospium graphideorum, Thelotrema lepadinum, Usnea ceratina
PX096	SS92866 26941	193	21/09/17	Pedunculate Oak in deer grazed parkland, Usnea articulata twigs F, also Anisomeridium ranunculosporum, Calicium salicinum, Cyphelium sessile Z1064, Pertusaria coccodes, Pertusaria multipuncta
PX097	SS92776 27008	186	21/09/17	Post mature Sycamore in southern field, interest on branches, Usnea articulata O

Name	GR	Alt	Date	Comment
PX098	SS92692 26882	160	21/09/17	Post mature Pedunculate Oak in hollow, much deer trampling about tree, Cresponea premnea F, also Agonimia tristicula, Bacidia biatorina
PX099	SS92729 26891	165	21/09/17	Ancient Pedunculate Oak on edge of wood, Cresponea premnea F, Mycobilimbia epixanthoides, Mycobilimbia pilularis O
PX100	SS92754 26890	169	21/09/17	Grey Poplar stand on edge of wood, Usnea articulata branches F, also Megalaria pulverea, Usnea rubicunda, Cyphelium sessile Z1064, Pertusaria coccodes
PX101	SS92700 26940	168	21/09/17	Ancient Pedunculate Oak with two trunks Chaenotheca brunneola lignum R, Chaenotheca trichialis R, Cresponea premnea R
PX102	SS92893 27122	200	21/09/17	Broken hollow ancient Pedunculate Oak in open parkland, Cresponea premnea R, also Cliostomum flavidulum, Lecanora jamesii, Megalaria pulverea
PX103	SS92852 27121	197	21/09/17	Younger post mature Pedunculate Oak in open parkland, Cresponea premnea R, a very small amount, recent colonist?
PX104	SS92821 27113	193	21/09/17	Ancient Pedunculate Oak with two trunks, in open parkland, on old boundary bank?, Cresponea premnea O, also Thelotrema lepadinum
PX105	SS92782 27174	190	21/09/17	Ancient Pedunculate Oak in open parkland, Cresponea premnea F, Rinodina roboris var. roboris O, also Calicium viride, Caloplaca obscurella, Diploicia canescens, Parmotrema crinitum, Schismatomma cretaceum, Taeniolella sp A Z1075, Coll. Herb. Sanderson 2307, Varicellaria hemisphaerica. Photo 2017-09-21-04 & 09
PX106	SS92838 27044	191	21/09/17	Ancient hollow Sycamore in open parkland, Collema fragrans lignum and bark, Coll. Herb Sanderson 2308, no lower cortex; spores muriform 19 – 24 x 11 – 12µm, also Caloplaca ulcerosa lignum, Lecania cyrtellina, Coll. simple spores 8 – 11 x 3µm, Porina byssophila, Coll. perithecia wall K + blue-grey. Photos 2017-09-21-05 – 08

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