

*Loch Kemp Storage - EIA Report*

*Appendix 10.3 Terrestrial Lichen Survey Report*

*November 2023*

**ash**

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# Terrestrial Lichen Survey at the Proposed Loch Kemp Pump Storage Scheme



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Report for ASH design + assessment

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## 1. Executive Summary

Loch Kemp Storage Ltd. (“the Applicant”), is proposing to construct the 600 Megawatt (MW) Loch Kemp Pumped Storage Scheme (hereafter referred to as “the Proposed Development”), located within the Dell Estate, approximately 13 kilometres (km) to the north-east of Fort Augustus, as illustrated in Figure 1.

The Proposed Development will impact ancient semi-natural woodland including upland birchwoods and stands of old growth hazel dominated by veteran hazels (Hodgetts, 2021). Hodgetts (2021) recommended lichen survey of the affected areas. Most of the birchwood areas and all of the hazel stands occur within the Ness Woods Special Area of Conservation (SAC).

An initial lichen survey highlighted the high conservation importance of the epiphytic lichens in areas likely to be affected by the Proposed Development (Acton, 2022). This included high interest on veteran birch and very high interest on veteran hazel. The report recommended additional lichen survey along watercourses that might be affected by the Proposed Development (both directly during construction or as a result of water abstraction/changes in waterflows).

ASH commissioned additional survey of epiphytic lichens on hazel outwith the proposed construction/operation areas to facilitate impact assessment. This report concerns the epiphytic interest on the site. Douglass (2022) surveyed the saxicolous habitats along the watercourses.

The birchwoods are extensive with abundant old/veteran birch. Hazel stands are more local but there are some largish stands with abundant old growth hazel. The focus of this follow up survey was hazel but a small selection of veteran birch outwith the areas likely to be affected by the Proposed Development were also examined. The site was surveyed fairly comprehensively for hazel stands (Figure 3), and it is estimated that more than 95% of the hazels seen in these areas were examined for lichens. It is likely that some small stands and individual hazels may have been overlooked. In total 1067 target notes have been recorded on the study site (including data from Acton 2022). This includes lichen recording from: 903 hazels, 103 birch trees, 28 rowan trees, 11 ash trees and a small number of other trees/shrub species.

The birchwoods and old growth hazels (and associated trees/shrubs of other species) both support old growth lichen communities of SSSI quality and are of national significance. The old-growth hazel habitat is of international significance for lichens. The site supports a large number of lichen taxa that are rare/threatened in a UK and/or European context. Most of these taxa are strongly associated with veteran hazel but several were recorded on other veteran trees/shrub species including birch, ash, aspen and rowan.

Eighty-three notable have been recorded from the site including old growth lichens, Nationally Scarce/Rare (**NS/NR**) species, UK Biodiversity Action Plan (**P**) species, Scottish Biodiversity List (**Sc**) species, and species for which Britain has an International Responsibility to conserve viable populations (**IR** species). Species of particular interest included the veteran tree specialist species *Bactrospora corticola* **NS** and *Microcalicium disseminatum* **NR**, and the hyperoceanic old-growth species: *Bactrospora homalotropa* **NS Sc IR**, *Leptogium burgessii* **Sc IR**, *Pseudocyphellaria norvegica* **NS P Sc Wa L IR** and *Crutarndina petractoides* **Sc IR**. *P. norvegica* was only recorded outwith the Proposed Development site.

Thirteen UK Red-Listed species were recorded during the survey, and some of these are European Red-Listed. An additional UK Red-Listed species *Schismatomma graphidioides* is also known from the study site (NBN, 2022). Of the Fourteen UK Red-Listed species, nine are likely to be impacted by the development. The other five have only been recorded outwith the development zone: *Arctomia delicatula*, *Collema fasciculare*, *Gomphillus calycioides* and *Leptogium hibernicum* and *S. graphidioides*. The *L. hibernicum* was a particularly important record of a globally Red-Listed Endangered (**EN**) species.

Table 1: UK Red-Listed epiphytic species in the study site. Those listed in bold text are in or near the Proposed Development. Those in normal text are unlikely to be affected by the Proposed Development. **NT** species are RDB Near Threatened, **VU** are RDB Vulnerable. For other abbreviations see the Main report.

<b>Taxon name</b>	<b>Status</b>
<i>Arctomia delicatula</i>	NT NR Sc
<b><i>Arthonia sampaianae</i></b>	<b>NT NR</b>
<b><i>Arthonia zwackhii</i></b>	<b>NT NR Sc</b>
<i>Collema fasciculare</i>	NT NS P Sc Wa L IR
<b><i>Fuscopannaria ignobilis</i></b>	<b>VU D1 NS P Sc S8</b>
<i>Gomphillus calycioides</i>	NT NS P Sc Wa L IR
<i>Leptogium hibernicum</i>	NT NR P Sc IR
<b><i>Nevesia sampaiana</i></b>	<b>NT NS P Eng Sc Wa L IR</b>
<b><i>Pachyphiale fagicola</i></b>	<b>NT NR Sc</b>
<b><i>Parmeliella testacea</i></b>	<b>NT NS P Eng Sc Wa L IR</b>
<b><i>Phlyctis agelaea</i></b>	<b>NT NS Sc</b>
<i>Schismatomma graphidioides</i>	VU B, D1 NS P Eng Sc Wa IR
<b><i>Sclerophora peronella</i></b>	<b>NT NS</b>
<b><i>Scutula circumspecta</i></b>	<b>VU C, D1 NS P Eng Sc Wa</b>

In addition to the nine Red-Listed species, many other notable species are likely to be impacted by the Proposed Development including Nationally Rare, Nationally Scarce, BAP and Scottish Biodiversity List species.

The *Lobarion* community was common on veteran hazel and many of the less specialist species of this community such as *Lobaria pulmonaria* are fairly common in the study site; some very limited losses of trees/shrubs supporting these more common species would probably not compromise the long-term viability at the site provided there was appropriate long term commitment to establish suitable replacement habitat. However, some of the more specialist lichen taxa were found on relatively few trees/hazels, and where these occur in or near the construction zone they are most at threat from any direct felling or indirect impacts including habitat fragmentation.

Some recommendations are given, relating to minimising construction corridors/areas and routing access tracks where practicable to:

- minimise the felling of veteran birch;
- avoid fragmentation of core stands of veteran hazels with old-growth lichen communities; and
- avoid felling specific veteran trees and hazels with species of high interest.

Implementation of these recommendations are advised to avoid significant impacts on the lichen flora. Steps to establish 'veterans of the future' is recommended, but this is a very long-term proposal and inadequate mitigation for loss of current old growth lichen habitat.

## 2. Introduction

Loch Kemp Storage Ltd. (“the Applicant”), is proposing to construct the 600 Megawatt (MW) Loch Kemp Pumped Storage Scheme (hereafter referred to as “the Proposed Development”), located within the Dell Estate to the eastern banks of Loch Ness, approximately 13 kilometres (km) to the north-east of Fort Augustus, as illustrated in Figure 1.

Part of the Proposed Development is located within the Ness Woods Special Area of Conservation (SAC). The Proposed Development will impact ancient semi-natural woodland including upland birchwoods and stands of old growth hazel dominated by veteran hazels (Hodgetts, 2021). Hodgetts (2021) recommended lichen survey of the affected areas. Most of the birchwood areas and all of the hazel stands examined occur within the Ness Woods SAC.

ASH design+assessment Ltd (ASH) commissioned a survey to assess the lichen flora and inform an impact assessment of the Proposed Development (Acton, 2022). The results confirmed the high conservation importance of the epiphytic lichens in areas likely to be affected by the Proposed Development. This included high lichen interest on veteran birch and very high lichen interest on veteran hazel. The report also recommended lichen survey along watercourses that might be affected by the Proposed Development (either directly during construction or as a result of water abstraction/changes in waterflows).

ASH commissioned additional survey of epiphytic lichens on hazel outwith the Proposed Development site to facilitate impact assessment. The study site and layout of the Proposed Development is shown in Figure 1. Douglass (2022) surveyed the saxicolous habitats along three watercourses in the study site.

## 3. Methods

### 3.1 Field survey

Fieldwork took the form of a walkover survey of the study site over 14.25 man days. 7 man days were taken to look at the lichen flora within the Proposed Development site in April (Acton, 2022). The follow up survey on the Estate-owned areas of the wider SAC was undertaken over 7.25 man days in May 2022.

The initial survey focussed on epiphytic lichens associated with birchwoods and stands of hazel. Most of the survey time was spent in the woodland within the SAC but there was additional recording of birchwoods around Loch Kemp (some adjoining the SAC but outwith the SAC boundary) and some additional recording was undertaken of saxicolous lichens from siliceous rock outcrops above Loch Kemp. The follow up survey focussed almost exclusively on old-growth hazel. Recording from rocks along watercourses and along some of the existing tracks was undertaken by Douglass (2022).

Potential lichen habitats within the areas visited were searched for lichens, lichenicolous fungi and non-lichenized micro-fungi traditionally recorded by lichenologists. Survey effort concentrated on those microhabitats likely to support well-developed lichen communities and/or notable species.

Species lists were compiled and Target Notes recorded for features/species of particular interest such as Nationally Scarce/Rare, Red-Listed or otherwise notable species. Target notes (TNs) were used to make a note on other features of interest. Locations were recorded using a Global Positioning System (GPS). Site coverage is indicated in Figure 2. Samples were collected of species not readily identifiable in the field using a x14 hand lens, for subsequent identification in the laboratory. As small a sample as possible was collected using hammer and chisel or knife, as appropriate.

### 3.2 Data Collation

Samples collected in the field were identified in the laboratory using the standard literature (Smith *et al.*, 2009 *et seq.*; and various keys in the published and unpublished literature), compound/binocular microscopes, and chemical analysis. Field records and identifications from laboratory work were collated. All records will be submitted to the British Lichen Society (BLS) and be subsequently available through the National Biodiversity Network (<http://data.nbn.org.uk/>). All recording areas within the study site are shown on Figure 2.

### 3.3 Constraints

The main constraints were practical e.g. areas of steep rough ground that were difficult to access in the time available. Lichen survey is time-consuming. Locally some areas of crags and very steep rocky terrain were not accessed. The site was surveyed fairly comprehensively for hazel stands and it is estimated that more than 95% of the hazels seen in the areas surveyed were examined for lichens, as illustrated in Figure 3. It is likely that some small stands and individual hazels may have been overlooked.

Two small areas of old hazel were seen but not surveyed, as illustrated in Figure 3. One area of hazel on steep ground above Loch Ness was not accessed. Another stand on the steep slopes to the south of the unnamed watercourse from the Lochan à Choin Uire, above where it is anticipated the proposed powerhouse would be located, was not surveyed. See section 6.2 for more details on these two areas of hazel.

The steep slopes below Creag a' Ghiubhais were examined at a distance and were steep, heathery slopes dominated by birch. The main stands of hazel were veteran pasture hazels on richer soil accumulations (often associated with bracken slopes). On the basis of experience of other steep birch-dominated slopes elsewhere on site, it was judged that there was much more limited potential for old growth hazel stands on these more acidic slopes below Creag a' Ghiubhais and so they were not visited.

### 3.4 Nomenclature

Nomenclature for lichens follows Smith *et al* (2009) except for a few species that have recently changed names. Where this is likely to facilitate cross referencing with relevant literature (e.g. Smith *et al*, 2009) the first time the new name is used in the report (e.g. section 4.1) the older name is given as a synonym (syn.) in parentheses; for example the old name for *Crutarndina petractoides* (syn. *Thelotrema petractoides*).

Conservation Status follows Woods & Coppins (2012) and their acronyms are used in this report. Red-Listed species are Critically Endangered **CR**, Endangered **EN**, Vulnerable **VU** or Near Threatened **NT**. Other acronyms include:

- IR** Species for which the UK has International Responsibility.
- L** *Lobarion* community species.
- L\*** Species often associated with *Lobarion* communities
- LC** Least Concern i.e. not threatened in UK though it may still be threatened at other scales e.g. regionally threatened, or of conservation value e.g. Nationally Scarce/Rare or Scottish Biodiversity List species.

- NS** Nationally Scarce
- P** UKBAP species.
- Sc** Scottish Biodiversity List species.
- S8** Schedule 8 species.
- Eng** Species of importance in England (Section 41 species)
- Wa** Species of importance in Wales (Section 42 species)

For explanations of these terms refer to the glossary (see Appendix 1). Note that the number of 10km squares in which a taxon is found may have changed since the formal 2012 assessment in Woods & Coppins. For the latest distribution maps refer to the latest British Lichen Society (BLS) distribution maps available online at <http://www.britishlichensociety.org.uk/resources/species-accounts>.

## 4. Site Account

### 4.1 Main epiphytic lichen habitats and lichen communities

The main lichen interest was associated with old/veteran trees/shrubs especially veteran hazel, rowan, birch, and more locally ash, oak and alder. Additional interest was recorded on siliceous rock. The distribution of veteran hazel in the study site are shown on Figure 3.

The old growth *Lobarion pulmonariae* community (hereafter abbreviated to *Lobarion*) of more base rich bark was present and locally very well-developed on veteran hazel, ash, rowan and an ancient stand of layering cherry. The *Lobarion* community included hyperoceanic elements more typical of the lichen-rich woods in western Scotland. A species-poor form of the *Lobarion* community was occasionally found on veteran birch.

*Lobarion* species included occasional to locally frequent *Lobaria pulmonaria*, *Lobaria scrobiculata*, *Pannaria conoplea*, *Parmeliella triptophylla*, *Peltigera collina*, *Pectenia atlantica* (syn. *Degelia atlantica*), *Ricasolia amplissima* (syn. *Lobaria amplissima*), *Ricasolia virens* (syn. *Lobaria virens*), *Sticta sylvatica*, *Sticta fuliginosa*, and the UK Red-Listed *Parmeliella testacea* and *Nevesia sampaiana* (syn. *Fuscopannaria sampaiana*). *Nephroma laevigatum*, *N. parile* and *S. limbata* were occasional. More scarce/rare and local species recorded in *Lobarion* communities included *Arctomia delicatula*, *Collema subflaccidum*, '*Dictyonema*' sp. (an undescribed species, see section 4.2), *Fuscopannaria mediterranea*, *Leptogium burgessii*, *Leptogium cyanescens*, *Leptogium lichenoides*, *Mycobilimbia pilularis*, *Nephroma laevigatum*, *Pachyphiale carneola*, *Pannaria rubiginosa*, *Pectenia plumbea* s. str. (syn. *Degelia plumbea*), *Peltigera horizontalis*, *Pseudocyphellaria norvegica* and the UK Red-Listed species: *Arthonia sampaianae*, *Collema fasciculare*, *Fuscopannaria ignobilis*, *Gomphillus calycioides* and *Leptogium hibernicum*.

The high quality of the *Lobarion* is reflected in the presence of fertile specimens of several species that are often not fertile in suboptimal habitats and several lichenicolous fungi. *Plectocarpon lichenum* was locally frequent on *Lobaria pulmonaria* and *Plectocarpon scrobiculatae* was recorded on *L. scrobiculata*. *Lobarion* species recorded fertile included: *Parmeliella triptophylla*, *Leptogium burgessii*, *Lobaria scrobiculata*, *Lobaria pulmonaria*, *Peltigera collina* (not commonly found fertile) and *Pannaria conoplea* (the latter only very rarely recorded fertile even in western Scotland).

The *Graphidion scriptae* (*Graphidion*) community was recorded on smooth bark. The old woodland species *Thelotrema lepadinum* and the hyperoceanic species *Pyrenula occidentalis* were frequent on hazel and rowan. *Thelotrema lepadinum* was also

occasional on smoother bark patches on veteran birch. More scarce or rare and local were *Opegrapha thelotrematis* and several hyperoceanic species including *Arthonia ilicina*, *Bactrospora homalotropa*, *Crutarndina petractoides* (syn. *Thelotrema petractoides*), *Phlyctis agelaea* and *Thelotrema macrosporum*.

Other notable species recorded on veteran hazels included *Biatora vernalis*, and the UK Red-Listed *Pachyphiale fagicola* and *Scutula circumspecta* (syn. *Bacidia circumspecta*).

The acid bark community was very well developed on old/veteran birch with frequent/abundant *Mycoblastus sanguinarius* and *Ochrolechia androgyna* *Ochrolechia tartarea*, *Sphaerophorus globosus*,. Where the community was best developed old growth species such as *Loxospora elatina* (recorded fertile), *Micarea alabastrites*, *Megalaria pulverea* (fertile), *Parmeliella parvula*, *Felipes leucopellaeus* (syn. *Arthonia leucopellaea*) and *Protoparmelia ochrococca* were present; the latter two species were most frequent in old birchwoods in the SAC near the proposed dam at the north end of Loch Kemp. Other species that were more scarce/rare in the study site include the old growth species *Bactrospora corticola*, *Bryobilimbia sanguineoatra* (syn. *Lecidea sanguineoatra*), *Hypotrachyna laevigata*, *Lopadium disciforme* and *Bunodophoron melanocarpum*.

The dry rough bark of old birch that was sheltered from direct rainfall was generally dominated by the common lichen *Lecanactis abietina* with frequent *Chrysothrix candelaris*, and *Cliostomum griffithii*, but 'pinhead' lichens ('*Caliciales*') were locally frequent including frequent *Calicium viride* as well as *Calicium glaucellum*, *Chaenotheca ferruginea*, *Chaenotheca trichialis* and *Chaenotheca chrysocephala*. Pinhead lichens recorded as rare on veteran birch include *Chaenotheca hispidula* *Microcalicium disseminatum* and the UK Red -listed *Sclerophora peronella*.

## 4.2 Notable taxa

More than 250 taxa were recorded including 80 notable species (Table 1). Fourteen of the species known from the site are UK Red-Listed. Three of these were not recorded in 2022 but are listed for the site on the NBN Atlas (*Microcalicium ahlneri*, *Micarea synotheoides* and *Schismatomma graphidioides*).

A number of the notable species in Table 1 are listed Nationally Scarce or Rare **NS** or **NR** in Woods & Coppins (2012). A number are *Lobarion* species (**L** in the Table below) or species often associated with *Lobarion* communities (**L\*** species). Many of these are Scottish Biodiversity List (**Sc**) species and some of these are **IR** species - i.e. International Responsibility species. These are species which the UK has a responsibility for as it supports a significant proportion of the European and/or global populations (see Woods & Coppins, 2012). Although many of the species are not UK Red-Listed some are at the eastern edge of their range and several of the old woodland species are very local and probably threatened outwith core populations in

more oceanic parts of western Scotland (e.g. Argyll and Lochaber). Some of the NS species are common and widespread in the right habitats and merely under-recorded species and likely to be of low ecological value (e.g. *Lepraria* spp. and the saxicolous *Porpidia* spp.)

Table 2: Eighty-three notable recorded in the study site. UK Red-Listed species listed in **bold** text.

<b>Taxon name</b>	<b>Status</b>
<b><i>Arctomia delicatula</i></b>	<b>NT NR Sc</b>
<i>Arthonia anombrophila</i>	LC NS Sc IR
<i>Arthonia ilicina</i>	LC Sc IR
<i>Arthonia muscigena</i>	LC NS
<b><i>Arthonia sampaiana</i></b>	<b>NT NR</b>
<i>Arthonia vinosa</i>	LC L*
<b><i>Arthonia zwackhii</i></b>	<b>NT NR Sc</b>
<i>Bacidia caesiovirens</i>	LC NS Sc IR
<i>Bactrospora homalotropa</i>	LC NS Sc IR
<i>Bactrospora corticola</i>	LC NS
<i>Biatora vernalis</i>	LC NS
<i>Bryobilimbia sanguineoatra</i>	LC NS
<i>Bryoria capillaris</i>	LC NS
<i>Caloplaca ferruginea</i> s. str.	LC Sc IR
<i>Calvitimela aglaea</i>	LC NS
<i>Capronia normandinae</i>	LC NS
<i>Catinaria atropurpurea</i>	LC L*
<i>Chaenotheca hispidula</i>	LC NS
<b><i>Collema fasciculare</i></b>	<b>NT NS P Sc Wa L IR</b>
<i>Crutarndina petractoides</i>	LC Sc IR
<i>Dactylospora lobariella</i>	LC NS
<i>Dictyonema</i> sp.	Not formally evaluated but an old growth (oceanic?) species. Probably nationally scarce, see Appendix 3 for distribution map.
<i>Felipes leucopellaeus</i>	LC NS
<b><i>Fuscopannaria ignobilis</i></b>	<b>VU D1 NS P Sc S8</b>
<i>Fuscopannaria mediterranea</i>	LC NS L
<b><i>Gomphillus calycioides</i></b>	<b>NT NS P Sc Wa L IR</b>
<i>Gyalideopsis muscicola</i>	LC NS Sc IR
<i>Japewia subaurifera</i>	LC NS
<i>Lepraria ecorticata</i>	LC NS
<i>Lepraria elobata</i>	LC NS
<i>Leptogium burgessii</i>	LC Sc Wa L IR
<i>Leptogium cyanescens</i>	LC Sc IR
<b><i>Leptogium hibernicum</i></b>	<b>NT NR P Sc IR</b>
<i>Lobaria pulmonaria</i>	LC Sc L IR

<b>Taxon name</b>	<b>Status</b>
<i>Lobaria scrobiculata</i>	LC Sc L IR
<i>Micarea alabastrites</i>	LC Sc IR
<i>Micarea synotheoides</i>	LC NS Sc IR
<i>Micarea xanthonica</i>	LC NS Sc IR
<i>Microcalicium ahlneri</i>	LC NS
<i>Microcalicium disseminatum</i>	LC NR
<i>Mycobilimbia pilularis</i>	LC L*
<i>Mycoblastus affinis</i>	LC NS
<i>Mycoglaena myricae</i>	LC NS
<i>Nephroma laevigatum</i>	LC Sc L IR
<i>Nephroma parile</i>	LC L
<b><i>Nevesia sampaiana</i></b>	<b>NT NS P Eng Sc Wa L IR</b>
<i>Normandina pulchella</i>	LC L*
<i>Ochrolechia szatalaënsis</i>	LC NS Sc IR
<i>Opegrapha thelotrematis</i>	LC NS Sc IR
<i>Pachyphiale carneola</i>	LC L
<b><i>Pachyphiale fagicola</i></b>	<b>NT NR Sc</b>
<i>Pannaria conoplea</i>	LC Sc L IR
<i>Pannaria rubiginosa</i>	LC Sc L IR
<i>Parmeliella parvula</i>	LC Sc L* IR
<b><i>Parmeliella testacea</i></b>	<b>NT NS P Eng Sc Wa L IR</b>
<i>Parmeliella triptophylla</i>	LC Sc L IR
<i>Pectenaria atlantica</i>	LC L IR
<i>Pectenaria plumbea s. str.</i>	LC L IR
<i>Peltigera collina</i>	LC Sc L IR
<i>Peltigera horizontalis</i>	LC L*
<i>Peltigera polydactylon</i>	LC NS
<i>Pertusaria chiodectonoides</i>	LC NS
<i>Pertusaria coronata</i>	LC NS
<b><i>Phlyctis agelaea</i></b>	<b>NT NS Sc</b>
<i>Plectocarpon lichenum</i>	LC NS
<i>Plectocarpon scrobiculatae</i>	LC NR
<i>Porpidia melinodes</i>	LC NS
<i>Porpidia striata</i>	LC NS
<i>Protoparmelia ochrococca</i>	LC NS
<i>Pseudocyphellaria norvegica</i>	LC NS P Sc Wa L IR
<i>Psoroma hypnorum</i>	LC NS
<i>Pyrenula occidentalis</i>	LC Sc IR
<i>Ricasolia amplissima</i>	LC Sc L IR
<i>Ricasolia virens</i>	LC Sc L IR
<b><i>Schismatomma graphidioides</i></b>	<b>VU B, D1 NS P Eng Sc Wa IR</b>
<b><i>Sclerophora peronella</i></b>	<b>NT NS</b>
<b><i>Scutula circumspecta</i></b>	<b>VU C, D1 NS P Eng Sc Wa</b>
<i>Sphaerellothecium stereocaulorum</i>	NE
<i>Sticta fuliginosa s. lat.</i>	LC Sc L IR

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<b>Taxon name</b>	<b>Status</b>
<i>Sticta limbata</i>	LC Sc L IR
<i>Sticta sylvatica</i>	LC Sc L IR
<i>Thelotrema lepadinum</i>	LC L*
<i>Thelotrema macrosporum</i>	LC NS Sc IR

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## 5. Evaluation

Woodland habitats for lichens can be assessed on the basis of notable assemblages of species as well as the presence of particularly notable species (e.g. UK Red-Listed species). Various indices have been developed to assess woodlands (e.g. Coppins & Coppins 2002 who developed the indices of Francis Rose). The woodland habitats for lichens have been assessed using the Boreal Woodland Index (**BWI**), the Sub-oceanic Woodland Index (**SWI**) and the 'Pinhead' Index of Sanderson *et al.*, (2018).

### 5.1 Boreal Woodland Index (**BWI**) score

Thirty-one **BWI** species have been recorded at the site (Table 3). Note two micro-lichens *Microcalicium ahlneri* and *Micarea synotheoides* were not recorded in 2022 but are listed for the site on the NBN Atlas. The threshold for SSSI quality is 15 BWI species in this area of Britain (Sanderson *et al.* 2018). Three additional old woodland species also indicate the importance of the Boreal woods in the study site: the Upland Rainforest Index **URI** species *Bunodophoron melanocarpum*, *Parmeliella parvula* and *Bryobilimbia sanguineoatra*.

Table 3: Boreal Woodland Index (**BWI**) species.

<b>BWI spp.</b>	
<i>Arthonia vinosa</i>	<i>Megalaria pulverea</i>
<i>Bryoria capillaris</i>	<i>Micarea alabastrites</i>
<i>Chaenotheca chrysocephala</i>	<i>Microcalicium ahlneri</i>
<i>Chaenotheca trichialis</i>	<i>Microcalicium disseminatum</i>
<i>Felipes leucopellaeus</i>	<i>Mycoblastus affinis</i>
<i>Fuscopannaria ignobilis</i>	<i>Pannaria conoplea</i>
<i>Fuscopannaria mediterranea</i>	<i>Pannaria rubiginosa</i>
<i>Hypotrachyna laevigata</i>	<i>Protoparmelia ochrococca</i>
<i>Micarea synotheoides</i>	<i>Ricasolia amplissima</i>
<i>Nevesia sampaiana</i>	<i>Ricasolia virens</i>
<i>Pectenaria atlantica</i>	<i>Sclerophora peronella</i>
<i>Pectenaria plumbea s. str.</i>	<i>Sticta fuliginosa s. lat.</i>
<i>Lobaria pulmonaria</i>	<i>Sticta limbata</i>
<i>Lobaria scrobiculata</i>	<i>Sticta sylvatica</i>
<i>Lopadium disciforme</i>	<i>Thelotrema lepadinum</i>
<i>Loxospora elatina</i>	

## 5.2 Sub-oceanic Woodland Index (SWI) score

Thirty-two **SWI** species were recorded (Table 4). One of these, *Microcalicium ahlneri* was not recorded in 2022 but is listed for the site on the NBN Atlas. The threshold for SSSI quality is 20 SWI species in this area of Britain (Sanderson *et al.* 2018). There are also 19 additional records for other old woodland indicator species for example those used to calculate the Lowland Rainforest Index **LRI** (Table 5). The lichen flora of the hazel stands in the site thus far exceeds the threshold for consideration as a SSSI for lichens in this region of Scotland.

Table 4: Sub-Oceanic Woodland Index (**SWI**) species.

Taxon name	
<i>Arthonia vinosa</i>	<i>Nephroma laevigatum</i>
<i>Catinaria atropurpurea</i>	<i>Nephroma parile</i>
<i>Chaenotheca chrysocephala</i>	<i>Normandina pulchella</i>
<i>Chaenotheca hispidula</i>	<i>Pachyphiale carneola</i>
<i>Chaenotheca trichialis</i>	<i>Pachyphiale fagicola</i>
<i>Coniocarpon cinnabarinum</i>	<i>Pannaria conoplea</i>
<i>Fuscopannaria mediterranea</i>	<i>Parmeliella triptophylla</i>
<i>Lobaria pulmonaria</i>	<i>Pectenaria plumbea s. str.</i>
<i>Lobaria scrobiculata</i>	<i>Peltigera collina</i>
<i>Lopadium disciforme</i>	<i>Ricasolia amplissima</i>
<i>Loxospora elatina</i>	<i>Ricasolia virens</i>
<i>Megalaria grossa</i>	<i>Sclerophora peronella</i>
<i>Megalaria pulverea</i>	<i>Sticta fuliginosa s. lat.</i>
<i>Microcalicium ahlneri</i>	<i>Sticta limbata</i>
<i>Microcalicium disseminatum</i>	<i>Sticta sylvatica</i>
<i>Mycobilimbia pilularis</i>	<i>Thelotrema lepadinum</i>

Table 5: Nineteen additional old woodland indicator species in the hazel stands including Lowland Rainforest Index **LRI**, Boreal Woodland Index **BWI** and also West of Scotland Index of Ecological continuity species **WSIEC** and **WSEIC Bonus** species as used in Coppins & Coppins, 2002.

Taxon name	Index	Taxon name	Index
<i>Arctomia delicatula</i>	<b>WSIEC Bonus</b>	<i>Gomphillus calycioides</i>	<b>LRI</b>
<i>Arthonia anombrophila</i>	<b>LRI</b>	<i>Leptogium burgessii</i>	<b>LRI</b>
<i>Arthonia ilicina</i>	<b>LRI</b>	<i>Leptogium hibernicum</i>	<b>LRI</b>
<i>Arthonia sampaiana</i>	<b>WSIEC Bonus</b>	<i>Nevesia sampaiana</i>	<b>LRI, BWI</b>
<i>Bactrospora homalotropa</i>	<b>LRI</b>	<i>Pannaria rubiginosa</i>	<b>BWI</b>
<i>Collema fasciculare</i>	<b>LRI</b>	<i>Parmeliella testacea</i>	<b>LRI</b>
<i>Collema subflaccidum</i>	<b>LRI</b>	<i>Pseudocyphellaria norvegica</i>	<b>LRI</b>
<i>Crutarndina petractoides</i>	<b>LRI</b>		
<i>Felipes leucopellaeus</i>	<b>LRI, BWI</b>	<i>Pyrenula occidentalis.</i>	<b>LRI</b>
<i>Fuscopannaria ignobilis</i>	<b>Bonus, BWI</b>	<i>Thelotrema macrosporum</i>	<b>LRI</b>

### 5.3 Pinhead Index

Nine Pinhead species have been recorded at the site (Table 6). One species, *Microcalicium ahlneri* was not recorded in 2022 but is listed for the site on the NBN Atlas. The threshold for SSSI quality is 10 pinhead species (Sanderson *et al.* 2018). The lichen flora of veteran birch thus does not currently meet the threshold for consideration as a SSSI for pinhead lichens in this region of Scotland. Given that the Pinhead flora was well developed on veteran birch and many veteran birch remain unexamined (the May survey focussed on hazel stands which are generally poor for Pinheads), it is likely that further survey work would find additional pinhead species such as *Chaenotheca brunneola* and thus meet the SSSI threshold; *Calicium salicinum* and *C. brunneola* are known from veteran hazel in the SAC at NH4414 (Acton, 2013).

Table 6: Pinhead species recorded on site.

Taxon name
<i>Calicium glaucellum</i>
<i>Calicium viride</i>
<i>Chaenotheca chrysocephala</i> .
<i>Chaenotheca ferruginea</i>
<i>Chaenotheca hispidula</i>
<i>Chaenotheca trichialis</i>
<i>Microcalicium disseminatum</i>
<i>Microcalicium ahlneri</i> #
<i>Sclerophora peronella</i>

### 5.4 Overall evaluation

The **BWI** and **SWI** scores clearly indicate the site qualifies for SSSI status for lichens of birchwoods and hazel stands in this central region of Scotland. To put the site into context of more western woods in the Scottish temperate rainforest zone, the site supports 23 **LRI** species (the threshold for SSSI status in western Scotland is 25 **LRI** spp.).

The site supports 14 UK Red-Listed species. Eleven are listed as Near Threatened and three are UK Red-Listed Vulnerable: *Fuscopannaria ignobilis* **VU D1 NS P Sc S8**, *Scutula circumspecta* **VU C, D1 NS P Eng Sc Wa** and *Schismatomma graphidioides* **VU B, D1 NS P Eng Sc Wa IR**. One of the UK Red-Listed species *Leptogium hibernicum* **NT NR P Sc IR** is also globally Red-Listed Endangered (**EN**).

In addition there are a number of old woodland species that are scarce and threatened in this region of Scotland especially oceanic/hyperoceanic species at the edge of their range. The site is particularly important because it not only supports these species but

the best hazel stands currently support viable populations of a number of them, including *Lobarion* species that are scarce/threatened in England, Wales and/or Europe (e.g. Table 2). For example the site supports *Pachyphiale fagicola* **NT NR** and what is probably the best known British (probably global?) populations of *Arthonia sampaiana*, **NT NR ?endemic**, and what are likely to be nationally and internationally important populations of the UK Red Listed Near Threatened and European Threatened **IR** species: *Nevesia sampaiana* **NT NS IR P Eng Sc Wa L IR** and *Parmeliella testacea* **NT NS P Eng Sc Wa L IR**. Following Sanderson *et al.* (2018), the site qualifies for SSSI status purely on the basis of the outstanding populations of two species: the **NT IR** species *N. sampaiana* and *P. testacea*.

The site is clearly of National and International importance for lichens.

## 6. Discussion

### 6.1 Target Note locations

The locations of Target Notes for species of medium, high and very high value are shown in Figures 4 and 5. The locations of Target Notes for species of very high value only are shown in Figure 6. The Target Note details are given in the Appendices 2a and 2b.

### 6.2 Old growth hazel stands

The old growth hazels on the eastern banks of Loch Ness (see Figure 3) support lichens of very high conservation value including species that are Red-listed in the UK and/or Europe, rare or absent most other areas of Britain outwith their strongholds in Argyll/Lochaber. The survey aimed to examine and assess most of the hazels likely to support lichen interest. Figure 3 also illustrates two small hazel stands that were not surveyed due to accessibility issues, but there may be others (section 3.1.2). The area on steep slopes and outcrops on steep slopes above the shore (at TN194) was not examined by Acton 2022 but includes old hazel so is likely to support some lichen interest. The other area on the steep slopes to the south of the unnamed watercourse from the Lochan à Choin Uire, above where it is anticipated proposed powerhouse would be located, is an impressive stand of old-growth hazel near TN172 and will almost certainly support a notable lichen flora including UK Red-Listed species.

The rich lichen flora is partially a consequence of continuity of habitat - i.e., relatively well-lit but sheltered veteran hazels in an upland pasture woodland. Browsing has been important to maintain these conditions but deer browsing has been too high for too long. The woodlands have been subject to a long history of browsing and there are a number of 'tree form' hazels (including some ancient hazels with pollard-like forms, e.g. Image 1). Many hazels have collapsed and although many have regenerated successfully by 'phoenix' regeneration, others are in poor condition. The ongoing collapse and decline means that control of browsing is now essential. Many hazels are in desperate need of some basal regeneration and some natural regeneration by seed is desirable to replace hazels that have died. The most moribund stands were seen just to the north of Allt an t-Sluichd.

Some successful regeneration of other species such as willow, ash, alder, rowan, holly and oak is also desirable to diversify species composition (oak, alder and willow for example are very rare on site). Saplings were rare and confined to inaccessible crags. Accessible aspen suckers seen were suppressed by browsing but should regenerate well with a reduction in browsing.

It is essential to reduce deer browsing to allow basal regeneration of the hazel, allow aspens suckers to establish and permit successful recruitment of a more diverse range of tree species. Total browsing exclusion can be disastrous for rich lichen florae, so deer control is recommended (see section 8.1).



Image 1: An ancient hazel at TN 172. This is one of the largest hazels the author has observed and likely over 400 years old. The adjacent area just upslope and to the south was outwith the Proposed Development area surveyed by Acton (2022) and has not been examined in detail for lichens but it is prime hazel habitat.

### 6.3 Notes on some the more notable lichens potentially impacted by the scheme

Some of the old-growth epiphytic species that are particularly important at the site based scale and potentially threatened by the Proposed Development are listed in Table 7. Target Note locations for these are shown on Figures 7 – 20. Full details of all target notes are given in Appendix 2a.

The species in Table 7 of High and Very high conservation value were recorded systematically as far as practical but additional locations of some non-macro lichens e.g. *Bactrospora homalotropia* could have been overlooked.

Table 7 does *not* include a *large* number of other notable species. Some of these are fairly scarce/local at the site-based scale whilst others are occasional to locally frequent in the high-quality areas on veteran hazels (e.g. *Lobaria pulmonaria*, *Lobaria*

*scrobiculata*, *Ricasolia virens*). The more common species have generally been assessed as of Medium value at the study-site based scale, the notable species that are scarce on site as of High value. Two species of Medium value at the site based scale are included in the Table: *Pectenaria atlantica* and *Ricasolia amplissima*; both were assessed as of high value by Acton (2022) but the extended survey found them to be fairly frequent in high quality habitat so they were downgraded to Medium. Other species downgraded following the extended survey in May include *Pannaria rubiginosa* and *Bunodophoron melanocarpum*, whose locations were assessed as of Very High value at the site-based scale in Acton (2022), but have been downgraded to High in this report, as these species were identified at additional locations during the follow up survey.

It will be important to maintain viable populations of all notable species at the site (including species of Medium value). So although some of these more commonly encountered species are likely to be more resilient to very localised impacts, overall impact will depend on the final layout of the Proposed Development and to what degree the impacts can be minimised. These additional species may need further consideration in any final impact assessment (see section 7).

Table 7: Some of the more notable old growth lichen species recorded in the study site. European RDB status is based on information in Church *et al.* 1996 (for macro lichens) and reference to GBIF and the Norwegian Red Lists. Species annotated with an asterisk have had the value downgraded since Acton (2022), see the notes column. Note that 5 UK Red-Listed species have *not* been included in this Table as they have only been recorded outwith the development zone: *Arctomia delicatula*, *Collema fasciculare*, *Gomphillus calycioides*, *Leptogium hibernicum* and *Schismatomma graphidioides*. Red Listed and Threatened species are in red text.

Taxon	Assessed value (taking into consideration rarity on site)	Europe RDB status	IR Status	Oceanic?	UK Conservation Status	Rarity in the study site	Locations in study site	Notes
<i>Arthonia sampaiana</i>	Very High	Threatened	Endemic ?	Hyperoceanic	NT NR	Very rare	9 veteran hazels (TNs 93, 96, 448, 487, 502, 928, 932, 971, 1006). c. 45% of the known population occurs along or near the proposed operational track (at time of survey) (TN93, 96, 928, 932).	This is a host-specific lichenicolous fungus and the host ( <i>N. sampaiana</i> ) is Threatened in Europe so this parasitic species will be Threatened too. Appears to be endemic according to the maps available on GBIF
<i>Arthonia zwackhii</i>	Very High	Threatened?		No	NT NR Sc	Very rare	On one veteran hazel TN9.	A lichenicolous fungus on <i>Phlyctis</i> sp. Very rare in Scotland (only known from Milton Wood NNR, NO1650). Most of the world records appear to be in ancient woodland in southern England, with a few records from Spain and Sweden, and

Taxon	Assessed value (taking into consideration rarity on site)	Europe RDB status	IR Status	Oceanic?	UK Conservation Status	Rarity in the study site	Locations in study site	Notes
								one from France (according to GBIF maps).
<i>Bactrospora corticola</i>	Very High	Threatened?		?	LC NS		On 2 veteran birch TN264, 293. TN293 is within the Proposed Development site adjacent to the proposed dam at the north end of Loch Kemp.	Possibly under-recorded on site but even so probably still rare and local (a veteran tree specialist of dry fissured bark). Main populations on GBIF are in Britain, Norway and Sweden. Red-Listed VU in Norway and NT in Sweden.
<i>Bactrospora homalotropa</i>	Very High	Threatened?	IR	Hyperoceanic	NS Sc	Rare	On 7 veteran hazels (TNs 68, 75, 100, 558, 812, 986, 1081). 43% of the known population occurs along or near the proposed operational track (at time of survey) (TNs68, 75, 100).	Possibly under-recorded on site but even so probably still rare and local (confined to high quality stands of old growth hazel). Main global populations in west Scotland and west Ireland (GBIF). Red-Listed VU in Norway.
<i>Bunodophoron melanocarpum</i>	High*	Threatened?		Oceanic		Scarce and local	On 8 birch plus 2 dead birch and one small cliff. c 10 % of the	Main populations on GBIF are in Britain and Norway. Red-Listed Near Threatened in

Taxon	Assessed value (taking into consideration rarity on site)	Europe RDB status	IR Status	Oceanic?	UK Conservation Status	Rarity in the study site	Locations in study site	Notes
							known population is in an area likely to be impacted by the Proposed Development: a veteran phoenix birch in the inundation zone above Loch Kemp (atTN226).	Norway. An old growth species initially assessed as of Very High value as only recorded on 1 veteran birch (Acton 2021). Downgraded to High on the basis of the May survey; the May survey focussed on hazel and several old growth birch stands that looked suitable for <i>Bundodphoron</i> were not examined. It is anticipated the species is under-recorded in the study site though probably still local. The birch at Loch Kemp (TN226) is likely to represent <5% of the overall population.
<b><i>Crutarndina petractoides</i></b>	High	Threatened?	IR	Hyperoceanic	Sc	Local	On 55 old/veteran hazels through the site including 5 (9%) in the vicinity of proposed construction works (TN34, 35, 74, 163 and 171).	In Europe confined to western Scotland and Norway. (and Red Listed EN in Norway). Note it can occur on large old stools but also small, spindly (but old) stools.

Taxon	Assessed value (taking into consideration rarity on site)	Europe RDB status	IR Status	Oceanic?	UK Conservation Status	Rarity in the study site	Locations in study site	Notes
<i>Fuscopannaria ignobilis</i>	Very High	Unknown?		No	<b>VU D1 NS P Sc S8</b>	Very rare	On 1 veteran hazel (TN4) near the proposed operational track (at time of survey), a tiny scrap of aff. <i>F. ignobilis</i> on 1 aspen that will be far from any construction works (at TN309); on an ash along the Allt an t-Sluichd at TN1086.	Red-Listed Near Threatened in Norway but GBIF indicates a number of records in Spain and Italy so European status unclear. This species is especially at risk from ash dieback disease as ash is a major host for it.
<i>Fuscopannaria mediterranea</i>	Very High	Unknown?		No	<b>NS L</b>	Very Rare	On 2 hazels TN928 and 1045. TN928 could be affected by the Proposed Development but the hazel TN1045 is outwith the Proposed Development site.	Red-Listed NT in Norway and Sweden. GBIF indicates a good number of records in Spain and Portugal so European status unclear.
<i>Leptogium burgessii</i>	Very High	<b>Threatened</b>	<b>IR</b>	Hyperoceanic	<b>Sc Wa L</b>	Rare and very local	27 trees/shrubs, (22 hazels, 5 ash) and 2 rocks: 28 % of these 10 of these are within the areas likely to be affected by the Proposed Development TNs10, 70, 72, 73, 75,	Red Listed VU in Norway. Also present in Portugal but most European records are from western Scotland and Ireland (GBIF). Often only recorded in the study site as small patches.

Taxon	Assessed value (taking into consideration rarity on site)	Europe RDB status	IR Status	Oceanic?	UK Conservation Status	Rarity in the study site	Locations in study site	Notes
							78, 101, 922, 933 and possibly 171). Others outwith the development area are: TN334, 363, 452, 497, 555, 757, 800, 827, 863, 942, 959,963, 965, 1008,1076, 1078,1086, 1088).	<i>L. burgessii</i> is an important component of the SAC lichen flora. It was recorded as rare in another of the woodland areas in the SAC (along the Allt Luiadhe, Acton, 2013).
<i>Microcalicium disseminatum</i>	Very High	Not Threatened		No	NR	Very rare	1 veteran birch (TN53) along the proposed operational track (at time of survey) (Acton, 2022).	Main European populations in Norway and Sweden
<i>Nevesia sampaiana</i>	High*	Not Threatened?	IR	Hyperoceanic	NT NS P Eng Sc Wa L	Widespread but almost exclusively on veteran hazels.	On 179 veteran hazels, 2 rowans and 2 ash). c. 18% of these are in areas likely to be affected by the Proposed Development site (recorded on 1 veteran rowan and 31 veteran hazels in the preliminary survey (Acton, 2022). See TNs for all locations.	Confined to the best stands of veteran pasture hazel, where it can be very locally frequent, but very local and scarce overall. Main populations in western Scotland and Norway (GBIF). Norwegian Red-listed. Assessed as Very High in the preliminary survey (Acton 2022), but downgraded to High on basis of the extended survey.

Taxon	Assessed value (taking into consideration rarity on site)	Europe RDB status	IR Status	Oceanic?	UK Conservation Status	Rarity in the study site	Locations in study site	Notes
<i>Pachyphiale fagicola</i>	Very High	Not Threatened?		No	NT NR Sc	Very Rare	On 1 veteran hazel (TN 27) near the existing track (and part of the proposed operational track (at time of survey)).	LC in Norway. GBIF also shows lots of records in Sweden and additional locations in several other European countries including Switzerland and Estonia. The same hazel at TN27 supports the RDB Vulnerable <i>Scutula circumspecta</i> .
<i>Pannaria rubiginosa</i>	High*	Not Threatened?	IR	Oceanic	Sc L	Rare	On 41 veteran hazels, 3 ash 2 aspen 2 rowan (though one dead fallen). c. 21% are the initial Proposed Development site; recorded on 10 veteran hazels by Acton 2022: TNs 11, 13, 16, 23, 41, 75, 117, 137, 160, 162	Assessed as Very High in the preliminary survey (Acton 2022), but downgraded to High on basis of the extended survey.
<i>Parmeliella testacea</i>	High	Threatened	IR	Hyperoceanic	NT NS P Eng Sc Wa L	Local but locally frequent in the best stands of hazel	On 168 hazels, 1 rowan. c. 44% of these are within areas where construction impacts are anticipated: -it was recorded on 74 veteran hazels in the	Occurs in several European countries (GBIF) but main populations in Western Scotland, western Ireland, and Norway with a number of records from Spain and a few

Taxon	Assessed value (taking into consideration rarity on site)	Europe RDB status	IR Status	Oceanic?	UK Conservation Status	Rarity in the study site	Locations in study site	Notes
							preliminary survey (Acton, 2022).	from Portugal. Red-Listed EN in Norway.
<i>Pectenia atlantica</i>	Medium	Threatened	IR	Hyperoceanic	L		Recorded on 66 trees/hazels. Acton, 2022 recorded it on 32 old/veteran hazels in the Proposed Development site during preliminary survey.	The species was not recorded systematically and is likely to be present on more hazels both within and outwith the development area as it was fairly frequent in high quality hazel habitat
<i>Pectenia plumbea s. str.</i>	Very High	Not Threatened?	IR	No	L	Very Rare	On 4 old hazels at TN137, 488, 559, 1083 and 2 old rowans TN223, 348. Two of these are within the areas affected by the Proposed Development (TN137 and a rowan above Loch Kemp TN223 in the area likely to be inundated (Acton, 2022).	

Taxon	Assessed value (taking into consideration rarity on site)	Europe RDB status	IR Status	Oceanic?	UK Conservation Status	Rarity in the study site	Locations in study site	Notes
<i>Phlyctis agelaea</i>	Very High	Not threatened?		No	NT NS Sc		On 5 hazels TN787, 789, 790, 934, 947. 20% of the population (the hazel at the existing turning circle TN 934) is threatened by the Proposed Development.	Red-Listed VU in Norway.
<i>Ricasolia amplissima</i> (syn. <i>Lobaria amplissima</i> )	Medium*	Threatened	IR		Sc L	Local but locally frequent	Recorded on 50 veteran hazels. Acton (2022) recorded it on 16 old/veteran hazels in the Proposed Development site during the preliminary lichen survey (Acton 2022).	Assessed as High in the preliminary survey (Acton 2022), but downgraded to Medium on basis of the extended survey. The species was not recorded systematically and is likely to be present on lots more hazels both within and outwith the development area as it was fairly frequent in high quality hazel habitat.
<i>Sclerophora peronella</i>	Very High	Not Threatened		No	NT NS	Very Rare	1 veteran birch along the proposed operational track (at time of survey) (TN7).	Main European populations in Norway and Sweden

Taxon	Assessed value (taking into consideration rarity on site)	Europe RDB status	IR Status	Oceanic?	UK Conservation Status	Rarity in the study site	Locations in study site	Notes
<b><i>Scutula circumspecta</i></b> (syn. <i>Bacidia circumspecta</i> )	Very High	Not Threatened?		No	<b>VU C, D1 NS P Eng Sc Wa</b>	Very rare	On 1 veteran hazel (TN 27) near the existing track (and proposed operational track (at time of survey)).	Not Threatened in Norway. Recorded on a veteran hazel near the track. Same hazel also with <i>Pachyphiale ophiospora</i> .

## 7. Ecological Impacts

The main issues and concerns for epiphytic lichens relate to:

- The direct loss of lichen habitat, lichens and associated microfungi, during construction works.
- The indirect impacts as a result of fragmentation of habitat and longer-term impacts on resilience/viability of populations.

### 7.1 Direct losses

This primarily relates to felling of veteran trees (including birch and rowan) and veteran hazels, plus any losses due to death following inundation of roots.

### 7.2 Fragmentation

Fragmentation of habitat is generally damaging to old-growth epiphytic floras, but more specialist old growth species and poor dispersers are particularly at risk. For example, tracks passing through hazel and birch stands will affect micro-climatic conditions (e.g. increase exposure) and lead to reduced availability of niches for species reliant on more sheltered, more humid conditions (e.g. *Leptogium* spp. and *Parmeliella testacea*). Oceanic species are particularly vulnerable to reduction in shelter/humidity as they are on the eastern edge of their range.

Fragmentation will reduce viability/resilience of sub-populations though increasing distances between colonisation sources and thus reducing the chances of colonisation events. This is particularly an issue for species that appear to rely exclusively/almost exclusively on dispersal via vegetative propagules as these tend to be short range dispersal mechanisms (and most effective within a stand where veteran trees suitable for colonisation are nearby). A number of *Lobarion* species on site were not recorded fertile (or rarely recorded fertile) including:

*Collema subflaccidum*

*Fuscopannaria ignobilis*

*Fuscopannaria mediterranea*

*Leptogium cyanescens*

*Leptogium hibernicum* (only recorded outwith development area)

*Nephroma parile*

*Nevesia sampaiana*

*Pannaria conoplea* (rarely fertile)

*Parmeliella testacea*

*Peltigera collina* (rarely fertile)

*Pseudocyphellaria norvegica* (only recorded outwith development area)

*Ricasolia amplissima*  
*Sticta* spp.

The species of greatest concern specifically with regard to potential fragmentation of habitat due to the Proposed Development are:

- *F. ignobilis*. Very rare and not recorded fertile on site.
- *L. burgessii*. Scarce and local on site, and typically recorded as small patches that often had few or no fruits, larger healthy patches with well-developed fruits were very rare; requires sheltered, relatively humid conditions. Often fertile in Argyll.
- *P. testacea*. Very rarely recorded fertile and not seen fertile in the study site; requires sheltered, relatively humid conditions.
- *N. sampaiana*. Never recorded fertile, stands of hazel with good, healthy sub-populations of frequent *N. sampaiana* are probably especially important to support the parasite *A. sampaiana*.

Within the birchwoods, fragmentation is anticipated to be of less concern generally but locally there might be impacts. For example, the best populations of the old growth species *Felipes leucopellaea*, *Lopadium disciforme* and *Protoparmelia ochrococca* were recorded in the sheltered valley at the north end of Loch Kemp (at and near the proposed location of Dam 1). Felling here will not only directly reduce available habitat and colonisation sources, but is likely reduce humidity (*F. leucopellaea* is not confined to sheltered woods but often appears to be most abundant in more sheltered woods (pers. obs. e.g. elsewhere within the SAC at Allt Luaidhe, Acton 2013 ).

## 8. Minimising Impacts and Recommendations

### 8.1 General notes on mitigation and management

The following general guidelines/recommendations should be adopted to help ensure negative impacts arising from the Proposed Development are minimised and to maximise long term resilience of the lichen flora:

- All taxa that are on relatively few trees/shrubs or very local /patchily distributed through the site should be considered Threatened at the site-based scale (as listed in section 8.2); it is important to avoid these trees/shrubs where practicable to retain them on the site and provide future colonisation sources (i.e. maintain viable populations).
- An ECoW should supervise all works in the vicinity of veteran hazels and birch trees. Appropriate barrier netting should define working corridors and all trees to be avoided (as listed in section 8.2). Damage to the root plates of any hazels near the construction zone should be taken into account. Many of the hazels are collapsed/leaning and/or 'phoenix' trees and the additional areas occupied by such trees should also be considered. Cutting leaning stems on hazels to be retained is not appropriate as the lichen interest is often best developed on leaning stems. A lichenologist should be consulted if this is required. Appropriate buffer zones should be observed when erecting barrier tape to avoid inadvertent damage from heavy machinery/plant manoeuvring. Wrapping trees/hazels/branches with netting, marker tape or spray marking trees is not appropriate as this can damage/dislodge the lichen flora.
- The lichen flora is of national and international importance and appropriate long-term management is necessary to ensure long-term resilience. Browsing levels are currently too high and some stands of hazel are moribund and require a flush of regeneration. However, exclusion of all browsing is undesirable and dense regeneration can pose a serious shade threat to the lichen interest on existing veterans. A lichenologist should be consulted before any undertaking planting schemes or regeneration schemes, especially in the vicinity of hazel stands detailed in this report. Dense birch regeneration could also pose threat to existing old growth stands of birch, though patchy birch regeneration would be acceptable.
- It is the view of the Lichenologist, that planting schemes/regeneration schemes for any screening purposes should be considered a lower priority than ensuring appropriate management for notable lichen floras (bearing in mind the potential shade threat to lichens posed by inappropriate planting/natural regeneration densities).
- The importance of the lichen flora should be incorporated into an updated SSSI Citation and ideally lichens should be notified as a specific SSSI feature.

Lichens should also be incorporated into an updated SSSI Management Statement. The requirements of lichens should be explicitly incorporated into any management plan for the site; general management for woodland is not guaranteed to ensure the long term resilience and viability of the lichen flora.

- Many of the veteran hazels are open grown pasture form due to a long history of browsing and grazing. The woods are currently seriously overbrowsed and some hazel stands are currently moribund, so overbrowsing needs to be addressed (section 6.2) as part of the restoration and compensatory measures that are put forward for the SAC. Retaining the relatively open grown nature of the hazel stands is important. The establishment of some small denser stands is ok, but a variable, broken hazel canopy with gladed areas and open grown trees/hazels are important features for a diverse lichen flora. There is an obvious role for browsing here to maintain these glades and develop a new generation of more open grown trees/shrubs of a variety of species (future veterans, see below). Ideally at least some areas of the site would be grazed with cattle to maintain a pasture character long-term.
- Establishment of future veterans. As part of the restoration and compensatory measures that are put forward for the SAC, a long-term commitment is needed to ensure establishment of future old growth, with ongoing monitoring guiding management in order to achieve suitable habitat for old growth lichens. Plans to establish 'veterans of the future' are recommended, with some expansion/creation of additional suitable habitat near existing old growth. Whilst plans to establish old growth are welcome, the establishment of appropriate new habitat should be considered a long-term plan, and inadequate as mitigation for the direct loss of current old growth lichen habitat as a result of the construction of the Proposed Development.
- Avoidance of hazels is the key mitigation measure for the old growth lichen flora on hazel. Translocation is not really an appropriate mitigation measure for specialist, niche-specific old growth lichens. It is a risky strategy and translocated thalli have a good chance of not taking successfully so it is especially unsuitable mitigation for lichens that are scarce/rare/local on a site. In a site with very favourable habitat conditions then larger, robust thalli of species such as Tree lungwort *Lobaria pulmonaria* can potentially be successfully translocated, but if conditions are not very favourable even translocations of this species can fail. There is a high probability that translocated thalli of the more specialist species will fail, either being damaged during translocation procedures and subsequently dying, or dying post translocation (for example due to sub-optimal micro-habitats/niches).

Once the recommended avoidance measures have been implemented some translocation and monitoring would be useful in an effort to maximise the amount of potential colonisation sources of some lichen species (e.g. some of the species of medium interest at the site-based scale). Translocations should be conducted by a lichenologist and be monitored to inform future translocations.

## 8.2 Avoid species of very high value

All species of Very High value at the site-based scale were very scarce/rare and local at the site-based scale. Most occurred on 1-10 trees/hazels (Table 7) except for *Leptogium burgessii* (at 29 locations).

The proposal would have a potential significant impact on veteran hazels and veteran birch supporting Very High value at the site based scale (Table 7). These are all old-growth species that are rare at the site-based scale and most are UK and/or European Red-Listed (Table 7). Appropriate routing of tracks and minimisation of construction corridors/areas will be essential to minimise impacts on these species. Figures 6-12 show the locations of species (except *Bactrospora corticola*, see section 8.5). The potential impacts on these species of Very High value are summarised below:

- *Arthonia sampaiana*. Recorded on 9 hazels. Approximately 45% of the known population occurs along or near the proposed operational track<sup>1</sup> (at TN93, 96, 928, 932).
- *Arthonia zwackhii*. Recorded on a hazel along/near the proposed operational track (TN9).
- *Bactrospora homalotropa*. On 7 veteran hazels. Approximately 43% of the known population occurs along or near the proposed operational track<sup>1</sup> (TNs68, 75, 100).
- *Fuscopannaria mediterranea*. On 2 hazels, one of which, could be affected by the Proposed Development (TN928).
- *Leptogium burgessii*. Recorded on 27 trees/shrubs, (22 hazels, 5 ash) and 2 rocks. Approximately 28% of these of these are within the initial Proposed Development area (TN10, 70, 72, 73, 75, 78, 101, 922, 933 and possibly 171). The best sub-population seen on site is in a core hazel area along the proposed track<sup>1</sup> and it is recommended to avoid this core hazel area completely, in order to avoid fragmenting it (see section 7.2).
- *Microcalicium disseminatum*. On one birch along the proposed track<sup>1</sup> (TN58).
- *Pachyphiale fagicola*. On 1 veteran hazel (TN 27) near the existing track (and part of the proposed operational track<sup>1</sup>).

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<sup>1</sup> The proposed tracks / site infrastructure at the time of survey in April and May 2022.

- *Pectenia plumbea*. On 4 hazels and 2 old rowans. Two of these are within the areas affected by the Proposed Development (TN137 and a rowan above Loch Kemp TN223 in the area likely to be inundated).
- *Phlyctis agelaea*. On 5 hazels, one of which (the hazel at the turning circle TN 934) is potentially threatened by the Proposed Development.
- *Sclerophora peronella*. On 1 veteran birch along the proposed operational track<sup>1</sup> (TN7).
- *Scutula circumspecta*. On 1 veteran hazel (TN 27) near the existing track (and near the proposed operational track<sup>1</sup>).

It is recommended to avoid all trees/hazels supporting Very High lichen value at the site based scale (Figures 6-12). These are all old-growth species that are rare at the site-based scale and all except the Nationally Scarce *F. mediterranea* are UK and/or European Red-Listed.

### 8.3 Minimise impact on *Nevesia sampaiana* and *P. testacea*.

The populations of both these species in the study site are of national and international importance. Of particular importance were the healthy populations of two species recorded almost exclusively on veteran hazel: *Nevesia sampaiana* (on 179 hazels, 2 rowans, and 2 ash trees) and *Parmeliella testacea* (on 168 hazels, 1 rowan). The *N. sampaiana* is also important as the host species of the UK Red-Listed parasite *Arthonia sampaianae* that was found on 9 veteran hazels in the some of the core hazel stands (section 8.2). Locations with *P. testacea* and *N. sampaiana* have been assessed as of High value at the site based scale. Locations with *N. sampaiana* were assessed as Very High value by Acton (2022) but the extended survey found them to be not uncommon in high quality hazel habitat in other areas of the site so they were downgrade to High.

Both *N. sampaiana* and *P. testacea* were are fairly widespread overall on site (Figures 13-15) but the separate clusters of population should be considered as relatively isolated populations as the hazel stands are relatively isolated from each other; neither species was recorded fertile and both rely on short range dispersal via vegetative propagules (likely to be of the order of 50 m or so).

Although both appear to be viable on site with young colonising thalli seen, locally *N. sampaiana* (and the *Lobarion* community generally) is clearly threatened by habitat degradation; in the worst cases, the hazel stands could be reasonably described as 'moribund' with very scattered hazels in poor condition as a result of due to long term/chronic overbrowsing, that suppresses all basal regeneration and prevents hazel recruitment to replace hazels that die. The decline has been gradual but sustained. In these moribund stands (e.g. on the northwest facing slopes to the north

of Allt an t-Sluichd) the *Lobarion* community is generally poorly developed and species poor *Lobarion*; It is interesting that the *N. sampaiana* seems to be holding on in these conditions; *N. sampaiana* appears to be tolerant of increased light levels as the hazels stands decline, and appears to be less reliant on sheltered, humid conditions than some other *Lobarion* species such as *P. testacea*.

As the site supports what are probably internationally important populations of these species and anything that further compromises their viability should be avoided. For maximum resilience, all the existing main clusters of these species should be retained as viable sub-populations; fragmentation of any hazel stands supporting these species should be avoided; and regeneration of moribund stands should be regarded as a priority.

The core populations of *P. testacea* and two of the most important populations of *N. sampaiana* are directly along the currently proposed construction tracks<sup>1</sup> (Sections 8.3.1, 8.3.2). Although some limited loss hazels supporting *N. sampaiana* and *P. testacea* these would not compromise the overall population it is important that these core clusters of populations are safeguarded long term. The current proposal has the potential to have a significant impact on *N. sampaiana* and *P. testacea*. Appropriate routing of tracks, minimisation of construction corridors/areas is essential to minimise impacts on these species.

### 8.3.1 *Nevesia sampaiana*

The core sub-populations of *N. sampaiana* are readily discernible in Figures 13 and 14 and include core populations in the Proposed Development. Fragmentation of stands that are currently known to support *A. sampaiana* (Figure 14) are of particular concern, but it should be assumed that all hazel stands with significant clusters of *N. sampaiana* are important for this rare parasite.

The fact that *N. sampaiana* is locally frequent probably accounts for the relatively good population of its fungal parasite *Arthonia sampaiana*. The site supports what appears to be the best (known) world population of *Arthonia sampaiana* - a Nationally Rare, UK Near Threatened lichenicolous fungus that appears to be endemic to Britain according to available GBIF data.

- *Nevesia sampaiana*. Approximately 18% of the locations are within the initial study site where construction impacts were anticipated: (Table 7).

### 8.3.2 *Parmeliella testacea*

The core populations of *P. testacea* were in the south of the study area (Figure 15) with some key sub-population in the Proposed Development area and another outwith the area (to the south of Allt a' Chinn Mhonaich). One of the most important

hazel stands for *N. sampaiana*, *P. testacea* and *A. sampaiana* (with three locations) and a range of other important species such as *Leptogium burgessii* (see section 8.2) is along/near the route of the proposed track<sup>1</sup>.

- *Parmeliella testacea*. Approximately 44% of the locations are within the initial study site where construction impacts were anticipated: (Table 7).

#### 8.4 Minimise impact on veteran hazels with other notable lichens

The veteran hazel support a large number of old growth lichens (including species of European importance) and it is crucial to minimise impacts on these to retain robust, healthy populations on site. This includes minimising impacts on species with both Medium and High value at the site-based scale. The proposal has the potential to remove a large number of hazels and have a significant impact on core old-growth hazel stands with some of the best developed *Lobarion* communities (e.g. with frequent *Ricasolia amplissima*, *Lobaria scrobiculata*, *Pannaria* spp. *Sticta* spp.)

As discussed in above (section 6.3) it will be important to maintain viable populations of all notable species at the site. So, although some of the species that are not so scarce at the site-based scale are likely to be more resilient to very localised impacts, overall impact will depend on the final layout of the Proposed Development and to what degree the impacts can be minimised.

It is anticipated that following avoidance/ mitigation measure in section 7.2 - 8.3 the impacts on the old growth lichen communities will be reduced generally. However, additional micro-siting will be important to minimise the impact on veteran hazels with Medium and High value at the site based scale and ensure the long-term resilience of these communities/species. Depending on the final avoidance/mitigation adopted, and the number of veteran hazels that can be avoided, residual impact on these additional species may need further consideration in any final impact assessment.

Some examples are given below of typical concerns (data for individual species from Table 7):

- Approximately 9% of the hazels supporting *Crutarndina petractoides* (High value) are currently in the vicinity of proposed construction works (Figure 16).
- Approximately 21% of the hazels supporting *Pannaria rubiginosa* (High value) are currently in the vicinity of proposed construction works. (Figure 17).
- *Ricasolia amplissima* (Medium value) was recorded on 16 old/veteran hazels in the Proposed Development site during the preliminary survey<sup>1</sup>.

- *Degelia atlantica* (Medium value) was recorded on 32 old/veteran hazels in the Proposed Development site during preliminary survey<sup>2</sup>.
- 903 hazels (all veterans) have been examined and almost all had notable *Lobarion* species of Medium value or higher (only one had no *Lobarion* interest currently but it is a veteran and so still provides suitable habitat for future colonisation). Approximately 186 hazels have been examined within or adjacent to the original Proposed Development site (tracks and/or infrastructure)<sup>1</sup>. It is estimated that the 186 hazels represents >95% of the hazels in the areas likely to be impacted.
- It is estimated that approximately 20% of the veteran hazel resource within the study site (and so c. 20% of the phorophytes supporting the *Lobarion* flora) could be within or adjacent to the Proposed Development site (tracks and/or infrastructure)<sup>1</sup> and so could potentially be threatened by the Proposed Development<sup>3</sup>.

Careful alignment of the access track within the SAC is essential to avoid locations of key lichen interest on veteran hazel. Ideally the Proposed Development would be designed to minimise impacts in the vicinity of the access track, powerhouse and other lower reservoir works. Minimising all construction corridors/footprints in the vicinity of all hazel and all veteran birch is strongly recommended<sup>2</sup>.

## 8.5 Old birchwoods at Loch Kemp including along the upper section of Allt an t-Sluichd

Some of the stands of birch around Loch Kemp are fairly moribund with isolated fragments. The lichen flora is well developed but old growth species are much rarer/more local than within the upper section of the Allt an t-Sluichd (see TNs). The best areas of lochside birchwood were in the northern section that adjoins the SAC (between the existing track and the loch). To the south of this block of birch (e.g. near the proposed intake for the tunnel) the lichen flora is less interesting but moving south it improved again around old/veteran trees at TNs 220, 221, 222. The best development is on and just downslope of a rocky outcrop below spot height 232 m. The outcrops here and on the slopes below support veteran rowans and birch trees that support a *Lobarion* community including *Lobaria pulmonaria*, *Lobaria virens*, *Protopannaria pezizoides*, *Sticta limbata* and one of only four locations in the study site for *Pectenaria plumbea* s. str. A veteran phoenix birch also supports the old growth

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<sup>2</sup> These species were not recorded systematically so the % of occurrences in the study site within the Proposed Development site is unknown. Although the % is likely to be low, the actual numbers of veteran hazels with these notable lichens of medium value threatened is still of serious concern and should be reduced to a minimum.

<sup>3</sup> Nearly all of the trees and hazels likely to be impacted by the development have been tagged so once final routing and construction corridors are finalised, it should be possible to calculate the number of hazels that need to be felled and approximate % of hazel resource that will be impacted.

species *Bunodophoron melanocarpum*. These outcrops are just within the 205m inundation zone (Figure 18). Ideally inundation of the trees supporting notable species associated with these outcrops would be avoided (e.g. TN223, 224, 225, 226, 227) but it might be that only the ones higher up are easily avoidable (TN 223, 225).

The old birchwoods along the upper section of Allt an t-Sluichd supports a well-developed lichen flora. This includes good populations of the old growth species *Thelotrema lepadinum*, *Felipes leucopellaeus* **NS** and *Protoparmelia ochrococca* **NS** on old/veteran birch, occasional *Lobarion* development (on veteran birch and rowan) and more locally *Bactrospora corticola* **NS**, *Lopadium disciforme* and *Parmeliella parvula* on old/veteran birch. *L. disciforme*, *F. leucopellaeus*, and *P. ochrococca* were all recorded downstream of the Proposed Development site but the best populations of the latter two species recorded within the study site were in the development area near dam (with core populations indicated by the clusters of yellow dots in Figures 18-20). The best populations are very close to and just downstream of the proposed location of Dam 1, so shifting it as far upstream as possible and careful construction works to avoid as many old birch downstream as possible is recommended. Some of this area will be flooded and some losses are inevitable should the Proposed Development be constructed. Although some losses are acceptable, the care should be taken to minimise tree felling in this area.

Veteran birch TN293 is immediately downstream of the proposed dam location. Without shifting the dam location further upstream it is likely that very sensitive construction work and supervision by an ECoW are required to avoid damage to this tree. *Bactrospora corticola* was only recorded on two birches in the SAC (both shown in Figure 20). However, it is possible that additional veteran birches within the SAC birchwood support this easily overlooked species.

## 8.6 Siliceous rock outcrops around Loch Kemp

These support a typical upland saxicolous flora but some sampling was undertaken. Five Nationally Scarce **NS** saxicolous species (*Calvitimela aglaea*, *Pertusaria chiodectonoides*, *Lepraria ecorticata*, *Porpidia striata* and *Porpidia melinodes*) and a rare lichenicolous fungus (*Sphaerellothecium stereocaulorum*) were recorded from rocky habitats. All are nationally under-recorded species. Four of the **NS** species are common in the Scottish Uplands. The other, *P. chiodectonoides* recorded at TN198, is a much more local species and it is unusual to record it inland, it being typically recorded near the coast. The rarely recorded lichenicolous fungus occurs on the common upland saxicolous lichen *Stereocaulon evolutum*; although there are few records on NBN I have seen it several times and suspect it is not uncommon in upland Scotland.

No specific mitigation is recommended for the saxicolous lichens on outcrops that will be lost due to construction works/inundation.

## 9. References

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## Appendix 1 - Glossary

<b>Epiphytic</b>	Growing on other plants (generally on trees in this report) for mechanical support (and not parasitic).
<b>International Responsibility (IR) status</b>	In this report, this category only applies to lichen species. British populations of lichens with International Responsibility are considered to be of international significance. Woods & Coppins (2012) estimate that Britain supports more than 10% of the European and/or world's population of these species. Many members of the <i>Lobarion pulmonariae</i> lichen community are <b>IR</b> species.
<b>Least Concern (LC)</b>	An IUCN Red List category for a taxon that has been evaluated against the IUCN criteria but does not qualify as Threatened or Near Threatened (See Red-Listed species below). Although many widespread and abundant taxa are included in this category, Least Concern does NOT necessarily mean that a species is unimportant. For example – a species of Least Concern at the National Scale may be regionally scarce or threatened.
<b>Nationally Rare</b>	Occurring in 15 or fewer hectads (10 x 10 km squares) in Great Britain. Note that the number of 10km squares in which a taxon is found may have changed since the formal 2012 assessment in Woods & Coppins. For the latest distribution maps refer to the latest BLS distribution maps ( <a href="http://www.britishlichensociety.org.uk/resources/species-accounts">http://www.britishlichensociety.org.uk/resources/species-accounts</a> ).
<b>Nationally Scarce</b>	Occurring in 16–100 hectads (10 x 10 km squares) in Great Britain. Note that the number of 10km squares in which a taxon is found may have changed since the formal 2012 assessment in Woods & Coppins. For the latest distribution maps refer to the latest BLS distribution maps ( <a href="http://www.britishlichensociety.org.uk/resources/species-accounts">http://www.britishlichensociety.org.uk/resources/species-accounts</a> ).
<b>Oceanic</b>	Species with a 'western' distribution occurring in western Europe extending east to Norway, Denmark and Central France. Western Britain is very important for a range of oceanic assemblages including oceanic bryophytes, epiphytic

	lichens of ancient woodlands, and oceanic lichens of terricolous/saxicolous montane habitats.
<b>Old woodland indicator</b>	Species which are poor colonisers of new woodland habitats and so tend to be associated with long-established or ancient woodland.
<b>'Phoenix' regeneration</b>	'Phoenix' regeneration is a form of vegetative regeneration that can enable trees to persist despite collapse and/or death of the main trunk/stems. Phoenix trees (and Phoenix hazels) are those veterans that have either 1) collapsed and continue to survive and grow in a 'recumbent' position with trunks curving up and/or side branches and canopy branches growing to form 'new' upright stems/trunks, or 2) the main trunk has died/rotted but vegetative growth at the base has successfully formed new stems/trunks. Phoenix trees and Phoenix hazels are a distinctive feature of many old growth upland woods in Scotland and can play an important role maintaining ecological continuity (e.g. for old growth lichen floras).
<b>Red-Listed species</b>	A taxon that has been evaluated against IUCN criteria and qualifies as threatened (Critically Endangered <b>CR</b> , Endangered <b>EN</b> , or Vulnerable <b>VU</b> ) or Near Threatened <b>NT</b> .
<b>Saxicolous</b>	Growing on rock.
<b>Scottish Biodiversity List (Sc)</b>	A list of animals, plants and habitats that Scottish Ministers consider to be of principal importance for biodiversity conservation in Scotland.  The purpose of the list is to help public bodies carry out their Biodiversity Duty by identifying the species and habitats which are the highest priority for biodiversity conservation in Scotland. <a href="http://www.biodiversityscotland.gov.uk/advice-and-resources/scottish-biodiversity-list/">http://www.biodiversityscotland.gov.uk/advice-and-resources/scottish-biodiversity-list/</a>
<b>Section 41 and 42 species</b>	Species of principal importance in England <b>Eng</b> (Section 41 species) and Wales <b>Wa</b> (Section 42 species) referring to the relevant sections of the Natural Environment and Rural Communities Act 2006.

## Appendix 2a - Target Notes

Target note details are given in Table A1. See Appendix 2b for Target Note photographs.

Table A1: Target Notes. Value indicates value for lichens at the study-site based scale

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
1	M	Protoparmelia ochrococca	Birch			245555	816126
2	M	Parmeliella parvula	Birch	P. parvula tree the leaning one in centre of photo. Birch TN2 to left.	Photo 1	245563	816124
3	M	Protoparmelia ochrococca, Chaenotheca trichialis	Birch	Tag 2306		245434	816088
4	VH	Fuscopannaria ignobilis, Lobaria amplissima, Pannaria conoplea, L. pulmonaria, L. scrobiculata, Parmeliella parvula, Plectocarpon lichenum, Parmeliella triptophylla, Peltigera praetextata, Thelotrema lepadinum, Plectocarpon scrobiculatae	Hazel	Veteran phoenix hazel tag 2307 and 2308	Photo 2-4	245441	816115
5	H	Nevesia sampaiana, Lobaria scrobiculata, L. pulmonaria, Parmeliella triptophylla, Pyrenula occidentalis	Rowan	Veteran pasture rowan tag 2334	Photo 5	245436	816137
6	M	Sticta limbata, L. pulmonaria, L. scrobiculata, Plectocarpon lichenum, Catinaria atropurpurea, Pyrenula occidentalis, Arthonia vinosa, Opegrapha vermicellifera	Hazel	Veteran tree form hazel. No tag seen.		245427	816147
7	VH	L. pulmonaria, L. scrobiculata, Parmeliella parvula, Sclerophora peronella	Birch	Veteran birch tag 2330	Photo 6	245416	816159

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
8	M	<i>Thelotrema lepadinum</i>	Birch	Veteran birch tag 2332		245421	816138
9	VH	<i>Arthonia zwackhii</i> , <i>Nevesia sampaiana</i> , <i>Parmeliella testacea</i> , <i>Degelia atlantica</i> , <i>Peltigera collina</i> , <i>Nephroma parile</i> , <i>Dactylospora lobariella</i> , <i>R. amplissima</i> , <i>Sticta limbata</i> , <i>Pannaria conoplea</i> , <i>Parmeliella triptophylla</i> , <i>Pyrenula occidentalis</i> , <i>Lobaria pulmonaria</i> , <i>Agonimia tristicula</i> , <i>Plectocarpon lichenum</i> ,	Hazel	Collapsed veteran hazel tag 2335. photos of <i>Nevesia sampaiana</i> , <i>. atlantica</i> , <i>P. testacea</i> (with small patch <i>Nevesia sampaiana</i> ).	Photo 8-10	245426	816113
10	VH	<i>Parmeliella testacea</i> , <i>Leptogium burgessii</i> , <i>Sticta sylvatica</i> , <i>Thelotrema lepadinum</i> , <i>Pyrenula occidentalis</i> , <i>L. pulmonaria</i> , <i>Pannaria conoplea</i> , <i>Peltigera praetextata</i> , <i>Plectocarpon lichenum</i> , <i>R. amplissima</i> , <i>Peltigera collina</i>	Hazel	collapsed veteran hazel tag 2336	Photo 11-12	245418	816110
11	H	<i>Pannaria rubiginosa</i> , <i>Parmeliella testacea</i> , <i>Pannaria conoplea</i> , <i>L. pulmonaria</i> , <i>L. scrobiculata</i> , <i>R. amplissima</i> , <i>Sticta limbata</i> , <i>Sticta fuli/sylv</i> , <i>Peltigera collina</i> , <i>Parmeliella triptophylla</i>	Hazel	Veteran tree form hazel tag 2337	Photo 13-15	245422	816101
12	H	<i>Parmeliella testacea</i> , <i>Peltigera collina</i> , <i>L. pulmonaria</i> , <i>L. scrobiculata</i> , <i>P. triptophylla</i> (fertile), <i>S. sylvatica</i> , <i>R. amplissima</i>	Hazel	Veteran hazel no tag seen	Photo 16-17	245418	816091
13	H	Lobarion community incl. <i>Parmeliella testacea</i> , <i>Pannaria rubiginosa</i>	Hazel	Veteran hazel tag 234x		245403	816109

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
14	M	Lobarion community including <i>Sticta sylvatica</i> , <i>Lobaria</i> spp.	Hazel	Veteran hazel tag2341		245402	816114
15	H	Lobarion community including <i>Nevesia sampaiana</i> , <i>Parmeliella testacea</i> , also <i>Bacidia rubella</i> , <i>Bryobilimbia sanguineoatra</i>	Hazel	Veteran collapsed hazel no tag seen		245405	816129
16	H	Lobarion including <i>Parmeliella testacea</i> , <i>Pannaria rubiginosa</i> , <i>Sticta</i> sp.	Hazel	Veteran hazel tag 2344		245406	816135
17	M	Lobarion including <i>S. limbata</i> , <i>Plectocarpon lichenum</i>	Hazel	Veteran hazel with Lobarion, no tag seen		245383	816100
18	M	Lobarion including all 4 <i>Lobaria</i> spp. i.e. including the highly oceanic <i>Ricasolia virens</i> . Also <i>Sticta sylvatica</i> .	Hazel	Hazel no tag seen	Photo 20	245387	816114
19	M	<i>Ricasolia virens</i>	Hazel	Old tree form hazel, no tag seen		245389	816118
20	H	Lobarion including <i>Parmeliella testacea</i> , <i>R. amplissima</i>	Hazel			245386	816120
21	M	Lobarion including abundant <i>Ricasolia virens</i> , some <i>S. sylvatica</i> . <i>Arthonia vinosa</i>	Hazel	Veteran tree form hazel no tag seen		245381	816124
22	H	Lobarion including <i>Nevesia sampaiana</i>	Hazel	leaning hazel no tag seen		245377	816127
23	H	Lobarion including <i>Parmeliella testacea</i> , <i>Nevesia sampaiana</i> , <i>Pannaria rubiginosa</i> ,	Hazel	Giant veteran pasture hazel	Photo 21-22	245364	816137

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
		Sticta sp. Peltigera collina (fertile), Collema subflaccidum					
24	H	Lobarion including Parmeliella testacea, Nevesia sampaiana	Hazel	Veteran hazel. No tag seen		245367	816143
25	VH	Nevesia sampaiana, Pannaria conoplea (fertile), R. amplissima	Hazel	Veteran hazel no tag seen.		245374	816152
26	H	Lobarion including Parmeliella testacea	Hazel			245388	816137
27	VH	Pachyphiale fagicola, Scutula circumspecta, Arthonia vinosa	Hazel	Old tree form hazel with Lobarion. Second photo from edge of track with hazel tn27 in middle of photo.	Photo 24-25	245383	816136
28	M	Lobarion	Hazel			245391	816181
29	M	Lobarion including L. scrobiculata, Parmeliella triptophylla, S. limbata	Hazel	Hazel tag 2370?		245409	816244
30	M	Mycoblastus affinis, Thelotrema lepadinum, Parmeliella parvula	Birch	Veteran phoenix birch that has successfully layered downslope. No tag seen.	Photo 26-29	245422	816244
31	M	Parmeliella parvula, Thelotrema lepadinum, Lobaria scrobiculata (scrap).	Birch	Veteran birch tag 2358		245426	816253
32	H	Lopadium disciforme, Pyrenula occidentalis. Unidentified crust query Biatora vernalis?	Rowan	Old rowan tag 2204		245407	816285

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
33	M	Nephroma laevigatum, Lobaria pulmonaria, Sticta limbata on rowan, N. laevigatum and Psoroma hypnorum on rocks.	Rowan	N. laevigatum on rowan and also on rock, Psoroma hypnorum on mossy rock below		816265	Apr-22
34	H	Crutarndina petractoides, Ricasolia virens, L. pulmonaria, Arthonia cinnabarina, Parmeliella triptophylla, Parmeliella parvula, Pannaria conoplea, Sticta limbata	Hazel	Veteran hazel tag 2196		245387	816285
35	H	C. petractoides, Lobaria pulmonaria, Sticta sylvatica, Sticta limbata, Parmeliella parvula, Pannaria conoplea	Hazel	Veteran hazel tag 2079		245376	816288
36	M	Lobarion including R. virens	Hazel	Old hazel tag 2195	Photo 30	245375	816276
37	M	Catinaria atropurpurea, Micarea alabastrites, Pertusaria coronata, Thelotrema lepadinum, Arthonia vinosa	Oak	Veteran oak tag 2171	245330	816216	
38	VH	Lobarion including Pannaria conoplea (fertile), Sticta sp., Plectocarpon lichenum	Hazel	Veteran tree form tag2258		245328	816191
39	M	Lobarion	Hazel	Veteran hazel tag 2260		245337	816190
40	M	Lobarion	Hazel	Veteran hazel, Tag 2256		245328	816180
41	H	Lobarion including Nevesia sampaiana, Pannaria rubiginosa, Gyalideopsis muscicola	Hazel	Veteran hazel tag 2257. Some of the best P. rubiginosa seen and some good patches of Nevesia sampaiana.	Photo 31-32	245336	816177

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
42	M	<i>Thelotrema lepadinum</i>	Rowan	Old rowan growing at base of birch with tag 2123		245284	816200
43	M	Lobarion	Rowan	2 rowans on outcrop with <i>Lobaria pulmonaria</i> , <i>Thelotrema lepadinum</i> , <i>Pyrenula occidentalis</i> . The one at grid ref has Tag 2113, the other is along same outcrop c. 10m to northeast			
44	M	Lobarion including <i>Pannaria conoplea</i> , <i>Protopannaria pezizoides</i>	Rowan	Rowan tag 2045 and adjacent collapsed rowan.		245291	816206
45	M	Lobarion including <i>Ricasolia virens</i>	Rowan	Rowan tag 2046		245290	816211
46	M?	<i>Micarea</i> spp.	Birch	Old birch tag 2019		245285	816222
47	M	<i>Arthonia leucopellaea</i> , <i>Thelotrema lepadinum</i>	Birch	Veteran birch tag 2018		245280	816232
48	H	Lobarion including <i>Parmeliella testacea</i> , <i>Sticta limbata</i> , <i>S. sylvatica</i> , <i>Sticta sylvatica/fuliginosa</i> , large patches <i>P. conoplea</i> , <i>Parmeliella triptophylla</i> , <i>Nephroma parile</i> , <i>Agonimia tristicula</i>	Hazel	Veteran hazel tag 2016		245286	816234
49	M	Good cover of <i>Thelotrema lepadinum</i> , Some <i>P. occidentalis</i> . Lobarion poorly developed.	Hazel	Veteran hazel tag 2017.		245296	816230

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
50	M	Lobarion including Ricasolia virens, Catinaria atropurpurea	Rowan	Rowan tag 2014		245286	816238
51	H	Nevesia sampaiana, Parmeliella testacea, Degelia atlantica, Nephroma parile	Hazel	Veteran hazel no tag. Nevesia sampaiana, p. testacea and Degelia atlantica on collapsed stem.		245295	816248
52	M	Lobarion	Hazel	Veteran hazel, no tag seen.		245306	816245
53	VH	Microcalicium disseminatum, Chaenotheca trichialis, Thelotrema lepadinum	Birch	Old birch tag 2057		245311	816248
54	H	Lobarion including Parmeliella testacea	Hazel	Old Hazel tag 2060		245313	816253
55	H	Lobarion including Nevesia sampaiana	Hazel	Veteran hazel tag 2061		245323	816252
56	VH	Parmeliella testacea	Hazel	Collapsed old hazel leaning downslope, no tag seen. Photo shows the hazel by orange rucksack plus hazel 2061 just downslope to right side of photo)		245325	816253
57	M	Nephroma parile	Hazel	Veteran hazel collapsed downslope. No tag seen. Just upslope of hazel tagged 2062.		245332	816259

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
58	H	Lobarion including <i>Parmeliella testacea</i> , <i>Lobaria amplissima</i>	Hazel	Hazel tagged 2062		245325	816261
59	H	Lobarion including <i>Parmeliella testacea</i> , <i>Degelia atlantica</i> , <i>Sticta sylvatica</i> , <i>Dictyonema</i> sp.	Hazel	Hazel leaning downslope. No tag seen.		245329	816268
60	M	Lobarion	Hazel	Large upright tree form hazel. No tag seen.		245335	816271
61	H	<i>Parmeliella testacea</i>	Hazel	Large collapsed hazel. Lobarion poorly developed but some scraps of <i>P. testacea</i> on one stem.		245328	816269
62	H	Well developed Lobarion mostly composed of some of best patches of <i>Parmeliella testacea</i> seen so far.	Hazel	Hazel tagged 2009		245317	816270
63	H	Well developed Lobarion on branches incl. some bits of <i>Parmeliella testacea</i> . <i>S. sylvatica</i> .	Hazel	Large tree form hazel tag 2010.		245319	816264
64	H	<i>Nevesia sampaiana</i> , <i>Parmeliella testacea</i> , <i>Nephroma parile</i>	Hazel	Former tree form hazel partially collapsed (due to large fallen birch)		245313	816267
65	H	Lobarion including <i>Ricasolia virens</i> . Adjacent small hazel tn66with Lobarion including <i>Parmeliella testacea</i> .	Hazel	Large tree form hazel tag 2011	Photo 36	245302	816267

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
66	H	Lobarion including Parmeliella testacea.	Hazel	Old hazel stool but only with one mature stem remaining. No tag seen.		245300	816262
67	H	Parmeliella testacea, Degelia atlantica, Thelotrema macrosporum	Hazel	Veteran hazel no tag seen		245304	816270
68	VH	Parmeliella testacea, Nevesia sampaiana, Bactrospora homalotropa, Lobaria amplissima, Plectocarpon lichenum, Degelia atlantica	Hazel	Collapsed veteran hazel 2005 (now almost forming two entities see photos) with very good population of Parmeliella testacea on section collapsed to south..	Photo 37-38	245307	816274
69	M	Micarea spp., Thelotrema lepadinum	Birch	Veteran pasture birch tag 0008 with well developed flora. Micarea spp. in too poor condition to ID. Note other nice old trees outwith my corridor are tagged (but not examined).		245310	816287
70	VH	Lobarion including Parmeliella testacea, fertile Leptogium burgessii	Hazel	Veteran pasture hazel tag 2007.		245321	816279
71	H	Nevesia sampaiana, Parmeliella testacea, Lobaria amplissima	Hazel	Veteran pasture hazel 2006.		245321	816282

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
72	VH	Lobarion including small patch of <i>Leptogium burgessii</i> with incipient fruits	Hazel	Veteran pasture hazel tag 0009		245315	816290
73	VH	<i>Parmeliella testacea</i> , <i>Leptogium burgessii</i> (small patch), <i>Degelia atlantica</i> , <i>Lobaria amplissima</i> , <i>Peltigera collina</i> , <i>Pannaria conoplea</i> .	Hazel	Veteran pasture hazel tag 0010.		245322	816294
74	VH	<i>C. petraetoides</i> , <i>Nevesia sampaiana</i> , <i>Parmeliella testacea</i> , <i>Degelia atlantica</i> , <i>Lobaria scrobiculata</i> , <i>Sticta fuliginosa</i> , <i>Sticta sylvatica</i> , <i>Lobaria pulmonaria</i> (fertile), <i>Peltigera collina</i>	Hazel	Veteran collapsed hazel with red/white hazard tape. One of the best populations of <i>Nevesia sampaiana</i> seen plus good patches of <i>P. testacea</i> . One of the best developed Lobarion communities seen and one of the most important hazels see so far.	Photo 40-41	245333	816307
75	VH	<i>Nevesia sampaiana</i> , <i>Parmeliella testacea</i> , <i>Bactrospora homalotropa</i> , <i>Ricasolia virens</i> , <i>Thelotrema macrosporum</i> as per previous samples, <i>Leptogium burgessii</i> (nicest, healthiest fertile patches seen so far) <i>Pannaria rubiginosa</i> , <i>Peltigera horizontalis</i>	Hazel	Veteran pasture hazel 0032	Photo 42-43	245330	816320

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
76	M	Lobarion	Hazel	Veteran pasture hazel tag 0014.		245339	816316
77	H	Lobarion including Parmeliella testacea, Nevesia sampaiana, Lobaria amplissima	Hazel	Veteran pasture hazel tag 0013		245345	816317
78	VH	Lobarion including Parmeliella testacea, Leptogium burgessii, Ricasolia virens, Leptogium lichenoides (fertile), Lobaria amplissima, Sticta sylvatica	Hazel	Veteran pasture hazel tag 2067.		245354	816313
79	H	Lobarion including Parmeliella testacea, Nevesia sampaiana	Hazel	Collapsed veteran hazel no tag seen		245354	816309
80	H	Lobarion including Parmeliella testacea, Degelia atlantica, Plectocarpon scrobiculatae	Hazel	Collapsed veteran hazel no tag seen. Some nice patches of P. testacea.		245346	816313
81	H	Lobarion including Parmeliella testacea, Ricasolia virens, Degelia atlantica	Hazel	Large tree form hazel tag 2068. Healthy patches of Parmeliella testacea.		245347	816305
82	H	Lobarion including Parmeliella testacea	Hazel	Veteran hazel stool but only one mature stem remaining. Tag 2069.		245348	816297
83	H	Lobarion including Parmeliella testacea, Sticta sylvatica, Ricasolia virens	Hazel	Veteran pasture hazel. No tag seen.		245336	816283
84	H	Lobarion including Parmeliella testacea, Pannaria conoplea,	Hazel	Veteran pasture hazel tag 2084.		245339	816280

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
85	H	Lobarion including small patches <i>Parmeliella testacea</i> , <i>Nevesia sampaiana</i>	Hazel	Collapse old hazel, no tag seen.		245343	816285
86	H	Lobarion including very good patches of <i>Parmeliella testacea</i> , some <i>Nevesia sampaiana</i> , small but well developed patches of <i>Sticta sylvatica</i> , some <i>Degelia atlantica</i> , <i>Gyalideopsis muscicola</i>	Hazel	Veteran pasture hazel tag 2083		245348	816278
87	H	Lobarion including nice patches of <i>Parmeliella testacea</i>	Hazel	Veteran pasture hazel no tag seen.		245351	816280
88	H	Lobarion including nice patches <i>Parmeliella testacea</i> , <i>Sticta sylvatica</i> .	Hazel	Veteran hazel collapsing downslope (successfully phoenixing). Tag 2097.		245356	816269
89	M	Lobarion including <i>Sticta fuliginosa</i>	Hazel	Collapsed hazel tag 2190.		245358	816274
90	M	Lobarion including good patches <i>Ricasolia virens</i>	Hazel	Veteran pasture tree form hazel. No tag seen.		245366	816285
91	H	Lobarion including small patches <i>Parmeliella testacea</i> , some <i>Ricasolia virens</i>	Hazel	Old hazel (single stem, rest rotted away).		245364	816288
92	H	Lobarion including <i>Parmeliella testacea</i> , <i>Ricasolia virens</i>	Hazel	Veteran pasture hazel tag 2081		245359	816286
93	VH	<i>Arthonia sampaianae</i> on <i>Nevesia sampaiana</i> , <i>Parmeliella testacea</i> , <i>Sticta sylvatica</i>	Hazel	Collapsed veteran pasture hazel tag 2072.		245355	816293

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
94	H	Lobarion including <i>Nevesia sampaiana</i> , <i>Parmeliella testacea</i>	Hazel	Veteran hazel collapsed across small stream. No tag seen.		245367	816294
95	H	<i>Parmeliella testacea</i>	Hazel	Veteran tree form pasture hazel. no tag seen.		245358	816297
96	VH	Lobarion including <i>Arthonia sampaiana</i> on <i>Nevesia sampaiana</i> and <i>Catinaria atropurpurea</i> , <i>Parmeliella testacea</i> , <i>Lobaria amplissima</i> , <i>Nephroma parile</i>	Hazel	Collapsing veteran pasture hazel no tag seen.		245357	816300
97	H	Lobarion including <i>Parmeliella testacea</i>	Hazel	Veteran pasture hazel tag 0033		245314	816318
98	M	Lobarion	Hazel	Hazel tag 0034		245313	816321
99	H	Lobarion including <i>Parmeliella testacea</i> , <i>Nevesia sampaiana</i> , <i>Collema subflaccidum</i> , <i>Degelia atlantica</i> , <i>Lobaria amplissima</i> ,	Hazel	Old hazel no tag seen.		245323	816332
100	VH	Lobarion including <i>Nevesia sampaiana</i> , also <i>Bactrospora homalotropa</i>	Hazel	Veteran tree form hazel tag 0035		245319	816335
101	VH	Lobarion including good patches of fertile <i>Leptogium burgessii</i> , also <i>Nevesia sampaiana</i> , <i>Parmeliella testacea</i>	Hazel	Collapsed veteran pasture hazel tag 0029		245331	816346
102	H	Lobarion including <i>Parmeliella testacea</i> , <i>Degelia atlantica</i>	Hazel	Collapsed old hazel no tag seen.		245340	816345

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
103	H	Lobarion including <i>Nevesia sampaiana</i> , <i>Degelia atlantica</i> ,	Hazel	Veteran pasture hazel tag 0021		245346	816341
104	H	Lobarion including <i>Nevesia sampaiana</i> , <i>Parmeliella testacea</i> ,	Hazel	Veteran pasture hazel tag 0017		245357	816335
105	M	Well developed Lobarion (for birch) with <i>Lobaria scrobiculata</i> , <i>Lobaria pulmonaria</i> , <i>Plectocarpon lichenum</i> , <i>Sticta limbata</i> , <i>Thelotrema lepadinum</i>	Birch	Partially collapsed veteran birch tag 0018		245355	816337
106	M	Lobarion including <i>Lobaria scrobiculata</i> , <i>L. pulmonaria</i> . Also <i>Loxospora elatina</i> , <i>Thelotrema lepadinum</i> . Fantastic veteran dry bark habitat with abundant <i>Chaenotheca trichialis</i> but no other Caliciales seen (easily overlooked). <i>Micarea</i> sample tbc.	Birch	Giant veteran pasture birch tag 0069		245301	816327
107	H	Lobarion including <i>Nevesia sampaiana</i> , <i>Parmeliella testacea</i> , <i>Degelia atlantica</i> also fertile <i>Megalaria pulverea</i>	Hazel	Collapsed veteran pasture hazel tag 0036		245307	816315
108	H	Lobarion incl. tiny scrap <i>P. testacea</i> , <i>Catinaria atropurpurea</i>	Hazel	Veteran pasture hazel tag 0037		245300	816317
109	H	Lobarion including <i>Parmeliella testacea</i> , <i>Degelia atlantica</i> , <i>Ricasolia virens</i>	Hazel	Veteran pasture hazel tag 0039		245299	816317
110	M	Lobarion	Hazel	Collapsed hazel no tag seen.		245300	816304

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
111	H	Lobarion including scraps of Parmeliella testacea, some Degelia atlantica	Hazel	Collapsed veteran pasture hazel tag not seen.		245291	816312
112	M	Lobarion incl. Degelia atlantica, some nice patches P. conoplea.	Hazel	Collapsed veteran hazel no tag seen.		245288	816309
113	M	Nice patches of Arthonia vinosa, Also Lobarion including Ricasolia virens, Degelia atlantica	Hazel	Veteran pasture hazel with pollard form tag 0040.		245282	816314
114	M	Lobarion	Hazel	Veteran pasture hazel tag 0041		245274	816313
115	H	Lobarion including Nevesia sampaiana, Sticta limbata, Nephroma laevigatum, Degelia atlantica	Hazel	Veteran pasture hazel tag 0050		245269	816322
116	H	Nevesia sampaiana, Parmeliella testacea, Degelia atlantica	Hazel	Collapsed veteran pasture hazel no tag seen.		245266	816330
117	H	Lobarion including Pannaria rubiginosa	Hazel	Veteran pasture hazel tag 0049		245264	816326
118	H	Lobarion including Ricasolia virens, Fertile L. scrobiculata, and tiny scrap of Parmeliella testacea.	Hazel	Hazel tag 0054		245270	816346
119	M	Arthonia vinosa, Arthonia leucopellaea	Birch	Veteran birch tag 0048		245256	816318
120	M	Lobarion including fertile Lobaria scrobiculata	Hazel	Veteran hazel no tag		245570	816173

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
121	M	Lobarion including <i>Sticta limbata</i> , <i>Plectocarpon scrobiculatae</i> . Also <i>Arthonia muscigena</i> and <i>Gyalideopsis muscicola</i>	Hazel	Veteran hazel not tagged		245567	816156
122	M	<i>Arthonia leucopellaea</i>	Birch	Old birch tag 0109		245302	816375
123	M	Lobarion	Rowan	Rowan on outcrop, no tag seen.		245301	816371
124	M	Lobarion including <i>Ricasolia virens</i>	Hazel	Hazel on steep slope. No tag seen.		245278	816382
125	M	<i>Japewia subaurifera</i>	Birch	Old birch tag 0118		245301	816393
126	M?	Lobarion. some possible tiny scraps <i>Parmeliella testacea</i> but could be <i>P. triptophylla</i> (thalli wet, would need to collect/dry sample to confirm).	Hazel	Leaning hazel no tag seen		245295	816390
127	M	Lobarion including <i>Peltigera collina</i> , <i>Degelia atlantica</i> , <i>Sticta sylvatica</i> ,	Hazel	Veteran pasture hazel tag 0137		245326	816421
128	H	Lobarion including good population of <i>Parmeliella testacea</i> , <i>Sticta sylvatica</i>	Hazel	Veteran tree form pasture hazel tag 0140		245329	816406
129	M	<i>Thelotrema lepadinum</i> , <i>Pyrenula occidentalis</i> . No Lobarion seen.	Hazel	Old hazel tag 0143.		245338	816403
130	M	Species poor Lobarion	Hazel	Old hazel no tag seen.		245342	816407
131	H	Lobarion including <i>Nephroma parile</i> , tiny scrap <i>P. testacea</i> .	Hazel	Collapsed old hazel tag 0174		245337	816413

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
132	H	Lobarion including Parmeliella testacea, Degelia atlantica, Pannaria conoplea	Hazel	Old leaning hazel no tag seen.		245341	816415
133	M	Vert sparse, species poor Lobarion.	Hazel	Old hazel collapsed across small stream tag 0139		245331	816413
134	M	Lobarion incl. fertile Lobaria pulmonaria, Degelia atlantica	Hazel	Veteran hazel tag 0136		245320	816427
135	H	Well developed Caliciales with Locally abundant Chaenotheca trichialis plus Chaenotheca hispidula	Birch	Veteran pasture birch (low pollard form) tag 0165.		245325	816438
136	M	Lobarion present but poor	Hazel	Old hazel tag 0445		245349	816459
137	VH	Degelia plumbea s. str., Pannaria rubiginosa	Hazel	Old leaning hazel tag 0460		245358	816460
138	M	Lobarion including Ricasolia virens	Hazel	Upright old hazel no tag seen.		245377	816454
139	H	Parmeliella testacea, Opegrapha thelotrematis, Anisomeridium ranunculosporum	Hazel	Collapsed old hazel no tag seen but next to birch tagged 0197.		245382	816455
140	M	Well developed flora including Parmeliella parvula, Micarea alabastrites, Thelotrema lepadinum, Parmelinopsis hyperopta	Birch	Old birch tag 0614		245375	816464

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
141	M	Lobarion but spp. poor	Hazel	Veteran hazel leaning over. No tag seen.		245363	816468
142	H	Lobarion including Parmeliella testacea, frequent Sticta sylvatica, Degelia atlantica	Hazel	Large collapsed veteran hazel tag 0448		245355	816462
143	H	Lobarion including some Nevesia sampaiana and a good population of Parmeliella testacea	Hazel	Collapsed veteran hazel tag 0443		245343	816463
144	M	Lobarion	Hazel	Phoenix hazel tag 0444		245349	816463
145	M	Lobarion moderately well developed but not spp. rich.	Hazel	Veteran pasture hazel tag 0473		245352	816487
146	M	Lobarion well developed incl. abundant Plectocarpon lichenum, Ricasolia virens, fertile Parmeliella triptophylla, frequent Peltigera collina.	Hazel	Large veteran pasture hazel tag 0487		245364	816496
147	M	Lobarion including Nephroma parile, fertile Parmeliella triptophylla, Plectocarpon lichenum	Hazel	Leaning veteran pasture hazel tag 0486.		245363	816506
148	M	Well developed Lobarion including Parmeliella parvula, Nephroma parile but not particularly spp. rich. Some Graphidion samples.	Hazel	Veteran hazel tag 0488	Photo 55	245376	816490
149	M	Collapsed old hazel with Lobarion	Hazel	Collapsed old hazel		245382	816486

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
150	H	Lobarion not very well developed but does include small patches of <i>P. testacea</i> and <i>Bryobilimbia sanguineoatra</i> .	Hazel	Hazel tag 0504		245386	816486
151	H	Well developed Lobarion, not very species rich but including <i>Parmeliella testacea</i> , <i>Ricasolia virens</i>	Hazel	Veteran hazel tag 0505		245391	816487
152	H	Large well developed patches of <i>Parmeliella testacea</i> , also <i>Sticta fuliginosa</i>	Hazel	Veteran hazel tag 0641	Photo 56	245402	816489
153	H	<i>Parmeliella testacea</i> , <i>Sticta fuliginosa</i>	Hazel	Hazel 0642		245406	816490
154	M	<i>Thelotrema lepadinum</i>	Rowan	Old rowan tag 0640		245412	816484
155	M	Lobarion present but not well developed	Hazel	Large veteran hazel tag 0656.		245428	816485
156	M	Lobarion including <i>Sticta sylvatica</i>	Hazel	Small but old hazel no tag seen.		245424	816494
157	H	Lobarion including <i>Parmeliella testacea</i> (some nice patches), <i>Degelia atlantica</i> , <i>Ricasolia virens</i> , <i>Sticta sylvatica</i> , <i>Sticta fuliginosa</i> .	Hazel	Veteran collapsed hazel tag 0658.		245422	816496
158	M	<i>Parmeliella parvula</i>	Birch	Collapsed old birch tag 0655		245416	816499
159	M	Lobarion including <i>Ricasolia virens</i> , <i>Sticta fuliginosa</i> , <i>Sticta limbata</i>	Hazel	Veteran hazel tag 0660		245420	816503

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
160	H	Very well developed Lobarion including the best patches of Pannaria rubiginosa seen plus good patches of Degelia atlantica, Nephroma laevigatum (rare on site), Dictyonema sp., Fertile Parmeliella triptophylla, Capronia normandinae, Gyalideopsis muscicola.	Hazel	Veteran hazel leaning downslope. Tag 0662.		245436	816497
161	M	Lobarion including moderately well developed Sticta sylvatica, Degelia atlantica.	Hazel	Veteran pasture hazel tag 0663		245443	816497
162	H	Lobarion including good patches Pannaria rubiginosa and P. conoplea. Some N. laevigatum, Gyalideopsis muscicola, Sticta sp.	Hazel	Veteran hazel collapsed downslope. No tag seen.		245447	816501
163	H	C. petractoides, also Ricasolia virens	Hazel	Veteran hazel leaning out from steep slope tag 0666.		245450	816515
164	M	Well developed Caliciales habitat with abundant C. trichialis, also Calicium viride. Also Micarea xanthonica. Buellia and Micarea alabastrites <b>samples.</b>	Birch	Veteran pasture birch tag 0527		245448	816544
165	M	Lobarion including Ricasolia virens, Nephroma laevigatum, Protopannaria pezizoides, Collema auriforme. Rock below with Psoroma hypnorum.	Rowan	Veteran pasture rowan tag 0732		245471	816581

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
166	H	Lobarion including <i>Leptogium lichenoides</i> and <i>Ricasolia virens</i> . Also <i>Thelotrema macrosporum</i>	Hazel	Veteran hazel tag 0679.		245472	816551
167	H	Lobarion including <i>Ricasolia virens</i> , <i>Peltigera horizontalis</i> , <i>Gyalideopsis muscicola</i> and a tiny scrap of <i>Parmeliella testacea</i> .	Hazel	Giant veteran pasture hazel tag 0674		245482	816535
168	M	Lobarion including <i>Ricasolia virens</i>	Rowan	Old rowan tag 0744		245511	816633
169	M	Well developed Caliciales habitat with abundant <i>Chaenotheca trichialis</i>	Birch	Veteran birch tag 0725		245530	816615
170	M	Lobarion not very well developed/diverse, including <i>Ricasolia virens</i> .	Hazel	Veteran pasture hazel. No tag seen		245556	816588
171	VH	Well developed <i>Parmeliella testacea</i> and a nice small but healthy patch of fertile <i>Leptogium burgessii</i> . <i>C. petractoides</i> .	Hazel	Collapsed veteran hazel. No tag seen.		245561	816596
172	VH	Lobarion including <i>Parmeliella testacea</i> , <i>Sticta limbata</i> , <i>Sticta sylvatica</i> , <i>Degelia atlantica</i> , <i>Pannaria conoplea</i> , <i>R. virens</i> and some giant lobes of <i>L. scrobiculata</i> , <i>L. pulmonaria</i> .	Hazel	Ancient veteran pasture hazel tag 0761. The stool is possibly 400 years old or more. Assesses as VH value on basis of the ancient character rather than current lichen flora.	Photo 58	245562	816607

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
173	M	Lobarion including <i>Degelia atlantica</i> , <i>Peltigera collina</i> and <i>Nephroma laevigatum</i> , <i>Capronia normandinae</i>	Hazel	Leaning old hazel stems tag 0769 and 0770 (both stems probably part of original parent stool)		245587	816625
174	M	Lobarion well developed but not species rich	Hazel	Veteran hazel stool tag 0772		245587	816634
175	H	Lobarion not well developed and species poor but includes several small developing patches of <i>Parmeliella testacea</i> .	Hazel	Beware of location on OS map - Hazel on right bank of stream looking downstream. No tag seen		245603	816644
176	M	Lobarion poorly developed and species poor.	Hazel	Hazel on island in stream. Beware location on OS map.		245592	816653
177	M	Lobarion well developed but spp. poor	Hazel	Note location is above left bank looking downstream, beware location on OS map. Tag 0920.		245578	816656
178	H	<i>C. petractoides</i> , Some <i>Parmeliella testacea</i> and <i>Sticta</i> sp. on branches overhanging stream.	Hazel	Old hazel overhanging stream. No tag seen. Beware location on OS map.		245572	816659
179	M	<i>Micarea alabastrites</i>	Birch	Tag 0924		245569	816667

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
180	M	Lobarion including <i>Ricasolia virens</i> but spp. poor.	Hazel	Veteran hazel tag 0926		245565	816663
181	M	Lobarion moderately well developed but species poor	Hazel	Tag 0928. left bank stream beware map location.		245564	816663
182	M	Lobarion poorly developed and species poor	Hazel	Old hazel tag 0984		245584	816676
183	M?	No Lobarion seen	Hazel	No tag seen. Assessed as M on basis of suitable habitat for colonisation.		245577	816676
184	H	<i>Crutarndina petractoides</i>	Hazel	Old Hazel 0968		245576	816675
185	M	Lobarion poorly developed but includes <i>R. virens</i>	Hazel	Hazel on right bank of stream looking downstream tag 0985		245576	816671
186	H	<i>Crutarndina petractoides</i> , <i>Parmeliella testacea</i> , <i>Degelia atlantica</i>	Hazel	Hazel on right bank of stream looking downstream tag 0966		245572	816670
187	H	Lobarion including <i>Parmeliella testacea</i> , <i>Lobaria scrobiculata</i> and small patch of <i>Nevesia sampaiana</i>	Hazel	Veteran pasture hazel tag 0961		245567	816708
188	H	Well developed Lobarion including good patches of <i>Parmeliella testacea</i> , frequent small patches of <i>Nevesia sampaiana</i> . Also <i>Sticta limbata</i> , <i>L. scrobiculata</i> etc.	Hazel	Leaning veteran pasture hazel tag 0960		245561	816712

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
189	H	Loba including some nice patches Parmeliella testacea, some Degelia atlantica, Sticta limbata	Hazel	Veteran hazel tag 0962		245542	816711
190	M	Species poor, poorly developed Lobarion	Hazel	Mature rowan tagged 0582 bursting forth from veteran pasture hazel stool.		245530	816669
191	M	Lobaria scrobiculata, fertile Megalaria pulverea, Loxospora elatina, Stenocybe pullatula	Alder	Shoreline tree no tag seen.		245474	816638
192	M	Ricasolia virens	Rowan	Tree leaning off outcrop along shore no tag seen.		245474	816636
193	M	Lobarion moderately well developed but spp. poor.	Hazel	Veteran pasture hazel 0512		245382	816517
194	H?	Lobarion	Hazel	Several hazels on steep rocky slopes along shore at this grid ref. , and to southwest of here, not examined due to time constraints.		245315	816497
195	M	Lobarion including Ricasolia virens, Pannaria conoplea. Moderately well developed.	Hazel	Veteran hazel tagged 0415		245315	816443

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
196	H	Lobarion including good patches of Parmeliella testacea.	Hazel	Veteran hazel fallen across small dry stream and successfully phoenixed. No tag seen.		245313	816439
197	M	Lobarion including fertile Parmeliella triptophylla, Anisomeridium ranunculosporum	Hazel	Veteran hazel tag 0131		245315	816422
198	L	Various siliceous rock community spp. including Perstusaria chiodectonoides				247326	816459
199	L	More siliceous community spp.				247398	816478
200	M	Protoparmelia ochrococca	Birch	Wet birch tag 0864		246751	816879
201	M	Protoparmelia ochrococca	Birch	Wet birch tag 0859		246758	816888
202	M	Protoparmelia ochrococca	Birch	Wet birch tag 0861		246756	816885
203	M	Protoparmelia ochrococca	Birch	Wet birch tag 0852		246759	816886
204	H	Lopadium disciforme	Birch	Wet birch tag 0873		246741	816871
205	M?	Micarea sample	Birch	Birch tag 0872		246735	816869
206	M	Lobaria scrobiculata, Thelotrema lepadinum	Birch	Veteran birch tag 0904		246726	816874
207	M	Protoparmelia ochrococca	Birch	Birch tag 0903		246725	816881
208	M	Protoparmelia ochrococca	Birch	Old birch tag 0904		246722	816880

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
209	M	Well developed Caliciales mostly <i>Calicium viride</i> , some <i>Chaenotheca trichialis</i>	Birch	Veteran birch tag 0907		246719	816854
210	M	<i>Lobaria pulmonaria</i> , <i>Thelotrema lepadinum</i>	Birch	Old birch. no tag		246720	816841
211	M	<i>Arthonia leucopellaea</i>	Birch	Veteran birch		246724	816841
212	M	<i>Lobaria scrobiculata</i> , <i>L. pulmonaria</i>	Rowan			246717	816839
213	M	<i>Arthonia leucopellaea</i>	Birch	Veteran birch.		246687	816764
214	M	<i>Protoparmelia ochrococca</i>	Birch	Old twin stemmed birch		246685	816764
215	M?	<i>Buellia</i> sp.	Birch	Veteran birch		246668	816746
216	M	<i>Arthonia leucopellaea</i>	Birch	Old birch		246675	816697
217	M	<i>Protoparmelia ochrococca</i>	Birch	Old birch		246672	816654
218	M	<i>Micarea alabastrites</i>	Birch	Veteran birch leaning into loch		246621	816574
219	M?	<i>Buellia</i> sp.	Birch			246567	816431
220	M	<i>Protoparmelia ochrococca</i> , <i>Thelotrema lepadinum</i> , <i>Micarea alabastrites</i>	Birch			246624	816280
221	M	<i>Megalaria pulvereae</i> , <i>Chaenotheca chrysocephala</i> , <i>Thelotrema lepadinum</i>	Birch	Old birch		246627	816272

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
222	M	Protoparmelia ochrococca, Micarea alabastrites, and three Micarea samples	Birch	Old birch		246629	816276
223	VH	Degelia plumbea s. str., Protopannaria pezizoides	Rowan	Rowan on outcrop with scrap of D. plumbea. Ideally would be left as a lochside tree as colonisation source for future woodland established around shores of the future reservoir loch.		246674	816199
224	M	Lobaria pulmonaria, Ricasolia virens	Rowan	Large old rowan at base of outcrop. Ideally would be left as colonisation source.		246704	816209
225	M	Lobaria pulmonaria	Rowan	Rowan on outcrop. Ideally leave as future colonisation source. L. pulmonaria also on adjacent birch on outcrop. Outcrop with both trees shown in photo.		246709	816198
226	H	Bunodophoron melanocarpum	Birch	On phoenix birch collapsed from outcrop.	Photo 63-64	246704	816214
227	M	Lobaria pulmonaria, Sticta limbata	Rowan	Impressive veteran phoenix rowan	Photo 65-67	246711	816217

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
228	M	<i>Thelotrema lepadinum</i>	Birch	Small stand of old and veteran wet birch		247285	816242
229	H	<i>Parmeliella testacea</i> , <i>Sticta sylvatica</i> , <i>Nephroma parile</i> , <i>P. triptophylla</i> , <i>L. pulmonaria</i> , <i>L. scrobiculata</i> , <i>R. amplissima</i> , <i>Pyrenula occidentalis</i> , <i>Pannaria conoplea</i> , <i>Peltigera collina</i>	Hazel	Veteran hazel tag 2338		245422	816091
251	M	<i>Arthonia leucopellaea</i> , <i>Protoparmelia ochrococca</i> , <i>Parmeliella parvula</i> , fertile <i>Loxospora elatina</i>	Birch	Old birch tag 0210		246786	816903
252	M	<i>Lobaria scrobiculata</i> , <i>Thelotrema lepadinum</i>	Birch	Old birch tag 0219		246796	816916
253	M	<i>Lobaria scrobiculata</i>	Birch	Veteran birch tag 0220		246799	816915
254	M	<i>Lobaria scrobiculata</i> , <i>Protopannaria pezizoides</i>	Birch	Veteran birch 0221		246798	816917
255	M	<i>Lobaria scrobiculata</i>	Birch	Old birch tag 0224		246803	816933
256	M	<i>Lobaria pulmonaria</i> , <i>L. scrobiculata</i>	Rowan	Streamside rowan tag 0228		246803	816940
257	M	<i>Arthonia leucopellaea</i>	Birch	Old birch tag 0233		246811	816953
258	M	<i>Arthonia leucopellaea</i> , <i>Anisomeridium ranunculosporum</i> , <i>Thelotrema lepadinum</i>	Birch	Old birch tag 0236		246816	816959

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
259	M	Arthonia leucopellaea, Chaenotheca ferruginea	Birch	Old birch tag 0245		246827	816971
260	H	Lopadium disciforme, fertile Megalaria pulverea, Thelotrema lepadinum	Birch	Old birch tag 0251		246822	816976
261	M	Arthonia leucopellaea, Thelotrema lepadinum	Birch	Birch beyond impact of scheme, no tag		246839	817081
262	M	Arthonia leucopellaea, Thelotrema lepadinum	Birch	Birch beyond impact of scheme, no tag		246853	817097
263	M	Protoparmelia ochrococca, Japewia subaurifera, Thelotrema lepadinum	Birch	Birch beyond impact of scheme, no tag		246860	817122
264	H	Bactrospora corticola	Birch	Birch beyond impact of scheme, no tag		246868	817133
265	L	Ochrolechia szatalaënsis	Willow	Willow beyond impact of scheme, no tag		246824	817130
266	M	Arthonia leucopellaea	Birch	Birch outwith Proposed Development scheme, no tag		246823	817123
267	M	Arthonia leucopellaea, Thelotrema lepadinum	Birch	Birch outwith Proposed Development scheme, no tag		246815	817053
268	M	Arthonia vinosa, Arthonia leucopellaea	Birch	Veteran birch outwith Proposed Development		246809	817039

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
				scheme, no tag. Note tree is on west of stream, above right bank looking downstream (beware loc. on OS map).			
269	H	Lopadium disciforme, Thelotrema lepadinum	Birch	Veteran birch outwith Proposed Development scheme, no tag. Note tree is on west side of stream.		246815	817041
270	H	Lopadium disciforme, Megalaria pulverea, Arthonia leucopellaea, Thelotrema lepadinum	Birch	Veteran birch on west side of stream (no tag, outwith Proposed Development scheme).		246813	817029
271	M	Arthonia leucopellaea	Birch	Old birch along west side of stream, tag 0275		246810	817014
272	M	Arthonia leucopellaea	Rowan	Tree on west bank tag 0335		246801	816991
273	M	Lobaria scrobiculata, Psoroma hypnorum, Protopannaria pezizoides	Rowan	Collapsed dead rowan		246794	816955
274	M	Protoparmelia ochrococca	Birch	Birch tagged 0358		246792	816963
275	M	Arthonia leucopellaea	Birch	Old birch tagged 0348		246790	816968
276	M	Protoparmelia ochrococca	Birch	Old birch tag 0344		246783	816977

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
277	M	Well developed Caliciales including <i>Chaenotheca chrysocephala</i> , <i>C. trichialis</i> , <i>C. ferruginea</i> . Also <i>Arthonia leucopellaea</i>	Birch	Old/veteran birch, no tag seen.		246777	817000
278	H	<i>Protopannaria pezizoides</i> (on birch lignum), <i>Megalaria grossa</i> and <i>Opegrapha ochrocheila</i> . Unusual base-rich flora. For birch.	Birch	Impressive veteran pasture birch with established mature rowan 'air tree'		246747	816994
279	M	<i>Arthonia leucopellaea</i>	Birch	Birch tag 0363		246778	816958
280	M	<i>Protoparmelia ochrococca</i> , <i>Arthonia leucopellaea</i> , <i>Thelotrema lepadinum</i> , <i>Chaenotheca chrysocephala</i> , <i>C. trichialis</i>	Birch	Old birch tag 0364		246775	816954
281	M	<i>Arthonia leucopellaea</i>	Birch	Birch tag 0365		246776	816953
282	M	<i>Arthonia leucopellaea</i>	Birch	Old birch tag 0368		246780	816954
283	M	<i>Arthonia leucopellaea</i>	Birch	Birch tag 0367		246778	816951
284	M	<i>Arthonia leucopellaea</i>	Birch	Birch tag 0385		246781	816947
285	M	<i>Arthonia leucopellaea</i>	Birch	Old birch tag 0386		246782	816945
286	M	<i>Arthonia leucopellaea</i>	Birch	Old birch tag 0396		246781	816939
287	M	<i>Protoparmelia ochrococca</i> (best patches seen), <i>Arthonia leucopellaea</i>	Birch	Old birch tag 0398		246775	816943
288	M	<i>Arthonia leucopellaea</i>	Birch	Old birch tag 0804		246774	816927

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
289	M	Lobaria scrobiculata, Arthonia leucopellaea, Thelotrema lepadinum	Birch			246778	816930
290	M	Lobaria scrobiculata	Birch	birch tag 0400		246780	816929
291	M	Arthonia leucopellaea	Birch	Veteran birch tag 0827		246770	816915
292	M	Arthonia leucopellaea	Birch	Veteran birch 0809		246778	816918
293	H	Lobaria scrobiculata, Bactrospora corticola	Birch	Veteran birch 0824		246756	816913
294	M	Arthonia leucopellaea	Birch	Old birch tag 0818		246749	816925
300	H	Bunodophoron melanocarpum	Birch	Veteran birch with small patch of B. melanocarpum		245577	815520
301	H	Bunodophoron melanocarpum	Other	Heavily browsed Bunodophoron melanocarpum on dead fallen birch in Old growth birchwood.		245365	815430
302	M	Bacidia caesiovirens, Parmeliella parvula	Birch			245039	815254
303	M	Pannaria conoplea, Peltigera collina, Parmeliella triptophylla, Pyrenula occidentalis, Thelotrema lepadinum	Hazel	Streamside hazel with Lobarion		244905	815348

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
304	M	Lobaria pulmonaria, L. scrobiculata, Thelotrema lepadinum	Rowan			244875	815362
305	M	Thelotrema lepadinum	Other	Aspen on crag. Not easily accessible so not examined closely but no leafy Lobarion seen with binoculars. T. lepadinum on dead fallen aspen branch.		244903	815496
306	M	Parmeliella triptophylla, Lobaria pulmonaria, Pannaria conoplea, L. scrobiculata , Nephroma parile, Sticta sylvatica	Hazel	Collapsed veteran hazel		244917	815534
307	M	Lobaria amplissima, L. pulmonaria, L. scrobiculata, Pannaria conoplea	Hazel			244926	815555
308	H	Bunodophoron melanocarpum	Birch			244950	815546
309	VH	Possible F. ignobilis, Arctomia delicatula, Normandina acroglypta, Pannaria rubiginosa, Ricasolia virens, Parmeliella triptophylla	Aspen	Aspen on crag.		244968	815512
310	M	R. virens, L. pulmonaria, L. scrobiculata, Psoroma hypnorum	Willow	Collapsed veteran willow. Another veteran willow to east supported Lobarion but was not examined closely.		244949	815512

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
311	M	Pannaria conoplea, Anisomeridium ranunculosporum, L. pulmonaria, L. scrobiculata, Pyrenula occidentalis, Thelotrema lepadinum, Sticta sylvatica (scrap), Parmeliella triptophylla	Hazel			244950	815518
312	M	Sticta sylvatica, Lobaria pulmonaria, Lobaria scrobiculata, Ricasolia virens, Protopannaria pezizoides, Parmeliella triptophylla, Pannaria conoplea, Peltigera collina	Hazel			244944	815525
313	H	Nevesia sampaiana, Pannaria rubiginosa, Peltigera collina, Parmeliella triptophylla, Lobaria scrobiculata, L. pulmonaria, Pannaria conoplea	Hazel	Veteran hazel collapsing downslope		244870	815507
314	M	R. amplissima, L. pulmonaria, L. scrobiculata, S. sylvatica, Peltigera collina	Hazel	Veteran pasture tree form hazel		244856	815526
315	M	Lobaria pulmonaria, L. scrobiculata	Hazel	Lobarion also on adjacent rowan		244813	815554
316	H	Degelia atlantica, Pannaria rubiginosa, Peltigera collina, Lobaria pulmonaria	Hazel			244809	815552
317	M	Arthonia muscigena, Pannaria conoplea, Peltigera collina, Sticta sylvatica, Parmeliella triptophylla, Gyalideopsis muscigena	Hazel			244803	815511

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
318	H	Thelotrema macrosporum, Parmeliella triptophylla, Pyrenula occidentalis, Thelotrema lepadinum	Hazel			244808	815507
319	H	Crutarndina petractoides, L. pulmonaria	Hazel			244785	815484
320	H	Bunodophoron melanocarpum	Other	Dead birch that has fallen off crag		244789	815488
321	H	Crutarndina petractoides	Hazel	Small hazel on crag		244791	815492
322	M	Arthonia leucopellaea	Birch			244754	815478
323	M	Lobaria pulmonaria	Ash			244770	815504
324	H	Nephroma laevigatum, L. pulmonaria, Parmeliella triptophylla, Pannaria rubiginosa, Sticta sylvatica, L. scrobiculata	Hazel			244761	815517
325	H	Crutarndina petractoides	Hazel			244745	815500
326	M	Sticta sylvatica, L. pulmonaria, Parmeliella triptophylla, Pannaria conoplea	Hazel			244736	815504
327	H	Crutarndina petractoides, R. virens	Hazel			244729	815495
328	H	Crutarndina petractoides, Sticta sylvatica, Sticta sp.	Hazel			244713	815497
329	M	Peltigera collina, Sticta sylvatica	Hazel			244708	815494
330	M	L. pulmonaria, Pannaria conoplea	Hazel			244695	815485

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
331	H	<i>Crutarndina petractoides</i>	Hazel			244705	815516
332	M	<i>Sticta sylvatica</i> , <i>L. pulmonaria</i> , <i>R. virens</i>	Hazel			244699	815520
333	VH	<i>Mycobilimbia pilularis</i> , <i>Bilimbia sabuletorum</i> , <i>Leptogium cyanescens</i> , <i>Collema subflaccidum</i> , <i>Peltigera horizontalis</i> , <i>P. praetextata</i> , <i>P. collina</i> , <i>Sticta sylvatica</i> , <i>Nephroma laevigatum</i> , <i>Parmeliella triptophylla</i> , <i>Protopannaria pezizoides</i> , <i>Leptogium lichenoides</i> , <i>Pannaria rubiginosa</i> ,	Ash	Giant veteran ash with pollard form.		244672	815516
334	VH	<i>Leptogium burgessii</i> , <i>Degelia atlantica</i>	Hazel	Collapsed streamside hazel. Adjacent boulder with <i>P. pezizoides</i> , <i>Sticta sylvatica</i> .		244670	815518
335	H	<i>Crutarndina petractoides</i> , <i>L. pulmonaria</i>	Hazel	Hazel on south bank of stream (differs from map loc.)		244662	815517
336	M	<i>L. pulmonaria</i>	Hazel			244659	815539
337	M	<i>L. pulmonaria</i> , <i>L. scrobiculata</i> , <i>R. virens</i>	Hazel			244645	815535
338	M	<i>Lobaria pulmonaria</i> , <i>Nephroma parile</i> , <i>Pannaria conoplea</i> , <i>Sticta limbata</i>	Hazel			244635	815543
339	M	<i>Lobaria pulmonaria</i>	Elm			244655	815619

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
340	M	L. pulmonaria, R. virens	Other	Two aspens overhanging cliff		244688	815665
341	M?		Other	Abundant suppressed aspen suckers from mature parent tree on nearby crag.		244707	815686
342	M	Lobaria pulmonaria, L. scrobiculata	Hazel			244762	815713
343	M	Lobaria amplissima, Sticta limbata, Pannaria conoplea, Lobaria scrobiculata, Lobaria pulmonaria	Hazel	Collapsed hazel		244770	815699
344	M	L. scrobiculata, Pannaria conoplea, Parmeliella triptophylla, Lobaria pulmonaria	Hazel	Hazel collapsed under dead fallen birch		244779	815687
345	M	Arthonia leucopellaea	Birch			244895	815801
346	H	Arthonia anombrophila, Lobaria pulmonaria, Protopannaria pezizoides, Pannaria rubiginosa, Parmeliella triptophylla	Aspen			244909	815814
347	M	Lobaria scrobiculata, Lobaria pulmonaria	Rowan			244929	815836
348	VH	Degelia plumbea s. str., Sticta limbata, Pannaria rubiginosa, L. pulmonaria, L. scrobiculata, R. virens, Pannaria conoplea,	Rowan			244989	815897

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
349	M	<i>L. pulmonaria</i> , <i>R. virens</i>	Rowan			245006	815902
350	M	<i>L. pulmonaria</i>	Hazel			245013	815914
351	H	<i>Nephroma parile</i> , <i>L. pulmonaria</i> , <i>P. collina</i> , <i>Sticta sylvatica</i> , <i>Pannaria rubiginosa</i> , <i>P. conoplea</i> , <i>Parmeliella triptophylla</i>	Hazel			245023	815918
352	M	<i>Lobaria pulmonaria</i> , <i>R. virens</i>	Hazel	Veteran tree form hazel		245030	815923
353	H	<i>L. scrobiculata</i> , <i>L. pulmonaria</i> , <i>P. rubiginosa</i> , <i>Nephroma laevigatum</i> , <i>R. virens</i>				245025	815943
354	M	<i>R. amplissima</i> , <i>Sticta sylvatica</i> , <i>L. pulmonaria</i> , <i>Parmeliella triptophylla</i> , <i>P. conoplea</i> , <i>Megalaria pulvereana</i> , <i>P. collina</i> , <i>L. scrobiculata</i>	Hazel			245026	815960
355	M	<i>L. pulmonaria</i> , <i>R. virens</i>	Hazel	A grove of veteran pasture hazels		245034	815972
356	M	<i>Degelia atlantica</i> , <i>L. pulmonaria</i> , <i>L. scrobiculata</i> , <i>S. sylvatica</i> , <i>P. collina</i> , <i>Pannaria conoplea</i>	Hazel			245037	815966
357	H	<i>Crutarndina petractoides</i> , <i>L. pulmonaria</i> (c. ap.), <i>Pannaria conoplea</i> , <i>Parmeliella triptophylla</i> ,	Hazel	Large old veteran pasture hazel		245046	815975
358	H	<i>Parmeliella testacea</i> , <i>L. pulmonaria</i>	Hazel			245050	815968

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
359	H	Parmeliella testacea, Lobaria amplissima, Pannaria conoplea, R. virens, L. pulmonaria, P. collina, S. sylvatica	Hazel			245053	815971
360	H	Ricasolia virens, L. pulmonaria, Pannaria conoplea, Parmeliella triptophylla, s. sylvatica, Degelia plumbea s. str. (scrap), possible scrap of P. testacea.	Hazel	Large veteran hazel by small stream.		245051	815980
361	M	Pannaria conoplea, Parmeliella triptophylla, L. pulmonaria	Hazel			245052	815985
362	M	R. amplissima, L. pulmonaria, P. collina	Hazel	Collapsed veteran by small stream		245042	815986
363	VH	Leptogium burgessii (scraps), L. lichenoides, Sticta sylvatica, P. collina, P. conoplea, L. pulmonaria.	Ash	Dead fallen ash collapsed in stream		245247	816146
364	H	Collema subflaccidum, L. pulmonaria, R. virens	Hazel			245244	816155
365	M	L. scrobiculata	Rowan			245246	816158
366	M	Arthonia leucopellaea	Birch	Veteran birch		246686	817271
367	M	Lobaria scrobiculata	Rowan	Scrap of L. scrobiculata		246670	817266
368	H?	Bryoria capillaris	Birch	Not recorded elsewhere but possibly overlooked		246655	817271
369	M	Ricasolia virens, L. pulmonaria	Birch	Veteran birch		246603	817231

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
370	M	Arthonia leucopellaea	Birch			246585	817286
371	M	Arthonia leucopellaea	Birch			246614	817295
372	M	Pannaria conoplea, Sticta sylvatica, Lobaria pulmonaria, Parmeliella triptophylla, Peltigera collina	Hazel			246563	817324
373	M	L. pulmonaria, Sticta sylvatica, Nephroma parile	Hazel	Collapsed but successful phoenix		246535	817326
374	VH	Arctomia delicatula, Lobaria pulmonaria, Sticta sylvatica, Pannaria conoplea, L. scrobiculata	Hazel			246536	817316
375	M	Sticta sylvatica, Pannaria conoplea, L. pulmonaria, Nephroma parile	Hazel			246531	817310
376	M	Arthonia leucopellaea	Birch			246467	817301
377	M	Lobaria scrobiculata, Sticta sylvatica, L. pulmonaria, Pannaria conoplea	Hazel	Successful veteran phoenix		246555	817356
378	H	Nevesia sampaiana, R. amplissima, Sticta sylvatica, Parmeliella triptophylla, Pannaria conoplea, L. pulmonaria	Hazel			246563	817356
379	M	L. pulmonaria, L. scrobiculata	Hazel			246566	817367
380	H	Nevesia sampaiana, L. pulmonaria, L. scrobiculata, Pannaria conoplea, Parmeliella sp.	Hazel	Big veteran pasture tree form hazel		246576	817369

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
381	H	L. scrobiculata, L. pulmonaria, Pannaria conoplea, Plectocarpon lichenum, Peltigera collina, small thallus of aff. Nevesia sampaiana- no soralia visible.	Hazel			246584	817367
382	VH	Pseudocyphellaria norvegica, Nevesia sampaiana, Lobaria amplissima, Sticta sylvatica, Pannaria conoplea	Hazel	Several nice patches N. sampaiana on this hazel.		246593	817366
383	M	Parmeliella triptophylla	Hazel			246614	817347
384	M	L. pulmonaria, Pannaria conoplea	Hazel	Giant veteran		246582	817385
385	M	Sticta sylvatica, Peltigera collina, Parmeliella triptophylla, Lobaria pulmonaria, Pannaria conoplea, Lobaria scrobiculata, Catinarina atropurpurea	Hazel			246583	817379
386	H	Nevesia sampaiana, Pannaria rubiginosa, Pannaria conoplea, L. pulmonaria, Sticta sp.	Hazel			246592	817376
387	M	L. scrobiculata, L. pulmonaria	Hazel			246597	817374
388	VH	Pseudocyphellaria norvegica (scrap), Sticta sylvatica, L. pulmonaria, P. conoplea, R. virens	Hazel	Two hazels at same grid ref., the P. norvegica on the collapsed hazel.		246601	817381
389	M	Pannaria conoplea, Sticta sylvatica, Lobaria pulmonaria	Hazel			246609	817379

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
390	H	N. sampaiana (small patch on stem on ground), Pannaria conoplea, Lobaria pulmonaria, R. amplissima, S. sylvatica, P. testacea, I. scrobiculata	Hazel			246622	817381
391	M	Pannaria conoplea,	Hazel			246629	817379
392	H	Pannaria rubiginosa, R. amplissima, L. scrobiculata, L. pulmonaria, Sticta sylvatica, Parmeliella triptophylla,	Hazel			246616	817386
393	M	R. amplissima, L. pulmonaria, Sticta sylvatica	Hazel			246605	817386
394	M	L. pulmonaria, Pannaria conoplea	Hazel			246591	817392
395	M	L. pulmonaria, P. conoplea	Hazel			246584	817396
396	H	N. sampaiana, R. amplissima, L. pulmonaria, P. conoplea, s. sylvatica, Parmeliella triptophylla	Hazel			246577	817400
397	M	R. amplissima, Pannaria conoplea, Sticta sylvatica, L. pulmonaria, L. scrobiculata,	Hazel			246588	817407
398	H	N. sampaiana, P. triptophylla, L. pulmonaria, P. conoplea	Hazel			246589	817402
399	H	L. pulmonaria, Pannaria rubiginosa, Peltigera collina, Parmeliella testacea, P. triptophylla	Hazel			246595	817403

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
400	H	N. sampaiana, L. scrobiculata, L. pulmonaria, P. conoplea,	Hazel			246605	817410
401	M	L. scrobiculata, L. pulmonaria, P. collina, R. amplissima, P. triptophylla,	Hazel			246616	817415
402	M	L. pulmonaria, R. amplissima, P. conoplea	Hazel	Ancient stool/low pollard form.		246628	817425
403	M	L. pulmonaria, R. amplissima, S. sylvatica	Hazel			246643	817409
404	H	aff. N. sampaiana (on stem along ground, decent sized patch but no soralia seen), R. amplissima, L. scrobiculata, P. conoplea, L. pulmonaria	Hazel			246662	817412
405	H	Pannaria conoplea, L. pulmonaria, P. rubiginosa, S. sylvatica, R. amplissima, P. collina	Hazel			246674	817417
406	M	P. conoplea, L. pulmonaria,	Hazel			246683	817409
407	H	P. testacea, R. amplissima, L. pulmonaria, P. rubiginosa, P. conoplea, Parmeliella triptophylla	Hazel			246687	817415
408	M	L. pulmonaria, L. scrobiculata, Pannaria conoplea, R. amplissima	Hazel			246673	817425

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
409	H	N. sampaiana, R. amplissima (fertile), L. pulmonaria, L. scrobiculata, S. sylvatica, P. triptophylla	Hazel			246669	817435
410	M	L. pulmonaria, L. scrobiculata	Hazel			246664	817448
411	M	P. conoplea, L. pulmonaria, L. scrobiculata	Hazel			246675	817448
412	M	L. pulmonaria, L. scrobiculata	Hazel			246665	817454
413	M	R. amplissima, L. pulmonaria, L. scrobiculata, P. collina, P. triptophylla	Hazel			246673	817468
414	M	L. pulmonaria, L. scrobiculata, P. conoplea, P. lichenum, R. amplissima,	Hazel	Another collapsed veteran hazel, many in this area are.		246696	817482
415	M	Pannaria conoplea, L. pulmonaria,	Hazel			246711	817470
416	M	L. pulmonaria, Parmeliella triptophylla, L. scrobiculata, Peltigera collina, Nephroma parile, P. conoplea	Hazel			246723	817491
417	M	L. pulmonaria, p. triptophylla, P. conoplea	Hazel			246725	817504
418	M	L. pulmonaria, L. scrobiculata, P. conoplea	Hazel			246671	817497
419	M	L. pulmonaria	Hazel	There are scattered hazels further downslope but more widely spaced		246645	817504

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
				and likely to be more exposed and of lower interest than the area of veterans here with <i>N. sampaiana</i> .			
420	M	<i>P. conoplea</i> , <i>L. scrobiculata</i> , <i>L. pulmonaria</i> , <i>R. amplissima</i>	Hazel			246643	817494
421	M	<i>L. pulmonaria</i> , <i>L. scrobiculata</i>	Hazel			246644	817490
426	M	Lobarion	Hazel			246651	817482
422	M	Lobarion	Hazel			246657	817477
424	M	Lobarion	Hazel			246648	817466
423	M	Lobarion	Hazel			246643	817471
425	M	Lobarion	Hazel			246638	817459
427	M	Lobarion	Hazel			246629	817456
428	M	Lobarion	Hazel			246626	817462
429	M	Lobarion	Hazel	Giant veteran tree form		246624	817457
430	M	Lobarion	Hazel			246613	817452
431	M	Lobarion including <i>Sticta sylvatica</i> , <i>R. amplissima</i>	Hazel			246622	817446

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
432	M	Lobarion including <i>R. amplissima</i> , <i>P. conoplea</i>	Hazel			246612	817431
433	M	Lobarion	Hazel			246611	817428
434	M	Lobarion including <i>S. sylvatica</i>	Hazel	Giant veteran hazel		246603	817431
435	M	Lobarion	Hazel			246596	817430
436	H	Lobarion including <i>Nevesia sampaiana</i> , <i>Peltigera collina</i>	Hazel			246602	817419
437	M	Lobarion	Hazel			246622	817506
438	M	Lobarion	Hazel			246627	817511
439	M	Lobarion	Hazel	Also on the rowan and birch air trees that have grown on this hazel		246613	817511
440	M	Lobarion	Hazel			246618	817520
441	M	Lobarion	Hazel			246609	817525
442	M	Lobarion	Hazel			246611	817535
443	M	Lobarion including <i>R. amplissima</i> , <i>S. sylvatica</i>	Hazel			246625	817541
444	M	Lobarion	Hazel			246627	817530
445	M	Lobarion	Hazel			246637	817534

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
446	M	Lobarion	Hazel			246641	817538
447	M	Lobarion	Hazel			246652	817554
448	VH	Arthonia sampaiana, Nevesia sampaiana, (scraps), Lobaria amplissima, P. conoplea, Sticta sylvatica	Hazel			246626	817570
449	M	Lobarion	Hazel			246621	817582
450	H	N. sampaiana, Pannaria rubiginosa, R. amplissima, Pannaria conoplea, L. scrobiculata, Peltigera collina, Parmeliella triptophylla,	Hazel			246608	817572
451	H	Nevesia sampaiana	Hazel	Some nice patches of N. sampaiana.		246603	817558
452	VH	Leptogium hibernicum, Leptogium burgessii (c. ap.), Collema fasciculare, S. limbata, N. sampaiana	Hazel	Global Red Listed	Photo 70-73	246597	817555
453	H	Scrap of N. sampaiana	Hazel			246581	817552
454	M	Lobarion	Hazel			246580	817565
455	M	Lobarion	Hazel			246570	817562
456	VH	Gomphillus calycioides	Hazel			246582	817538
456	M	Lobarion	Hazel			246562	817540

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
457	H	N. sampaiana	Hazel			246556	817536
458	H	Nevesia sampaiana	Hazel			246553	817543
459	H	Nevesia sampaiana	Hazel			246550	817545
460	H	Nevesia sampaiana	Hazel			246553	817555
461	M	Lobarion	Hazel			246549	817570
462	H	Lobarion including N. sampaiana	Hazel			246543	817571
463	H	Nevesia sampaiana	Hazel			246530	817568
464	H	Nevesia sampaiana and fertile R. amplissima	Hazel			246523	817574
465	H	Fertile P. conoplea	Hazel			246511	817573
466	H	N. sampaiana	Hazel			246505	817581
466	M	Lobarion	Hazel			246505	817558
467	H	Lobarion including Nevesia sampaiana with Arthonia sampaianae	Hazel			246508	817547
468	M	Lobarion	Hazel			246519	817549
469	H	Lobarion including Nevesia sampaiana	Hazel			246522	817546
470	M	Lobarion	Hazel			246525	817547

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
471	M	Lobarion	Hazel			246531	817551
472	M	Lobarion	Hazel			246532	817556
473	M	Lobarion including <i>S. limbata</i> and nice patches of <i>S. sylvatica</i>	Hazel			246533	817561
474	H	Lobarion including <i>N. sampaiana</i> , <i>P. testacea</i>	Hazel			246547	817562
475	H	Lobarion including <i>N. sampaiana</i>	Hazel			246541	817560
476	M	Lobarion	Hazel			246540	817555
477	H	Lobarion including <i>Nevesia sampaiana</i> (scrap)	Hazel			246545	817554
478	M	Lobarion	Hazel			246521	817541
479	M	Lobarion including <i>P. horizontalis</i>	Hazel			246515	817536
480	H	Lobarion including <i>Nevesia sampaiana</i>	Hazel			246504	817533
481	M	Lobarion including <i>Psoroma hypnorum</i>	Hazel			246503	817529
482	H	Lobarion including tiny scrap <i>Nevesia sampaiana</i>	Hazel			246495	817533
483	H	Lobarion and <i>Crutarndina petractoides</i>	Hazel			246485	817518
484	M	Lobarion	Hazel			246480	817517

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
485	H	Lobarion including small patches <i>Nevesia sampaiana</i> and <i>P. testacea</i>	Hazel			246475	817518
486	H	Lobarion including small scrap of <i>Nevesia sampaiana</i>	Hazel			246477	817511
487	VH	Lobarion including <i>P. rubiginosa</i> , <i>Nevesia sampaiana</i> and <i>Arthonia sampaianae</i>	Hazel			246483	817501
488	VH	Lobarion including <i>Degelia plumbea</i>	Hazel			246470	817493
489	H	Lobarion including <i>Nevesia sampaiana</i>	Hazel			246462	817498
490	H	Lobarion including <i>Nevesia sampaiana</i> , <i>P. testacea</i>	Hazel			246462	817495
491	M	Lobarion	Hazel			246435	817486
492	M	Lobarion	Hazel			246428	817484
493	M	Lobarion	Hazel			246410	817457
494	M	Lobarion	Hazel			246405	817456
495	H	Lobarion including <i>Nevesia sampaiana</i>	Hazel			246396	817453
496	M	Lobarion	Hazel			246371	817442

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
497	VH	Lobarion including nice small fertile patch of <i>L. burgessii</i> , and also <i>Nevesia sampaiana</i> , <i>P. testacea</i>	Hazel			246370	817440
498	H	<i>Nevesia sampaiana</i>	Hazel			246377	817431
499	H	<i>Nevesia sampaiana</i>	Hazel			246351	817411
500	H	<i>Nevesia sampaiana</i>	Hazel			246380	817423
501	M	Lobarion	Hazel			246384	817427
502	VH	Lobarion including <i>Nevesia sampaiana</i> and <i>Arthonia sampaianae</i>	Hazel			246392	817431
503	M	Lobarion	Hazel			246383	817406
504	M	Lobarion	Hazel			246378	817391
505	M	Lobarion	Hazel			246379	817386
506	M	Lobarion	Hazel			246386	817398
507	M	Lobarion	Hazel			246389	817402
508	M	Lobarion	Hazel			246399	817417
509	M	Lobarion	Hazel			246400	817416
510	H	Lobarion including small patch <i>Nevesia sampaiana</i>	Hazel			246400	817429

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
511	H	Lobarion including Nevesia sampaiana	Hazel			246401	817434
512	H	Lobarion including tiny patch Nevesia sampaiana	Hazel			246405	817437
513	M	Lobarion	Hazel			246407	817441
514	H	Lobarion including small patch P.. testacea	Hazel			246411	817440
515	H	Lobarion including Nevesia sampaiana	Hazel			246416	817450
516	M	Lobarion	Hazel			246507	817509
517	M	Lobarion	Hazel			246509	817515
518	H	Lobarion including small patch Nevesia sampaiana	Hazel			246511	817520
519	M	Lobarion	Other	Lobarion on aspen fallen off crag. other aspens higher up not examined due to time constraints but probably accessible.		246522	817507
520	M	Lobarion	Hazel			246550	817598
521	H	Lobarion including Nevesia sampaiana	Hazel			246556	817602
522	M	Lobarion	Hazel			246555	817608
523	M	Lobarion	Hazel			246553	817609

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
524	H	Lobarion including <i>Nevesia sampaiana</i>	Hazel			246547	817607
525	M	Lobarion	Hazel			246540	817612
526	M	Lobarion	Hazel			246532	817605
527	M	Lobarion	Hazel			246525	817606
528	M	Lobarion	Hazel			246528	817611
529	M	Lobarion including <i>S. limbata</i>	Hazel			246528	817615
530	M	Lobarion	Hazel			246520	817608
531	M	Lobarion	Hazel			246533	817629
532	M	Lobarion	Hazel			246552	817626
533	H	Lobarion including <i>P. testacea</i>	Hazel			246558	817622
534	M	Lobarion	Hazel			246560	817616
535	M	Lobarion	Hazel			246565	817611
536	M	Lobarion	Hazel			246572	817614
537	M	Lobarion	Hazel			246580	817614
538	M	Lobarion	Hazel			246578	817627
539	H	Lobarion including <i>Nevesia sampaiana</i>	Hazel			246581	817624

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
540	VH	Lobarion including fertile <i>P. conoplea</i>	Hazel			246585	817620
541	M	Lobarion	Hazel			246603	817601
542	M	Lobarion including <i>S. limbata</i>	Hazel			246610	817604
543	M	Lobarion	Hazel			246642	817581
544	M	Lobarion	Hazel			246649	817581
545	M	Lobarion	Hazel			246665	817577
546	H	Lobarion including small patches of <i>Nevesia sampaiana</i>	Hazel			246662	817573
547	M	Lobarion	Hazel			246675	817566
548	M	Lobarion	Hazel			246669	817560
549	H	Lobarion with <i>Nevesia sampaiana</i>	Hazel			246669	817554
550	M	Lobarion	Hazel			246664	817529
551	H	Lobarion with <i>Nevesia sampaiana</i>	Hazel			246665	817524
552	H	Lobarion with <i>Nevesia sampaiana</i>	Hazel			246675	817517
553	H	<i>Bunodophoron melanocarpum</i> , <i>Parmeliella parvula</i>	Birch			246735	817392
554	H	<i>Bunodophoron melanocarpum</i>	Birch			246727	817403

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
555	VH	Leptogium burgessii, Mycobilimbia pilularis, Nephroma laevigatum, Pannaria rubiginosa	Ash	Also small patch L. burgessii colonised on rock at edge of stream (fallen from ash)		246813	817518
556	M	Lobarion	Hazel			246817	817519
557	M	Lobarion	Hazel			246828	817517
558	VH	Lobarion including Nevesia sampaiana, Collema fasciculare. Also Bactrospora homalotropa.	Hazel			246848	817527
559	VH	Lobarion including Degelia plumbea, Pannaria rubiginosa, Lobaria amplissima, Lobaria scrobiculata	Hazel			246858	817522
560	M	Lobarion	Hazel			246861	817518
561	M	Lobarion	Hazel			246868	817518
562	H	Lobarion including P. testacea	Hazel			246871	817502
563	H	Lobarion including Nevesia sampaiana	Hazel			246865	817536
564	M	Lobarion including fertile L. pulmonaria	Hazel			246870	817544
565	H	Lobarion including small patch Nevesia sampaiana.	Hazel			246863	817545
566	M	Lobarion	Hazel			246868	817555

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
567	M	Lobarion	Hazel			246858	817571
568	M	Tomasellia gelatinosa	Hazel			246842	817572
569	H	Lobarion including Nevesia sampaiana, Catinarina atropurpurea, also Bacidia caesiovirens and aff. Bryobilimbia sanguineoatra.	Hazel			246834	817562
570	H	Leafy Lobarion poorly developed but includes Pachyphiale carneola	Hazel			246821	817557
571	VH	Lobarion including nice fertile patches of Biatora vernalis	Hazel		Photo 74-75	246818	817561
572	H	Lobarion including Nevesia sampaiana	Hazel			246797	817669
573	H	Lobarion including Nevesia sampaiana	Hazel			246782	817686
574	M	Lobarion	Hazel			246789	817687
575	M	Lobarion	Hazel	Hazels here sparse, well spaced, exposed and Lobarion poorly developed		246801	817711
576	M	Lobarion poor	Hazel			246832	817730
577	M	Lobarion	Hazel	Several other very exposed hazels here not examined but not likely to have well		246837	817748

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
				developed/notable Lobarion			
578	M	Lobarion poor	Hazel			246829	817738
579	H	Lobarion with small patch <i>Nevesia sampaiana</i>	Hazel	A priority area for restoration of hazel habitat including establishment of more hazels by seed		246825	817748
580	M	Lobarion not seen	Hazel			246820	817769
581	M	Lobarion poor	Hazel			246830	817803
582	H	Lobarion including <i>P. testacea</i> and tiny patch <i>Nevesia sampaiana</i>	Hazel	More sheltered area		246848	817800
583	M	Lobarion	Hazel	Large veteran pasture tree (most hazels so far on this slope have been veteran but much smaller).		246860	817816
584	M	Lobarion	Hazel	Collapsed veteran		246839	817822
585	M	Lobarion poor	Hazel			246837	817834
586	M	Lobarion poor	Hazel			246848	817837
587	M	Lobarion well developed but spp. poor	Hazel			246872	817906
588	M	Lobarion well developed but spp. poor	Hazel			246889	817902

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
589	M	Lobarion present but spp. poor	Hazel			246884	817894
590	M	Lobarion present but poor	Hazel			246887	817892
591	H	Lobarion including <i>Nevesia sampaiana</i>	Hazel	Collapsed veteran		246891	817894
592	M	Lobarion	Hazel			246895	817892
593	M	Lobarion	Hazel			246904	817898
594	M	Lobarion	Hazel			246910	817891
595	H	<i>Bunodophoron melanocarpum</i>	Birch	Dead fallen tree		246907	817888
596	M	Lobarion spp. poor	Hazel			246908	817882
597	H	Lobarion spp. poor but with scrap of <i>Nevesia sampaiana</i>	Hazel			246920	817862
598	M	Lobarion spp. poor	Hazel			246920	817871
599	H	Lobarion spp. poor but with <i>Nevesia sampaiana</i>	Hazel	Veteran hazel on scree, hazel collapsed		246927	817880
600	M	Lobarion spp. poor	Hazel			246926	817887
601	M	Lobarion v. spp. poor	Hazel			246917	817892
602	M	Lobarion mod. well developed	Hazel			246905	817909
603	H	Lobarion incl. <i>Pannaria rubiginosa</i>	Hazel			246923	817923

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
604	M	Lobarion	Hazel			246929	817927
605	M	Lobarion poor	Hazel			246930	817946
606	M	Lobarion not very well developed	Hazel			246929	817952
607	M	Lobarion not very well developed	Hazel			246927	817956
608	M	Lobarion poor	Hazel			246920	817946
609	M	Lobarion spp. poor	Hazel			246919	817942
610	H	Lobarion incl. <i>Nevesia sampaiana</i>	Hazel			246903	817936
611	M	Lobarion poor	Hazel	Collapsed hazel		246895	817938
612	M	Lobarion poor	Hazel			246889	817942
613	M	Lobarion not seen	Hazel	Collapsed veteran		246884	817945
614	H	Lobarion very poorly developed but includes small patch <i>Nevesia sampaiana</i>	Hazel			246892	817953
615	H	Lobarion not very well developed but includes small patch <i>Nevesia sampaiana</i>	Hazel			246896	817952
616	H	Lobarion not very well developed but includes some patches of <i>Nevesia sampaiana</i>	Hazel			246904	817949
617	M	Lobarion very poor	Hazel			246904	817946

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
618	M	Lobarion very poor	Hazel			246902	817956
619	H	Lobarion including a nice patch of <i>Nevesia sampaiana</i> and some <i>D. atlantica</i>	Hazel			246894	817960
620	H	Lobarion including some <i>D. atlantica</i> . Also some <i>C. petractoides</i> .	Hazel			246890	817957
621	M	Lobarion very poor	Hazel			246870	817951
622	H	Lobarion present also <i>Crutarndina petractoides</i>	Hazel			246869	817959
623	M	Lobarion	Hazel			246858	817953
624	M	Lobarion	Hazel			246850	817950
625	H	Lobarion including <i>Pannaria rubiginosa</i>	Hazel			246849	817948
626	M	Lobarion	Hazel			246863	817967
627	M	no Lobarion seen	Hazel			246887	817976
628	M	Spp. poor Lobarion	Hazel			246892	817971
629	M	Very poor Lobarion	Hazel			246943	817981
630	M	Lobarion spp. poor	Hazel			246957	818019
631	M	Lobarion	Hazel			246947	818022
632	M	Lobarion not seen	Hazel			246951	818030

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
633	M	Lobarion poor	Hazel			246954	818031
634	M	Lobarion poor	Hazel			246958	818033
635	M	Lobarion not seen	Hazel			246950	818034
636	M	Lobarion not seen	Hazel			246948	818037
637	M	Lobarion poor	Hazel			246940	818031
638	M	Lobarion spp. poor	Hazel			246943	818030
639	M	Lobarion spp. poor	Hazel			246964	818039
640	M	Lobarion not seen	Hazel			246975	818041
641	M	Lobarion poor	Hazel			246976	818046
642	H	Bunodophoron melanocarpum	Birch			246981	818086
643	M	Lobarion poor	Hazel			247000	818093
644	H	Lobarion incl. small patch <i>P. testacea</i>	Hazel			247004	818090
645	H	Lobarion poor but <i>Crutarndina petractoides</i> present	Hazel			247005	818080
646	M	Lobarion poor	Hazel			247007	818083
647	M	Lobarion present but not well developed	Hazel			247010	818085

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
648	H	Lobarion poor but Crutarndina petractoides present	Hazel			247009	818093
649	H	Lobarion poor but good patches of Crutarndina petractoides present	Hazel			247011	818095
650	H	Lobarion incl. Degelia atlantica, Crutarndina petractoides present	Hazel			247015	818101
651	H	Lobarion incl. small patches Nevesia sampaiana, Crutarndina petractoides present	Hazel			247018	818110
652	H	Lobarion incl. Nevesia sampaiana, Degelia atlantica, Bryobilimbia sanguineoatra, Crutarndina petractoides present	Hazel			247017	818114
653	H	Lobarion not well developed but incl. small patches Nevesia sampaiana	Hazel			247013	818109
654	M	Arthonia leucopellaea, Thelotrema lepadinum	Oak	'Young mature' stem		247007	818123
655	M	Pyrenula occidentalis, Thelotrema lepadinum. No Lobarion seen.	Hazel			247005	818117
656	M	Lobarion poor	Hazel			246997	818102
657	H	Lobarion poor but Arthonia ilicina	Hazel			246995	818102
658	H	Lobarion incl. N.. sampaiana	Ash	Tree fallen but still alive		246985	818106

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
659	H	Lobarion not seen but <i>C. petraetoides</i> , <i>Arthonia ilicina</i>	Hazel			246967	818101
660	H	Lobarion not seen but <i>C. petraetoides</i>	Hazel			246936	818093
661	M	Lobarion poor	Hazel	Several nearby ash trees and aspen stand		246935	818092
662	H	Lobarion including <i>P. testacea</i>	Hazel			246919	818082
663	H	Lobarion including <i>P. testacea</i>	Hazel			246912	818076
664	M	Lobarion spp. poor	Hazel			246906	818063
665	M	Lobarion fairly spp. poor	Hazel			246908	818061
666	M	Lobarion spp. poor	Hazel			246908	818056
667	M	Lobarion spp. poor	Hazel			246907	818052
668	M	Lobarion spp. poor	Hazel			246892	818041
669	M	Lobarion spp. poor but includes <i>D.</i> <i>atlantica</i>	Hazel			246887	818046
670	M	Lobarion spp. poor	Hazel			246886	818057
671	M	Lobarion spp. poor	Hazel			246891	818068
672	VH	Lobarion includes <i>P. testacea</i> , <i>Collema</i> <i>subflaccidum</i>	Hazel			246893	818067

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
673	H	Lobarion spp. poor but includes Nevesia sampaiana and possibly scrap P. testacea	Hazel			246892	818075
674	H	Lobarion incl. small patch Nevesia sampaiana	Hazel			246879	818068
675	H	Lobarion on hollow veteran ash including Collema subflaccidum, Ricasolia virens, Bilimbia sabuletorum, Peltigera praetextata,	Ash			246866	818059
676	M	Lobarion	Hazel			246869	818057
677	H	Lobarion poor but Thelotrema macrosporum	Hazel			246858	818050
678	M	Lobarion poor	Hazel			246839	818037
679	M	Lobarion including S. limbata	Hazel			246836	818036
680	M	Several hazels with spp. poor Lobarion	Hazel			246817	818033
681	M	Spp. poor Lobarion	Hazel			246808	818024
682	H	Lobarion including small patch Nevesia sampaiana	Hazel			246828	818024
683	M	Lobarion poor	Hazel			246833	818024
684	H	Lobarion not well developed but includes small patch Nevesia sampaiana	Hazel			246837	818019

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
685	M	Lobarion	Hazel			246846	818023
686	M	Lobarion	Hazel			246857	818023
687	M	Lobarion poor	Hazel			246861	818028
688	M	Lobarion poor	Hazel			246878	818038
689	M	Lobarion spp. poor	Hazel			246885	818036
690	M	Lobarion spp. poor	Hazel			246846	817984
691	H	Lobarion not spp. rich but with <i>P. testacea</i>	Hazel			246863	817981
692	M	Lobarion poor	Hazel			246840	817969
693	M	Lobarion	Hazel			246838	817962
694	M	Lobarion	Hazel			246844	817959
695	M	Lobarion	Hazel			246840	817953
696	M	Lobarion spp. poor	Hazel			246822	817960
697	H	Lobarion including <i>P. testacea</i> and large patch <i>D. atlantica</i> and good patches of <i>C. petractoides</i> .	Hazel			246819	817957
698	H	Lobarion including <i>P. rubiginosa</i>	Hazel			246822	817948
699	H	Lobarion including tiny patch <i>Nevesia sampaiana</i>	Hazel			246814	817935

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
700	H	Lobarion including <i>P. testacea</i>	Hazel			246803	817935
701	H	Lobarion including small patch <i>P. testacea</i>	Hazel			246779	817922
702	M	Lobarion spp. poor	Hazel			246779	817912
703	M	Lobarion spp. poor	Hazel	Wood moribund here with lots of dead fallen trees.		246775	817909
704	L	Lobarion not seen	Hazel			246748	817907
705	M	Lobarion spp. poor but includes <i>Degelia atlantica</i>	Hazel			246750	817900
706	L	Lobarion not seen	Hazel			246734	817890
707	M	Lobarion very poor	Hazel			246733	817884
708	M	Lobarion very poor	Hazel			246741	817883
709	M	Lobarion	Hazel			246735	817876
710	H	Lobarion poorly developed but with several tiny patch of <i>Nevesia sampaiana</i>	Hazel			246725	817868
711	H	Lobarion poorly developed but a tiny patch of <i>Nevesia sampaiana</i>	Hazel			246725	817862
712	H	Lobarion poorly developed but a tiny patch of <i>Nevesia sampaiana</i>	Hazel			246719	817860

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
713	H	Lobarion poorly developed but a patch of <i>Nevesia sampaiana</i>	Hazel			246714	817857
714	H	Lobarion with frequent small patches of <i>Nevesia sampaiana</i>	Hazel			246709	817858
715	M	Lobarion poor	Hazel			246695	817848
716	M	Lobarion poor	Hazel	Several hazels here with poor Lobarion probably due to exposure and sparse canopy.		246687	817849
717	M	Lobarion poor	Hazel			246697	817837
718	M	Lobarion poor	Hazel			246699	817840
719	M	Lobarion poor	Hazel			246701	817838
720	L	Lobarion not seen	Hazel			246703	817833
721	M	Lobarion poor	Hazel			246727	817812
722	H	Lobarion including <i>Nevesia sampaiana</i> and <i>D. atlantica</i>	Hazel			246730	817806
723	H	Lobarion including <i>Nevesia sampaiana</i> and <i>D. atlantica</i>	Hazel			246720	817798
724	M	Lobarion including <i>D. atlantica</i>	Hazel			246738	817801

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
725	H	Poor Lobarion development but small patches of Parmeliella testacea and Nevesia sampaiana	Hazel			246743	817791
726	M	Poor Lobarion	Hazel			246738	817790
727	M	Poor Lobarion	Hazel			246731	817786
728	H	Lobarion includes some Nevesia sampaiana	Hazel			246732	817783
729	M	Lobarion	Hazel			246727	817774
730	M	Lobarion	Hazel			246732	817771
731	M	Lobarion spp. poor	Hazel			246738	817767
732	H	Lobarion including P. testacea and D. atlantica	Hazel			246736	817777
733	M	Lobarion spp. poor	Hazel			246738	817781
734	M?	Lobarion spp. poor but includes Collema subflaccidum	Hazel			246744	817781
735	M?	Lobarion spp. poor but includes Peltigera polydactylon	Hazel			246748	817786
736	M	Lobarion spp. poor	Hazel			246742	817787
736	H	Lobarion including P. testacea	Hazel			246761	817783

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
737	H	Lobarion including <i>P. testacea</i> and small patch <i>Nevesia sampaiana</i>	Hazel			246768	817784
738	M	Lobarion spp. poor	Hazel			246777	817794
739	H	Lobarion including <i>P. testacea</i>	Hazel			246779	817794
740	M	Lobarion poor	Hazel			246778	817802
741	M	Lobarion poor	Hazel			246786	817801
742	M	Lobarion poor	Hazel			246781	817786
743	M	Lobarion poor	Hazel			246773	817764
744	M	Lobarion	Hazel			246762	817763
745	M	Lobarion spp. poor	Hazel			246735	817753
746	M	Lobarion spp. poor	Hazel			246739	817751
747	M	Lobarion poor	Hazel			246737	817749
748	M	Lobarion spp. poor	Hazel			246738	817745
749	M	Lobarion spp. poor	Hazel			246737	817739
750	M	Lobarion	Hazel			246739	817738
751	M	Lobarion spp. poor	Hazel			246742	817737

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
752	H	Lobarion spp. poor but with some Nevesia sampaiana	Hazel			246739	817734
753	M	Lobarion spp. poor	Hazel			246739	817730
754	H	Lobarion including some nice patches of P. testacea	Hazel			246741	817724
755	VH	Lobarion spp. poor but includes Collema fasciculare	Hazel			246749	817725
756	M	Lobarion spp. poor but includes Plectocarpon lichenum	Hazel			246753	817741
757	VH	Lobarion including Leptogium burgessii, Nevesia sampaiana and P. testacea	Hazel			246759	817737
758	M	Lobarion spp. poor	Hazel			246765	817743
759	H	Lobarion including small patches Nevesia sampaiana	Hazel			246766	817737
760	M	Lobarion	Hazel			246758	817728
761	M	Lobarion including Plectocarpon lichenum	Hazel			246759	817726
762	M	Lobarion	Hazel			246756	817721
763	H	Lobarion including P. testacea and Nevesia sampaiana	Hazel			246758	817718
764	H	Lobarion including Nevesia sampaiana	Hazel			246761	817716

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
765	H	Lobarion including Nevesia sampaiana	Hazel			246758	817712
766	M	Lobarion spp. poor	Hazel			246753	817710
767	M	Lobarion spp, poor	Hazel			246746	817710
768	M	Lobarion spp, poor	Hazel			246749	817706
769	M	Lobarion spp, poor but including D. atlantica and Sticta limbata	Hazel			246751	817706
770	H	Lobarion Including P. testacea	Hazel			246748	817703
771	H	Lobarion Including Nevesia sampaiana	Hazel			246741	817701
772	M	Lobarion spp. poor	Hazel			246732	817701
773	M	Lobarion	Hazel			246732	817699
774	M	Lobarion spp. poor	Hazel			246740	817694
775	M	Lobarion	Hazel			245634	816029
776	M	Lobarion	Hazel	Veteran pasture hazel		245522	816030
777	M	Lobarion	Hazel			245513	816028
778	M	Lobarion	Hazel			245523	816034
779	M	Lobarion	Hazel			245524	816042
780	M	Lobarion	Hazel	Hazel across stream		245519	816044

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
781	M	Lobarion	Hazel			245516	816040
781	VH	Lobarion including Mycobilimbia pilularis	Ash			245510	816046
782	M	Lobarion	Hazel	Streamside hazel despite GIS location shown on OS map		245504	816036
783	M	Lobarion	Hazel			245497	816029
784	M	Lobarion	Hazel			245501	816027
785	H	Lobarion including Nevesia sampaiana, Protopannaria pezizoides	Hazel			245503	816020
786	L	No Lobarion seen	Hazel			245494	816015
787	VH	Phlyctis agelaea, and Lobarion including Plectocarpon lichenum, Nectriopsis lecanodes on Lobaria amplissima	Hazel		Photo 76-79	245488	816010
788	H	Lobarion including Plectocarpon scrobiculatae	Hazel			245482	816012
789	VH?	Phlyctis aff. agelaea (field record), and Lobarion including Plectocarpon scrobiculatae	Hazel			245484	816016
790	VH	Phlyctis agelaea and Lobarion including Plectocarpon lichenum	Hazel			245484	816017

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
791	M	Lobarion	Hazel			245490	816021
792	M	Lobarion	Hazel			245490	816024
793	M	Lobarion	Hazel			245487	816026
794	M	Lobarion sparse	Hazel			245486	816029
795	M	Lobarion poor. Arthonia vinosa	Hazel			245480	816022
796	M	Lobarion spp poor.	Hazel			245466	816016
797	M	Lobarion	Ash	Giant boled, hollow veteran ash		245455	816029
798	H	Lobarion and Thelotrema macrosporum	Hazel			245439	816033
799	H	Lobarion with small patch Nevesia sampaiana	Hazel	Hazel in stream		245426	816037
800	VH	Lobarion with scrap of L. burgessii	Hazel			245421	816036
801	H	Lobarion with good patches of P. testacea and a patch of Nevesia sampaiana	Rowan	Rowan growing on veteran hazel with Lobarion		245409	816044
802	M	Lobarion	Hazel			245409	816051
803	H	Lobarion including Nevesia sampaiana	Hazel			245398	816062
804	M	Lobarion fairly spp. poor	Hazel			245381	816073

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
805	H	Lobarion including <i>P. testacea</i>	Hazel			245377	816082
806	M	Lobarion	Hazel			245385	816086
807	H	Lobarion including <i>Nevesia sampaiana</i>	Hazel			245371	816092
808	H	Lobarion including <i>P. rubiginosa</i>	Hazel			245365	816096
809	M	Lobarion	Hazel			245358	816095
810	M	Lobarion spp. poor	Hazel			245355	816091
811	H	Lobarion spp. poor but incl. small patch <i>P. testacea</i>	Hazel			245354	816098
812	VH	Lobarion spp. poor but incl. small patch <i>P. testacea</i> , also <i>Opegrapha thelotrematis</i> , <i>Bactrospora homalotropa</i>	Hazel			245354	816102
813	M	Lobarion poor	Hazel	Fallen, phoenixing		245350	816093
814	M	Lobarion spp. poor	Hazel			245336	816104
815	H	Lobarion including <i>P. testacea</i>	Hazel	Dead standing veteran hazel		245313	816094
816	M	Lobarion spp. poor	Hazel			245305	816097
817	M	Lobarion spp. poor	Hazel			245298	816086
818	M	Lobarion spp. poor	Hazel			245258	816072

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
819	H	Lobarion spp. poor but including P. testacea	Hazel			245263	816084
820	M	Lobarion spp. poor	Hazel			245246	816079
821	M	Lobarion spp. poor	Hazel			245234	816088
822	M	Lobarion very poorly developed and spp. poor	Hazel			245234	816082
823	M	Lobarion very poorly developed and spp. poor	Hazel			245228	816072
824	H	Lobarion spp. poor but including Nevesia sampaiana	Hazel			245234	816069
825	M	Lobarion spp. poor	Hazel			245233	816065
826	M	Lobarion spp. poor	Hazel			245279	816092
827	VH	Lobarion including good patches of D. atlantica, good patches of P. testacea, a patch of fertile L. burgessii, a small patch of Nevesia sampaiana. Some P. rubiginosa.	Hazel	Streamside hazel		245370	816126
828	H	Lobarion including P. rubiginosa	Hazel			245359	816129
829	M	Lobarion spp. poor	Hazel			245350	816144

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
830	H	Lobarion not well developed but including small patch of <i>Nevesia sampaiana</i> and <i>P. testacea</i>	Hazel			245348	816149
831	M	Lobarion not well developed, spp. poor	Hazel			245321	816159
832	ML	Lobarion not seen	Hazel			245312	816153
833	M	Lobarion spp. poor	Hazel			245308	816152
834	M	Lobarion spp. poor	Hazel			245310	816141
835	ML	Lobarion not seen	Hazel			245317	816142
836	M	Lobarion poor but with <i>S. limbata</i>	Hazel			245316	816140
837	M	Lobarion spp. poor	Hazel	Hazel on south side of stream		245330	816142
838	M	Lobarion spp. poor	Hazel			245290	816114
839	H	Lobarion not very rich but with tiny patches <i>P. testacea</i>	Hazel			245264	816110
840	ML	Lobarion not seen	Hazel			245264	816117
841	M	Lobarion very poor	Hazel			245265	816122
842	M	Lobarion poor	Hazel			245270	816130
843	M	Lobarion present	Oak	Ancient oak on cliff above watercourse, see photos	Photo 80-82	245278	816144

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
844	M	Lobarion not seen	Hazel			245277	816145
845	M	Lobarion	Hazel			245269	816140
846	M	Lobarion	Hazel			245264	816136
847	M	Lobarion poorly developed	Hazel			245257	816142
848	M	Lobarion poorly developed	Hazel			245260	816147
849	M	Lobarion	Hazel			245266	816147
850	M	Lobarion spp. poor	Hazel			245254	816152
851	M	Lobarion very poor	Hazel			245231	816158
852	M	Lobarion very poor	Hazel	Hazel on north side of stream		245226	816155
853	M	Lobarion very poor	Hazel	Hazel on north side of stream		245219	816155
854	H	Lobarion very poor but <i>C. petractoides</i> present	Hazel	Hazel on north side of stream. More hazels in ravine section downstream not examined.		245218	816158
855	H	Lobarion and <i>C. petractoides</i>	Hazel			245233	816148
856	H	Lobarion and <i>C. petractoides</i>	Hazel			245234	816142

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
857	H	Lobarion fairly poor but <i>C. petractoides</i> present	Hazel			245226	816128
858	M	Lobarion not well developed	Hazel			245236	816119
859	M	Lobarion poorly developed	Hazel			245240	816123
860	M	Lobarion spp. poor	Hazel			245244	816121
861	H	Lobarion spp. poor but <i>Crutarndina petractoides</i> present	Hazel			245254	816127
862	H	Lobarion poor but <i>C. petractoides</i>	Hazel			245253	816137
863	VH	<i>Gyalecta truncigena</i> , Lobarion including small patch <i>L. burgessii</i> , <i>Mycobilimbia pilularis</i> , <i>Sticta sylvatica</i> , <i>Peltigera horizontalis</i> , <i>Protopannaria pezizoides</i> , <i>Leptogium lichenoides</i> , <i>Ricasolia virens</i> , fertile <i>P. triptophylla</i>	Ash	Veteran ash along stream	Photo 83-84	245254	816146
864	H	Lobarion poor but with <i>C. petractoides</i>	Hazel			245237	816126
865	H	Lobarion not seen but with <i>C. petractoides</i>	Hazel			245200	816141
866	H	Lobarion not seen but with <i>C. petractoides</i>	Hazel			245181	816143

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
867	M	Lobarion poor but with <i>Gyalideopsis muscicola</i>	Hazel			245153	816137
868	M	Lobarion poor	Hazel			245140	816139
869	H	Lobarion including <i>P. testacea</i> , also <i>C. petractoides</i>	Hazel			245136	816132
870	H	Lobarion including <i>P. testacea</i>	Hazel			245132	816131
871	H	Lobarion spp. poor but including <i>P. testacea</i> , also <i>C. petractoides</i>	Hazel			245133	816127
872	H	Lobarion not rich but including <i>P. testacea</i> , also <i>C. petractoides</i>	Hazel			245133	816126
873	M	Lobarion spp. poor	Hazel			245131	816123
874	M	Lobarion spp. poor	Hazel			245126	816119
875	M	Lobarion spp. poor but including <i>D. atlantica</i>	Hazel			245128	816121
876	H	Lobarion poor but with <i>C. petractoides</i>	Hazel			245104	816111
877	M	Lobarion	Hazel			245098	816098
878	M	Lobarion spp. poor	Hazel			245116	816095
879	M	Lobarion spp. poor	Hazel			245121	816087

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
880	M	Lobarion spp. poor but with <i>D. atlantica</i>	Hazel	Giant veteran stool probably ancient.		245129	816084
881	M	Lobarion spp. poor	Hazel			245135	816086
882	H	Lobarion spp. poor but with <i>C. petractoides</i>	Hazel			245170	816091
883	H	Lobarion including <i>P. testacea</i> , <i>C. petractoides</i>	Hazel			245149	816082
884	M	Lobarion	Hazel			245141	816073
885	M	Lobarion not seen	Hazel			245117	816027
886	H	Lobarion poorly developed but includes tiny patch <i>Nevesia sampaiana</i>	Hazel			245084	816034
887	M	Lobarion spp. poor	Hazel			245082	816018
888	H	Lobarion including tiny patch <i>Nevesia sampaiana</i>	Hazel			245076	816012
889	M	Lobarion including <i>D. atlantica</i>	Hazel			245073	816019
890	H	Lobarion including tiny patch of <i>Nevesia sampaiana</i>	Hazel			245068	816022
891	M	Lobarion spp. poor	Hazel			245064	816015
892	M	Lobarion spp. poor	Hazel			245070	816007

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
892	M	Lobarion spp. poor	Hazel			245061	816000
893	M	Lobarion poorly developed	Hazel	Fallen hazel		245058	816013
894	M	Lobarion spp. poor	Hazel			245052	816017
895	H	Lobarion including tiny patch of <i>Nevesia sampaiana</i>	Hazel			245057	816023
896	H	Lobarion spp. poor. but with patch of <i>Nevesia sampaiana</i>	Hazel			245050	816030
897	H	Lobarion including <i>D. atlantica</i> and a small patch of <i>Nevesia sampaiana</i>	Hazel			245036	816027
898	M	Lobarion spp. poor	Hazel			245035	816022
899	H	Lobarion including <i>Nevesia sampaiana</i> and <i>P. testacea</i>	Hazel			245036	816036
900	M	Lobarion spp. poor	Hazel	Several hazels on slopes below here not examined		245065	816070
901	M	Lobarion spp. poor	Hazel			245080	816077
902	M	Lobarion not seen	Hazel			245087	816105
903	M	Lobarion poorly developed	Hazel			245092	816112
904	H	Lobarion spp. poor but <i>C. petractoides</i> present	Hazel			245104	816131

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
905	M	Lobarion spp. poor	Hazel			245106	816141
906	H	Lobarion spp. poor but <i>C. petractoides</i> present	Hazel			245118	816145
907	H	Lobarion and <i>C. petractoides</i> present	Hazel			245119	816147
908	ML	Lobarion not seen	Hazel			245123	816133
909	H	Lobarion including <i>P. testacea</i> and tiny patch <i>Nevesia sampaiana</i>	Hazel			245126	816132
910	H	Lobarion spp. poor but good patches of <i>C. petractoides</i>	Hazel			245134	816148
911	M	Lobarion spp. poor	Hazel			245257	816231
912	M	Lobarion spp. poor	Hazel			245255	816234
913	M	Lobarion incl. good patches <i>R. amplissima</i>	Hazel			245256	816240
914	H	Lobarion incl. <i>P. testacea</i>	Hazel			245261	816240
915	H	Lobarion incl. <i>P. testacea</i>	Hazel			245266	816242
916	H	Lobarion incl. <i>P. testacea</i>	Hazel	large fallen veteran		245270	816247
917	H	Lobarion incl. <i>P. testacea</i>	Hazel			245281	816248
918	H	Lobarion not particularly spp. rich. or well developed but with tiny patch <i>P. testacea</i>	Hazel			245287	816253

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
919	H	Lobarion with some <i>P. testacea</i>	Hazel			245291	816257
921	H	Lobarion not particularly spp. rich but with <i>D. atlantica</i> , <i>P. testacea</i> and <i>Plectocarpon lichenum</i>	Hazel			245299	816273
922	VH	Lobarion with <i>Leptogium burgessii</i> incl. some small fruits, <i>D. atlantica</i> , <i>P. testacea</i> and <i>Collema subflaccidum</i>	Hazel			245286	816270
923	H	Lobarion with <i>D. atlantica</i> , <i>P. testacea</i>	Hazel			245276	816272
924	M	Lobarion spp. poor	Hazel			245273	816288
925	H	Lobarion with <i>P. testacea</i> , <i>Degelia atlantica</i> , <i>Nevesia sampaiana</i>	Hazel			245289	816292
926	H	Lobarion with <i>P. testacea</i>	Hazel	tree tag 0043?		245267	816313
927	M	Lobarion spp. poor	Hazel	Veteran pasture tree		245265	816307
928	VH	Lobarion with <i>Nevesia sampaiana</i> , <i>Arthonia sampaianae</i> and <i>Nevesia mediterranea</i>	Hazel	tree tag 0047		245246	816320
929	M	Lobarion not very spp. rich but with <i>D. atlantica</i>	Hazel	tree tag 0046		245242	816322
930	M	Lobarion not very spp. rich but incl. <i>Nephroma parile</i>	Hazel			245248	816299

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
931	H	Lobarion incl. <i>P. testacea</i> , also <i>C. petractoides</i>	Hazel			245236	816277
932	VH	Lobarion incl. nice patches of <i>Nevesia sampaiana</i> , <i>Arthonia sampaiana</i> , also <i>P. testacea</i> .	Hazel	Hazel at turning circle		245258	816280
933	VH	Nice fertile patch of <i>Leptogium burgessii</i> , also nice patches of <i>P. testacea</i> , several patches of <i>Nevesia sampaiana</i>	Hazel	Hazel at turning circle	Photo 86-87	245262	816280
934	VH	<i>Phlyctis agelaea</i> also Lobarion including <i>Parmeliella testacea</i>	Hazel			245266	816291
935	H	Lobarion including <i>Nevesia sampaiana</i> , <i>Sticta limbata</i> , <i>Degelia atlantica</i> , also <i>C. petractoides</i>	Hazel			245262	816291
936	H	Lobarion including nice patches <i>P. testacea</i> and also several patches of <i>Nevesia sampaiana</i> , and <i>R. amplissima</i> .	Hazel			245391	816091
937	H	Lobarion including <i>Nevesia sampaiana</i> and <i>P. testacea</i>	Hazel			245395	816093
938	M	Lobarion spp. poor	Hazel			245414	816082
939	M	Lobarion including <i>N. laevigatum</i>	Hazel			245417	816067
940	M	Lobarion, not particularly spp. rich	Hazel	Fallen hazel		245419	816052
941	M	Lobarion, not particularly spp. rich	Hazel			245426	816058

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
942	VH	Lobarion including nice patch of fertile <i>Leptogium burgessii</i> , also <i>Mycobilimbia pilularis</i> , <i>Pannaria rubiginosa</i> , <i>Mycobilimbia epixanthoides</i> , <i>Megalania grossa</i> , <i>Thelenella muscorum</i> , <i>Catinaria atropurpurea</i> , <i>Nephroma laevigatum</i> . <i>L. burgessii</i> also on rock in river.				245385	816079
943	H	Lobarion, also <i>Thelotrema macrosporum</i>	Hazel	Veteran pasture hazel		245384	816058
944	M	Lobarion including <i>Sticta limbata</i>	Hazel			245376	816056
945	M	Spp. poor Lobarion	Hazel	Tree form pasture hazel		245355	816049
946	M	Lobarion spp. poor	Hazel			245385	816045
947	VH	Lobarion spp. poor but with <i>Phlyctis agelaea</i> as previous samples	Hazel			245392	816050
948	M	Lobarion spp. poor but well developed with fertile <i>L. pulmonaria</i> .. With <i>Plectocarpon</i> lichenum.	Hazel			245395	816048
949	H	Lobarion including <i>P. testacea</i>	Hazel			245403	816045
950	M	Lobarion including <i>Protopannaria pezizoides</i>	Hazel			245462	815977
951	M	Lobarion	Hazel			245450	815974

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
952	H	Lobarion including tiny scrap <i>Nevesia sampaiana</i>	Hazel			245438	815967
953	M	Lobarion poor	Hazel			245449	815966
954	M	Lobarion	Hazel			245455	815966
955	M	Lobarion not very rich but includes fertile <i>L. pulmonaria</i> and good patches of <i>S. sylvatica</i> .	Hazel			245450	815952
956	M	Lobarion not very well developed	Hazel			245441	815950
957	M	Lobarion	Hazel			245430	815939
958	H	Lobarion including <i>D. atlantica</i> , <i>P. testacea</i> and tiny patch <i>Nevesia sampaiana</i>	Hazel			245424	815945
959	VH	Lobarion including healthy patches <i>P. testacea</i> and a few small patches <i>Nevesia sampaiana</i> and a small patch of <i>L. burgessii</i> (no fruits)	Hazel			245413	815949
960	M	Lobarion poor	Hazel	Collapsed hazel		245413	815944
961	H	Lobarion including <i>Nevesia sampaiana</i>	Hazel	Ancient giant pasture hazel		245403	815940
962	M	Lobarion	Hazel			245403	815933

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
963	VH	Lobarion including <i>Pannaria rubiginosa</i> , good patches of <i>P. testacea</i> , some <i>Nevesia sampaiana</i> and a nice fertile patch of <i>L. burgessii</i>	Hazel	Collapsed veteran tree form hazel		245384	815926
964	M	Lobarion poor	Hazel	Collapsed haze l		245384	815922
965	VH	Lobarion including <i>Pannaria rubiginosa</i> , <i>Sticta limbata</i> , and a tiny patch of <i>L. burgessii</i>	Hazel			245385	815913
966	M	Lobarion spp. poor but with <i>Arthonia vinosa</i>	Hazel			245384	815906
967	M	Lobarion	Hazel	Collapsed haze l		245382	815896
968	H	Lobarion including <i>P. testacea</i>	Hazel	Low pollard form hazel		245371	815888
969	H	Lobarion not very spp. rich but including <i>P. rubiginosa</i>	Hazel			245350	815883
970	ML	Lobarion not seen	Hazel	Collapsed hazel		245346	815871
971	VH	Lobarion including <i>Arthonia sampaianae</i> , fairly frequent patches of <i>Nevesia sampaiana</i>	Hazel			245327	815876
972	H	Lobarion including small patch <i>Nevesia sampaiana</i>	Hazel			245323	815878
973	M	Lobarion	Hazel			245316	815888

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
974	M	Lobarion	Hazel			245328	815870
975	VH?	Hypotrachyna laevigatum and Lobarion	Cherry	Stand of layering cherry. Probably ancient.		245326	815865
976	M	Lobarion poor	Hazel			245339	815850
977	M	Lobarion fairly spp. poor	Hazel			245313	815849
978	M	Lobarion fairly spp. poor	Hazel			245310	815853
979	M	Lobarion spp. poor	Hazel			245306	815850
980	M	Lobarion poor	Hazel			245299	815857
981	H	Lobarion including couple of tiny patches Nevesia sampaiana and also C. petractoides	Hazel			245296	815858
982	H?	Lobarion including good patches of a sterile crustose lichen (aff. Biatora vernalis).	Hazel			245285	815862
983	H	Bunodophoron melanocarpum	Birch	Fallen, phoenixing birch		245296	815864
984	M	Lobarion fairly poor	Hazel	Fallen hazel		245294	815867
985	H	Lobarion not seen but with C. petractoides	Hazel			245273	815854
986	VH	Lobarion not seen but with Bactrospora homalotropa	Hazel			245269	815852

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
987	H	Bunodophoron melanocarpum	Rock habitat	Small cliff below veteran birch		245268	815852
988	H	Lobarion not seen but with C. petractoides	Hazel			245267	815854
989	H	Lobarion poor but with C. petractoides	Hazel			245264	815857
990	M	Lobarion not seen	Hazel	Collapsed hazel		245258	815864
991	H	Lobarion not very well developed but including a tiny patch of Nevesia sampaiana and some Catinarina atropurpurea	Hazel	Collapsed, phoenixing		245264	815866
992	M	Lobarion not well developed	Hazel	A young stem that has arisen through successful phoenix regeneration. The connection to mother hazel has recently rotted and it is now independent.		245279	815864
993	H	Lobarion including tiny patch of Nevesia sampaiana	Hazel			245282	815865
994	H	Lobarion including a small patch of Nevesia sampaiana, P. testacea	Hazel			245290	815869
995	H	Lobarion including healthy patches P. testacea, also some Pannaria rubiginosa	Hazel			245300	815868

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
996	H	Well-developed Lobarion including frequent <i>P. rubiginosa</i> , also some <i>D. atlantica</i>	Hazel			245298	815889
997	M	Lobarion spp. poor	Hazel			245308	815900
998	M	Lobarion spp. poor	Hazel			245312	815901
999	M	Lobarion spp. poor	Hazel			245318	815899
1000	M	Lobarion spp. poor	Hazel			245319	815895
1001	H	Lobarion including <i>Parmeliella testacea</i> , <i>Nevesia sampaiana</i>	Hazel			245325	815901
1002	M	Lobarion spp. poor	Hazel			245328	815906
1003	M	Lobarion spp. poor	Hazel			245339	815901
1004	M	Lobarion	Hazel			245349	815902
1005	H	Lobarion including small patch <i>P. testacea</i> and tiny scrap of <i>Nevesia sampaiana</i>	Hazel			245357	815906
1006	VH	Lobarion including several good patches <i>Nevesia sampaiana</i> , <i>Arthonia sampaianae</i> as previous samples, also some <i>D. atlantica</i>	Hazel			245362	815915
1007	H	Lobarion including several good patches <i>Nevesia sampaiana</i> , <i>P. testacea</i> , also some <i>D. atlantica</i>	Hazel			245350	815913

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
1008	VH	Lobarion including 3 small patches of <i>L. burgessii</i> (3 fruits), also 7 tiny scraps of <i>Nevesia sampaiana</i>	Hazel			245364	815920
1009	H	Lobarion including <i>P. testacea</i> and <i>Degelia atlantica</i>	Hazel			245374	815932
1010	H	Lobarion including some <i>Nevesia sampaiana</i>	Hazel			245389	815942
1011	M	Lobarion spp. poor	Hazel			245390	815951
1012	H	Lobarion including <i>P. testacea</i>	Hazel			245390	815952
1013	H	Lobarion including 2 patches of <i>Nevesia sampaiana</i> , <i>Plectocarpon lichenum</i> , <i>Nephroma laevigatum</i>	Hazel			245398	815954
1014	H	Lobarion including a patch of <i>Nevesia sampaiana</i>	Hazel	Successful phoenix		245398	815961
1015	H	Lobarion including a patch of <i>Nevesia sampaiana</i>	Hazel			245394	815965
1016	H	Lobarion including <i>D. atlantica</i> , <i>P. testacea</i> , <i>Nectriopsis lecanodes</i> on <i>L. pulmonaria</i>	Hazel	Appears to be two hazels but hard to be sure if one arisen via phoenixing		245388	815963

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
1017	M	Lobarion poor	Hazel	Most of hazel appears dead but one small stem survives		245382	815962
1018	VH	Lobarion including Collema fasciculare	Hazel			245381	815957
1019	H	Lobarion including several nice patches Nevesia sampaiana, also D. atlantica, P. rubiginosa	Hazel			245378	815946
1020	M	Lobarion poor	Hazel			245369	815941
1021	M	Lobarion	Hazel			245365	815943
1022	H	Lobarion including a patch of Nevesia sampaiana, good patches of P. rubiginosa,	Hazel			245368	815949
1023	M	Lobarion	Hazel			245364	815953
1024	H	Lobarion including D. atlantica, Pannaria rubiginosa, some P. testacea	Hazel			245349	815937
1025	H	Lobarion including Pannaria rubiginosa, small patch P. testacea	Hazel			245348	815929
1026	M	Lobarion spp. poor	Hazel			245354	815928
1027	M	Lobarion	Hazel			245345	815919
1028	H	Lobarion including tiny patch of Nevesia sampaiana	Hazel			245340	815921

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
1029	M	Lobarion poor	Hazel			245333	815921
1030	M	Lobarion poor	Hazel			245334	815914
1031	H	Lobarion including patch of <i>P. rubiginosa</i>	Hazel	Collapsed hazel		245329	815912
1032	M	Lobarion spp. poor	Hazel	Low pollard form		245329	815915
1033	M	Lobarion poor	Hazel	Hazel in very poor condition with fungal infection on only remaining live stem.		245315	815917
1034	H	Lobarion including <i>P. testacea</i>	Hazel			245313	815923
1035	M	Lobarion spp. poor	Hazel			245314	815931
1036	M	Lobarion poor	Hazel			245308	815935
1037	M	Lobarion poor	Hazel			245303	815935
1038	H?	Lobarion spp. poor but including <i>Leptogium lichenoides</i>	Hazel			245313	815941
1039	M	Lobarion spp. poor	Hazel			245315	815945
1040	H	Lobarion including <i>P. testacea</i>	Hazel			245323	815947
1041	H	Lobarion spp. poor but with tiny patch <i>P. testacea</i>	Hazel			245319	815939
1042	M	Lobarion poor	Hazel			245320	815931

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
1043	H	Lobarion spp. poor but with some P. testacea	Hazel			245323	815931
1044	H	Lobarion including P. rubiginosa, tiny patch Nevesia sampaiana,	Hazel			245333	815929
1045	VH	Lobarion including Fuscopannaria mediterranea	Hazel			245320	815923
1046	M	Lobarion spp. poor	Hazel			245324	815953
1048	M	Lobarion poor	Hazel			245317	815951
1047	M	Lobarion spp. poor	Hazel			245312	815951
1049	M	Lobarion spp. poor	Hazel			245311	815957
1050	M	Lobarion spp. poor	Hazel			245318	815960
1051	H	Lobarion not particularly well developed but includes small patch Nevesia sampaiana	Hazel			245286	815957
1052	H?	Lobarion including sterile crust aff. Biatora vernalis, also Gyalideopsis muscicola	Hazel			245285	815962
1053	M	Lobarion	Hazel			245282	815965
1054	M	Lobarion	Hazel			245278	815963
1055	M	Lobarion spp. poor	Hazel			245276	815953

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
1056	M	Lobarion spp. poor	Hazel			245267	815956
1057	H	Lobarion including some Nevesia sampaiana	Hazel			245266	815964
1058	M	Lobarion spp. poor	Hazel			245260	815964
1059	M	Lobarion spp. poor	Hazel			245259	815962
1060	H	Lobarion not well developed but including tiny patch Nevesia sampaiana and some Dictyonema sp.	Hazel			245249	815964
1061	M	Lobarion spp. poor	Hazel			245235	815960
1062	M	Lobarion including Plectocarpon lichenum	Hazel			245226	815961
1063	M	Lobarion	Hazel			245223	815963
1064	M	Lobarion	Hazel			245208	815955
1065	ML	Lobarion not seen	Hazel			245178	815964
1066	ML	Lobarion not seen	Hazel			245176	815960
1067	M	Lobarion poor	Hazel			245168	815954
1068	M	Lobarion	Hazel			245172	815975
1069	M	Lobarion very poorly developed	Hazel			245134	815962

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
1070	H	Lobarion fairly spp. poor but including a few small patches <i>P. testacea</i>	Hazel			245132	815954
1071	M	Lobarion poor	Hazel			245115	815964
1072	M	Lobarion spp. poor	Hazel			245104	815969
1073	H	Lobarion including <i>P. testacea</i> , also <i>C. petractoides</i>	Hazel			245104	815964
1074	M	Lobarion poor	Hazel	Hazel in very poor condition		245099	815959
1075	M	Lobarion spp. poor	Hazel			245093	815975
1076	VH	Lobarion including good patches of <i>P. testacea</i> , 2 patches of <i>L. burgessii</i> (both with fruits), also <i>D. atlantica</i>	Hazel			245090	815972
1077	H	Lobarion, also <i>C. petractoides</i>	Hazel			245088	815960
1078	VH	Lobarion including <i>P. rubiginosa</i> , a small patch of <i>Nevesia sampaiana</i> , and a tiny non-fertile patch of <i>L. burgessii</i>	Hazel			245078	815967
1079	M	Lobarion spp. poor	Hazel			245073	815968
1080	M	Lobarion spp. poor	Hazel			245062	815965
1081	VH	Lobarion spp. poor but with <i>Bacidia caesiovirens</i> and <i>Bactrospora homalotropa</i>	Hazel			245063	815969

TN	Value	Lichen species	Habitat	Notes	Photo Ref (Appendix 2b)	Easting	Northing
1082	M	Lobarion	Hazel			245068	815978
1083	VH	Lobarion including <i>P. rubiginosa</i> and <i>Degelia plumbea</i> s. str.	Hazel			245182	815997
1084	M	Lobarion including <i>S. limbata</i>	Hazel			245225	815999
1085	M	Lobarion spp. poor but <i>Arthonia vinosa</i>	Hazel			245248	816003
1086	VH	<i>Fuscopannaria ignobilis</i> , <i>Nevesia sampaiana</i> , <i>Leptogium burgessii</i> , <i>Mycobilimbia pilularis</i> , on ash. <i>Porina guntheri</i> var. <i>lucens</i> on rocks	Ash, plus <i>Porina</i> on rocks	Record by John Douglass (2022)		246854	817457
1087	VH	<i>Pseudocyphellaria norvegica</i> , <i>Lepraria membranacea</i> (on boulder), <i>Schismatomma umbrinum</i> (underhang at edge of river), <i>Porina guntheri</i> var. <i>lucens</i> , <i>V. anziana</i> on rocks in river.	Massive mossy boulder	Record by John Douglass (2022)		246878	817405
1088	VH	<i>Leptogium burgessii</i> , <i>Parmeliella triptophylla</i> . <i>Catillaria chalybeia</i> var. <i>chloropoliza</i> and <i>Parmeliella triptophylla</i> on rock.	Rock habitat	Record by John Douglass (2022) on rock in river		245323	816142

## Appendix 2b - Target Note Site Photographs



Photo 1. Target Note (TN) 2: *Parmeliella parvula* on the tree leaning in centre of photo. Birch TN2 to left.



Photo 2. TN4: Veteran phoenix hazel (Tags 2307 and 2308) with *Fuscopannaria ignobilis*, *Lobaria amplissima*, *Pannaria conoplea*, *L. pulmonaria*, *L. scrobiculata*, *Parmeliella parvula*, *Plectocarpon lichenum*, *Parmeliella triptophylla*, *Peltigera praetextata*, *Thelotrema lepadinum* and *Plectocarpon scrobiculatae* (Photo 1 of 3)



Photo 3. TN4: Veteran phoenix hazel (Tags 2307 and 2308) with *Fuscopannaria ignobilis*, *Lobaria amplissima*, *Pannaria conoplea*, *L. pulmonaria*, *L. scrobiculata*, *Parmeliella parvula*, *Plectocarpon lichenum*, *Parmeliella triptophylla*, *Peltigera praetextata*, *Thelotrema lepadinum* and *Plectocarpon scrobiculatae* (Photo 2 of 3)



Photo 4. TN4: Veteran phoenix hazel (Tags 2307 and 2308) with *Fuscopannaria ignobilis*, *Lobaria amplissima*, *Pannaria conoplea*, *L. pulmonaria*, *L. scrobiculata*, *Parmeliella parvula*, *Plectocarpon lichenum*, *Parmeliella triptophylla*, *Peltigera praetextata*, *Thelotrema lepadinum* and *Plectocarpon scrobiculatae* (Photo 3 of 3).



Photo 5. TN5: Veteran pasture rowan (Tag 2334) with *Nevesia sampaiana*, *Lobaria scrobiculata*, *L. pulmonaria*, *Parmeliella triptophylla* and *Pyrenula occidentalis*



Photo 6. TN7: Veteran birch (Tag 2330) with *L. pulmonaria* and *L. scrobiculata*



Photo 7. TN9: Collapsed veteran hazel (Tag 2335 with *Nevesia sampaiana*, *Parmeliella testacea*, *Degelia atlantica*, *Peltigera collina*, *Nephroma parile*, *Dactylospora lobariella*, *R. amplissima*, *Sticta limbata*, *Pannaria conoplea*, *Parmeliella triptophylla*, *Pyrenula occidentalis*, *Lobaria pulmonaria*, *Agonimia tristicula* and *Plectocarpon lichenum* (Photo 1 of 4)



Photo 8. TN9: Collapsed veteran hazel (Tag 2335 with *Nevesia sampaiana*, *Parmeliella testacea*, *Degelia atlantica*, *Peltigera collina*, *Nephroma parile*, *Dactylospora lobiella*, *R. amplissima*, *Sticta limbata*, *Pannaria conoplea*, *Parmeliella triptophylla*, *Pyrenula occidentalis*, *Lobaria pulmonaria*, *Agonimia tristicula* and *Plectocarpon lichenum* (Photo 2 of 4)



Photo 9. TN9: Collapsed veteran hazel (Tag 2335) with *Arthonia zwackhii*, *Nevesia sampaiana*, *Parmeliella testacea*, *Degelia atlantica*, *Peltigera collina*, *Nephroma parile*, *Dactylospora lobiella*, *R. amplissima*, *Sticta limbata*, *Pannaria conoplea*, *Parmeliella triptophylla*, *Pyrenula occidentalis*, *Lobaria pulmonaria*, *Agonimia tristicula* and *Plectocarpon lichenum* (Photo 3 of 4)



Photo 10. TN9: Collapsed veteran hazel (Tag 2335) with *Nevesia sampaiana*, *Parmeliella testacea*, *Degelia atlantica*, *Peltigera collina*, *Nephroma parile*, *Dactylospora lobariella*, *R. amplissima*, *Sticta limbata*, *Pannaria conoplea*, *Parmeliella triptophylla*, *Pyrenula occidentalis*, *Lobaria pulmonaria*, *Agonimia tristicula* and *Plectocarpon lichenum* (Photo 4 of 4).



Photo 11. TN10: Collapsed veteran hazel (Tag 2336) with *Parmeliella testacea*, *Leptogium burgessii*, *Sticta sylvatica*, *Thelotrema lepadinum*, *Pyrenula occidentalis*, *L. pulmonaria*, *Pannaria conoplea*, *Peltigera praetextata*, *Plectocarpon lichenum*, *R. amplissima* and *Peltigera collina* (Photo 1 of 2).



Photo 12. TN10: Collapsed veteran hazel (Tag 2336) with *Parmeliella testacea*, *Leptogium burgessii*, *Sticta sylvatica*, *Thelotrema lepadinum*, *Pyrenula occidentalis*, *L. pulmonaria*, *Pannaria conoplea*, *Peltigera praetextata*, *Plectocarpon lichenum*, *R. amplissima* and *Peltigera collina* (Photo 2 of 2).



Photo 13. TN11: Veteran tree form hazel (Tag 2337) with *Pannaria rubiginosa*, *Parmeliella testacea*, *Pannaria conoplea*, *L. pulmonaria*, *L. scrobiculata*, *R. amplissima*, *Sticta limbata*, *Sticta fuli/sylv*, *Peltigera collina* and *Parmeliella triptophylla* (Photo 1 of 3)



Photo 14. TN11: Veteran tree form hazel (Tag 2337) with *Pannaria rubiginosa*, *Parmeliella testacea*, *Pannaria conoplea*, *L. pulmonaria*, *L. scrobiculata*, *R. amplissima*, *Sticta limbata*, *Sticta fuli/sylv*, *Peltigera collina* and *Parmeliella triptophylla* (Photo 2 of 3).



Photo 15. TN11: Veteran tree form hazel (Tag 2337) with *Pannaria rubiginosa*, *Parmeliella testacea*, *Pannaria conoplea*, *L. pulmonaria*, *L. scrobiculata*, *R. amplissima*, *Sticta limbata*, *Sticta fuli/sylv*, *Peltigera collina* and *Parmeliella triptophylla* (Photo 3 of 3).



Photo 16. TN12: Veteran hazel (no tag seen) with *Parmeliella testacea*, *Peltigera collina*, *L. pulmonaria*, *L. scrobiculata*, *P. triptophylla* (fertile), *S. sylvatica* and *R. amplissima* (Photo 1 of 2).



Photo 17. TN12: Veteran hazel (no tag seen) with *Parmeliella testacea*, *Peltigera collina*, *L. pulmonaria*, *L. scrobiculata*, *P. triptophylla* (fertile), *S. sylvatica* and *R. amplissima* (Photo 2 of 2)



Photo 18. TN13: Lobarion community, including *Parmeliella testacea* and *Pannaria rubiginosa*.



Photo 19. TN18: Lobarion community, including *Sticta sylvatica* and *Lobaria* spp. (Photo 1 of 2).



Photo 20. TN18: Lobarion community, including *Sticta sylvatica* and *Lobaria* spp. (Photo 2 of 2)



Photo 21. TN23: Giant veteran pasture hazel with *Lobarion*, including *Parmeliella testacea*, *Nevesia sampaiana*, *Pannaria rubiginosa*, *Sticta* sp. *Peltigera collina* (fertile) and *Collema subflaccidum* (Photo 1 of 2)



Photo 22. TN23: Giant veteran pasture hazel with *Lobarion*, including *Parmeliella testacea*, *Nevesia sampaiana*, *Pannaria rubiginosa*, *Sticta* sp. *Peltigera collina* (fertile) and *Collema subflaccidum* (Photo 2 of 2)



Photo 23. TN25: Veteran hazel (no tag seen) with *Nevesia sampaiana*, *Pannaria conoplea* (fertile) and *R. amplissima*.



Photo 24. TN27: Old tree form hazel with *Lobarion* (Photo 1 of 2)



Photo 25. TN27: Old tree form hazel with *Lobarion* (Photo 1 of 2). Photo from edge of the existing track with hazel TN27 in middle of photo.



Photo 26. TN30: Veteran phoenix birch (No tag seen) that has successfully layered downslope with *Mycoblastus affinis*, *Thelotrema lepadinum*, *Parmeliella parvul* (Photo 1 of 4)



Photo 27. TN30: Veteran phoenix birch (No tag seen) that has successfully layered downslope with *Mycoblastus affinis*, *Thelotrema lepadinum*, *Parmeliella parvul* (Photo 2 of 4)



Photo 28. TN30: Veteran phoenix birch (No tag seen) that has successfully layered downslope with *Mycoblastus affinis*, *Thelotrema lepadinum*, *Parmeliella parvul* (Photo 3 of 4)



Photo 29. TN30: Veteran phoenix birch (No tag seen) that has successfully layered downslope with *Mycoblastus affinis*, *Thelotrema lepadinum*, *Parmeliella parvul* (Photo 4 of 4)



Photo 30. TN36: Old hazel (Tag 2195) with *Lobarion*, including *R. virens*.



Photo 31. TN41: Veteran hazel (Tag 2257) with *Lobarion*, including *Nevesia sampaiana*, *Pannaria rubiginosa* and *Gyalideopsis muscicola* (Photo 1 of 2).



Photo 32. TN41: Veteran hazel (Tag 2257) with *Lobarion*, including *Nevesia sampaiana*, *Pannaria rubiginosa* and *Gyalideopsis muscicola* (Photo 2 of 2).



Photo 33. TN45: Rowan tree (Tag 2046) with *Lobarion*, including *Ricasolia virens*.



Photo 34. TN56: Collapsed old hazel leaning downslope (no tag seen) with *Parmeliella testacea*. Photo shows the hazel by orange rucksack plus hazel Tag 2061 just downslope to right side of photo.



Photo 35. TN59: Hazel leaning downslope (no tag seen) with *Lobarion* including *Parmeliella testacea*, *Degelia atlantica*, *Sticta sylvatica* and *Dictyonema* sp.



Photo 36. TN65: Large hazel (Tag 2011) with *Lobarion* including *Ricasolia virens*. Adjacent small hazel (TN 66) with *Lobarion* including *Parmeliella testacea*.



Photo 37. TN68: Collapsed veteran hazel (Tag 2005), now almost forming two entities, with very good population of *Parmeliella testacea* on section collapsed to south. *Nevesia sampaiana*, *Bactrospora homalotropa*, *Lobaria amplissima*, *Plectocarpon lichenum*, and *Degelia atlantica* also present (Photo 1 of 2).



Photo 38. TN68: Collapsed veteran hazel (Tag 2005), now almost forming two entities, with very good population of *Parmeliella testacea* on section collapsed to south. *Nevesia sampaiana*, *Bactrospora homalotropa*, *Lobaria amplissima*, *Plectocarpon lichenum*, and *Degelia atlantica* also present (Photo 2 of 2).



Photo 39. TN70: Veteran pasture hazel (Tag 2007) with *Lobarion* including *Parmeliella testacea*, fertile *Leptogium burgessii*, *Pyrenula* aff. *Acutispora*.



Photo 40. TN74: Veteran collapsed hazel with red/white hazard tape. One of the best populations of *Nevesia sampaiana* seen plus good patches of *P. testacea*. One of the best developed *Lobarion* communities seen and one of the most important hazels surveyed (Photo 1 of 2).



Photo 41. TN74: Veteran collapsed hazel with red/white hazard tape. One of the best populations of *Nevesia sampaiana* seen plus good patches of *P. testacea*. One of the best developed *Lobarion* communities seen and one of the most important hazels surveyed (Photo 2 of 2).



Photo 42. TN75: Veteran pasture hazel (Tag 0032) with *Nevesia sampaiana*, *Parmeliella testacea*, *Bactrospora homalotropa*, *Ricasolia virens*, *Thelotrema macrosporum* as per previous samples, *Leptogium burgessii*, *Pannaria rubiginosa* and *Peltigera horizontalis* (Photo 1 of 2).



Photo 43. TN75: Veteran pasture hazel (Tag 0032) with *Nevesia sampaiana*, *Parmeliella testacea*, *Bactrospora homalotropa*, *Ricasolia virens*, *Thelotrema macrosporum* as per previous samples, *Leptogium burgessii*, *Pannaria rubiginosa* and *Peltigera horizontalis* (Photo 2 of 2).



Photo 44. TN79: Collapsed veteran hazel (no tag seen) with *Lobarion*, including *Parmeliella Testacea* and *Nevesia sampaiana*.



Photo 45. TN85: Collapse old hazel (no tag seen) with *Lobarion*, including small patches of *Parmeliella Testacea* and *Nevesia sampaiana*.



Photo 46. TN86: Veteran pasture hazel (Tag 2083) with *Lobarion* including very good patches of *Parmeliella testacea*, some *Nevesia sampaiana*, small but well developed patches of *Sticta sylvatica*, some *Degelia atlantica*, and *Gyalideopsis muscicola*.



Photo 47. TN91: Old hazel (single stem) with *Lobarion* including small patches of *Parmeliella Testacea* and some *Ricasolia virens*.



Photo 48. TN95: Veteran tree form pasture hazel (no tag seen) with *Parmeliella testacea*.



Photo 49. TN96: Collapsing veteran pasture hazel (no tag seen) with *Lobarion* including *Arthonia sampaiana* on *Nevesia sampaiana* and *Catinaria atropurpurea*, *Parmeliella testacea*, *Lobaria amplissima* and *Nephroma parile*.



Photo 50. TN106: Giant veteran pasture birch (tag 0069) with *Lobarion* including *Lobaria scrobiculata* and *L. pulmonaria*. Also *Loxospora elatina* and *Thelotrema lepadinum*. Fantastic veteran dry bark habitat with abundant *Chaenotheca trichialis* but no other *Caliciales* seen (easily overlooked). *Micarea* sample tbc.



Photo 51. TN113: Veteran pasture hazel with pollard form (tag 0040) with nice patches of *Arthonia vinosa* and *Lobarion*, including *Ricasolia virens* and *Degelia atlantica*.



Photo 52. TN132: Old leaning hazel (no tag seen) with *Lobarion* including *Parmeliella testacea*, *Degelia atlantica* and *Pannaria conoplea*.



Photo 53. TN137: Old leaning hazel (tag 0460) with *Degelia plumbea* s. str. and *Pannaria rubiginosa*.



Photo 54. TN139: Collapsed old hazel (no tag seen but next to birch tagged 0197) with *Parmeliella testacea*, *Opegrapha thelotrematis* and *Anisomeridium ranunculosporum*.



Photo 55. TN148: Large veteran pasture hazel (tag 0487) with *Lobarion* well developed incl. abundant *Plectocarpon lichenum*, *Ricasolia virens*, fertile *Parmeliella triptophylla* and frequent *Peltigera collina*.



Photo 56. TN152: Veteran hazel (tag 0641) with large well developed patches of *Parmeliella testacea*, also *Sticta fuliginosa*.



Photo 57. TN160: Veteran hazel leaning downslope (tag 0662) with very well developed *Lobarion* including the best patches of *Pannaria rubiginosa* seen plus good patches of *Degelia atlantica*, *Nephroma laevigatum* (rare on site), *Dictyonema sp.*, and Fertile *Parmeliella triptophylla*, *Capronia normandinae* and *Gyalideopsis muscicola*.



Photo 58. TN172: Ancient veteran pasture hazel (tag 0761). The stool is possibly 400 years old or more with *Lobarion* including *Parmeliella testacea*, *Sticta limbata*, *Sticta sylvatica*, *Degelia atlantica*, *Pannaria conoplea*, *R. virens* and some giant lobes of *L. scrobiculata* and *L. pulmonaria*.



Photo 59. TN175: Hazel on right bank of stream looking downstream (no tag seen) with *Lobarion*. Not well developed and species poor but includes several small developing patches of *Parmeliella testacea*.



Photo 60. TN190: Mature rowan (tag 0582) bursting forth from veteran pasture hazel stool with Species poor, poorly developed *Lobarion*.



Photo 61. TN224: Large old rowan at base of outcrop with *Lobaria pulmonaria* and *Ricasolia virens*



Photo 62. TN225: Rowan on outcrop with *Lobaria pulmonaria*.



Photo 63. TN226: Phoenix birch collapsed from outcrop with *Bunodophoron melanocarpum* (Photo 1 of 2).



Photo 64. TN226: Phoenix birch collapsed from outcrop with *Bunodophoron melanocarpum* (Photo 2 of 2).



Photo 65. TN227: Veteran phoenix rowan with *Lobaria pulmonaria* and *Sticta limbata* (Photo 1 of 3).



Photo 66. TN227: Veteran phoenix rowan with *Lobaria pulmonaria* and *Sticta limbata* (Photo 2 of 3).



Photo 67. TN227: Veteran phoenix rowan with *Lobaria pulmonaria* and *Sticta limbata* (Photo 3 of 3).



Photo 68. TN278: Veteran pasture birch with established mature rowan 'air tree' with *Protopannaria pezizoides* (on birch lignum), *Megalaria grossa* and *Opegrapha ochrocheila*.  
Page 211



Photo 69. TN402: Ancient stool/low pollard for with *L. pulmonaria*, *R. amplissima* and *P. conoplea*.



Photo 70. TN452: Hazel with *Leptogium hibernicum*, *Leptogium burgessii* (c. ap.), *Collema fasciculare*, *S. limbate* and *N. sampaiana* (Photo 1 of 4).



Photo 71. TN452: Hazel with *Leptogium hibernicum*, *Leptogium burgessii* (c. ap.), *Collema fasciculare*, *S. limbate* and *N. sampaiana* (Photo 2 of 4).



Photo 72. TN452: Hazel with *Leptogium hibernicum*, *Leptogium burgessii* (c. ap.), *Collema fasciculare*, *S. limbate* and *N. sampaiana* (Photo 3 of 4).



Photo 73. TN452: Hazel with *Leptogium hibernicum*, *Leptogium burgessii* (c. ap.), *Collema fasciculare*, *S. limbate* and *N. sampaiana* (Photo 4 of 4).



Photo 74. TN571: Hazel with *Lobarion* including nice fertile patches of *Biatora vernalis* (Photo 1 of 2).



Photo 75. TN571: Hazel with *Lobarion* including nice fertile patches of *Biatora vernalis* (Photo 2 of 2).



Photo 76. TN787: Hazel with *Phlyctis agelaea*, and *Lobarion* including *Plectocarpon lichenum* and *Nectriopsis lecanodes* on *Lobaria amplissima* (Photo 1 of 4).



Photo 77. TN787: Hazel with *Phlyctis agelaea*, and Lobarion including *Plectocarpon lichenum* and *Nectriopsis lecanodes* on *Lobaria amplissima* (Photo 2 of 4).



Photo 78. TN787: Hazel with *Phlyctis agelaea*, and Lobarion including *Plectocarpon lichenum* and *Nectriopsis lecanodes* on *Lobaria amplissima* (Photo 3 of 4).



Photo 79. TN787: Hazel with *Phlyctis agelaea*, and *Lobarion* including *Plectocarpon lichenum* and *Nectriopsis lecanodes* on *Lobaria amplissima* (Photo 4 of 4).



Photo 80. TN843: Ancient oak on cliff above watercourse with *Lobarion* present (Photo 1 of 3)



Photo 81. TN843: Ancient oak on cliff above watercourse with *Lobarion* present (Photo 2 of 3)



Photo 82. TN843: Ancient oak on cliff above watercourse with *Lobarion* present (Photo 3 of 3)



Photo 83. TN863: Veteran ash along stream with *Gyalecta truncigena* and *Lobarion* including small patch *L. burgessii*, *Mycobilimbia pilularis*, *Sticta sylvatica*, *Peltigera horizontalis*, *Protopannaria pezizoides*, *Leptogium lichenoides*, *Ricasolia virens*, and fertile *P. triptophylla* (Photo 1 of 2).



Photo 84. TN863: Veteran ash along stream with *Gyalecta truncigena* and *Lobarion* including small patch *L. burgessii*, *Mycobilimbia pilularis*, *Sticta sylvatica*, *Peltigera horizontalis*, *Protopannaria pezizoides*, *Leptogium lichenoides*, *Ricasolia virens*, and fertile *P. triptophylla* (Photo 2 of 2).



Photo 85. TN932: Hazel at turning circle with *Lobarion* incl. nice patches of *Nevesia sampaiana*, *Arthonia sampaiana* and also *P. testacea*.

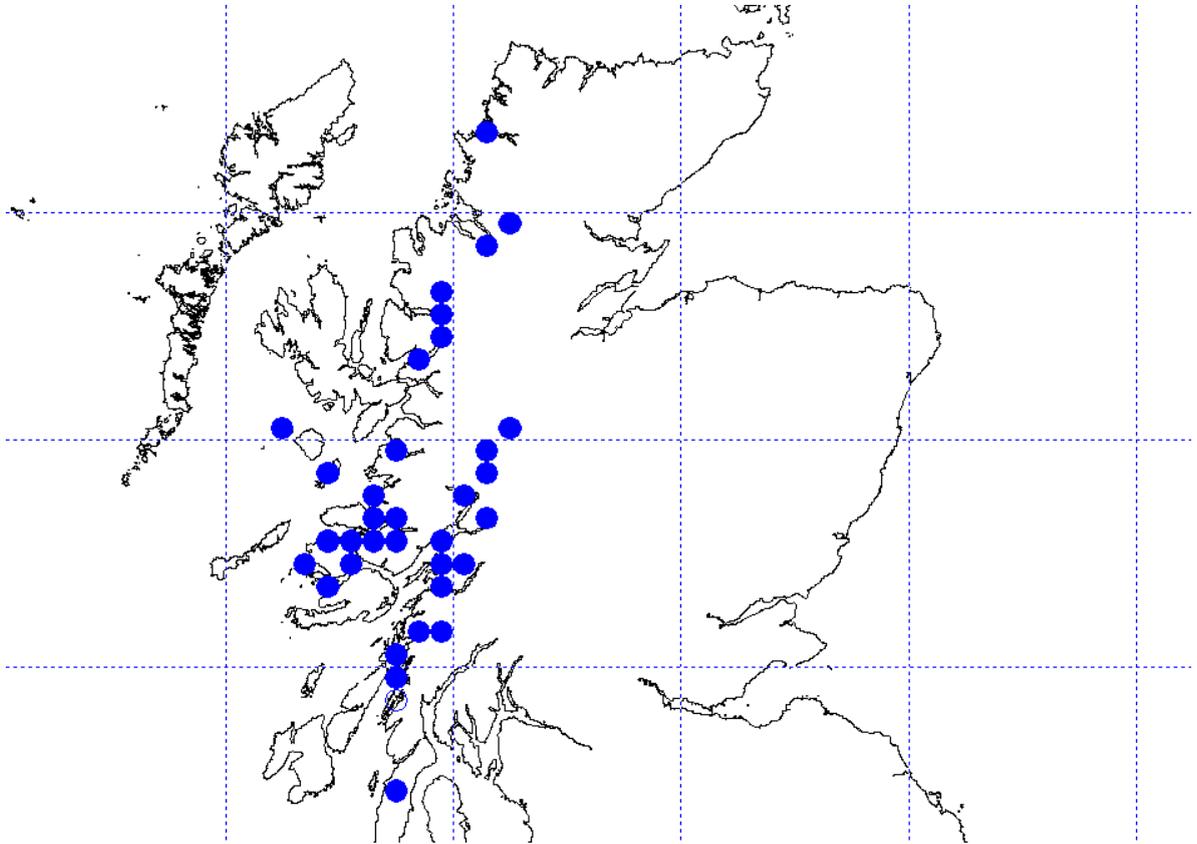


Photo 86. TN933: Hazel at turning circle with fertile patch of *Leptogium burgessii*, also patches of *P. testacea* and *Nevesia sampaiana* (Photo 1 of 2).

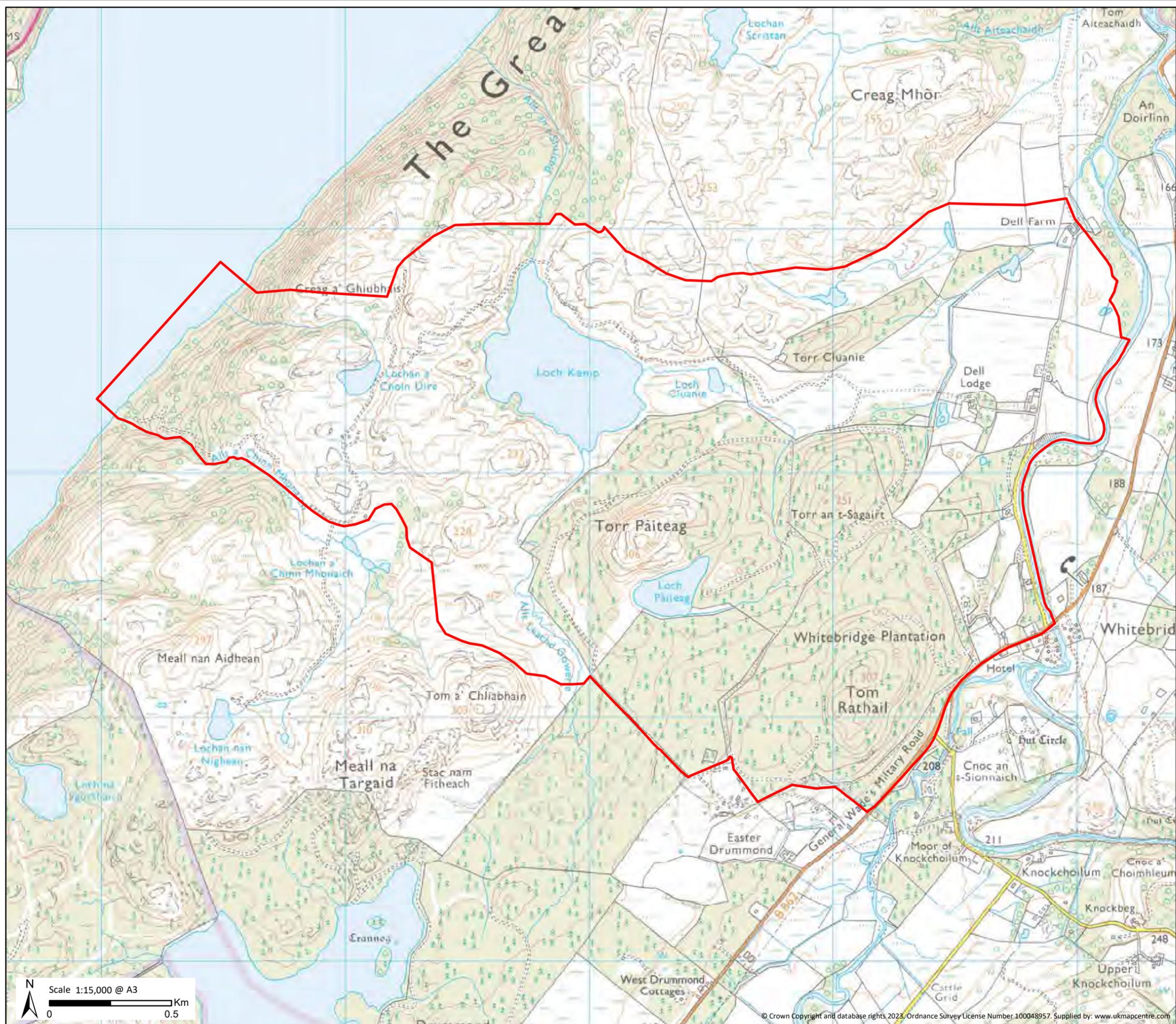


Photo 87. TN933: Hazel at turning circle with fertile patch of *Leptogium burgessii*, also patches of *P. testacea* and *Nevesia sampaiana* (Photo 2 of 2).

### Appendix 3 - '*Dictyonema*' sp. distribution map



## Appendix 4 - Figures



**Key**

Site Boundary

**Loch Kemp Storage  
EIA Report**

**Figure 1  
Site Location**

Drawn by: [Redacted] Date: 14/11/2023  
 Drawing: 120019-D-TLS1-1.0.0



**Loch Kemp  
Storage**  
A STATEWIDE COMPANY



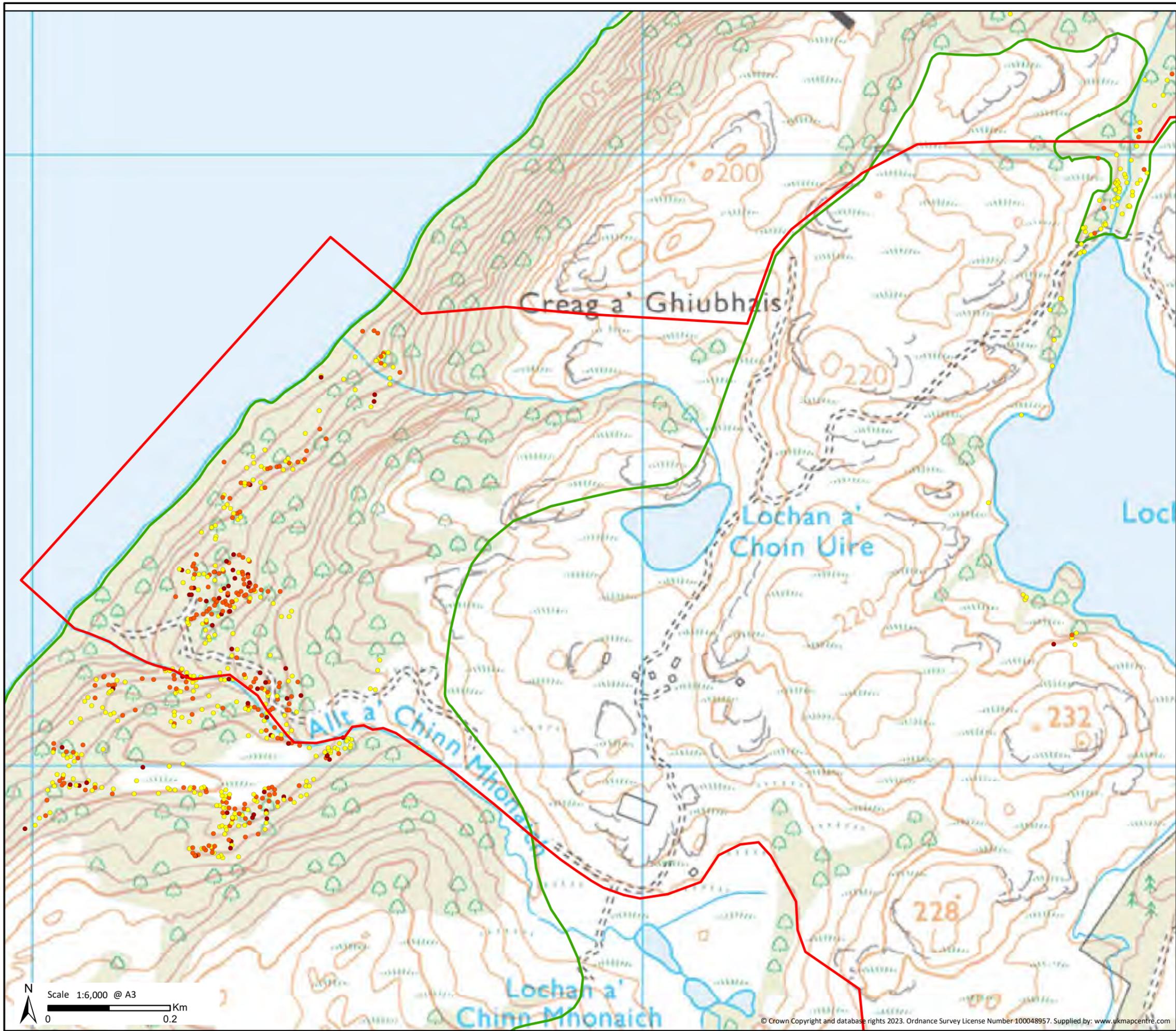
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- Key**
- Site Boundary
  - Ness Woods SAC
- Lichen Species Value**
- Species of Very High Value
  - Species of High Value
  - Species of Medium Value

N  
Scale 1:6,000 @ A3  
0 0.2 Km

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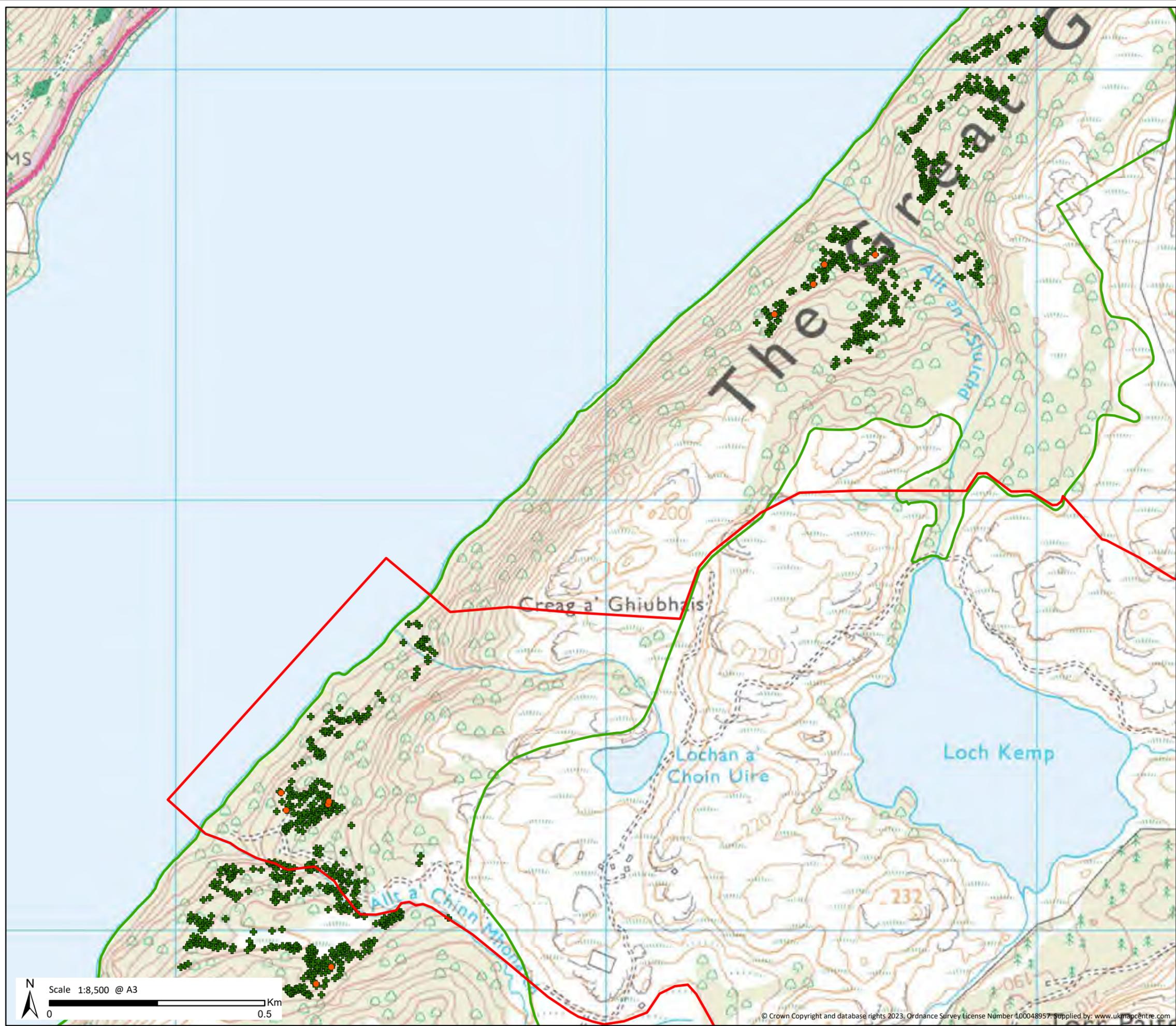
**Loch Kemp Storage  
EIA Report**

**Figure 5**  
Target Notes - lichen species of medium, high and very high value within the Site Boundary

Drawn by: K Date: 14/11/2023  
Drawing: [Redacted]







**Key**

- Site Boundary
  - + Veteran Hazel
  - Ness Woods SAC
- Lichen Species of Very High Value**
- *Arthonia sampaiana*

N  
Scale 1:8,500 @ A3  
0 0.5 Km

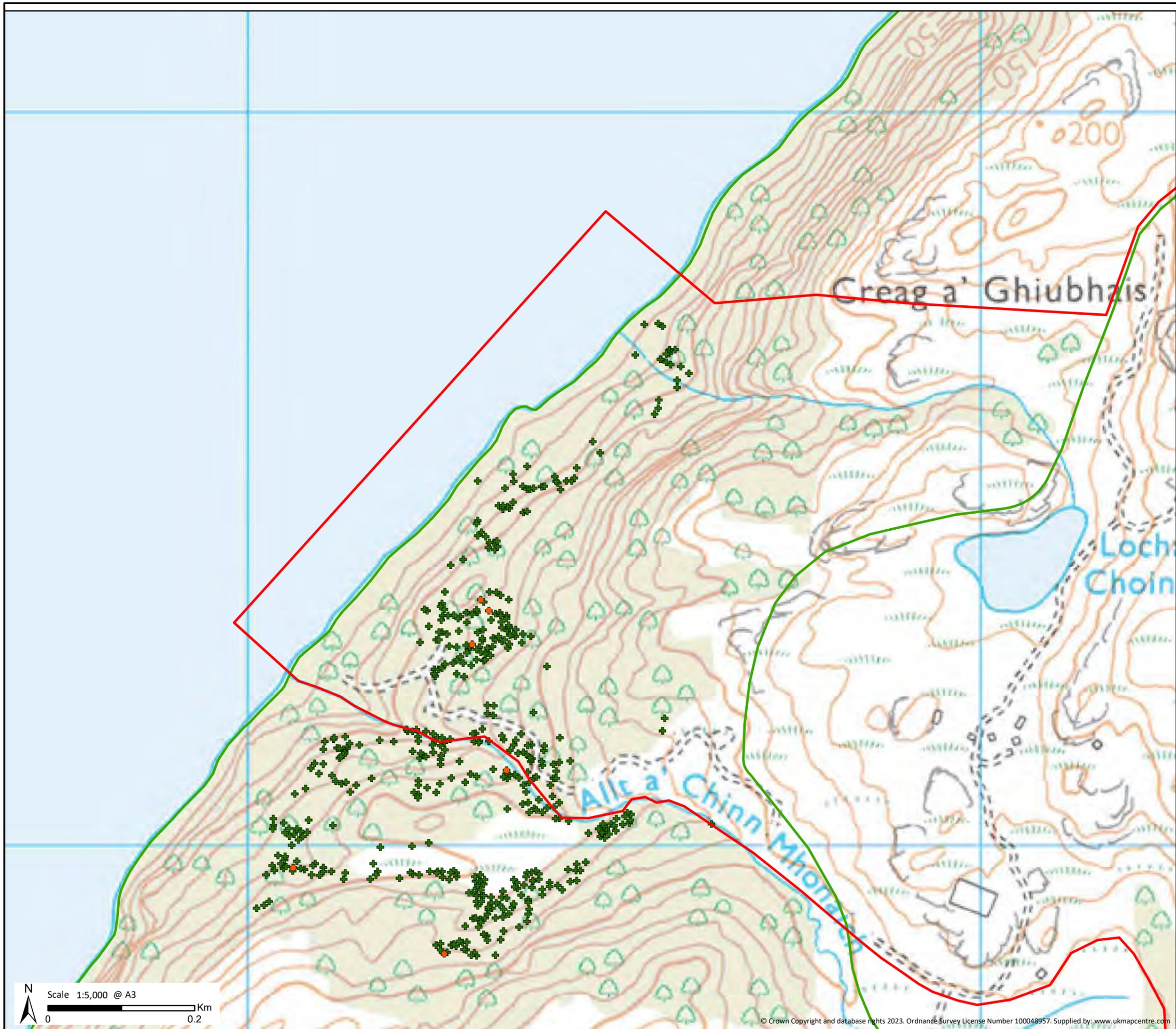
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**Loch Kemp Storage  
EIA Report**

**Figure 7  
Target Notes - *Arthonia sampaiana*  
locations**

Drawn by: [redacted] Date: 14/11/2023  
Drawing: 120019-D-TLS7-1.0.0





**Key**

- Site Boundary
- + Veteran Hazel
- Ness Woods SAC

**Lichen Species of Very High Value**

- *Bactrospora homalotropa*

Loch Kemp Storage  
EIA Report

**Figure 8**  
Target Notes - *Bactrospora homalotropa*  
locations

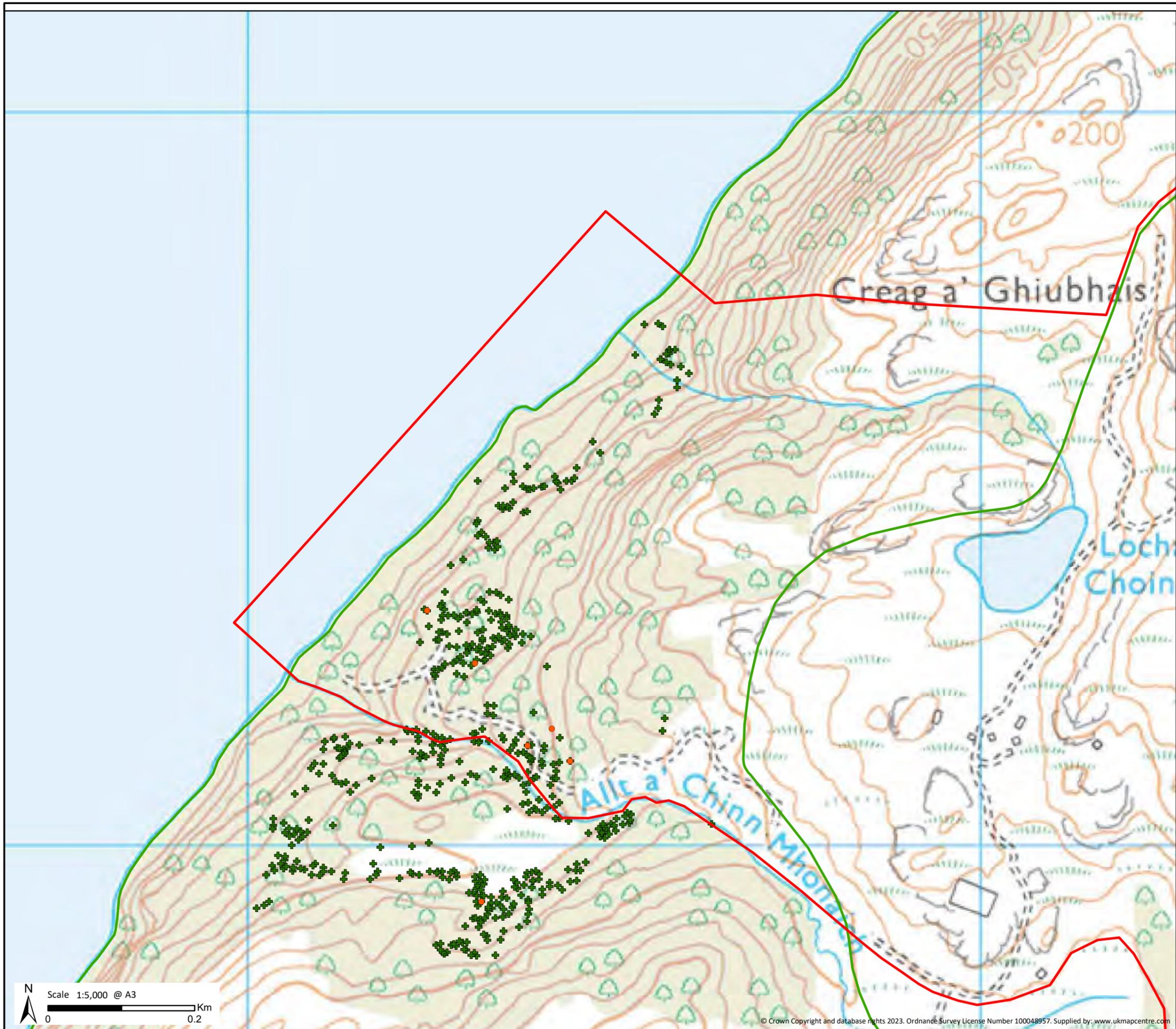
Drawn by: [redacted] 14/11/2023



**Loch Kemp  
Storage**  
A STATEWIDE COMPANY

ash

N  
Scale 1:5,000 @ A3  
0 Km  
0.2



**Key**

- Site Boundary
- + Veteran Hazel
- Ness Woods SAC

**Lichen Species of Very High Value**

- *Fuscopannaria ignobilis*,  
*Fuscopannaria mediterranea*,  
*Microcalicium disseminatum* and  
*Sclerophora peronella*

**Loch Kemp Storage  
EIA Report**

**Figure 9**  
Target Notes - *Fuscopannaria ignobilis*,  
*Fuscopannaria mediterranea*, *Microcalicium*  
*disseminatum* and *Sclerophora peronella* locations

Drawn by: [redacted] Date: 14/11/2023  
Drawing: 120019-D-TLS9-1.0.0

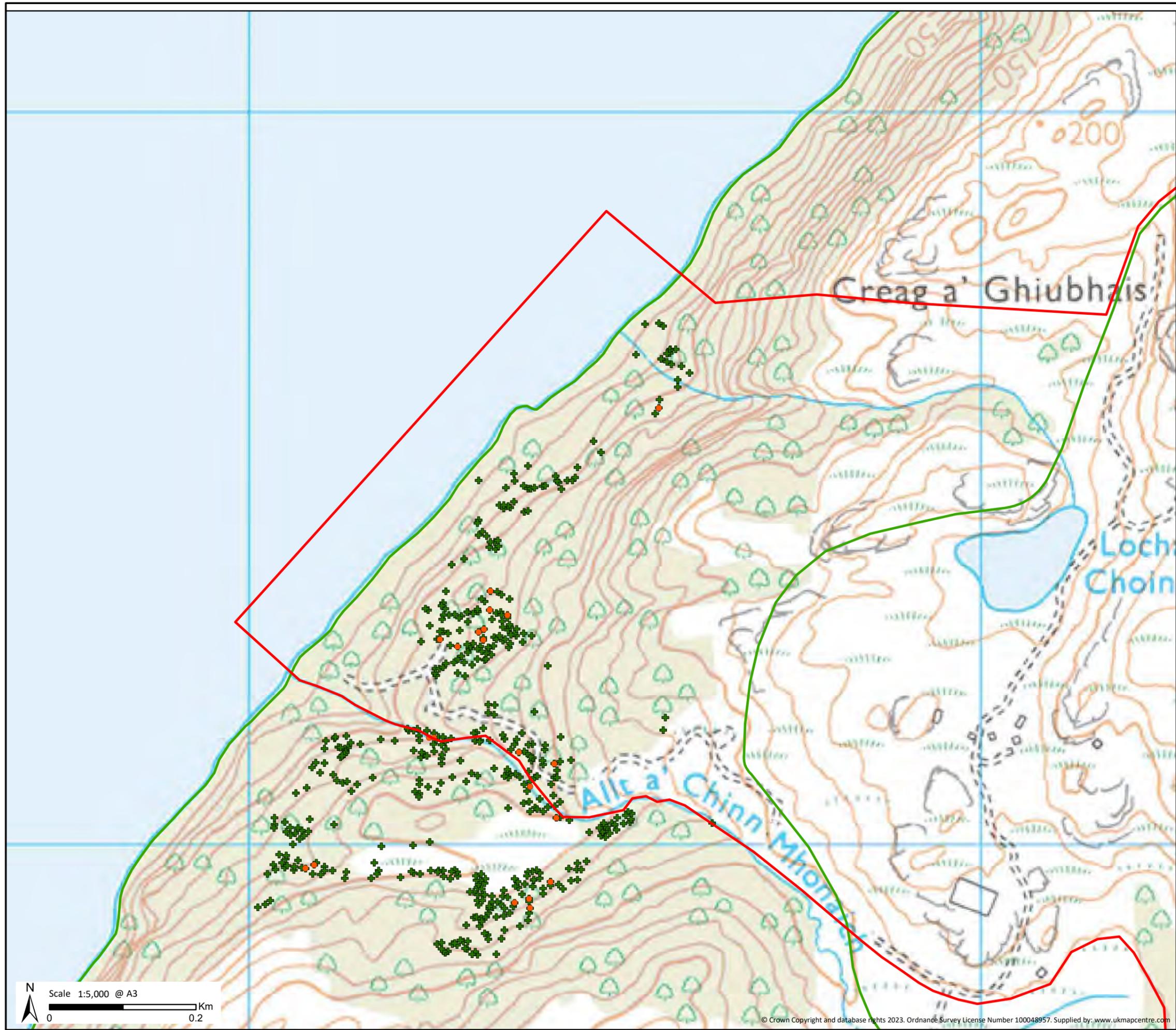


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Storage**  
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Scale 1:5,000 @ A3  
0 Km  
0.2

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**Key**

- Site Boundary
- + Veteran Hazel
- Ness Woods SAC

**Lichen Species of Very High Value**

- *Leptogium burgessii*

Loch Kemp Storage  
EIA Report

**Figure 10**  
Target Notes -  
*Leptogium burgessii* locations

Drawn by: [redacted] Date: 14/11/2023

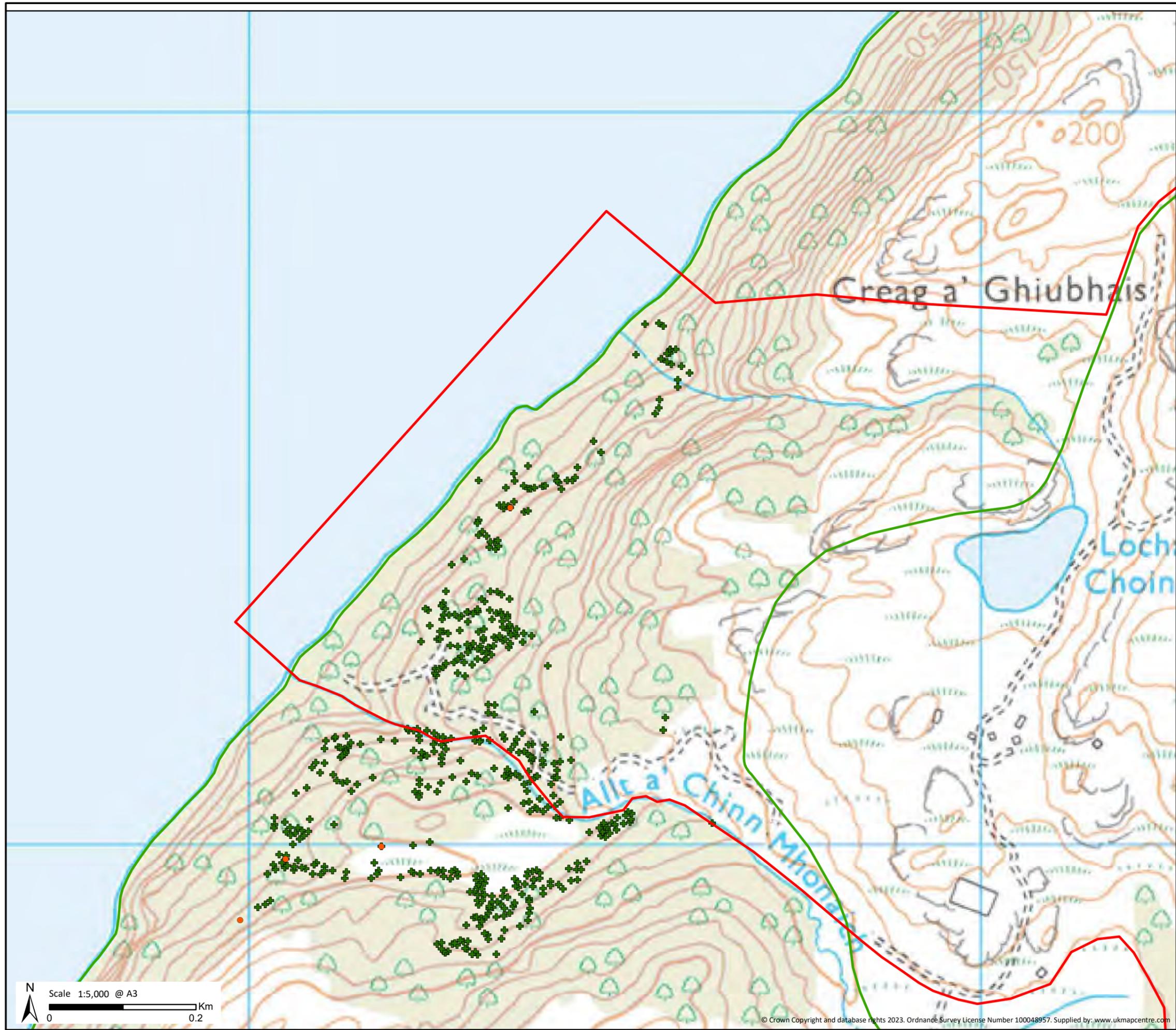
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**Loch Kemp  
Storage**  
A STATEWAY COMPANY



N  
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0 Km  
0.2



**Key**

- Site Boundary
- + Veteran Hazel
- Ness Woods SAC

**Lichen Species of Very High Value**

- *Pectenیا plumbea*

Loch Kemp Storage  
EIA Report

**Figure 11**  
Target Notes -  
*Pectenیا plumbea* locations

Drawn by: [redacted] Date: 14/11/2023  
Drawing: 120019-D-TLS11-1.0.0



N  
Scale 1:5,000 @ A3  
0 Km 0.2

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**Key**

- Site Boundary
- + Veteran Hazel
- Ness Woods SAC

**Lichen Species of Very High Value**

- *Phlyctis agelaea*
- *Arthonia zwackhii*

Loch Kemp Storage  
EIA Report

**Figure 12**  
Target Notes - *Phlyctis agelaea* and  
*Arthonia zwackhii* locations

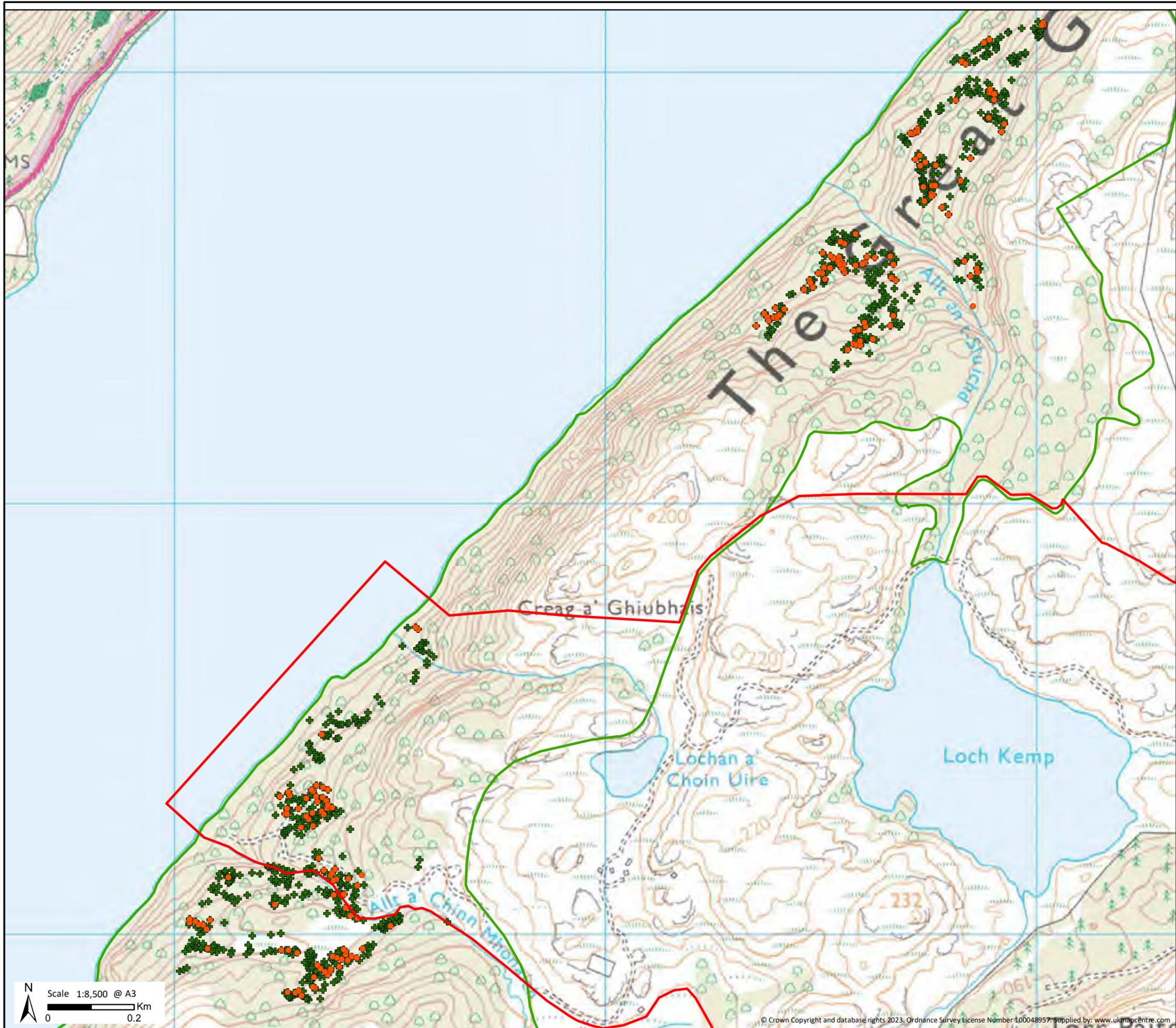
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Drawing: 120019-D-TLS12-1.0.0

Loch Kemp Storage  
A STATEWIDE COMPANY

ash

N  
Scale 1:8,500 @ A3  
0 0.2 Km



**Key**

- Site Boundary
- + Veteran Hazel
- Ness Woods SAC

**Lichen Species of Very High Value**

- *Nevesia sampaiana*

N  
Scale 1:8,500 @ A3  
0 0.2 Km

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**Loch Kemp Storage  
EIA Report**

**Figure 13  
Target Notes - *Nevesia sampaiana***

Drawn by: [REDACTED] Date: 14/11/2023  
Drawing: 120019-D-TLS13-1.0.0



**Key**

- Site Boundary
- + Veteran Hazel
- Ness Woods SAC

**Lichen Species of Very High Value**

- *Arthonia sampaiana*\*
- *Nevesia sampaiana*

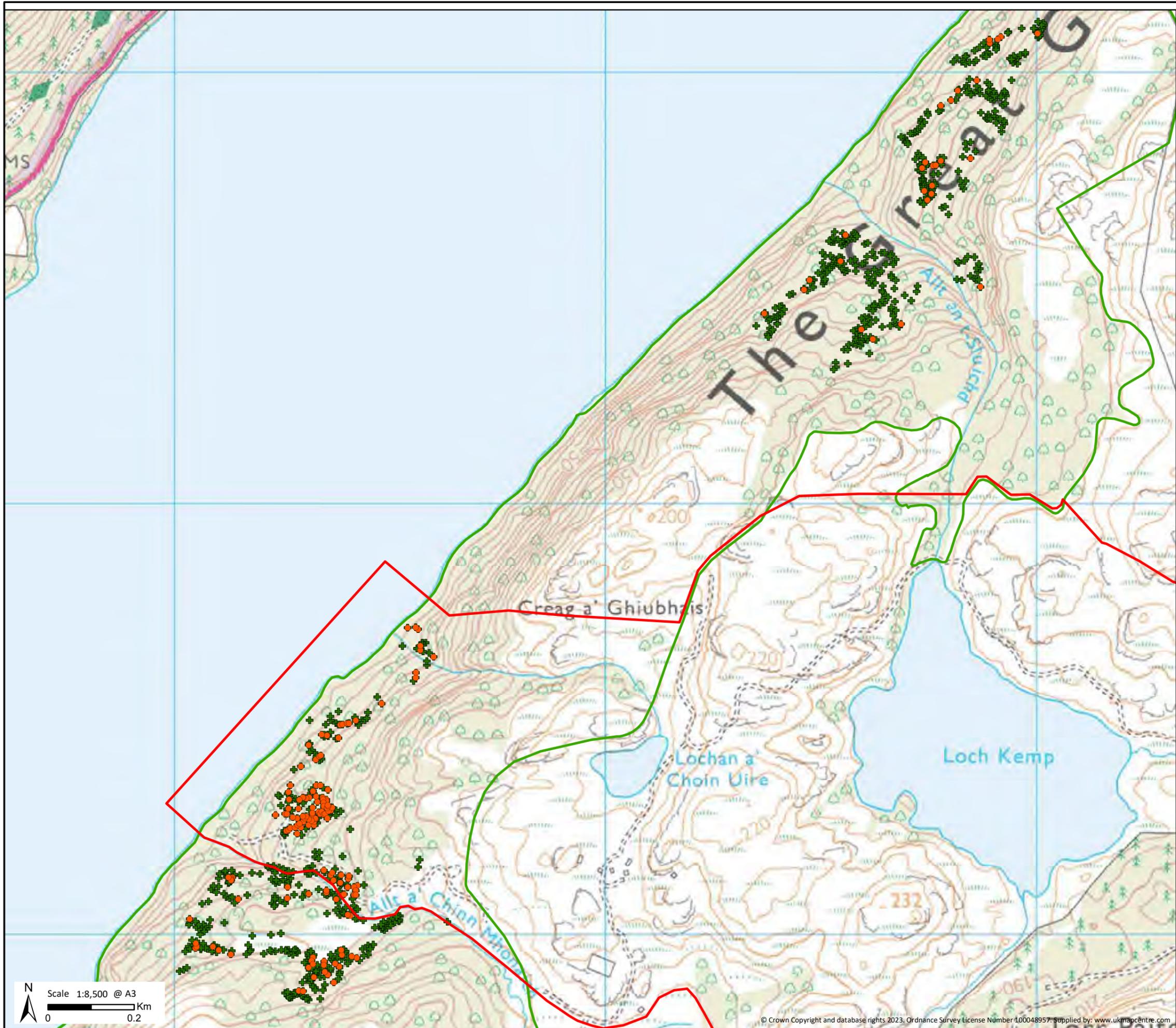
\**A. sampaiana* is a UK Red-Listed parasite that was found on 9 veteran hazels within the site.  
*N. sampaiana* is an important host species of *A. sampaiana*

**Loch Kemp Storage  
EIA Report**

**Figure 14**  
**Target Notes - *Nevesia sampaiana* and *Arthonia sampaiana* on pasture hazel stands**

Drawn by: [Redacted] Date: 14/11/2023  
 Drawing: 120019-D-TLS14-1.0.0

N  
 Scale 1:8,500 @ A3  
 0 0.2 Km



**Key**

- Site Boundary
- + Veteran Hazel
- Ness Woods SAC

**Lichen Species of Very High Value**

- *Parmeliella testacea*

N  
Scale 1:8,500 @ A3  
0 0.2 Km

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**Loch Kemp Storage  
EIA Report**

**Figure 15  
Target Notes - *Parmeliella testacea*  
locations**

Drawn by: [redacted] Date: 14/11/2023  
Drawing: 120019-D-TLS15-1.0.0



**Key**

- Site Boundary
- + Veteran Hazel
- Ness Woods SAC

**Lichen Species of Very High Value**

- *Crutarndina petractoides*

Loch Kemp Storage  
EIA Report

**Figure 16**  
Target Notes - *Crutarndina Petractoides*  
locations

Drawn by: [REDACTED] Date: 14/11/2023

Drawing: 120019-D-TLS16-1.0.0



**Loch Kemp  
Storage**  
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N  
Scale 1:8,500 @ A3  
0 0.2 Km



**Key**

- Site Boundary
- + Veteran Hazel
- Ness Woods SAC

**Lichen Species of Very High Value**

- *Pannaria rubiginosa*

Loch Kemp Storage  
EIA Report

**Figure 17**  
Target Notes - *Pannaria rubiginosa*  
locations

Drawn by: [REDACTED] Date: 14/11/2023

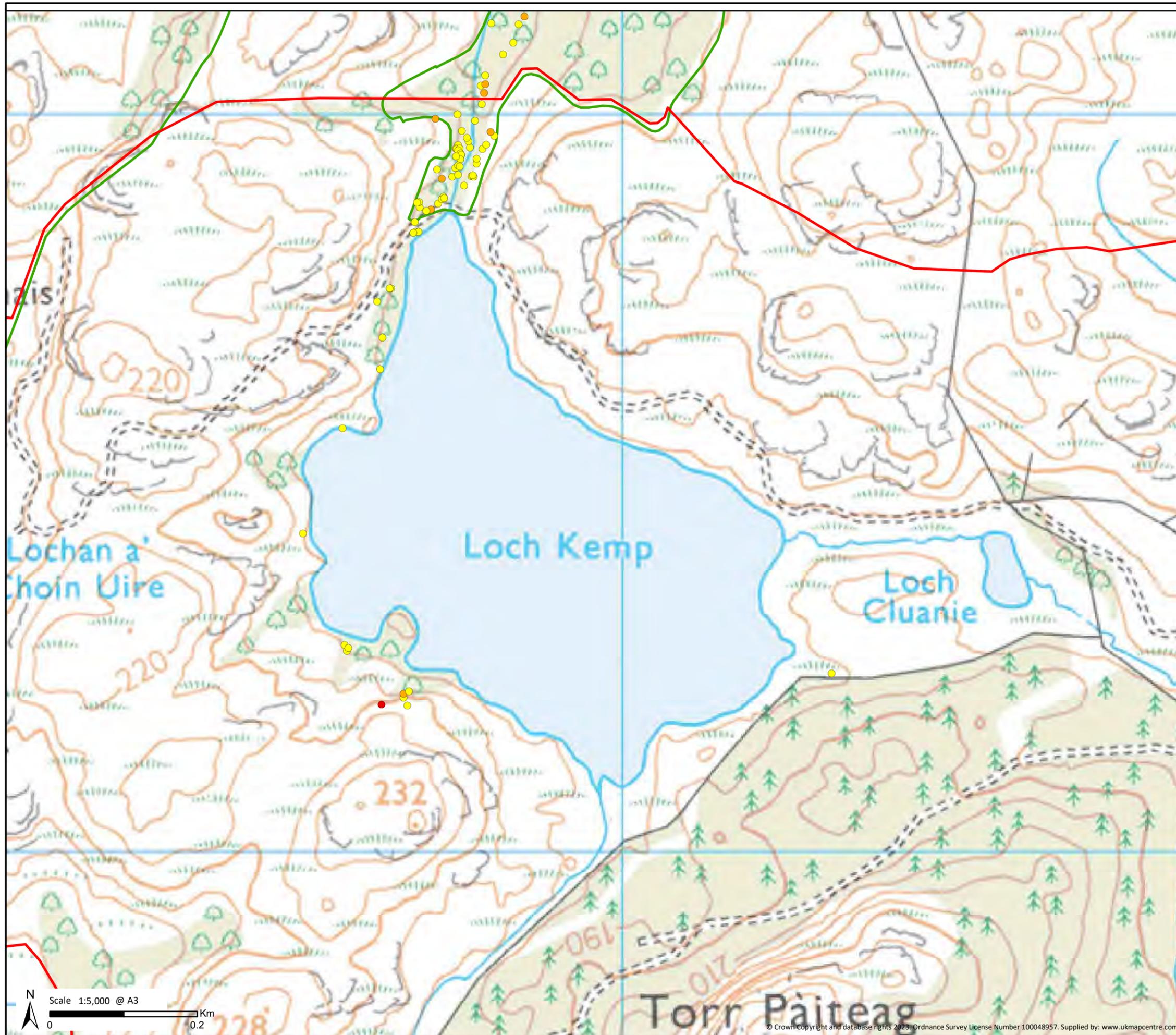
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**Loch Kemp  
Storage**  
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N  
Scale 1:8,500 @ A3  
0 0.2 Km



**Key**

- Site Boundary
- Ness Woods SAC

**Lichen Species Value**

- Species of very high value
- Species of high value
- Species of medium value

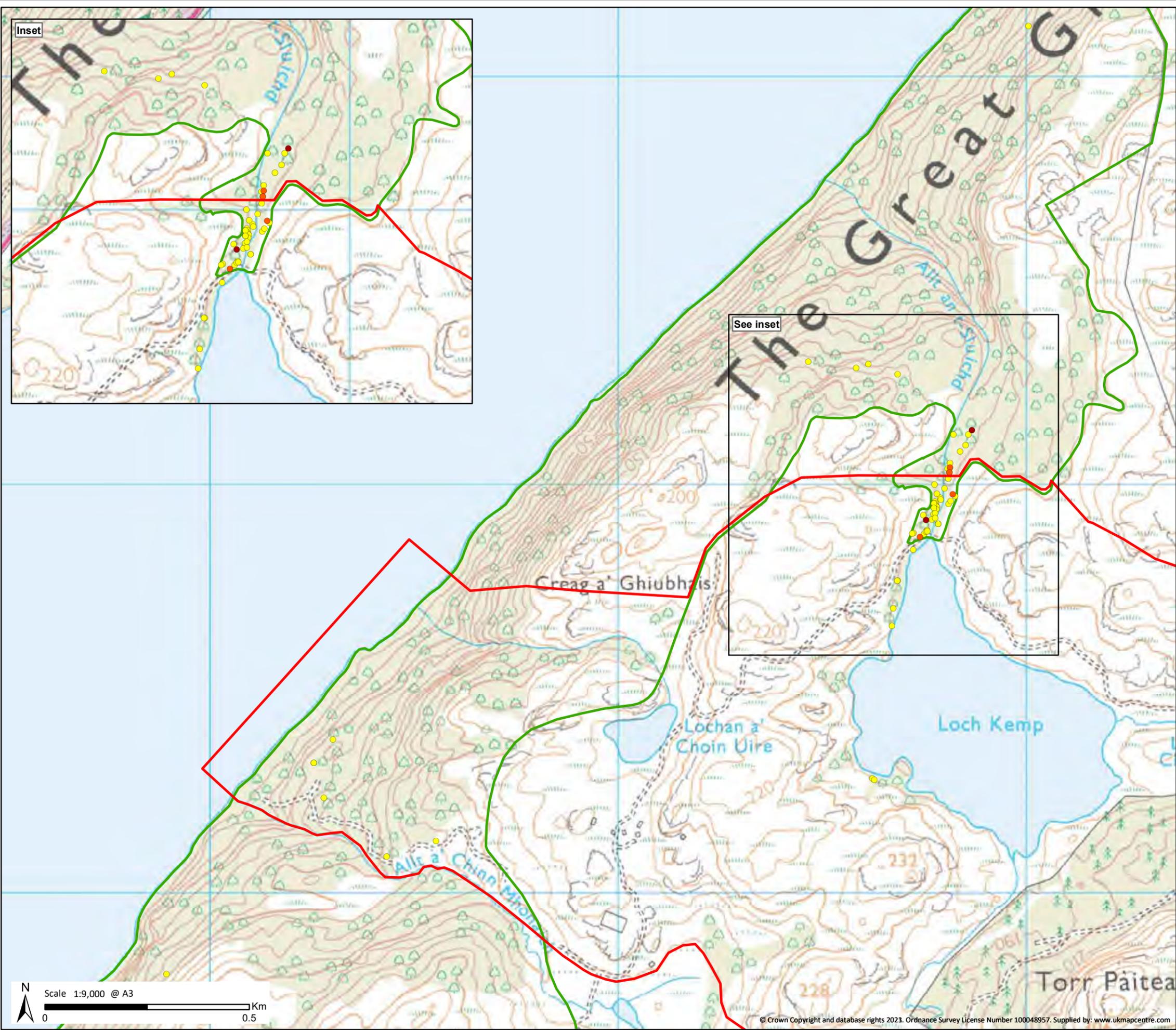
**Loch Kemp Storage  
EIA Report**

**Figure 18**  
Target Notes in Old Birch Woodlands  
surrounding Loch Kemp and the upper  
section of Allt an t-Sluichd

Drawn by: [redacted] Date: 14/11/2023  
Drawing: 120019-D-TLS18-1.0.0

N  
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0 0.2 Km

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**Key**

- Site Boundary
- Ness Woods SAC

**Lichen Species of High Value**

- *Bactrospora corticola*
- *Lopadium disciforme*
- *Protoparmelia ochrococca* and *Felipes leucopellaea*

**Loch Kemp Storage  
EIA Report**

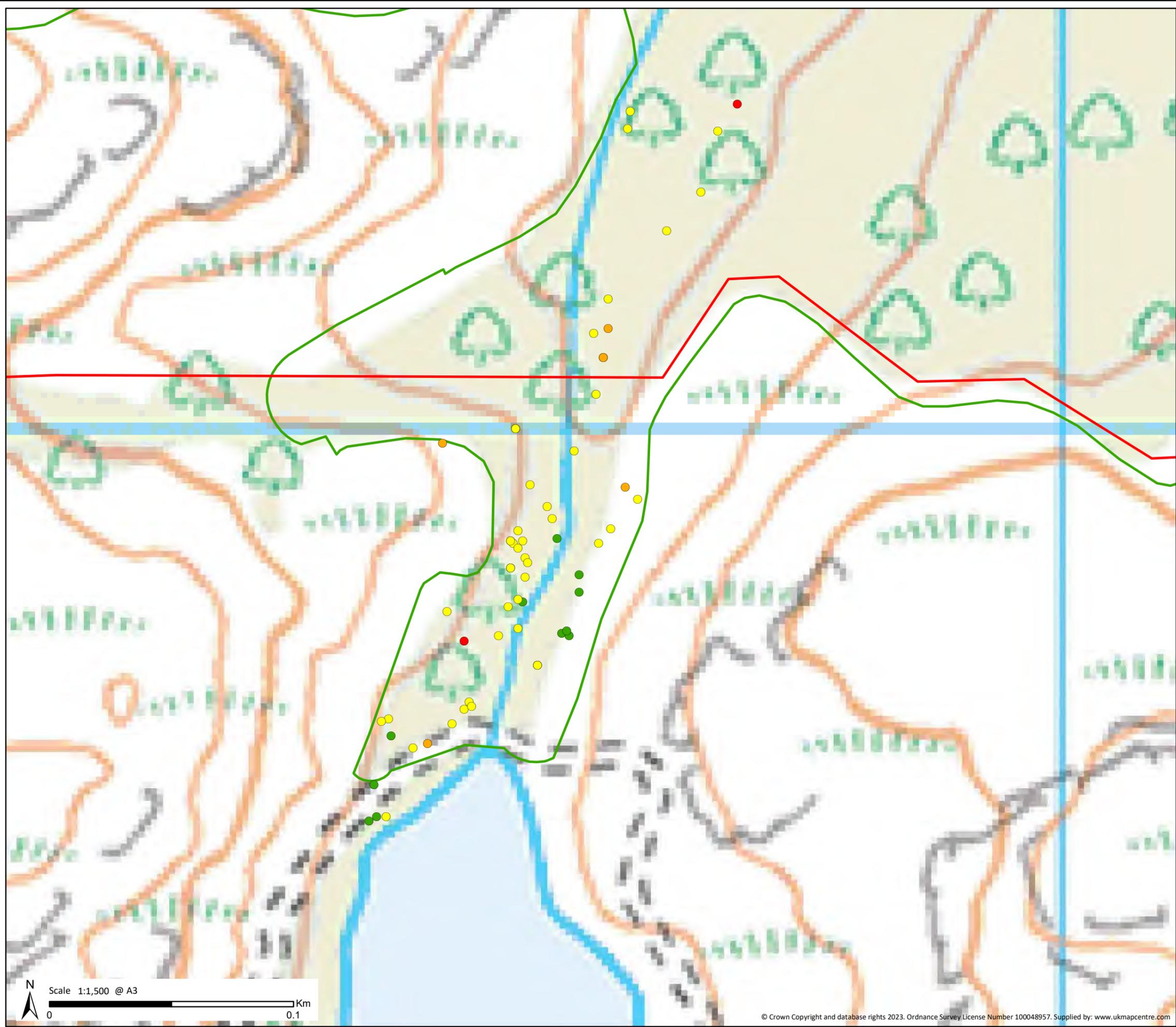
**Figure 19**  
The distribution of *Felipes leucopellaea* (NS)  
and *Protoparmelia ochrococca* (NS) records  
on old veteran birch

Drawn by: [redacted] Date: 14/11/2023  
Drawing: 120019-D-TLS19-1.0.0



N  
Scale 1:9,000 @ A3  
0 0.5 Km

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- Key**
- Site Boundary
  - Ness Woods SAC
  - Species of very high value
  - Species of high value
  - Old growth species *Felipes leucopellaea* and *Protoparmelia ochrococca*
  - *Lobarion* spp. and *Caliciales* species that are not uncommon at the site-based scale

N  
Scale 1:1,500 @ A3  
0 Km 0.1

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**Loch Kemp Storage  
EIA Report**

**Figure 20**  
Target Notes in Old Birch Woodland  
in the northern section of Loch Kemp and  
the upper section of Allt an t-Sluichd

Drawn by: [redacted] Date: 14/11/2023  
Drawing: 120019-D-TLS20-1.0.0

