Cyfoeth Naturiol Cymru
Natural Resources Wales

# Epiphytic Lichen Survey of Gregynog SSSI, Montgomeryshire, 2018


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## Contents

**Cover Photograph**: An ancient Oak in the Wood Cottage Area (GYG071), a section of the SSSI not previously surveyed for lichens in detail. This tree supported a large population of the Notable lichen *Schismatomma umbrinum*, new the site. It is an uncommon species of dry rock overhangs in the uplands, which rarely occurs on the dry bark of veteran Oaks. This occurrence on trees here is unusual in that there are no local records on rock, with the nearest previously known site being in the far west of the county.

**Acknowledgements**: thanks to Gregynog for permission to carry out the survey and to Sam Bosanquet (NRW) for proofing the document.

# 1. Crynodeb Gweithredol

### Arolwg

Arolygwyd cyfosodiadau cennau SoDdGA Gregynog dros dridiau ym mis Mai 2018 gan N. A. Sanderson. Dyma oedd yr arolwg cennau cynhwysfawr cyntaf o bob rhan o'r SoDdGA, er y cafwyd ymweliadau blaenorol rheolaidd â rhannau o'r SoDdGA gan arbenigwyr cennau eraill a'r awdur. Cynhaliwyd yr arolwg dan amodau da a chofnodwyd y coed pwysig yn ardal y Goedwig Fawr a Wood Cottage. Yn ogystal, cynhaliwyd trawslun ar draws cynefinoedd yn y Cwningar.

### Canlyniadau

Er 1976, mae cyfanswm o 228 o dacsonau o gennau a thacsonau ffwngaidd cysylltiedig wedi cael eu cofnodi yn yr SoDdGA, y gwelwyd 168 ohonynt yn 2018. O'r rhain, roedd 32 yn newydd i'r safle yn 2018. Mae SoDdGA Gregynog yn sgorio 34 ar y Mynegai Coetiroedd Cefnforol Deheuol ar gyfer yr holl ddata a 26 ar gyfer arolwg 2018. Y trothwy ar gyfer ansawdd SoDdGA ar gyfer y mynegai hwn yn yr ardal hon yw 20. Y sgôr Mynegai Cen Pincas ar gyfer yr holl ddata yw 16 a 12 ar gyfer arolwg 2018, gyda throthwy o 10 ar gyfer ansawdd SoDdGA. Mae'r SoDdGA hefyd yn cefnogi sawl cen o ddiddordeb cadwraeth yn ei rinwedd ei hun. Mae gan saith rhywogaeth gen brin boblogaethau o bwys cenedlaethol yma; mae'r rhain naill ai'n rhywogaethau dan fygythiad ar lefel Brydeinig, neu rywogaethau dan beth bygythiad sydd hefyd wedi'u rhestru fel rhai â statws Cyfrifoldeb Rhyngwladol. Mae hefyd 12 o rywogaethau ychwanegol eraill sydd wedi cael eu hasesu fel rhai sydd dan fygythiad yng Nghymru.

Mae Gregynog yn safle eithriadol bwysig o arwyddocâd rhyngwladol, gyda diddordeb wedi'i ganolbwyntio ar y Goedwig Fawr ac ardal Wood Cottage. Mae'n un

o'r safleoedd pwysicaf ar gyfer hen dyfiant sy'n dibynnu ar gennau epiffytig yn nwyrain Cymru ac yn y Gororau. Mae gan Gregynog gyfosodiad nodedig, sy'n cynnwys poblogaethau cryf o rywogaethau is-gefnforol sy'n brin yng nghyd-destun Ewrop. Yn ogystal, daw'r rhain ynghyd â chymysgedd o rywogaethau cefnforol deheuol ger ochr ogledd-ddwyreiniol eu cwmpas, rhywogaethau cefnforol cyffredinol a rhai rhywogaethau gogleddol.

Dyma'r prif gynefinoedd a chyfosodiadau unigol sy'n cyfrannu'n gryf i'r arwyddocâd rhyngwladol hwn:

Cyfosodiadau Rhisgl Sych wedi'u Datblygu'n Eithriadol o Dda ar Goed Hynod (*Lecanactidetum premneae* a *Calicietum hyperelli*): mae'r Gymuned Rhisgl Sych Hynafol (*Lecanactidetum premneae*) yn brin yn rhyngwladol ac yn gymuned bron yn endemig y mae gan Brydain gyfrifoldeb arbennig drosti, ac mae gan gynefinoedd eraill gysylltiad agos â'r gymuned hon a choed derw hynod. Mae Gregynog yn cynnal cyfosodiad sylweddol o'r Gymuned Rhisgl Sych Hynafol ac mae ymhlith y cyfosodiadau unigol mwyaf sy'n hysbys yn Ewrop. Mae mewn cyflwr da gyda rhai o'r rhywogaethau arbenigol iawn y deuir o hyd iddynt ar goed derw aeddfed iau yn dangos arwyddion o gytrefu parhaus. Mae rhywogaethau pwysig yn cynnwys *Enterographa sorediata*, sydd â'r boblogaeth Gymreig fwyaf sy'n hysbys yma, sydd hefyd yn un o'r mwyaf a gofnodwyd yn unrhyw le. Mae'n debygol fod gan Gregynog un o'r poblogaethau mwyaf o *Lecanographa lyncea* yn Ewrop. Deuwyd o hyd i *Chaenothecopsis retinens* hefyd, sy'n brin yn rhyngwladol ac yn newydd i Gymru.

Cymuned Rhisgl Mesig Aeddfed (*Pertusarietum amarae*) gyda phoblogaethau cryf o rywogaethau is-gefnforol prin: mae Gregynog yn cynnal un o'r cyfosodiadau mwyaf cyfoethog a helaeth o'r ffurf lai cefnforol o'r Gymuned Rhisgl Mesig Aeddfed

sy'n hysbys ym Mhrydain. Mae hyn yn cynnwys poblogaethau eithriadol o fawr o *Lecanora sublivescens*, sy'n brin drwy gydol Ewrop. Mae'r cynefin hefyd yn cynnal poblogaethau mawr i Brydain o *Caloplaca lucifuga* a *Lecanora quercicola*.

Cymuned Goetir Rhisgl Llawn Basau (*Lobarion pulmonariae*): yn llai aml na'r uchod ac wedi'i lleihau o bosib gan lygredd aer asideiddio yn y gorffennol, sydd bellach wedi'i leihau. Mae'r cyfosodiad yn llawer mwy cyfyngedig na'r hyn y deuir ar ei draws mewn coetiroedd cefnforol iawn yng ngogledd-orllewin Cymru, ond mae'n cefnogi rhai rhywogaethau sy'n brin yn rhanbarthol ac yn genedlaethol. Mae'r rhain yn cynnwys poblogaethau cryf o'r cennau deiliog cefnforol cyffredinol nodweddiadol *Lobaria pulmonaria* a *Lobaria virens*, ynghyd â nifer o rywogaethau cefnforol deheuol ar ymylon eu cwmpas. Canfuwyd *Coenogonium tavaresianum*, sydd o arwyddocâd rhyngwladol ac yn newydd i Gymru, yn y cyfosodiad hwn.

Cymysgedd o Gyfosodiadau Coetir Rhisgl Asid Cefnforol (*Parmelion laevigatae*) a rhywogaethau rhisgl asid mwy gogledd-ddwyreiniol (*Pseudevernietum furfuraceae*): mae'r rhywogaethau cefnforol yn cynnwys sawl un ar ymylon ei chwmpas yng Nghymru, gan gynnwys rhai nad oes ganddynt ond ychydig neu ddim cofnodion eraill ohonynt yn Sir Drefaldwyn. Mae rhywogaethau cefnforol arwyddocaol yn cynnwys yr hyn sy'n debygol o fod y boblogaeth fwyaf yng Nghymru o *Schismatomma niveum*. Roedd y rhywogaethau gogledd-ddwyreiniol yn cynnwys *Lecidea nylanderi*, sy'n newydd i Gymru ac sy'n cynrychioli estyniad cwmpas sylweddol iawn.

Cymunedau o Lignwm Sych (*Calicietum abietinae*) a Lignwm Llaith (*Cladonietum coniocraeae*) wedi'u Datblygu'n Dda: Mae gan Gregynog gyfosodiad lignwm amrywiol iawn ar gyfer de Prydain, ac mae'r sgôr Mynegai Cen Pincas yn uwch

nag ar gyfer unrhyw safle arall yng Nghymru. Roedd *Ochrolechia arborea* hefyd yn newydd i Gymru ac mae gan Gregynog y boblogaeth fwyaf yng Nghymru o'r rhywogaeth ogleddol gyfandirol *Microcalicium disseminatum*.

Cymunedau Canopi a Brigau a Llygredd Aer: mae'r amrywiaeth fawr o gymunedau cennau yn y canopi'n cynnwys yn bennaf rhywogaethau cyffredin sy'n cytrefu'n gyflym. Fodd bynnag, mae'r cyfosodiadau canopi'n ymateb yn gyflym iawn i'r drefn llygredd aer bresennol ac yn rhoi arwydd clir o'r tueddiadau parhaus. Er bod llygredd asideiddio o ffynonellau diwydiannol pell wedi dirywio, ceir tystiolaeth fod lefelau amonia o amaethyddiaeth ddwys yn yr ardal gyffredinol wedi cynyddu. Deuwyd o hyd i'r cen treebeard *Usnea florida*, sy'n sensitif iawn i amonia, unwaith yn unig yn 2018, ond fe'i cofnodwyd yn fwy eang mewn ymweliadau blaenorol. Mae ail rywogaeth sensitif iawn, *Bryoria fuscescens*, wedi dangos dirywiad sylweddol: yn 2018 dim ond deunydd gwael iawn y deuwyd o hyd iddo ar foncyff syrthiedig, ond ar ddiwedd yr 20fed ganrif, nodwyd ei fod yn amlwg yn lleol ar ganghennau a boncyffion wedi'u goleuo'n dda yn y Goedwig Fawr a'r Cwningar. Awgrymodd arsylwadau a wnaed yn 2018 o gyfosodiadau brigau fod ardaloedd sydd wedi'u cysgodi'n dda yn dal i fod yn 'lân' ond bod peth effaith yn eang yn y SoDdGA. Yng ngogledd ardal Wood Cottage, effeithiwyd yn wael ar goeden unigol ar dir pori a ddefnyddir yn fwy dwys. Mae'r cyfosodiadau canopi'n dangos cyferbyniad sylweddol rhwng rhannau gogleddol a deheuol ardal Wood Cottage, gydag arwyddion o lefelau amonia isel yn y de. Yng ngogledd ardal Wood Cottage, roedd y cymunedau boncyffion hefyd wedi'u dadfaethu gan lefelau amonia uchel. Yng ngweddill y SoDdGA, ni welwyd unrhyw effaith sylweddol ar gyfosodiadau boncyffion; mae cymunedau boncyffion yn anweithredol i ryw raddau ac yn arafach i ymateb i newidiadau mewn llygredd aer. Mae'r ardal i'r

gogledd o Wood Cottage yn destun lefelau o amonia a fyddai'n niweidio'r SoDdGA yn ddifrifol petaent yn cael eu hymestyn dros y safle cyfan.

**Rheoli**

Yn nodweddiadol, mae gan gennau prin gyfraddau isel iawn o feddiant, oherwydd bod angen cilfachau arbenigol arnynt y deuir o hyd iddynt ar ychydig o goed hynod yn unig. O ganlyniad, maent yn dueddol o ymddangos mewn nifer bach iawn o goed o fewn poblogaethau mawr o goed hynod. Mae ganddynt ofynion amrywiol ar gyfer graddau gwahanol o gysgod a golau, ond mae angen cyfuniad o'r ddau arnynt. O ganlyniad, mae gan safleoedd sy'n gyfoethog o ran cennau lawer o goed hynod ar ffurfiau mosaig o glystyrau agored a rhannol agored. Mae clystyrau agored iawn a chaeedig iawn yn llai cyfoethog, a cheir ychydig iawn o ddiddordeb ar goed hynod dan gysgod trwm. Deuir o hyd i'r cynefin coed mwyaf cyfoethog o ran cennau ar dir sy'n cael ei bori'n helaeth ac sy'n gymysgedd o goetir llannerchog sy'n cael ei bori a pheth parcdir mwy agored.

Sylwadau ar y rheolaeth o SoDdGA Gregynog:

- Mae strwythur presennol Gregynog yn addas iawn ar gyfer y cyfosodiad o gennau.

- Fodd bynnag, mae diffyg coed iau, yn enwedig o'r rhywogaeth goed bwysicaf, derw. Mae angen gwneud penderfyniadau sylweddol ar sut i sefydlu'r cenedlaethau nesaf o goed, wrth gynnal pori ac amodau agored o amgylch y coed hynod ar yr un pryd.

- Opsiynau cymysg mae'n debyg yw'r ateb gorau gyda lleihad mewn pwysau pori'n cynhyrchu peth adfywio natur wedi'i gyfuno â phlannu coed yn lleol.

- Problem fawr yw effaith llygredd. Mae asideiddio wedi bod yn lleihau oherwydd polisi cenedlaethol ac mae angen i hyn barhau. Mewn cyferbyniad, mae lefelau amonia wedi cynyddu ac yn broblem yn lleol, ac mae angen ymatebion iddynt megis lleihau'r defnydd dwys o dir ar dir cyfagos yn ogystal ag o fewn y SoDdGA.

- Y lleiaf y mae angen ei wneud yng Ngregynog i leihau llygredd amonia fyddai lleihau dwysedd y gwaith i reoli glaswelltir ar y SoDdGA a'r caeau cyfagos. Byddai hyn yn cynnwys dim defnydd o wrtaith ar gaeau cyfagos ynghyd â gostyngiadau cyfatebol mewn da byw ar draws y safle ehangach.

Mae clefyd coed ynn yn debygol o gael effaith negyddol ar y cennau yn y SoDdGA ond nid yw coed ynn yn swbstrad sylweddol i gennau. Fodd bynnag, byddai effaith sylweddol ar ychydig o rywogaethau o ddiddordeb a bydd llawer o goed hynod posib y dyfodol hefyd yn cael eu colli. Mae lliniaru tymor byr i ganolig yn anodd yn hyn o beth, ond, yn y tymor hir iawn, dylai unrhyw goed ynn lleol ymwrthol gael eu cadw a'u meithrin, gan gynnwys casglu hadau o bosib a'u tyfu'n lleol er mwyn eu plannu y tu allan.

## 2. Executive Summary

### Survey

The lichen assemblages of Gregynog SSSI were surveyed over three days in May 2018, by N. A. Sanderson. This was the first comprehensive lichen survey of the whole SSSI, although there had been frequent previous visits to parts of the SSSI by other lichenologists and the author. The survey was carried out in good conditions and systematically recorded the important trees in Great Wood and the Wood Cottage area. In addition, a transect across the habitats in The Warren was carried out.

### Results

Since 1976 a total of 228 taxa of lichens and associated fungal taxa have been recorded from the SSSI, of which 168 were seen in 2018. Of the latter, 32 were new to the site in 2018. Gregynog SSSI scores 34 using the Southern Oceanic Woodland Index (SOWI) for all data and 26 for the 2018 survey. The threshold for SSSI quality for this index in this area is 20. The Pinhead Index score for all data is 16 and 12 for the 2018 survey, with the threshold for SSSI quality 10. The SSSI also supports many lichens of conservation interest in their own right. Seven rare lichen species have nationally significant populations here; these are either Threatened species at a British level, or Near Threatened species that are also listed as being of International Responsibility. There are also an additional 12 species assessed as Threatened in Wales.

Gregynog is an exceptionally important site of international significance, with the interest concentrated in Great Wood and the Wood Cottage area. It is one of the most important sites for old growth dependant epiphytic lichens in eastern Wales and

the Welsh Marches. Gregynog has a distinctive assemblage, which includes strong populations of sub-oceanic species that are rare in a European context. In addition, these are accompanied by a mixture of southern oceanic species near the north-eastern edge of their ranges, oceanic generalist species and some northern species.

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

Exceptionally Well Developed Dry Bark Assemblages on Veteran Trees (*Lecanactidetum premneae* & *Calicietum hyperelli*): the Ancient Dry Bark Community (*Lecanactidetum premneae*) is an internationally rare and near endemic community for which Britain has a special responsibility, while the other habitats are closely associated with this community and veteran Oaks. Gregynog supports a major occurrence of the Ancient Dry Bark Community and is among the largest individual occurrences known in Europe. It is in a good condition with some of the very specialist species found on younger post mature Oaks indicating ongoing colonisation. Important species include *Enterographa sorediata*, which has is largest known Welsh population here which is also one of the largest recorded anywhere. Gregynog is likely to be have one of the largest populations of *Lecanographa lyncea* in Europe. The internationally rare *Chaenothecopsis retinens* was also found, new to Wales.

Mature Mesic Bark Community (*Pertusarietum amarae*) with strong populations of rare sub-oceanic species: Gregynog supports one of the richest and most extensive occurrences of the less oceanic form of Mature Mesic Bark Community known in Britain. This includes an exceptionally large populations of *Lecanora sublivescens* which is rare throughout Europe. The habitat also supports large populations for Britain of *Caloplaca lucifuga* and *Lecanora quercicola*.

Base Rich Bark Woodland Community (*Lobarion pulmonariae*): less frequent than the above and potentially reduced by past acidifying air pollution, which has now reduced. The assemblage is much more limited than found in more strongly oceanic woods in north-west Wales, but supports some regionally and nationally rare species. These include strong populations of the characteristic general oceanic leafy lichens *Lobaria pulmonaria* and *Lobaria virens*, along with a number of southern oceanic species at the edges of their ranges. The internationally significant discovery of *Coenogonium tavaresianum*, new to Wales, was made in this assemblage.

A mix of Oceanic Acid Bark Woodland Assemblage (*Parmelion laevigatae*) and more north-eastern acid bark species (*Pseudevernietum furfuraceae*): the oceanic species include many at the edge of their ranges in Wales, some with few or no other records from Montgomeryshire. Significant oceanic species include what is likely to be is likely to be the largest Welsh population of *Schismatomma niveum*. The north-eastern species included *Lecidea nylanderi* new to Wales; a very substantial range extension.

Well-developed Dry Lignum (*Calicietum abietinae*) & Damp Lignum (*Cladonietum coniocraeae*) Communities: Gregynog has a very diverse lignum assemblage for southern Britain, and the Pinhead Index score is higher than for any other site in Wales. *Ochrolechia arborea* was also new to Wales and Gregynog has the largest Welsh population of the continental northern species *Microcalicium disseminatum*.

Canopy and Twig Communities and Air Pollution: the great variety of lichen communities in the canopy are largely composed of widespread rapidly colonising species. The canopy assemblages however rapidly respond to the current air pollution

regime and give a strong indication of ongoing trends. While acidifying pollution from distant industrial sources has declined, there is evidence that ammonia levels from intensive agriculture in the general area have increased. The very ammonia sensitive Treebeard lichen *Usnea florida* was only found once in 2018, but had been reported more widely in previous visits. A second very sensitive species, *Bryoria fuscescens*, has shown a very marked decline: in 2018 only very poor material was found once on a fallen trunk, whereas in the late 20th century it was noted as locally prominent on branches and well-lit trunks and was recorded in both in Great Wood and The Warren. Observations made in 2018 of the twig assemblages indicated that very sheltered areas were still 'clean' but some impact was widespread within the SSSI. In the north of the Wood Cottage area an isolated tree within more intensively used pasture was badly impacted. The canopy assemblages show a marked contrast between the northern and southern parts of the Wood Cottage area, with low ammonia levels indicated to the south. In the northern Wood Cottage area the trunk communities were also impoverished by high ammonia levels. In the rest of the SSSI no significant impact was observed on trunk assemblages; trunk communities have a degree of inertia and are slower to respond to changes in air pollution. The area north of the Wood Cottage is subjected to levels of ammonia that would seriously damage the SSSI if extended across the whole site.

**Management**

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. They have varying demands for different degrees of shelter and light, but require combinations of

both, with the result that lichen rich sites typically have an abundance of veteran trees in mosaics of open and partially open stands. Very open and very closed stands are less rich, with very little interest found on deeply shaded veteran trees. The best lichen rich tree habitat is found in extensively grazed land with both gladed grazed woodland and some more open parkland.

Comments on Management of Gregynog SSSI:

- The current structure of Gregynog is very suitable for the lichen assemblage.

- There is, however, a lack of younger trees, especially of the most important tree species Oak. Major decisions have to be made on how to establish the next generations of trees, while maintaining grazing and open conditions around the veteran trees.

- Mixed options are likely to be the best solution with grazing pressure reductions producing some nature regeneration combined with local tree planting.

- A major issue is the impact of pollution. Acidification has been declining due national policy and this needs to continue. In contrast ammonia levels have increased and are a local issue, requiring responses such as reducing land use intensity on adjacent land as well as within the SSSI.

- The minimum required at Gregynog to reducing ammonia pollution would to reduce the intensity of grassland management on both the SSSI and the adjacent fields. This would involve no fertiliser applications being made on the adjacent fields along with corresponding reductions in stock numbers across the wider site.

- Ash Dieback is likely to have a negative impact on the lichen within the SSSI but Ash is not a major substrate for the lichen interest. A few species of interest, however, would be seriously impacted and many potentially future veteran trees will also be lost. Short to medium term mitigation is difficult here but 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.

# 3. Introduction

## 3.1. Background & Brief

### *3.1.1. Background*

Gregynog SSSI covers two areas of parkland either side of Gregynog Hall (**Map 1**), 5km north of Newtown, Powys (Vice-county 47, Montgomeryshire). The north western section of the SSSI in particular has been long known to support a rich and diverse lichen assemblage. The SSSI citation includes the following description:

> The habitat at Gregynog consists of patches of mature oak *Quercus* spp. woodland of varying size, including the Great Wood to the north of Gregynog Hall, and areas of more open parkland habitat comprising mainly of agriculturally un-improved pasture and bracken, with scattered trees and shrubs. The woodland areas have a mature 'high forest' character, with sunny glades, a sparse shrub layer and a ground flora that is largely dominated by grasses and bracken. Veteran trees are common throughout the site.
>
> Lichen communities associated with gnarled old dry bark, are represented particularly well at Gregynog; principally the *Calicion hyperelli* alliance and its association, the *Lecanactidetum premneae*. Amongst these dry-bark communities are typical species such as *Cresponea premnea*, *Lecanographa lyncea*, *Schismatomma niveum*, *Schismatomma cretaceum*, *Lecanactis* spp., *Calicium* spp. and *Chaenotheca* spp. This distinctive association appears to have become the post-climax community of very ancient trees with dry and brittle bark surfaces that have lost their water-holding capacity.
>
> The ancient trees of Gregynog, chiefly oak and ash *Fraxinus excelsior*, also support a number of nationally rare and scarce species including *Calicium adspersum*,

*Lecanographa amylacea* [1], *Lecanora quercicola* and *Lecanora sublivescens*. Furthermore, a number of the species at Gregynog have been identified as species for which the United Kingdom has an international responsibility for their conservation.

In places, the site also supports ancient woodland lichens of the alliance *Lobarion pulmonariae*, with species including *Lobaria pulmonaria*, *Lobaria virens*, *Sticta limbata* [2], *Thelotrema lepadinum*, *Dimerella lutea*, *Pachyphiale carneola* and *Phyllopsora rosei*[3]. Many of these species are good indicators of a long continuity of woodland cover, and represent the climax community of hardwood trees.

There is a history of ad hoc recording and a number of visits by experts or groups of experts, but there does not appear to be a single report that sets out the richness of the lichen flora at Gregynog. A 2014 site dossier for Dinefwr SSSI – compiled by Neil Sanderson and funded by Plantlife (Sanderson, 2014) – has been pivotal in highlighting the importance of the lichen flora of that site, and an equivalent was urgently needed for Gregynog.

### 3.1.2. Brief

The current project was to involve sufficient *de novo* survey of parkland trees to get a full picture of the distribution and abundance of notable lichens. The lichens present on each surveyed tree should be listed along with notes on abundance and condition and trees was to be recorded with any Tree Tag numbers as well as a 10/12-figure GPS reading.

[1] The single record of this species is likely to be an error for sterile *Lecanographa lyncea*
[2] No other localised record for this species at Gregynog found
[3] No other localised record for this species at Gregynog found

Records from this de novo survey will be combined with historic records from the British Lichen Society and any available reports in order to produce a full record of the lichens of the parkland. Individual notable species should be discussed, especially if there are signs of a decline (or increase), and a map of the best trees for lichens should be produced.

NRW have significant concerns that Gregynog SSSI is experiencing ammonia pollution from surrounding agriculture. Twig Lichen Survey by Sam Bosanquet in 2017 revealed *Physcia* and *Xanthoria* species on oak twigs even in the heart of both SSSI units. The current survey should include documentation of any signs of ammonia enrichment on the trunks of parkland trees (the 2017 survey looked only at twigs), including GPS readings and a map of all trees that are showing enrichment.

The contractor was required to:

- Survey the lichens of Gregynog Great Wood and The Warren, focusing particularly on Notable (Section 7, GB Red List, Wales Redlist, and TNTN) species;
- Record and map the location of every tree supporting Notable lichens;
- Record the Notable lichen flora on as many separate trees as possible, and produce a map of the distribution of important trees;
- Combine 2018 survey data with older records to produce a site dossier in the form of a report;
- Produce a spreadsheet of records.

The survey method was to be determined by the contractor, following discussion with the Project Officer.

# 4. Methods

## 4.1. Survey Methods

### 4.1.1. Timing & Conditions

The survey was carried out between the 1st to 4th May 2018. The weather was mainly dry with only passing showers on the second morning and conditions were good for lichen survey throughout.

### 4.1.2. Areas Surveyed

The survey route is shown on Google Earth (**Map 2**) and the OS map base (**Map 3**) as derived from the route record by the GPS receiver. To aid description the site was broken up into four recording areas (**Map 1**), demarking areas of different character. Complete species lists were made for the recording areas. These were:

- **Great Wood East**: the gladed grazed old growth woodland to the east of the main ride in Great Wood. Shown as similar in the later 19th century on Ordnance Survey Maps <http://maps.nls.uk/geo/find/>, but at this time not fenced off from the open parkland to the east
- **Great Wood West**: similar gladed old growth woodland but to the west of the main ride in Great Wood but also including areas of more open parkland to the north west. Shown as similar habitat on 19th century OS maps.
- **Wood Cottage Area**: the more open parkland to the west of Great Wood. 19th century OS maps indicate that the boundary here is a 20th century one and that this area was until then a more wooded extension of Great Wood.
- **The Warren**: a separate area of open parkland south east of Gregynog Hall. Generally open with fewer veteran trees that in the northern areas surveyed.

### 4.1.3. 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. The level of interest found in Great Wood was so intensive that limited time was left to survey The Warren. In this case a transect was made that differed from that made by Sanderson (2012).

The locations of trees of particular interest supporting rare species which were recorded systematically (see section **2.1.4** for definition) were recorded as waypoints using a Garmin GPSmap 64s (**Maps 3 – 46** & **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. The waypoint was recorded when the accuracy indicated was about ± 5m or less. Where the interest was very concentrated, with frequent trees of interest, about 10m separation was maintained between waypoints.

The codes used for the waypoints were GYC and then a sequential waymark number, e.g. GYG001 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 a 1: 5,000 WNR SSSI map.

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

### 4.1.4. Species Recording

All epiphytic lichen species and associated fungi visible from the ground were recorded (**Annex 2**). As such the focus 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 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 of 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 flora of lichens of conservation interest, but could significantly under estimate population 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 that allows the clear expression of current nitrogen pollution. Where possible the lichen assemblage of Oak twigs was checked to estimate current air pollution levels. The high canopies and lack of time limited intensive recording of twigs to three locations. These however appeared to span the range of pollution levels on the site.

A selection of species, which were either very rare and threatened (i.e. all national RDB or Welsh RDB species at Vulnerable or higher) or are more easily recorded Near Threatened or Notable species, of ecological significance, were systematically mapped. It was not possible to systematically record all Welsh Near Threatened and national Notable species as there were so many of them and some are not easy to record systematically. In addition the density of interest within this site is exceptionally high and what was mapped had to be tailored to the time available.

All trees with the systematically recorded species were located using a GPS receiver and mapped as a broad brush monitoring exercise (**Maps 4 – 42** & **Annex 1, 3 & 4**). For these species the frequency of occurrence was estimated as D = Dominant, A = Abundant, F = Frequent, O = Occasional and R = Rare. The data was entered into a matrix in the Excel spreadsheet <GPS Waypoints Gregynog.xls>. In addition, on these trees, all additional species of conservation interest present were also noted as present.

Some colonies of macrolichens were photographed to allow monitoring, and the locations of trees with national RDB species were photographed (**Annex 1**), but smaller crusts predominate on the site and recording their distribution on the trees was not possible in the time available.

**Systematically Recorded Species:**

| **Species** | **Conservation Status** | **Welsh RDB** | **Habitats** |
|---|---|---|---|
| *Arthonia anombrophila* | Nb (NS/IR) | NT | Dry Bark |
| *Biatora chrysantha* | Nb (NS) | NT | Base Rich Bark |
| *Bryoria fuscescens* | | VU | Lignum |
| *Caloplaca herbidella s. str.* | VU (NR/S7) | VU | Mesic Bark |
| *Caloplaca lucifuga* | VU (NR/S7) | VU | Mesic Bark |
| *Chaenotheca stemonea* | Nb (NS) | VU | Dry Bark, Lignum |
| *Chaenothecopsis nigra* | Nb (NS) | | Lignum |
| *Chaenothecopsis pusilla* | Nb (NS) | NE, N | Lignum |
| *Chaenothecopsis retinens* | Nb (NR) | NE, N | Dry Bark |
| *Coenogonium tavaresianum* | Nb (NR) | NE, N | Base Rich Bark |

| | | | |
|---|---|---|---|
| *Cresponea premnea* | Nb (IR) | NT | Dry Bark |
| *Enterographa sorediata* | NT (NS/IR/BAP) | NE, N | Dry Bark |
| *Lecanographa lyncea* | Nb (IR) | EN | Dry Bark |
| *Lecanora quercicola* | VU (NS/IR/S7) | VU | Mesic Bark |
| *Lecanora sublivescens* | NT (NS/IR/S7) | NT | Mesic Bark |
| *Lobaria pulmonaria* | Nb (IR) | VU | Base Rich Bark |
| *Lobaria virens* | Nb (IR) | EN | Base Rich Bark |
| *Lopadium disciforme* | | | Base Rich-Acid Bark |
| *Microcalicium disseminatum* | Nb (NR) | VU | Dry Bark, Lignum |
| *Opegrapha fumosa* | Nb (NS/IR) | VU | Acid Bark |
| *Pachyphiale carneola* | | NT | Base Rich Bark |
| *Porina coralloidea* | Nb (NS/IR) | NT | Base Rich Bark |
| *Porina rosei* | NT (NS/IR) | NT | Base Rich Bark |
| *Ramonia chrysophaea* | NT (NS/IR/S7) | NT | Base Rich Bark |
| *Rinodina roboris* var. *roboris* | Nb (IR) | | Base Rich Bark |
| *Schismatomma cretaceum* | Nb (IR) | VU | Dry Bark |
| *Schismatomma niveum* | Nb (IR) | VU | Acid Bark |
| *Schismatomma quercicola* | Nb (IR) | NT | Acid Bark |
| *Schismatomma umbrinum* | Nb (NS/IR) | | Dry Bark |
| *Xerotrema quercicola* | NT (NR/IR) | | Lignum |

One Welsh Vulnerable RDB species, *Porina byssophila* Nb (NR) (W-VU) was considered not to actually be are rare as assessed because this species was not realised to be a widespread epiphyte until recently. It was not mapped. In addition, it was forgotten that *Schismatomma cretaceum* Nb (IR) (W-VU) is assessed as Vulnerable in Wales during the survey, so a few locations were not mapped, as post survey data was used.

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 List 1, 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_v6f Gregynog 2018.xlsx>. The waymark grid references from each

location and the comments in **Annex 1** were transferred a spreadsheet <GPS Waypoints Gregynog.xls> (**Annex 4**). The waypoint data was also exported as <Gregynog 2018.csv>, <Gregynog 2018.kml> and <Gregynog 2018.GPX> files.

#### *4.1.5. 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.

### 4.2. Data Analysis

#### *4.2.1. Nomenclature*

The nomenclature mainly follows Woods & Coppins (2012) for lichens and lichenicolous fungi.

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 this report:

| **Old Name** | **New Name** |
|---|---|
| *Arthonia pruinata* | *Pachnolepia pruinata* |
| *Caloplaca herbidella s. str.* | *Blastenia herbidella* |
| *Dimerella lutea* | *Coenogonium luteum* |
| *Enterographa sorediata* | *Syncesia myrticola*, sorediate morph |
| *Lecidea sanguineoatra* | *Bryobilimbia sanguineoatra* |
| *Lepraria lobificans* | *Lepraria finkii* |
| *Leptogium teretiusculum* | *Scytinium tenuissimum* |
| *Lobaria virens* | *Ricasolia virens* |
| *Pachyphiale carneola* | *Gyalecta carneola* |
| *Pertusaria multipuncta* | *Lepra multipuncta* |
| *Schismatomma cretaceum* | *Sporodophoron cretaceum* |
| *Schismatomma decolorans* | *Dendrographa decolorans* |
| *Schismatomma niveum* | *Snippocia nivea* |

### *4.2.2. 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, 2018a), mainly with the 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 updated SSSI selection criteria for lichens (Sanderson et al, 2018). Some minor changes were also made to the species used. To reflect the changes the indices were given new and 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 affected by the management of the trees

The main appropriate list for Mid Wales 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 (2018a) 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 eastern mid Wales, it is recommended that a score of 20 is used as the threshold for considering sites for SSSI status (Sanderson et al, 2018).

Also relevant to this site is the Pinhead Index (Sanderson et al, 2018). For this the total number of recorded Pinhead species in the genera *Calicium*, *Chaenotheca*, *Chaenothecopsis*, *Microcalicium*, *Mycocalicium* and *Sclerophora* is used as an index score. This index measures the quality of ancient tree and dead wood habitat, sites scoring more than ten are can be regarded as being of national importance.

Two other indices are presented in Annex 2, but are less relevant to assessing this site than the SOWI and Pinhead Index. The Upland Rainforest Index (URI) (formerly the Eu-oceanic Calcifuge Index of Ecological Continuity, EUOCIEC) covers acidic and leached woodlands in very high rainfall areas in hyper-oceanic to eu-oceanic climates. Gregynog is too dry to support nationally important assemblages of this habitat, but significant species do occur in the more sheltered parts of the woods. The Sub-oceanic Woodland Index (SWI) is derived from the ESIEC – East of Scotland Index of Ecological Continuity and applies to the less oceanic parts of the Britain. It has been suggested that the ESIEC could be applied to the area in the rain shadow of the mid Welsh mountains (Coppins & Coppins, 2002a). Sanderson (2018a) reviewed this and found that although there were occurrences of some sub-oceanic specialist species, southern oceanic specialist species also occurred. The SOWI and

SWI indices were significantly correlated and both could be used. However, Sanderson (2018a) suggested restricting the use of the SWI to areas lacking any southern oceanic specialist species, excluding the rain shadow of the mountains of mid Wales.

### *4.2.3. 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>.

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

***Notable Species***: Sanderson (2011a & 2018b) 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 (2011a) 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 (2018b) 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 given in Sanderson (2018a) and is followed in this report.

Sanderson (2018b) 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. It is not adopted by Sanderson et al (2018) as a priority method of assessing woodland.

***Section 7 Species***. The former BAP list (Biodiversity Reporting and Information Group, 2007) provided the basis of the lichens listed under Section 42 of the Natural Environment & Rural Communities (NERC) Act 2006. This list has now been transposed into Section 7 of the Environment (Wales) Act 2016.

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, the Section 7 species list is not an objective tool for assessing conservation importance – habitat indices, RDB populations and the list of Notable species provide this – it includes species regarded in the act as being of "principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales". Some BAP species occurring in Wales are not listed in Section 7 because they were not found in Wales until after section 42 was abstracted from the BAP list.

***A Lichen Red Data List for Wales***. Woods (2010) has completed a lichen Red Data List for Wales. This emphasises the high level of threat to many epiphytic species, especially those of the Base Rich Bark Woodland Community (*Lobarion pulmonariae*), which still have strong populations in western Scotland, but are threatened further south. The status of species in the Welsh list is given in tables and the text but is not directly used in the main analysis of conservation interest. Welsh Threatened Species that are Vulnerable or higher but not threatened in Britain as a whole with significant populations within SSSI areas of search can be considered in

Wales can be treated as potentially notifiable features of an SSSI (Sanderson et al, 2018).

Abbreviations used in the text and tables are listed below:

RDB = Red Data Book Species, (CR, EN, VU & NT 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

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

S7 = Section 7 species

BAP = BAP species not listed in S7, as because they were not found in Wales until after section 42 was abstracted from the BAP list.

W- = Welsh RDB assessment (as prefix)

### *4.2.4. 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. The "*Lobarion* Community" also listed as a community or assemblage in Section 7 of the Environment (Wales) Act 2016 as "principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales". The species listed are found in both

the Oceanic Base Rich Bark Woodland Community (*Lobarion pulmonariae*) and Southern Base Rich Bark Woodland Community (*Agonimion octosporae*).

### 4.2.5. Mapping the Quality of Lichen Interest

The conservation interest of the lichen flora at the waypoints was assessed and mapped, with different symbols assigned to different levels of interest in Garmin BaseCamp.

**Purple**: location with systematically recorded Welsh RDB Vulnerable or higher species.

**Red**: location with systematically recorded Welsh or British RDB Near Threatened species.

**Blue**: location with other systematically recorded British Notable species.

**Green**: other species of ecological significance

Of the species not evaluated in the Welsh RDB the follow provisional assessments were made to map those species of high interest species:

| **Species** | **Provisional Assessment** |
|---|---|
| *Chaenothecopsis pusilla* | Near Threatened |
| *Chaenothecopsis retinens* | Vulnerable or higher |
| *Enterographa sorediata* | Vulnerable or higher |

In addition, the distributions of individual lichen communities (**Maps 5** – **10**), habitats (**Maps 11** – **14**) and systematically recorded species (**Maps 15** – **42**) were mapped.

### 4.2.6. Existing Data

A spreadsheet of the lichen data held by the British Lichen Society for Gregynog were sent by Janet Simkin on 27th April 2018 <Gregynog BLS Data.xlsx>. This

includes data from many ad hoc visits. There has been a single contract survey (Orange, 1996) but this covered only The Warren (Areas 1 & 4) along with an area outside of the SSSI to the west of the Warren (Areas 2 & 4). Other records may or not be inside the SSSI, but in some case the habitat of the species recorded makes it clear that the taxa was recorded outside of the SSSI. The species probably not recorded from the SSSI plus records thought to be errors are listed in **Annex 2**.

The oldest records are from 1976, and were made during a BLS field meeting lead by Peter James. The species from this also included saxicolous species clearly recorded off the SSSI. Other subsequent visits were made in 1979, by Ray Woods and Brian Coppins, Ray Woods and Francis Rose in 1981, Ray Woods in 1987 and 1990. These visits appear to have concentrated in Great Wood, but The Warren was visited by September A. S. Mackintosh, Ray Woods and Francis Rose in 1987 and Orange (1996).

Up to 1996 a total of 157 accepted taxa were recorded from the SSSI, with a SOWI score of 22 (**Annex 2**). Orange (1996) recorded 87 species from The Warren with a SOWI scored of eight, with a score of nine including the 1987 visit to The Warren by Dr F. Rose. Fletcher et al (1982) describe Gregynog Great Wood as nationally important, with a rich lichen assemblage in old woodland and parkland. Significant communities listed are the Ancient Dry Bark Community (*Lecanactidetum premneae*), Dry Bark and Lignum Communities (*Calicietum hyperelli* & *Calicietum abietinae*) and the Base Rich Bark Woodland Community (*Lobarion pulmonariae*). Species of importance noted by Fletcher et al (1982) included *Calicium adspersum* CR (NR/S7) (W-CR), *Caloplaca herbidella* s. str. VU (NR/S7) (W-VU), *Cresponea premnea* Nb (IR) (W-NT), *Lecanora quercicola* VU (NS/IR/S7) (W-VU), *Lobaria pulmonaria* Nb (IR) (W-

VU), *Pachyphiale carneola* (W-NT), *Pertusaria coronata* Nb (NS) (W-NT), *Schismatomma niveum* Nb (IR) (W-VU) and *Sticta limbata* Nb (IR) (W-NT). The overall assemblage shows more continental affinities than many lowland English lichen rich parklands. Orange (1996) described The Warren as important at a county or local area but also as being part a complex of national significance.

This century there were two significant visits recorded along with a single record from Ray Woods in 2005. The first in 2011, when Neil Sanderson and Steve Chambers lead a training visit by the Welsh Apprentices (Sanderson, 2011b). This was followed by a survey in 2012 to refined *Caloplaca herbidella* s. str. VU (NR/S7) (W-VU) by Neil Sanderson (Sanderson, 2014b). These two surveys recorded 107 taxa, scored 22 using the SOWI and added several significant species to the site including two species new to Wales *Cliostomum flavidulum* Nb (NS) (W-NE) and *Enterographa sorediata* NT (NS/IR/BAP) (W-NE). Also of high interest were *Arthonia anombrophila* Nb (NS/IR) (W-NT), *Caloplaca lucifuga* VU (NR/S7) (W-VU), *Microcalicium disseminatum* Nb (NR) (W-VU), *Opegrapha fumosa* Nb (NS/IR) (W-VU), *Porina coralloidea* Nb (NS/IR) (W-NT), *Porina rosei* NT (NS/IR) (W-NT) and *Xerotrema quercicola* NT (NR/IR). *Caloplaca herbidella* s. str. VU (NR/S7) (W-VU) was refound but only on a single tree and in poor condition.

# 5. Survey

## 5.1. Lichen Assemblage

### *5.1.1. Totals*

The combined lichen and associated fungi species list recorded since 1976 is given in **Species List 1** in **Annex 2**. A total of 228 taxa have been reliably recorded from the SSSI; of these 202 were lichens, 10 lichen parasites and 16 associated non-lichenised fungi. A total of 168 taxa were recorded in 2018, of which 32 taxa were new to the SSSI.

Epiphytic species of interest recorded for the SSSI included 34 Southern Oceanic Woodland Index (SOWI) species, of which 26 were recorded in 2018. In addition, one Critically Endangered, four Vulnerable, seven Near Threatened and 37 Notable species have been recorded in total. In 2018 three Vulnerable, seven Near Threatened and 32 Notable species were recorded. Seven Section 7 species and a BAP species new to Wales have been recorded in total with seven of these recorded in 2018. The overall totals listed in **Table 1**. The 2018 surrey recorded more taxa over all than were recorded in either of the 1976 – 96 of 2011 – 12. The 2018 survey also recorded higher totals in all measures of lichen biodiversity importance except Critically Endangered, the latter due to the loss of a single species. The totals for the 2018 also exceeded or nearly matched most of the biodiversity measures for all the previous surveys, with the exception of total taxa. The latter reflects the concentration on trunk habitats of greater conservation importance in 2018. These figures indicate no large-scale decline in lichen diversity within the SSSI. There are, however, observed declines or losses of in individual species that are discussed further below, and trunk epiphytes are known to persist for longer than twig epiphytes even when they are undergoing gradual decline and are being replaced by other species.

Table 1: Total Numbers of Lichens Recorded from Gregynog SSSI 1976 – 2018

| Gregynog Biodiversity Measures | 1976–96 | 2005–12 | 1976–2012 | 2018 | Total |
|---|---|---|---|---|---|
| Total taxa | 158 | 107 | 196 | 168 | 228 |
| Southern Oceanic Woodland Index | 22 | 23 | 28 | 26 | 34 |
| Pinhead Index | 9 | 10 | 13 | 12 | 16 |
| Critically Endangered | 1 | 0 | 1 | 0 | 1 |
| Vulnerable | 2 | 3 | 3 | 3 | 3 |
| Near Threatened | 2 | 5 | 5 | 7 | 7 |
| Notable | 14 | 19 | 25 | 32 | 39 |
| International Responsibility Species | 10 | 14 | 16 | 21 | 23 |
| S7/BAP | 5 | 6 | 7 | 7 | 8 |
| TNTN Score | 26 | 41 | 50 | 58 | 65 |

Seventy taxa were added to the site since 2010, of which 60 were recorded in 2018. Species recorded in 2011 and 2012 include important records of *Enterographa sorediata* NT (NS/IR/BAP) (W-NE), *Microcalicium disseminatum* Nb (NR) (W-VU), *Opegrapha fumosa* Nb (NS/IR) (W-VU), *Porina coralloidea* Nb (NS/IR) (W-NT), *Porina rosei* NT (NS/IR) (W-NT) and *Xerotrema quercicola* NT (NR/IR). Of the 32 new species recorded in 2018, seven were new to Wales including significant records for the lichens *Chaenothecopsis retinens* Nb (NR), *Coenogonium tavaresianum* Nb (NR), *Ochrolechia arborea* NT (NR) and *Lecidea nylanderi* Nb (NS). The first two are also internationally rare. Three others were less well known lichen parasites *Laetisaria lichenicola*, *Roselliniopsis tartaricola* [NS] and *Tremella pertusariae* [NR]. Other significant new species include *Biatora chrysantha* Nb (NS) (W-NT), *Chaenotheca stemonea* Nb (NS) (W-VU), *Micarea xanthonica* Nb (NS/IR), *Ramonia chrysophaea* NT (NS/IR/S7) (W-NT), *Rhaphidicyrtis trichosporella* Nb (NS) (W-NT), *Schismatomma quercicola* Nb (IR) (W-NT) and *Schismatomma umbrinum* Nb (NS/IR).

A total of 60 taxa were not refound in 2018, however, these included only 12 lichens of conservation interest. These included the very rare *Calicium adspersum* CR (NR/S7) (W-CR), which may now be extinct in Britain but appears only to have been recorded once in 1979 from Gregynog. A prominent species *Sticta limbata* Nb (IR) (W-NT) is mentioned in Fletcher et al (1982) but has no localised record in the

BLS database. Of the other species three were recorded in 2011 or 2012 and are probably still present *Caloplaca phlogina* Nb (NS), *Catinaria atropurpurea* (W-NT) and *Pertusaria coronata* Nb (NS) (W-NT). The rest are easily over looked species, but have not been seen this century; some will still be present. These are *Buellia pulverea* Nb (NS), *Chaenotheca brachypoda* (W-VU), *Chaenotheca hispidula* Nb (NS), *Lecanactis subabietinum* Nb (IR), *Lecanora jamesii*, *Leptogium subtile* Nb (NS) and *Phaeographis dendritica*.

The totals recorded within the recording areas in 2018 are listed in **Table 2**.

Table 2: Total Numbers of Lichens Recorded from Gregynog SSSI 2018

| Gregynog 2018 Biodiversity Measures | GW-E | GW-W | WC | TW | 2018 |
|---|---|---|---|---|---|
| Total taxa | 115 | 91 | 67 | 58 | 168 |
| Southern Oceanic Woodland Index | 22 | 16 | 13 | 8 | 26 |
| Pinhead Index | 9 | 7 | 7 | 3 | 12 |
| Vulnerable | 2 | 3 | 0 | 0 | 3 |
| Near Threatened | 4 | 4 | 3 | 1 | 7 |
| Notable | 24 | 17 | 14 | 4 | 32 |
| International Responsibility Species | 17 | 11 | 7 | 2 | 21 |
| S7/BAP | 4 | 5 | 3 | 1 | 7 |
| TNTN Score | 40 | 37 | 20 | 6 | 58 |

This shows marked variation in diversity across the SSSI, with the east of Great Wood richest recording areas. The west of Great Wood and the Wood Cottage area are also lichen-rich but The Warren is markedly poorer as noted by Orange (1996) as well. The richness can be related to the density of trees found 2018 with systematically surveyed species (**Map 3**).

### *5.1.2. Lichen Communities of Conservation Interest*

The communities or assemblages contributing to the lichen interest are described below. The most widespread habitat is dry bark on veteran trees (Ancient Dry Bark Community *Lecanactidetum premneae* and Dry Bark Community *Calicietum hyperelli*), with 147 waypoints with trees of particular interest for this habitat. High

quality mesic bark assemblages (Mature Mesic Bark Community, *Pertusarietum amarae*) are also widespread, with 75 waypoints of interest for this habitat. Other habitats are localised and less frequent. Acid Bark Woodland Communities (*Parmelion laevigatae*) were of high interest on 20 trees, dry lignum (Dry Lignum Community, *Calicietum abietinae*) was of high interest at 16 locations, while woodland base rich bark assemblage well developed at 10 locations, but with a further 20 trees with developing base rich bark communities.

**Dry Bark Assemblages on Veteran Trees (Lecanactidetum premneae & Calicietum hyperelli)**

This habitat occupies the dry sides of ancient Oaks and rarely other tree species. The most distinctive community, Ancient Dry Bark Community (*Lecanactidetum premneae*), 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 & 2010a). 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. On very dry bark here this community grades into more general dry bark communities, including the Dry Bark Community (*Calicietum hyperelli*). This is more typical of drier less oceanic climates and can also support some specialist species, especially pinhead fungi.

A total of 21 species of conservation interest have been recorded from this habitat and related dry bark habitats, of which 16 were recorded in 2018. These included substantial populations of *Enterographa sorediata*, *Lecanographa lyncea* and *Microcalicium disseminatum* all of which are likely to have their largest Welsh populations here, while *Chaenothecopsis retinens* is internationally rare and new to Wales. The habitat supports a mixture of southern oceanic species typical of the *Lecanactidetum premneae*, such as *Enterographa sorediata*, *Lecanographa lyncea* and *Cresponea premnea* and more widespread *Calicietum hyperelli* species such as the *Chaenotheca* species. There are even some northern temperate boreal species, with *Microcalicium disseminatum* a significant example. The continental species *Calicium adspersum*, however, has not been seen for many years. The occurrence of the very localised specialist of rock overhangs *Schismatomma umbrinum*, on three Oaks was an unexpected bonus.

This is a major occurrence of the near endemic community Ancient Dry Bark Community (*Lecanactidetum premneae*) and is **among the largest individual occurrences known in Europe** (Sanderson, 2002, 2009 & 2014a).

In nutrient enriched habitats the Ancient Dry Bark Community is displaced by the Nutrient Rich Dry Bark Community (*Arthonietum impolitae*). The latter is a species poor community dominated by *Arthonia pruinata*, sometimes with *Schismatomma decolorans*. *Arthonia pruinata* is rare in woodland stands of the Ancient Dry Bark Community but is a typical, if minor, component in stands in parkland, where nutrient levels are naturally somewhat higher. Only in situations with excessive nutrient deposition does the species poor Nutrient Rich Dry Bark Community develop. In Gregynog SSSI *Arthonia pruinata* is widespread but rarely dominant. It occurred on

20 of the waymarked trees with significant Ancient Dry Bark Community stands (13.6%) and on 13 of the trees with *Lecanographa lyncea* (14.1%). This is probably typical of parkland stands. Fully developed Nutrient Rich Dry Bark Communities are rare but one example was noted on an old Oak in the most enriched and heavily grazed area in the north east of the Wood Cottage area. This tree also had twigs assemblages indicative of over-enrichment.

A total of 147 trees were waymarked as supporting systematically recorded species characteristic of this habitat (**Map 5**) in 2018. The habitat is very frequent in Great Wood, but more scattered in Wood Cottage area. The latter is mostly due to the lower density of tree in the open park, but the community is also less rich here. It is very rare and poorly developed in The Warren. The habitat is strongly associated with veteran Oak, with Oak being the host at 140 locations. The habitat was also recorded once on Alder and Sycamore and on seven Ash trees. The development was limited on Alder and Sycamore, but the Ash did include the rare specialists *Enterographa sorediata* and *Lecanographa lyncea*. **Some of the very specialist species were found on younger post mature Oaks indicating ongoing colonisation.**

**Species recorded in the Dry Bark Assemblages (*Lecanactidetum premneae* & *Calicietum hyperelli*)**:

| Species | Conservation Status | Welsh Red List | 2018 |
|---|---|---|---|
| *Arthonia anombrophila* | Nb (NS/IR) | W-NT | 1 |
| *Bactrospora corticola* | Nb (NS) | W-NT | 1 |
| *Calicium adspersum* | CR (NR/S7) | W-CR | + |

| | | | |
|---|---|---|---|
| *Calicium salicinum* * | | | 1 |
| *Chaenotheca brachypoda* • | | W-VU | + |
| *Chaenotheca brunneola* • | | | 1 |
| *Chaenotheca chrysocephala* • | | | 0 |
| *Chaenotheca hispidula* • | Nb (NS) | | + |
| *Chaenotheca stemonea* • | Nb (NS) | W-VU | 1 |
| *Chaenotheca trichialis* • | | | 1 |
| *Chaenothecopsis retinens* | Nb (NR) | W-NE | 1 |
| *Cresponea premnea* • | Nb (IR) | W-NT | 1 |
| *Enterographa sorediata* • | NT (NS/IR/BAP) | W-NE | 1 |
| *Lecanactis subabietinum* • | Nb (IR) | | + |
| *Lecanographa lyncea* • | Nb (IR) | W-EN | 1 |
| *Lepraria ecorticata* | (NS) | | 1 |
| *Microcalicium disseminatum* * | Nb (NR) | W-VU | 1 |
| *Milospium graphideorum* | Nb (NS) | | 1 |
| *Rhaphidicyrtis trichosporella* | Nb (NS) | W-NT | 1 |
| *Schismatomma cretaceum* | Nb (IR) | W-VU | 1 |
| *Schismatomma umbrinum* | Nb (NS/IR) | | 1 |

• = SOWI species

* = Used in other Indices and an old woodland/veteran tree species here

\+ = Pre-2000 record only

0 = Recorded 2011 or 2012 but not 2018

1 = Recorded in 2018

**Mature Mesic Bark Community (*Pertusarietum amarae*)**

This is 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* and *Pertusaria amara* f. *amara* along with *Phlyctis argena*. *Pertusaria flavida* is characteristic of the more species rich variants. This community occurs widely

through the countryside on older trees but additional ancient woodland species, or veteran tree specialists, can occur in older woodland stands and in parks. On well lit bark, the dominant crust forming lichens are partly displaced by leafy "*Parmelia*" species (Well Lit Mature Bark Community, *Parmelietum revolutae*). This latter community is poorer in species of conservation interest.

A total of 14 species of conservation interest have been recorded from this habitat, of which 11 were recorded in 2018. Rare species characteristic of the Mature Mesic Bark Community include south western forest species, which are absent from Gregynog and a well-defined assemblage of southern sub-oceanic species. The latter are a prominent feature of Gregynog. These are characteristic of veteran trees, mainly Oak in well lit but sheltered locations. They are typical of parklands and woodland edge sites and are absent from deep woodland habitats. The assemblage is likely to have had is core area of distribution in the English midlands but has ben largely lost from this area due to acidifying air pollution. The assemblage survives on the fringes of this area where pollution was lowest (**Map 47**), especially in eastern central Wales and the Marches (Sanderson, 2014b). The most widespread of these sub-oceanic species at Gregynog is *Lecanora sublivescens*, which is tolerant of more acidic bark. The other species, *Caloplaca herbidella* s. str., *Caloplaca lucifuga* and *Lecanora quercicola*, require bark at the more base rich end of the range of the habitat and are occasional to rare here. A further special species is *Pertusaria coronata*, a more northern sub-oceanic species that is very rare south of the Scottish Highlands. *Pertusaria coronata*, was not seen in 2018 but is likely to be still present. In addition, there are a number of more widespread species typical of the habitat.

**This is one of the richest and most extensive occurrences the less oceanic form of Mature Mesic Bark Community known in Britain and includes an exceptionally large populations of *Lecanora sublivescens* which is rare though out Europe** http://wales-lichens.org.uk/species-account/lecanora-sublivescens.

A total of 75 trees were waymarked as supporting systematically recorded species characteristic of this habitat (**Map 6**) in 2018. The habitat very frequent in Great Wood, but occasional in Wood Cottage area and The Warren. In Great Wood it was strongly associated with open parkland trees and trees on the edges of the wood or on glade edges within the woods. The habitat is predominately found on Oak but was also recorded on eight Ash trees and one Sycamore. On rare species *Caloplaca herbidella* s. str. has only been recorded on Ash at Gregynog.

**Species recorded in Mature Mesic Bark Community (*Pertusarietum amarae*)**:

| Species | Conservation Status | Welsh Red List | 2018 |
|---|---|---|---|
| *Caloplaca herbidella* s. str. | VU (NR/S7) | W-VU | 1 |
| *Caloplaca lucifuga* | VU (NR/S7) | W-VU | 1 |
| *Cyphelium sessile* | Nb (NS) | | 1 |

| | | | |
|---|---|---|---|
| *Dactylospora parasitica* | [NS] | | 1 |
| *Lecanora jamesii* • | | | + |
| *Lecanora quercicola* | VU (NS/IR/S7) | W-VU | 1 |
| *Lecanora sublivescens* • | NT (NS/IR/S7) | W-NT | 1 |
| *Pertusaria coronata* | Nb (NS) | W-NT | 0 |
| *Pertusaria multipuncta* • | | | 1 |
| *Phaeographis dendritica* • | | | + |
| *Roselliniopsis tartaricola* | [NS] | | 1 |
| *Sphinctrina turbinata* | Nb (NS) | W-NE | 1 |
| *Thelotrema lepadinum* • | | W-NT | 1 |
| *Tremella pertusariae* | [NR] | | 1 |

• = SOWI species

\+ = Pre-2000 record only

0 = Recorded 2011 or 2012 but not 2018

1 = Recorded in 2018

**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. 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 and 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. In southern Britain the *Agonimion octosporae* is something of a "deep forest" assemblage and is best developed in large little disturbed old growth woodlands.

A total of 15 species of conservation interest have been recorded from this habitat, of which 13 were recorded in 2018. At Gregynog there are a quite few southern species, including *Porina coralloidea*, *Porina rosei*, *Ramonia chrysophaea* and *Rinodina roboris* var. *roboris*. *Coenogonium tavaresianum* was found, an internationally rare species and new to Wales, is also a southern Atlantic – Mediterranean species. All of these are recent discoveries, most likely overlooked rather than new colonisations. In addition, the northern *Lopadium disciforme* is frequent with the more general species including the pollution sensitive *Lobaria pulmonaria* and *Lobaria virens* known from a single tree. Of the species not found in 2018, *Catinaria atropurpurea* is a small species seen in 2011 and is probably still present. On the other hand the very pollution sensitive *Sticta limbata* has not been seen for decades and is probably lost. **The assemblage is much more limited than found in more strongly oceanic woods but supports some regionally and nationally rare species.**

A total of 12 trees were waymarked as supporting systematically recorded species characteristic of fully developed example of this habitat (**Map 7**) in 2018. In addition, a further 17 trees supported *Lopadium disciforme* along in more acidic transitions to this habitat (**Map 8**). The fully developed examples are confined to sheltered areas of Great Wood, with one exception, which occurred on an Oak by a flush in the Wood Cottage area. The trees with only *Lopadium disciforme* occurred in the same areas. The fully developed stands were all on veteran Oaks. The developing stands were recorded on 11 oaks and six Ash trees. Some of these were mature, rather than post mature trees indicating on going colonisation.

The frequency of the Base Rich Bark Woodland Community is low compared to the abundance of species rich Mature Mesic Bark Community. In clean air conditions, base rich bark would be expected to be more frequent than this, and it is likely that past acidification has reduced the number trees with high pH bark.

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

| Species | Conservation Status | Welsh Red List | 2018 |
|---|---|---|---|
| *Arthonia vinosa* • | | W-NT | 1 |
| *Bacidia biatorina* • | | W-NT | 1 |
| *Biatora chrysantha* * | Nb (NS) | W-NT | 1 |
| *Catinaria atropurpurea* • | | W-NT | 0 |
| *Coenogonium tavaresianum* | Nb (NR) | W-NE | 1 |
| *Leptogium teretiusculum* • | | | 1 |
| *Lobaria pulmonaria* • | Nb (IR) | W-VU | 1 |
| *Lobaria virens* • | Nb (IR) | W-EN | 1 |
| *Lopadium disciforme* * | | | 1 |
| *Pachyphiale carneola* • | | W-NT | 1 |
| *Porina coralloidea* • | Nb (NS/IR) | W-NT | 1 |
| *Porina rosei* • | NT (NS/IR) | W-NT | 1 |
| *Ramonia chrysophaea* | NT (NS/IR/S7) | W-NT | 1 |
| *Rinodina roboris* var. *roboris* | Nb (IR) | | 1 |
| *Sticta limbata* • | Nb (IR) | W-NT | + |

• = SOWI species

* = Used in other Indices and an old woodland/veteran tree species here

\+ = Pre-2000 record only

0 = Recorded 2011 or 2012 but not 2018

1 = Recorded in 2018

### 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, 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. In less sheltered situations it is replaced by the Exposed Acid Bark Community (*Pseudevernietum furfuraceae*). This can have some old woodland species in sheltered locations but these less numerous than the western oceanic community.

A total of 17 species of conservation interest have been recorded from this habitat and related dry bark habitats, of which 16 were recorded in 2018. Trees with acid bark habitats are widespread, with the Exposed Acid Bark Community in more exposed locations. In sheltered locations in Great Wood and in a small valley in the east of Wood Cottage Area, however, oceanic woodland species occur. **These include many at the edge of their ranges in Wales, some with few or no other records from Montgomeryshire**. Rare species in Wales include *Cliostomum flavidulum*, *Micarea xanthonica*, *Opegrapha fumosa*, *Schismatomma niveum* and *Schismatomma quercicola* more general species recorded are *Anisomeridium ranunculosporum*, *Loxospora elatina*, *Micarea doliiformis*, *Mycoblastus caesius*, *Megalaria pulverea* and *Trapelia corticola*. In addition to these oceanic species, at the edge of their range, this habitat also supported a few northern and eastern species of interest. These are *Lecidea nylanderi*, new to Wales and *Parmeliopsis hyperopta*. Both were also found on lignum. A further eastern species *Bryoria fuscescens* (W-VU), characteristic of the, Exposed Acid Bark Community was recorded in the habitat in the past but was not found on bark within the SSSI in 2018. It was still abundant on

a bark on a single Oak off the SSSI near the car park in the woodland garden east of the house. This is an impressive assemblage for a site at the eastern edge of the extent of the habitat, with the addition of some less oceanic species of interest.

A total of 26 trees were waymarked as supporting systematically recorded species characteristic of this habitat (**Map 8**) in 2018. One was an Ash and the rest were Oaks. Less rare species also occurred locally on Alder. The habitat is very much restricted to sheltered humid locations, either deep in Great Wood or in a sheltered wet valley in the east of the Wood Cottage area.

**The decline of *Bryoria fuscescens* and the possible conspecific *Bryoria subcana* is marked**; several recorders in the 1980s and 1990s explicitly described either species as occasional or frequent. Others recorded it without comment. It was not recorded on bark in the SSSI in 2018 and was seen once on lignum. This decline is certainly due to increased ammonia deposition and has been noted widely in upland Wales (S. Bosanquet, pers. com.). As an eastern Exposed Acid Bark Community species it is typically found on wood edge and isolated trees and is likely to have been more exposed to ammonia pollution than the oceanic acid bark species that are confined to sites deeper in the more wooded areas of the SSSI. The surviving strong population on the garden tree is particularly well sheltered from more intensively used land.

## Species recorded in acid bark assemblages (*Parmelion laevigatae* & *Pseudevernietum furfuraceae*):

| Species | Conservation Status | Welsh Red List | 2018 |
|---|---|---|---|
| *Anisomeridium ranunculosporum* • | | | 1 |
| *Cliostomum flavidulum* | Nb (NS) | W-NE | 1 |
| *Lecidea nylanderi* | Nb (NS) | W-NE | 1 |
| *Lepraria umbricola* | (NS) | | + |
| *Loxospora elatina* • | | | 1 |
| *Megalaria pulverea* * | | | 1 |
| *Melaspilea ochrothalamia* | Nb (NS) | | 1 |
| *Micarea doliiformis* * | Nb (NS) | | 1 |
| *Micarea viridileprosa* | (NS) | | 1 |
| *Micarea xanthonica* | Nb (NS/IR) | | 1 |
| *Mycoblastus caesius* * | | | 1 |
| *Opegrapha fumosa* | Nb (NS/IR) | W-VU | 1 |
| *Parmeliopsis hyperopta* * | | | 1 |
| *Schismatomma niveum* • | Nb (IR) | W-VU | 1 |
| *Schismatomma quercicola* • | Nb (IR) | W-NT | 1 |
| *Thelotrema lepadinum* • | | W-NT | 1 |
| *Trapelia corticola* * | | | 1 |

• = SOWI species

* = Used in other Indices and an old woodland/veteran tree species here

\+ = Pre-2000 record only

1 = Recorded in 2018

**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. This habitat is found beyond old growth stands and is visually striking but not usually of great interest, however, it can support species of interest.

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.

A total of 15 species of conservation interest have been recorded from this habitat and related dry bark habitats, of which 13 were recorded in 2018. Damper wood locally supports *Cladonia parasitica*, but most species of interest are found on drier standing or propped dead wood. This supports several northern and eastern species including *Microcalicium disseminatum*, very rare south of the Highlands and *Lecidea nylanderi*, new to Wales along with *Bryoria fuscescens*, *Imshaugia aleurites* and *Lecidea turgidula*. The little known *Ochrolechia arborea* was also recorded, new to Wales, along with the rare oceanic *Xerotrema quercicola*. More generalist pinhead species include several species are rare in Wales: *Chaenotheca stemonea*, *Chaenothecopsis nigra* and *Chaenothecopsis pusilla*. The single species not seen recently, *Buellia pulverea*, is a species that may have been encouraged by past acidifying pollution and is now little recorded anywhere in Britain. **This is a very**

**diverse lignum assemblage for southern Britain, and the Pinhead Index score is higher than for any other site in Wales**.

A total of 15 trees were waymarked as supporting systematically recorded species characteristic of this habitat (**Map 9**) in 2018. Rich stands were scattered through Great Wood and in the Wood Cottage area. Rich lignum communities were typically found on better wood in glades, wood edges and isolated but sheltered sites. At one site the interest was found inside a hollow Alder pollard, but the rest were found on Oak. Of these six were dead Oaks, one a standing dead Oak, the rest fallen trees. The remaining were live ancient Oaks with exposed lignum. There was limited dead wood in The Warren and little lichen interest.

The pollution sensitive *Bryoria fuscescens* was found at its only site in 2018 on a fallen wood edge Oak in the west of Great Wood. **This material was not well grown and was likely to have been suffering from recently increased ammonia levels.**

**Species recorded on lignum habitats (*Calicietum abietinae* & *Cladonietum coniocraeae*)**:

| Species | Conservation Status | Welsh Red List | 2018 |
|---|---|---|---|
| *Buellia pulverea* | Nb (NS) | | + |
| *Bryoria fuscescens* | | W-VU | 1 |
| *Calicium salicinum* * | | | 1 |
| *Chaenotheca brunneola* • | | | 1 |
| *Chaenotheca stemonea* • | Nb (NS) | W-VU | 1 |
| *Chaenothecopsis nigra* * | Nb (NS) | | 1 |
| *Chaenothecopsis pusilla* * | Nb (NS) | W-NE | 1 |
| *Cladonia parasitica* • | | | 1 |
| *Imshaugia aleurites* * | | | 1 |

| | | | |
|---|---|---|---|
| *Lecidea nylanderi* * | Nb (NS) | W-NE | 1 |
| *Lecidea turgidula* * | | | 0 |
| *Microcalicium disseminatum* * | Nb (NR) | W-VU | 1 |
| *Ochrolechia arborea* | NT (NR) | W-NE | 1 |
| *Parmeliopsis hyperopta* * | | | 1 |
| *Xerotrema quercicola* | NT (NR/IR) | | 1 |

• = SOWI species

* = Used in other Indices and an old woodland/veteran tree species here

\+ = Pre-2000 record only

0 = Recorded 2011 or 2012 but not 2018

1 = Recorded in 2018

**Smooth Bark Communities (*Graphidion*: *Graphidetum scriptae*)**

Communities on smooth bark of shrubs, especially Hazel, Rowan and Holly, and smooth barked trees in sheltered woodland conditions. The basic community is 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 aerated conditions and a generally species poor undescribed community dominated by *Pyrenula* species in damp humid conditions (*Pyrenula chlorospila* – *Pyrenula macrospora* nodum).

This community is rare on the SSSI due to the lack of suitable trees, but there were some interesting occurrences on boundary Hazels on the edge of Great Wood,

an old Holly and Alder twigs inside Great Wood. The former added *Arthonia elegans*, *Arthopyrenia salicis* and *Porina byssophila* to the site list, while *Stenocybe septata* was found on the Holly and *Mycoporum antecellens* on the Alder.

**Species recorded in Smooth Bark Communities (*Graphidion: Graphidetum scriptae*)**:

| Species | Conservation Status | Welsh Red List | 2018 |
|---|---|---|---|
| *Mycoporum antecellens* • | | | 1 |
| *Porina byssophila* | Nb (NR) | W-VU | 1 |
| *Stenocybe septata* • | Nb (IR) | | 1 |
| *Thelotrema lepadinum* • | | W-NT | 1 |

• = SOWI species

1 = Recorded in 2018

### Wound Tracks Assemblages

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 and has obviously declined in recent years. Many characteristic species are now Red Data Book and S41 species due to the total loss of veteran Elm. There may have been old Elm trees at Gregynog; Orange (1996) found *Leptogium subtile* on the base of a dead Elm trunk. There are no other records from Elm and only a few commoner wound track species have been found recently on older Ash trees.

**Species recorded in Wound Tracks assemblages:**

| Species | Conservation Status | Welsh Red List | 2018 |
|---|---|---|---|
| *Caloplaca phlogina* | Nb (NS) | | 0 |
| *Leptogium subtile* | Nb (NS) | | + |
| *Strigula taylorii* | Nb (NS/IR) | | 1 |

**Canopy and Twig Communities.**

The great variety of lichen communities in the canopy are largely composed of widespread rapidly colonising species. The canopy assemblages however rapidly respond to the current air pollution regime and give a strong indication of ongoing trends (Wolseley, 2006). This is in contrast to trunk communities that have a degree of inertia and are slower to respond to changes in air pollution. The pollution sensitive *Bryoria fuscescens* (W-VU) may have occurred on branches but most records are from trunks. It is discussed under acid bark communities above. One Near Threatened pollution sensitive species *Usnea florida* has been recorded. In 2018 it was recorded once in the Wood Cottage area. Earlier records suggest it was not widespread but potentially more frequent than now and was recorded in The Warren, where it was not refound.

**Species recorded in Canopy and Twig Communities**:

| Species | Conservation Status | Welsh Red List | 2018 |
|---|---|---|---|
| *Usnea florida* • | NT (S7) | | 1 |
| *Usnea wasmuthii* | (NS) | | 1 |

At three locations across the main area of the SSSI Oak trees with three easily accessible low sweeping branches were surveyed and the twig species recorded. These appeared to span the range of ammonia concentrations within the SSSI.

GYG073 was an old oak in the open parkland in the Wood Cottage area, which was set in unimproved grassland beside a flush. The trunk supported *Cresponea premnea* Nb (IR) (W-NT), *Coenogonium tavaresianum* Nb (NR) (W-NE), *Lecanora sublivescens* NT (NS/IR/S7) (W-NT), *Pachyphiale carneola* (W-NT) and *Ramonia chrysophaea* NT (NS/IR/S7) (W-NT). GYG004 was in Great Wood on the eastern edge of the main ride. The trunk supported *Cresponea premnea* Nb (IR) (W-NT) and *Lecanora sublivescens* NT (NS/IR/S7) (W-NT). The Oak at grid reference SO0784 9762, was set in improved grassland and was obviously often used by sheep to shelter under. It lacked any lichen interest on its trunk but this supported species poor communities typical of very nutrient enriched bark, with *Arthonia pruinata* dominating the dry bark and *Diploicia canescens* on the wetter bark. The lichen species recorded on the twigs are listed in **Table 3**. The species are arranged in groups representing their sensitivity to raised ammonia levels, with the most sensitive at the top.

Tree GYG073 had a twig assemblage rich in species that are very sensitive to ammonia pollution and lacked any species tolerant of very high ammonia levels. It is likely to represent the cleanest air conditions within the SSSI. The presence of some species tolerant of elevated nutrient levels suggest that levels are not minimal here, but are what would be expected in a well managed extensively grazed parkland. Tree GYG004 appears to represent the situation through much of the SSSI. There is a conspicuous lack of many of lichens sensitive to ammonia pollution but equally species tolerant of very high ammonia levels are absent too. This suggests that levels of ammonia are higher than is desirable but are not so high that impacts are appearing the more protected and on the slower responding communities on the trunks. The tree at SO0784 9762 is an exception on the SSSI; it is in clearly improved grassland and has sheep congregating below it. The lichen assemblage is typical example of

trees in areas with high ammonia concentrations. The twigs have an abundant cover of lichens tolerant of high nutrient levels. **This is a tree subjected to levels of ammonia that would seriously damage the SSSI if extended across the whole site**.

Table 3: Lichens Recorded from Twigs of Three Oaks 2018

| Species | GYG073 | GYG004 | SO0784 9762 |
|---|---|---|---|
| **Require low nutrient levels** | | | |
| *Evernia prunastri* | 1 | 1 | 1 |
| *Homostegia piggotii* | 1 | | |
| *Hypogymnia physodes* | 1 | | |
| *Hypogymnia tubulosa* | 1 | | |
| *Platismatia glauca* | 1 | | |
| *Parmelia saxatilis* | 1 | | |
| *Usnea florida* | 1 | | |
| *Usnea subfloridana* | 1 | | |
| *Usnea wasmuthii* | 1 | | |
| **Totals** | **9** | **1** | **1** |
| **Thrive in intermediate conditions** | | | |
| *Arthonia radiata* | | | 1 |
| *Fuscidea lightfootii* | 1 | 1 | |
| *Hypotrachyna afrorevoluta* | 1 | | |
| *Hypotrachyna revoluta s. str.* | 1 | | |
| *Lecanora chlarotera* | | 1 | |
| *Melanelixia subaurifera* | 1 | 1 | 1 |
| *Parmelia sulcata* | 1 | 1 | 1 |
| *Pertusaria amara f. amara* | 1 | | |
| **Totals** | **6** | **4** | **2** |
| **Tolerant of elevated nutrient levels** | | | |
| *Physcia aipolia* | 1 | 1 | |
| *Physcia tenella* | 1 | 1 | 1 |
| *Punctelia subrudecta s. str.* | 1 | | |
| *Ramalina farinacea* | 1 | 1 | 1 |
| **Totals** | **4** | **3** | **2** |
| **Tolerant of high nutrient levels** | | | |
| *Physcia adscendens* | | | 1 |
| *Laetisaria lichenicola* | | | 1 |
| *Xanthoria parietina* | | | 1 |
| **Totals** | **0** | **0** | **3** |
| **Total number of lichens** | **19** | **8** | **9** |

### 5.1.3. Lichen Species of Interest

The number of locations at which systematically recorded species were recorded in 2018 is given in **Table 4**. The GPS waymarks where these species were recorded are mapped on **Maps 4 & 15 – 43.** The GPS waymarks shown at a large scale on **Maps 43 – 46**.

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

Table 4: The Number of Locations at which Systematically Recorded Species were Found

| Species | SSSI | GW-E | GW-W | WCA | TW |
|---|---|---|---|---|---|
| *Arthonia anombrophila* | 2 | 0 | 2 | 0 | 0 |
| *Biatora chrysantha* | 1 | 0 | 1 | 0 | 0 |
| *Bryoria fuscescens* | 1 | 0 | 1 | 0 | 0 |
| *Caloplaca herbidella s. str.* | 1 | 0 | 1 | 0 | 0 |
| *Caloplaca lucifuga* | 4 | 2 | 2 | 0 | 0 |
| *Chaenotheca stemonea* | 2 | 0 | 0 | 2 | 0 |
| *Chaenothecopsis nigra* | 4 | 2 | 0 | 2 | 0 |
| *Chaenothecopsis pusilla* | 2 | 0 | 2 | 0 | 0 |
| *Chaenothecopsis retinens* | 1 | 1 | 0 | 0 | 0 |
| *Coenogonium tavaresianum* | 3 | 2 | 0 | 1 | 0 |
| *Cresponea premnea* | 125 | 66 | 50 | 9 | 0 |
| *Enterographa sorediata* | 29 | 24 | 5 | 0 | 0 |
| *Lecanographa lyncea* | 92 | 50 | 39 | 2 | 1 |
| *Lecanora quercicola* | 5 | 1 | 4 | 0 | 0 |
| *Lecanora sublivescens* | 55 | 26 | 24 | 3 | 2 |
| *Lobaria pulmonaria* | 1 | 1 | 0 | 0 | 0 |
| *Lobaria virens* | 1 | 1 | 0 | 0 | 0 |
| *Lopadium disciforme* | 19 | 13 | 5 | 1 | 0 |
| *Microcalicium disseminatum* | 15 | 8 | 6 | 1 | 0 |
| *Opegrapha fumosa* | 4 | 4 | 0 | 0 | 0 |
| *Pachyphiale carneola* | 5 | 2 | 2 | 1 | 0 |
| *Porina coralloidea* | 2 | 2 | 0 | 0 | 0 |
| *Porina rosei* | 1 | 1 | 0 | 0 | 0 |
| *Ramonia chrysophaea* | 1 | 0 | 0 | 1 | 0 |
| *Schismatomma cretaceum* | 8 | 5 | 3 | 0 | 0 |
| *Schismatomma niveum* | 20 | 18 | 2 | 0 | 0 |
| *Schismatomma quercicola* | 2 | 0 | 0 | 2 | 0 |
| *Schismatomma umbrinum* | 3 | 0 | 1 | 2 | 0 |
| *Xerotrema quercicola* | 6 | 2 | 4 | 0 | 0 |
| Waypoints | 189 | 99 | 71 | 15 | 3 |

**National Red Data Book Lichen Species:**

***Calicium adspersum*** CR (NR/S7) (Wales CR): a pin head lichen very rarely recorded on old Oaks, with older records from England and Wales and a recent record from eastern Scotland. The species is a continental species at the edge of its European range and it possible that some occurrence were the result of vagrant spores. On the other hand the species is often sterile in Czechia, with the sterile thallus very similar to the common *Cliostomum griffithii* (Dr Jan Vondrak, pers. com.). They can only be definitely separated by the K + purple reaction of the *Cliostomum* pycnidia, so it is possible that sterile *Calicium adspersum* is being overlooked as *Cliostomum griffithii* in Britain. At Gregynog this lichen has only been recorded once in 1979 by Brian Coppins and Ray Woods (but date is given as 1996 in <http://wales-lichens.org.uk>, this is presumably an error). Not seen since.

***Caloplaca herbidella*** s. str. (Vulnerable, NR/S42) (Wales VU): a crust forming lichen that is very thinly scattered across southern England and eastern Wales on well lit ancient parkland and field trees in base rich variants of the Mature Mesic Bark Community (*Pertusarietum amarae*). In Britain it is a southern sub-oceanic species that has probably lost the original core of its distribution in eastern England due to air pollution. In southern England it has only ever been recorded from a handful of trees, most in Savernake Forest, and its national headquarters is in Eastern Wales (Sanderson, 2014a & 2014b). It appears to always have been rare at Gregynog and was recorded from Ash in the west of Great Wood in 1976, 1979, 1990 and 2012. The latter find is described by Sanderson (2014b). The 2012 tree was refound in 2018 (**Map 18**), but the lichen was in very poor condition. ***Caloplaca lucifuga*** (Vulnerable, NS/S7) (Wales VU) is a crust forming lichen with its headquarters in eastern Wales with a few records from eastern Scotland and southern England. It is

a southern sub-oceanic species that has probably lost the original core of its distribution in eastern England due to air pollution. It is confined to mesic bark on well lit old Oaks (Mature Mesic Bark Community, *Pertusarietum amarae*). Found, new to the county, in 2012 on two Oaks in Great Wood (Sanderson, 2014b). Refound on one of these Oaks in 2018 but not the other but also found on a further three Oaks (**Map 19**). The species is somewhat ephemeral in its individual occurrences and not refinding one tree is not unsurprising. **This is a large population for Britain**.

***Enterographa sorediata*** (Near Threatened, NS/IR/BAP) (Wales NE): a crust forming lichen, recently shown, by DNA sequencing to be, remarkably, a sterile sorediate morph of *Syncesia myrticola* NT (NS/IR/S7) (W-VU) itself a very rare lichen of dry overhangs on sea cliffs and rarely dry bark on trees (Ertz et al, 2018). In Britain the sorediate morph is resticted to the Ancient Dry Bark Community (*Lecanactidetum premneae*) on ancient Oaks. It is confined to the south, from Cornwall to Hampshire with outliers in Norfolk and Wales. It is limited to sites with well developed and high quality *Lecanactidetum premneae* communities on veteran Oaks. At Greynog it was found in 2011 on two trees in the east of Great Wood (Sanderson, 2011), one dead, new to Wales. In 2012 it was found on an additional two Oaks to the west of Great Wood, one ancient oak and one a younger small post mature Oak with colonising thalli (Sanderson, 2014b). In 2018, a massive population was recorded occupying 29 trees, mainly Oaks but also on one Ash, only the second record of this taxon from Ash in Britain. The population is concentrated in the east of Great Wood, but extends west of the main ride (**Map 26**). **This is among the largest populations of this taxon recorded** (Sanderson, 2002 & 2009) in Britain.

***Lecanora quercicola*** (Vulnerable, NS/IR/S7) (Wales VU): a crust forming lichen of well lit bark on old Oak trees. It is thinly scattered across the south of England, eastern Wales with a few sites to the north. It is a southern sub-oceanic species that has probably lost the original core of its distribution in eastern England due to air pollution. Found in ancient pasture woodlands and parkland trees in Mature Mesic Bark Communities (*Pertusarietum amarae*) on veteran trees. Recorded on Oak in Great Wood in 1979 and 1981 and refound in 2012 on a single rich oak in the west of Great Wood (Sanderson, 2014b). In 2018, refound on the original tree and four other Oaks, three near the 2012 Oak and one in the east of the wood (**Map 28**). **This is a substantial population of a rare species with few British post 1999 records** <http://wales-lichens.org.uk>.

***Lecanora sublivescens*** (Near Threatened, NS/IR/S42) (Wales NT): a crust forming lichen of well lit bark on old trees, especially Oak and Beech in Mature Mesic Bark Communities (*Pertusarietum amarae*). It is thinly scattered across the south of England and eastern Wales. In Britain it is a southern sub-oceanic species that has probably lost the original core of its distribution in eastern England due to acidifying air pollution. More acid tolerant than other species of this assemblage, so has been less reduced than other species. Recorded frequently from both The Warren and Great Wood by most past surveys. In 2018, a very large population was recorded on 55 trees, 49 Oaks, five Ash trees and a Sycamore. The majority were found in Great Wood but with three in the Wood Cottage area and two in The Warren (**Map 29**). **This is an exceptionally large population, potentially one of the largest in Europe** <http://wales-lichens.org.uk>.

***Ochrolechia arborea*** (Near Threatened, NR) (Wales NE): a crust forming lichen of old weathered exposed lignum, found on both old worked timber and natural dead wood. Easily picked out from similar white sorediate crusts by the very bright orange UV fluorescence, and being found more now due to the wider use of powerful UV lights in the field. Until recently only known from eastern Scotland but recently found scattered across southern England, and may not be assessed as Near Threatened in the next review. In 2018 a single thallus was spotted on a fallen Oak (waypoint GYG014) in the west of Great Wood, new to Wales.

***Porina rosei*** (Near Threatened, NS/IR) (W–NT) a crust forming lichen of base rich bark on old trees (*Lobarion*) in very sheltered conditions. This lichen is a southern and western species that is frequent in the New Forest and widely but thinly scattered beyond. First found in 2012 on an Oak east of the main ride in Great Wood (Sanderson, 2014a), new to the county and is an oceanic species on the edge of its range. In 2018, this tree was not refound, as the location description was not clear, but a large new colony was found on the *Lobaria* tree (**Map 30**).

***Ramonia chrysophaea*** (Near Threatened, NS/IR/S7) (W-NT) a small loosely lichenised crust forming lichen with ephemeral apothecia. It is characteristic of patches of bare spongy bark with *Lobarion* communities, usually on Oak. It is frequent in the New Forest but rare beyond, including in Wales. At Greynog, found new to the site and county on a rich old Oak by a flush in the open parkland in the Wood Cottage Area (**Map 36**).

***Usnea florida*** (Near Threatened) 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 in the south west of Britain. 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 raised ammonia concentrations**. Recorded in The Warren in 1987 and 1996 and Great Wood in 1976 and 1979, along with a more specific 2011 record from a fallen Oak twig in the east of Great Wood. In 2018 not refound in The Warren or Great Wood, but it was found on a single Oak in Wood Cottage area (**Map 36**). The twig assemblage on this tree suggested this area had lower ammonia levels than the other areas looked at in 2018.

***Xerotrema quercicola*** (Near Threatened, NR) this recently described tiny crust forming fungus, is restricted to lignum on standing or propped dead Oaks, in old oceanic woodland in the west. These can be quite small diameter self thinned trees in dense woodland or maturing 19th century Oak plantations but it occurs mainly on large hulks of standing dead Oak in old growth woodlands or large bits of fallen wood. Found new to the site and county in 2012 (Sanderson, 2014b) on a fallen Oak east of the main ride in Great Wood. It was refound on this tree and five more trees in 2018 (**Map 42**) in Great Wood. Of these one was a standing dead oak and the rest were fallen oak or large branches.

**Welsh RDB, not in National List, Endangered:**

***Lecanographa lyncea*** (Notable, IR) (W-EN) a crust forming lichen that is widespread in the Ancient Dry Bark Community (*Lecanactidetum premneae*) in the south of England, becoming rarer to the north, including Wales, but is very rare in Europe (James et al, 1977). It is an SOWI Ancient Woodland Indicator. It is a strongly old growth and veteran tree dependant species. At Gregynog recorded frequently in

Great Wood (1976, 1981, 1979, 2011 & 2012) and once from The Warren (1986). In 2018 a massive population was recorded with the species present at 92 waypoints, mostly in Great wood, but with two in the Wood Cottage area and one in The Warren (**Map 27**). These included two Ash trees, the rest were Oaks. **This is likely to be among the largest populations in Europe**. In the author's knowledge it is only bettered by a few New Forest sites (Sanderson, 2017). The next largest surveyed Welsh population at Dinefwr it was recorded on 26 trees (Sanderson, 2014a).

***Lobaria virens*** (Notable, IR) (Wales EN) a large leafy lichen which is a SOWI Ancient Woodland Indicator. 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 sheltered reasonably well lit situations but it is even more sensitive to summer sunshine than *Lobaria pulmonaria*. It is rarer than *Lobaria pulmonaria* in the lowlands and more strongly associated with high forest pasture woodlands. Well known on a single Oak (GYG144) on the north side of Great Wood, but only recorded previously in 2005 and 2011. In 2018, refound on this tree (**Map 30**), with five healthy clumps higher up on the trunk.

**Welsh RDB, not in National List, Vulnerable:**

***Bryoria fuscescens*** (Wales VU): a brown bushy species, which is a common species on acid bark and lignum in boreal and northern woodlands. Rare in southern England, where it may have only been present due to acidifying pollution. Widespread if local in north and central Wales (where it is a long-established native rather than a pollution-dependent colonist), but declining generally here, most likely due to increasing ammonia pollution. At Gregynog, old records suggest it was locally

prominent, recorded in 1976, 1979, 1996, both in Great Wood and The Warren. Clearly rare by the 21st century. The only record prior to 2018, was a strong colony seen on the trunk of an Oak in the woodland garden by the car park off the SSSI in 2012 (Sanderson, 2014b). In 2018 it was refound on the SSSI but only as some very poor growth on a fallen Oak in the west of Great Wood (**Map 17**). The garden tree population was still healthy in 2018. The latter tree is in a location that is very sheltered from ammonia pollution from more intensively grazed land in the area.

***Chaenotheca brachypoda*** (Wales VU) a widespread, but scattered SOWI Ancient Woodland Indicator pinhead lichen found mainly in the east of Britain. It is found on lignum on less acid species especially Beech, Ash and Elder. On trees it is mainly found in old growth stands with much standing dead wood. It can also grow on the dry sides of old Elder bushes, however, which extends the species into more disturbed habitats. At Gregynog, there was a single record from Oak bark in 1979; not seen since.

***Chaenotheca stemonea*** (Notable NS) (Wales VU) an uncommon pinhead lichen confined to dry bark on ancient trees thinly scattered throughout Britain except the far west. Rare in Wales and mainly recorded from Radnorshire. At Gregynog found on lignum inside a hollow Alder and on bark on an old Oak in parkland in the Wood Cottage area (**Map 20**), new to the site and the county.

***Lobaria pulmonaria*** (Notable, IR) (Wales VU) (known as Lungwort) a large leafy lichen which is a SOWI Ancient Woodland Indicator. The International Responsibility status reflects the large stable populations in western and northern Scotland, while it is threatened across most of Europe. It is still very locally frequent south of the Scottish Highlands, but has been declining in most of these areas. 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 where it is not exposed to hot summer sun for more than a few hours. Well known on a single Oak (GYG144) on the north side of Great Wood, but only recorded previously in 1976, 1979 and 2011. In 2018, refound on this tree (**Map 30**), when it was abundant lower down on the trunk.

***Microcalicium disseminatum*** (Notable, NR) (Wales VU) is a pinhead fungus species found mainly on dry on bark on Pines in native pinewoods but also more rarely Oaks, where it parasites other lichens or free living algae. It is a characteristic species of central and eastern native pinewoods, which is very rare in England and Wales. In Wales only two known sites and was first recorded at Gregynog in 2011 and refound in 2012. In 2018 it was recorded at 15 locations, with one in the Wood Cottage area and the rest in Great Wood (**Map 32**). Three colonies were on Oak lignum 12 were on Oak bark. One was a standing dead Oak, the rest were live trees.

***Opegrapha fumosa*** (Notable, NS/IR) (Wales VU) (familiarly known as 'Smoky Jo') is a sorediate sterile crust with scattered records across the south of England from the New Forest to Dartmoor, as well as west Wales and the West Highlands. It is a species of very restricted distribution and habitat, being confined to acid bark on post mature trees, normally Oaks, in very sheltered but reasonably well lit high forests. At Gregynog, first recorded in 2011 on a single Oak in the east of Great Wood. In 2018, found on four Oaks in the same area (**Map 33**).

***Porina byssophila*** (Notable, NR) (Wales VU) 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, The Vulnerable status in Wales is likely to be revised; it is not likely now to be assessed as threaten. At Gregynog, found on a wound track on a Hazel stem on the southern boundary of Great Wood. New to the site and the county.

***Schismatomma cretaceum*** Nb (IR) (Wales VU) a crust forming lichen, which is widespread along the south coast but is scarcer to the north. The species is found mainly in the east and south west in Wales. At Gregynog recorded from Great Wood in 1979, 2011 and 2012 and The Warren in 1987 and 1996. In 2018, not refound in The Warren but it was found on an Oak in the Wood Cottage area and more than 10 Oaks and an Ash and a Sycamore in Great Wood (**Map 38**).

***Schismatomma niveum*** (Notable, IR) (Wales VU) a crust forming SOWI Ancient Woodland Indicator 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 over 80 trees per ha recorded in the New Forest (Sanderson, 2001) but becomes a rare species to the north and is very scarce in Wales and rare in mid and north Wales. At Gregynog, recorded once in 1976 and then not recorded again until 2011 and 2012 in Great Wood. In 2018, recorded at 20 locations, mainly in the east of Great Wood but extending into the more sheltered parts of the west of Great Wood (**Map 40**). On a single Ash, the rest were Oak. **This is likely to be the largest Welsh population**.

**Welsh RDB, not in National List, Near Threatened:**

***Arthonia anombrophila*** (Notable, NS/IR) (Wales NT) a crust forming lichen confined to the dry bark of old trees as well as smooth bark communities in the north and west, where it is widespread but infrequent. In Wales local in the west and rare to the east. First recorded in 2011 as new to the site and the county on an Oak in the easy of Great Wood (Sanderson, 2011). This tree was not refound in 2018 but two new Oak trees were located in the west of Great Wood (**Map 15**).

***Arthonia vinosa*** (Wales NT) an SOWI woodland indicator of mesic bark, dry bark and to transitions to base rich bark, moderately mobile to south, rarer in west. Appears widespread in all but south Wales. At Gregynog, recorded in Great Wood in 1979 and 2012 and The Warren in 1986, 1987 and 1996. In 2018 refound as occasional on Oak in Great Wood and rare in the Wood Cottage area. Not refound in The Warren.

***Bacidia biatorina*** (Wales NT) an SOWI woodland indicator of mesic bark to transitions to base rich bark, a moderately mobile lichen, which can widely colonise 19$^{th}$ century Oak stands, potentially under recorded as mainly occurs as a sterile thallus. Appears widespread in central and north west Wales. Found new to the site in 2011 on Oak and also on Ash in 2012. In 2018 refound on Oak and Ash in all areas. Widespread in Great Wood, rarer in the other areas.

***Bactrospora corticola*** **Nb** (Notable, NS) (Wales NT) a crust forming lichen confined to the dry bark of old trees, mainly Oak in the lowlands, but also Alder in the uplands. It is a predominantly upland and eastern species, with most Welsh records from eastern central Wales. At Gregynog, recorded in The Warren in 1987. Not refound until 2018, when it was found, with pycnidia only, on dry bark on an old Oak (GYG053) in the west of Great Wood.

***Biatora chrysantha*** (Notable, NS) (Wales NT) a crust forming lichen of acid bark on old trees in upland old growth woodlands in acidic to mildly base rich flush bark. It is a predominantly eastern species and is most frequent in the eastern Scottish Highlands. It is rather in rare in Wales. In 2018 found new to Gregynog and the county on a wound track in a smallish Oak cut recently as a pollard on the west side of the main ride in Great Wood (**Map 16**).

***Catinaria atropurpurea*** (Wales NT) an SOWI woodland indicator of base rich bark, moderately mobile in the south, probably less so in the north west. Appears widespread in central and west Wales. Recorded new to the site on an Ash in 2011. Not refound in 2018.

***Cresponea premnea*** (Notable, IR) (Wales NT) a widespread crust forming lichen in southern Britain that defines the Ancient Dry Bark Community (*Lecanactidetum premneae*); it is an SOWI Ancient Woodland Indicator species. It is very rare in the rest of Europe and is hence an International Responsibility species. Widespread on veteran Oaks in lowland Wales. Recorded frequently for Great Wood in 1976, 1979, 2011 and 2012. Also recorded from The Warren in 1987 and 1996, but at least the 1996 record was made outside of the boundary of SSSI. In 2018, found to be very common and recorded at 125 locations (**Map 25**). Frequent in Great Wood and the Wood Cottage area but not found in The Warren. Mainly found on Oak but recorded on six Ash trees, and single Alder and one Sycamore.

***Dimerella lutea*** (Wales NT) an SOWI woodland indicator of mesic bark to base rich bark, mobile species. Widespread in Wales except in the most polluted areas and presumably regarded as Near Threatened due to threats from acid deposition, but showing strong recovery in England at present. Recorded new to the site on an Ash

in 2011. Not refound in 2018 on Ash but noted on three Oaks in the east of Great Wood.

***Pachyphiale carneola*** (Wales NT) a widespread southern and western crust forming SOWI Ancient Woodland Indicator lichen. It typically grows in shaded transitions between the Mature Mesic Bark Community (*Pertusarietum amarae*) to the Base Rich Bark Woodland Community (*Lobarion*). It is moderately mobile in the south of Britain, rarer to the north west. Appears widespread but local in north Wales, more sparse to the south and east. At Gregynog, recorded in 1986, 1976 and 2011. In 2018 recorded at five locations, all on old Oaks, four in Great Wood and one in the Wood Cottage area (**Map 34**).

***Pertusaria coronata*** (Notable, NS) (Wales NT) an isidiate crust, similar to the common *Pertusaria coccodes*, but separated by spot tests and some colour differences. Found on sheltered well lit mesic bark (*Pertusarietum amarae*). An eastern species, which is widespread in the central and eastern Highland but very rarely recorded to the south. Recorded from The Warren in 1986 and 1987 and in Great Wood in 1981, 1979 and 2011, that latter on an Oak in the east of Great Wood. Not refound in 2018, but this species is easily overlooked.

***Porina coralloidea*** (Notable, NS/IR) (Wales NT) a crust forming lichen, which is a SOWI Ancient Woodland Indicator. 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. It has been rarely recorded from Wales and mainly in the north west. At Gregynog found new to the site in 2011 on an ancient Oak to the eastern side of the main ride. This colony was refound in 2018 and on a second Oak to the east of Great Wood (**Map 35**).

***Rhaphidicyrtis trichosporella*** (Notable, NS) a small crust forming lichen found smooth to somewhat rough acid bark in western woods. Very rarely recorded in Wales and potentially under recorded. In 2018, found new to Gregynog and the county on dry bark on an old Oak (GYG090) in the east of Great Wood.

***Schismatomma quercicola*** (Notable, IR) (Wales NT) 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, but most of the rest of England it is much more uncommon and more of a relic species. Rather few records from Wales, mainly from North Wales and probably under recorded. In 2018, found new to Gregynog and the county on acid bark on two old Oaks in a humid sheltered valley in the Wood Cottage area (**Map 40**), a significant extension of range for this western species.

***Sticta limbata*** (Notable, IR) (Wales NT) a large leafy lichen which is an SOWI Ancient Woodland Indicator. The International Responsibility status reflects the large surviving populations in western 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 reasonably well lit situations where it is not exposed to too much summer sun. Still widespread in west Wales. There is no record of this species in the BLS database for Gregynog but it is mentioned in the SSSI citation and in Fletcher et al (1982), but there are no recent records, so it is presumably long lost.

***Thelotrema lepadinum*** (Wales NT) a very widespread crust forming SOWI Ancient Woodland Indicator lichen. It grows in a variety of communities on moist acid to mesic bark and can colonise mature young growth stands. It can build up high

densities of occupied trees in favourable sheltered woodlands. It shows an interesting behaviour in Wales, locally absent from some lichen rich woods, but abundant in others. The rich woods from which it is absent have probably had poor survival of undisturbed old woodland conditions but good survival of veteran trees; lichen rich woods with high *Thelotrema lepadinum* cover have survival of both woodland conditions and veteran trees. Recorded by all surveys. In 2018, found to be abundant in Great Wood and occasional in the other areas. In was recorded on Oak, Ash, Hazel, Alder, Holly, Beech and Sycamore. In open stands of The Warren it was notable that the species had not colonised any younger 19th century Oaks, but the species was clearly more mobile in Great Wood where the younger and older trees are growing closer together.

**Welsh RDB, not in National List, Not Evaluated or Data Deficient**

Seven species found in the SSSI that were not evaluated by Woods (2010) that are not in the national red list. Of these *Cliostomum flavidulum* Nb (NS) is a recently described species, which is unlikely to be threatened in Wales. *Cyphelium sessile* Nb (NS) (W-NE) and *Sphinctrina turbinata* Nb (NS) (W-NE) are lichen parasites, which were not assessed in Wales but were assessed in Britain. The former is rare in Wales but is probably not threatened the latter is quite widespread. The others are all rare species in Wales and likely to be assessed as RDB species when assessed. One species, *Hypotrachyna afrorevoluta*, was classed as Data Deficient, and in not listed as Threatened or Near Threatened in the British RDB. This is recently recognised species, which is actually common and widespread Wales.

***Chaenothecopsis pusilla*** (Notable, NS) (Wales NE) is a pinhead fungus found in the Dry Lignum Community (*Calicietum abietini*) on dry vertical or overhanging

lignum on standing dead Oaks or large fallen Oaks. Recorded from the Scottish Highlands and southern England, it is probably under recorded, but largely confined to old growth stands. Only recently recorded from Wales, where it appears to be rare. Recorded new to Gregynog and the county in 2018 at two locations on the south west of Great Wood (**Map 22**).

***Chaenothecopsis retinens*** (Notable, NR) (Wales NE) an obligate fungal parasite of *Schismatomma cretaceum* in Britain and on the closely related *Inoderma byssaceum* (*Arthonia byssacea*) in Switzerland. Both lichens are specialist of veteran trees. The parasite is internationally rare, only recorded from five sites in southern England and one in Switzerland in recent decades. Not assessed by Woods & Coppins (2012), but would seem likely to be at assessed at least to be Endangered when it is assessed. In 2018 found new to the site and Wales on a single Oak in the east of Great Wood (**Map 23**).

***Coenogonium tavaresianum*** (*Dimerella tavaresiana*) (Notable, NR) (Wales NE) a recent discovery for Britain, found on old Oaks in parkland in base rich flushes on the bark in Hampshire and Oxfordshire in 2017. Recently also found on Oaks in Moccas Park, Herefordshire. *C. tavaresianum* is internationally rare and had previously been known only from undisturbed humid Mediterranean woodland habitats in southern Europe (Southern France, Portugal, Spain and Italy) and the Canary Islands. It is regarded as threatened or red listed in all these counties (Critically Endangered in France, Vulnerable in Italy and Data Deficient in Iberia). It recent discovery in Britain was a surprise but is apparently a species with a southern Atlantic – Mediterranean distribution. It is likely to be rare in Britain but had probably been over looked as the common *Gyalecta truncigena*. At Gregynog, it was found on three

old Oaks, two in the east of Great Wood and one in the Wood Cottage area. **An internationally significant discovery**.

***Lecidea nylanderi*** Nb (NS) (Wales N) a crust forming sorediate lichen, sterile in Britain. A northern species in Britain, mainly found on dead wood and acid bark in eastern Scotland. Until recently unknown from England or Wales, but recently detected as a rare species of sites with large dead wood resources in eastern and southern England. In 2018, found to be quite frequent on Oak lignum and bark in Great Wood and rare in the Wood Cottage area, **new to Wales and a very substantial range extension**.

**Other nationally Notable species and Species of interest, not Welsh RDB list**

***Buellia pulverea*** (Notable, NS) a crust forming sorediate lichen of exposed acid bark, wood and heather stems. Found locally in central Scotland, northern England and southern Wales in the 20th century but with very few recent records. It is tolerant of sulphur dioxide and may have declined as this pollution has declined, in parallel lichenologist may have unfamiliar with the species as it became less prominent. At Gregynog it was recorded in 1979 but has not been seen since.

***Caloplaca phlogina*** (Notable, NS) a member of the *Caloplaca citrina* group, only recently well described. Probably widespread but local on nutrient enriched bark and wound tracks. Recorded in 2012 in a wound track on an old Ash in the east of Great Wood, new to the county. Not refound in 2018.

***Chaenotheca hispidula*** (Notable, NS) a widespread but scattered pinhead lichen of lignum or dry bark on less acid species especially Beech and Ash lignum and occasionally Oak bark. Usually found in old growth stands. At Gregynog it was recorded in 1979 on Oak bark but has not been seen since.

***Chaenothecopsis nigra*** (Notable, NS) a pinhead fungus 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 Gregynog, found on two Oak on the east side of the ride in Great Wood in 2012 (Sanderson, 2014b). In 2018, refound on these trees and on two more trees in the Wood Cottage area (**Map 21**). One was a standing dead Oak and the others were ancient trees with exposed lignum.

***Cliostomum flavidulum*** Nb (NS) (Wales Not Evaluated) (Notable, NS) a yellow sorediate and normally sterile crust forming lichen. Woods & Coppins (2003) listed it as a RDB Data Deficient species, but it was not given RDB status in Woods & Coppins (2011). It has probably been much overlooked for other common yellow sorediate crusts and it is likely to be under recorded. It appears to be characteristic of mildly acidic bark on Oak, Beech and Alder in less disturbed woodlands. At Gregynog it was found, new to Wales, in 2011 and more trees were found in 2012 (Sanderson, 2011 & 2012). In 2018, it was found widely on Oaks in Great Wood and the Wood Cottage area and also rarely in The Warren.

***Lecanactis subabietina*** (Notable, IR) a crust forming lichen that is widespread on the dry bark of old trees (*Lecanactidetum premneae* and other communities) in the south. It is also a SOWI Ancient Woodland Indicator. It can be a strong coloniser close to the coast but generally confined to old growth stands and veteran trees inland. At Gregynog recorded on a single Oak in The Warren in 1996. Not seen since.

***Leptogium subtile*** (Notable, NS) a small crust-like shrubby Nationally Scarce lichen. It is possibly a rather ephemeral and under recorded species of bark and debris

on base rich old trees. At Gregynog recorded on a single dead Elm trunk in The Warren in 1996. Not seen since.

***Lopadium disciforme*** an ancient woodland species of mildly acidic to base rich bark. A northern species widespread in the Scottish Highlands, occasional in eastern Wales, but rare beyond. At Gregynog recorded occasionally in 1979, 2011 and 2012. In 2018 recorded at 19 locations, mainly in the east of Great Wood but extending into the west of the wood and the Wood Cottage area (**Map 31**). Recorded on younger mature trees as well as post mature trees and found on 13 oaks and six Ash trees.

***Melaspilea ochrothalamia*** (Notable, NS) a bark fungus, which is possibly parasitic on crust forming lichens. It is a widespread species but always very scattered in its occurrence and rarely found in more than a few trees in any one site, usually in shaded mesic bark. It is found on mature trees as well as old trees and is not especially associated with old growth stands. At Gregynog, first recorded in the east of Great Wood in 2011 on Oak. In 2018, noted on three Oaks in the east of Great Wood and one in the Wood Cottage area.

***Micarea doliiformis*** (Notable, NS) 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 benefit from mild acidification. In Wales mainly recorded from central and south west Wales, with few records from north west Wales. At Gregynog, first recorded in the east of Great Wood in 2011 Oak. In 2018, refound on a single Oak in the west of Great Wood.

***Micarea xanthonica*** (Notable, NS/IR) a crust forming lichen recently separated from the common *Micarea prasina*. It has a disjunct world distribution, being found in the north west Europe and the Pacific Northwest of North America. This lichen appears to be a widespread oceanic species of acidic bark in oceanic woodland in western Britain. As yet, rarely recorded from Wales, but likely to be very under recorded in the north west at least. At Gregynog, it was recorded on two Oaks in Great Wood, new to the site and the county.

***Milospium graphideorum*** (Notable, NS) a parasitic fungus found mainly on *Lecanographa lyncea* in the Ancient Dry Bark Community (*Lecanactidetum premneae*) but also occasionally on other species in the same habitat. Very rarely it can form independent lichen. In Gregynog, recorded in 2011 and 2012 mainly as a parasite of *Lecanographa lyncea* but also noted parasitising *Enterographa sorediata*, a new host. In 2018 noted as abundant on the *Lecanographa lyncea* population throughout the site. It was also noted on *Arthonia pruinata*.

***Rinodina roboris* var. *roboris*** (Notable, IR) 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 air areas with frequent old trees. At Gregynog, found new to the site on three old Oaks in the east of Great Wood (**Map 37**).

***Schismatomma umbrinum*** (Notable, NS) a Nationally Scarce powdery crust forming lichen. It is an upland species characteristic of dry overhangs on rock outcrops, very rarely found on dry bark on ancient Oaks. It is most widespread in the

Scottish Highlands with a small number of records from central west Wales and very few records elsewhere. At Gregynog discovered new to the site and the east of the county as two large colonies on old Oaks in sheltered humid locations by streams in the east of the Wood Cottage area and a small fragment in the west of Great Wood (**Map 41**). A surprising find, and outside of the core area of occurrence in Wales.

***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. Recorded from Gregynog in 1987 and 1996 in The Warren and from Great Wood in 2011 and 2012. In 2018 recorded rarely in the east and west of Great Wood. Not refound in The Warren in 2018.

***Stenocybe septata*** (Notable, IR) is southern and western fungi confined to the bark of old Hollies (Smooth Bark Community *Graphidetum scriptae*). It is a SOWI Ancient Woodland Indicator. At Gregynog first found in 2012 on a single old Holly east of the main ride in Great Wood (Sanderson, 2014b), but this record did not get into the BLS database. Refound on the same tree in 2018.

***Strigula taylorii*** (Notable, NS) 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. At Gregynog, found on a wound track on an Ash in the east of the Great Wood, new to the site.

**Other Records of Interest**

Other records of interest include the following new records:

**New to Wales**

Three lichenicolous fungi found in 2018 were new to Wales.

***Laetisaria lichenicola*** a probably common parasite of *Physcia* species in nutrient enriched environments, which has been recently added to the British list. Recorded on *Physcia adscendens* on an Oak twig in the Wood Cottage area.

***Tremella pertusariae*** [NR] a little recorded parasite of *Pertusaria hymenea*, widespread but local. Recorded on *Pertusaria hymenea* on a Hazel on the southern boundary of Great Wood.

***Roselliniopsis tartaricola*** [NS] a rarely recorded parasite of *Ochrolechia tartarea* and *Varicellaria hemisphaerica*, probably a local species of better quality sites but much overlooked. Found on *Varicellaria hemisphaerica* on a big veteran oak in the east of Great Wood.

**New to Montgomeryshire**

The following additional species were new to Montgomeryshire:

***Arthopyrenia salicis*** a widespread oceanic species of smooth bark, especially on Hazel. Recorded on an old Hazel on the southern boundary of Great Wood.

***Bacidia viridifarinosa*** a widespread species of shaded base rich humid bark. Recorded on a Sycamore and an Oak in Great Wood.

***Homostegia piggotii*** a widespread parasite of *Parmelia saxatilis* in the west of Britain. Recorded on *Parmelia saxatilis* on oak twigs and Sallow twigs in the Wood Cottage and The Warren.

***Micarea viridileprosa*** (NS) a widespread species of acid habitats, including bark and heathland soils, recently segregated from *Micarea prasina*. Recorded from an Oak in the east of Great Wood.

***Vouauxiella lichenicola*** a common parasite of Lecanora species, clearly under recorded in Wales. Recorded on *Lecanora chlarotera* on an Ash in the east of Great Wood.

**New to the Site**

The following additional species were new to the site:

***Arthonia elegans*** a widespread species of smooth bark, especially on Hazel. Recorded on an old Hazel on the southern boundary of Great Wood

***Caloplaca obscurella*** a widespread species of wound tracks. Recorded on a nutrient enriched Ash in The Warren

***Hypotrachyna revoluta* s. str**. a very common species, but not as common as the segregate *Hypotrachyna afrorevoluta* in areas with lower nitrogen deposition. Previously only the *Hypotrachyna afrorevoluta* segregate was recorded, *Hypotrachyna revoluta* s. str. was confirmed on Oak in the Wood Cottage area and The Warren.

***Leptogium teretiusculum*** a widespread species of base rich habitats including bark and rocks. An SOWI species. Found on an ancient Ash in the east of Great Wood.

***Micarea peliocarpa*** a common species of acidic substrates. Recorded on Oak lignum in the west of Great Wood.

***Mycoporum antecellens*** a widespread species of smooth bark in oceanic woods. A SOWI species. Recorded on the branch of an Alder in the east of Great Wood.

***Stenocybe pullatula*** a specialist fungi of Alder twigs. Found on an Alder on the southern boundary of Great Wood.

***Trapelia corticola*** an oceanic ancient woodland species of acid bark. Occasional on Oak and Alder in the east of Great Wood and once on Alder in The Warren.

## 5.2. Descriptions of Recording Areas

The lichen species of interest, communities and structure of the recording compartments (**Map 1**) are described below. Individual locations of interest are shown on **Maps 3** & **43** – **46**.

### *5.2.1. Great Wood East*

The section of Great Wood east of the main ride. The ride is presumably a long established feature maintained as a sightline from the main house. On the 1885 6" Ordnance Survey Map <https://maps.nls.uk>, this area is shown as unfenced from the field to the east and it was still unfenced from this field in 1953. The eastern section of Great Wood is dominated by gladed grazed high forest and is shown as being similar in 1885.

The grazed high forest is dominated by Oak, this predominately post mature, but with some ancient Oaks and younger mature trees. Dead wood was noted as frequent, including both large standing and fallen trees. The associated tree flora is more diverse than the grazed high forest to the west, with local Ash, Hazel, Holly,

Sycamore and Alder within the wood. There was also Alder and Hazel along stream. There are few young trees but a scatter of young Ash were seen. It was not clear if these were planted or had regenerated through Bracken. Glades of varied sizes are frequent and are an important feature in promoting lichen diversity. This includes the long linear glade formed by the main ride. There are also more isolated trees on the edges. To the south the bank above the stream has a stand of planted mature Beech.

**Management**: the wood is grazed, with sheep seen during the survey. The grazing was not then heavy, with plenty of uneaten grass. The very thin shrub layer, the lack of young trees and the absence of Bramble indicates long sustained grazing. Locally some small circular exclosures have been made with small dead wood. Presumably these are intended to encourage regeneration, but at the time of survey only slightly longer grass swards were observed as a result.

**Lichens**: the richest area within the SSSI (**Species List 2** & **Map 4**), with rich and extensive ancient dry bark assemblages and widespread mesic bark assemblages (**Maps 5** & **6**) along with more occasional base rich bark, lignum and acid bark interest (**Maps 7** – **10**). The biodiversity measures recorded 2018 are listed below:

| **Biodiversity Measures** | **GW-E** |
|---|---|
| Total taxa | 115 |
| Southern Oceanic Woodland Index | 22 |
| Pinhead Index | 9 |
| Critically Endangered | 0 |
| Vulnerable | 2 |
| Near Threatened | 4 |
| Notable | 24 |

| | |
|---|---|
| S7/BAP | 4 |
| TNTN Score | 40 |

Several significant new species were found, with an only a few previously located species of interest not refound. Most of these were all less easy to spot species seen in 2011 or 2012 and are probably still present. Two larger ammonia sensitive species, *Usnea florida* NT (S7) and *Bryoria fuscescens* W-VU, were not seen in 2018 and are likely to have actually declined.

The dry bark assemblages (*Lecanactidetum premneae* & *Calicietum hyperelli*) are outstanding with large populations of *Cresponea premnea* Nb (IR) (W-NT), *Enterographa sorediata* NT (NS/IR/BAP) (W-NE), *Lecanographa lyncea* Nb (IR) (W-EN) and *Microcalicium disseminatum* Nb (NR) (W-VU). The internationally rare lichenicolous fungi *Chaenothecopsis retinens* Nb (NR) (W-NE) was found new to Wales parasitising *Schismatomma cretaceum* Nb (IR) (W-VU). Additional species of interest were seen in *Calicium salicinum*, *Chaenotheca trichialis*, *Milospium graphideorum* Nb (NS) and *Rhaphidicyrtis trichosporella* Nb (NS) (W-NT). The best trees were typically near glades but trees of interest also occurred in more shaded areas. All species of interest noted from this area in 2011 and 2012 were refound except the small *Arthonia anombrophila* Nb (NS), which was refound to the west.

Rich trees with Mature Mesic Bark Community (*Pertusarietum amarae*) are less widespread than dry bark assemblages, being more strongly associated with glades. The importance of the habitat is for populations of rare sub-oceanic specialists of veteran trees. These include a large population of *Lecanora sublivescens* NT (NS/IR/S7) (W-NT) with rich trees also supporting *Caloplaca lucifuga* VU (NR/S7) (W-VU) and *Lecanora quercicola VU* (NS/IR/S7) (W-VU) rarely. Other species of interest

noted included *Pertusaria multipuncta*, *Roselliniopsis tartaricola* [NS], *Sphinctrina turbinata* Nb (NS) (W-NE) and *Thelotrema lepadinum* W-NT. One species seen in 2011, *Pertusaria coronata* Nb (NS) (W-NT), was not refound, it is not easy to spot and is probably still present.

Fully developed Base Rich Bark Woodland Communities (*Lobarion pulmonariae*) are most frequent in the sheltered areas of the east of Great Wood within the SSSI, as are the more acidic transitional communities with *Lopadium disciforme*.

The well known rich Oak to the north still has strongly developed colonies of *Lobaria pulmonaria* Nb (IR) (W-VU) and *Lobaria virens* (Nb (IR) (W-EN) along with *Porina rosei* (NT (NS/IR) (W-NT). Also of high significance were two trees with the internationally rare *Coenogonium tavaresianum* Nb (NR) (W-NE) was recorded on two Oaks and *Rinodina roboris* var. *roboris* Nb (IR) was found, new to the site. Also of interest were *Bacidia biatorina* (W-NT), *Pachyphiale carneola* (W-NT) and *Porina coralloidea* (Nb (NS/IR) (W-NT). Not refound in 2018 were one small species recorded here in 2011, *Catinaria atropurpurea* and an Oak with *Porina rosei* (NT (NS/IR) (W-NT) seen in 2012. The former is an easily overlooked species and the latter was probably not refound due to a confusing description in the GPS data used to refind trees.

Lignum assemblages (*Calicietum abietinae* & *Cladonietum coniocraeae*) are significant but rich trees are less frequent than in the more open stands to the west. Two important species recorded in 2018 were *Microcalicium disseminatum* Nb (NR) (W-VU) and *Xerotrema quercicola* NT (NR/IR). Also present were *Chaenotheca brunneola*, *Chaenothecopsis nigra* Nb (NS), *Cladonia parasitica* and *Imshaugia aleurites*.

Acid bark assemblages of high interest (*Parmelion laevigatae* & *Pseudevernietum furfuraceae*) are most frequent in the sheltered areas of the east of Great Wood within the SSSI. The area supports a large population of the southern oceanic *Schismatomma niveum* Nb (IR) (W-VU) along with populations of oceanic species on the edge of their ranges. These include *Opegrapha fumosa* Nb (NS/IR) (W-VU), *Micarea doliiformis* Nb (NS), *Micarea xanthonica* Nb (NS/IR) and *Sphaerophorus globosus. There* are also some interesting northern species, including *Lecidea nylanderi* Nb (NS) (W-NE), new to Wales along with *Parmeliopsis hyperopta*. Other species of interest include *Anisomeridium ranunculosporum*, *Cliostomum flavidulum* Nb (NS) (W-NE), *Loxospora elatina*, *Megalaria pulverea*, *Melaspilea ochrothalamia* Nb (NS), *Micarea viridileprosa* (NS), *Thelotrema lepadinum* (W-NT) and *Trapelia corticola*.

The canopy assemblages examined in the south east indicated there was moderate ammonia enrichment.

### *5.2.2. Great Wood West*

The section of Great Wood west of the main ride. The ride is presumably a long established feature maintained as a sightline from the main house. On the 1885 6" Ordnance Survey Map <https://maps.nls.uk>, this area is shown as unfenced from the Wood Cottage field to the west and it was still unfenced from this field in 1953. The southern section of the area is similar grazed high forest to the west of the wood. The northern section is much more open with scattered trees and groups of open grown trees. The 1885 OS map shows a similar pattern of pasture woodland structure.

Post mature Oak dominates the grazed high forest area, with occasional ancient Oak but with rare Ash. The stand has an open well lit structure, lacking a

shrub layer, with frequent glades of varying sizes. There is rare Sycamore of interest on the southern boundary. Dead wood is well developed, including fallen and standing dead wood. The open area to the north also has post mature and some ancient Oak widespread, with some post mature Ash.

**Management**: the wood is grazed, with sheep seen during the survey. The grazing was not then heavy, with plenty of uneaten grass. The very thin shrub layer, the lack of young trees and the absence of Bramble indicates long sustained grazing.

**Lichens**: the second richest area within the SSSI (**Species List 2** & **Map 4**), with rich and extensive ancient dry bark assemblages and widespread mesic bark assemblages through out the area (**Maps 5** & **6**) along with more occasional base rich bark and acid bark interest in the grazed high forest and lignum interest in both areas (**Maps 7** – **10**). The biodiversity measures recorded 2018 are listed below:

| **Biodiversity Measures** | **GW-W** |
|---|---|
| Total taxa | 91 |
| Southern Oceanic Woodland Index | 16 |
| Pinhead Index | 7 |
| Critically Endangered | 0 |
| Vulnerable | 3 |
| Near Threatened | 4 |
| Notable | 17 |
| S7/BAP | 5 |
| TNTN Score | 37 |

Several significant new species were found along with all previously located species of conservation interest.

The dry bark assemblages (*Lecanactidetum premneae* & *Calicietum hyperelli*) are outstanding with large populations of *Cresponea premnea* Nb (IR) (W-NT), *Lecanographa lyncea* Nb (IR) (W-EN) and *Microcalicium disseminatum* Nb (NR) (W-VU). *Enterographa sorediata* NT (NS/IR/BAP) (W-NE) occurs in the east of the high forest but is not as abundant as in the east of Great Wood. A small amount of the regionally rare *Schismatomma umbrinum* Nb (NS/IR) was spotted on a parkland tree. Other species of high interest recorded in the habitat are *Arthonia anombrophila* Nb (NS/IR) (W-NT), *Bactrospora corticola* Nb (NS) (W-NT), *Milospium graphideorum* Nb (NS), *Rhaphidicyrtis trichosporella* Nb (NS) (W-NT) and *Schismatomma cretaceum* Nb (IR) (W-VU). Other species include *Calicium salicinum*, *Chaenotheca trichialis* and *Lepraria ecorticata* (NS).

Rich trees with Mature Mesic Bark Community (*Pertusarietum amarae*) are less widespread than dry bark assemblages within the woodland, being strongly associated with glades, which communities are more frequent in the parkland trees. The importance of the habitat is for populations of rare sub-oceanic specialists of veteran trees. These include a large population of *Lecanora sublivescens* NT (NS/IR/S7) (W-NT) with rich trees also supporting *Caloplaca herbidella* s. str. VU (NR/S7) (W-VU), *Caloplaca lucifuga* VU (NR/S7) (W-VU) and *Lecanora quercicola VU* (NS/IR/S7) (W-VU). The latter was found on four trees, a very large population for this very rare species. Other species of interest noted included *Cyphelium sessile* Nb (NS) (W-NE), *Dactylospora parasitica* [NS] and *Tremella pertusariae* [NR], the latter new to Wales. One colony of *Caloplaca lucifuga* recorded in 2012 was not refound, but this is typical for this quite ephemeral species and it was found on two new trees in this area.

Base Rich Bark Woodland Communities (*Lobarion pulmonariae*) is much less well developed than the woodland to the east, but scattered interest occurs in the denser woodland to the south. These include new records for the site *Biatora chrysantha* Nb (NS) (W-NT) and *Leptogium teretiusculum*. Other species of interest recorded were *Arthonia vinosa* (W-NT), *Bacidia biatorina* (W-NT), *Lopadium disciforme* and *Pachyphiale carneola* (W-NT).

Lignum assemblages (*Calicietum abietinae* & *Cladonietum coniocraeae*) are very well developed in this section of the wood, on both fallen and standing dead wood. Species of importance include *Chaenothecopsis pusilla* Nb (NS) (W-NE), *Microcalicium disseminatum* Nb (NR) (W-VU), *Xerotrema quercicola* NT (NR/IR) and *Ochrolechia arborea* NT (NR) (W-NE). The latter was new to Wales. Also new to Wales was the northern *Lecidea nylanderi* Nb (NS) (W-NE). Other species of interest include *Chaenotheca brunneola*, *Cladonia parasitica* and *Imshaugia aleurites*. **The declining nitrogen pollution species sensitive north eastern species of acid substrates Bryoria fuscescens (W-VU) was found once on fallen dead wood in this area, a great decline from past records**.

Acid bark assemblages of high interest (*Parmelion laevigatae* & *Pseudevernietum furfuraceae*) have their core area of diversity in the east of Great Wood. However, part of the important population of *Schismatomma niveum* Nb (IR) (W-VU) was found just west of the main ride in the high forest area and scattered interest did occur. In addition some oceanic species on the edge of their range included *Micarea xanthonica* Nb (NS/IR), *Mycoblastus caesius* and *Sphaerophorus globosus.* There are also some interesting northern species, including *Lecidea nylanderi* Nb (NS) (W-NE), new to Wales along with *Parmeliopsis hyperopta*. Other

species of interest include *Anisomeridium ranunculosporum*, *Cliostomum flavidulum* Nb (NS) (W-NE), *Loxospora elatina*, *Megalaria pulverea*, *Thelotrema lepadinum* (W-NT) and *Trapelia corticola*.

### 5.2.3. Wood Cottage Area

The parkland field west of Great Wood. On the 1885 6" Ordnance Survey Map <https://maps.nls.uk>, this area is shown as unfenced from Great Wood to the east and it was still unfenced from this area in 1953, the splitting off of this area from Great Wood is a recent feature. The 1885 map shows a different habitat from now, with the more closed grazed high forest stand in the south of Great Wood extending across the Wood Cottage area south of the cottage. This is depicted as a seamless extension of the more wooded part of Great Wood. The current landscape of more open parkland fenced off from Great Wood is not shown on OS maps until 1974 <www.old-maps.co.uk/>. This area appears have been separated from Great Wood in the latter part of the 20th century and there also may have been some tree felling opening up the southern part of the area.

There are still differences between the habitat in the north and south of the Wood Cottage area. The south consists of mainly scattered old Oak in permanent pasture with flushes, but also with more sheltered old Oak in younger infill on southern and eastern edge. The Oaks are mainly post mature but there are also some large ancient Oaks as well. The northern section has fewer old Oaks in more intensively managed pasture. To the south there is a rich woodland/parkland assemblage, while the north is much less rich and nutrient demanding species are much more prominent.

**Lichens**: this area has far fewer old trees than the Great Wood areas, so is less rich than these, but there are some rich and significant assemblages (**Species**

**List 2** & **Map 4**). The most extensive are ancient dry bark assemblages (**Map 5**) but mesic bark, base rich bark, lignum and acid bark interest also occur on a few trees (**Maps 6** – **10**). The biodiversity measures recorded 2018 are listed below:

| **Biodiversity Measures** | **WC** |
|---|---|
| Total taxa | 67 |
| Southern Oceanic Woodland Index | 10 |
| Pinhead Index | 7 |
| Critically Endangered | 0 |
| Vulnerable | 0 |
| Near Threatened | 3 |
| Notable | 14 |
| S7/BAP | 3 |
| TNTN Score | 20 |

There appears to have been no previous lichen survey of this area.

The dry bark assemblages (*Lecanactidetum premneae* & *Calicietum hyperelli*) are well developed with large *Cresponea premnea* Nb (IR) (W-NT) widespread. The more sheltered tree in the valley in the south east adding *Lecanographa lyncea* Nb (IR) (W-EN) and *Schismatomma umbrinum* Nb (NS/IR). Also present were *Chaenotheca stemonea* Nb (NS) (W-VU), only recorded from the SSSI here, along with *Calicium salicinum*, *Chaenotheca trichialis* and *Schismatomma cretaceum* Nb (IR) (W-VU).

Rich trees with Mature Mesic Bark Community (*Pertusarietum amarae*) are less widespread but *Lecanora sublivescens* NT (NS/IR/S7) (W-NT) was found on three Oaks, while *Cyphelium sessile* Nb (NS) (W-NE) and *Thelotrema lepadinum* (W-NT) were also noted.

Base Rich Bark Woodland Communities (*Lobarion pulmonariae*) is rare but one important Oak tree was found but flushed grassland (GYG073). This supported the internationally rare *Coenogonium tavaresianum* Nb (NR) (W-NE), *Ramonia chrysophaea* NT (NS/IR/S7) (W-NT) new to the site and *Pachyphiale carneola* (W-NT). Other trees also supported Arthonia vinosa (W-NT), *Bacidia biatorina* (W-NT) and *Lopadium disciforme*.

The area supports a significant lignum assemblage (*Calicietum abietinae*), with the most significant species on lignum exposed on veteran trees, with *Microcalicium disseminatum* Nb (NR) (W-VU) on one Oak, *Chaenothecopsis nigra* Nb (NS) on two Oaks and *Chaenotheca stemonea* Nb (NS) (W-VU) inside a hollow Alder. Also present were *Calicium salicinum* in the same habitat along with *Imshaugia aleurites* and *Parmeliopsis hyperopta* on fallen dead wood.

Finally there is significant acid bark interest (*Parmelion laevigatae* & *Pseudevernietum furfuraceae*, but with the richest trees confined to the sheltered veteran Oaks in the humid valley to the south east of the area. This included two Oaks with the oceanic species *Schismatomma quercicola* Nb (IR) (W-NT) new to the site. Other species interest included the northern species *Lecidea nylanderi* Nb (NS) (W-NE), new to Wales, with other species including *Anisomeridium ranunculosporum*, *Cliostomum flavidulum* Nb (NS) (W-NE), *Loxospora elatina*, *Melaspilea ochrothalamia* Nb (NS), *Thelotrema lepadinum* (W-NT).

**The canopy assemblages show a marked contrast between the northern and southern parts of this area. To the north the twig assemblages indicate high levels of ammonia but to the south the assemblages indicated the clearest air**

**on the site, including the only record of the very ammonia sensitive *Usnea florida* NT (S7) in 2018**.

### 5.2.4. The Warren

This area of parkland is to the south east of Greynog Hall and Great Wood. On the 1885 6" Ordnance Survey Map <https://maps.nls.uk>, it was then called the Rabbit Warren and was shown as rough gazing with parkland trees, including conifers and some areas of denser unenclosed woodland. The current tree assemblage lacks any very old Oaks but there are pockets of scattered younger post mature Oak on the lower ground to the north west. These probably date from the early 19th century or possibly the late 18th century. To the east and south the trees are predominately younger 19th century trees, including Oak, Copper Beech and conifers. The lack of very old Oaks and the much poorer lichen assemblage suggests that The Warren may have been rather treeless in the 18th century and had subsequently become more treed.

**Lichens**: the Rabbit Warren has a markedly poorer lichen assemblage than the Great Wood, mostly likely reflecting a past break in continuity in trees. There is limited development of all the assemblages (**Species List 2** & **Map 4**) but a few significant species occur on older trees, with two species from the dry bark assemblages and mesic bark assemblages (**Maps 5** & **6**). Even more limited interest was found in 2018 from the base rich bark, lignum and acid bark assemblages. The biodiversity measures recorded 2018 are listed below:

| **Biodiversity Measures** | **TW** |
|---|---|
| Total taxa | 58 |
| Southern Oceanic Woodland Index | 8 |
| Pinhead Index | 3 |

| | |
|---|---|
| Critically Endangered | 0 |
| Vulnerable | 0 |
| Near Threatened | 1 |
| Notable | 4 |
| S7/BAP | 1 |
| TNTN Score | 6 |

Five species of conservation interest recorded from the SSSI here were not refound in 2018: *Bryoria fuscescens* (W-VU) and *Sphinctrina turbinata* Nb (NS) (seen 1987 & 1996), *Chaenotheca chrysocephala* (seen 2012), *Lecanactis subabietinum* Nb (IR) (seen 1996) and *Pertusaria multipuncta* (seen 1987). Of these the prominent *Bryoria fuscescens* is likely to have declined, but the others may have been overlooked. In 2018 the dry bark specialist *Lecanographa lyncea* Nb (IR) (W-EN) was found on a single tree, new to The Warren and *Lecanora sublivescens* NT (NS/IR/S7) (W-NT) on two oaks, confirming older records from this part of the park. Dry bark also supported *Chaenotheca trichialis* along with *Milospium graphideorum* Nb (NS) parasitising the *Lecanographa lyncea*. As well as the *Lecanora sublivescens* mesic bark habitats also supported *Cyphelium sessile* Nb (NS) (W-NE), *Roselliniopsis tartaricola* [NS] parasitising *Varicellaria hemisphaerica* and *Thelotrema lepadinum* W-NT. Otherwise there was minor interest in acid bark habitats including *Anisomeridium ranunculosporum*, *Cliostomum flavidulum* Nb (NS) (W-NE), *Thelotrema lepadinum* (W-NT) and *Trapelia corticola*, base rich bark *Bacidia biatorina* (W-NT) and *Chaenotheca brunneola* and *Cladonia parasitica* on lignum.

# 6. Nature conservation value and management

## 6.1. Nature Conservation Value

### 6.1.1. Value of the Lichen flora

Gregynog SSSI scores 34 using the SOWI (Southern Oceanic Woodland Index) for all data and 26 for the 2018 survey. The threshold for SSSI quality for this index in this area is 20 (Sanderson et al, 2018). The Pinhead Index score for all data is 16 and 12 for the 2018 survey, with the threshold for SSSI quality 10 (Sanderson et al, 2018). As well as the high scores produced by these indices, the area also supports many species of conservation interest in their own right. These are listed below (• = Section 7 or BAP species. In 2018 column; 1 = Seen 2018, 0 = Recorded 2011 or 2012 & + = Not seen after 1996):

**One Critically Endangered RDB species:**

| **Species** | **Status** | **1976–2012** | **2018** |
|---|---|---|---|
| *Calicium adspersum* • | NR | 1 | + |
| **Total number VU species** | | **1** | **0** |

**Three Vulnerable RDB species:**

| **Species** | **Status** | **1976–2012** | **2018** |
|---|---|---|---|
| *Caloplaca herbidella s. str.* • | NR | 1 | 1 |
| *Caloplaca lucifuga* • | NR | 1 | 1 |
| *Lecanora quercicola* • | NR/IR | 1 | 1 |
| **Total number VU species** | | **3** | **3** |

**Seven Near Threatened RDB species:**

| **Species** | **Status** | **1976–2012** | **2018** |
|---|---|---|---|
| *Enterographa sorediata* • | NS/IR | 1 | 1 |
| *Lecanora sublivescens* • | NS/IR | 1 | 1 |

| | | | |
|---|---|---|---|
| *Ochrolechia arborea* | NR | | 1 |
| *Porina rosei* | NS/IR | 1 | 1 |
| *Ramonia chrysophaea* • | NS/IR | | 1 |
| *Usnea florida* • | | 1 | 1 |
| *Xerotrema quercicola* • | NR/IR | 1 | 1 |
| **Total number NT species** | | **5** | **7** |

**Thirty Nine Notable species:**

| **Species** | **Status** | **1976–2012** | **2018** |
|---|---|---|---|
| *Arthonia anombrophila* | Nb (NS/IR) | 1 | 1 |
| *Bactrospora corticola* | Nb (NS) | 1 | 1 |
| *Biatora chrysantha* | Nb (NS) | | 1 |
| *Buellia pulverea* | Nb (NS) | 1 | + |
| *Caloplaca phlogina* | Nb (NS) | 1 | 0 |
| *Chaenotheca hispidula* | Nb (NS) | 1 | + |
| *Chaenotheca stemonea* | Nb (NS) | | 1 |
| *Chaenothecopsis nigra* | Nb (NS) | 1 | 1 |
| *Chaenothecopsis pusilla* | Nb (NS) | | 1 |
| *Chaenothecopsis retinens* | Nb (NR) | | 1 |
| *Cliostomum flavidulum* | Nb (NS) | 1 | 1 |
| *Coenogonium tavaresianum* | Nb (NR) | | 1 |
| *Cresponea premnea* | Nb (IR) | 1 | 1 |
| *Cyphelium sessile* | Nb (NS) | 1 | 1 |
| *Lecanactis subabietinum* | Nb (IR) | 1 | + |
| *Lecanographa lyncea* | Nb (IR) | 1 | 1 |
| *Lecidea nylanderi* | Nb (NS) | | 1 |
| *Leptogium subtile* | Nb (NS) | 1 | + |
| *Lobaria pulmonaria* | Nb (IR) | 1 | 1 |
| *Lobaria virens* | Nb (IR) | 1 | 1 |

| Notable species cont. | | | Sites |
|---|---|---|---|
| **Species** | **Status** | **1976–2012** | **2018** |
| *Melaspilea ochrothalamia* | Nb (NS) | 1 | 1 |
| *Micarea doliiformis* | Nb (NS) | 1 | 1 |
| *Micarea xanthonica* | Nb (NS/IR) | | 1 |
| *Microcalicium disseminatum* | Nb (NR) | 1 | 1 |
| *Milospium graphideorum* | Nb (NS) | 1 | 1 |
| *Opegrapha fumosa* | Nb (NS/IR) | 1 | 1 |
| *Pertusaria coronata* | Nb (NS) | 1 | 0 |
| *Porina byssophila* | Nb (NR) | | 1 |
| *Porina coralloidea* | Nb (NS/IR) | 1 | 1 |
| *Rhaphidicyrtis trichosporella* | Nb (NS) | | 1 |
| *Rinodina roboris var. roboris* | Nb (IR) | | 1 |
| *Schismatomma cretaceum* | Nb (IR) | 1 | 1 |
| *Schismatomma niveum* | Nb (IR) | 1 | 1 |
| *Schismatomma quercicola* | Nb (IR) | | 1 |
| *Schismatomma umbrinum* | Nb (NS/IR) | | 1 |
| *Sphinctrina turbinata* | Nb (NS) | 1 | 1 |
| *Stenocybe septata* | Nb (IR) | | 1 |
| *Sticta limbata* | Nb (IR) | 1 | + |
| *Strigula taylorii* | Nb (NS/IR) | | 1 |
| **Total number Nb species** | | **23** | **32** |

This is a very rich assemblage of Threatened Near Threatened and Notable species, and gives a TNTN score of 65, with 47 scored for the records from 1976–2012 and a score of 58 in 2018. TNTN scoring is not used for woodland SSSI selection, however, **eight of the species recorded in 2018 could be assessed as having populations that qualify for SSSI site selection in their own right as Threatened lichens in Britain**. These are either Vulnerable or higher threatened

species, or Near Threatened species that are International Responsibility species (*Caloplaca herbidella* s. str., *Caloplaca lucifuga*, *Lecanora quercicola*, *Enterographa sorediata*, *Lecanora sublivescens*, *Porina rosei*, *Ramonia chrysophaea* and *Xerotrema quercicola*). **Of these all, except the currently very reduced *Caloplaca herbidella* s. str. population, are likely to be nationally significant populations. Two other species that were not assessed by Woods & Coppins (2012), *Chaenothecopsis retinens* Nb (NR) and *Coenogonium tavaresianum* Nb (NR), are also likely to also have internationally important populations at Gregynog**.

In addition to the nationally Threatened and Near Threatened species, there is also an abundance of species assessed as Threatened or Near Threatened species in Wales (2010). These including some species not assessed as threatened at a British level but which are threatened in Wales. Such species threatened at Vulnerable or higher in Wales can also quality for SSSI site selection as having populations for Wales or the area of selection. These include 12 potentially selectable species. **Of these *Lecanographa lyncea*, *Microcalicium disseminatum* and *Schismatomma niveum* have their largest known populations in Wales**. In addition the populations of *Lobaria virens*, *Chaenotheca stemonea*, *Lobaria pulmonaria*, *Opegrapha fumosa* and *Schismatomma cretaceum* are also likely to be of SSSI quality in terms of the area of selection. *Porina byssophila* has been found to be more widespread than appreciated in 2010 and is not likely to be reassessed as Vulnerable in Wales.

**Welsh Red List Species**:

| Species | National Status |
|---|---|
| **Wales: Critically Endangered, one species** | |
| *Calicium adspersum* | CR (NR/S7) |
| **Wales: Endangered, two species** | |
| *Lecanographa lyncea* | Nb (IR) |
| *Lobaria virens* | Nb (IR) |
| **Wales: Vulnerable, 12 species** | |
| *Bryoria fuscescens* | |
| *Caloplaca herbidella s. str.* | VU (NR/S7) |
| *Caloplaca lucifuga* | VU (NR/S7) |
| *Chaenotheca brachypoda* | |
| *Chaenotheca stemonea* | Nb (NS) |
| *Lecanora quercicola* | VU (NS/IR/S7) |
| *Lobaria pulmonaria* | Nb (IR) |
| *Microcalicium disseminatum* | Nb (NR) |
| *Opegrapha fumosa* | Nb (NS/IR) |
| *Porina byssophila* | Nb (NR) |
| *Schismatomma cretaceum* | Nb (IR) |
| *Schismatomma niveum* | Nb (IR) |
| **Wales: Near Threatened, 18 species** | |
| *Arthonia anombrophila* | Nb (NS/IR) |
| *Arthonia vinosa* | |
| *Bacidia biatorina* | |
| *Bactrospora corticola* | Nb (NS) |
| *Biatora chrysantha* | Nb (NS) |
| *Catinaria atropurpurea* | |
| *Cresponea premnea* | Nb (IR) |
| *Dimerella lutea* | |

| | |
|---|---|
| *Lecanora sublivescens* | NT (NS/IR/S7) |
| *Pachyphiale carneola* | |
| *Pertusaria coronata* | Nb (NS) |
| *Porina coralloidea* | Nb (NS/IR) |
| *Porina rosei* | NT (NS/IR) |
| *Ramonia chrysophaea* | NT (NS/IR/S7) |
| *Rhaphidicyrtis trichosporella* | Nb (NS) |
| *Schismatomma quercicola* | Nb (IR) |
| *Sticta limbata* | Nb (IR) |
| *Thelotrema lepadinum* | |

Gregynog is an exceptionally important site of international significance, with the interest concentrated in Great Wood and the Wood Cottage area. The Warren is of more marginal interest but some of the lichen interest of Great Wood extends here. It is one of the best surviving lichen rich old growth stands in central eastern Wales and the Welsh Marches. This area supports a distinctive lichen assemblage, which includes strong populations of sub-oceanic species that are rare in a European context. In addition, these are accompanied a mixture of southern oceanic species near the north eastern edge of their ranges, oceanic generalist species and some northern species.

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

**Mature Mesic Bark Community (*Pertusarietum amarae*)** with Strong Populations of Rare sub-oceanic Species: Gregynog has strong populations of the internationally rare sub-oceanic lichens characteristic of less oceanic parts of lowland Britain. This includes what may be the largest recorded population known in Europe

of *Lecanora sublivescens* NT (NS/IR/S7) (W-NT), along with what are among the strongest known British populations of *Caloplaca lucifuga* VU (NR/S7) (W-VU) and *Lecanora quercicola* VU (NS/IR/S7) (W-VU). In addition, there is a very vulnerable surviving single population of *Caloplaca herbidella* s. str. VU (NR/S7) (W-VU).

Exceptionally Well Developed **Dry Bark Assemblages on Veteran Trees (*Lecanactidetum premneae* & *Calicietum hyperelli*)**: the *Lecanactidetum premneae* this is a community for which Britain has a special responsibility. It is a southern oceanic community dependant on large populations of veteran Oak and is of very restricted occurrence outside of Britain due to the rarity of veteran Oaks in south west Europe. Gregynog has one of the largest occurrences of the *Lecanactidetum premneae* community in Britain and certainly the best in Wales. The population of the characteristic lichen *Lecanographa lyncea* Nb (IR) (W-EN), at 92 trees, well exceeds any known population outside of the New Forest. It is certainly much larger that any known in Wales, with the next largest surveyed Welsh population being at Dinefwr, where it was recorded 26 trees (Sanderson, 2014a). Along with a very large population of *Cresponea premnea* Nb (IR) (W-NT), the population of *Enterographa sorediata* NT (NS/IR/BAP) (W-NE) (now known to be a sterile sorediate morph of *Syncesia myrticola* (Ertz et al, 2018)) at 29 trees is a substantial one and far larger than the other known Welsh sites. The little known parasite of *Schismatomma cretaceum* Nb (IR) (W-VU), *Chaenothecopsis retinens* Nb (NR) (W-NE), was also new to Wales and is internationally rare. Other species of interest included the normally rock overhang species *Schismatomma umbrinum* Nb (NS/IR) and uncommon dry bark species *Arthonia anombrophila* Nb (NS/IR) W-NT), *Bactrospora corticola* Nb (NS) (W-NT) and *Rhaphidicyrtis trichosporella* Nb (NS) (W-NT).

As well as a very well developed example of the *Lecanactidetum premneae* assemblage at the north eastern edge of its European range, there are also more generalist and northern dry bark species (*Calicietum hyperelli*). These include a single record of the continental *Calicium adspersum* CR (NR/S7) (W-CR), a very rare species in Britain, but this has not been seen recently. More significant is a good population of the north eastern *Microcalicium disseminatum* Nb (NR) (W-VU), which is very rare in Britain south of the Scottish Highlands. Other species of interest include many pinhead species including *Chaenotheca stemonea* Nb (NS) (W-VU), which is rare in Wales.

A **Rich Base Rich Bark Woodland Assemblage (*Lobarion pulmonariae*)**: veteran trees supporting base rich bark assemblages are much less frequent than the above assemblages. Past acidifying pollution is likely to have reduced the numbers of suitable trees, but was not so intense as to destroy the assemblage. At least one species, *Stricta limbata* Nb (IR) (W-NT) has been lost from the site, probably due to acidification. The surviving assemblage is still rich and well developed on a regional basis. It includes strong populations of the characteristic general oceanic leafy lichens *Lobaria pulmonaria* Nb (IR) W-VU and *Lobaria virens* Nb (IR) W-EN on a single tree. In addition, a significant feature is a number of southern oceanic crust forming species at the edges of their ranges: *Porina coralloidea* Nb (NS/IR) (W-NT), *Porina rosei* NT (NS/IR) (W-NT), *Ramonia chrysophaea* NT (NS/IR/S7) (W-NT), *Rinodina roboris* var. *roboris* Nb (IR) and *Coenogonium tavaresianum* Nb (NR) (W-NE). The latter is a little known species that appears to be internationally rare. Finally, there are also a few species with more northern and eastern distributions at the southern edge of their distributions: *Biatora chrysantha* Nb (NS) (W-NT) and *Lopadium disciforme*.

A mix of **Oceanic Acid Bark Woodland Assemblage (*Parmelion laevigatae*) and more North Eastern Species (*Pseudevernietum furfuraceae*)**: the more sheltered parts of Great Wood support a significant acid bark woodland assemblage at the eastern edge of the range of this habitat. This assemblage included uncommon oceanic species such as *Micarea xanthonica* Nb (NS/IR), *Opegrapha fumosa* Nb (NS/IR) (W-VU), *Schismatomma niveum* Nb (IR) (W-VU) and *Schismatomma quercicola* Nb (IR) (W-NT). More generalist oceanic species also on the edge of their range were *Anisomeridium ranunculosporum*, *Cliostomum flavidulum* Nb (NS) (W-NE), *Loxospora elatina*, *Mycoblastus caesius*, *Sphaerophorus globosus* and *Trapelia corticola*. There are far fewer more continental trending species of conservation interest, including *Lecidea nylanderi* Nb (NS) (W-NE), new to Wales and *Parmeliopsis hyperopta*. One lichen, *Bryoria fuscescens* (W-VU), a mobile acid bark species with a continental, northern distribution had a strong population on well lit acid bark in the SSSI. This edge of range species has declined strongly in east Wales in recent decades, very likely due to a strong sensitivity to ammonia pollution. It was not found on bark within the SSSI at all in 2018.

Well developed **Dry Lignum (*Calicietum abietinae*) & Damp Lignum (*Cladonietum coniocraeae*) Communities**: there is an impressive resource of dead wood in Great Wood, including lignum exposed on live Oaks, standing dead wood and large fallen trunks with significant Dry Lignum assemblages (*Calicietum abietinae*). The best of the latter are typically partly propped of the ground on branch stubs; wood in full contact with the ground and stumps are wetter and typically are dominated by less important Damp Lignum Communities (*Cladonietum coniocraeae*). Some of the species of interest are shared with acid bark and dry bark assemblages. The assemblage has fewer oceanic species than some important habitats here but does

include *Xerotrema quercicola* NT (NR/IR). Other significant species are more eastern in distribution and include *Microcalicium disseminatum* Nb (NR) (W-VU), *Chaenotheca stemonea* Nb (NS) (W-VU), *Chaenothecopsis nigra* Nb (NS), *Chaenothecopsis pusilla* Nb (NS) (W-NE), *Lecidea nylanderi* Nb (NS) (W-NE) and *Ochrolechia arborea* NT (NR) (W-NE). Other species of interest recorded recently included *Calicium salicinum*, *Chaenotheca brunneola*, *Cladonia parasitica*, *Imshaugia aleurites*, *Lecidea turgidula* and *Parmeliopsis hyperopta*. The pollution sensitive *Bryoria fuscescens* (W-VU), which has likely declined within the SSSI due to increased local ammonia pollution, had a single small surviving population on fallen dead wood in 2018.

### 6.1.2. Distribution of Interest, 2018

The distribution of interest recorded in 2018 is shown on **Map 4**. This shows a very dense concentration of locations of interest in Great Wood. The density of trees with Welsh Vulnerable species within Great Wood is quite exceptional in the author's experience. The Wood Cottage area to the west has a lower density interest, but this reflects the lower density of veteran trees here. The area dominated by mature Beech, lacking veteran Oak in the south east of Great Wood is of very low interest. In contrast, The Warren does have a proportionately lower density of trees of interest compared to the numbers of old trees. It does, however, support small outlying populations of some of the species of importance with large populations in Great Wood, but is in its own right, only of county interest.

In addition, there is likely to be considerable interest on veteran trees outside of the SSSI, especially those closer to Great Wood than The Warren, which were not covered by this survey.

### 6.1.3. Status of Epiphytic Lichen Flora

**Great Wood is one of the most important sites for old growth dependant epiphytic lichens in eastern Wales and the Welsh Marches**, with several lichen-rich habitats well developed. It is currently part of a landscape park but doubtlessly represents a survival from an earlier pasture woodland or deer park, which was incorporated into the larger landscape park. The Warren will have lacked this continuity and is likely to have been relatively treeless in the beginning of the early modern period.

As well as past continuity of veteran tree habitats, the interest of the site has been impacted by air pollution. In the late twentieth century the site was on the fringes of the acidification caused by sulphur dioxide pollution from industrial sources. This had an impact; Rich Base Rich Bark Woodland Assemblages (*Lobarion pulmonariae*) are more restricted than would be expected of such a site and the very sensitive species *Sticta limbata* Nb (IR) (W-NT) has been lost. Impacts on other habitats are less obvious but the most base-demanding mesic bark specialist *Caloplaca herbidella* s. str. VU (NR/S7) (W-VU), is in very poor condition. Acidification has reduced considerably but the Air Pollution Information System (APIS) <http://www.apis.ac.uk> indicates that the site is still just in exceedance but with nitrogen compounds now dominating over sulphur compounds. This acidity is likely to be mainly originating from long-range pollution.

A major recent change is increases in ammonia levels. As a rapidly scrubbed out pollutant the sources of ammonia are local; from nearby more intensively managed agricultural land. The dramatic decline of *Bryoria fuscescens* (W-VU) is local evidence confirming increases in this pollutant. APIS gives the background concentrations in

the area as 1.26µg $m^3$, in exceedance of the critical level of 1.0µg $m^3$. Observations during the 2018 survey suggest that levels in the most sheltered areas of the SSSI are probably below the critical level. On the other hand the more exposed edges are certainly in exceedance and the north east of the Wood Cottage area could be higher than the background levels reported (at 5km resolution) by APIS.

Currently of the lichen rich habitats, the Mature Mesic Bark Community (*Pertusarietum amarae*), Dry Bark Assemblages (*Lecanactidetum premneae* & *Calicietum hyperelli*), Acid Bark Woodland Assemblage (*Parmelion laevigatae*) and Dry Lignum (*Calicietum abietinae*) appear to be in good condition. **The bark communities all show colonisation of species of interest on to younger post mature trees**. The situation with the Rich Base Rich Bark Woodland Assemblage (*Lobarion pulmonariae*) is less clear. Many of the most sensitive species are rare and restricted to older veteran trees; residual acidity may still be restricting the spread of some of the species of this habitat. The occurrence of the somewhat more acid tolerant *Lopadium disciforme*, on several mature trees and younger post mature trees, however, may suggest the beginnings of a positive response in this habitat. **So far visible ammonia impact is limited in the core communities on trunks; but these habitats typically show some inertia (i.e. established crust dominated communities resisting change but being displaced slowly over time and not colonising new trees)**. However, a veteran Oak in the north of the Wood Cottage area, which had a twig assemblage indicating high levels of ammonia, supported the species poor Nutrient Rich Dry Bark Community (*Arthonietum impolitae*) rather than the expected Ancient Dry Bark Community (*Lecanactidetum premneae*).

## 6.2. Management

### 6.2.1. Management Requirements of Woodland and Parkland Lichen Floras

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 loss 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. For example, 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.

Parkland is an artificial habitat that maintains conditions similar to those found in the more open parts of pasture woodlands. The main difference 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.

Parks are more likely to be negatively impacted by agricultural intensification and the resultant ammonia pollution than woodlands. Extensive grassland management with no or minimal fertiliser applications are required. Parks brought into arable production in the 20th century should be put back to permanent grassland. Parks are much more likely than woodlands to suffer from tree generation gaps. In most parks, little tree planting occurred between the agricultural depression of the 1870s and the 1960s. In parks with particularly serious generation gaps simply planting trees now with not solve the problem; many of the current veteran trees will be lost before the planted trees are old enough to be colonised by rare lichen species. In these situations, there may be solutions involving land adjacent to the surviving open parkland. There was often tree planting in adjacent woods during the gap in parkland planting and mature 19th century Oak in adjacent habitats could be promoted as new veteran trees to bridge the gap. In many parks there has also been a tendency to fence off denser areas of veteran trees and patches of pasture woodland with the wider parks over the 19th and 20th centuries. Ideally conserving or restoring the lichen interest of such areas would involve thinning any dense post enclosure regeneration away from older trees, removing fences, and restoring grazing.

In heavily grazed parks individual trees of groves are sometimes fenced off to prevent direct damage to the trees from the stock. Ideally the grazing intensity should be reduced rather than fencing off the trees. If trees must be fenced off, then it is absolutely essential that the grazing be replaced with grass cutting, scrub control and Ivy control to maintain the parkland conditions around the lower trunks.

### 6.2.2. Comments on Management of the Parkland at Gregynog

**The current structure of Gregynog is very suitable for the lichen assemblage**. There is an abundance of veteran trees that are mainly well lit but with differing degrees of shelter. This has produced a great variety of niches for rare lichens. The core area of interest in Great Wood has a scatter of ancient trees, many post mature trees and reasonable numbers of mature trees. There is however a lack of younger trees, especially of the most important tree species Oak. Major decisions have to be made on how to establish the next generations of trees, while maintaining grazing and open conditions around the veteran trees. If natural regeneration is to be the main source of new trees considerable changes in management would be required, with extensification of the grazing management (rewilding). Alternatively a similar grazing regime could be maintained with the next generation established by small scale planting in cages or small enclosures. The latter would be consistent with the recent past history of the site as a landscape park. The NRW statement on management is a bit ambiguous on which would be the preferred option. Mixed options are possible with some grazing pressure reductions producing some regeneration combined with some planting.

**A major issue is the impact of pollution. Acidification has been declining due national policy and this needs to continue. In contrast ammonia levels have increased and is a local issue, requiring responses such as reducing land use intensity on adjacent land as well as within the SSSI.**

Finally Ash dieback is a future issues likely to impact negatively on the lichen interest.

### 6.2.3. Tree Regeneration

To achieve tree regeneration dominated by Oak, without planting would require a change in the current grazing regime, as very little regeneration is currently evident. Regeneration of Oak under grazing pressure mainly occurs in the shelter of patches of less grazed cover, typical either Bracken stands or patches of establishing thorny scrub or Bramble. The thorny scrub is absent and would require a reduction in grazing pressure to establish. Suitable Bracken stands are present, but support little or no tree regeneration at present. Regeneration in Bracken is usually a feature of cattle grazed woods; the weight of the cattle break up the Bracken litter and allow tree seeds to reach the soil. Achieving suitable conditions would require a change to lighter, probably seasonal, grazing with cattle the dominant animal.

A compromise would be to reduce the grazing pressure with the aim of achieving some regeneration, especially in Bracken stands, but also back this up with tree planting in cages or small fenced off areas. Whatever is done it is important to ensure that the existing trees of interest are not heavily shaded by regeneration or planted trees. New trees need to be largely established in more open areas. As well as Oak it is important to also establish some young trees and bushes of other species, including Sycamore, Alder, Hazel, Holly and Hawthorn. Ash is discussed below.

### 6.2.4. Reducing Ammonia Pollution

Ammonia pollution has a short range impact and can be reduced by actions on and near the SSSI (<http://www.apis.ac.uk/overview/pollutants/overview_NH3.htm>, van Herk 1999 & Wolseley et al. 2006). It is notable that there is a surviving strong population of the very ammonia sensitive *Bryoria fuscescens* (W-VU) on an Oak off the SSSI in the woodland garden by the Gregynog car park. This is in a location which

is sheltered by woodland from locally intensively managed grassland. **The minimum at Gregynog would to reduce the intensity of grassland management on both the SSSI and the adjacent fields. This would involve no fertiliser applications being made on the adjacent fields along with corresponding reductions in stock numbers across the wider site**. Planting more trees on the further margins of this wider area would help scrub out atmospheric ammonia from more distant sources.

### *6.2.5. Ash Dieback*

The impact of the 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 Gregynog SSSI Ash was not found to be a major substrate for systematically surveyed lichens. Ash was noted as supporting systematically recorded lichens at 15 out of 189 waypoints (8%) (**Table 5**). Only eight of the 29 systematically recorded species were recorded on Ash and only one species, *Caloplaca herbidella* s. str. VU (NR/S7) (W-VU) has only been recorded from Ash. Otherwise only *Lopadium disciforme* had about one third of its records from Ash.

Table 5: The Number of Locations at which Systematically Recorded Species were Found on Ash

| Species | No of Locations with Ash Trees | % of Lichen Population |
|---|---|---|
| *Caloplaca herbidella s. str.* | 1 | 100% |
| *Lopadium disciforme* | 6 | 32% |

| | | |
|---|---|---|
| *Schismatomma cretaceum* | 1 | 13% |
| *Lecanora sublivescens* | 6 | 11% |
| *Schismatomma niveum* | 1 | 5% |
| *Cresponea premnea* | 6 | 5% |
| *Enterographa sorediata* | 1 | 3% |
| *Lecanographa lyncea* | 3 | 2% |
| *Arthonia anombrophila* | 0 | 0 |
| *Biatora chrysantha* | 0 | 0 |
| *Bryoria fuscescens* | 0 | 0 |
| *Caloplaca lucifuga* | 0 | 0 |
| *Chaenotheca stemonea* | 0 | 0 |
| *Chaenothecopsis nigra* | 0 | 0 |
| *Chaenothecopsis pusilla* | 0 | 0 |
| *Chaenothecopsis retinens* | 0 | 0 |
| *Coenogonium tavaresianum* | 0 | 0 |
| *Lecanora quercicola* | 0 | 0 |
| *Lobaria pulmonaria* | 0 | 0 |
| *Lobaria virens* | 0 | 0 |
| *Microcalicium disseminatum* | 0 | 0 |
| *Opegrapha fumosa* | 0 | 0 |
| *Pachyphiale carneola* | 0 | 0 |
| *Porina coralloidea* | 0 | 0 |
| *Porina rosei* | 0 | 0 |
| *Ramonia chrysophaea* | 0 | 0 |
| *Schismatomma quercicola* | 0 | 0 |
| *Schismatomma umbrinum* | 0 | 0 |
| *Xerotrema quercicola* | 0 | 0 |
| **Waypoints** | **15** | **8%** |

*Caloplaca herbidella* s. str. is found mainly on Oak in other sites (Sanderson, 2014a), and could potentially occur on Oak at Gregynog. It has only been recorded from Ash at Gregynog, which may reflect past mild acidification. The high proportion of *Lopadium disciforme*, reflects its colonisation of mature to younger post mature Ash in Great Wood. The latter reflects the beginnings of colonisation by Rich Base Rich Bark Woodland Assemblage (*Lobarion pulmonariae*) species on to maturing Ash trees. This indicates the main likely impact of Ash dieback; the loss of a significant number of Ash trees transitioning to veteran trees that would have been available for lichen colonisation in the near future. There is also the potential loss of an already highly threatened species *Caloplaca herbidella* s. str. and some minor losses of other species that are much more frequent on veteran Oak.

Mitigation potential is very limited in the short term. The main species likely to be impacted are crust forming lichens, which are difficult or impossible to translocate.

In the drier climate of Gregynog, suitable alternative fast maturing substrates such as Sallows and Hazels are not of the same value for rare lichens as they are in in very wet areas. The main alternative tree substrates, Sycamore and Norway Maple, are rare or absent respectively but could be planted in small numbers as a long term replacements. Also continuing reductions in acid deposition are likely to make Oak a more widespread substrate for *Lobarion* lichens. **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**.

# 7. References

Alexander, K. N. A., Smith, M., Stiven & Sanderson, N. A. (2002) *English Nature research Reports No 494. Defining 'Old Growth' in the UK Context*. Peterborough: English Nature.

Coppins, B. J. (2002) *Checklist of Lichens of Great Britain and Ireland*. London: British Lichen Society.

Coppins, A. M. & Coppins, B. J. (1998) *Lichen Survey of Horner Woods NNR – 1998*. Unpublished Report to the National Trust.

Coppins A. M. & Coppins, B. J. (2002a) *Indices of Ecological Continuity for Woodland Epiphytic Lichen Habitats in the British Isles*. London: British Lichen Society.

Coppins A. M. & Coppins, B. J. (2002b) *Watersmeet SSSI (Part of Exmoor & Quantocks cSAC) Lichen Survey in the Hoaroak Water, Farley Water & East Lyn River March 2002*. An unpublished report to English Nature.

Fletcher, A., Coppins, B.J., Hawksworth, D.L., James, P.W. & Rose, F. (1982) *Survey and Assessment of Epiphytic Lichen Habitats*. A report prepared by the Woodland Working Party of the British Lichen Society, for the Nature Conservancy Council [contract HF3/03/266].

Ertz, D., Coppins, B. J. & Sanderson, N. A. (2018) The British endemic *Enterographa sorediata* is the widespread *Syncesia myrticola* (*Roccellaceae*, *Arthoniales*). *Lichenologist* **50**: 153-160

Fritz, Ö. (2009) Vertical distribution of epiphytic bryophytes and lichens emphasizes the importance of old beeches in conservation. *Biodivers. Conser.* **18**: 289–304

Harding, P. T. & Alexander, K. N. A. (1993) The saproxylic invertebrates of historic parklands: progress and problems. In: *Dead Wood Matters: the Ecology and Conservation of Saproxylic invertebrates in Britain* (ed. K. J. Kirby & C. M. Drake) 58 – 73. Peterborough: English Nature.

Hodgetts, N. G. (1992) *Guidelines for Selection of Biological SSSIs: Non-Vascular Plants*. Peterborough: JNCC.

James, P. W., Hawksworth, D. & Rose, F. (1977) Lichen communities in the British Isles: A preliminary conspectus. In: *Lichen Ecology* (ed. M. R. D., Seaward) 295-413.

Orange, A. (1996) *A Survey of Welsh Parklands*. CCW Contract Science Report No. 138.

Rose, F. (1976) Lichenological indicators of age and environmental continuity in woodlands. In: *Lichenology: Progress and Problems* (eds: D H Brown, D L Hawksworth & R H Bailey) 279-307

Rose, F. (1992) Temperate forest management: its effects on bryophytes and lichen floras and habitats. In: *Bryophytes and Lichens in a Changing Environment*. (eds: J W Bates & A M Farmer) 211-233. Oxford: Oxford University Press.

Sanderson, N. A. (1996) *Lichen Conservation within the New Forest Timber Inclosures*. Eastleigh: Hampshire Wildlife Trust.

Sanderson, N. A. (1998) *New Forest Epiphytic Lichen Data Base Volume 4. Part 3 Summary of Results*. Hampshire Wildlife Trust.

Sanderson, N. A. (2002) *Species Dossier for* Enterographa sorediata. A report by Botanical Survey & Assessment to English Nature.

Sanderson, N. A. (2009) *A Survey of Dusty Writing* Enterographa sorediata *in Devon & Cornwall*. A report by Botanical Survey & Assessment to Natural England.

Sanderson, N. A. (2010) Chapter 9 Lichens. In: *Biodiversity in the New Forest* (ed. A. C. Newton) 84-111. Newbury, Berkshire; Pisces Publications

Sanderson, N. A. (2011a) Scoring of threatened, rare and scarce lichens for site assessment. *British Lichen Society Bulletin*. **109**: 12-24.

Sanderson, N. A. (2011b) *Lichen Training Day At Gregynog Great Wood*. A Botanical Survey & Assessment report to Plantlife International.

Sanderson, N. A. (2014a) *Epiphytic Lichen Survey of Dinefwr NNR, Carmarthenshire, 2013*. A report by Botanical Survey & Assessment to Plantlife International.

Sanderson (2014b) *Geranium Firedot* Caloplaca herbidella *Dossier: Survey of Sites 2012 to 2014*. A report by Botanical Survey & Assessment to Plantlife International.

Sanderson, N. A. (2017) Lichens & Woodland Management, Roydon Woods NR, Hampshire, 2017 (Interim Report). A report by Botanical Survey & Assessment to the Hampshire Wildlife Trust.

Sanderson, N. A. (2018a) *A review of woodland epiphytic lichen habitat quality indices in the UK*. A report by Botanical Survey and Assessment for Natural England.

Sanderson, N. A. (2018b) *The development of TNTN lichen assemblage scoring*. A report by Botanical Survey and Assessment for Natural England.

Sanderson, N. A. Wilkins, T., Bosanquet, S. & Genney, D. (2018) *Guidelines for the Selection of Biological SSSIs. Part 2: Detailed Guidelines for Habitats and Species Groups. Chapter 13 Lichens and associated microfungi*. Joint Nature Conservation Committee 2018: Peterborough <jncc.defra.gov.uk/page-2303>

Sanderson, N. A. & Wolseley, P. (2001). Management of pasture woodlands for lichens. In: *Habitat Management for Lichens*. (ed. A. Fletcher) 05-1 – 05-25. London: British Lichen Society.

Smith, C. W., Aptroot, A., Coppins, B. J., Fletcher, A., Gilbert, O. L., James P.W. & Wolseley. P. A. (2009) *The Lichens of Great Britain and Ireland*. London: British Lichen Society.

Wolseley, P. A., James, P. A., Theobald, M. R. & Sutton, M. A. (2006) Detecting Changes in epiphytic lichen communities at sites effected by atmospheric ammonia from agricultural sources. *The Lichenologist*. **38**: 161-176.

Woods, R. G. (2010) *A Lichen Red Data List for Wales*. Salisbury: Plantlife.

Woods, R. G. & Coppins, B. J. (2012) *Species Status No. 13 A Conservation Evaluation of British Lichens and Lichenicolous Fungi*. Peterborough: JNCC.

van Herk, C. M. (1999) Mapping of ammonia pollution with epiphytic lichens in the Netherlands. *Lichenologist* **31**: 9-20.

# ANNEX 1 Field Notes

**Key**:

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

**Substrates**
Al = Alder, Ap = Sycamore, Co = Hazel, Ct = Hawthorn, Fg = Beech, Fx = Ash, Ix = Holly, Q = Oak, Sx = Sallow, L = Lignum (as prefix) & Tw = twigs & branches.

**Hosts for lichenicolous fungi**: Z0063 = *Arthonia pruinata*, Z0600 = Lecanographa lyncea, Z1015 = *Parmelia saxatilis*, Z1064 = *Pertusaria coccodes*, Z1076 = *Pertusaria hymenea*, Z1075 = *Varicellaria hemisphaerica*, Z1087 = *Pertusaria pertusa*, Z1112 = Physcia adscendens, Z1318 = *Schismatomma cretaceum*,

**Species in bold** = systematically recorded species

## A1 Gregynog 1/5/2018

### *Weather*

Dry, patchy sunshine at first, clouding over later, bark dry

### *A1.2 Gregynog Great Wood, East of Ride*

**SO083 975**
Mature to post mature Oak, mature Beech, Alder and Hazel along stream.

**GYG001** (SO08345 97571, 196m): post mature Oak on slope above stream

| | | | |
|---|---|---|---|
| ***Cresponea premnea*** | Q | O | |
| ***Lecanora sublivescens*** | Q | O | at base |
| ***Lopadium disciforme*** | Q | R | |
| Also | | | |
| *Arthonia vinosa* | Q | | |
| *Chaenotheca trichialis* | Q | | |
| *Dimerella lutea* | Q | | |
| *Roselliniopsis tartaricola* | Q, Z1075 | | |
| *Thelotrema lepadinum* | Q | | |
| *Varicellaria hemisphaerica* | Q | | |

**Photo** 2018-05-01-01 Left

**GYG002** (SO08331 97578, 196m): big post mature Oak top of slope east edge of ride, Tag 05481

| | | |
|---|---|---|
| ***Lecanora sublivescens*** | Q | R |
| Also | | |
| *Calicium salicinum* | Q | |
| *Pertusaria flavida* | Q | |

**Photo** 2018-05-01-01 Right

Photo 2018-05-01-01: GYG001 left and GYG002 right

**GYG003** (GG002) (SO08320 97570, 190m): mature Sycamore at top of slope in open in ride, Tag 05478

| | | |
|---|---|---|
| **Lecanora sublivescens** | Ap | F |
| Also | | |
| *Lecanora argentata* | Ap | Coll. |
| *Pertusaria flavida* | Ap | |
| *Thelotrema lepadinum* | Ap | |

Photo 2018-05-01-02 GYG003 with GYG001 and GYG002 behind

**GYG004** (SO08336 97596, 191m): post mature Oak on east edge of ride, tree surgery high up, Tag 05630

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| ***Lecanora sublivescens*** | Q | R |
| Also | | |
| *Pertusaria flavida* | Q | |
| *Thelotrema lepadinum* | Q | |
| On twigs | | |
| *Evernia prunastri* | Q Tw | A |
| *Fuscidea lightfootii* | Q Tw | |
| *Lecanora chlarotera* | Q Tw | |
| *Melanelixia subaurifera* | Q Tw | |
| *Parmelia sulcata* | Q Tw | |
| *Physcia aipolia* | Q Tw | |
| *Physcia tenella* | Q Tw | |
| *Ramalina farinacea* | Q Tw | |

**Photo** 2018-05-01-03

Photo 2018-05-01-03: Great Wood, Gregynog, GYG004 right, GYG005 left & GYG006 centre and behind

**GYG005** (GG003) (SO08322 97591, 193m): smaller post mature Oak east side of ride, Tag 05648

| | | |
|---|---|---|
| **Cresponea premnea** | Q | O |
| **Lecanora sublivescens** | Q | F |
| Also | | |
| Arthonia vinosa | Q | |
| Calicium salicinum | Q | |
| Melaspilea ochrothalamia | Q | |
| Pertusaria flavida | Q | |
| Thelotrema lepadinum | Q | |

**Photo** 2018-05-01-03 Left

**GYG009** (SO08301 97546, 196m): ancient Oak on the western side of ride by stream

| | | |
|---|---|---|
| ***Lecanographa lyncea*** | Q | F |
| ***Chaenothecopsis pusilla*** | LQ | Coll. Stem K –, spores 1 septate, with pale septa, New VC Record. Herb. Sanderson 2395 |

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| Also | | |
| *Arthonia pruinata* | Q | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Thelotrema lepadinum* | Q | |

**SO083 975**
**Species of Interest**
**East of ride**

| | | |
|---|---|---|
| *Arthonia vinosa* | Q | |
| *Calicium salicinum* | Q | |
| *Chaenotheca trichialis* | Q | |
| *Cliostomum flavidulum* | Q | SO0839 9756 |
| *Cresponea premnea* | Q | |
| *Dimerella lutea* | Q | |
| *Lecanora sublivescens* | Q Ap | |
| *Lepraria ecorticata* | Q | SO0839 9756 Herb. Sanderson 2393 |
| *Lopadium disciforme* | Q | |
| *Loxospora elatina* | Q | |
| *Megalaria pulverea* | Al | |
| *Melaspilea ochrothalamia* | Q | |
| *Mycoporum antecellens* | Al Tw | |
| *Porina byssophila* | Co Coll. SO08355 97564. Involucrellum purple-brown, K + blue-grey; three septate spores; clustered perithecia. New to VC47 Herb. Sanderson 2393 | |
| *Rhaphidicyrtis trichosporella* | Q | SO0839 9756 Coll. spores 60 – 70 x 2.5µm, about 7 septate. New VC record Herb. Sanderson 2392 |
| *Thelotrema lepadinum* | Al, Co, Q, Al | |
| *Trapelia corticola* | Al | |

**West of ride**

| | | |
|---|---|---|
| *Chaenothecopsis pusilla* | LQ | Coll |
| *Lecanographa lyncea* | Q | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Thelotrema lepadinum* | Q | |

**Other Species**
**East of ride**

| | | |
|---|---|---|
| *Arthonia elegans* | Co | New to site |
| *Arthonia punctiformis* | Al Tw | |
| *Arthonia radiata* | Al, Co | |
| *Arthonia spadicea* | Al, Q | |
| *Arthopyrenia salicis* | Co | SO08355 97564 Coll. New to VC47? |
| *Calicium viride* | Q | |
| *Chaenotheca ferruginea* | Al | |
| *Chrysothrix candelaris* | Q, Al, Ap | |
| *Chrysothrix flavovirens* | LQ | |
| *Cladonia coniocraea* | Al | |
| *Cladonia polydactyla* var. *polydactyla* | LQ | |
| *Cliostomum griffithii* | Q | |
| *Evernia prunastri* | LQ, Ct, Q Tw | |
| *Flavoparmelia caperata* | Q | |
| *Fuscidea lightfootii* | Ct, Q Tw | |
| *Graphis elegans* | Ct | |
| *Hypogymnia physodes* | LQ, Ct | |
| *Lecanactis abietina* | Q, Al, Ct, Ap | |
| *Lecanora argentata* | Ap | Coll. |
| *Lecanora chlarotera* | Ap, Q Tw | |
| *Lecanora expallens* | Q | |
| *Lepraria lobificans* | Co | |
| *Melanelixia glabratula* | Q | |

| | | |
|---|---|---|
| *Melanelixia subaurifera* | Q Tw | |
| *Micarea prasina* s. lat. | Al | |
| *Ochrolechia androgyna* | LQ, Q | |
| *Ochrolechia microstictoides* | LQ | |
| *Opegrapha herbarum* | Co | Coll. |
| *Opegrapha ochrocheila* | Al | |
| *Opegrapha varia* | Al, Ap | Coll |
| *Opegrapha vermicellifera* | Ap | |
| *Opegrapha vulgata* | Co,Ap | |
| *Parmelia saxatilis* | LQ, Ct, Q | |
| *Parmelia sulcata* | Q Tw | |
| *Pertusaria albescens var. corallina* | Q | |
| *Pertusaria amara f. amara* | Ct | |
| *Pertusaria flavida* | Q | |
| *Pertusaria pertusa* | Q, Al, Ct, Ap | |
| *Phlyctis argena* | Q | |
| *Physcia aipolia* | Q Tw | |
| *Physcia tenella* | Q Tw | |
| *Platismatia glauca* | LQ | |
| *Pyrrhospora quernea* | Q, Al | |
| *Ramalina farinacea* | Q, Q Tw | |
| *Roselliniopsis tartaricola* | Q, Z1075 | |
| *Schismatomma decolorans* | Q | |
| *Stenocybe pullatula* | Al Tw | |
| *Usnea cornuta* | Q | |
| *Usnea subfloridana* | LQ | |
| *Varicellaria hemisphaerica* | Q, Ap | |
| *Violella fucata* | LQ | |
| **West of Ride** | | |
| *Arthonia pruinata* | Q | |

## *A1.3 Gregynog Great Wood, West of Ride*

**SO083 976**
Surveyed the trees to the west of the ride in denser woodland along the stream. Woodland west of the ride has a grazed high forest structure, with Oak dominating by with rare Ash on the edges, with an open well lit structure, lacking a shrub layer.

**GYG006** (SO08335 97607, 198m): post mature Oak east of GYG004, Tag 05629

| | | |
|---|---|---|
| ***Lecanographa lyncea*** | Q | O |
| Also | | |
| *Lepraria ecorticata* | Q | |
| *Milospium graphideorum* | Q, Z0600 | |

**Photo** 2018-05-03 centre behind.

**GYG007** (SO08300 97616, 201m): post mature Oak east side of ride, Tag 05644

| | | |
|---|---|---|
| ***Lecanographa lyncea*** | Q | F |
| ***Lecanora sublivescens*** | Q | O |
| ***Microcalicium disseminatum*** | Q | R |
| Also | | |
| *Anisomeridium ranunculosporum* | Q | |
| *Cliostomum flavidulum* | Q | |
| *Lecidea nylanderi* | Q | Coll. Herb. Sanderson 2394. New to Wales |
| *Loxospora elatina* | Q | |
| *Micarea doliiformis* | Q | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Parmeliopsis hyperopta* | Q | |
| *Thelotrema lepadinum* | Q | |
| *Trapelia corticola* | Q | |

**Photo** 2018-05-01-04

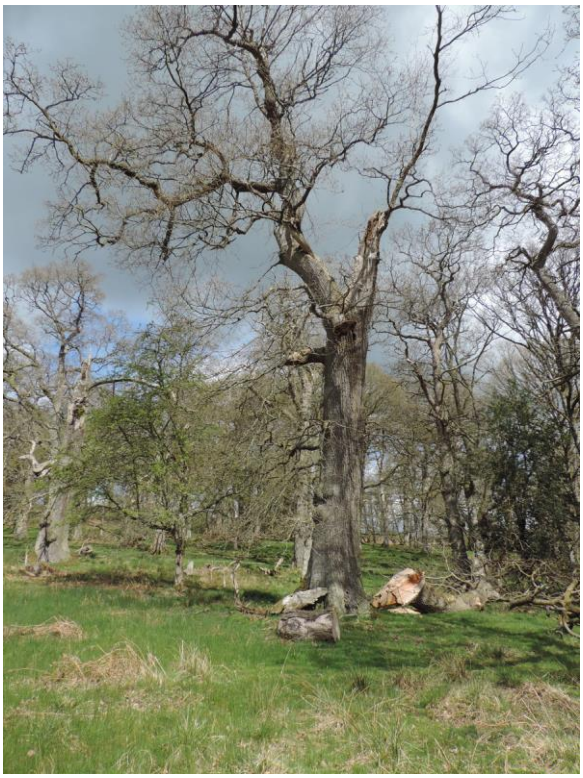


Photo 2018-05-01-04: GYG007, foreground

**GYG008** (SO08315 97611, 201m): post mature Oak in from ride, Tag 95632

| | | |
|---|---|---|
| ***Lecanographa lyncea*** | Q | R |
| ***Microcalicium disseminatum*** | Q | R |
| Also | | |
| *Anisomeridium ranunculosporum* | Q | |
| *Micarea xanthonica* | Q | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Pertusaria pupillaris* | Q | |
| *Sphaerophorus globosus* | Q | |
| *Trapelia corticola* | Q | |

**Photo** 2018-05-01-05


Photo 2018-05-01-05: GYG008, foreground

**SO083 976**
**Species of Interest**

| | | |
|---|---|---|
| *Cliostomum flavidulum* | Q | |
| *Lecanographa lyncea* | Q | |
| *Lecanora sublivescens* | Q | |
| *Lecidea nylanderi* | Q | Coll. |
| *Lepraria ecorticata* | Q | |
| *Loxospora elatina* | LQ, Q | |
| *Micarea doliiformis* | Q | |
| *Micarea xanthonica* | Q | |
| *Microcalicium disseminatum* | Q | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Parmeliopsis hyperopta* | Q | |
| *Sphaerophorus globosus* | Q | |
| *Thelotrema lepadinum* | Q | |
| *Trapelia corticola* | Q | |

**Other Species**

| | |
|---|---|
| *Hypocenomyce scalaris* | LQ |
| *Pertusaria coccodes* | LQ |
| *Pertusaria pupillaris* | Q |

**SO982 975**
Working west of the ride.

**GYG010** (SO08263 97555, 197m): post mature Oak above stream

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | F |
| ***Lecanographa lyncea*** | Q | F |

Also

| | |
|---|---|
| *Milospium graphideorum* | Q, Z0600 |
| *Thelotrema lepadinum* | Q |

**GYG011** (SO08255 97547, 197m): post mature Oak above steam in open woodland, Tag 5253

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | F |
| ***Enterographa sorediata*** | Q | R |
| ***Lecanographa lyncea*** | Q | F |
| Also | | |
| *Arthonia pruinata* | Q | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Thelotrema lepadinum* | Q | |

**Photo** 2018-05-01-06

Photo 2018-05-01-06: GYG011, foreground

**GYG012** (SO08252 97526, 189m): mature Sycamore tree grown from coppice on boundary

| | | |
|---|---|---|
| ***Cresponea premnea*** | Ap | O |
| Also | | |
| *Thelotrema lepadinum* | Ap | |

**GYG013** (SO08229 97538, 194m): big post mature Oak by glade by stream, Tag 05666

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| ***Lecanora sublivescens*** | Q | R |

**Photo** 2018-05-01-07

Photo 2018-05-01-07: GYG013 foreground & GYG014 fallen tree, far right in the distance

**GYG014** (SO08222 97551 194m): small fallen Oak

| | | | |
|---|---|---|---|
| ***Xerotrema quercicola*** | LQ | F | |
| Also | | | |
| *Lecidea nylanderi* | LQ | | |
| *Loxospora elatina* | LQ | | |
| *Micarea peliocarpa* | LQ | | Coll. |
| *Ochrolechia arborea* | LQ | | New to Wales |
| Adjacent suppressed young Oak | | | |
| ***Lopadium disciforme*** | Q | O | |
| Also | | | |
| *Bacidia biatorina* | Q | | |
| *Pertusaria flavida* | Q | | |

**Photo** 2018-05-01-07 far right

**GYG015** (SO08202 97522 196m): big post mature Oak by glade near stream

| | | | |
|---|---|---|---|
| ***Lecanographa lyncea*** | Q | F | |
| ***Lecanora sublivescens*** | Q | F | |
| Also | | | |
| *Arthonia pruinata* | Q | | |
| *Cliostomum flavidulum* | Q | | |
| *Milospium graphideorum* | Q, Z0063, Z0600 | | |
| *Thelotrema lepadinum* | Q | | |

**Photo** 2018-05-01-08 Right

Photo 2018-05-01-08: GYG015 right & GYG016 left

**GYG017** (SO08227 97559, 196m): big post mature Oak below track

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| ***Enterographa sorediata*** | Q | O |
| ***Lecanographa lyncea*** | Q | F |

Also

| | |
|---|---|
| *Milospium graphideorum* | Q, Z0600 |
| *Thelotrema lepadinum* | Q |

**Photo** 2018-05-01-09 Right

Photo 2018-05-01-09: GYG017 foreground to right

**GYG018** (SO08247 97577, 200m): post mature Oak in open woodland

| | | |
|---|---|---|
| ***Lecanographa lyncea*** | Q | O |
| Also | | |
| *Anisomeridium ranunculosporum* | Q | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Thelotrema lepadinum* | Q | |

**GYG019** (SO08259 97568, 200m): post mature Oak by glade

| | | |
|---|---|---|
| ***Lecanographa lyncea*** | Q | F |
| Also | | |
| *Milospium graphideorum* | Q, Z0600 | |

**GYG020** (SO08275 97582, 198m): burry ancient Oak western side of ride, Tag 05649

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | F |
| ***Lecanographa lyncea*** | Q | F |
| Also | | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Thelotrema lepadinum* | Q | |

**GYG021** (GG004) (SO08273 97580, 198m): ancient Ash western side of ride

| | | |
|---|---|---|
| ***Lecanographa lyncea*** | Fx | A |
| ***Schismatomma cretaceum*** | Fx | |
| Also | | |
| *Anisomeridium ranunculosporum* | Fx | |
| *Arthonia pruinata* | Fx | |
| *Bacidia biatorina* | Fx | |
| *Milospium graphideorum* | Fx, Z0600 | |
| *Pertusaria flavida* | Fx | |
| *Thelotrema lepadinum* | Fx | |

**GYG022** (SO08228 97609, 200m): post mature Oak west side of ride

| | | |
|---|---|---|
| ***Lecanographa lyncea*** | Q | F |
| ***Lecanora sublivescens*** | Q | R |
| ***Microcalicium disseminatum*** | Q | O |
| Also | | |
| *Anisomeridium ranunculosporum* | Q | |
| *Chaenotheca trichialis* | Q | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Thelotrema lepadinum* | Q | |

**Photo** 2018-05-01-10 Left

Photo 2018-05-01-10: GYG022 foreground to left

**GYG023** (SO08223 97594, 199m): big post mature Oak above track

| | |
|---|---|
| ***Cresponea premnea*** | Q |
| Also | |
| *Chaenotheca trichialis* | Q |
| *Megalaria pulverea* | Q |
| *Pertusaria flavida* | Q |
| *Thelotrema lepadinum* | Q |

**GYG025** (SO08203 97587, 201m): post mature Oak above track in wood

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | F |
| ***Lecanographa lyncea*** | Q | F |
| Also | | |
| *Chaenotheca trichialis* | Q | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Thelotrema lepadinum* | Q | |

**SO082 975**

**Species of Interest**

| | |
|---|---|
| *Anisomeridium ranunculosporum* | Q, Fx |
| *Arthonia pruinata* | Q, Fx |
| *Bacidia biatorina* | Q, Fx |
| *Calicium glaucellum* | LQ |
| *Chaenotheca trichialis* | Q |
| *Cliostomum flavidulum* | Q |
| *Cresponea premnea* | Q, Ap |
| *Enterographa sorediata* | Q |
| *Lecanographa lyncea* | Q, Fx |
| *Lecanora sublivescens* | Q |
| *Lecidea nylanderi* | LQ, Q |
| *Loxospora elatina* | Q, LQ |
| *Megalaria pulverea* | Q |
| *Milospium graphideorum* | Q, Fx, Z0600, Z0063 |
| *Ochrolechia arborea* | LQ |
| *Parmeliopsis hyperopta* | Q |
| *Schismatomma cretaceum* | Fx, Ap |

| | | |
|---|---|---|
| *Sphaerophorus globosus* | Q | |
| *Thelotrema lepadinum* | Q, Ap, Al, Co, Fx | |
| *Xerotrema quercicola* | Q | |
| **Other Species** | | |
| *Arthonia spadicea* | Ix | |
| *Bacidia viridifarinosa* | Ap | |
| *Buellia griseovirens* | LQ | |
| *Enterographa crassa* | Q | |
| *Hypocenomyce scalaris* | Q | |
| *Lecanactis abietina* | Ix | |
| *Lecanora expallens* | LQ, Q | |
| *Micarea peliocarpa* | LQ | Coll. |
| *Ochrolechia subviridis* | Q | |
| *Opegrapha sorediifera* | Q | |
| *Pertusaria flavida* | Q, Fx | |
| *Pertusaria hymenea* | Co | |
| *Phlyctis argena* | Fx, Q | |
| *Trapeliopsis flexuosa* | LQ | |
| *Trapeliopsis pseudogranulosa* | LQ | |
| *Tremella pertusariae* | Co, Z1076 | SO0824 9752. New to Wales |
| *Violella fucata* | LQ | |
| *Xanthoria parietina* | Co Tw | Edge of site |

**SO981 975**
West of ride in more wooded area

**GYG016** (SO08196 97540, 197m): big post mature Oak north of GYG015 by glade

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | F |
| ***Lecanographa lyncea*** | Q | R |
| ***Lecanora sublivescens*** | Q | O |
| Also | | |
| *Pertusaria flavida* | Q | |
| *Thelotrema lepadinum* | Q | |

**Photo** 2018-05-01-08 Left

**GYG026** (SO08200 97580, 200m): mature Oak in wood

| | | |
|---|---|---|
| ***Lopadium disciforme*** | Q | O |
| Also | | |
| *Thelotrema lepadinum* | Q | |

**GYG027** (SO08188 97572, 199m): post mature Oak above track

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| ***Lecanographa lyncea*** | Q | F |
| Also | | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Thelotrema lepadinum* | Q | |

**GYG028** (SO08175 97585, 203m): post mature Oak above track

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | A |
| ***Lecanographa lyncea*** | Q | F |
| ***Schismatomma cretaceum*** | Q | |
| Also | | |
| *Arthonia pruinata* | Q | |
| *Cliostomum flavidulum* | Q | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Thelotrema lepadinum* | Q | |

**GYG029** (SO08141 97580, 208m): post mature Oak in wood

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | F |
| ***Lecanographa lyncea*** | Q | O |

| | | |
|---|---|---|
| Also | | |
| *Arthonia pruinata* | Q | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Thelotrema lepadinum* | Q | |

**GYG030** (SO08145 97538, 204m): post mature Oak above glade, Tag 05809

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| ***Lopadium disciforme*** | Q | O |
| ***Pachyphiale carneola*** | Q | F |
| Also | | |
| *Bacidia biatorina* | Q | |
| *Pertusaria flavida* | Q | |
| *Thelotrema lepadinum* | Q | |
| Adjacent Oak log | | |
| ***Chaenothecopsis pusilla*** | LQ | Coll Stem K –, spores 1 septate, with pale septa |
| Also | | |
| *Chaenotheca brunneola* | LQ | |
| *Cladonia parasitica* | LQ | |
| Adjacent log | | |
| *Micarea melaena* | LQ | |

**GYG031** (SO08171 97568, 201m): smaller post mature Oak

| | | |
|---|---|---|
| ***Lopadium disciforme*** | Q | F |
| Also | | |
| *Pertusaria flavida* | Q | |
| *Thelotrema lepadinum* | Q | |

**GYG032** (SO08162 97520, 198): fallen Oak logs in glade

| | | |
|---|---|---|
| ***Xerotrema quercicola*** | LQ | |
| Also | | |
| *Imshaugia aleurites* | LQ | |
| *Lecidea nylanderi* | LQ | |
| *Loxospora elatina* | LQ | |

**GYG033** (SO08107 97538, 203m): post mature Oak above boundary, Tag 05829

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| Also | | |
| *Cliostomum flavidulum* | Q | |
| *Loxospora elatina* | Q | |
| *Thelotrema lepadinum* | Q | |

**GYGO34** (SO08122 97575, 210m): post mature Oak in wood

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |

**SO081 975**

**Species of Interest**

| | | |
|---|---|---|
| *Bacidia biatorina* | Q | |
| *Chaenotheca brunneola* | LQ | |
| *Chaenotheca furfuracea* | Q | |
| *Chaenotheca trichialis* | Q | |
| *Chaenothecopsis pusilla* | LQ | Coll. |
| *Cladonia parasitica* | LQ | |
| *Cliostomum flavidulum* | Q | |
| *Cresponea premnea* | Q | |
| *Imshaugia aleurites* | LQ | |
| *Lecanographa lyncea* | Q | |
| *Lecanora sublivescens* | Q | |
| *Lecidea nylanderi* | LQ, Q | |
| *Lepraria ecorticata* | Q | |

| | |
|---|---|
| *Lopadium disciforme* | Q |
| *Loxospora elatina* | LQ, Q |
| *Megalaria pulverea* | Q |
| *Micarea xanthonica* | Q |
| *Pachyphiale carneola* | Q |
| *Schismatomma cretaceum* | Q |
| *Thelotrema lepadinum* | Q |
| *Xerotrema quercicola* | LQ |
| **Other Species** | |
| *Amandinea punctata* | Q |
| *Arthonia pruinata* | Q |
| *Cladonia digitata* | LQ |
| *Cladonia floerkeana* | LQ |
| *Cladonia pyxidata* | Q |
| *Lecidella elaeochroma* f. *elaeochroma* | Q |
| *Micarea melaena* | LQ |
| *Pertusaria flavida* | Q |

**SO082 976**
Just on the west side of the wide ride

**GYG041** (SO08215 97633, 219m): recently pollarded Oak on western side of ride, Tag 05694

| | | | |
|---|---|---|---|
| ***Biatora chrysantha*** | Q | R | New to VC47 |
| Also | | | |
| *Thelotrema lepadinum* | Q | | |

**GYG024** (SO08202 97604, 200m): post mature Oak inside open woodland, Tag 05737

| | | |
|---|---|---|
| ***Schismatomma niveum*** | Q | A |
| Also | | |
| *Cliostomum flavidulum* | Q | |
| *Lecidea nylanderi* | Q | |
| *Parmeliopsis hyperopta* | Q | |
| *Thelotrema lepadinum* | Q | |

**SO082 976**

| | |
|---|---|
| **Species of Interest** | |
| *Biatora chrysantha* | Q |
| *Calicium glaucellum* | LQ |
| *Cladonia parasitica* | LQ |
| *Cliostomum flavidulum* | Q |
| *Lecidea nylanderi* | Q |
| *Parmeliopsis hyperopta* | Q |
| *Schismatomma niveum* | Q |
| *Thelotrema lepadinum* | Q |
| **Other species** | |
| *Buellia schaereri* | LQ |
| *Pertusaria flavida* | Q |

**SO081 976**
Working up slope within the wooded area

**GYG035** (SO08127 97630, 212m): post mature Ash edge of denser area of trees

| | | |
|---|---|---|
| ***Cresponea premnea*** | Fx | R |
| ***Enterographa sorediata*** | Fx | O |
| ***Lecanographa lyncea*** | Fx | O |
| ***Lecanora sublivescens*** | Fx | R |
| Also | | |
| *Milospium graphideorum* | Fx, Z0600 | |
| *Pertusaria flavida* | Fx | |

**Photo** 2018-05-01-11

Photo 2018-05-01-11: GYG035 foreground to right

**GYG036** (SO08157 97624, 207m): post mature Oak on edge of glade, Tag 05727

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | F |
| ***Lecanographa lyncea*** | Q | O |
| ***Microcalicium disseminatum*** | Q | R |

Also

| | |
|---|---|
| *Anisomeridium ranunculosporum* | Q |
| *Milospium graphideorum* | Q, Z0600 |
| *Thelotrema lepadinum* | Q |

**Photo** 2018-05-01-12

Photo 2018-05-01-12: GYG036 foreground to right

**GYG037** (SO08160 97610, 204m): post mature Oak in open woodland, Tag 05732

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | F |
| ***Lecanographa lyncea*** | Q | R |
| ***Lecanora sublivescens*** | Q | R |
| Also | | |
| *Cliostomum flavidulum* | Q | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Thelotrema lepadinum* | Q | |
| Added 2/5/2018 | | |
| ***Microcalicium disseminatum*** | Q | |
| ***Schismatomma cretaceum*** | Q | |

**Photo** 20-8-05-01-13 also GYG036 behind central

Photo 20-8-05-01-13: GYG037 foreground central, also GYG036 behind central, just to left of GYG037

**GYG038** (SO08189 97633, 225m): post mature Oak by glade, Tag 05730

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| ***Lecanographa lyncea*** | Q | O |
| Also | | |
| *Anisomeridium ranunculosporum* | Q | |
| *Thelotrema lepadinum* | Q | |

**GYG039** (SO08194 97627, 223m): post mature Oak by glade, tag 05735

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| ***Lecanographa lyncea*** | Q | O |
| Also | | |
| *Anisomeridium ranunculosporum* | Q | |
| *Cliostomum flavidulum* | Q | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Pertusaria flavida* | Q | |
| *Thelotrema lepadinum* | Q | |

**GYG040** (SO08214 97627, 219m): forked post mature Oak by glade above GYG024, Tag 05693

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| ***Lecanographa lyncea*** | Q | F |

| | | |
|---|---|---|
| ***Microcalicium disseminatum*** | Q | R |
| ***Milospium graphideorum*** | | |
| ***Schismatomma niveum*** | Q | O |

Also

| | | |
|---|---|---|
| *Thelotrema lepadinum* | Q | |

**Photo** 2018-05-01-14 Left

**GYG042** (SO08197 97639, 218m): burry post mature Oak on western side of ride, Tag 05698

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | A |
| ***Lecanographa lyncea*** | Q | O |

Also

| | | |
|---|---|---|
| *Arthonia pruinata* | Q | |
| *Chaenotheca trichialis* | Q | |
| *Milospium graphideorum* | Q, Z0600 | |

**Photo** 20-8-05-01-14 Right

Photo 2018-05-01-14: GYG040 left and GYG042 right

**GYG043** (SO08191 97649, 219m): partly burry post mature Oak on western side of ride

| | | |
|---|---|---|
| ***Lecanora sublivescens*** | Q | R |

**Photo** 2018-05-01-15 background

**GYG044** (GG014) (SO08177 97655, 219m): big post mature Oak on western side of ride

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| ***Enterographa sorediata*** | Q | F |
| ***Lecanographa lyncea*** | Q | A |
| ***Lecanora sublivescens*** | Q | R |

Also

| | | |
|---|---|---|
| *Anisomeridium ranunculosporum* | Q | |
| *Arthonia pruinata* | Q | |
| *Chaenotheca furfuracea* | Q | |
| *Loxospora elatina* | Q | |
| *Pertusaria flavida* | Q | |
| *Thelotrema lepadinum* | Q | |

**Photo** 2018-05-01-15 foreground

Photo 2018-05-01-15: GYG043 background and GYG044 foreground

**GYG045** (SO08160 97665, 221m): big post mature Oak western side of ride

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | F |
| ***Lecanographa lyncea*** | Q | R |
| Also | | |
| *Milospium graphideorum* | Q, Z0600 | |

**GYG046** (SO08172 97676, 221m): big post mature Oak on western side of ride at top

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | F |
| ***Lecanographa lyncea*** | Q | F |
| ***Microcalicium disseminatum*** | Q | R |

**SO081 976**

**Species of Interest**

| | |
|---|---|
| *Anisomeridium ranunculosporum* | Q |
| *Arthonia pruinata* | Q |
| *Bacidia biatorina* | Fx |
| *Chaenotheca furfuracea* | Q |
| *Chaenotheca trichialis* | Q |
| *Cliostomum flavidulum* | Q |
| *Cresponea premnea* | Fx |
| *Enterographa sorediata* | Fx |
| *Lecanographa lyncea* | Fx, Q |
| *Lecanora sublivescens* | Fx |
| *Lecidea nylanderi* | Q |
| *Lepraria ecorticata* | Q |
| *Microcalicium disseminatum* | Q |
| *Milospium graphideorum* | Fx, Q, Z0600 |
| *Schismatomma niveum* | Q |
| *Thelotrema lepadinum* | Q, Fx |

**Other Species**

| | |
|---|---|
| *Ochrolechia androgyna* | Q |
| *Pertusaria albescens* var. *corallina* | Fx |
| *Pertusaria flavida* | Fx |
| *Schismatomma decolorans* | Fx |

**SO080 976**
Covered some trees on the edge of the wood by the open area to the north at the end of the day

**GYG047** (SO08074 97655, 221m): ancient hollow Ash on edge of wood

| | | |
|---|---|---|
| ***Cresponea premnea*** | Fx | R |
| ***Lecanora sublivescens*** | Fx | R |
| Also | | |
| *Bacidia rubella* | Fx | |
| *Calicium salicinum* | Fx, LFx | |
| *Leptogium teretiusculum* | Fx | |
| *Pertusaria flavida* | Fx | |

**Photo** 2018-05-01-16

Photo 2018-05-01-16: foreground to right

**GYG048** (SO08061 97636, 221m): post mature Oak on edge of very open area

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | R |
| ***Lecanographa lyncea*** | Q | O |
| ***Microcalicium disseminatum*** | Q | |
| Also | | |
| Anisomeridium ranunculosporum | Q | |

**GYG049** (SO08051 97646, 219m): huge standing dead Oak hulk, Tag 05841

| | | |
|---|---|---|
| ***Microcalicium disseminatum*** | LQ | A |
| Also | | |
| *Imshaugia aleurites* | LQ | |
| *Lecidea nylanderi* | LQ | |

**Photo** 2018-05-01-17

Photo 2018-05-01-17: large dead tree

**GYG050** (GG016) (SO08039 97621, 216m): big post mature Oak on edge of open area

| | | |
|---|---|---|
| ***Caloplaca lucifuga*** | Q | O |
| ***Cresponea premnea*** | Q | F |
| ***Lecanora quercicola*** | Q | O |
| ***Lecanora sublivescens*** | Q | F |

Added 2/5/2018

| | | |
|---|---|---|
| ***Schismatomma umbrinum*** | Q | (not identified at the time, may just have been on a nearby tree) |

Also

| | |
|---|---|
| *Arthonia pruinata* | Q |
| *Arthonia vinosa* | Q |
| *Chaenotheca trichialis* | LQ |

**Photo** 2018-05-01-18

Photo 2018-05-01-18: foreground, ***Lecanora quercicola*** in mossy section of bark at base

Species of Interest

| | |
|---|---|
| **SO080 976** | |
| *Calicium salicinum* | LFx, Fx |
| *Caloplaca lucifuga* | Q |
| *Cresponea premnea* | Fx, Q |
| *Imshaugia aleurites* | LQ |
| *Lecanographa lyncea* | Q |
| *Lecanora quercicola* | Q |
| *Leptogium teretiusculum* | Fx |
| *Microcalicium disseminatum* | Q, LQ |
| *Schismatomma quercicola* | Q |
| **Other Species** | |
| *Bacidia rubella* | Fx |
| *Chrysothrix flavovirens* | LQ |
| *Cliostomum griffithii* | Fx |
| *Lecanora expallens* | Fx |
| *Micarea melaena* | LQ |
| *Pertusaria flavida* | Fx |
| *Pertusaria hymenea* | Fx |
| *Schismatomma decolorans* | Fx |

## A2 Gregynog 2/5/2018

### *A2.1 Weather*

Weather had rained heavily over night. Setting dry and sunny. Wet bark damp. Some showers in the morning dry the afternoon

### *A2.2 Gregynog Great Wood, West of Ride*

**SO082 976**
**Other Species**

| | |
|---|---|
| *Arthonia didyma* | Q Tw |
| *Arthonia radiata* | Q Tw |
| *Pertusaria leioplaca* | Q Tw |
| *Usnea cornuta* | Q |

**SO081 976**

**GYG052** (SO08170 97609, 224m): post mature Oak by slight glade in open woodland, Tag 05733

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| ***Lecanographa lyncea*** | Q | R |
| Also | | |
| *Milospium graphideorum* | Q, Z0600 | |

**SO080 976**
A tiny amount of ***Schismatomma umbrinum*** was spotted on one of the old trees in this area, but was not recognised until a larger colony was seen on GYG070 latter in the day. It was not refound but memory suggested it was on GYG050.

**GYG053** (SO08059 97626, 224m): big post mature Oak on edge of wood, Tag 05838

| | | | |
|---|---|---|---|
| ***Cresponea premnea*** | Q | | |
| ***Lecanographa lyncea*** | Q | | |
| Also | | | |
| *Anisomeridium ranunculosporum* | Q | | |
| *Bactrospora corticola* | Q | Coll. | Sterile, pycnidia only |
| *Chaenotheca trichialis* | Q | | |
| *Milospium graphideorum* | Q, Z0600 | | |
| *Ramalina canariensis* | Q | | |
| *Thelotrema lepadinum* | Q | | |

**GYG054** (SO08022 97625, 221m): big post mature Oak in open, Tag 05846

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| ***Lecanographa lyncea*** | Q | R |
| Also | | |
| *Amandinea punctata* | Q | R |
| *Chaenotheca trichialis* | Q | |
| *Milospium graphideorum* | Q, Z0600 | |

**GYG055** (SO08033 97610, 219m): broken Oak and fallen dead wood, Tag 05847

| | | |
|---|---|---|
| ***Bryoria fuscescens*** | LQ | R |
| ***Xerotrema quercicola*** | LQ | F |
| Also | | |
| *Buellia schaereri* | LQ | Coll. |
| *Calicium glaucellum* | LQ | |
| *Cladonia parasitica* | LQ | |
| *Imshaugia aleurites* | LQ | |
| *Parmeliopsis ambigua* | LQ | |

**GYG056** (SO08015 97598, 219m): post mature Oak at edge of wood, Tag 95887

| | | | |
|---|---|---|---|
| ***Cresponea premnea*** | Q | O | |
| ***Lecanographa lyncea*** | Q | O | |
| ***Lecanora quercicola*** | Q | R | North side on wet bark |
| ***Lecanora sublivescens*** | Q | O | |
| ***Lopadium disciforme*** | Q | R | |
| ***Pachyphiale carneola*** | Q | O | |
| Also | | | |
| *Bacidia biatorina* | Q | | |
| *Chaenotheca trichialis* | Q | | |

**Photo** 2018-05-02-01

Photo 2018-05-02-01: GYG056 foreground

**SO080 976**
**Species of Interest**

| | |
|---|---|
| *Anisomeridium ranunculosporum* | Q |
| *Bacidia biatorina* | Q |
| *Bactrospora corticola* | Q |
| *Bryoria fuscescens* | LQ |
| *Calicium glaucellum* | LQ |
| *Chaenotheca trichialis* | Q |
| *Cladonia parasitica* | LQ |
| *Cresponea premnea* | Q |
| *Imshaugia aleurites* | LQ |
| *Lecanographa lyncea* | Q |
| *Lecanora quercicola* | Q |
| *Lecanora sublivescens* | Q |
| *Lopadium disciforme* | Q |
| *Milospium graphideorum* | Q, Z0600 |
| *Pachyphiale carneola* | Q |
| *Sphaerophorus globosus* | Q |
| *Thelotrema lepadinum* | Q |
| *Xerotrema quercicola* | LQ |

**Other Species**

| | | |
|---|---|---|
| *Buellia schaereri* | LQ | Coll. |
| *Hypogymnia physodes* | LQ | |
| *Parmeliopsis ambigua* | LQ | |
| *Platismatia glauca* | LQ | |
| *Ramalina canariensis* | Q | |
| *Trapeliopsis flexuosa* | LQ | |

**SO080 975**
Worked back into the western end of the denser pasture woodland.

**GYG057** (SO08095 97586, 211m): burry post mature Oak by glade, Tag 05798

| | | | |
|---|---|---|---|
| ***Cresponea premnea*** | Q | F | |
| ***Lecanographa lyncea*** | Q | F | |
| ***Lecanora quercicola*** | Q | R | At base left of wet bark |
| ***Lecanora sublivescens*** | Q | R | |
| ***Milospium graphideorum*** | Q, Z0600 | | |
| ***Schismatomma cretaceum*** | Q | | |
| Also | | | |
| *Anisomeridium ranunculosporum* | Q | | |
| *Pertusaria flavida* | Q | | |
| *Thelotrema lepadinum* | Q | | |

**Photo** 2018-05-02-02

Photo 2018-05-02-02: GYG057 foreground left

**GYG058** (SO08060 97564, 210m): post mature Oak open part of wood, Tag 05862

| | | |
|---|---|---|
| ***Lecanographa lyncea*** | Q | F |
| Also | | |
| *Milospium graphideorum* | Q, Z0600 | |

**GYG059** (SO08040 97563, 208m): suppressed mature Oak by track in wood

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| Also | | |
| *Thelotrema lepadinum* | Q | |

**GYG060** (SO08064 97549, 205m): post mature Oak with some exposed lignum by track in wood, Tag 05867

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| ***Lecanora quercicola*** | Q | R |
| ***Lecanora sublivescens*** | Q | O |
| Also | | |
| *Arthonia pruinata* | Q | |
| *Bacidia biatorina* | Q | |
| *Thelotrema lepadinum* | Q | |

**Photo** 2018-05-02-03

Photo 2018-05-02-03: GYG060 foreground centre left

**GYG061** (SO08086 97555, 202m): post mature Oak in wood, Tag 05833

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | |
| ***Lecanographa lyncea*** | Q | F |
| Also | | |
| *Anisomeridium ranunculosporum* | Q | |
| *Cliostomum flavidulum* | Q | |
| *Lecidea nylanderi* | Q | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Thelotrema lepadinum* | Q | |

**GYG062** (SO08101 97556, 200m): post mature Oak by track in Wood, Tag 08531

| | | |
|---|---|---|
| ***Arthonia anombrophila*** | Q | O |
| ***Cresponea premnea*** | Q | F |
| ***Lecanora sublivescens*** | Q | R |
| Also | | |
| *Anisomeridium ranunculosporum* | Q | |
| *Bacidia biatorina* | Q | |
| *Dactylospora parasitica* | Q, Z1076 | |
| *Pertusaria hymenea* | Q | |
| *Thelotrema lepadinum* | Q | |

**Photo** 2018-05-02-04

Photo 2018-05-02-04: GYG062 foreground left

**GYG063** (SO08096 97533, 198m): post mature Oak by track through wood

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | F |
| ***Lecanographa lyncea*** | Q | R |
| ***Lecanora sublivescens*** | Q | R |
| Also | | |
| *Arthonia pruinata* | Q | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Pertusaria flavida* | Q | |
| *Thelotrema lepadinum* | Q | |

GG24 (SO08081 97520) Oak refound *Mycoblastus caesius* and confirmed

**GYG064** (SO08048 97539, 199m): standing dead Oak below track in wood

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| Also | | |
| *Chaenotheca brunneola* | LQ | |
| Adjacent fallen dead wood | | |
| ***Xerotrema quercicola*** | LQ | O |
| Also | | |
| *Loxospora elatina* | LQ | |

**GYG065** (SO08024 97527, 197m): post mature Oak at western edge of Great Wood, Tag 05881,

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | F |
| ***Lecanographa lyncea*** | Q | O |
| Also | | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Thelotrema lepadinum* | Q | |

**SO080 975**
**Species of Interest**

| | |
|---|---|
| *Anisomeridium ranunculosporum* | Q |
| *Arthonia anombrophila* | Q |
| *Bacidia biatorina* | Q |
| *Chaenotheca brunneola* | LQ |

| | | |
|---|---|---|
| *Chaenotheca trichialis* | Q | |
| *Cliostomum flavidulum* | Q | |
| *Cresponea premnea* | Q | |
| *Dactylospora parasitica* | Q, Z1076 | |
| *Lecanographa lyncea* | Q | |
| *Lecanora quercicola* | Q | |
| *Lecanora sublivescens* | Q | |
| *Lecidea nylanderi* | Q | |
| *Loxospora elatina* | Q | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Mycoblastus caesius* | Q | SO0808 9752 |
| *Parmeliopsis hyperopta* | Q | |
| *Thelotrema lepadinum* | Q | |
| *Trapelia corticola* | Q | |
| **Other Species** | | |
| *Arthonia pruinata* | Q | |
| *Pertusaria flavida* | Q | |
| *Pertusaria hymenea* | Q | |

### *A2.3 Gregynog Great Wood, Wood Cottage Area*

Surveyed the western Park, mainly scattered old Oak in permanent pasture with flushes, with more sheltered old Oak in younger infill on edge.

**SO079 975**
Young Alder infill in fenced area to east

**SO080 974**
**GYG066** (SO08007 97476, 199m): post mature Oak in flush, in Alder – Sallow

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | R |
| Also | | |
| *Bacidia biatorina* | Q | |
| *Thelotrema lepadinum* | Q | |

**SO080 974**
**Species of Interest**

| | |
|---|---|
| *Bacidia biatorina* | Q |
| *Cresponea premnea* | Q |
| *Thelotrema lepadinum* | Q |

**SO079 974**
Scatter post mature Oak in small valley and in open parkland.

**GYG067** (SO07976 97436, 206m): sheltered post mature Oak by stream

| | | |
|---|---|---|
| ***Schismatomma quercicola*** | Q | O |
| Also | | |
| *Anisomeridium ranunculosporum* | Q | |
| *Loxospora elatina* | Q | |
| *Thelotrema lepadinum* | Q | |

**Photo** 2019-05-02-05

Photo 2019-05-02-05: GYG067

**GYG068** (SO07954 97458, 206m): post mature Oak at edge of open park

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | F |
| ***Lecanographa lyncea*** | Q | R |
| ***Lecanora sublivescens*** | Q | R |
| Also | | |
| *Cliostomum flavidulum* | Q | |
| *Cyphelium sessile* | Q, Z1064 | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Pertusaria coccodes* | Q | |
| *Pertusaria flavida* | Q | |
| *Thelotrema lepadinum* | Q | |

**Photo** 2018-05-02-06 Right

**GYG069** (SO07954 97463, 206m): post mature Oak at edge of open park

| | | |
|---|---|---|
| ***Schismatomma quercicola*** | Q | F |
| ***Cresponea premnea*** | Q | R |
| ***Lecanographa lyncea*** | Q | R |
| ***Milospium graphideorum*** | Q, Z0600 | |
| Also | | |
| *Cliostomum flavidulum* | Q | |
| *Loxospora elatina* | Q | |
| *Thelotrema lepadinum* | Q | |

**Photo** 2018-05-02-06 Left

Photo 2018-05-02-06: GYG068 right and GYG069 left

**GYG070** (SO07959 97487, 196m): post mature Oak in flushed woodland

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| ***Schismatomma umbrinum*** | Q | F |

Also

| | |
|---|---|
| *Thelotrema lepadinum* | Q |

**Photo** 2018-05-02-07

Photo 2018-05-02-07: GYG070 foreground

**GYG071** (SO07921 97498, 204m): ancient Oak on edge of open park by steam
***Schismatomma umbrinum*** Q F
**Photo** 2018-05-02-08

Photo 2018-05-02-08: GYG071

**GYG074** (SO07889 97409, 214m): ancient hollow Oak in parkland
***Cresponea premnea*** Q F
***Lecanora sublivescens*** Q F
***Lopadium disciforme*** Q R
***Microcalicium disseminatum*** LQ F
**Photo** 2018-05-02-10

Photo 2018-05-02-10: GYG074 foreground

**GYG075** (SO07930 97383, 217m): ancient Oak on edge of park

| | | | |
|---|---|---|---|
| ***Chaenothecopsis nigra*** | LQ | O | Coll. Spores one septate, with dark septa |

**SO079 974**

**Species of Interest**

| | | |
|---|---|---|
| *Anisomeridium ranunculosporum* | Q | |
| *Arthonia vinosa* | Q | |
| *Bacidia biatorina* | Fx | |
| *Chaenotheca trichialis* | Bt | |
| *Chaenothecopsis nigra* | LQ | Coll |
| *Cliostomum flavidulum* | Q | |
| *Cresponea premnea* | Q | |
| *Lecanographa lyncea* | Q | |
| *Lecanora sublivescens* | Q | |
| *Lopadium disciforme* | Q | |
| *Loxospora elatina* | Q | |
| *Microcalicium disseminatum* | LQ | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Schismatomma quercicola* | Q | |
| *Schismatomma umbrinum* | Q | |
| *Thelotrema lepadinum* | Al, Q, Ix | |

**Other Species**

| | | |
|---|---|---|
| *Chaenotheca ferruginea* | Q | |
| *Cladonia coniocraea* | Al | |
| *Evernia prunastri* | Q | |
| *Lecanactis abietina* | Al, Q | |
| *Ochrolechia androgyna* | Q | |
| *Parmeliopsis ambigua* | LQ | |
| *Pertusaria coccodes* | Q | |
| *Pertusaria flavida* | Q, Fx | |
| *Pyrrhospora quernea* | Al | |

**SO079 975**

**Species of Interest**

| | |
|---|---|
| *Schismatomma cretaceum* | Q |
| *Thelotrema lepadinum* | Q |

**SO078 974**

Open parkland with veteran Oak

**GYG072** (SO07897 97465, 210m): post mature Oak in open park

| | | | |
|---|---|---|---|
| ***Cresponea premnea*** | Q | F | |
| Also | | | |
| *Arthonia pruinata* | Q | | |

**GYG073** (SO07833 97424, 218m): post mature Oak in open park by flush

| | | | |
|---|---|---|---|
| ***Cresponea premnea*** | Q | F | |
| ***Coenogonium tavaresianum*** | Q | R | Coll. Herb. Sanderson 2399. Apothecia 0.2-0.25mm, concave when young, orange-brown; exciple orange-brown on edge; hymenium I – & strongly K/I + blue; asci thin walled, no tholus, K/I–; spores 8 – 12 x 3µm. New Wales |
| ***Lecanora sublivescens*** | Q | | |
| ***Pachyphiale carneola*** | Q | | |
| ***Ramonia chrysophaea*** | Q | R | Coll. Spores 45 – 70 x 4µm. New to VC47 Herb. Sanderson 2397 |
| Also | | | |
| *Pertusaria flavida* | Q | | |

**Photo** 2018-05-02-09 & 19 – 22

Photo 2018-05-02-09: GYG073 right

Photo 2018-05-02-19 & 20: *Coenogonium tavaresianum*, specimen Sanderson 2397 & apothecium cross section in water

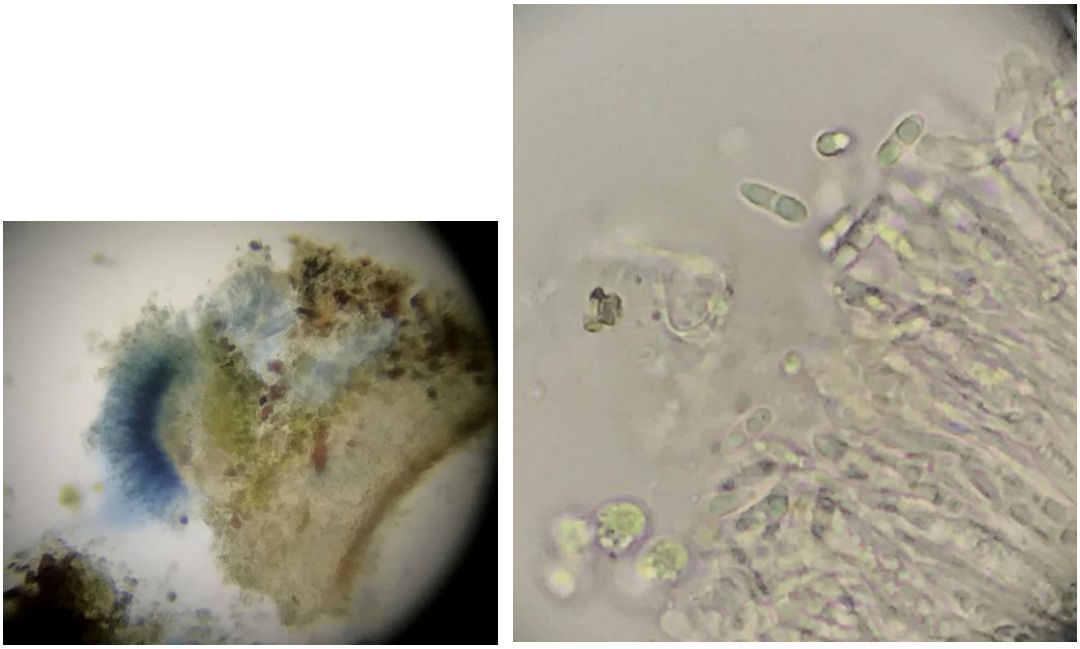


Photo 2018-05-02-21 & 22: Coenogonium tavaresianum apothecium squash showing hyothecium K/I+ blue & spores in K.

**GYG073** Twig list from low sweeping branches

| | | | |
|---|---|---|---|
| *Evernia prunastri* | Q Tw | F | |
| *Fuscidea lightfootii* | Q Tw | | |
| *Homostegia piggotii* | Q Tw, Z1015 | | New to VC47 |
| *Hypogymnia physodes* | Q Tw | | |
| *Hypogymnia tubulosa* | Q Tw | | |
| *Hypotrachyna afrorevoluta* | Q Tw | | |
| *Hypotrachyna revoluta* s. str. | Q Tw | | |
| *Melanelixia subaurifera* | Q Tw | | |
| *Parmelia saxatilis* | Q Tw | | |
| *Parmelia sulcata* | Q Tw | | |
| *Pertusaria amara f. amara* | Q Tw | | |
| *Physcia aipolia* | Q Tw | | |
| *Physcia tenella* | Q Tw | F | |
| *Platismatia glauca* | Q Tw | | |
| *Punctelia subrudecta* s. str. | Q Tw | | |
| *Ramalina farinacea* | Q Tw | R | |
| *Usnea florida* | Q Tw | | |
| *Usnea subfloridana* | Q Tw | | |
| *Usnea wasmuthii* | Q Tw | Coll. | |

**GYG076** (SO07805 97487, 226m): ancient hollow Oak

| | | | |
|---|---|---|---|
| ***Chaenothecopsis nigra*** | LQ | R | Coll. Spores one septate, with dark septa |

**SO078 974**

**Species of Interest**

| | | |
|---|---|---|
| *Anisomeridium ranunculosporum* | Q | |
| *Calicium glaucellum* | LQ | |
| *Calicium salicinum* | LQ | |
| *Chaenothecopsis nigra* | LQ | Coll. |
| *Coenogonium tavaresianum* | Q | |
| *Cresponea premnea* | Q | |
| *Imshaugia aleurites* | LQ | |
| *Lecanora sublivescens* | Q | |
| *Lecidea nylanderi* | Q | |
| *Pachyphiale carneola* | Q | |

| | | | |
|---|---|---|---|
| *Parmeliopsis hyperopta* | LQ | | |
| *Ramonia chrysophaea* | Q | | |
| *Schismatomma cretaceum* | Q | | |
| *Thelotrema lepadinum* | Q | | |
| *Usnea florida* | Q Tw | | |
| **Other Species** | | | |
| *Arthonia pruinata* | Q | | |
| *Cladonia polydactyla* var. *polydactyla* | LQ | | |
| *Evernia prunastri* | | | |
| *Evernia prunastri* | Q Tw, LQ | | |
| *Fuscidea lightfootii* | Q Tw | | |
| *Homostegia piggotii* | Q Tw, Z1015 | | |
| *Hypogymnia physodes* | LQ, Q Tw | | |
| *Hypogymnia physodes* | | | |
| *Hypotrachyna afrorevoluta* | Q Tw | | |
| *Hypotrachyna revoluta* s. str. | Q Tw | | |
| *Lecanora expallens* | LQ | | |
| *Melanelixia subaurifera* | Q Tw | | |
| *Ochrolechia microstictoides* | LQ | | |
| *Parmelia saxatilis* | Q Tw | | |
| *Parmelia sulcata* | Q Tw | | |
| *Parmeliopsis ambigua* | LQ | | |
| *Pertusaria amara* f. *amara* | Q Tw | | |
| *Pertusaria flavida* | Q | | |
| *Physcia aipolia* | Q Tw | | |
| *Physcia tenella* | Q Tw | F | |
| *Placynthiella icmalea* | LQ | | |
| *Platismatia glauca* | Q Tw | | |
| *Punctelia subrudecta* s. str. | Q Tw | | |
| *Ramalina farinacea* | Q Tw | R | |
| *Schismatomma decolorans* | Q | | |
| *Trapeliopsis flexuosa* | LQ | | |
| *Usnea subfloridana* | Q Tw | | |
| *Usnea wasmuthii* | Q Tw | Coll. | |

**SO079 973**

**GYG188** (SO07906 97351, 227m): ancient hollow Alder

| | | | | |
|---|---|---|---|---|
| ***Chaenotheca stemonea*** | LAl | Coll. | Herb. Sanderson 2398 | New to VC47 |

**SO078 973**
**Species of Interest**

| | |
|---|---|
| *Calicium salicinum* | Q |
| *Melaspilea ochrothalamia* | Q |
| *Thelotrema lepadinum* | Q |
| **Other Species** | |
| *Pertusaria flavida* | Fx |
| *Xanthoria parietina* | Fx Tw, Q Tw |

**SO077 973**
Top corner, not much interest

**SO077 973**
Species of Interest

| | |
|---|---|
| *Thelotrema lepadinum* | Q |

**SO078 975**
North west of western park

**GYG077** (SO07800 97520, 224m): post mature Oak in park
**Chaenotheca stemonea** Q
Also
*Chaenotheca trichialis* Q

**GYG078** (SO07904 97699, 211m): post mature Oak in park
***Cresponea premnea*** Q R

**SO078 975**
**Species of Interest**
*Chaenotheca stemonea* Q
*Chaenotheca trichialis* Q
*Cresponea premnea* Q
*Thelotrema lepadinum* Q

**SO078 976**
Northeast corner of Wood Cottage area, more intensively managed pasture and the few trees with nutrient demanding species prominent.

**SO0784 9762** nutrient enriched Old Oak, only *Arthonia pruinata* on dry bark. Low sweeping twigs recorded systematically.
Trunk
*Arthonia pruinata* Q
*Diploicia canescens* Q
Twigs
*Arthonia radiata* Q Tw
*Evernia prunastri* Q Tw
*Laetisaria lichenicola* Q Tw, Z1112
*Melanelixia subaurifera* Q Tw
*Parmelia sulcata* Q Tw
*Physcia adscendens* Q Tw
*Physcia tenella* Q Tw
*Ramalina farinacea* Q Tw
*Xanthoria parietina* Q Tw F

**SO079 977**
North east corner of western park

**GYG079** (SO07904 97699, 211m): big post mature Oak at edge of western park
***Cresponea premnea*** Q O

### *A2.4 Gregynog Great Wood, Open Parkland West of Ride*

Surveyed the open parkland in the north west of Great Wood, with post mature and some ancient Oak widespread, also some post mature Ash

**SO079 976**
**GYG080** (SO07976 97637, 208m): post mature Oak in open parkland, Tag 05897
***Lecanora sublivescens*** Q
**Photo** 2018-05-02-11 Right

**GYG081** (SO07983 97639, 207m): post mature Oak in open parkland, Tag 05896
***Lecanographa lyncea*** Q
Also
*Anisomeridium ranunculosporum* Q
**Photo** 2018-05-02-11 C behind

**GYG082** (SO07977 97645, 206m): post mature Oak in open parkland, Tag 05898
***Arthonia anombrophila*** Q O
***Cresponea premnea*** Q F

| | | |
|---|---|---|
| ***Lecanographa lyncea*** | Q | O |
| ***Lecanora sublivescens*** | Q | R |

Also

| | |
|---|---|
| *Arthonia pruinata* | Q |
| *Milospium graphideorum* | Q, Z0600 |

**Photo** 2018-05-02-11 Left

Photo 2018-05-02-11: GYG080 right, GYG081 centre behind and GYG082 left

**GYG083** (GG023) (SO07936 97670, 207m): ancient Oak in open parkland

| | | | |
|---|---|---|---|
| ***Cresponea premnea*** | Q | R | |
| ***Lecanora sublivescens*** | Q | R | On root |

Also

| | |
|---|---|
| *Arthonia pruinata* | Q |

**Photo** 2018-05-02-12

Photo 2018-05-02-12: GYG083 right foreground, with GYG085 immediately to left.

GG022 one Ash has fallen, still alive

**GYG084** (SO07924 97673, 209m): post mature Oak pair in corner, Tags 05901 & 05902

| | | | |
|---|---|---|---|
| ***Lecanora sublivescens*** | Q | O | Both trees |
| ***Cresponea premnea*** | Q | O | Both trees |
| ***Caloplaca lucifuga*** | Q | R | Northern tree |
| Also | | | |
| *Pertusaria pertusa* | Q | | |
| *Sphinctrina turbinata* | Q, Z1087 | | |

**Photo** 2018-05-02-13

Photo 2018-05-02-13: GYG084, northern tree to right

**GYG085** (GG022 N) (SO07950 97676, 210m): post mature Ash, Tag 05903
***Lecanora sublivescens*** Fx O
**Photo** 2018-05-02-12 Left

**GYG086** (SO07964 97699, 213m): big post mature Oak in parkland, Tag 05910
***Cresponea premnea*** Q O
Also
*Amandinea punctata* Q
*Arthonia pruinata* Q

**GYG087** (GG021) (SO07988 97683, 210m): post mature Ash in open parkland, Tag 05913
***Cresponea premnea*** Fx R
***Lecanora sublivescens*** Fx R
Also
*Arthonia pruinata* Fx
*Pertusaria flavida* Fx
Adjacent post mature Oak
***Cresponea premnea*** Q O
***Lecanora sublivescens*** Q R
**Photo** 2018-05-02-14


Photo 2018-05-02-14: GYG087

**SO079 976**
**Species of Interest**
*Anisomeridium ranunculosporum* Q
*Arthonia anombrophila* Q
*Bacidia biatorina* Fx
*Cresponea premnea* Q
*Lecanographa lyncea* Q
*Lecanora sublivescens* Q, Fx
*Milospium graphideorum* Q, Z0600
*Sphinctrina turbinata* Q, Z1087
*Thelotrema lepadinum* Fx
**Other Species**
*Amandinea punctata* Q
*Arthonia pruinata* Q, Fx

| | |
|---|---|
| *Lecanora argentata* | Q |
| *Lecanora chlarotera* | Fx |
| *Pertusaria flavida* | Q, Fx |
| *Pertusaria pertusa* | Q |
| *Vouauxiella lichenicola* | Fx, Z0639 |

**SO080 976**
High up slope in open parkland

**GYG088** (GG019) (SO08013 97670, 211m): post mature Ash in open, Tag 05920

| | | | |
|---|---|---|---|
| ***Caloplaca herbidella* s. str.** | Fx | R | Fragments just detectable |

Also

| | |
|---|---|
| *Amandinea punctata* | Fx |
| *Pertusaria flavida* | Fx |

**Photo** 2018-05-02-15

Photo 2018-05-02-15: GYG088, Ash to right

| | |
|---|---|
| *Diplotomma alboatrum* | Fx Coll. |

**SO079 977**
North west of Great Wood, parkland

**GYG089** (GG022) (SO07999 97737, 219m): post mature Ash in recent fenced enclosure with collapsed Crab Apple, Tag 05925

| | | |
|---|---|---|
| ***Lecanora sublivescens*** | Fx | R |

**SO079 9777**
**Species of Interest**

| | |
|---|---|
| ***Lecanora sublivescens*** | Fx |

**SO080 977**
High up in parkland

**GYG090** (GG015) (SO08083 97720, 221m): ancient Oak with much lignum on north side. ***Caloplaca lucifuga*** was seen in 2012 but not refound in 2018.

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | R |

***Lecanora sublivescens*** Q F
Also
*Chaenotheca trichialis* Q
*Pertusaria flavida* Q
*Rhaphidicyrtis trichosporella* Q
**Photo** 2018-05-02-16

Photo 2018-05-02-16: GYG090 centre

**GYG091** (SO08087 97706, 218m): ancient Oak below GYG090, Tag 05715
***Lecanora sublivescens*** Q R
**Photo** 2018-05-02-17

Photo 2018-05-02-17: GYG091 centre foreground

**SO080 977**
**Species of Interest**

| | |
|---|---|
| *Chaenotheca trichialis* | Q |
| *Cresponea premnea* | Q |
| *Lecanora sublivescens* | Q |
| *Rhaphidicyrtis trichosporella* | Q |
| **Other Species** | |
| *Pertusaria flavida* | Q |

**SO081 977**
High up in open grove

**GYG092** (SO08107 97698, 218m): big post mature Oak on edge of grove, Tag 05717

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | F |
| Also | | |
| *Arthonia pruinata* | Q | |
| *Thelotrema lepadinum* | Q | |

**GYG093** (SO08113 97714, 218m): post mature Oak in grove, Tag 05710

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | F |
| ***Enterographa sorediata*** | Q | O |
| ***Lecanographa lyncea*** | Q | O |
| Also | | |
| *Milospium graphideorum* | Q, Z0600 | |

**Photo** 2018-05-02-18

Photo 2018-05-02-18: GYG093

**SO081 977**
**Species of Interest**

| | |
|---|---|
| *Cresponea premnea* | Q |
| *Enterographa sorediata* | Q |
| *Lecanographa lyncea* | Q |
| *Milospium graphideorum* | Q, Z0600 |
| *Thelotrema lepadinum* | Q |
| **Other Species** | |
| *Arthonia pruinata* | Q |

**SO081 976**
**GYG094** (SO08132 97696, 215m): big post mature Oak in grove

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | A |
| ***Lecanographa lyncea*** | Q | F |

Also

| | |
|---|---|
| *Arthonia pruinata* | Q |
| *Chaenotheca trichialis* | Q |
| *Milospium graphideorum* | Q, Z0600 |
| *Thelotrema lepadinum* | Q |

**SO081 976**
**Species of Interest**

| | |
|---|---|
| *Chaenotheca trichialis* | Q |
| *Cresponea premnea* | Q |
| *Cyphelium sessile* | Q, Z1064 |
| *Lecanographa lyncea* | Q |
| *Milospium graphideorum* | Q, Z0600 |
| *Thelotrema lepadinum* | Q |

***Other Species***

| | |
|---|---|
| *Arthonia pruinata* | Q |
| *Pertusaria coccodes* | Q |

# A3 Gregynog 3/5/2018

## *A3.1 Weather*

Weather started dry with thin cloud, the tree bark was dry.

## *A3.2 Gregynog Great Wood, East of Ride*

Surveyed Great Wood east of the main ride.

**SO083 976**
Started surveying the southern area east of the main ride. Grazed high forest dominated by post mature Oak. Rich and extensive ancient dry bark assemblages with widespread mesic bark assemblage along with base rich bark and acid bark interest.

**GYG051** (SO08313 97623, 239m): post mature Oak just east of ride, Tag 05635

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| ***Enterographa sorediata*** | Q | O |
| Also | | |
| *Cliostomum flavidulum* | Q | |
| *Thelotrema lepadinum* | Q | |

**Photo** 2018-05-03-01

Photo 2018-05-03-01: GYG051

**GYG095** (SO08309 97642, 225m): small post mature Oak in wood, Tag 05636

| | | |
|---|---|---|
| ***Lopadium disciforme*** | Q | O |
| Also | | |
| *Anisomeridium ranunculosporum* | Q | |
| *Thelotrema lepadinum* | Q | |

**GYG096** (SO08355 97648, 215m): post mature Oak by edge of glade

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | A |
| ***Lecanographa lyncea*** | Q | F |

Also
*Milospium graphideorum* Q, Z0600
*Thelotrema lepadinum* Q

**GYG097** (SO08351 97648, 211m): post mature Oak by glade
***Enterographa sorediata*** Q R
***Lecanographa lyncea*** Q O
***Schismatomma niveum*** Q O
Also
*Pertusaria flavida* Q
*Thelotrema lepadinum* Q
**Photo** 2018-05-03-02 Right

**GYG098** (SO08363 97644, 210m): mature Oak in glade, Tag 05617
***Lecanora sublivescens*** Q R Near base
***Lopadium disciforme*** Q O
Also
*Melaspilea ochrothalamia* Q
*Pertusaria flavida* Q
**Photo** 2018-05-03-02 Left


Photo 2018-05-03-02: GYG097 right and GYG098 left

**GYG099** (SO08355 97643, 205m): big post mature Oak by glade, Tag 05619
***Schismatomma niveum*** Q O
Also
*Anisomeridium ranunculosporum* Q
*Lecidea nylanderi* Q
*Loxospora elatina* Q
*Parmeliopsis hyperopta* Q
*Thelotrema lepadinum* Q

**GYG100** (SO08396 97677, 203m): leaning post mature Oak by glade
***Cresponea premnea*** Q R
***Lecanographa lyncea*** Q O

Also
*Lecidea nylanderi* Q
*Milospium graphideorum* Q, Z0600
*Pertusaria flavida* Q
*Thelotrema lepadinum* Q
**Photo** 2018-05-03-03 Right

**GYG101** (SO08385 97692, 200m): post mature Oak by glade, Tag 05592
***Cresponea premnea*** Q
***Lecanographa lyncea*** Q O
***Lecanora sublivescens*** Q O
***Schismatomma cretaceum*** Q
Also
*Anisomeridium ranunculosporum* Q
*Cliostomum flavidulum* Q
*Milospium graphideorum* Q, Z0600
*Pertusaria flavida* Q
*Thelotrema lepadinum* Q
**Photo** 2018-05-03-03 Left

Photo 2018-05-03-03: GYG100 right and GYG101 left

**GYG102** (SO08356 97673, 200m): post mature Oak in glade, Tag 05603
***Enterographa sorediata*** Q R
***Coenogonium tavaresianum*** Q Coll. Herb. Sanderson 2400. Apothecia 0.2-0.3mm, concave when young, orange-brown; exciple orange-brown on edge; hymenium I – & K/I + blue lower down; asci thin walled, no tholus, K/I–; spores 9 – 11 x 3µm
***Cresponea premnea*** Q F
***Lecanographa lyncea*** Q F
Also
*Milospium graphideorum* Q, Z0600
*Thelotrema lepadinum* Q
**Photo** 2018-05-03-04, 34 & 35

Photo 2018-05-03-04: GYG102

Photo 2018-05-03-34 & 35: *Coenogonium tavaresianum*, apothecia on specimen Herb. Sanderson 2400

**GYG103** (SO08338 97683, 203m): post mature Oak by glade

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| ***Lecanographa lyncea*** | Q | R |
| Also | | |
| *Milospium graphideorum* | Q, Z0600 | |

**GYG104** (SO08336 97678, 204m): post mature Oak by glade

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | A |
| ***Enterographa sorediata*** | Q | O |
| ***Lecanographa lyncea*** | Q | F |
| Also | | |
| *Arthonia pruinata* | Q | |
| *Thelotrema lepadinum* | Q | |

**Photo** 2018-05-03-05 R foreground

**GYG105** (SO08333 97671, 202m): post mature Oak by glade, Tag 05609

| | | |
|---|---|---|
| ***Microcalicium disseminatum*** | Q | O |

**Photo** 2018-05-03-05 L foreground

**GYG106** (SO08328 97659, 200m): post mature Oak by glade

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | R |
| ***Lecanographa lyncea*** | Q | O |

Also

| | |
|---|---|
| *Cliostomum flavidulum* | Q |
| *Milospium graphideorum* | Q, Z0600 |
| *Thelotrema lepadinum* | Q |

**Photo** 2018-05-03-05 Left behind

Photo 2018-05-03-05: GYG104 right foreground, GYG105 left foreground & GYG106 left back

**GYG107** (SO08317 97678, 199m): post mature Oak by glade, above track

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | A |

**GYG108** (SO08305 97698, 204m): post mature Oak in wood, above track

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| ***Opegrapha fumosa*** | Q | R |

Also

| | |
|---|---|
| *Anisomeridium ranunculosporum* | Q |
| *Cliostomum flavidulum* | Q |
| *Loxospora elatina* | Q |
| *Thelotrema lepadinum* | Q |

**GYG109** (SO08304 97663, 202m): post mature Oak in wood, above track, Tag 05368

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| ***Enterographa sorediata*** | Q | O |
| ***Lecanographa lyncea*** | Q | F |

Also

| | |
|---|---|
| *Anisomeridium ranunculosporum* | Q |
| *Cliostomum flavidulum* | Q |
| *Pertusaria flavida* | Q |
| *Thelotrema lepadinum* | Q |

**Photo** 2018-05-03-06

Photo 2018-05-03-06: GYG109

**GYG161** (SO08336 97697, 199m): post mature Oak above track

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | F |
| ***Enterographa sorediata*** | Q | F |
| ***Lecanographa lyncea*** | Q | O |
| Also | | |
| *Anisomeridium ranunculosporum* | Q | |
| *Thelotrema lepadinum* | Q | |

**Photo** 2018-05-03-27

Photo 2018-05-03-27: GYG161, foreground left

**SO083 976**

**Species of Interest**

| | | |
|---|---|---|
| *Anisomeridium ranunculosporum* | Q | |
| *Bacidia biatorina* | Q | |
| *Chaenotheca brunneola* | LQ | |
| *Cliostomum flavidulum* | Q | |
| *Cresponea premnea* | Q | |
| *Enterographa sorediata* | Q | |
| *Lecanographa lyncea* | Q | |
| *Lecanora sublivescens* | Q | |
| *Lecidea nylanderi* | Q | |
| *Lepraria ecorticata* | Q | |
| *Lopadium disciforme* | Q | |
| *Loxospora elatina* | Q | |
| *Melaspilea ochrothalamia* | Q | Coll. SO08340 97648 |
| *Milospium graphideorum* | Q, Z0600 | |
| *Opegrapha fumosa* | Q | |
| *Parmeliopsis hyperopta* | Q | |
| *Schismatomma cretaceum* | Q | |
| *Schismatomma niveum* | Q | |
| *Thelotrema lepadinum* | Q, Ix | |

**Other Species**

| | |
|---|---|
| *Arthonia pruinata* | Q |
| *Dimerella pineti* | Q |
| *Lecanactis abietina* | Ix |
| *Lecidella elaeochroma* f. *elaeochroma* | Q |
| *Opegrapha atra* | Ix |
| *Opegrapha vulgata* | Ix |
| *Pertusaria flavida* | Q |
| *Usnea cornuta* | Q |
| *Usnea rubicunda* | Q |

**SO082 976**

Continuing up slope working along the eastern side of the main ride. Similar rich grazed high forest with extensive ancient dry bark assemblages with widespread mesic bark assemblage along with lignum, base rich bark and acid bark interest.

**GYG110** (SO08299 97634, 201m): post mature Oak east of ride

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| ***Enterographa sorediata*** | Q | R |

Also

| | |
|---|---|
| *Cliostomum flavidulum* | Q |
| *Loxospora elatina* | Q |
| *Thelotrema lepadinum* | Q |

**Photo** 2018-05-03-07 by Holly

Photo 2018-05-03-07: GYG110 left of Holly

**GYG111** (SO08277 97620, 200m): big post mature on eastern edge of ride, Tag 05642

| | | |
|---|---|---|
| ***Lecanographa lyncea*** | Q | O |
| ***Microcalicium disseminatum*** | Q | R |
| Also | | |
| *Cliostomum flavidulum* | Q | |
| *Lecidea nylanderi* | Q | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Pertusaria flavida* | Q | |
| *Thelotrema lepadinum* | Q | |

**GYG112** (GG005) (SO08270 97636, 203m): ancient Oak with much exposed lignum

| | | |
|---|---|---|
| ***Chaenothecopsis nigra*** | LQ | R |
| ***Lecanographa lyncea*** | Q | O |
| Also | | |
| *Anisomeridium ranunculosporum* | Q | |
| *Loxospora elatina* | LQ | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Thelotrema lepadinum* | Q | |

**GYG113** (GG006) (SO08262 97648, 203m): standing dead Oak east of ride

| | | |
|---|---|---|
| ***Chaenothecopsis nigra*** | LQ | O |
| **Xerotrema quercicola** | LQ | F |
| Also | | |
| *Chaenotheca brunneola* | LQ | |
| *Loxospora elatina* | LQ | |

**GYG114** (SO08286 97683, 206m): ancient Oak in open woodland, post 36

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | A |
| ***Enterographa sorediata*** | Q | O |
| ***Lecanographa lyncea*** | Q | F |
| ***Rinodina roboris* var. *roboris*** | Q | R |
| Also | | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Thelotrema lepadinum* | Q | |

**Photo** 2018-05-03-08

Photo 2018-05-03-08: GYG114, foreground right

**GYG115** (SO08263 97674, 206m): post mature Oak by glade

| | | |
|---|---|---|
| ***Lecanographa lyncea*** | Q | O |
| ***Enterographa sorediata*** | Q | R |
| Also | | |
| *Cliostomum flavidulum* | Q | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Thelotrema lepadinum* | Q | |

**Photo** 2018-05-03-09 Left

**GYG116** (GG008) (SO08270 97664, 202m): post mature Oak by glade east of ride, Tag 05332, post 32

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| ***Enterographa sorediata*** | Q | R |
| ***Lecanographa lyncea*** | Q | O |
| Also | | |
| *Anisomeridium ranunculosporum* | Q | |
| *Cliostomum flavidulum* | Q | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Thelotrema lepadinum* | Q | |

**Photo** 2018-05-03-09 Right

Photo 2018-05-03-09: GYG115 left and GYG116 right

**GYG117** (GG007) (SO08249 97656, 202m): ancient Oak just in from ride

| | | |
|---|---|---|
| ***Caloplaca lucifuga*** | Q | R |
| ***Coenogonium tavaresianum*** | Q | R |
| ***Cresponea premnea*** | Q | F |
| ***Enterographa sorediata*** | Q | O |
| ***Lecanographa lyncea*** | Q | F |
| ***Lecanora sublivescens*** | Q | R |
| ***Schismatomma cretaceum*** | Q | |
| Also | | |
| *Anisomeridium ranunculosporum* | Q | |
| *Arthonia pruinata* | Q | |
| *Loxospora elatina* | Q | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Pertusaria flavida* | Q | |
| *Thelotrema lepadinum* | Q | |

**Photo** 2018-05-03-10 Left behind

**GYG118** (SO08244 97643, 205m): post mature Oak on ride edge

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | F |
| ***Lecanographa lyncea*** | Q | R |
| ***Lecanora sublivescens*** | Q | O |
| Also | | |
| *Loxospora elatina* | Q | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Thelotrema lepadinum* | Q | |

**Photo** 2018-05-03-10

Photo 2018-05-03-10: GYG117 left behind & GYG118 foreground

**GYG119** (GG009) (SO08258 97675, 205m): two mature Ash by glade

| | | |
|---|---|---|
| ***Lopadium disciforme*** | Fx | F |
| Also | | |
| *Anisomeridium ranunculosporum* | Fx | |
| *Bacidia biatorina* | Fx | |
| *Thelotrema lepadinum* | Fx | |

**GYG120** (GG010) (SO08255 97691, 209m): fallen Oak in small glade

| | | |
|---|---|---|
| ***Xerotrema quercicola*** | LQ | F |
| Also | | |
| *Imshaugia aleurites* | LQ | |
| *Ochrolechia microstictoides* | LQ | |

**GYG121** (SO08235 97674, 208m): mature Oak near ride

| | | |
|---|---|---|
| ***Lopadium disciforme*** | Q | O |
| Also | | |
| *Anisomeridium ranunculosporum* | Q | |
| *Loxospora elatina* | Q | |
| *Pertusaria flavida* | Q | |
| *Thelotrema lepadinum* | Q | |

**GYG122** (SO08232 97673, 208m): post mature Oak on ride edge, by post 34 fallen

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| ***Lecanora sublivescens*** | Q | R |
| ***Lecanographa lyncea*** | Q | O |
| Also | | |
| *Anisomeridium ranunculosporum* | Q | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Thelotrema lepadinum* | Q | |

**Photo** 2018-05-03-11


Photo 2018-05-03-11: GYG122, left foreground

**GYG123** (GG013) (SO08217 97685, 210m): post mature Oak in for ride edge by glade, Tag 05321

| | | |
|---|---|---|
| ***Lecanographa lyncea*** | Q | R |
| ***Schismatomma niveum*** | Q | A |

Also

| | |
|---|---|
| *Cliostomum flavidulum* | Q |
| *Thelotrema lepadinum* | Q |

**GYG124** (SO08229 97694, 209m): young Oak

| | | |
|---|---|---|
| ***Schismatomma niveum*** | Q | F |

Also

| | |
|---|---|
| *Thelotrema lepadinum* | Q |

**GYG125** (SO08244 97690, 208m): two post mature Oaks by glade

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | F |
| ***Enterographa sorediata*** | Q | R |
| ***Lecanographa lyncea*** | Q | O |
| ***Microcalicium disseminatum*** | Q | R |
| ***Schismatomma niveum*** | Q | A |

Also

| | |
|---|---|
| *Anisomeridium ranunculosporum* | Q |
| *Cliostomum flavidulum* | Q |
| *Loxospora elatina* | Q |
| *Milospium graphideorum* | Q, Z0600 |
| *Thelotrema lepadinum* | Q |

Photo 2018-05-03-12


Photo 2018-05-03-12: GYG124, two Oaks in foreground

**GYG126** (SO08251 97698, 206m): mature Ash in wood, round tag 5242 (GG011?)

| | | |
|---|---|---|
| ***Cresponea premnea*** | Fx | R |
| ***Lopadium disciforme*** | Fx | O |
| Also | | |
| *Anisomeridium ranunculosporum* | Fx | |
| *Bacidia biatorina* | Fx | |
| *Megalaria pulverea* | Fx | |
| *Thelotrema lepadinum* | Fx | |

**SO082 976**

**Species of Interest**

| | |
|---|---|
| *Anisomeridium ranunculosporum* | Q, Fx |
| *Bacidia biatorina* | Fx |
| *Caloplaca lucifuga* | Q |
| *Chaenotheca brunneola* | LQ |
| *Chaenothecopsis nigra* | LQ |
| *Cliostomum flavidulum* | Q |
| *Coenogonium tavaresianum* | Q |
| *Cresponea premnea* | Q |
| *Dimerella lutea* | Q |
| *Enterographa sorediata* | Q |
| *Imshaugia aleurites* | LQ |
| *Lecanographa lyncea* | Q |
| *Lecanora sublivescens* | Q |
| *Lecidea nylanderi* | Q |
| *Lopadium disciforme* | Fx, Q |
| *Loxospora elatina* | Q, LQ |
| *Megalaria pulverea* | Fx |
| *Microcalicium disseminatum* | Q |
| *Milospium graphideorum* | Q, Z0600 |
| *Rinodina roboris* var. *roboris* | Q |
| *Schismatomma cretaceum* | Fx, Q |
| *Schismatomma niveum* | Q |

| | |
|---|---|
| *Thelotrema lepadinum* | Q, Fx |
| *Xerotrema quercicola* | LQ |
| **Other Species** | |
| *Arthonia pruinata* | Q |
| *Cladonia polydactyla* var. *polydactyla* | LQ |
| *Lecanactis abietina* | Fx |
| *Normandina pulchella* | Fx |
| *Ochrolechia microstictoides* | LQ |
| *Pertusaria amara* f. *amara* | Fx |
| *Pertusaria flavida* | Fx |
| *Pertusaria hymenea* | Fx |
| *Phlyctis argena* | Fx |
| *Pyrrhospora quernea* | Fx |
| *Schismatomma decolorans* | Fx |
| *Trapeliopsis flexuosa* | LQ |

**SO082 977**
Surveying higher up slope just in from the east of the ride. Grazed high forest with rich Oak, but more diverse here with local Ash, Hazel and Alder. Extensive ancient dry bark assemblages with widespread mesic bark assemblage, important base rich bark trees, along with acid bark interest.

**GYG127** (SO08256 97719, 207m): mature Oak in wood by Holly

| | | |
|---|---|---|
| ***Lopadium disciforme*** | Q | R |
| Also | | |
| *Lepraria ecorticata* | Q | |
| *Thelotrema lepadinum* | Q | |

**GYG128** (SO08256 97710, 207m): post mature Oak by glade, by posts 30 & mature Ash post 39

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q, Fx | A |
| ***Lecanographa lyncea*** | Q | O |
| ***Schismatomma niveum*** | Q | R |
| Also | | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Thelotrema lepadinum* | Q, Fx | |

**GYG129** (SO08241 97713, 206m): post mature Oak by glade

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | A |
| ***Enterographa sorediata*** | Q | O |
| ***Lecanographa lyncea*** | Q | R |
| ***Lecanora sublivescens*** | Q | R |
| Also | | |
| *Thelotrema lepadinum* | Q | |

**Photo** 2018-05-03-13 Right

**GYG130** (GG012) (SO08256 97729, 206m): post mature Oak in wood, by post 41, Tag 05380

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| ***Microcalicium disseminatum*** | Q | O |
| ***Porina coralloidea*** | Q | O |
| ***Schismatomma niveum*** | Q | O |
| Also | | |
| *Anisomeridium ranunculosporum* | Q | |
| *Loxospora elatina* | Q | |
| *Pertusaria flavida* | Q | |
| *Thelotrema lepadinum* | Q | |

**Photo** 2018-05-03-13 Left behind

Photo 2018-05-03-13: GYG129 right & GYG130 left behind

**GYG131** (SO08271 97724, 204m): mature Ash by glade, Tag 05377

| | | |
|---|---|---|
| ***Lecanora sublivescens*** | Fx | R |
| ***Lopadium disciforme*** | Fx | F |
| Also | | |
| *Anisomeridium ranunculosporum* | Fx | |
| *Bacidia biatorina* | Fx | |
| *Thelotrema lepadinum* | Fx | |

**Photo** 2018-05-03-14

Photo 2018-05-03-14: GYG131 centre foreground

**GYG132** (SO08271 97724, 204m): mature Oak in glade

| | | |
|---|---|---|
| ***Lopadium disciforme*** | Q | R |
| ***Schismatomma niveum*** | Q | O |

Also

| | |
|---|---|
| *Thelotrema lepadinum* | Q |

**GYG133** (SO08283 97708, 210m): post mature Oak by glade

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | A |
| ***Lecanographa lyncea*** | Q | F |
| ***Rinodina roboris* var. *roboris*** | Q | O |

Also

| | |
|---|---|
| *Milospium graphideorum* | Q, Z0600 |
| *Pertusaria flavida* | Q |
| *Thelotrema lepadinum* | Q |

**GYG134** (SO08298 97714, 208m): big post mature Oak by glade, by post 24, Tag 05402

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | F |
| ***Enterographa sorediata*** | Q | R |
| ***Lecanographa lyncea*** | Q | O |

Also

| | |
|---|---|
| *Calicium salicinum* | Q |
| *Milospium graphideorum* | Q, Z0600 |

**Photo** 2018-05-03-15

Photo 2018-05-03-15: GYG134

**GYG135** (SO08295 97730, 208m): two mature Ash in glade

| | | |
|---|---|---|
| ***Lopadium disciforme*** | Fx | F |

Also

| | |
|---|---|
| *Anisomeridium ranunculosporum* | Fx |
| *Megalaria pulverea* | Fx |
| *Normandina pulchella* | Fx |
| *Thelotrema lepadinum* | Fx |

**GYG136** (SO08275 97736, 209m): post mature Alder in glade

| | |
|---|---|
| ***Cresponea premnea*** | Al |

Also
*Loxospora elatina* Al
*Megalaria pulverea* Al
*Thelotrema lepadinum* Al

**GYG137** (SO08294 97744, 208m): mature Oak by glade
***Cresponea premnea*** Q R
Also
*Bacidia biatorina* Q
*Pertusaria flavida* Q
*Thelotrema lepadinum* Q

**GYG138** (SO08216 97702, 212m): post mature Oak high in wood, by glade, by post 40
***Cresponea premnea*** Q A
***Enterographa sorediata*** Q R
***Lecanographa lyncea*** Q F
***Lecanora sublivescens*** Q O
***Schismatomma niveum*** Q F
Also
*Loxospora elatina* Q
*Milospium graphideorum* Q, Z0600
*Pertusaria pertusa* Q
*Sphinctrina turbinata* Q, Z1087
*Thelotrema lepadinum* Q
**Photo** 2018-05-03-16

Photo 2018-05-03-16: GYG138

**GYG139** (SO08201 97701, 211m): big post mature Oak with Ivy by ride
***Cresponea premnea*** Q F
***Lecanographa lyncea*** Q O
***Lecanora sublivescens*** Q O
Also
*Milospium graphideorum* Q, Z0600
**Photo** 2018-05-03-17 Right

**GYG140** (SO08202 97708, 214m): post mature Oak east of ride

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | R |
| ***Lecanora sublivescens*** | Q | O |
| ***Schismatomma niveum*** | Q | R |
| Also | | |
| *Bacidia biatorina* | Q | |
| *Thelotrema lepadinum* | Q | |

**Photo** 2018-05-03-17 Left

Photo 2018-05-03-17: GYG139 right foreground & GYG140 left behind

**GYG141** (SO08215 97733, 216m): post mature Oak at top of slope, Tag 05346

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| ***Lecanographa lyncea*** | Q | A |
| ***Lecanora sublivescens*** | Q | O |
| Also | | |
| Loxospora elatina | Q | |
| Megalaria pulverea | Q | |
| *Milospium graphideorum* | Q, Z0600 | |
| Pertusaria flavida | Q | |

**Photo** 2018-05-03-18 Right

**GYG142** (SO08206 97736, 219m): post mature Oak at top of slope, Tag 05347

| | |
|---|---|
| ***Lecanographa lyncea*** | Q |
| Also | |
| *Milospium graphideorum* | Q, Z0600 |
| *Parmeliopsis hyperopta* | |
| *Pertusaria flavida* | |

**Photo** 2018-05-03-18 Left

Photo 2018-05-03-18: GYG141 right & GYG142 left

**GYG143** (SO08217 97750, 218m): post mature Oak at top of slope

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | A |
| ***Lecanographa lyncea*** | Q | F |
| ***Schismatomma cretaceum*** | Q | |
| Also | | |
| *Chaenotheca trichialis* | Q | |
| *Micarea viridileprosa* | Q | |
| *Milospium graphideorum* | Q, Z0600 | |

**GYG144** (SO08236 97753, 215m): leaning post mature Oak at base of top slope by glade, post 64, Tag 05388

| | | | |
|---|---|---|---|
| ***Cresponea premnea*** | Q | O | |
| ***Enterographa sorediata*** | Q | R | |
| ***Lecanographa lyncea*** | Q | F | |
| ***Lobaria pulmonaria*** | Q | F | 5 clumps higher up |
| ***Lobaria virens*** | Q | A | Lower down |
| ***Pachyphiale carneola*** | Q | O | |
| ***Porina rosei*** | Q | F | |
| Also | | | |
| *Arthonia vinosa* | Q | | |
| *Bacidia biatorina* | Q | | |
| *Bacidia viridifarinosa* | Q | | |
| *Dimerella lutea* | Q | | |
| *Pertusaria flavida* | Q | | |
| *Thelotrema lepadinum* | Q | | |

**Photos** 2018-05-03-19 & 20


Photos 2018-05-03-19 & 20: leaning Oak behind & close up view showing *Lobaria* colonies

**GYG145** (SO08236 97753, 215m): post mature Oak by glade, Tag 05393

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |

**GYG146** (SO08246 97782, 216m): post mature Oak by upper track

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | F |
| ***Lecanographa lyncea*** | Q | O |
| ***Lecanora sublivescens*** | Q | R |
| Also | | |
| *Thelotrema lepadinum* | | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Pertusaria flavida* | Q | |

**Photo** 2018-05-03-21 Right

**GYG147** (SO08245 97787, 216m): big burry post mature Oak by glade, Tag 05390

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| ***Lecanographa lyncea*** | Q | O |
| ***Microcalicium disseminatum*** | Q | R |
| ***Schismatomma cretaceum*** | Q | |
| Also | | |
| *Milospium graphideorum* | Q, Z0600 | |

**Photo** 2018-05-03-21 Left

Photo 2018-05-03-21: GYG146 right and GYG147 left

**GYG148** (SO08221 97775, 221m): post mature Oak at top of wood, Tag 05352

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | F |
| ***Enterographa sorediata*** | Q | R |
| ***Lecanographa lyncea*** | Q | F |

Also

| | |
|---|---|
| *Milospium graphideorum* | Q, Z0600 |

**Photo** 2018-05-03-22

Photo 2018-05-03-22: GYG148 foreground right

**GYG149** (SO08212 97769, 222m): mature Oak at top of wood

| | | |
|---|---|---|
| ***Schismatomma niveum*** | Q | F |

Also

| | |
|---|---|
| *Pertusaria flavida* | Q |

**GYG150** (SO08201 97757, 221m): post mature Oak at top of wood

| | | |
|---|---|---|
| ***Lecanographa lyncea*** | Q | R |
| ***Schismatomma niveum*** | Q | F |

Also

| | |
|---|---|
| *Lecidea nylanderi* | Q |
| *Milospium graphideorum* | Q, Z0600 |
| *Pertusaria flavida* | Q |

**SO082 977**

**Species of Interest**

| | | | |
|---|---|---|---|
| *Anisomeridium ranunculosporum* | Q, Fx | | |
| *Arthonia vinosa* | Q | | |
| *Bacidia biatorina* | Q Fx | | |
| *Calicium salicinum* | Q | | |
| *Chaenotheca trichialis* | Q | | |
| *Cresponea premnea* | Q, Fx, Al | | |
| *Dimerella lutea* | Q | | |
| *Enterographa sorediata* | Q | | |
| *Lecanographa lyncea* | Q | | |
| *Lecanora sublivescens* | Q, Fx | | |
| *Lecidea nylanderi* | Q | | |
| *Lepraria ecorticata* | Q | | |
| *Lobaria pulmonaria* | Q | | |
| *Lobaria virens* | Q | | |
| *Lopadium disciforme* | Q, Fx | | |
| *Loxospora elatina* | Al | | |
| *Megalaria pulverea* | Fx, Al, Q | | |
| *Micarea viridileprosa* | Q | | |
| *Milospium graphideorum* | Q, Z0600 | | |
| *Pachyphiale carneola* | Q | | |
| *Parmeliopsis hyperopta* | Q | | |
| *Pertusaria multipuncta* | Co, Fx | | |
| *Porina byssophila* | Fx | Coll. | SO08244 97735 |
| *Porina coralloidea* | Q | | |
| *Porina rosei* | Q | | |
| *Rinodina roboris* var. *roboris* | Q | | |
| *Schismatomma cretaceum* | Q | | |
| *Schismatomma niveum* | Q | | |
| *Sphinctrina turbinata* | Q, Pertusaria pertusa | | |
| *Stenocybe septata* | Ix | SO0826 9771, Tag 05374 | |
| *Strigula taylorii* | Fx | Coll. | SO08244 97735 |
| *Thelotrema lepadinum* | Ix, Q, Fx, Co, Al | | |

**Other Species**

| | |
|---|---|
| *Arthonia didyma* | Co |
| *Bacidia viridifarinosa* | Q |
| *Graphis scripta* | Co |
| *Normandina pulchella* | Fx |
| *Peltigera praetextata* | Fx |
| *Pertusaria flavida* | Q, Fx |
| *Pyrrhospora quernea* | Co |
| *Stenocybe pullatula* | Al Tw |
| *Xanthoria parietina* | Fx Tw |

**SO081 977**

North west corner of eastern part of wood with a few trees of interest.

**GYG151** (SO08183 97757, 223m): post mature Oak top of wood

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | R |
| ***Schismatomma niveum*** | Q | R |

**GYG152** (SO08178 97757, 223m): pair post mature Oak ditto

| | | |
|---|---|---|
| ***Schismatomma niveum*** | Q | O |

**SO081 977**
**Species of Interest**

| | |
|---|---|
| *Cladonia parasitica* | LQ |
| *Cresponea premnea* | Q |
| *Schismatomma niveum* | Q |

**SO083 977**
The upslope in the east of the grazed high forest east of the main ride. A similar area of grazed high forest pasture woodland with oak dominant. Extensive ancient dry bark assemblages with widespread mesic bark assemblage, along with base rich bark, lignum and acid bark interest.

**GYG153** (SO08311 97771, 208m): post mature Oak top of wood

| | |
|---|---|
| ***Cresponea premnea*** | Q |
| Also | |
| *Thelotrema lepadinum* | Q |

**GYG154** (SO08312 97748, 204m): post mature Oak by glade, by post 43

| | | |
|---|---|---|
| ***Caloplaca lucifuga*** | Q | R |
| ***Cresponea premnea*** | Q | F |
| ***Lecanographa lyncea*** | Q | O |
| ***Lecanora quercicola*** | Q | R |
| ***Lecanora sublivescens*** | Q | O |
| Also | | |
| *Milospium graphideorum* | Q, Z0600 | |
| Pertusaria flavida | Q | |
| Thelotrema lepadinum | Q | |

**Photo** 2018-05-03-23 Left

**GYG155** (SO08316 97743, 205m): ancient Oak, tree below GYG154, Tag 05434

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | F |
| ***Lecanographa lyncea*** | Q | O |
| ***Lecanora sublivescens*** | Q | R |
| ***Microcalicium disseminatum*** | LQ | R |
| Also | | |
| *Cliostomum flavidulum* | Q | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Pertusaria flavida* | Q | |
| *Thelotrema lepadinum* | Q | |

**Photo** 2018-05-03-23 Right

Photo 2018-05-03-23: GYG154 left and GYG155 right

**GYG156** (SO08322 97743, 205m): mature Ash

| | | |
|---|---|---|
| ***Lopadium disciforme*** | Fx | O |
| Also | | |
| *Pertusaria flavida* | Fx | |
| *Thelotrema lepadinum* | Fx | |

**GYG157** (SO08322 97756, 206m): post mature Oak

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| ***Schismatomma niveum*** | Q | R |
| Also | | |
| *Chaenotheca furfuracea* | Q | |

**GYG158** (SO08338 97736, 203m): post mature Oak by glade

| | | | |
|---|---|---|---|
| ***Chaenothecopsis retinens*** | Q, Z1318 | O | Coll. Herb. Sanderson 2401. Parasitic on *Sporodophoron* (*Schismatomma*) *cretaceum*; short K – reddish brown stalk; brown one septate spores, spores with dark septa, spores 8 – 10 x 3µm. New to Wales |
| ***Cresponea premnea*** | Q | F | |
| ***Enterographa sorediata*** | Q | O | |
| ***Lecanographa lyncea*** | Q | O | |
| ***Schismatomma cretaceum*** | Q | | |
| Also | | | |
| *Arthonia pruinata* | Q | | |

**Photo** 2018-05-03-24 (2018-05-03-25 behind)

Photo 2018-05-03-24: GYG158 foreground

**GYG159** (SO08332 97727, 204m): post mature Oak above track, Tag 05439

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | F |
| ***Enterographa sorediata*** | Q | O |
| ***Lecanographa lyncea*** | Q | R |
| ***Opegrapha fumosa*** | Q | O |
| Also | | |
| *Milospium graphideorum* | Q, Z0600 | |

**Photo** 2018-05-03-25

Photo 2018-05-03-25: GYG159 foreground, with GYG158 behind to right of GYG159

**GYG160** (SO08313 97716, 203m): post mature Oak by flush, by post 21, Tag 05412

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | F |
| ***Lecanographa lyncea*** | Q | F |
| ***Lecanora sublivescens*** | Q | R |

Also

| | |
|---|---|
| *Bacidia biatorina* | Q |
| *Milospium graphideorum* | Q, Z0600 |
| *Pertusaria flavida* | Q |
| *Thelotrema lepadinum* | Q |

**Photo** 2018-05-03-26

Photo 2018-05-03-26: GYG160

**GYG162** (SO08346 97706, 200m): post mature Oak below the track, Tag 05599

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | F |
| ***Enterographa sorediata*** | Q | O |
| ***Lecanora sublivescens*** | Q | R |

Also

| | |
|---|---|
| *Thelotrema lepadinum* | Q |

**Photo** 2018-05-03-28

**GYG163** (SO08354 97718, 197m): post mature Oak below the track

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | F |
| ***Enterographa sorediata*** | Q | O |
| ***Lecanographa lyncea*** | Q | O |

Also

| | |
|---|---|
| *Cliostomum flavidulum* | Q |
| *Pertusaria flavida* | Q |
| *Thelotrema lepadinum* | Q |

**Photo** 2018-05-03-28 behind

Photo 2018-05-03-28: GYG162 foreground right of track with GYG163 behind to the left GYG162

**GYG164** (SO08367 97727, 193m): post mature Oak below track,

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | F |
| ***Enterographa sorediata*** | Q | O |
| ***Lecanographa lyncea*** | Q | R |
| ***Lecanora sublivescens*** | Q | R |
| Also | | |
| *Milospium graphideorum* | Q, Z0600 | |

**Photo** 2018-05-03-29

Photo 2018-05-03-29: GYG164 to right

**GYG165** (SO08355 97744, 194m): mature Oak above track
***Lopadium disciforme*** Q O

**GYG166** (SO08354 97752, 194m): mature Oak above track
***Cresponea premnea*** Q R

**GYG167** (SO08334 97758, 198m): post mature Oak
***Opegrapha fumosa*** Q O
Also
*Anisomeridium ranunculosporum* Q
*Thelotrema lepadinum* Q

**GYG168** (SO08316 97781, 201m): post mature Oak high in wood
***Cresponea premnea*** Q A
***Lecanographa lyncea*** Q F
***Lecanora sublivescens*** Q R
Also
*Milospium graphideorum* Q, Z0600
**Photo** 2018-05-03-30

Photo 2018-05-03-30: GYG168 foreground

**GYG169** (SO08319 97783, 203m): post mature Ash at top of wood
***Cresponea premnea*** Fx R

**GYG170** (SO08332 97780, 202m) post mature Ash at top of wood
***Lopadium disciforme*** Fx F
***Schismatomma niveum*** Fx R
Also
*Anisomeridium ranunculosporum* Fx
*Pertusaria flavida* Fx
*Thelotrema lepadinum* Fx

**GYG171** (SO08336 97772, 202m): mature Oak at top of wood
***Schismatomma niveum*** Q O

Also
*Cliostomum flavidulum* Q
*Megalaria pulverea* Q
*Thelotrema lepadinum* Q

**GYG172** (SO08347 97788, 202m): post mature Oak at top of wood
***Cresponea premnea*** Q O

**GYG173** (Greg 3) (SO08360 97787, 200m): big post mature Oak above glade
***Cresponea premnea*** Q F
***Lecanographa lyncea*** Q O
***Lecanora sublivescens*** Q O
Also
*Cliostomum flavidulum* Q
*Loxospora elatina* Q
*Milospium graphideorum* Q, Z0600
*Pertusaria flavida* Q
*Thelotrema lepadinum* Q
**Photo** 2018-05-03-31

Photo 2018-05-03-31: GYG173 right

**GYG174** (SO08374 97787, 200m): post mature Oak above glade
***Lecanographa lyncea*** Q O
***Cresponea premnea*** Q O
Also
*Megalaria pulverea* Q
*Milospium graphideorum* Q, Z0600

**GYG175** (SO08384 97782, 194m): post mature Oak above track
***Cresponea premnea*** Q O
***Lecanographa lyncea*** Q O
Also
*Milospium graphideorum* Q, Z0600

**GYG176** (SO08396 97795, 195m): big post mature Oak eastern edge
***Cresponea premnea*** Q A

| | | |
|---|---|---|
| ***Rinodina roboris* var. *roboris*** | Q | R |

**GYG181** (SO08397 97738, 190m): two post mature Oaks in valley

| | | | |
|---|---|---|---|
| ***Cresponea premnea*** | Q | F | Both |
| ***Porina coralloidea*** | Q | O | Western |
| ***Schismatomma niveum*** | Q | F | Western |

Also

| | |
|---|---|
| *Anisomeridium ranunculosporum* | Q |
| *Thelotrema lepadinum* | Q |

**Photo** 2018-05-03-33

Photo 2018-05-03-33: GYG181 two trees in centre

**GYG182** (SO08391 97755, 192m): post mature Oak in valley below glade

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| ***Opegrapha fumosa*** | Q | R |

**SO083 977**

**Species of Interest**

| | |
|---|---|
| *Arthonia pruinata* | Q |
| *Bacidia biatorina* | Q |
| *Caloplaca lucifuga* | Q |
| *Chaenotheca furfuracea* | Q |
| *Chaenothecopsis retinens* | Q, Z1318 |
| *Cliostomum flavidulum* | Q |
| *Cresponea premnea* | Q, Fx |
| *Enterographa sorediata* | Q |
| *Lecanographa lyncea* | Q |
| *Lecanora quercicola* | Q |
| *Lecanora sublivescens* | Q |
| *Lopadium disciforme* | Fx |
| *Loxospora elatina* | Q |
| *Megalaria pulverea* | Q |
| *Milospium graphideorum* | Q, Z0600 |
| *Opegrapha fumosa* | Q |
| *Pertusaria multipuncta* | Fx |
| *Porina coralloidea* | Q |

| | | |
|---|---|---|
| *Rinodina roboris* var. *roboris* | Q | |
| *Schismatomma cretaceum* | Q | |
| *Schismatomma niveum* | Q, Fx | |
| *Thelotrema lepadinum* | Q, Fx, Al | |
| **Other Species** | | |
| *Pertusaria flavida* | Q, Fx | |

**SO083 978**
North east edge

**GYG177** (SO08362 97823, 201m): post mature Oak and recently dead Oak on edge

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |

**GYG178** (SO08396 97819, 196m): big post mature Oak on edge

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | F |
| ***Lecanora sublivescens*** | Q | R |

**SO084 978**
Eastern edge exposed and species poor

**SO084 977**
Eastern edge exposed species poor but with interest in from edge trees

**GYG179** (SO08416 97787, 192m): exposed on Oak on edge

| | | |
|---|---|---|
| ***Lecanographa lyncea*** | Q | R |
| Also | | |
| *Milospium graphideorum* | Q, Z0600 | |

**GYG180** (SO08419 97731, 189m): huge post mature Oak, more sheltered

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | R |
| Also | | |
| *Roselliniopsis tartaricola* | Q, Z1075<br>Voucher | Coll. Herb. Sanderson 2402.<br>Photo 2018-05-03-37 |
| *Varicellaria hemisphaerica* | Q | |

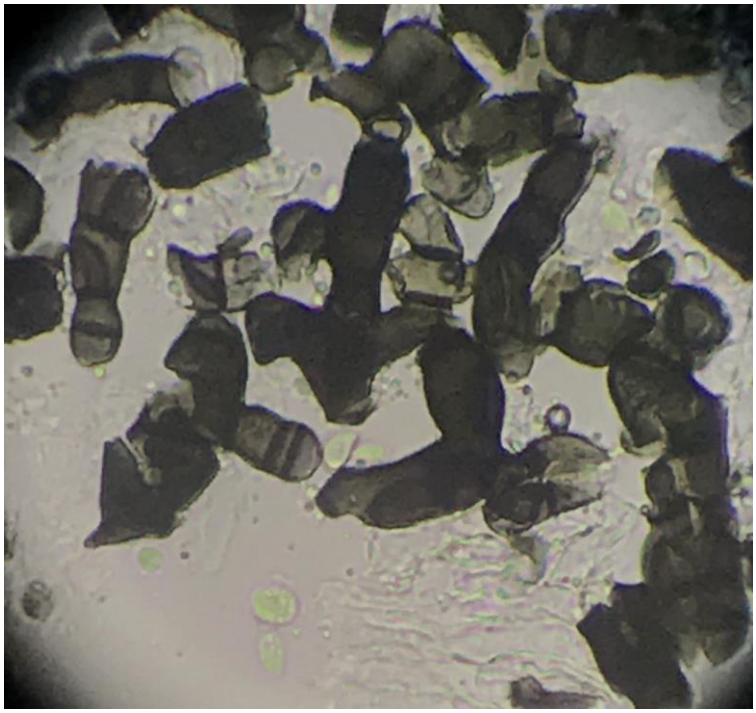


Photo 2018-05-03-37: *Roselliniopsis tartaricola* conidia and conidiophores, from Herb. Sanderson 2402. *Roselliniopsis tartaricola* was parasitising *Varicellaria hemisphaerica*.

**GYG183** (SO08409 97709, 189m): big post mature Pedunculate Oak in swampy bottom

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | F |
| ***Enterographa sorediata*** | Q | R |
| Also | | |
| *Cliostomum flavidulum* | Q | |
| *Pertusaria flavida* | Q | |
| *Thelotrema lepadinum* | Q | |

**Photo** 2018-05-03-32

Photo 2018-05-03-32: GYG183, foreground to right

**GYG184** (SO08449 97727, 188m): post mature Oak on edge

| | | |
|---|---|---|
| ***Cresponea premnea*** | Q | O |
| ***Lecanographa lyncea*** | Q | R |
| ***Pachyphiale carneola*** | Q | O |
| Also | | |
| *Bacidia biatorina* | Q | |
| *Milospium graphideorum* | Q, Z0600 | |
| *Thelotrema lepadinum* | Q | |
| *Normandina pulchella* | Q | |
| *Pertusaria flavida* | Q | |

**SO084 977**

**Species of Interest**

| | |
|---|---|
| *Bacidia biatorina* | Q |
| *Cliostomum flavidulum* | Q |
| *Cresponea premnea* | Q |
| *Enterographa sorediata* | Q |
| *Lecanographa lyncea* | Q |
| *Milospium graphideorum* | Q, Z0600 |
| *Normandina pulchella* | Q |
| *Pachyphiale carneola* | Q |
| *Thelotrema lepadinum* | Q |

**Other Species**

| | |
|---|---|
| *Normandina pulchella* | Q |
| *Pertusaria flavida* | Q |
| *Roselliniopsis tartaricola* | Q, Z1075 |

| | |
|---|---|
| *Varicellaria hemisphaerica* | Q |

**SO084 976**
Beech area at southern most part of park, not of much interest

**SO084 976**
**Species of Interest**

| | |
|---|---|
| *Bacidia biatorina* | Q |
| *Pertusaria multipuncta* | Fg |
| *Thelotrema lepadinum* | Fg |

# A4 Gregynog 4/5/2018

## *A4.1 Weather*

The weather was overcast, with occasional faint drizzle, tree bark was dry.

## *A4.2 The Warren*

The Warren was looked at briefly with the emphasis on covering areas with old Oak not looked at in 2012. The area of 19th century planting higher in the park was ignored. Some more sheltered 19th century planting in the east of the park was looked at but was of no lichen interest.

**SO087 974**
A scatter of younger post mature and mature Oak

**SO087 974**

| **Species of Interest** | |
|---|---|
| *Anisomeridium ranunculosporum* | Q |
| *Chaenotheca brunneola* | Q |
| *Cliostomum flavidulum* | Q |
| *Thelotrema lepadinum* | Q |
| **Other Species** | |
| *Chaenotheca ferruginea* | LQ |
| *Chrysothrix candelaris* | Q |
| *Chrysothrix flavovirens* | LQ |
| *Fuscidea lightfootii* | Q Tw |
| *Homostegia piggotii* | Sx Tw, Z1015 |
| *Lecanactis abietina* | Q |
| *Lecanora chlarotera* | Q, Q Tw |
| *Melanelixia subaurifera* | Sx Tw |
| *Ochrolechia androgyna* | Q |
| *Parmelia saxatilis* | Sx Tw |
| *Parmelia sulcata* | Sx Tw |
| *Pertusaria amara f. amara* | Q |
| *Pertusaria flavida* | Q |
| *Pertusaria hymenea* | Q |
| *Pertusaria pertusa* | Q |
| *Phlyctis argena* | Sx Tw |
| *Physcia tenella* | Sx Tw |
| *Pyrrhospora quernea* | Q |
| *Ramalina farinacea* | Sx Tw |
| *Roselliniopsis tartaricola* | Q, Z1075 |
| *Usnea wasmuthii* | Q Tw |
| *Varicellaria hemisphaerica* | Q |

**SO087 973**
A scatter of younger post mature and mature Oak

**SO087 973**

| **Species of Interest** | |
|---|---|
| *Anisomeridium ranunculosporum* | Q |
| *Thelotrema lepadinum* | Q |
| **Other Species** | |
| *Chaenotheca ferruginea* | Q |
| *Evernia prunastri* | Q Tw |
| *Hypogymnia physodes* | Q |
| *Hypotrachyna revoluta* s. str. | Q |
| *Melanelixia subaurifera* | Q |
| *Parmelia saxatilis* | Q |

| | |
|---|---|
| *Parmelia sulcata* | Q |
| *Physcia aipolia* | Q |
| *Physcia tenella* | Q |
| *Usnea subfloridana* | Q |

**SO088 974**
A scatter of younger post mature and mature Oak, with some species of high interest here

**GYG185** (SO08850 97417, 191m): post mature Oak in parkland

| | | | |
|---|---|---|---|
| ***Lecanographa lyncea*** | Q | O | Mostly sterile, one fertile bit collected seven septate spores |

Also

| | |
|---|---|
| *Chaenotheca trichialis* | Q |
| *Milospium graphideorum* | Q, Z0600 |
| *Pertusaria flavida* | Q |

**Photo** 2018-05-04-01

Photo 2018-05-04-01: GYG185 centre right

**GYG186** (SO08897 97428, 188m): two post mature Oaks, eastern tree of pair in parkland

| | | | |
|---|---|---|---|
| ***Lecanora sublivescens*** | Q | O | A few scattered small thalli |

Also

| | |
|---|---|
| *Cyphelium sessile* | Q, Z1064 |
| *Thelotrema lepadinum* | Q |
| *Pertusaria coccodes* | Q |
| *Pertusaria flavida* | Q |

Western tree

| | | |
|---|---|---|
| ***Lecanora sublivescens*** | Q | R |

Also

| | |
|---|---|
| *Anisomeridium ranunculosporum* | Q |
| *Thelotrema lepadinum* | Q |

**Photo** 2018-05-04-02

Photo 2018-05-04-02: GYG186 both trees

**SO088 974**
**Species of Interest**

| | |
|---|---|
| *Anisomeridium ranunculosporum* | Q |
| *Chaenotheca trichialis* | Q |
| *Cyphelium sessile* | Q, Z1064 |
| *Lecanographa lyncea* | Q |
| *Lecanora sublivescens* | Q |
| *Milospium graphideorum* | Q, Z0600 |
| *Thelotrema lepadinum* | Q |

**Other Species**

| | |
|---|---|
| *Cladonia coniocraea* | Q |
| *Cliostomum griffithii* | Q |
| *Melanelixia glabratula* | Q |
| *Micarea prasina* s. lat. | Q |
| *Pertusaria coccodes* | Q |
| *Pertusaria flavida* | Q |
| *Phlyctis argena* | Q |
| *Schismatomma decolorans* | Q |
| *Xanthoria parietina* | Ct Tw |

**SO088 975**
In area of older Oaks but lower down, a single tree of high interest found.

**GYG187** (SO08902 97504, 188m): pair of Oaks in parkland, interest on southern tree

| | | |
|---|---|---|
| ***Lecanora sublivescens*** | Q | O |

Also

| | |
|---|---|
| *Thelotrema lepadinum* | Q |

2018-05-04-03

Photo 2018-05-04-03: GYG187 both trees

**SO088 975**
**Species of Interest**

| | |
|---|---|
| *Lecanora sublivescens* | Q |
| *Thelotrema lepadinum* | Q |

**SO089 975**
**Species of Interest**

| | |
|---|---|
| *Chaenotheca trichialis* | Q |
| *Lecanora sublivescens* | Q |
| *Thelotrema lepadinum* | Q |

**SO089 974**
Alder in streams and flushes plus Ash and Sallow in valley in the mid slope area

**SO089 974**
**Species of Interest**

| | |
|---|---|
| *Bacidia biatorina* | Fx, Q |
| *Chaenotheca trichialis* | Q |
| *Thelotrema lepadinum* | Q |

**Other Species**

| | |
|---|---|
| *Arthonia pruinata* | Q |
| *Chaenotheca ferruginea* | Al |
| *Chrysothrix candelaris* | Fx |
| *Cladonia coniocraea* | Al |
| *Cladonia pyxidata* | Fx |
| *Lecanactis abietina* | Al |
| *Lecanora expallens* | Al |
| *Normandina pulchella* | Fx |
| *Ochrolechia androgyna* | Al |
| *Parmelia saxatilis* | Al |
| *Pertusaria hymenea* | Fx |
| *Schismatomma decolorans* | Fx |
| *Stenocybe pullatula* | Al Tw |

**SO089 973**
Higher up slope in valley with Alder

**SO089 973**
**Species of Interest**

| | | |
|---|---|---|
| *Cladonia parasitica* | LQ | |
| *Trapelia corticola* | Al | |
| *Thelotrema lepadinum* | Fx | |

**Other Species**

| | | |
|---|---|---|
| *Anisomeridium polypori* | Fx | |
| *Micarea prasina* s. lat. | Al | |
| *Normandina pulchella* | Fx | |
| *Platismatia glauca* | Q Tw | |

**SO090 973**
Wooded area to east of park with younger Oak and Copper Beech. Nothing of interest on 19th century trees

**SO090 974**
**Species of Interest**

| | | |
|---|---|---|
| *Thelotrema lepadinum* | Q | Only on a post mature pre 19th tree |

**Other Species**

| | | |
|---|---|---|
| *Lecanora chlarotera* | Fg | |
| *Pyrrhospora quernea* | Fg | |
| *Pertusaria pertusa* | Fg | |
| *Phlyctis argena* | Fg | |
| *Parmelia saxatilis* | Fg | |

**SO090 976**
Parkland Ash low down in park, nutrient enriched

**SO090 976**
**Other Species**

| | | |
|---|---|---|
| *Amandinea punctata* | Fx | |
| *Caloplaca obscurella* | Fx | New to site |
| *Chrysothrix candelaris* | Fx | |
| *Cliostomum griffithii* | Fx | |
| *Lecanora expallens* | Fx | |
| *Ochrolechia subviridis* | Fx | |
| *Pertusaria albescens* var. *corallina* | Fx | |
| *Pertusaria flavida* | Fx | |
| *Physconia grisea* | Fx | |
| *Xanthoria parietina* | Fx | |

### *A4.3 Outside of the SSSI*

The garden outside of the SSSI was briefly looked at on the way back to the car.

**SO0866 9762**

| | | |
|---|---|---|
| ***Lopadium disciforme*** | Q | |
| *Thelotrema lepadinum* | Q | |

**SO 08600 97583**
The *Bryoria fuscescens* tree recorded in 2012 was refound and is still OK.

| | | |
|---|---|---|
| ***Bryoria fuscescens*** | Q | F |

# ANNEX 2 Species Lists

**General Key**

**Species**
s. str. = In the strict sense, a recently split up species, recorded in the new tighter definition
s. lat. = In the loose sense, a species previously recorded on a wider definition than now and subsequently split up

**New**
S = New to site in 2018
V = New to vice-county in 2018
W = New to Wales in 2018

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

**SWI**
1 = Species used to calculate the Sub-oceanic Woodland Index (based on the former ESIEC with moderate modifications)

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

**Conservation Status**
CR = Critically Endangered Red Data Book species
VU = Vulnerable Red Data Book species
NT = Near Threatened Red Data Book species
Nb = Notable species (NR, NS or IR species of conservation significance not RDB NT or higher)
NR = Nationally Rare
NS = Nationally Scarce
IR = International Responsibility species
S7 = Section 7 species
BAP = Biodiversity Action Plan Species, not included in S42 or S7, as not known from Wales when the BAP list was transposed into S42
[NR] = Nationally Rare lichenicolous (fungal parasite of a lichen), likely to be very under recorded
[NS] = Nationally Scarce lichenicolous (fungal parasite of a lichen), likely to be very under recorded
(NS) = Nationally Scarce species not regarded as a Notable species, an under recorded or ruderal species of limited conservation significance
NE, L = Lichenicolous species assessed in the British Red List but not the Welsh Red List
NE, W = Lichen species not assessed in the Welsh Red List as not known from Wales in 2010

**Survey Areas**
GW-E = Great Wood, east of the main ride
GW-W = Great Wood, west of the main ride
WCA = Wood Cottage area
TW = The Warren

**Substrates**
Al = Alder, Ap = Sycamore, Co = Hazel, Ct = Hawthorn, Fg = Beech, Fx = Ash, Ix = Holly, Q = Oak, Sx = Sallow, L = Lignum (as prefix) & Tw = twigs & branches.

**Hosts for lichenicolous fungi**: Z0063 = *Arthonia pruinata*, Z0408 = *Cladonia polydactyla*, Z0578 = *Hypocenomyce scalaris*, Z0600 = *Lecanographa lyncea*, Z0987 = *Flavoparmelia caperata*, Z0997 = *Melanelixia glabratula*, Z1015 = *Parmelia saxatilis*, Z1064 = *Pertusaria coccodes*, Z1076 = *Pertusaria hymenea*, Z1075 = *Varicellaria hemisphaerica*, Z1087 = *Pertusaria pertusa*, Z1112 = Physcia adscendens, Z1318 = *Schismatomma cretaceum*

## SPECIES LIST 1: full lichen list for Gregynog SSSI

**Gregynog SSSI, All Surveys**

| Species | 1976–99 | 2005–12 | 2018 | New | SOWI | SWI | URI | Conservation Status | Welsh Red List |
|---|---|---|---|---|---|---|---|---|---|
| *Abrothallus bertianus* | | 1, Z0997 | | | | | | | |
| *Abrothallus microspermus* | | 1, Z0987 | | | | | | | |
| *Abrothallus parmeliarum* | 1, Z1015 | | | | | | | | |
| *Acrocordia gemmata* | | 1 | | | | | | | |
| *Amandinea punctata* | 1 | | 1 | | | | | | |
| *Anisomeridium biforme* | 1 | | | | | | | | |
| *Anisomeridium polypori* | 1 | | 1 | | | | | | |
| *Anisomeridium ranunculosporum* | 1 | 1 | 1 | | 1 | | | | |
| *Arthonia anombrophila* | | 1 | 1 | | | | | Nb (NS/IR) | NT |
| *Arthonia didyma* | 1 | | 1 | | | | | | |
| *Arthonia elegans* | | | 1 | S | | 1 | | | |
| *Arthonia pruinata* | | 1 | 1 | | | | | | |
| *Arthonia punctiformis* | 1 | 1 | 1 | | | | | | |
| *Arthonia radiata* | 1 | 1 | 1 | | | | | | |
| *Arthonia spadicea* | 1 | | 1 | | | | | | |
| *Arthonia vinosa* | 1 | 1 | 1 | | 1 | 1 | | | NT |
| *Arthopyrenia analepta* | 1 | | | | | | | | |
| *Arthopyrenia salicis* | | | 1 | V | | | | | |
| *Bacidia biatorina* | | 1 | 1 | | 1 | | | | NT |
| *Bacidia rubella* | 1 | 1 | 1 | | | | | | |
| *Bacidia viridifarinosa* | | | 1 | V | | | | | |
| *Bactrospora corticola* | 1 | | 1 | | | | | Nb (NS) | NT |
| *Biatora chrysantha* | | | 1 | V | | | | Nb (NS) | NT |
| *Bryoria fuscescens* | 1 | | 1 | | | | | | VU |
| *Bryoria subcana* | 1 | | | | | | | | |
| *Buellia griseovirens* | 1 | | 1 | | | | | | |
| *Buellia pulverea* | 1 | | | | | | | Nb (NS) | |
| *Buellia schaereri* | 1 | | 1 | | | | | | |
| *Calicium adspersum* | 1 | | | | | | | CR (NR/S7) | CR |
| *Calicium glaucellum* | 1 | 1 | 1 | | | | | | |

| Species | 1976–99 | 2005–12 | 2018 | New | SOWI | SWI | URI | Conservation Status | Welsh Red List |
|---|---|---|---|---|---|---|---|---|---|
| *Calicium salicinum* | 1 | 1 | 1 | | | | | | |
| *Calicium viride* | 1 | 1 | 1 | | | | | | |
| *Caloplaca herbidella s. str.* | 1 | 1 | 1 | | | | | VU (NR/S7) | VU |
| *Caloplaca lucifuga* | | 1 | 1 | | | | | VU (NR/S7) | VU |
| *Caloplaca obscurella* | | | 1 | S | | | | | |
| *Caloplaca phlogina* | | 1 | | | | | | Nb (NS) | |
| *Caloplaca ulcerosa* | | 1 | | | | | | | |
| *Candelariella reflexa* | 1 | | | | | | | | |
| *Catinaria atropurpurea* | | 1 | | | 1 | 1 | | | NT |
| *Chaenotheca brachypoda* | 1 | | | | 1 | | | | VU |
| *Chaenotheca brunneola* | 1 | 1 | 1 | | 1 | 1 | | | |
| *Chaenotheca chrysocephala* | | 1 | | | | | | | |
| *Chaenotheca ferruginea* | 1 | 1 | 1 | | | | | | |
| *Chaenotheca furfuracea* | | 1 | 1 | | | | | | |
| *Chaenotheca hispidula* | 1 | | | | 1 | | | Nb (NS) | |
| *Chaenotheca stemonea* | | | 1 | V | 1 | 1 | | Nb (NS) | VU |
| *Chaenotheca trichialis* | 1 | 1 | 1 | | 1 | 1 | | | |
| *Chaenothecopsis nigra* | | 1 | 1 | | | 1 | | Nb (NS) | |
| *Chaenothecopsis pusilla* | | | 1 | S | | | | Nb (NS) | NE, N |
| *Chaenothecopsis retinens* | | | 1 | W | | | | Nb (NR) | NE, N |
| *Chrysothrix candelaris* | 1 | 1 | 1 | | | | | | |
| *Chrysothrix flavovirens* | 1 | | 1 | | | | | | |
| *Cladonia caespiticia* | 1 | | | | | | | | |
| *Cladonia chlorophaea s. lat.* | 1 | | | | | | | | |
| *Cladonia coccifera s. lat.* | 1 | | | | | | | | |
| *Cladonia coniocraea* | 1 | | 1 | | | | | | |
| *Cladonia digitata* | 1 | | 1 | | | | | | |
| *Cladonia fimbriata* | 1 | | | | | | | | |
| *Cladonia floerkeana* | 1 | | 1 | | | | | | |
| *Cladonia ochrochlora* | 1 | | | | | | | | |
| *Cladonia parasitica* | 1 | 1 | 1 | | 1 | 1 | | | |
| *Cladonia polydactyla var. polydactyla* | 1 | 1 | 1 | | | | | | |
| *Cladonia pyxidata* | 1 | 1 | 1 | | | | | | |
| *Cladonia squamosa* | 1 | | | | | | | | |
| *Cliostomum flavidulum* | | 1 | 1 | | | | | Nb (NS) | NE, N |
| *Cliostomum griffithii* | 1 | 1 | 1 | | | | | | |
| *Clypeococcum hypocenomycis* | | 1, Z0578 | | | | | | | |
| *Coenogonium tavaresianum* | | | 1 | W | | | | Nb (NR) | NE, N |
| *Cresponea premnea* | 1 | 1 | 1 | | 1 | | | Nb (IR) | NT |
| *Cyphelium inquinans* | 1 | | | | | | | | |
| *Cyphelium sessile* | | 1 | 1 | | | | | Nb (NS) | NE, L |
| *Cyrtidula quercus* | 1 | | | | | | | | |
| *Dactylospora parasitica* | | 1 | 1 | | | | | [NS] | |
| *Dimerella lutea* | | 1 | 1 | | | | | | NT |
| *Dimerella pineti* | | 1 | 1 | | | | | | |
| *Diploicia canescens* | 1 | | 1 | | | | | | |
| *Diplotomma alboatrum* | 1 | 1 | 1 | | | | | | |
| *Enterographa crassa* | | 1 | 1 | | | | | | |
| *Enterographa sorediata* | | 1 | 1 | | 1 | | | NT (NS/IR/BAP) | NE, N |
| *Evernia prunastri* | 1 | 1 | 1 | | | | | | |
| *Flavoparmelia caperata* | 1 | 1 | 1 | | | 1 | | | |
| *Fuscidea lightfootii* | 1 | | 1 | | | | | | |
| *Graphis elegans* | 1 | | 1 | | | | | | |
| *Graphis scripta* | 1 | | 1 | | | | | | |
| *Haematomma ochroleucum var. porphyrium* | 1 | | | | | | | | |
| *Homostegia piggotii* | | | 1 | V | | | | | |
| *Hypocenomyce caradocensis* | 1 | | | | | | | | |
| *Hypocenomyce scalaris* | 1 | 1 | 1 | | | | | | |
| *Hypogymnia physodes* | 1 | 1 | 1 | | | | | | |
| *Hypogymnia tubulosa* | 1 | 1 | 1 | | | | | | |
| *Hypotrachyna afrorevoluta* | 1 | | 1 | | | | | | DD |
| *Hypotrachyna revoluta s. str.* | | | 1 | S | | | | | |
| *Imshaugia aleurites* | 1 | 1 | 1 | | | | | | |
| *Jamesiella anastomosans* | | 1 | | | | | | | |
| *Laetisaria lichenicola* | | | 1 | W | | | | | |
| *Lecanactis abietina* | 1 | 1 | 1 | | | | | | |
| *Lecanactis subabietinum* | 1 | | | | 1 | | | Nb (IR) | |
| *Lecania naegelii* | 1 | | | | | | | | |
| *Lecanographa lyncea* | 1 | 1 | 1 | | 1 | | | Nb (IR) | EN |
| *Lecanora albellula* | 1 | | | | | | | | |
| *Lecanora aitema* | 1 | | | | | | | | |
| *Lecanora argentata* | 1 | | 1 | | | | | | |
| *Lecanora chlarotera* | 1 | 1 | 1 | | | | | | |
| *Lecanora confusa* | 1 | | | | | | | | |
| *Lecanora conizaeoides f. conizaeoides* | 1 | | | | | | | | |
| *Lecanora expallens* | 1 | 1 | 1 | | | | | | |
| *Lecanora intumescens* | 1 | | | | | | | | |
| *Lecanora jamesii* | 1 | | | | 1 | | | | |
| *Lecanora pulicaris* | 1 | 1 | | | | | | | |
| *Lecanora quercicola* | 1 | 1 | 1 | | 1 | | | VU (NS/IR/S7) | VU |
| *Lecanora sublivescens* | 1 | 1 | 1 | | 1 | | | NT (NS/IR/S7) | NT |
| *Lecidea nylanderi* | | | 1 | W | | | | Nb (NS) | NE, N |
| *Lecidea turgidula* | | 1 | | | | | | | |
| *Lecanora symmicta* | 1 | | | | | | | | |
| *Lecanora varia* | 1 | | | | | | | | |

| Species | 1976–99 | 2005–12 | 2018 | New | SOWI | SWI | URI | Conservation Status | Welsh Red List |
|---|---|---|---|---|---|---|---|---|---|
| *Lecidella elaeochroma f. elaeochroma* | 1 | | 1 | | | | | | |
| *Lepraria ecorticata* | | 1 | 1 | | | | | (NS) | |
| *Lepraria jackii* | 1 | | | | | | | | |
| *Lepraria lobificans* | | 1 | 1 | | | | | | |
| *Lepraria umbricola* | 1 | | | | | | | (NS) | |
| *Leptogium subtile* | 1 | | | | | | | Nb (NS) | |
| *Lichenoconium erodens* | 1, Z0408 | | | | | | | | |
| *Leptogium teretiusculum* | | | 1 | S | 1 | | | | |
| *Lobaria pulmonaria* | 1 | 1 | 1 | | 1 | 1 | | Nb (IR) | VU |
| *Lobaria virens* | 1 | 1 | 1 | | 1 | 1 | | Nb (IR) | EN |
| *Lopadium disciforme* | 1 | 1 | 1 | | | 1 | 1 | | |
| *Loxospora elatina* | | 1 | 1 | | 1 | 1 | 1 | | |
| *Megalaria pulverea* | | 1 | 1 | | | 1 | 1 | | |
| *Melanelixia glabratula* | 1 | 1 | 1 | | | | | | |
| *Melanelixia subaurifera* | 1 | | 1 | | | | | | |
| *Melanohalea exasperata* | 1 | | | | | | | | |
| *Melaspilea ochrothalamia* | | 1 | 1 | | | | | Nb (NS) | |
| *Micarea doliiformis* | | 1 | 1 | | | | 1 | Nb (NS) | |
| *Micarea denigrata* | 1 | | | | | | | | |
| *Micarea melaena* | 1 | | 1 | | | | | | |
| *Micarea peliocarpa* | | | 1 | S | | | | | |
| *Micarea prasina s. lat.* | 1 | | 1 | | | | | | |
| *Micarea viridileprosa* | | | 1 | V | | | | (NS) | |
| *Micarea xanthonica* | | | 1 | V | | | | Nb (NS/IR) | |
| *Microcalicium disseminatum* | | 1 | 1 | | | 1 | | Nb (NR) | VU |
| *Milospium graphideorum* | | 1 | 1 | | | | | Nb (NS) | |
| *Mycoblastus caesius* | 1 | 1 | 1 | | | | 1 | | |
| *Mycoporum antecellens* | | | 1 | S | 1 | | | | |
| *Normandina pulchella* | 1 | | 1 | | | 1 | | | |
| *Ochrolechia androgyna* | 1 | 1 | 1 | | | | | | |
| *Ochrolechia arborea* | | | 1 | S | | | | NT (NR) | NE, N |
| *Ochrolechia microstictoides* | 1 | | 1 | | | | | | |
| *Ochrolechia subviridis* | 1 | 1 | 1 | | | | | | |
| *Opegrapha atra* | 1 | | 1 | | | | | | |
| *Opegrapha fumosa* | | 1 | 1 | | | | | Nb (NS/IR) | VU |
| *Opegrapha herbarum* | 1 | | 1 | | | | | | |
| *Opegrapha ochrocheila* | 1 | | 1 | | | | | | |
| *Opegrapha sorediifera* | | 1 | 1 | | | | | | |
| *Opegrapha varia* | 1 | 1 | 1 | | | | | | |
| *Opegrapha vermicellifera* | 1 | 1 | 1 | | | | | | |
| *Opegrapha vulgata* | 1 | 1 | 1 | | | | | | |
| *Pachyphiale carneola* | 1 | 1 | 1 | | 1 | 1 | | | NT |
| *Parmelia saxatilis* | 1 | 1 | 1 | | | | | | |
| *Parmelia sulcata* | 1 | 1 | 1 | | | | | | |
| *Parmeliopsis ambigua* | 1 | | 1 | | | | | | |
| *Parmeliopsis hyperopta* | 1 | 1 | 1 | | | | | | |
| *Parmotrema perlatum* | 1 | | | | | | | | |
| *Peltigera hymenina* | 1 | | | | | | | | |
| *Peltigera praetextata* | 1 | | 1 | | | | | | |
| *Pertusaria albescens var. albescens* | 1 | | | | | | | | |
| *Pertusaria albescens var. corallina* | 1 | 1 | 1 | | | | | | |
| *Pertusaria amara f. amara* | 1 | 1 | 1 | | | | | | |
| *Pertusaria coccodes* | 1 | 1 | 1 | | | | | | |
| *Pertusaria coronata* | 1 | 1 | | | | | | Nb (NS) | NT |
| *Pertusaria flavida* | 1 | 1 | 1 | | | | | | |
| *Pertusaria hymenea* | 1 | 1 | 1 | | | | | | |
| *Pertusaria leioplaca* | 1 | | 1 | | | | | | |
| *Pertusaria multipuncta* | 1 | 1 | 1 | | 1 | | | | |
| *Pertusaria pertusa* | 1 | 1 | 1 | | | | | | |
| *Pertusaria pupillaris* | | 1 | 1 | | | | | | |
| *Phaeographis dendritica* | 1 | | | | 1 | | | | |
| *Phaeophyscia orbicularis* | 1 | | | | | | | | |
| *Phlyctis argena* | 1 | 1 | 1 | | | | | | |
| *Physcia adscendens* | 1 | | 1 | | | | | | |
| *Physcia aipolia* | 1 | 1 | 1 | | | | | | |
| *Physcia tenella* | 1 | | 1 | | | | | | |
| *Physconia enteroxantha* | 1 | | | | | | | | |
| *Physconia grisea* | 1 | | 1 | | | | | | |
| *Placynthiella dasaea* | 1 | 1 | | | | | | | |
| *Placynthiella icmalea* | 1 | | 1 | | | | | | |
| *Platismatia glauca* | 1 | 1 | 1 | | | | | | |
| *Porina aenea* | 1 | 1 | | | | | | | |
| *Porina byssophila* | | | 1 | V | | | | Nb (NR) | VU |
| *Porina coralloidea* | | 1 | 1 | | 1 | | | Nb (NS/IR) | NT |
| *Porina rosei* | | 1 | 1 | | 1 | | | NT (NS/IR) | NT |
| *Pseudevernia furfuracea var. furfuracea* | 1 | | | | | | | | |
| *Punctelia subrudecta s. str.* | 1 | | 1 | | | | | | |
| *Pyrrhospora quernea* | 1 | 1 | 1 | | | | | | |
| *Ramalina canariensis* | | | 1 | | | | | | |
| *Ramalina farinacea* | 1 | | 1 | | | | | | |
| *Ramonia chrysophaea* | | | 1 | V | | | | NT (NS/IR/S7) | NT |
| *Rhaphidicyrtis trichosporella* | | | 1 | V | | | | Nb (NS) | NT |
| *Rinodina roboris var. roboris* | | | 1 | S | | | | Nb (IR) | |
| *Roselliniopsis tartaricola* | | | 1 | W | | | | [NS] | |
| *Schismatomma cretaceum* | 1 | 1 | 1 | | | | | Nb (IR) | VU |

| Species | 1976–99 | 2005–12 | 2018 | New | SOWI | SWI | URI | Conservation Status | Welsh Red List |
|---|---|---|---|---|---|---|---|---|---|
| *Schismatomma decolorans* | 1 | | 1 | | | | | | |
| *Schismatomma niveum* | 1 | 1 | 1 | | 1 | | | Nb (IR) | VU |
| *Schismatomma quercicola* | | | 1 | V | 1 | | 1 | Nb (IR) | NT |
| *Schismatomma umbrinum* | | | 1 | S | | | | Nb (NS/IR) | |
| *Scoliciosporum chlorococcum* | 1 | | | | | | | | |
| *Sphaerophorus globosus* | 1 | 1 | 1 | | | | | | |
| *Sphinctrina turbinata* | 1 | 1 | 1 | | | | | Nb (NS) | NE, L |
| *Stenocybe pullatula* | | | 1 | S | | | | | |
| *Stenocybe septata* | | | 1 | S | 1 | | | Nb (IR) | |
| *Sticta limbata* | 1 | | | | 1 | 1 | | Nb (IR) | NT |
| *Strigula taylorii* | | | 1 | S | | | | Nb (NS/IR) | |
| *Thelotrema lepadinum* | 1 | 1 | 1 | | 1 | 1 | | | NT |
| *Trapelia corticola* | | | 1 | S | | | 1 | | |
| *Trapeliopsis flexuosa* | 1 | 1 | 1 | | | | | | |
| *Trapeliopsis pseudogranulosa* | 1 | | 1 | | | | | | |
| *Tremella pertusariae* | | | 1 | W | | | | [NR] | |
| *Usnea cornuta* | 1 | | 1 | | | | | | |
| *Usnea florida* | 1 | 1 | 1 | | 1 | | | NT (S7) | |
| *Usnea rubicunda* | 1 | | 1 | | | | | | |
| *Usnea subfloridana* | 1 | 1 | 1 | | | | | | |
| *Usnea wasmuthii* | 1 | | 1 | | | | | (NS) | |
| *Varicellaria hemisphaerica* | 1 | 1 | 1 | | | 1 | | | |
| *Violella fucata* | 1 | | 1 | | | | | | |
| *Vouauxiella lichenicola* | | | 1 | V | | | | | |
| *Xanthoria parietina* | 1 | 1 | 1 | | | | | | |
| *Xanthoria polycarpa* | 1 | | | | | | | | |
| *Xerotrema quercicola* | | 1 | 1 | | | | | NT (NR/IR) | |
| *Xylographa vitiligo* | 1 | | | | | | | | |

| Gregynog Biodiversity Measures | 1976–99 | 2005–12 | 1976–2012 | 2018 | Total |
|---|---|---|---|---|---|
| Total taxa | 158 | 107 | 196 | 168 | 228 |
| SOWI | 22 | 22 | 28 | 26 | 33 |
| SWI | 14 | 17 | 19 | 20 | 22 |
| URI | 2 | 5 | 5 | 7 | 7 |
| Pinhead Index | 9 | 10 | 13 | 12 | 16 |
| Critically Endangered | 1 | 0 | 1 | 0 | 1 |
| Vulnerable | 2 | 3 | 3 | 3 | 3 |
| Near Threatened | 2 | 5 | 5 | 7 | 7 |
| Notable | 14 | 19 | 23 | 32 | 39 |
| International Responsibility Species | 10 | 14 | 16 | 21 | 23 |
| S7/BAP | 5 | 6 | 7 | 7 | 8 |
| National Rare | 2 | 4 | 5 | 9 | 10 |
| National Scarce | 9 | 18 | 23 | 29 | 34 |
| TNTN Score | 26 | 41 | 47 | 58 | 65 |

**Redeterminations**
*Abrothallus parmeliarum* (2011) = *Abrothallus microspermus* (as recorded on *Flavoparmelia caperata*)
*Ochrolechia turneri* s. lat. = *Ochrolechia microstictoides* (the only member of the aggregate recorded in 2018)
*Punctelia subrudecta* s. lat. = *Punctelia subrudecta* s. str. (the only member of the aggregate recorded in 2018)
*Trapeliopsis granulosa* = *Trapeliopsis flexuosa* (no later records of *Trapeliopsis granulosa* indicates use in aggregate sense in early records)
*Placynthiella uliginosa* = *Placynthiella icmalea* (The correct conversion of the synonym used in 1976)

**Possible Errors**
*Bryobilimbia hypnorum* = Recorded in November 1986, by Ray Woods this mainly terricolous calcicole is very unlikely but it very likely to have been been *Bryobilimbia sanguineoatra* (*Lecidea sanguineoatra*) Nb (NS) and URI indicator species. Not seen since.

*Cladonia macilenta* = Only recorded before 2000, older records are most likely to be small *Cladonia polydactyla* var. *polydactyla* specimens without cups. True *Cladonia macilenta* (no cup & fine farinose soredia) may be present but has not been confirmed

*Lecanographa amylacea* VU (NS/IR/S7) SOWI sp. Only recorded once in 1981 by Ray Woods and Francis Rose. This species has been much mistaken for sterile *Lecanographa lyncea*, further evidence would be required before accepting this record from a site with abundant *Lecanographa lyncea*.

*Lepraria membranacea* URI sp = Only recorded in 1976 by Peter James and the BLS Excursion. Very unlikely to be correct as not seen since, probably either *Lepraria vouauxii* or well developed *Lepraria lobificans*.

**Saxicolous and Terricolous Species**
Saxicolous and terricolous species recorded previously.

1976 by Peter James and the BLS Excursion:
*Aspicilia calcarea*
*Bacidia chloroticula*
*Baeomyces rufus*
*Candelariella aurella* f. *aurella*
*Candelariella vitellina* f. *vitellina*
*Cladonia furcata*
*Collema crispum* var. *crispum*
*Lecanora campestris* subsp. *campestris*
*Lecanora dispersa*
*Lecanora intricata*
*Lecanora muralis*
*Lecidea lithophila*
*Melanelixia fuliginosa*
*Physcia caesia*
*Porina chlorotica* f. *chlorotica*
*Porpidia cinereoatra*
*Porpidia macrocarpa* f. *macrocarpa*
*Porpidia tuberculosa*
*Protoblastenia rupestris*
*Rhizocarpon reductum*

*Scoliciosporum umbrinum*
*Trapelia coarctata*
*Verrucaria nigrescens*

1986 Ray G Woods:
*Lecidella scabra*
*Porpidia crustulata*

**Species with no Localised Records**
In addition the SSSI citation mentioned two species but which have no localised records in the BLS database for Gregynog:
*Phyllopsora rosei* Nb (NS/IR) (W-NT), SOWI sp and *Sticta limbata* Nb (IR) (W-NT), SOWI sp. The latter is mentioned in Fletcher et al (1982) so is added. *Phyllopsora rosei* may have been an error from *Megalaria pulverea* so is not included.

**Orange (1996), Species Recorded Outside of the SSSI near The Warren**
Recorded in other areas of the SSSI:
*Cresponea premnea* (W-NT), SOWI sp
*Enterographa crassa*
*Lecanora chlarotera*
*Pertusaria multipuncta* SOWI sp
*Ramalina canariensis*
Not recorded in other areas of the SSSI:
*Tuckermannopsis chlorophylla* (W-NT)

## SPECIES LIST 2: lichens recorded in 2018 survey

**Gregynog SSSI, 2018 Survey**

| Species | GW-E | GW-W | WC | TW | SOWI | SWI | URI | Conservation Status | Welsh Red List |
|---|---|---|---|---|---|---|---|---|---|
| *Amandinea punctata* | | Fx, Q | | Fx | | | | | |
| *Anisomeridium polypori* | | | | Fx | | | | | |
| *Anisomeridium ranunculosporum* | Q, Fx | Q, Fx | Q | Q | 1 | | | | |
| *Arthonia anombrophila* | | Q | | | | | | Nb (NS/IR) | NT |
| *Arthonia didyma* | Co | Q Tw | | | | | | | |
| *Arthonia elegans* | Co | | | | | 1 | | | |
| *Arthonia pruinata* | Q | Q, Fx | Q | Q | | | | | |
| *Arthonia punctiformis* | Al Tw | | | | | | | | |
| *Arthonia radiata* | Al, Co | Q Tw | Q Tw | | | | | | |
| *Arthonia spadicea* | Al, Q | Ix | | | | | | | |
| *Arthonia vinosa* | Q | Q | Q | | 1 | 1 | | | NT |
| *Arthopyrenia salicis* | Co | | | | | | | | |
| *Bacidia biatorina* | Q, Fx | Q, Fx | Q, Fx | Fx, Q | 1 | | | | NT |
| *Bacidia rubella* | | Fx | | | | | | | |
| *Bacidia viridifarinosa* | Q | Ap | | | | | | | |
| *Bactrospora corticola* | | Q | | | | | | Nb (NS) | NT |
| *Biatora chrysantha* | | Q | | | | | | Nb (NS) | NT |
| *Bryoria fuscescens* | | LQ | | | | | | | VU |
| *Buellia griseovirens* | | LQ | | | | | | | |
| *Buellia schaereri* | | LQ | | | | | | | |
| *Calicium glaucellum* | | LQ | LQ | | | | | | |
| *Calicium salicinum* | Q | Fx, LFx | LQ, Q | | | | | | |
| *Calicium viride* | Q | | | | | | | | |
| *Caloplaca herbidella s. str.* | | Fx | | | | | | VU (NR/S7) | VU |
| *Caloplaca lucifuga* | Q | Q | | | | | | VU (NR/S7) | VU |
| *Caloplaca obscurella* | | | | Fx | | | | | |
| *Chaenotheca brunneola* | LQ | LQ | | Q | 1 | 1 | | | |
| *Chaenotheca ferruginea* | Al | | Q | LQ, Q, Al | | | | | |
| *Chaenotheca furfuracea* | Q | Q | | | | | | | |
| *Chaenotheca stemonea* | | | LAl, Q | | 1 | 1 | | Nb (NS) | VU |
| *Chaenotheca trichialis* | Q | Q, LQ | Bt, Q | Q | 1 | 1 | | | |
| *Chaenothecopsis nigra* | LQ | | LQ | | | 1 | | Nb (NS) | |
| *Chaenothecopsis pusilla* | | LQ | | | | | | Nb (NS) | NE, N |
| *Chaenothecopsis retinens* | Q, Z1318 O | | | | | | | Nb (NR) | NE, N |
| *Chrysothrix candelaris* | Q, Al, Ap | | | Q, Fx | | | | | |
| *Chrysothrix flavovirens* | LQ | LQ | | LQ | | | | | |
| *Cladonia coniocraea* | Al | | Al | Q, Al | | | | | |
| *Cladonia digitata* | | LQ | | | | | | | |
| *Cladonia floerkeana* | | LQ | | | | | | | |
| *Cladonia parasitica* | LQ | LQ | | LQ | 1 | 1 | | | |
| *Cladonia polydactyla var. polydactyla* | LQ | | LQ | | | | | | |
| *Cladonia pyxidata* | | Q | | Fx | | | | | |
| *Cliostomum flavidulum* | Q | Q | Q | Q | | | | Nb (NS) | NE, N |
| *Cliostomum griffithii* | Q | Fx | | Q, Fx | | | | | |
| *Coenogonium tavaresianum* | Q | | Q | | | | | Nb (NR) | NE, N |
| *Cresponea premnea* | Q, Fx, Al | Q, Ap, Fx | Q | | 1 | | | Nb (IR) | NT |
| *Cyphelium sessile* | | Q, Z1064 | Q, Z1064 | Q, Z1064 | | | | Nb (NS) | NE, L |
| *Dactylospora parasitica* | | Q, Z1076 | | | | | | [NS] | |
| *Dimerella lutea* | Q | | | | | | | | NT |
| *Dimerella pineti* | Q | | | | | | | | |
| *Diploicia canescens* | | | Q | | | | | | |
| *Diplotomma alboatrum* | | Fx | | | | | | | |
| *Enterographa crassa* | | Q | | | | | | | |
| *Enterographa sorediata* | Q | Q, Fx | | | 1 | | | NT (NS/IR/BAP) | NE, N |
| *Evernia prunastri* | LQ, Ct | | Q, Q Tw, LQ | Q Tw | | | | | |
| *Flavoparmelia caperata* | Q | | | | | 1 | | | |
| *Fuscidea lightfootii* | Ct | | Q Tw | Q Tw | | | | | |
| *Graphis elegans* | Ct | | | | | | | | |
| *Graphis scripta* | Co | | | | | | | | |
| *Homostegia piggotii* | | | Q Tw, Z1015 | Sx Tw, Z1015 | | | | | |
| *Hypocenomyce scalaris* | LQ | Q | | | | | | | |
| *Hypogymnia physodes* | LQ, Ct | LQ | Q Tw, LQ | Q | | | | | |
| *Hypogymnia tubulosa* | | | Q Tw | | | | | | |
| *Hypotrachyna afrorevoluta* | | | Q Tw | | | | | | DD |
| *Hypotrachyna revoluta s. str.* | | | Q Tw | Q | | | | | |
| *Imshaugia aleurites* | LQ | LQ | LQ | | | | | | |
| *Laetisaria lichenicola* | | | Q Tw, Z1112 | | | | | | |
| *Lecanactis abietina* | Q, Al, Ct, Ap,m Ix, Fx | Ix | Al, Q | Q, Al | | | | | |
| *Lecanographa lyncea* | Q | Q, Fx | Q | Q | 1 | | | Nb (IR) | EN |
| *Lecanora argentata* | Ap, Q | | | | | | | | |
| *Lecanora chlarotera* | Ap | Fx | | Q, Q Tw, Fg | | | | | |
| *Lecanora expallens* | Q | LQ, Q, Fx | LQ | Al, Fx | | | | | |
| *Lecanora quercicola* | Q | Q | | | 1 | | | VU (NS/IR/S7) | VU |
| *Lecanora sublivescens* | Q, Fx | Q, Fx | Q | Q | 1 | | | NT (NS/IR/S7) | NT |
| *Lecidea nylanderi* | Q | LQ, Q | Q | | | | | Nb (NS) | NE, N |
| *Lecidella elaeochroma f. elaeochroma* | Q | Q | | | | | | | |
| *Lepraria ecorticata* | Q | Q | | | | | | (NS) | |
| *Lepraria lobificans* | Co | | | | | | | | |
| *Leptogium teretiusculum* | | Fx | | | 1 | | | | |
| *Lobaria pulmonaria* | Q | | | | 1 | 1 | | Nb (IR) | VU |
| *Lobaria virens* | Q | | | | 1 | 1 | | Nb (IR) | EN |
| *Lopadium disciforme* | Q, Fx | Q | Q | | | 1 | 1 | | |
| *Loxospora elatina* | Q, LQ. Al | Q, LQ | Q | | 1 | 1 | 1 | | |
| *Megalaria pulverea* | Fx, Al, Q | Q | | | | 1 | 1 | | |
| *Melanelixia glabratula* | Q | | | Q | | | | | |

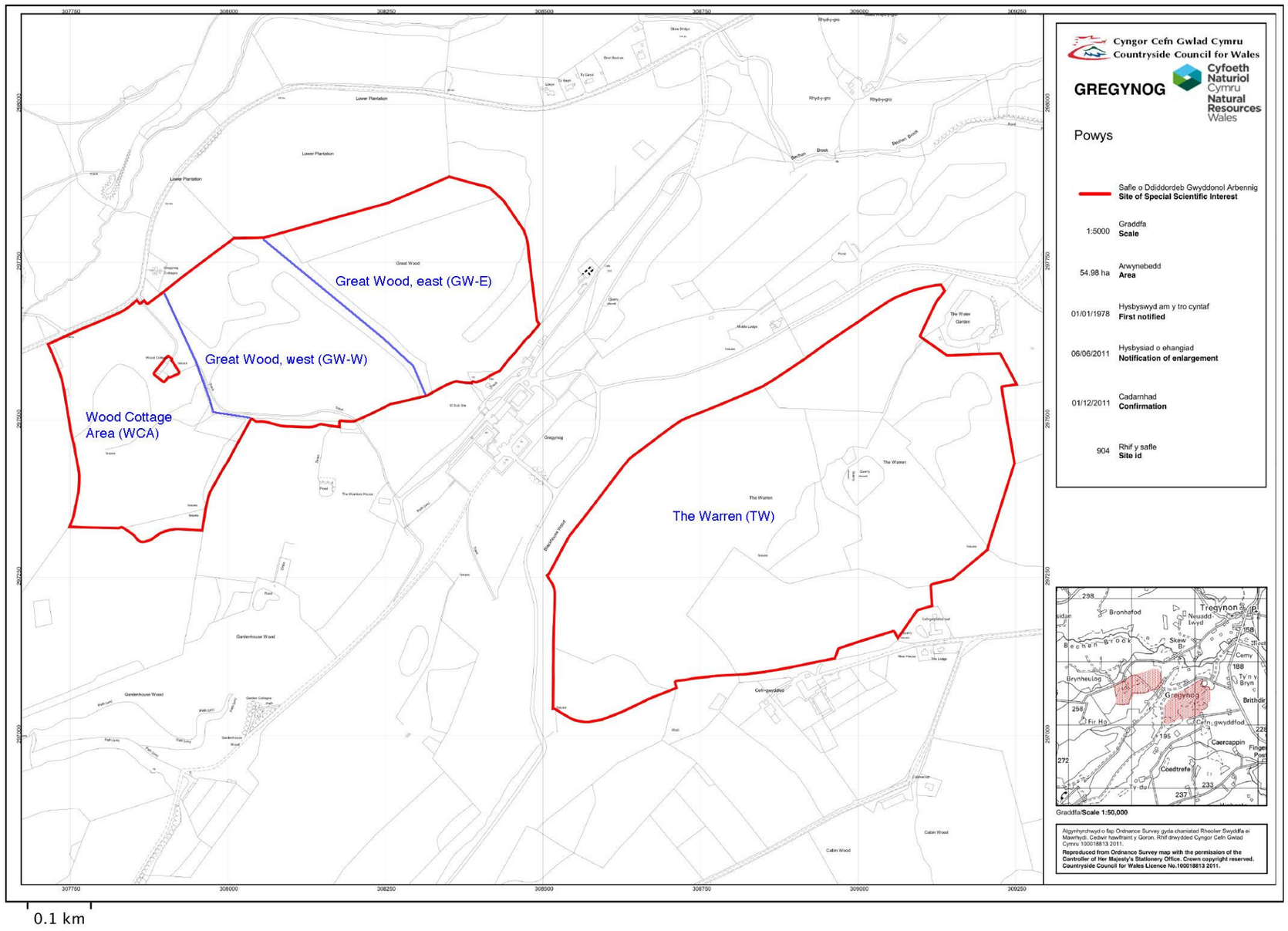
| Species | GW-E | GW-W | WC | TW | SOWI | SWI | URI | Conservation Status | Welsh Red List |
|---|---|---|---|---|---|---|---|---|---|
| *Melanelixia subaurifera* | | | Q Tw | Sx Tw, Q | | | | | |
| *Melaspilea ochrothalamia* | Q | | Q | | | | | Nb (NS) | |
| *Micarea doliiformis* | Q | | | | | | 1 | Nb (NS) | |
| *Micarea melaena* | | LQ | | | | | | | |
| *Micarea peliocarpa* | | LQ | | | | | | | |
| *Micarea prasina s. lat.* | Al | | | Q, Al | | | | | |
| *Micarea viridileprosa* | Q | | | | | | | (NS) | |
| *Micarea xanthonica* | Q | Q | | | | | | Nb (NS/IR) | |
| *Microcalicium disseminatum* | Q, LQ | Q, LQ | LQ | | | 1 | | Nb (NR) | VU |
| *Milospium graphideorum* | Q, Z0600 | Q, Fx, Z0063, Z0600 | Q, Z0600 | Q, Z0600 | | | | Nb (NS) | |
| *Mycoblastus caesius* | | Q | | | | | 1 | | |
| *Mycoporum antecellens* | Al Tw | | | | 1 | | | | |
| *Normandina pulchella* | Fx, Q | | | Fx | | 1 | | | |
| *Ochrolechia androgyna* | LQ, Q | Q | Q | Q, Al | | | | | |
| *Ochrolechia arborea* | | LQ | | | | | | NT (NR) | NE, N |
| *Ochrolechia microstictoides* | LQ | | LQ | | | | | | |
| *Ochrolechia subviridis* | | Q | | Fx | | | | | |
| *Opegrapha atra* | Ix | | | | | | | | |
| *Opegrapha fumosa* | Q | | | | | | | Nb (NS/IR) | VU |
| *Opegrapha herbarum* | Co | | | | | | | | |
| *Opegrapha ochrocheila* | Al | | | | | | | | |
| *Opegrapha sorediifera* | | Q | | | | | | | |
| *Opegrapha varia* | Al, Ap | | | | | | | | |
| *Opegrapha vermicellifera* | Ap | | | | | | | | |
| *Opegrapha vulgata* | Co, Ap, Ix | | | | | | | | |
| *Pachyphiale carneola* | Q | Q | Q | | 1 | 1 | | | NT |
| *Parmelia saxatilis* | LQ, Ct, Q | | Q Tw | Sx Tw, Q, Al, Fg | | | | | |
| *Parmelia sulcata* | | | Q Tw | Sx Tw, Q | | | | | |
| *Parmeliopsis ambigua* | | LQ | LQ | | | | | | |
| *Parmeliopsis hyperopta* | Q | Q | LQ | | | | | | |
| *Peltigera praetextata* | Fx | | | | | | | | |
| *Pertusaria albescens var. corallina* | Q | Fx | | Fx | | | | | |
| *Pertusaria amara f. amara* | Ct, Fx | | Q Tw | Q | | | | | |
| *Pertusaria coccodes* | LQ | Q | Q | Q | | | | | |
| *Pertusaria flavida* | Q, Fx | Q, Fx | Q, Fx | Q, Fx | | | | | |
| *Pertusaria hymenea* | Fx | Fx, Q, Co | | Q, Fx | | | | | |
| *Pertusaria leioplaca* | | Q Tw | | | | | | | |
| *Pertusaria multipuncta* | Co, Fx, Fg | | | | 1 | | | | |
| *Pertusaria pertusa* | Q, Al, Ct | Q | | Q, Fg | | | | | |
| *Pertusaria pupillaris* | Q | | | | | | | | |
| *Phlyctis argena* | Q, Fx | Fx, Q | | Sx Tw, Q, Fg | | | | | |
| *Physcia adscendens* | | | Q Tw | | | | | | |
| *Physcia aipolia* | | | Q Tw | Q | | | | | |
| *Physcia tenella* | | | Q Tw | Sx Tw, Q | | | | | |
| *Physconia grisea* | | | | Fx | | | | | |
| *Placynthiella icmalea* | | | LQ | | | | | | |
| *Platismatia glauca* | LQ | LQ | Q Tw | Q Tw | | | | | |
| *Porina byssophila* | Co, Fx | | | | | | | Nb (NR) | VU |
| *Porina coralloidea* | Q | | | | 1 | | | Nb (NS/IR) | NT |
| *Porina rosei* | Q | | | | 1 | | | NT (NS/IR) | NT |
| *Punctelia subrudecta s. str.* | | | Q Tw | | | | | | |
| *Pyrrhospora quernea* | Q, Al, Fx, Co | | Al | Q, Fg | | | | | |
| *Ramalina canariensis* | | Q | | | | | | | |
| *Ramalina farinacea* | Q | | Q Tw | Sx Tw | | | | | |
| *Ramonia chrysophaea* | | | Q | | | | | NT (NS/IR/S7) | NT |
| *Rhaphidicyrtis trichosporella* | Q | Q | | | | | | Nb (NS) | NT |
| *Rinodina roboris var. roboris* | Q | | | | | | | Nb (IR) | |
| *Roselliniopsis tartaricola* | Q, Z1075 | | | Q, Z1075 | | | | [NS] | |
| *Schismatomma cretaceum* | Fx, Q | Fx, Ap, Q | Q | | | | | Nb (IR) | VU |
| *Schismatomma decolorans* | Q, Fx | Fx | Q | Q, Fx | | | | | |
| *Schismatomma niveum* | Q, Fx | Q | | | 1 | | | Nb (IR) | VU |
| *Schismatomma quercicola* | | | Q | | 1 | | 1 | Nb (IR) | NT |
| *Schismatomma umbrinum* | | Q | Q | | | | | Nb (NS/IR) | |
| *Sphaerophorus globosus* | Q | Q | | | | | | | |
| *Sphinctrina turbinata* | Q Z1087 | Q, Z1087 | | | | | | Nb (NS) | NE, L |
| *Stenocybe pullatula* | Al Tw | | | Al Tw | | | | | |
| *Stenocybe septata* | Ix | | | | 1 | | | Nb (IR) | |
| *Strigula taylorii* | Fx | | | | | | | Nb (NS/IR) | |
| *Thelotrema lepadinum* | Ix, Q, Fx, Co, Al, Fg | Q, Ap, Al, Co, Fx | Al, Q, Ix | Q, Fx | 1 | 1 | | | NT |
| *Trapelia corticola* | Al, Q | | | Al | | | 1 | | |
| *Trapeliopsis flexuosa* | LQ | LQ | LQ | | | | | | |
| *Trapeliopsis pseudogranulosa* | | LQ | | | | | | | |
| *Tremella pertusariae* | | Co, Z1043 | | | | | | [NR] | |
| *Usnea cornuta* | Q | Q | | | | | | | |
| *Usnea florida* | | | Q Tw | | 1 | | | NT (S7) | |
| *Usnea rubicunda* | Q | | | | | | | | |
| *Usnea subfloridana* | LQ | | Q Tw | Q | | | | | |
| *Usnea wasmuthii* | | | Q Tw | Q Tw | | | | (NS) | |
| *Varicellaria hemisphaerica* | Q | | | Q | | 1 | | | |
| *Violella fucata* | LQ | LQ | | | | | | | |
| *Vouauxiella lichenicola* | | Fx, Z0639 | | | | | | | |
| *Xanthoria parietina* | Fx Tw | Co Tw | Fx Tw, Q Tw | Ct Tw, Fx | | | | | |
| *Xerotrema quercicola* | LQ | LQ | | | | | | NT (NR/IR) | |

| Gregynog 2018 Biodiversity Measures | GW-E | GW-W | WC | TW | 2018 |
|---|---|---|---|---|---|
| Total taxa | 115 | 91 | 67 | 58 | 168 |
| SOWI | 22 | 16 | 13 | 8 | 26 |
| SWI | 18 | 12 | 10 | 6 | 19 |
| URI | 5 | 4 | 3 | 1 | 7 |
| Pinhead Index | 9 | 7 | 7 | 3 | 12 |
| Critically Endangered | 0 | 0 | 0 | 0 | 0 |

| | | | | | |
|---|---|---|---|---|---|
| Vulnerable | 2 | 3 | 0 | 0 | 3 |
| Near Threatened | 4 | 4 | 3 | 1 | 7 |
| Notable | 24 | 17 | 14 | 4 | 32 |
| International Responsibility Species | 17 | 11 | 7 | 2 | 21 |
| S7/BAP | 4 | 5 | 3 | 1 | 7 |
| National Rare | 6 | 6 | 2 | 0 | 9 |
| National Scarce | 19 | 17 | 11 | 6 | 29 |
| TNTN Score | 40 | 37 | 20 | 6 | 58 |

# ANNEX 3 Maps

## B1 General Maps




Blue = Survey Areas

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

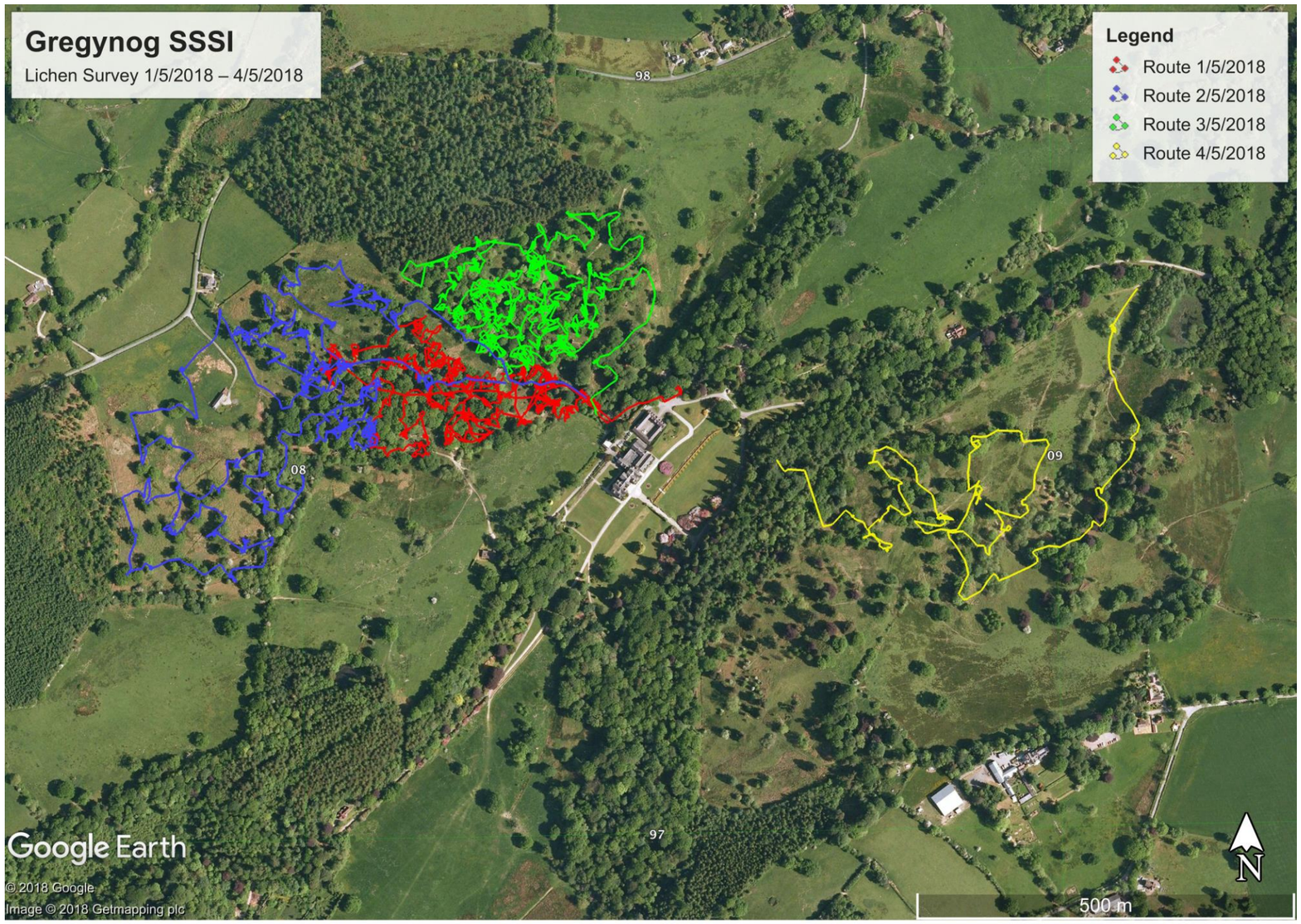
**Gregynog SSSI Lichen Survey**

**Location** **Map 1**

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

## Gregynog SSSI Lichen Survey

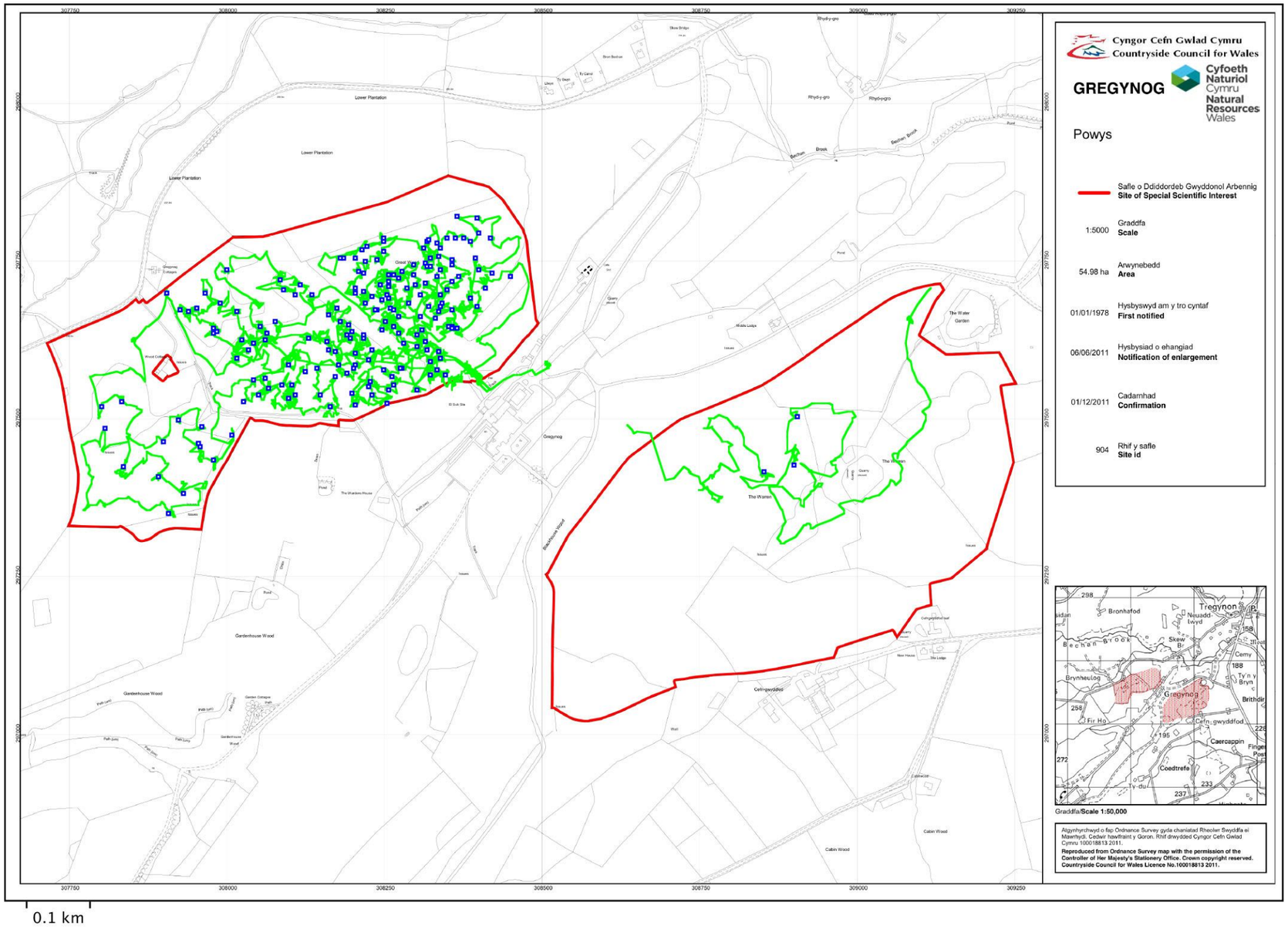
**Survey Route** **Map 2**



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

# Gregynog SSSI Lichen Survey

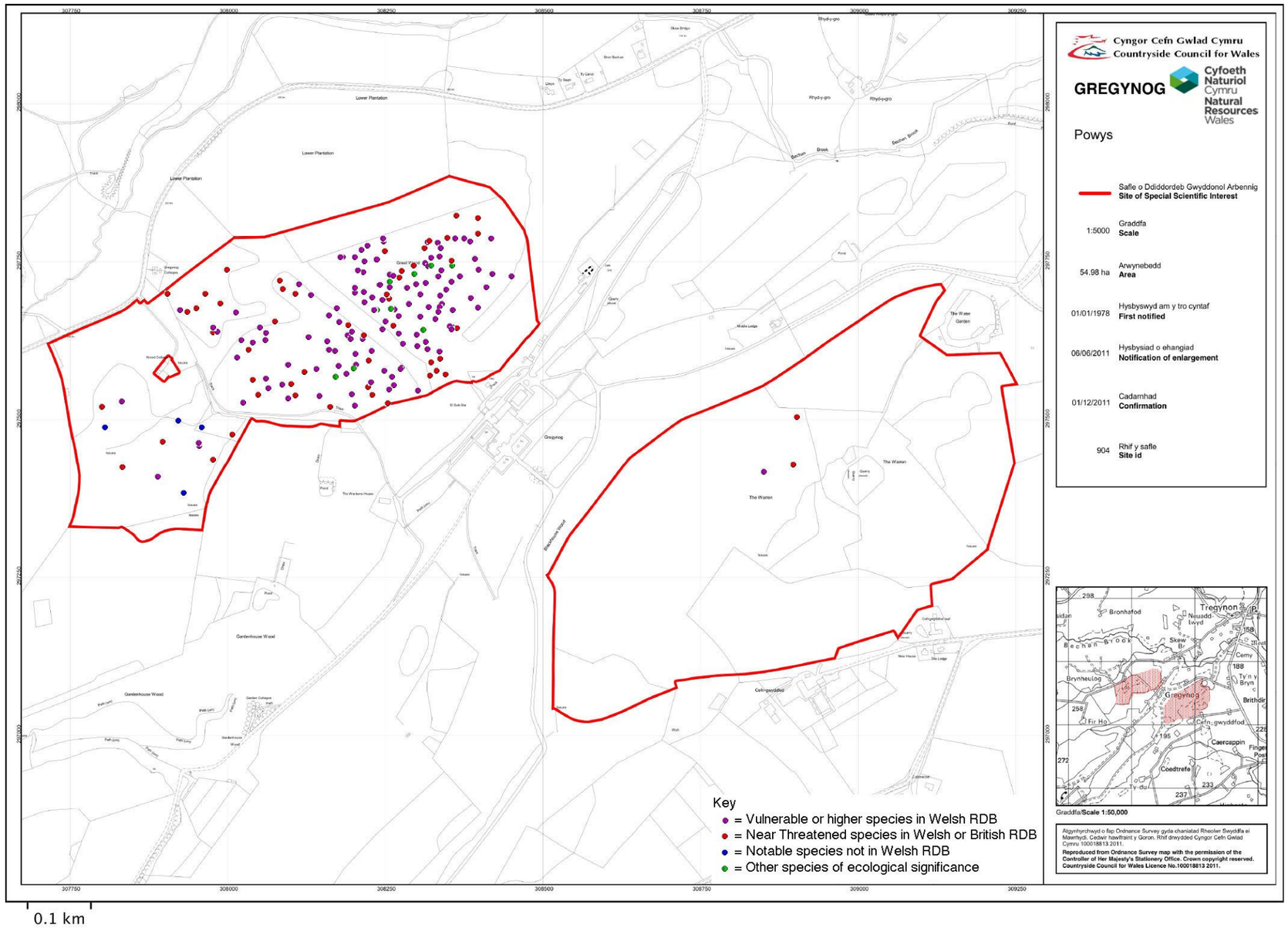
## Survey Route & Waypoints — Map 3



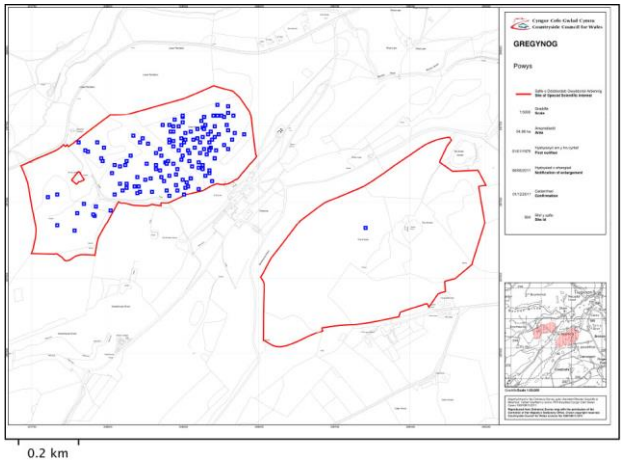
**Botanical Survey and Assessment**
**3 Green Close, Woodlands, SO40 7HU**
**023 8029 3671**

# Gregynog SSSI Lichen Survey

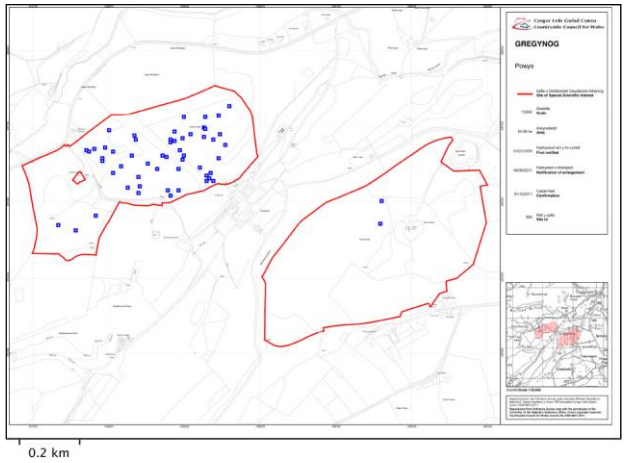
## Conservation Value — Map 4



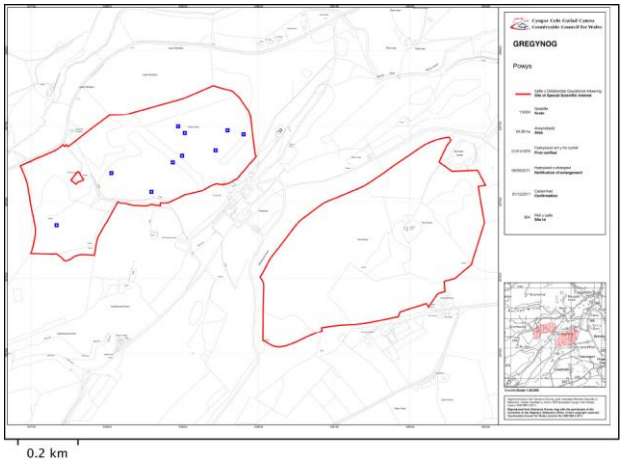
## B2 Community Maps



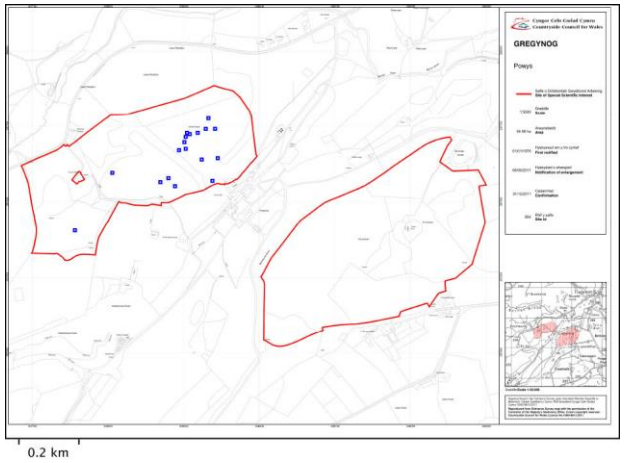

Map 5 Ancient Dry Bark Assemblage



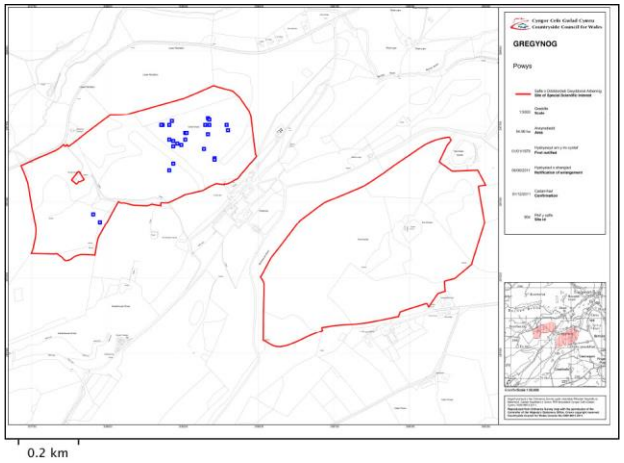

Map 6 Mesic Bark Assemblage



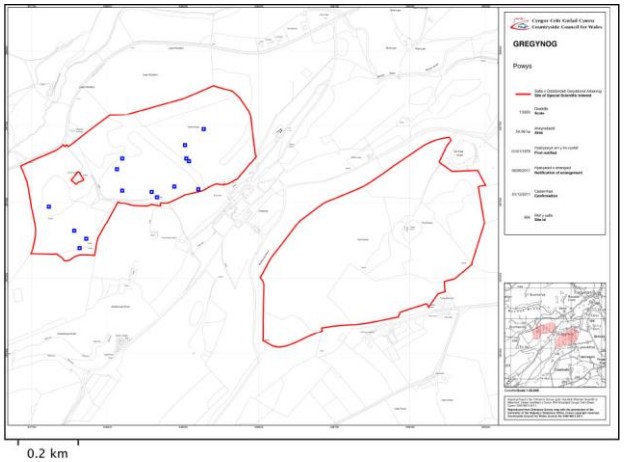

Map 7 Base Rich Bark Woodland Assemblage




Map 8 Base Rich/Acid Bark Transition

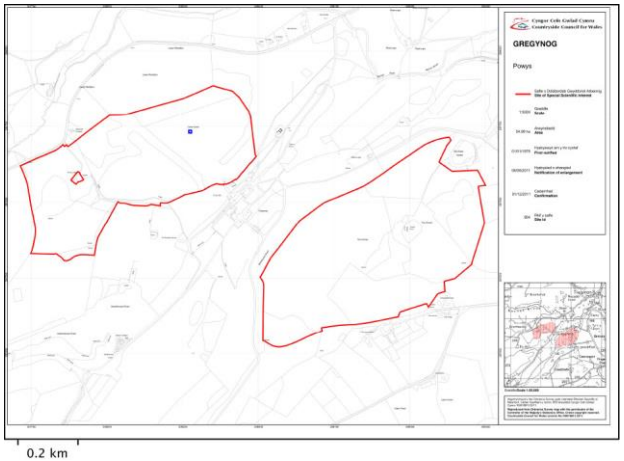



Map 9 Acid Bark Woodland Assemblage

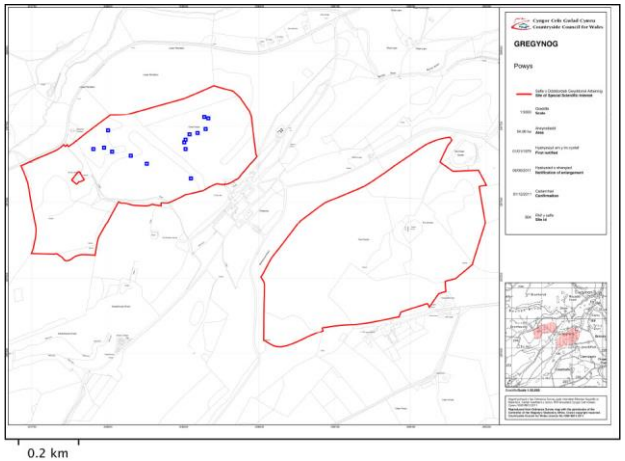



Map 10 Lignum Assemblage

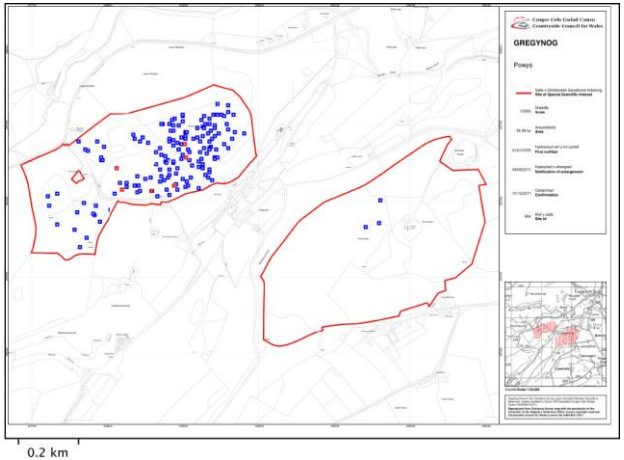
## B3 Habitat Maps



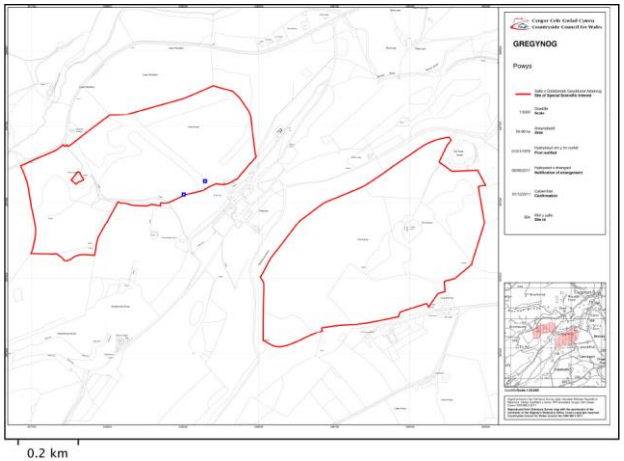

Map 11 Alder with systematically recorded spp




Map 12 Ash with systematically recorded spp

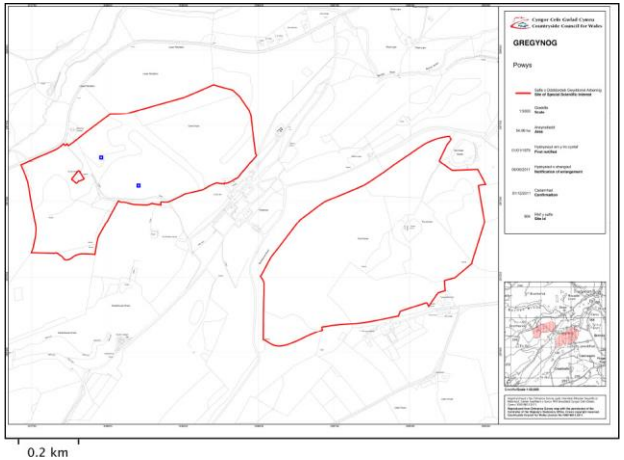



Map 13 Oak with systematically recorded spp
Blue = live tree & red = dead tree

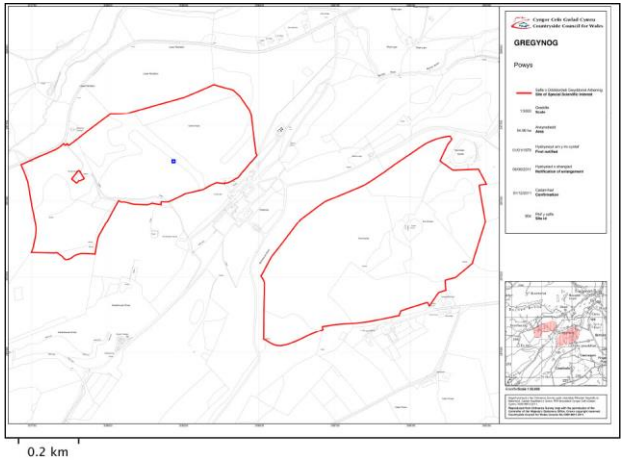



Map 14 Sycamore with systematically recorded spp

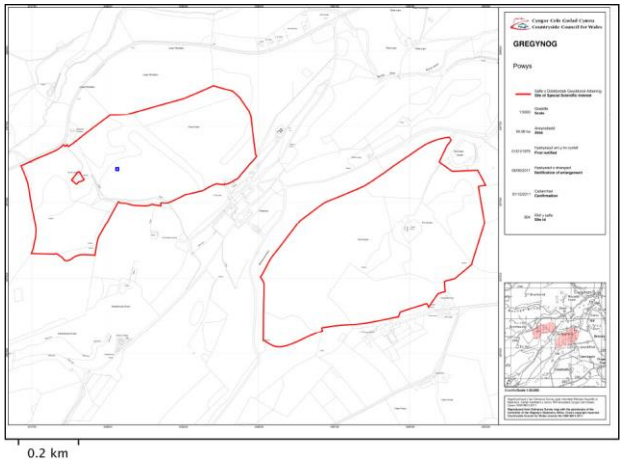
## B4 Species Maps



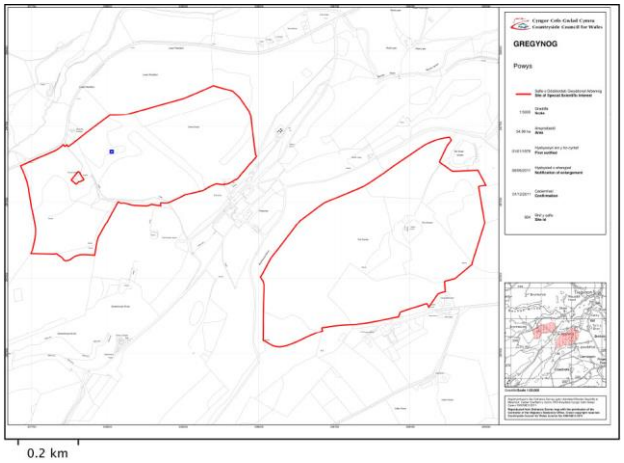

Map 15 *Arthonia anombrophila*



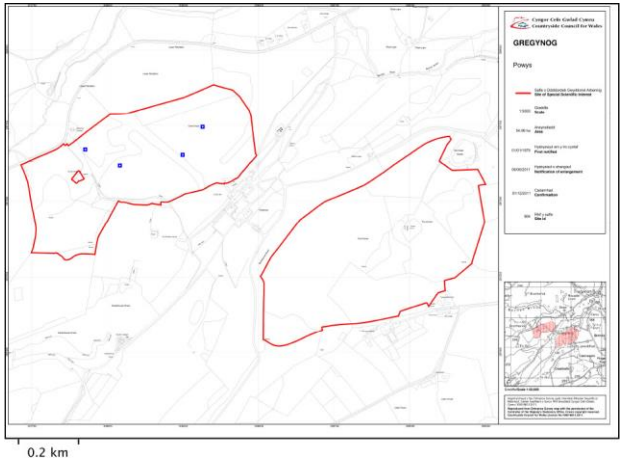

Map 16 *Biatora chrysantha*



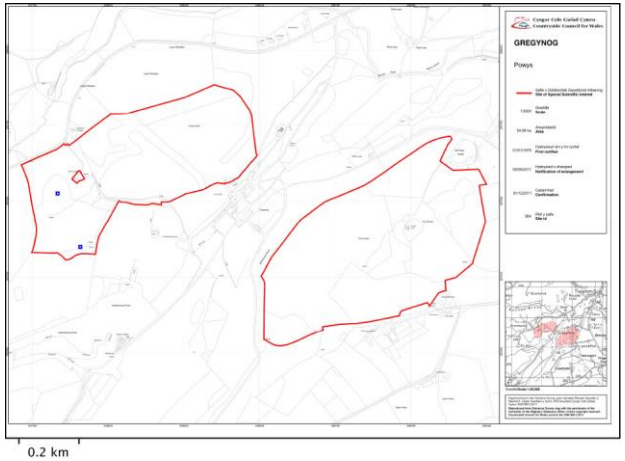

Map 17 *Bryoria fuscescens*



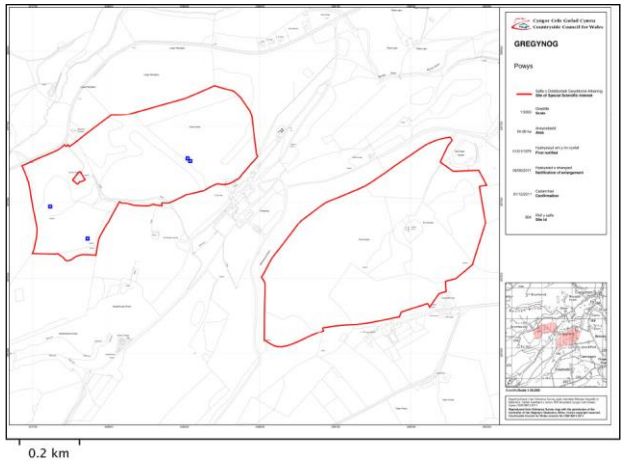

Map 18 *Caloplaca herbidella* s. str.



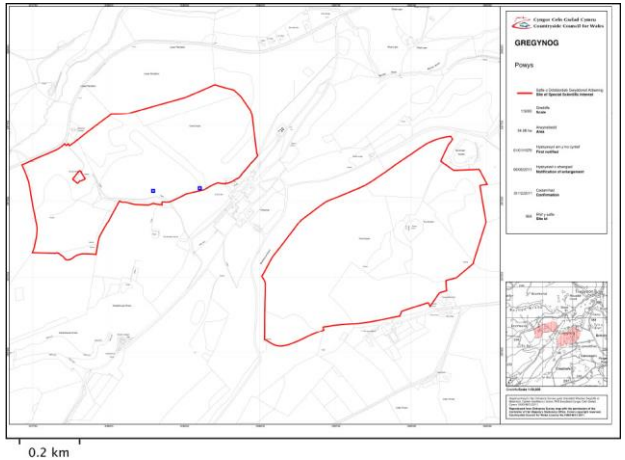

Map 19 *Caloplaca lucifuga*



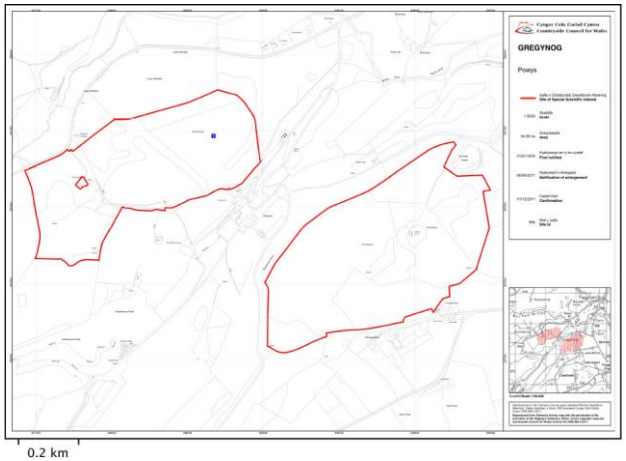

Map 20 *Chaenotheca stemonea*



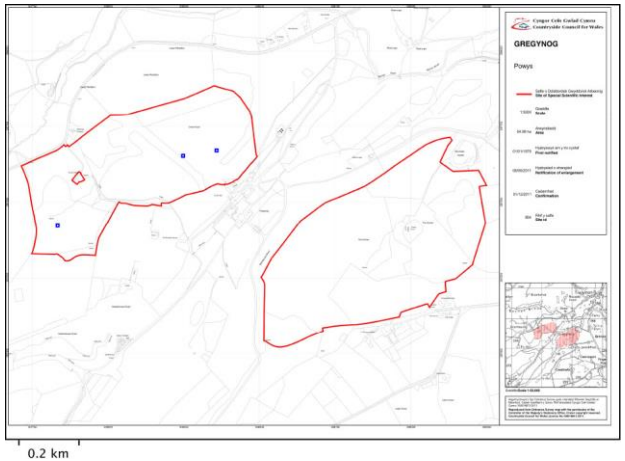

Map 21 *Chaenothecopsis nigra*



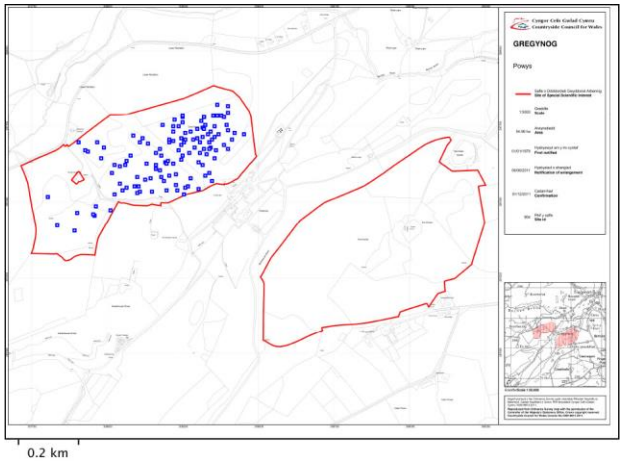

Map 22 *Chaenothecopsis pusilla*



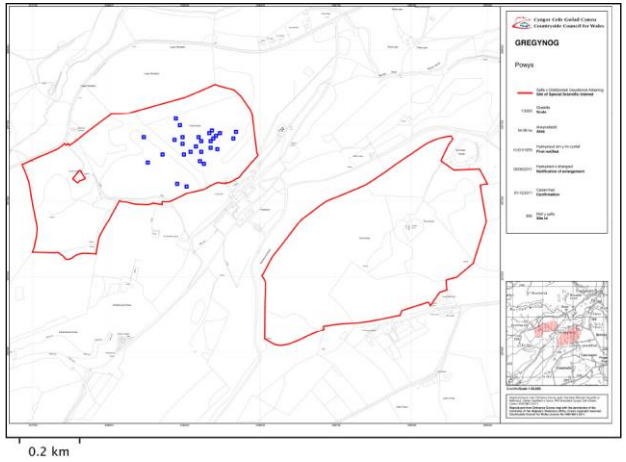

Map 23 *Chaenothecopsis retinens*



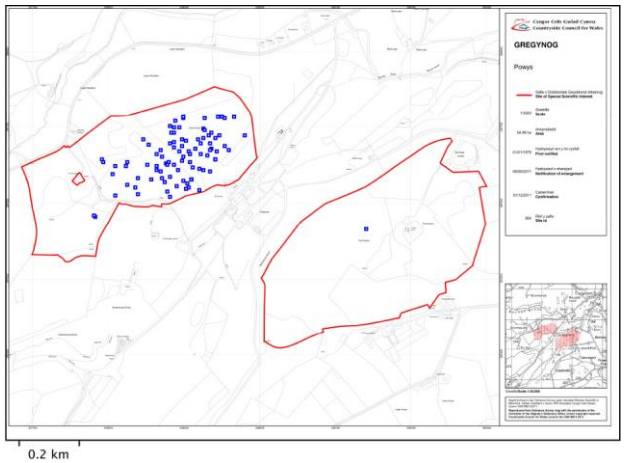

Map 24 *Coenogonium tavaresianum*



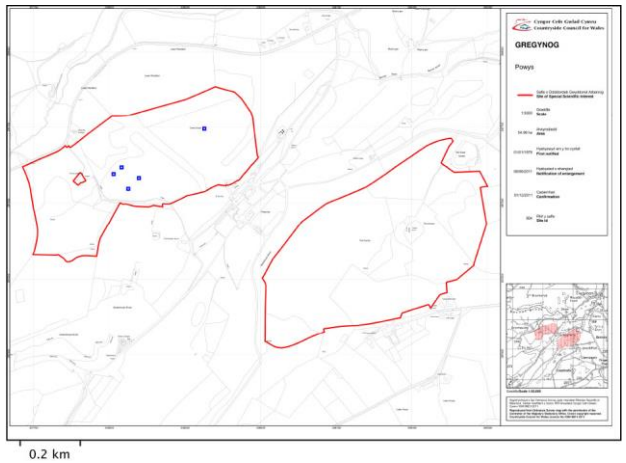

Map 25 *Cresponea premnea*



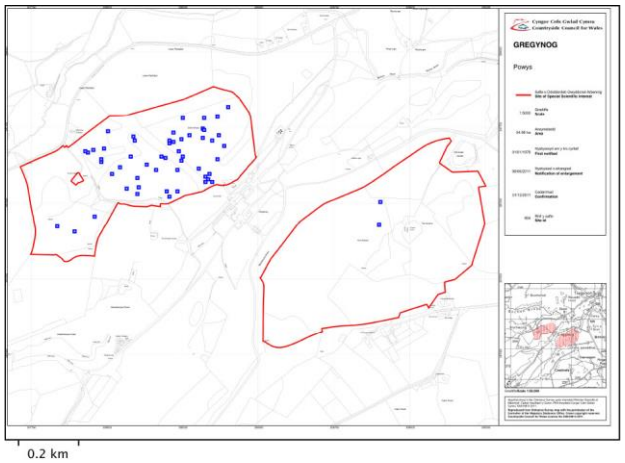

Map 26 *Enterographa sorediata*



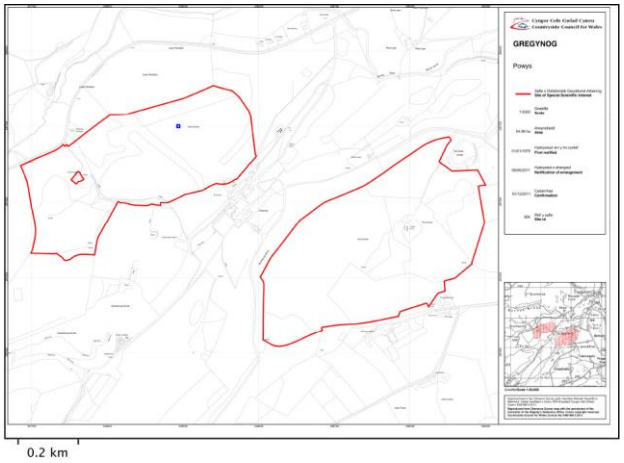

Map 27 *Lecanographa lyncea*



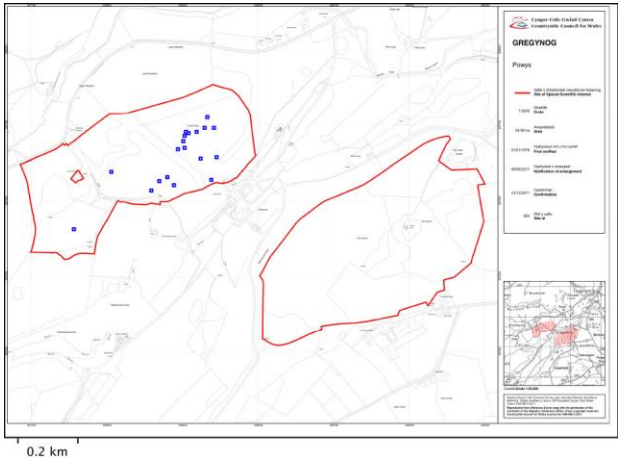

Map 28 *Lecanora quercicola*



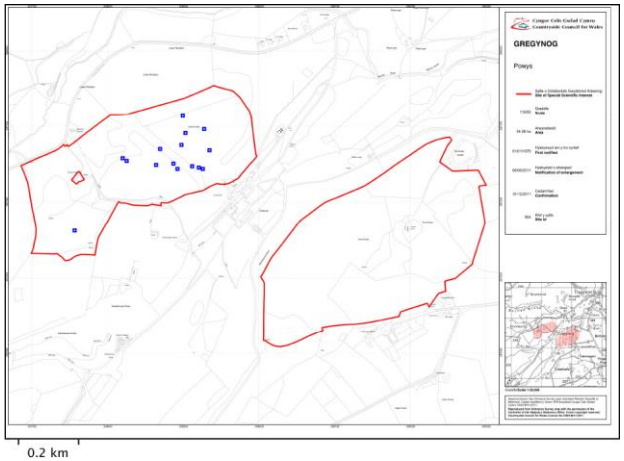

Map 29 *Lecanora sublivescens*



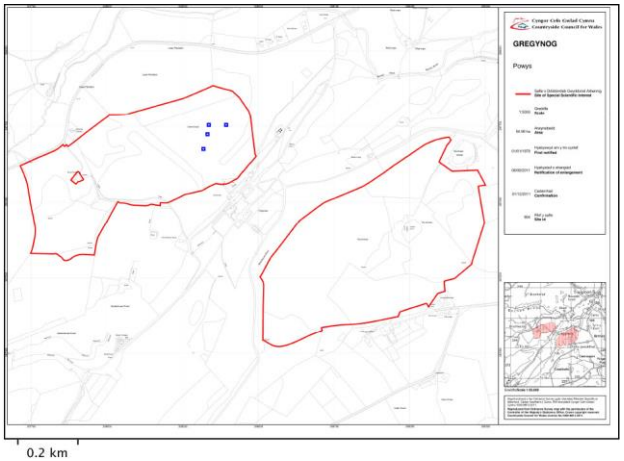

Map 30 *Lobaria pulmonaria*, *Lobaria virens* & *Porina rosei*



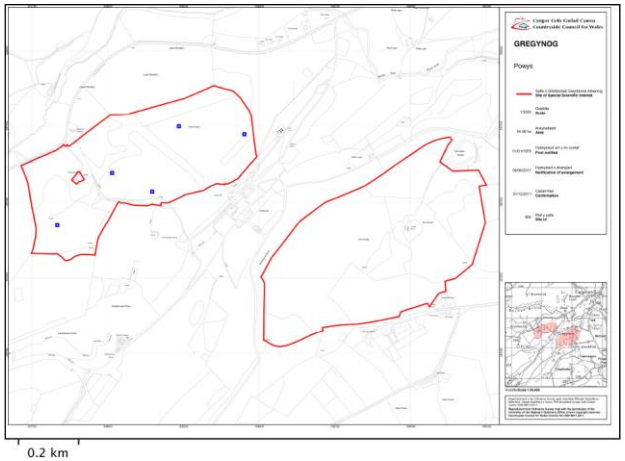

Map 31 *Lopadium disciforme*



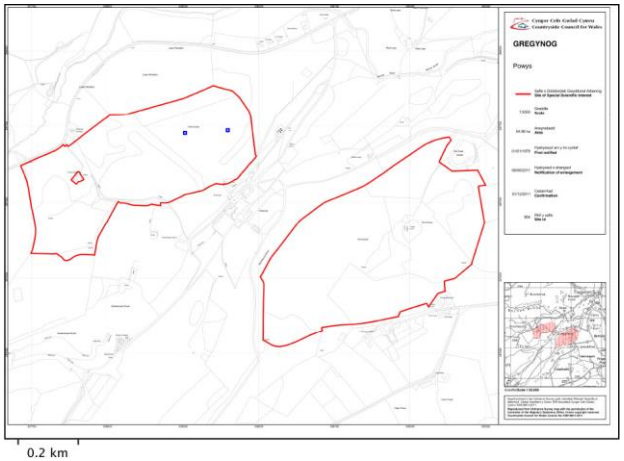

Map 32 *Microcalicium disseminatum*



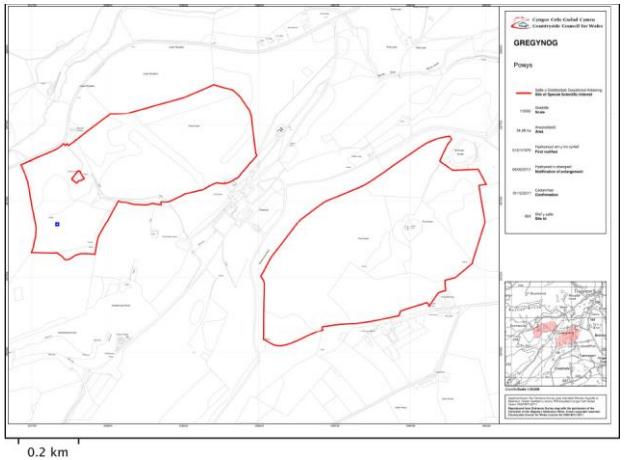

Map 33 *Opegrapha fumosa*



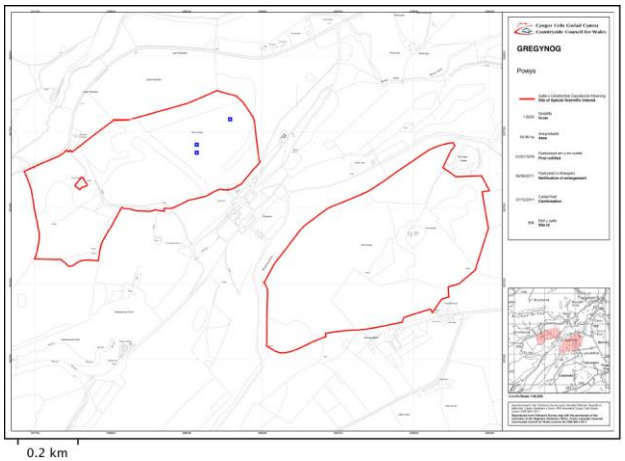

Map 34 *Pachyphiale carneola*



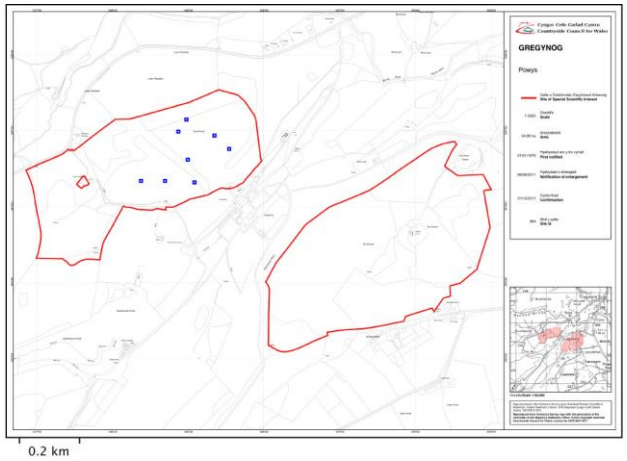

Map 35 *Porina coralloidea*



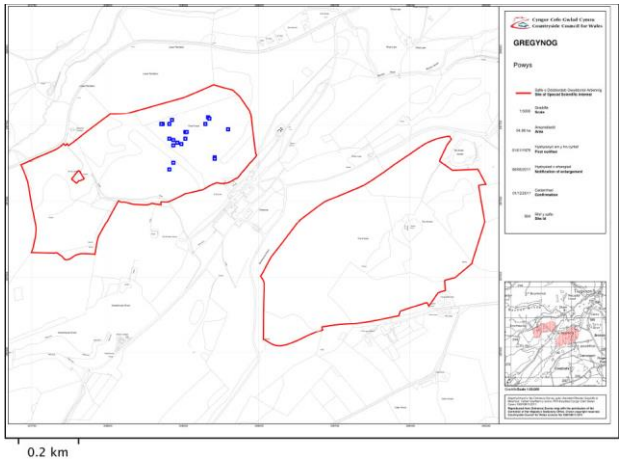

Map 36 *Ramonia chrysophaea* & *Usnea florida*



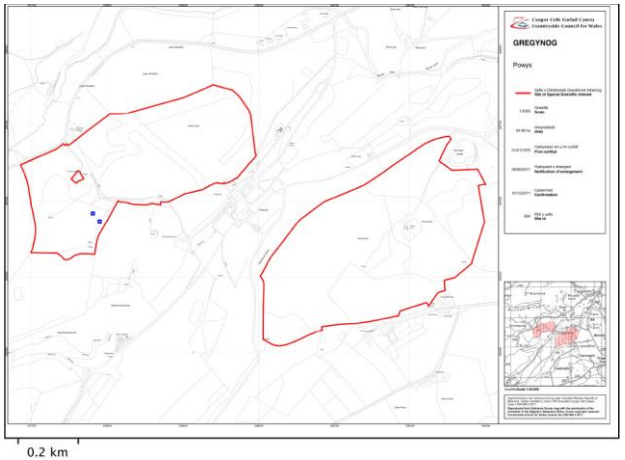

Map 37 *Rinodina roboris* var. *roboris*



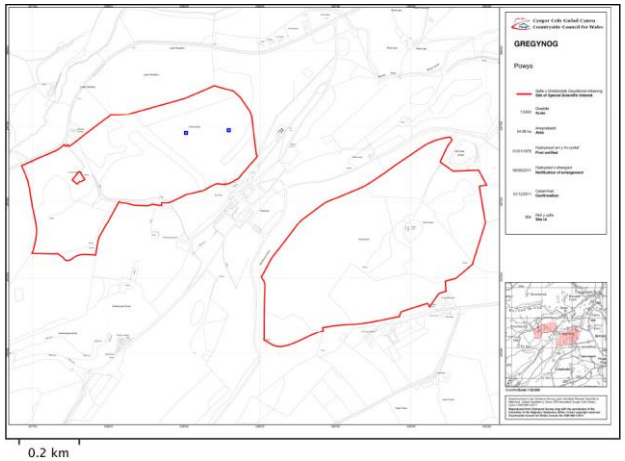

Map 38 *Schismatomma cretaceum* (a few locations not mapped)



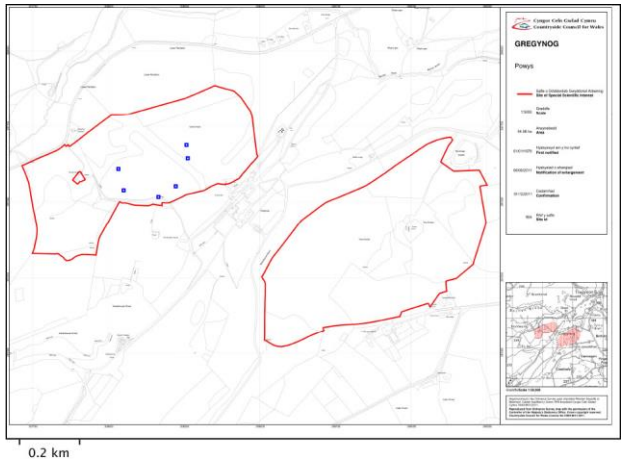

Map 39 *Schismatomma niveum*




Map 40 *Schismatomma quercicola*




Map 41 *Schismatomma umbrinum*



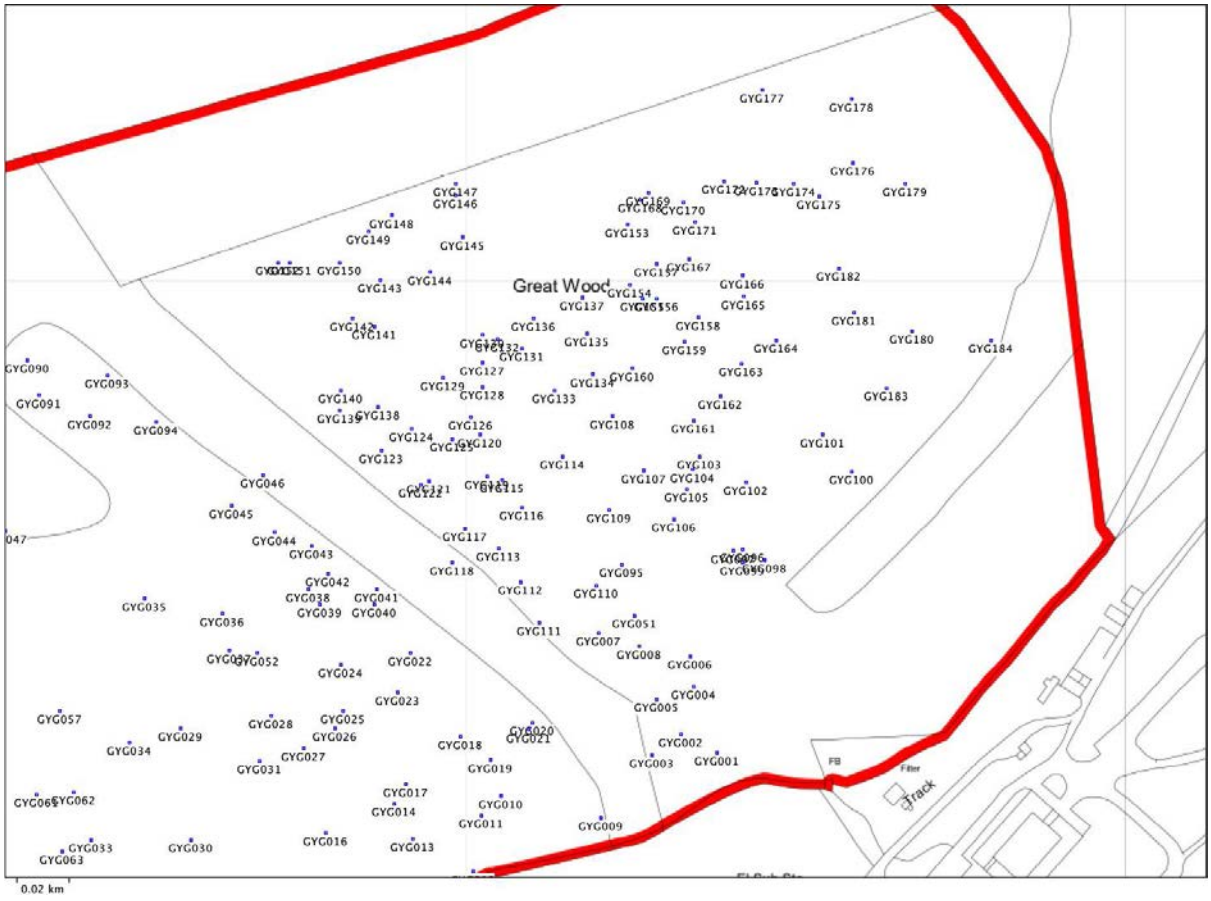

Map 42 *Xerotrema quercicola*

## B5 Waypoint Maps

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

# Gregynog SSSI Lichen Survey

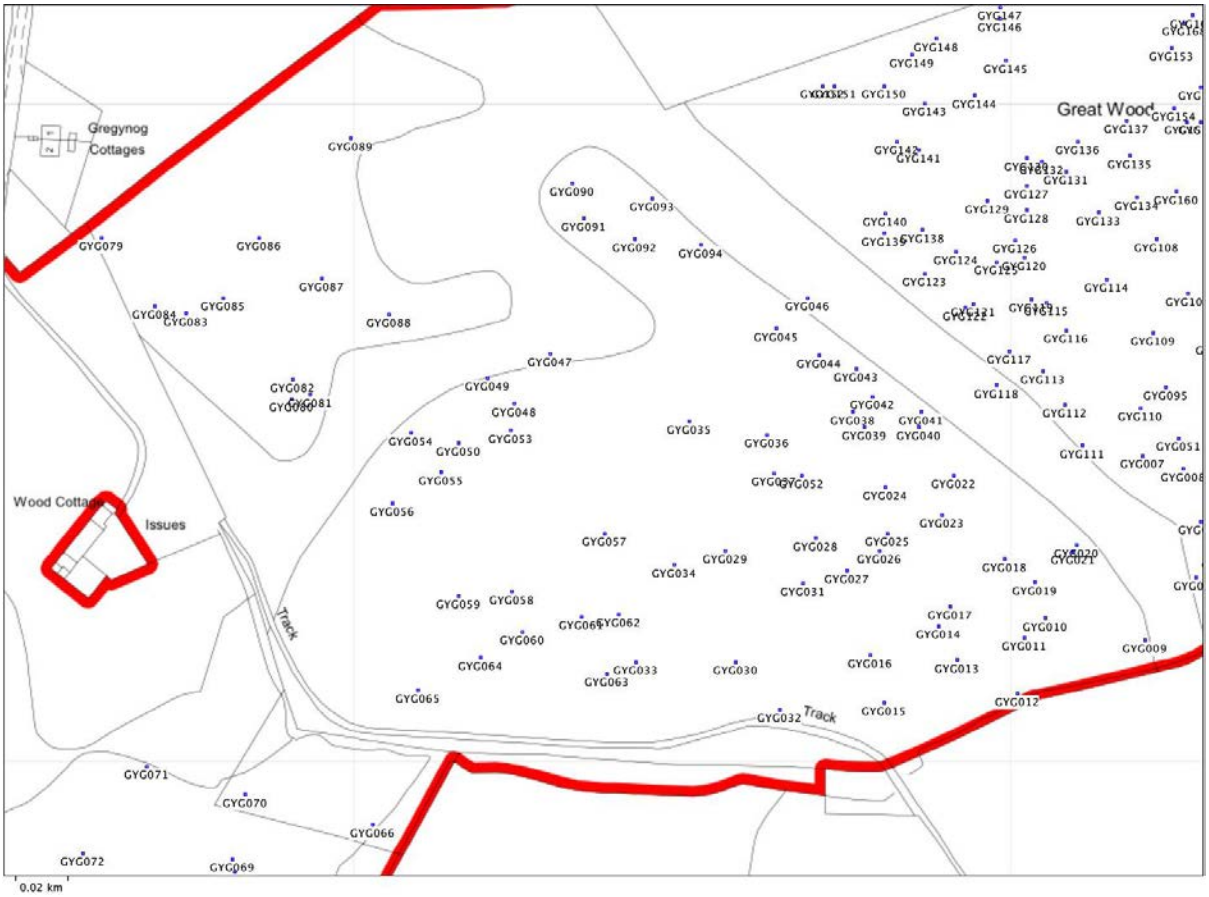
**Waypoints, Great Wood East** **Map 43**



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

# Gregynog SSSI Lichen Survey

## Waypoints, Great Wood West Map 44



**Botanical Survey and Assessment**
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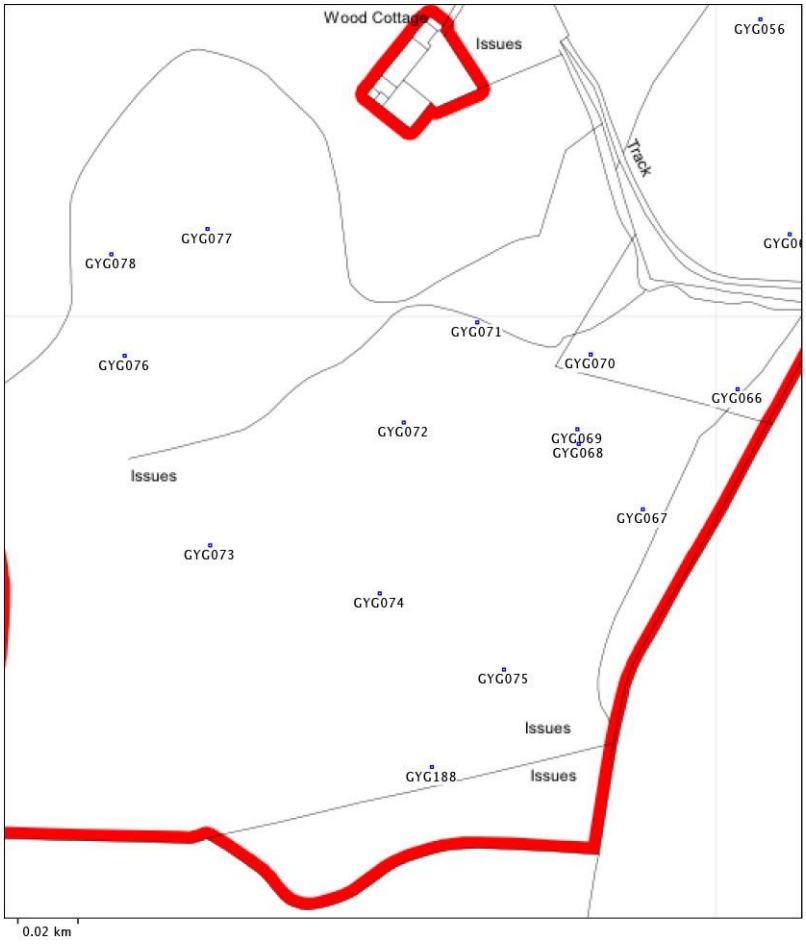
# Gregynog SSSI Lichen Survey

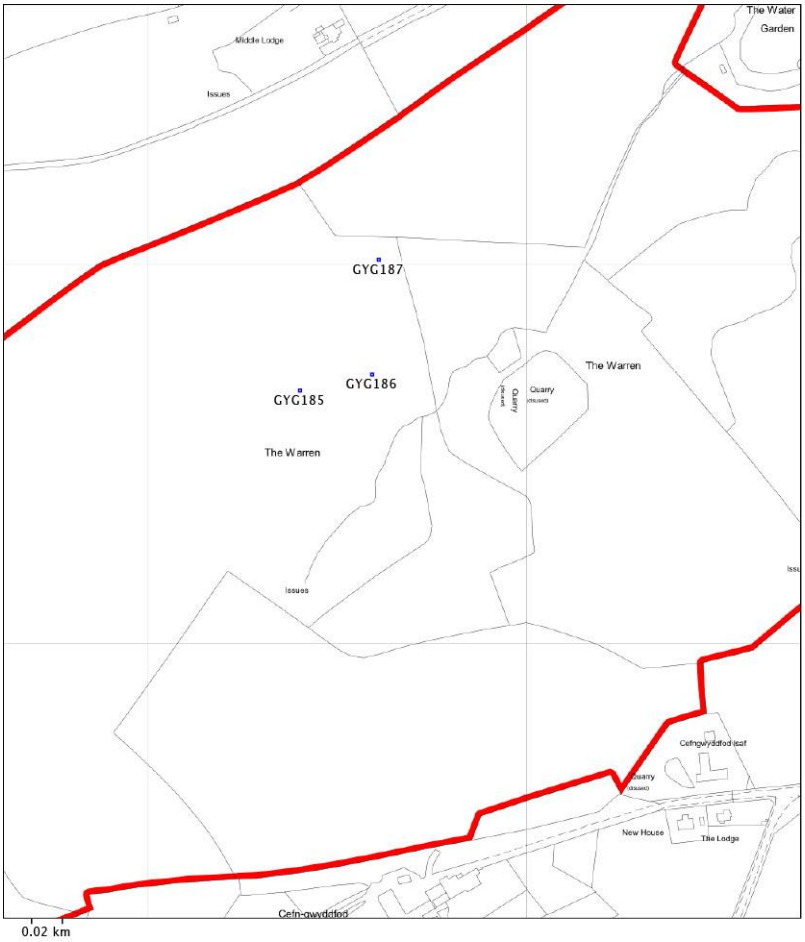
## Waypoints, Wood Cottage Area Map 45



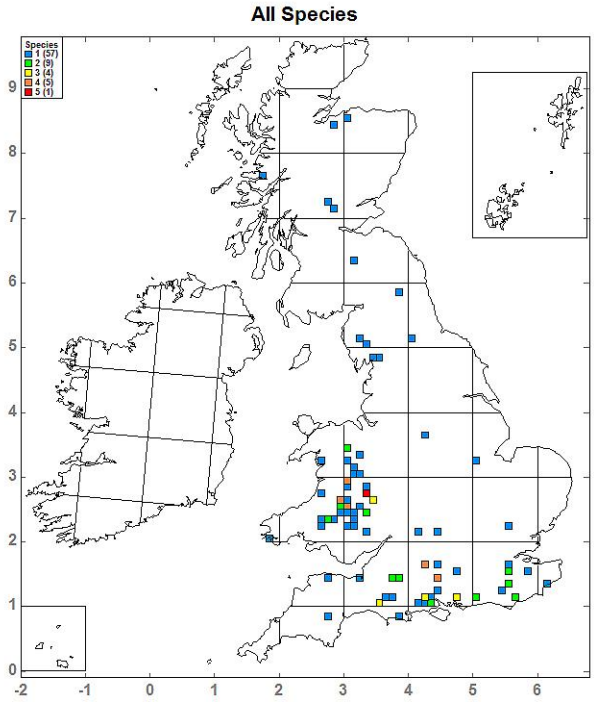
**Botanical Survey and Assessment**
**3 Green Close, Woodlands, SO40 7HU**
**023 8029 3671**

# Gregynog SSSI Lichen Survey

## Waypoints, The Warren Map 46



## B6 National Maps




Map 47 A coincidence map of southern sub-oceanic Mature Mesic Bark Community species (from Sanderson, 2014b)

# ANNEX 4 Waypoints Tabulated

Table 6: Gregynog SSSI 2018 Waypoints

| Name | GR | Alt | Date | Comment |
|---|---|---|---|---|
| GYG001 | SO08345 97571 | 196 | 01/05/18 | Post mature Oak on slope above stream, Cresponea premnea O, Lecanora sublivescens O at base, Lopadium disciforme R, also Arthonia vinosa, Chaenotheca trichialis, Dimerella lutea, Roselliniopsis tartaricola, Z1075, Thelotrema lepadinum, Varicellaria hemisphaerica. Photo 2018-05-01-01 Left |
| GYG002 | SO08331 97578 | 196 | 01/05/18 | Big post mature Oak top of slope east edge of ride, Tag 05481, Lecanora sublivescens R, also Calicium salicinum, Pertusaria flavida. Photo 2018-05-01-01 Right |
| GYG003 | SO08320 97570 | 190 | 01/05/18 | Mature Sycamore at top of slope in open in ride, Tag 05478, Lecanora sublivescens F, also Lecanora argentata Coll., Pertusaria flavida, Thelotrema lepadinum. Photo 2018-05-01-02 GYG002 with GYG001 behind |
| GYG004 | SO08336 97596 | 191 | 01/05/18 | Post mature Oak on east edge of ride, tree surgery high up, Tag 05630 Cresponea premnea O, Lecanora sublivescens R, Also Pertusaria flavida, Thelotrema lepadinum, On twigs Evernia prunastri A, Fuscidea lightfootii, Lecanora chlarotera, Melanelixia subaurifera, Parmelia sulcata, Physcia aipolia, Physcia tenella, Ramalina farinacea. Photo 2018-05-01-03 |
| GYG005 | SO08322 97591 | 193 | 01/05/18 | Smaller post mature Oak east side of ride, Tag 05648, Cresponea premnea O, Lecanora sublivescens F, also Arthonia vinosa, Calicium salicinum, Melaspilea ochrothalamia, Pertusaria flavida, Thelotrema lepadinum. Photo 2018-05-01-03 Left |
| GYG006 | SO08335 97607 | 198 | 01/05/18 | Post mature Oak east of GYG004, Tag 05629, Lecanographa lyncea O, also Lepraria ecorticata, Milospium graphideorum Z0600. Photo 2018-05-03 central behind. |
| GYG007 | SO08300 97616 | 201 | 01/05/18 | Post mature Oak east side of ride, Tag 05644, Lecanographa lyncea F, Lecanora sublivescens O, Microcalicium disseminatum R, also Anisomeridium ranunculosporum, Cliostomum flavidulum, Lecidea nylanderi Coll. Herb. Sanderson 2394, new to Wales, Loxospora elatina, Micarea doliiformis, Milospium graphideorum Z0600, Parmeliopsis hyperopta, Thelotrema lepadinum, Trapelia corticola. Photo 2018-05-01-04 |
| GYG008 | SO08315 97611 | 201 | 01/05/18 | Post mature Oak in from ride, Tag 95632, Lecanographa lyncea R, Microcalicium disseminatum R, also Anisomeridium ranunculosporum, Micarea xanthonica, Milospium graphideorum Z0600, Pertusaria pupillaris, Sphaerophorus globosus, Trapelia corticola. Photo 2018-05-01-05 |
| GYG009 | SO08301 97546 | 196 | 01/05/18 | Ancient Oak on the western side of ride by stream, Lecanographa lyncea F, Chaenothecopsis pusilla LQ Coll. Stem K –, spores 1 septate, with pale septa, New VC Record. Herb. Sanderson 2395, Cresponea premnea, O, also Arthonia pruinata, Milospium graphideorum Z0600, Thelotrema lepadinum |
| GYG010 | SO08263 97555 | 197 | 01/05/18 | Post mature Oak above stream, Cresponea premnea F, Lecanographa lyncea F, also Milospium graphideorum Z0600, Thelotrema lepadinum |

| Name | GR | Alt | Date | Comment |
|---|---|---|---|---|
| GYG011 | SO08255 97547 | 197 | 01/05/18 | Post mature Oak above steam in open woodland, Tag 5253, Cresponea premnea F, Enterographa sorediata R, Lecanographa lyncea F, also Arthonia pruinata, Milospium graphideorum Z0600, Thelotrema lepadinum. Photo 2018-05-01-06 |
| GYG012 | SO08252 97526 | 189 | 01/05/18 | Mature Sycamore tree grown from coppice on boundary, Cresponea premnea O, also Thelotrema lepadinum |
| GYG013 | SO08229 97538 | 194 | 01/05/18 | Big post mature Oak by glade by stream, Tag 05666, Cresponea premnea O, Lecanora sublivescens R. Photo 2018-05-01-07 |
| GYG014 | SO08222 97551 | 194 | 01/05/18 | Small fallen Oak, all lignum, Xerotrema quercicola F, also Lecidea nylanderi, Loxospora elatina, Micarea peliocarpa Coll., Ochrolechia arborea. Adjacent suppressed young Oak, Lopadium disciforme O, also Bacidia biatorina, Pertusaria flavida. Photo 2018-05-01-07 far Right |
| GYG015 | SO08202 97522 | 196 | 01/05/18 | Big post mature Oak by glade near stream, Lecanographa lyncea F, Lecanora sublivescens F, also Arthonia pruinata, Cliostomum flavidulum, Milospium graphideorum Z0063, Z0600, Thelotrema lepadinum. Photo 2018-05-01-08 Right |
| GYG016 | SO08196 97540 | 197 | 01/05/18 | Big post mature Oak north of GYG015 by glade, Cresponea premnea F, Lecanographa lyncea R, Lecanora sublivescens O, also Pertusaria flavida, Thelotrema lepadinum. Photo 2018-05-01-08 Left |
| GYG017 | SO08227 97559 | 196 | 01/05/18 | Big post mature Oak below track, Cresponea premnea O, Enterographa sorediata O, Lecanographa lyncea F, also Milospium graphideorum Z0600, Thelotrema lepadinum. Photo 2018-05-01-09 Right |
| GYG018 | SO08247 97577 | 200 | 01/05/18 | Post mature Oak in open woodland, Lecanographa lyncea O, Milospium graphideorum Q, Z0600, also Anisomeridium ranunculosporum, Thelotrema lepadinum |
| GYG019 | SO08259 97568 | 200 | 01/05/18 | Post mature Oak by glade, Lecanographa lyncea F, also, Milospium graphideorum Z0600 |
| GYG020 | SO08275 97582 | 198 | 01/05/18 | Burry ancient Oak western side of ride, Tag 05649, Cresponea premnea F, Lecanographa lyncea F, also Milospium graphideorum Z0600, Thelotrema lepadinum |
| GYG021 | SO08273 97580 | 198 | 01/05/18 | Ancient Ash western side of ride, Lecanographa lyncea A, also Anisomeridium ranunculosporum, Arthonia pruinata, Bacidia biatorina, Milospium graphideorum Z0600, Pertusaria flavida, Schismatomma cretaceum, Thelotrema lepadinum. |
| GYG022 | SO08228 97609 | 200 | 01/05/18 | Post mature Oak west side of ride, Lecanographa lyncea F, Lecanora sublivescens R, Microcalicium disseminatum O, also Anisomeridium ranunculosporum, Chaenotheca trichialis, Milospium graphideorum Z0600, Thelotrema lepadinum. Photo 2018-05-01-10 Left |
| GYG023 | SO08223 97594 | 199 | 01/05/18 | Big post mature Oak above track Cresponea premnea, also Chaenotheca trichialis, Megalaria pulverea, Pertusaria flavida, Thelotrema lepadinum |
| GYG024 | SO08202 97604 | 200 | 01/05/18 | Post mature Oak inside open woodland, Tag 05737, Schismatomma niveum A, also Cliostomum flavidulum, Lecidea nylanderi, Parmeliopsis hyperopta, Thelotrema lepadinum |
| GYG025 | SO08203 97587 | 201 | 01/05/18 | Post mature Oak above track in wood, Cresponea premnea F, Lecanographa lyncea F, also Chaenotheca trichialis, Milospium graphideorum Z0600, Thelotrema lepadinum |

| Name | GR | Alt | Date | Comment |
|---|---|---|---|---|
| GYG026 | SO08200 97580 | 200 | 01/05/18 | Mature Oak in wood, Lopadium disciforme O, Thelotrema lepadinum |
| GYG027 | SO08188 97572 | 199 | 01/05/18 | Post mature Oak above track, Cresponea premnea O, Lecanographa lyncea F, also Milospium graphideorum Z0600, Thelotrema lepadinum |
| GYG028 | SO08175 97585 | 203 | 01/05/18 | Post mature Oak above track, Cresponea premnea A, Lecanographa lyncea F, also Arthonia pruinata, Cliostomum flavidulum, Milospium graphideorum Z0600, Schismatomma cretaceum, Thelotrema lepadinum |
| GYG029 | SO08141 97580 | 208 | 01/05/18 | Post mature Oak in wood, Cresponea premnea F, Lecanographa lyncea, Milospium graphideorum Z0600, Thelotrema lepadinum |
| GYG030 | SO08145 97538 | 204 | 01/05/18 | Post mature Oak above glade, Tag 05809, Cresponea premnea O, Lopadium disciforme O, Pachyphiale carneola F, also Bacidia biatorina, Pertusaria flavida, Thelotrema lepadinum. Adjacent Oak log, on lignum, Chaenothecopsis pusilla Coll Stem K –, spores 1 septate, with pale septa, also Chaenotheca brunneola, Cladonia parasitica. Adjacent log, on lignum, Micarea melaena |
| GYG031 | SO08171 97568 | 201 | 01/05/18 | Smaller post mature Oak, Lopadium disciforme F, also Pertusaria flavida, Thelotrema lepadinum |
| GYG032 | SO08162 97520 | 198 | 01/05/18 | Fallen Oak logs in glade, on lignum Xerotrema quercicola, also Imshaugia aleurites, Lecidea nylanderi, Loxospora elatina |
| GYG033 | SO08107 97538 | 203 | 01/05/18 | Post mature Oak above boundary, Tag 05829, Cresponea premnea O, also Cliostomum flavidulum, Loxospora elatina, Thelotrema lepadinum |
| GYG034 | SO08122 97575 | 210 | 01/05/18 | Post mature Oak in wood, Cresponea premnea O |
| GYG035 | SO08127 97630 | 212 | 01/05/18 | Post mature Ash edge of denser area of trees, Cresponea premnea R, Enterographa sorediata O, Lecanographa lyncea O, Lecanora sublivescens R, also Milospium graphideorum Z0600, Pertusaria flavida. Photo 2018-05-01-11 |
| GYG036 | SO08157 97624 | 207 | 01/05/18 | Post mature Oak on edge of glade, Tag 05727, Cresponea premnea F, Lecanographa lyncea O, Microcalicium disseminatum R, also Anisomeridium ranunculosporum, Milospium graphideorum Z0600, Thelotrema lepadinum. Photo 2018-05-01-12 |
| GYG037 | SO08160 97610 | 204 | 01/05/18 | Post mature Oak in open woodland, Tag 05732, Cresponea premnea F, Lecanographa lyncea R, Lecanora sublivescens R, also Cliostomum flavidulum, Milospium graphideorum Z0600, Thelotrema lepadinum. Photo 20-8-05-01-13 GYG036 behind central |
| GYG038 | SO08189 97633 | 225 | 01/05/18 | Post mature Oak by glade, Tag 05730, Cresponea premnea O, Lecanographa lyncea O, also Anisomeridium ranunculosporum, Thelotrema lepadinum |
| GYG039 | SO08194 97627 | 223 | 01/05/18 | Post mature Oak by glade, tag 05735, Cresponea premnea O, Lecanographa lyncea O, also, Anisomeridium ranunculosporum, Cliostomum flavidulum, Milospium graphideorum Z0600, Pertusaria flavida, Thelotrema lepadinum |
| GYG040 | SO08214 97627 | 219 | 01/05/18 | Forked post mature Oak by glade above GYG024, Tag 05693, Cresponea premnea O, Lecanographa lyncea F, Microcalicium disseminatum R, Milospium graphideorum, Schismatomma niveum O, also Thelotrema lepadinum Q. Photo 2018-05-01-14 Left |

| Name | GR | Alt | Date | Comment |
|---|---|---|---|---|
| GYG041 | SO08215 97633 | 219 | 01/05/18 | Recently pollarded Oak on western side of ride, Tag 05694, Biatora chrysantha R, also Thelotrema lepadinum |
| GYG042 | SO08197 97639 | 218 | 01/05/18 | Burry post mature Oak on western side of ride, Tag 05698, Cresponea premnea A, Lecanographa lyncea O, also Arthonia pruinata, Chaenotheca trichialis, Milospium graphideorum Z0600. Photo 20-8-05-01-14 Right |
| GYG043 | SO08191 97649 | 219 | 01/05/18 | Partly burry post mature Oak on western side of ride, Lecanora sublivescens R. Photo 2018-05-01-15 background |
| GYG044 | SO08177 97655 | 219 | 01/05/18 | Big post mature Oak on western side of ride, Cresponea premnea O, Enterographa sorediata F, Lecanographa lyncea A, Lecanora sublivescens R, also Anisomeridium ranunculosporum, Arthonia pruinata, Chaenotheca furfuracea, Loxospora elatina, Pertusaria flavida, Thelotrema lepadinum. Photo 2018-05-01-15 foreground |
| GYG045 | SO08160 97665 | 221 | 01/05/18 | Big post mature Oak western side of ride, Cresponea premnea F, Lecanographa lyncea R, also Milospium graphideorum Z0600 |
| GYG046 | SO08172 97676 | 221 | 01/05/18 | Big post mature Oak on western side of ride at top Cresponea premnea F, Lecanographa lyncea F, Microcalicium disseminatum R |
| GYG047 | SO08074 97655 | 221 | 01/05/18 | Ancient hollow Ash on edge of wood, Cresponea premnea R, Lecanora sublivescens R, also Bacidia rubella, Calicium salicinum bark & lignum, Leptogium teretiusculum, Pertusaria flavida. Photo 2018-05-01-16 |
| GYG048 | SO08061 97636 | 221 | 01/05/18 | Post mature Oak on edge of very open area,Cresponea premnea R, Lecanographa lyncea O, Microcalicium disseminatum R, also Anisomeridium ranunculosporum |
| GYG049 | SO08051 97646 | 219 | 01/05/18 | Huge standing dead Oak hulk, Tag 05841, on lignum Microcalicium disseminatum A, also Imshaugia aleurites, Lecidea nylanderi. Photo 2018-05-01-17 |
| GYG050 | SO08039 97621 | 216 | 01/05/18 | Big post mature Oak on edge of open area, Caloplaca lucifuga O, Cresponea premnea F, Lecanora quercicola O, Lecanora sublivescens F, added 2/5/2018, Schismatomma umbrinum R also, Arthonia pruinata, Arthonia vinosa, Chaenotheca trichialis on lignum. Photo 2018-05-01-18 |
| GYG051 | SO08313 97623 | 239 | 03/05/18 | Post mature Oak just east of ride, Tag 05635, Cresponea premnea O, Enterographa sorediata O, also Cliostomum flavidulum, Thelotrema lepadinum. Photo 2018-05-03-01 |
| GYG052 | SO08170 97609 | 224 | 02/05/18 | Post mature Oak by slight glade in open woodland, Tag 05733, Cresponea premnea O, Lecanographa lyncea R, also Milospium graphideorum Z0600 |
| GYG053 | SO08059 97626 | 224 | 02/05/18 | Big post mature Oak on edge of wood, Tag 05838, Cresponea premnea, Lecanographa lyncea, also Anisomeridium ranunculosporum, Bactrospora corticola Coll., sterile, pycnidia only, Chaenotheca trichialis, Milospium graphideorum Z0600, Ramalina canariensis, Thelotrema lepadinum |
| GYG054 | SO08022 97625 | 221 | 02/05/18 | Big post mature Oak in open, Tag 05846, Cresponea premnea O, Lecanographa lyncea R, also Amandinea punctata R, Chaenotheca trichialis, Milospium graphideorum Z0600 |
| GYG055 | SO08033 97610 | 219 | 02/05/18 | Broken Oak and fallen dead wood, Tag 05847, lignum, Bryoria fuscescens R, Xerotrema quercicola F, also Buellia schaereri Coll., Calicium glaucellum, Cladonia parasitica, Imshaugia aleurites, Parmeliopsis ambigua |

| Name | GR | Alt | Date | Comment |
|---|---|---|---|---|
| GYG056 | SO08015 97598 | 219 | 02/05/18 | Post mature Oak at edge of wood, Tag 95887, Cresponea premnea O, Lecanographa lyncea O, Lecanora quercicola R north side on wet bark, Lecanora sublivescens O, Lopadium disciforme R, Pachyphiale carneola O, also Bacidia biatorina, Chaenotheca trichialis. Photo 2018-05-02-01 |
| GYG057 | SO08095 97586 | 211 | 02/05/18 | Burry post mature Oak by glade, Tag 05798, Cresponea premnea F, Lecanographa lyncea F, Lecanora quercicola R, at base left of wet bark, Lecanora sublivescens R, Milospium graphideorum Z0600, also Anisomeridium ranunculosporum, Chaenotheca trichialis, Pertusaria flavida, Schismatomma cretaceum, Thelotrema lepadinum. Photo 2018-05-02-02 |
| GYG058 | SO08060 97564 | 210 | 02/05/18 | Post mature Oak open part of wood, Tag 05862, Lecanographa lyncea F, Milospium graphideorum Z0600 |
| GYG059 | SO08040 97563 | 208 | 02/05/18 | Suppressed mature Oak by track in wood, Cresponea premnea O, also, Thelotrema lepadinum |
| GYG060 | SO08064 97549 | 205 | 02/05/18 | Post mature Oak with some exposed lignum by track in wood, Tag 05867, Cresponea premnea O, Lecanora quercicola R, Lecanora sublivescens O, also Arthonia pruinata, Bacidia biatorina, Thelotrema lepadinum. Photo 2018-05-02-03 |
| GYG061 | SO08086 97555 | 202 | 02/05/18 | Post mature Oak in wood, Tag 05833, Cresponea premnea, Lecanographa lyncea, F, also Anisomeridium ranunculosporum, Cliostomum flavidulum, Lecidea nylanderi, Milospium graphideorum Z0600, Thelotrema lepadinum |
| GYG062 | SO08101 97556 | 200 | 02/05/18 | Post mature Oak by track in Wood, Tag 08531, Arthonia anombrophila O, Cresponea premnea F, Lecanora sublivescens R, also Anisomeridium ranunculosporum, Bacidia biatorina, Dactylospora parasitica Z1076, Pertusaria hymenea, Thelotrema lepadinum. Photo 2018-05-02-04 |
| GYG063 | SO08096 97533 | 198 | 02/05/18 | Post mature Oak by track through wood, Cresponea premnea F, Lecanographa lyncea R, Lecanora sublivescens R, also Arthonia pruinata, Milospium graphideorum Z0600, Pertusaria flavida, Thelotrema lepadinum |
| GYG064 | SO08048 97539 | 199 | 02/05/18 | Standing dead Oak below track in wood, lignum, Cresponea premnea O, also Chaenotheca brunneola. Adjacent fallen dead wood Xerotrema quercicola, also Loxospora elatina |
| GYG065 | SO08024 97527 | 197 | 02/05/18 | Post mature Oak at western edge of Great Wood, Tag 05881, Cresponea premnea F, Lecanographa lyncea O, also Milospium graphideorum Z0600, Thelotrema lepadinum |
| GYG066 | SO08007 97476 | 199 | 02/05/18 | Post mature Oak in flush, in Alder – Sallow, Cresponea premnea R, lso, Bacidia biatorina, Thelotrema lepadinum |
| GYG067 | SO07976 97436 | 206 | 02/05/18 | Sheltered post mature Oak by stream, Schismatomma quercicola O, also Thelotrema lepadinum, Anisomeridium ranunculosporum, Loxospora elatina. Photo 2019-05-02-05 |
| GYG068 | SO07954 97458 | 206 | 02/05/18 | Post mature Oak at edge of open park, Cresponea premnea F, Lecanographa lyncea R, Lecanora sublivescens R, also Cliostomum flavidulum, Cyphelium sessile Z1064, Milospium graphideorum Z0600, Pertusaria coccodes, Pertusaria flavida, Thelotrema lepadinum. Photo 2018-05-02-06 Right |

| Name | GR | Alt | Date | Comment |
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| GYG069 | SO07954 97463 | 206 | 02/05/18 | Post mature Oak at edge of open park, Schismatomma quercicola F, Cresponea premnea R, Lecanographa lyncea R, also Cliostomum flavidulum, Loxospora elatina, Milospium graphideorum Z0600, Thelotrema lepadinum. Photo 2018-05-02-06 Left |
| GYG070 | SO07959 97487 | 196 | 02/05/18 | Post mature Oak in flushed woodland, Cresponea premnea O, Schismatomma umbrinum F, also Thelotrema lepadinum. Photo 2018-05-02-07 |
| GYG071 | SO07921 97498 | 204 | 02/05/18 | Ancient Oak on edge of open park by steam, Schismatomma umbrinum F. Photo 2018-05-02-08 |
| GYG072 | SO07897 97465 | 210 | 02/05/18 | Post mature Oak in open park, Cresponea premnea F, also Arthonia pruinata |
| GYG073 | SO07833 97424 | 218 | 02/05/18 | Post mature Oak in open park, Cresponea premnea F, Coenogonium tavaresianum Q, Coll. Herb. Sanderson 2399. Apothecia 0.2-0.25mm, concave when young, orange-brown; exciple orange-brown on edge; hymenium I – & strongly K/I + blue; asci thin walled, no tholus, K/I–; spores 8 – 12 x 3µm, new to Wales. Lecanora sublivescens, Pachyphiale carneola, Ramonia chrysophaea R Coll. Spores 45 – 70 x 4µm. New to VC47 Herb. Sanderson 2397. Also Pertusaria flavida. Photo 2018-05-02-09 |
| GYG074 | SO07889 97409 | 214 | 02/05/18 | Ancient hollow Oak in parkland, Cresponea premnea F, Lecanora sublivescens F, Lopadium disciforme R, Microcalicium disseminatum F (lignum). Photo 2018-05-02-10 |
| GYG075 | SO07930 97383 | 217 | 02/05/18 | Ancient Oak on edge of park, lignum, Chaenothecopsis nigra O, Coll. Spores one septate, with dark septa |
| GYG076 | SO07805 97487 | 226 | 02/05/18 | Ancient hollow Oak, lignum, Chaenothecopsis nigra R, Coll. Spores one septate, with dark septa |
| GYG077 | SO07832 97529 | 221 | 02/05/18 | Post mature Oak in park Chaenotheca stemonea, also Chaenotheca trichialis |
| GYG078 | SO07800 97520 | 224 | 02/05/18 | Post mature Oak in park, Cresponea premnea |
| GYG079 | SO07904 97699 | 211 | 02/05/18 | Big post mature Oak at edge of western park, Cresponea premnea O |
| GYG080 | SO07976 97637 | 208 | 02/05/18 | Post mature Oak in open parkland, Tag 05897, Lecanora sublivescens. Photo 2018-05-02-11 Right |
| GYG081 | SO07983 97639 | 207 | 02/05/18 | Post mature Oak in open parkland, Tag 05896, Lecanographa lyncea, also Anisomeridium ranunculosporum. Photo 2018-05-02-11 C behind |
| GYG082 | SO07977 97645 | 206 | 02/05/18 | Post mature Oak in open parkland, Tag 05898, Arthonia anombrophila O, Cresponea premnea F, Lecanographa lyncea O, Lecanora sublivescens R, also Milospium graphideorum Z0600, Arthonia pruinata. Photo 2018-05-02-11 Left |
| GYG083 | SO07936 97670 | 207 | 02/05/18 | Ancient Oak in open parkland, Cresponea premnea R, Lecanora sublivescens R, on root, also Arthonia pruinata. Photo 2018-05-02-12 |
| GYG084 | SO07924 97673 | 209 | 02/05/18 | Post mature Oak pair in corner, Tags 05901 & 05902, Caloplaca lucifuga R northern tree, Cresponea premnea O both trees, Lecanora sublivescens O both trees, also Pertusaria pertusa, Sphinctrina turbinata Z1087. Photo 2018-05-02-13 |
| GYG085 | SO07950 97676 | 210 | 02/05/18 | Post mature Ash, Tag 05903, Lecanora sublivescens O. Photo 2018-05-02-12 Left |
| GYG086 | SO07964 97699 | 213 | 02/05/18 | Big post mature Oak in parkland, Tag 05910, Cresponea premnea O, also Amandinea punctata, Arthonia pruinata |

| Name | GR | Alt | Date | Comment |
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| GYG087 | SO07988 97683 | 210 | 02/05/18 | Post mature Ash in open parkland, Tag 05913, Cresponea premnea R, Lecanora sublivescens R, also Arthonia pruinata, Pertusaria flavida. Adjacent post mature Oak, Cresponea premnea O, Lecanora sublivescens R. Photo 2018-05-02-14 |
| GYG088 | SO08013 97670 | 211 | 02/05/18 | Post mature Ash in open, Tag 05920, Caloplaca herbidella s. str. R, fragments just detectable, also Amandinea punctata, Pertusaria flavida. Photo 2018-05-02-15 |
| GYG089 | SO07999 97737 | 219 | 02/05/18 | Post mature Ash in recent fenced enclosure with collapsed Crab Apple, Tag 05925, Lecanora sublivescens R |
| GYG090 | SO08083 97720 | 221 | 02/05/18 | Ancient Oak with much lignum on north side, Cresponea premnea R, Lecanora sublivescens F, also Chaenotheca trichialis, Pertusaria flavida, Rhaphidicyrtis trichosporella. Photo 2018-05-02-16 |
| GYG091 | SO08087 97706 | 218 | 02/05/18 | Ancient Oak below GYG090, Tag 05715, Lecanora sublivescens R. Photo 2018-05-02-17 |
| GYG092 | SO08107 97698 | 218 | 02/05/18 | Big post mature Oak on edge of grove, Tag 05717, Cresponea premnea F, also Arthonia pruinata, Thelotrema lepadinum |
| GYG093 | SO08113 97714 | 218 | 02/05/18 | Post mature Oak in grove, Tag 05710, Cresponea premnea F, Enterographa sorediata O, Lecanographa lyncea O, also Milospium graphideorum Z0600. Photo 2018-05-02-18 |
| GYG094 | SO08132 97696 | 215 | 02/05/18 | Big post mature Oak in grove, Cresponea premnea A, Lecanographa lyncea F, also Arthonia pruinata, Chaenotheca trichialis, Milospium graphideorum Z0600, Thelotrema lepadinum |
| GYG095 | SO08309 97642 | 225 | 03/05/18 | Small post mature Oak in wood, Tag 05636, Lopadium disciforme O, also Anisomeridium ranunculosporum, Thelotrema lepadinum |
| GYG096 | SO08355 97648 | 215 | 03/05/18 | Post mature Oak by edge of glade, Cresponea premnea A, Lecanographa lyncea F, also Milospium graphideorum Z0600, Thelotrema lepadinum |
| GYG097 | SO08351 97648 | 211 | 03/05/18 | Post mature Oak by glade, Enterographa sorediata R, Lecanographa lyncea O, Schismatomma niveum O, also Pertusaria flavida, Thelotrema lepadinum. Photo 2018-05-03-02 Right |
| GYG098 | SO08363 97644 | 210 | 03/05/18 | Mature Oak in glade, Tag 05617, Lecanora sublivescens R, near base, Lopadium disciforme O, also Melaspilea ochrothalamia, Pertusaria flavida. Photo 2018-05-03-02 Left |
| GYG099 | SO08355 97643 | 205 | 03/05/18 | Big post mature Oak by glade, Tag 05619, Schismatomma niveum O, also Anisomeridium ranunculosporum, Lecidea nylanderi, Loxospora elatina, Parmeliopsis hyperopta, Thelotrema lepadinum |
| GYG100 | SO08396 97677 | 203 | 03/05/18 | Leaning post mature Oak by glade, Cresponea premnea R, Lecanographa lyncea O, also Lecidea nylanderi, Milospium graphideorum Z0600, Pertusaria flavida, Thelotrema lepadinum. Photo 2018-05-03-03 Right |
| GYG101 | SO08385 97692 | 200 | 03/05/18 | Post mature Oak by glade, Tag 05592, Cresponea premnea, Lecanographa lyncea O, Lecanora sublivescens O, also Anisomeridium ranunculosporum, Cliostomum flavidulum, Milospium graphideorum Z0600, Pertusaria flavida, Schismatomma cretaceum, Thelotrema lepadinum. Photo 2018-05-03-03 Left |

| Name | GR | Alt | Date | Comment |
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| GYG102 | SO08356 97673 | 200 | 03/05/18 | Post mature Oak in glade, Tag 05603, Enterographa sorediata R, Coenogonium tavaresianum Coll. Herb. Sanderson 2400. Apothecia 0.2-0.3mm, concave when young, orange-brown; exciple orange-brown on edge; hymenium I – & K/I + blue lower down; asci thin walled, no tholus, K/I–; spores 9 – 11 x 3µm. Cresponea premnea F, Lecanographa lyncea F, also Milospium graphideorum Z0600, Thelotrema lepadinum. Photo 2018-05-03-04 |
| GYG103 | SO08338 97683 | 203 | 03/05/18 | Post mature Oak by glade, Cresponea premnea O, Lecanographa lyncea R, also Milospium graphideorum Z0600 |
| GYG104 | SO08336 97678 | 204 | 03/05/18 | Post mature Oak by glade, Cresponea premnea A, Enterographa sorediata O, Lecanographa lyncea F, also Arthonia pruinata, Thelotrema lepadinum. Photo 2018-05-03-05 R foreground |
| GYG105 | SO08333 97671 | 202 | 03/05/18 | Post mature Oak by glade, Tag 05609, Microcalicium disseminatum O. Photo 2018-05-03-05 L foreground |
| GYG106 | SO08328 97659 | 200 | 03/05/18 | Post mature Oak by glade, Cresponea premnea R, Lecanographa lyncea O, also Cliostomum flavidulum, Milospium graphideorum Z0600, Thelotrema lepadinum. Photo 2018-05-03-05 Left behind |
| GYG107 | SO08317 97678 | 199 | 03/05/18 | Post mature Oak by glade, above track, Cresponea premnea A |
| GYG108 | SO08305 97698 | 204 | 03/05/18 | Post mature Oak in wood above track, Cresponea premnea O, Opegrapha fumosa R, also Anisomeridium ranunculosporum, Cliostomum flavidulum, Loxospora elatina, Thelotrema lepadinum |
| GYG109 | SO08304 97663 | 202 | 03/05/18 | Post mature Oak in wood, above track, Tag 05368, Cresponea premnea O, Enterographa sorediata O, Lecanographa lyncea F, also Anisomeridium ranunculosporum, Cliostomum flavidulum, Pertusaria flavida, Thelotrema lepadinum. Photo 2018-05-03-06 |
| GYG110 | SO08299 97634 | 201 | 03/05/18 | Post mature Oak east of ride, Cresponea premnea O, Enterographa sorediata R, also Cliostomum flavidulum, Loxospora elatina, Thelotrema lepadinum. Photo 2018-05-03-07 by Holly |
| GYG111 | SO08277 97620 | 200 | 03/05/18 | Big post mature on eastern edge of ride, Tag 05642, Lecanographa lyncea O, Microcalicium disseminatum R, also Cliostomum flavidulum, Lecidea nylanderi, Milospium graphideorum Z0600, Pertusaria flavida, Thelotrema lepadinum |
| GYG112 | SO08270 97636 | 203 | 03/05/18 | Ancient Oak with much exposed lignum, Chaenothecopsis nigra R lignum, Lecanographa lyncea O bark, also Anisomeridium ranunculosporum, Loxospora elatina lignum, Milospium graphideorum Z0600, Thelotrema lepadinum, |
| GYG113 | SO08262 97648 | 203 | 03/05/18 | Standing dead Oak east of ride, interest on lignum, Chaenothecopsis nigra O, Xerotrema quercicola F, also Chaenotheca brunneola, Loxospora elatina |
| GYG114 | SO08286 97683 | 206 | 03/05/18 | Ancient Oak in open woodland, post 36, Cresponea premnea A, Enterographa sorediata O, Lecanographa lyncea F, Rinodina roboris var. roboris R, also Milospium graphideorum Z0600, Thelotrema lepadinum. Photo 2018-05-03-08 |
| GYG115 | SO08263 97674 | 206 | 03/05/18 | Post mature Oak by glade, Lecanographa lyncea O, Enterographa sorediata R, also Cliostomum flavidulum, Milospium graphideorum Z0600, Thelotrema lepadinum. Photo 2018-05-03-09 Left |

| Name | GR | Alt | Date | Comment |
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| GYG116 | SO08270 97664 | 202 | 03/05/18 | Post mature Oak by glade east of ride, Tag 05332, post 32, Cresponea premnea O, Enterographa sorediata R, Lecanographa lyncea O, also Anisomeridium ranunculosporum, Cliostomum flavidulum, Milospium graphideorum Z0600, Thelotrema lepadinum. Photo 2018-05-03-09 Right |
| GYG117 | SO08249 97656 | 202 | 03/05/18 | Ancient Oak just in from ride, Caloplaca lucifuga R, Coenogonium tavaresianum R, Cresponea premnea F, Enterographa sorediata O, Lecanographa lyncea F, Lecanora sublivescens R, also Anisomeridium ranunculosporum, Arthonia pruinata, Loxospora elatina, Milospium graphideorum Z0600, Pertusaria flavida, Schismatomma cretaceum, Thelotrema lepadinum. Photo 2018-05-03-10 Left behind |
| GYG118 | SO08244 97643 | 205 | 03/05/18 | Post mature Oak on ride edge, Cresponea premnea F, Lecanographa lyncea R, Lecanora sublivescens O, also Loxospora elatina, Milospium graphideorum Z0600, Thelotrema lepadinum. Photo 2018-05-03-10 |
| GYG119 | SO08258 97675 | 205 | 03/05/18 | Two mature Ash by glade, Lopadium disciforme F, also Anisomeridium ranunculosporum, Bacidia biatorina, Thelotrema lepadinum |
| GYG120 | SO08255 97691 | 209 | 03/05/18 | Fallen Oak in small glade, interest on lignum, Xerotrema quercicola F, also Imshaugia aleurites, Ochrolechia microstictoides |
| GYG121 | SO08235 97674 | 208 | 03/05/18 | Mature Oak near ride, Lopadium disciforme O, also Anisomeridium ranunculosporum, Loxospora elatina, Pertusaria flavida, Thelotrema lepadinum |
| GYG122 | SO08232 97673 | 208 | 03/05/18 | Post mature Oak on ride edge, by post 34 fallen, Cresponea premnea O, Lecanora sublivescens R, Lecanographa lyncea O, also Anisomeridium ranunculosporum, Milospium graphideorum Z0600, Thelotrema lepadinum. Photo 2018-05-03-11 |
| GYG123 | SO08217 97685 | 210 | 03/05/18 | Post mature Oak in for ride edge by glade, Tag 05321, Lecanographa lyncea R, Schismatomma niveum A, also Cliostomum flavidulum, Thelotrema lepadinum |
| GYG124 | SO08229 97694 | 209 | 03/05/18 | Young Oak, Schismatomma niveum F, also Thelotrema lepadinum |
| GYG125 | SO08244 97690 | 208 | 03/05/18 | Two post mature Oaks by glade, Cresponea premnea F, Enterographa sorediata R, Lecanographa lyncea O, Microcalicium disseminatum R, Schismatomma niveum A, also Anisomeridium ranunculosporum, Cliostomum flavidulum, Loxospora elatina, Milospium graphideorum Z0600, Thelotrema lepadinum. Photo 2018-05-03-12 |
| GYG126 | SO08251 97698 | 206 | 03/05/18 | Mature Ash in wood, round tag 5242 (GG011?), Cresponea premnea R, Lopadium disciforme O, also Anisomeridium ranunculosporum, Bacidia biatorina, Megalaria pulverea, Thelotrema lepadinum |
| GYG127 | SO08256 97719 | 207 | 03/05/18 | Mature Oak in wood by Holly, Lopadium disciforme R, also Lepraria ecorticata, Thelotrema lepadinum |
| GYG128 | SO08256 97710 | 207 | 03/05/18 | Post mature Oak by glade, by posts 30 & mature Ash post 39, Cresponea premnea Q, Fx A, Lecanographa lyncea Q O, Schismatomma niveum Q R, also Milospium graphideorum Q, Z0600, Thelotrema lepadinum Q, Fx |
| GYG129 | SO08241 97713 | 206 | 03/05/18 | Post mature Oak by glade, Cresponea premnea A, Enterographa sorediata O, Lecanographa lyncea R, Lecanora sublivescens R, also Thelotrema lepadinum. Photo 2018-05-03-13 Right |

| Name | GR | Alt | Date | Comment |
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| GYG130 | SO08256 97729 | 206 | 03/05/18 | Post mature Oak in wood, by post 41, Tag 05380, Cresponea premnea O, Microcalicium disseminatum O, Porina coralloidea O, Schismatomma niveum O, also Anisomeridium ranunculosporum, Loxospora elatina, Pertusaria flavida, Thelotrema lepadinum. Photo 2018-05-03-13 Left behind |
| GYG131 | SO08271 97724 | 204 | 03/05/18 | Mature Ash by glade, Tag 05377, Lecanora sublivescens R, Lopadium disciforme F, also Anisomeridium ranunculosporum, Bacidia biatorina, Thelotrema lepadinum. Photo 2018-05-03-14 |
| GYG132 | SO08262 97728 | 206 | 03/05/18 | Mature Oak in glade, Lopadium disciforme R, Schismatomma niveum O, also Thelotrema lepadinum |
| GYG133 | SO08283 97708 | 210 | 03/05/18 | Post mature Oak by glade, Cresponea premnea A, Lecanographa lyncea F, Rinodina roboris var. roboris O, also Milospium graphideorum Z0600, Pertusaria flavida, Thelotrema lepadinum |
| GYG134 | SO08298 97714 | 208 | 03/05/18 | Big post mature Oak by glade, by post 24, Tag 05402, Cresponea premnea F, Enterographa sorediata R, Lecanographa lyncea O, also Calicium salicinum, Milospium graphideorum Z0600. Photo 2018-05-03-15 |
| GYG135 | SO08295 97730 | 208 | 03/05/18 | Two mature Ash in glade, Lopadium disciforme F, also Anisomeridium ranunculosporum, Megalaria pulverea, Normandina pulchella, Thelotrema lepadinum |
| GYG136 | SO08275 97736 | 209 | 03/05/18 | Post mature Alder in glade, Cresponea premnea, also Loxospora elatina, Megalaria pulverea, Thelotrema lepadinum, |
| GYG137 | SO08294 97744 | 208 | 03/05/18 | Mature Oak by glade, Cresponea premnea R, also Bacidia biatorina, Pertusaria flavida, Thelotrema lepadinum |
| GYG138 | SO08216 97702 | 212 | 03/05/18 | Post mature Oak high in wood, by glade, by post 40, Cresponea premnea A, Enterographa sorediata R, Lecanographa lyncea F, Lecanora sublivescens O, Schismatomma niveum F, also Loxospora elatina, Milospium graphideorum Z0600, Pertusaria pertusa, Sphinctrina turbinata Z1087, Thelotrema lepadinum. Photo 2018-05-03-16 |
| GYG139 | SO08201 97701 | 211 | 03/05/18 | Big post mature Oak with Ivy by ride, Cresponea premnea F, Lecanographa lyncea O, Lecanora sublivescens O, also Milospium graphideorum Z0600. Photo 2018-05-03-17 Right |
| GYG140 | SO08202 97708 | 214 | 03/05/18 | Post mature Oak east of ride, Cresponea premnea R, Lecanora sublivescens O, Schismatomma niveum R, also Bacidia biatorina, Thelotrema lepadinum. Photo 2018-05-03-17 Left |
| GYG141 | SO08215 97733 | 216 | 03/05/18 | Post mature Oak at top of slope, Tag 05346, Cresponea premnea O, Lecanographa lyncea A, Lecanora sublivescens O, also Loxospora elatina, Megalaria pulverea, Milospium graphideorum Z0600, Pertusaria flavida. Photo 2018-05-03-18 Right |
| GYG142 | SO08206 97736 | 219 | 03/05/18 | Post mature Oak at top of slope, Tag 05347, Lecanographa lyncea, also Milospium graphideorum Z0600, Parmeliopsis hyperopta, Pertusaria flavida. Photo 2018-05-03-18 Left |
| GYG143 | SO08217 97750 | 218 | 03/05/18 | Post mature Oak at top of slope, Cresponea premnea A, Lecanographa lyncea F, also Chaenotheca trichialis, Micarea viridileprosa, Milospium graphideorum Z0600, Schismatomma cretaceum |

| Name | GR | Alt | Date | Comment |
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| GYG144 | SO08236 97753 | 215 | 03/05/18 | Leaning post mature Oak at base of top slope by glade, post 64, Tag 05388, Cresponea premnea O, Enterographa sorediata R, Lecanographa lyncea F, Lobaria pulmonaria F 5 clumps higher up, Lobaria virens A lower down, Pachyphiale carneola O, Porina rosei F, also Arthonia vinosa, Bacidia biatorina, Bacidia viridifarinosa, Dimerella lutea, Pertusaria flavida, Thelotrema lepadinum. Photos 2018-05-03-19 & 20 |
| GYG145 | SO08248 97766 | 214 | 03/05/18 | Post mature Oak by glade, Tag 05393, Cresponea premnea |
| GYG146 | SO08246 97782 | 216 | 03/05/18 | Post mature Oak by upper track, Cresponea premnea F, Lecanographa lyncea O, Lecanora sublivescens R, also Thelotrema lepadinum, Milospium graphideorum Z0600, Pertusaria flavida. Photo 2018-05-03-21 Right |
| GYG147 | SO08245 97787 | 216 | 03/05/18 | Big burry post mature Oak by glade, Tag 05390, Cresponea premnea O, Lecanographa lyncea O, Microcalicium disseminatum R, also Milospium graphideorum Z0600, Schismatomma cretaceum. Photo 2018-05-03-21 Left |
| GYG148 | SO08221 97775 | 221 | 03/05/18 | Post mature Oak at top of wood, Tag 05352, Cresponea premnea F, Enterographa sorediata R, Lecanographa lyncea F, also Milospium graphideorum Z0600. Photo 2018-05-03-22 |
| GYG149 | SO08212 97769 | 222 | 03/05/18 | Mature Oak at top of wood, Schismatomma niveum F, also Pertusaria flavida |
| GYG150 | SO08201 97757 | 221 | 03/05/18 | Post mature Oak at top of wood, Lecanographa lyncea R, Schismatomma niveum F, also Lecidea nylanderi, Milospium graphideorum Z0600, Pertusaria flavida |
| GYG151 | SO08183 97757 | 223 | 03/05/18 | Post mature Oak top of wood, Cresponea premnea R, Schismatomma niveum R |
| GYG152 | SO08178 97757 | 223 | 03/05/18 | Pair post mature Oak top of wood Schismatomma niveum O |
| GYG153 | SO08311 97771 | 208 | 03/05/18 | Post mature Oak top of wood, Cresponea premnea, also Thelotrema lepadinum |
| GYG154 | SO08312 97748 | 204 | 03/05/18 | Post mature Oak by glade, by post 43, Caloplaca lucifuga R, Cresponea premnea F, Lecanographa lyncea O, Lecanora quercicola R, Lecanora sublivescens O, also Milospium graphideorum Z0600, Pertusaria flavida, Thelotrema lepadinum. Photo 2018-05-03-23 Left |
| GYG155 | SO08316 97743 | 205 | 03/05/18 | Ancient Oak, tree below GYG154, Tag 05434, Cresponea premnea F, Lecanographa lyncea O, Lecanora sublivescens R, Microcalicium disseminatum lignum R, also Cliostomum flavidulum, Milospium graphideorum Z0600, Pertusaria flavida, Thelotrema lepadinum. Photo 2018-05-03-23 Right |
| GYG156 | SO08322 97743 | 205 | 03/05/18 | Mature Ash Lopadium disciforme O, also Pertusaria flavida, Thelotrema lepadinum |
| GYG157 | SO08322 97756 | 206 | 03/05/18 | Post mature Oak, Cresponea premnea O, Schismatomma niveum R also Chaenotheca furfuracea |
| GYG158 | SO08338 97736 | 203 | 03/05/18 | Post mature Oak by glade, Chaenothecopsis retinens Z1318 O, Coll. Herb. Sanderson 2401. Parasitic on Sporodophoron (Schismatomma) cretaceum; short K – reddish brown stalk; brown one septate spores, spores with dark septa, spores 8 – 10 x 3µm. New to Wales. Cresponea premnea F, Enterographa sorediata O, Lecanographa lyncea O, also Arthonia pruinata, Schismatomma cretaceum. Photo 2018-05-03-24 (2018-05-03-25 behind) |

| Name | GR | Alt | Date | Comment |
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| GYG159 | SO08332 97727 | 204 | 03/05/18 | Post mature Oak above track, Tag 05439, Cresponea premnea F, Enterographa sorediata O, Lecanographa lyncea R, Opegrapha fumosa O, also Milospium graphideorum Z0600. Photo 2018-05-03-25 |
| GYG160 | SO08313 97716 | 203 | 03/05/18 | Post mature Oak by flush, by post 21, Tag 05412, Cresponea premnea F, Lecanographa lyncea F, Lecanora sublivescens R, also Bacidia biatorina, Milospium graphideorum, Z0600, Pertusaria flavida, Thelotrema lepadinum. Photo 2018-05-03-26 |
| GYG161 | SO08336 97697 | 199 | 03/05/18 | Post mature Oak above track, Cresponea premnea F, Enterographa sorediata F, Lecanographa lyncea O, also Anisomeridium ranunculosporum, Thelotrema lepadinum. Photo 2018-05-03-27 |
| GYG162 | SO08346 97706 | 200 | 03/05/18 | Post mature Oak below the track, Tag 05599, Cresponea premnea F, Enterographa sorediata O, Lecanora sublivescens R, also Thelotrema lepadinum. Photo 2018-05-03-28 |
| GYG163 | SO08354 97718 | 197 | 03/05/18 | Post mature Oak below the track, Cresponea premnea F, Enterographa sorediata O, Lecanographa lyncea O, also Cliostomum flavidulum, Pertusaria flavida, Thelotrema lepadinum. Photo 2018-05-03-28 behind |
| GYG164 | SO08367 97727 | 193 | 03/05/18 | Post mature Oak below track, Cresponea premnea F, Enterographa sorediata O, Lecanographa lyncea R, Lecanora sublivescens R, also Milospium graphideorum Z0600. Photo 2018-05-03-29 |
| GYG165 | SO08355 97744 | 194 | 03/05/18 | Mature Oak above track Lopadium disciforme O |
| GYG166 | SO08354 97752 | 194 | 03/05/18 | Mature Oak above track, Cresponea premnea R |
| GYG167 | SO08334 97758 | 198 | 03/05/18 | Post mature Oak, Opegrapha fumosa O, also Anisomeridium ranunculosporum, Thelotrema lepadinum |
| GYG168 | SO08316 97781 | 201 | 03/05/18 | Post mature Oak high in wood, Cresponea premnea A, Lecanographa lyncea F, Lecanora sublivescens R, also, Milospium graphideorum Z0600. Photo 2018-05-03-30 |
| GYG169 | SO08319 97783 | 203 | 03/05/18 | Post mature Ash at top of wood, Cresponea premnea R |
| GYG170 | SO08332 97780 | 202 | 03/05/18 | Post mature Ash at top of wood, Lopadium disciforme F, Schismatomma niveum R, also Anisomeridium ranunculosporum, Pertusaria flavida, Thelotrema lepadinum |
| GYG171 | SO08336 97772 | 202 | 03/05/18 | Mature Oak at top of wood, Schismatomma niveum O, also Cliostomum flavidulum, Megalaria pulverea, Thelotrema lepadinum |
| GYG172 | SO08347 97788 | 202 | 03/05/18 | Post mature Oak at top of wood, Cresponea premnea O |
| GYG173 | SO08360 97787 | 200 | 03/05/18 | Big post mature Oak above glade, Cresponea premnea F, Lecanographa lyncea O, Lecanora sublivescens O, also Cliostomum flavidulum, Loxospora elatina, Milospium graphideorum, Z0600, Pertusaria flavida, Thelotrema lepadinum. Photo 2018-05-03-31 |
| GYG174 | SO08374 97787 | 200 | 03/05/18 | Post mature Oak above glade, Lecanographa lyncea O, Cresponea premnea O, also Megalaria pulverea, Milospium graphideorum Z0600 |
| GYG175 | SO08384 97782 | 194 | 03/05/18 | Post mature Oak above track, Cresponea premnea O, Lecanographa lyncea O, also Milospium graphideorum Z0600 |
| GYG176 | SO08396 97795 | 195 | 03/05/18 | Big post mature Oak eastern edge, Cresponea premnea A, Rinodina roboris var. roboris R |

| Name | GR | Alt | Date | Comment |
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| GYG177 | SO08362 97823 | 201 | 03/05/18 | Post mature Oak and recently dead Oak on edge, Cresponea premnea O |
| GYG178 | SO08396 97819 | 196 | 03/05/18 | Big post mature Oak on edge, Cresponea premnea F, Lecanora sublivescens R |
| GYG179 | SO08416 97787 | 192 | 03/05/18 | Exposed on Oak on edge, Lecanographa lyncea R, also Milospium graphideorum Z0600 |
| GYG180 | SO08419 97731 | 189 | 03/05/18 | GYG183 (SO08409 97709, 189m): big post mature Oak in swampy bottom, Cresponea premnea F, Enterographa sorediata R, also Cliostomum flavidulum, Pertusaria flavida, Thelotrema lepadinum. Photo 2018-05-03-32 |
| GYG181 | SO08397 97738 | 190 | 03/05/18 | Two post mature Oaks in valley, Cresponea premnea F both trees, Porina coralloidea O western tree, Schismatomma niveum F western tree, also Anisomeridium ranunculosporum, Thelotrema lepadinum. Photo 2018-05-03-33 |
| GYG182 | SO08391 97755 | 192 | 03/05/18 | Post mature Oak in valley below glade Cresponea premnea O, Opegrapha fumosa R |
| GYG183 | SO08409 97709 | 189 | 03/05/18 | Big post mature Pedunculate Oak in swampy bottom, Cresponea premnea F, Enterographa sorediata R, also Cliostomum flavidulum, Pertusaria flavida, Thelotrema lepadinum. Photo 2018-05-03-32 |
| GYG184 | SO08449 97727 | 188 | 03/05/18 | Post mature Oak on edge, Cresponea premnea O, Lecanographa lyncea R, Pachyphiale carneola O, also Bacidia biatorina, Milospium graphideorum Z0600, Normandina pulchella, Pertusaria flavida, Thelotrema lepadinum |
| GYG185 | SO08850 97417 | 191 | 04/05/18 | Post mature Oak in parkland, Lecanographa lyncea O, mostly sterile, one fertile bit collected seven septate spores, also, Chaenotheca trichialis, Milospium graphideorum Z0600, Pertusaria flavida. Photo 2018-05-04-01 |
| GYG186 | SO08897 97428 | 188 | 04/05/18 | Two post mature Oaks, east of pair in parkland with, Lecanora sublivescens O scattered few small thalli, also Cyphelium sessile Z1064, Pertusaria coccodes, Pertusaria flavida, Thelotrema lepadinum. Western tree Lecanora sublivescens R, also Anisomeridium ranunculosporum, Thelotrema lepadinum. Photo 2018-05-04-02 |
| GYG187 | SO08902 97504 | 188 | 04/05/18 | Pair of Oaks in parkland, interest on southern tree, Lecanora sublivescens O, also Thelotrema lepadinum Q. 2018-05-04-03 |
| GYG188 | SO07906 97351 | | 02/05/18 | Ancient hollow Alder, lignum, Chaenotheca stemonea, Coll. Herb. Sanderson. New to VC47 |