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Wales

# Monitoring of the Atlantic woodland bryophyte assemblage of Coedydd Nantgwynant, Caernarfon



*Radula aquilegia*

Des Callaghan (Bryophyte Surveys Ltd)

Evidence Report No 994

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- Securing our data and information;
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## 1. Crynodeb gweithredol

Mae SoDdGA Coedydd Nantgwynant (142.8 ha) yn cynnwys tair uned o dir o fewn dyffryn Nantgwynant, lle mai coetir yr Iwerydd yw'r prif gynefin o ddiddordeb ac un o'i nodweddion allweddol yw'r fflora bryoffytau cefnforol. O'i gymharu â safleoedd cymaradwy eraill yn Eryri, prin fu'r arolygon a gynhaliwyd i edrych ar fflora bryoffytau'r SoDdGA. Gan ddefnyddio mapio grid a lleiniau ffotograffig pwynt sefydlog, mae'r astudiaeth hon yn darparu arolwg monitro sylfaenol o gasgliad bryoffytau coetir yr Iwerydd yn y SoDdGA. O ran amrywiaeth rhywogaethau, mae'r canlyniadau'n dangos mai'r SoDdGA hwn yw'r cyfoethocaf yng Nghymru ar gyfer y casgliad hwn o fryoffytau. Cadarnheir bod cyfanswm o 23 o rywogaethau yn bresennol, gan gynnwys *Breutelia chrysocoma*, *Cololejeunea microscopica*, *Colura calyptrifolia*, *Dicranum scottianum*, *Drepanolejeunea hamatifolia*, *Fissidens polyphyllus*, *Harpalejeunea molleri*, *Heterocladium wulfsbergii*, *Jubula hutchinsiae*, *Lejeunea lamacerina*, *Lejeunea patens*, *Lepidozia cupressina*, *Lepidozia pearsonii*, *Plagiochila bifaria*, *Plagiochila exigua*, *Plagiochila heterophylla*, *Plagiochila punctata*, *Plagiochila spinulosa*, *Pseudomarsupidium decipiens*, *Radula aquilegia*, *Radula voluta*, *Scapania gracilis* a *Sematophyllum demissum*. Oherwydd eu bod yn brin yng Nghymru, mae poblogaethau *Plagiochila heterophylla*, *Radula aquilegia*, *Radula voluta* a *Sematophyllum demissum* yn arbennig o arwyddocaol.

## 2. Executive summary

Coedydd Nantgwynant SSSI (142.8 ha) comprises three units of land within the Nantgwynant valley, in which the main habitat of interest is Atlantic woodland and one of its key features is the oceanic bryophyte flora. Compared to other comparable sites in Snowdonia, the bryophyte flora of the SSSI has received little survey attention. Using grid-mapping and fixed-point photographic plots, this study provides a base-line monitoring survey of the Atlantic woodland bryophyte assemblage of the SSSI. In terms of species diversity, the results show that this SSSI is the richest in Wales for this assemblage of bryophytes. A total of 23 species are confirmed to be present, including *Breutelia chrysocoma*, *Cololejeunea microscopica*, *Colura calyptrifolia*, *Dicranum scottianum*, *Drepanolejeunea hamatifolia*, *Fissidens polyphyllus*, *Harpalejeunea molleri*, *Heterocladium wulfsbergii*, *Jubula hutchinsiae*, *Lejeunea lamacerina*, *Lejeunea patens*, *Lepidozia cupressina*, *Lepidozia pearsonii*, *Plagiochila bifaria*, *Plagiochila exigua*, *Plagiochila heterophylla*, *Plagiochila punctata*, *Plagiochila spinulosa*, *Pseudomarsupidium decipiens*, *Radula aquilegia*, *Radula voluta*, *Scapania gracilis* and *Sematophyllum demissum*. Due to their rarity in Wales, the populations of *Plagiochila heterophylla*, *Radula aquilegia*, *Radula voluta* and *Sematophyllum demissum* are especially significant.

### 3. Background

Bryophytes comprise a diverse group of organisms that are sensitive indicators of the state of the environment. Desiccation tolerance varies greatly between species, and some of the most sensitive species are limited to highly oceanic climates. Atlantic (or oceanic) bryophytes are more strongly represented in the British Isles than in any other part of Europe and, due to their general rarity and phytogeographic interest, have received much attention from bryologists and conservationists. The most diverse Atlantic communities are found in sheltered lowland ravines along streams and rivers in west Scotland, north-west Wales (Snowdonia), north-west England (the English Lake District) and west Ireland. The best assemblages trigger the selection of Sites of Special Scientific Interest (SSSI) in Britain (Bosanquet et al. 2018) and are of principal importance for conservation under Section 7 of The Environment (Wales) Act 2016.

Entirely contained within Meirionnydd Oakwoods and Bat Sites SAC, Coedydd Nantgwynant SSSI (142.8 ha; Figure 1) comprises three units of land in which the main habitat of interest is Atlantic woodland (Figure 2) and one of its key features is the oceanic bryophyte flora. Compared to other comparable sites in Snowdonia, the bryophyte flora of the SSSI has received little survey attention. There has been some casual recording of bryophytes, but the only commissioned survey has been that of M.E. Newton in 2002, in addition to a species-specific survey of *Sematophyllum demissum* by D.A. Callaghan in 2014 (Callaghan 2014).

Using grid-mapping and fixed-point photographic plots, the aim of this study is to provide a base-line monitoring survey of the Atlantic woodland bryophyte assemblage of Coedydd Nantgwynant SSSI. Taxonomy follows Blockeel et al. (2021).



**Figure 1** Locations of the three units that comprise Coedydd Nantgwynant SSSI, including: (1) Dinas Emrys; (2) Coed Bwlch-derw; and (3) Hafod Iwyfog to Gwastadannas.



**Figure 2** View across part of Unit 3 of Coedydd Nantgwynant SSSI, looking towards the Afon Feingam valley.

## 4. Methods

### 4.1. Grid-mapping of species

Surveying was undertaken over 5 days, during 30–31 December 2025 and 2–4 March 2026. Survey routes were chosen that together provided comprehensive coverage of the oceanic woodland across the SSSI, including visits to all of the best areas. Species belonging to the Atlantic woodland bryophyte assemblage (Bosanquet et al. 2018) were grid-mapped at a resolution of 10 x 10 m, following the method of Callaghan (2013). This involved the recording of all colonies of each species as waypoints by GPS, ignoring colonies within 5 m of an already logged colony. Within GIS, the waypoints were imported and a spatial analysis was undertaken to determine the distribution and number of occupied OS 10 m grid cells. These data were used to produce species distribution maps, and a count of the 10 m grid cells occupied by each species, the latter providing a standard measure of abundance that is useful for population monitoring purposes, and for comparisons of populations between sites. The only species of the Atlantic woodland bryophyte assemblage excluded from this method was *Scapania gracilis*, which occurred far too frequently within the SSSI to allow accurate grid-mapping in the time available.

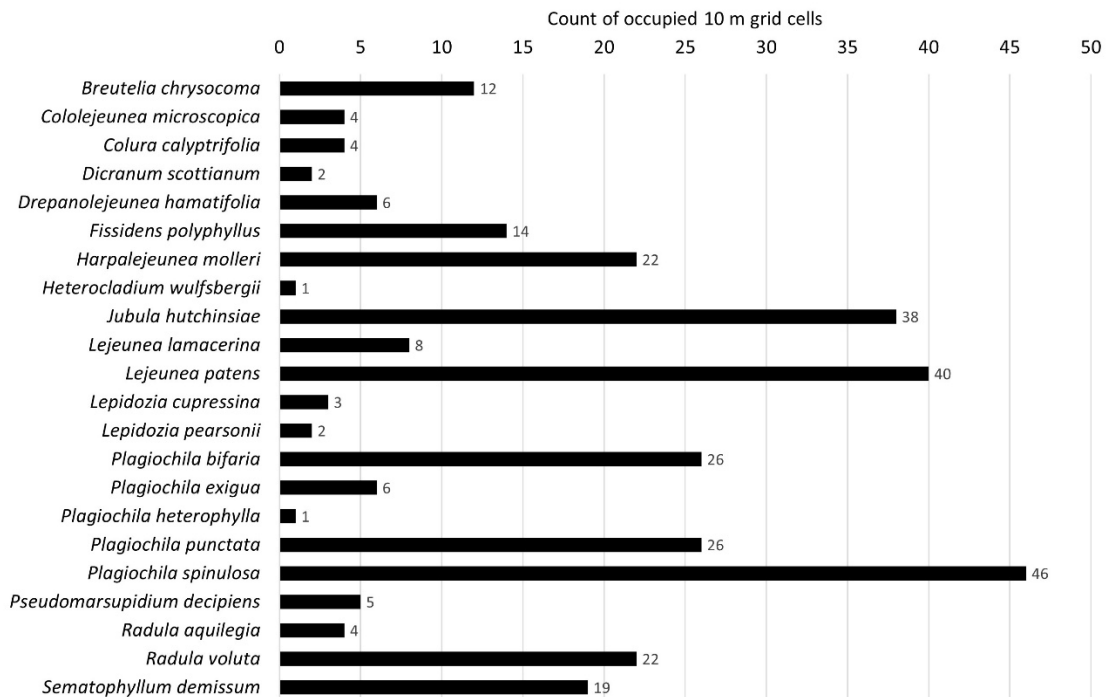
### 4.2. Fixed-point photographic plots

A series of fixed-point photographic monitoring plots were established to illustrate the locations of some of the more notable species, and the current condition of their habitat. These plots are useful when re-visited for relocating key species and for helping to judge the cause of any changes in abundance.

## 5. Results

### 5.1. Grid-mapping of species

Species records and GPS data collected during the present survey are provided in Appendix 1, and 10 m grid-maps of each species are provided in Appendix 2. Figure 3 shows counts of 10 m grid cells occupied by each species.



**Figure 3** Counts of OS 10 m grid cells occupied by Atlantic bryophyte species within Coedydd Nantgwynant SSSI. Note: *Scapania gracilis* is excluded because it occurred too frequently to map accurately.

### 5.2. Fixed-point photographic plots

Appendix 3 provides a series of 23 fixed-point photographic monitoring plots.

## 6. Discussion

Two species from the Atlantic woodland bryophyte assemblage that have been recorded from Coedydd Nantgwynant SSSI previously were not refound during the present survey: *Andreaea megistospora* and *Rhynchostegium alopecuroides*. There is one record of the former, by M.E. Newton from SH66065352 in 2002. The location was revisited during the present survey, and includes rock exposures bordering the woodland margin, above Gwastadannas. The only costate *Andreaea* that was seen in this area was the common *A. rothii*, which is frequent on the rock outcrops, together with smaller amounts of *A. rupestris*. *Rhynchostegium alopecuroides* was recorded from the Afon Feingam

by D.J.T. Dobson in 2015. The entire river within the SSSI was searched during the present survey, but only the common look-alike *R. riparioides* was seen, which is locally abundant in several other streams in the SSSI. The lower section of the Afon Feingam outside the SSSI was also surveyed by the author in December 2025 for a separate project, but again only *R. riparioides* was seen. Due to possible confusion with look-alike species and without confirmed voucher specimens, both *Andreaea megistospora* and *Rhynchostegium alopecuroides* are here considered to be unconfirmed records from the SSSI.

Six species from the Atlantic woodland bryophyte assemblage not previously recorded from the SSSI were discovered during the present survey: *Colura calyptrifolia*, *Dicranum scottianum*, *Drepanolejeunea hamatifolia*, *Heterocladium wulfsbergii*, *Lepidozia cupressina* and *Lepidozia pearsonii*. This makes a total of 23 species from the Atlantic woodland bryophyte assemblage that are presently known to occur in the SSSI (*Breutelia chrysocoma*, *Cololejeunea microscopica*, *Colura calyptrifolia*, *Dicranum scottianum*, *Drepanolejeunea hamatifolia*, *Fissidens polyphyllus*, *Harpalejeunea molleri*, *Heterocladium wulfsbergii*, *Jubula hutchinsiae*, *Lejeunea lamacerina*, *Lejeunea patens*, *Lepidozia cupressina*, *Lepidozia pearsonii*, *Plagiochila bifaria*, *Plagiochila exigua*, *Plagiochila heterophylla*, *Plagiochila punctata*, *Plagiochila spinulosa*, *Pseudomarsupidium decipiens*, *Radula aquilegia*, *Radula voluta*, *Scapania gracilis* and *Sematophyllum demissum*). In terms of species diversity, this makes it the richest SSSI in Wales for the Atlantic woodland bryophyte assemblage.

In the context of Wales, the rarest species known from the SSSI is *Plagiochila heterophylla*, which was found by G.P. Rothero in the Afon Feingam valley in 2005, at somewhere around SH657526. The species has not been seen since in this valley, and was not refound during the present survey, though the habitat continues to look favourable, with locally frequent *P. spinulosa* which is otherwise generally scarce within the SSSI. A detailed species-specific survey would be needed to confirm the presence/absence of *P. heterophylla* in the Afon Feingam valley. In this context, the discovery of a new population of *P. heterophylla* within the SSSI, at Dinas Emrys, was the highlight of the current survey. It was only seen in very small quantity (see Plot 16 of Appendix 3), but a detailed species-specific survey would likely reveal further colonies within the site.

## 7. Acknowledgements

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## 8. References

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## 9. Appendices

### 9.1. Appendix 1: Species records

Species	Date	Location	Spatial reference
<i>Anastrophyllum hellerianum</i>	03-03-2026	Dinas Emrys	SH6069449291
<i>Anastrophyllum hellerianum</i>	03-03-2026	Dinas Emrys	SH6064449294
<i>Andreaea rothii</i> subsp. <i>falcata</i>	03-03-2026	Coed Bwlch-derw	SH6180749309
<i>Andreaea rothii</i> subsp. <i>falcata</i>	03-03-2026	Dinas Emrys	SH6076049281
<i>Andreaea rothii</i> subsp. <i>falcata</i>	02-03-2026	Gwastadannas, East of	SH6606653526
<i>Andreaea rothii</i> subsp. <i>falcata</i>	02-03-2026	Gwastadannas, East of	SH6604453506
<i>Bartramia pomiformis</i>	03-03-2026	Dinas Emrys	SH6049749230
<i>Bazzania tricrenata</i>	03-03-2026	Coed Bwlch-derw	SH6178849206
<i>Bazzania tricrenata</i>	03-03-2026	Coed Bwlch-derw	SH6193849317
<i>Bazzania tricrenata</i>	03-03-2026	Coed Bwlch-derw	SH6195949307
<i>Bazzania tricrenata</i>	03-03-2026	Coed Bwlch-derw	SH6195949307
<i>Blindia acuta</i>	30-12-2025	Afon Feingam valley	SH6614252924
<i>Blindia acuta</i>	02-03-2026	Hafod Rhisgl, North-east of	SH6584553117
<i>Breutelia chrysocoma</i>	30-12-2025	Afon Feingam valley	SH6606052801
<i>Breutelia chrysocoma</i>	30-12-2025	Afon Feingam valley	SH6604052814
<i>Breutelia chrysocoma</i>	30-12-2025	Afon Feingam valley	SH6599452815
<i>Breutelia chrysocoma</i>	02-03-2026	Gwastadannas, East of	SH6605053501
<i>Breutelia chrysocoma</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6588052490
<i>Breutelia chrysocoma</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6589852485
<i>Breutelia chrysocoma</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6601052468
<i>Breutelia chrysocoma</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6589252379
<i>Breutelia chrysocoma</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6592752430
<i>Breutelia chrysocoma</i>	04-03-2026	Llyn Gwynant, East of	SH6480351545
<i>Breutelia chrysocoma</i>	04-03-2026	Llyn Gwynant, East of	SH6481951521
<i>Breutelia chrysocoma</i>	04-03-2026	Llyn Gwynant, East of	SH6524951876
<i>Cephalozia lunulifolia</i>	03-03-2026	Dinas Emrys	SH6069449292
<i>Cephaloziella divaricata</i>	04-03-2026	Llyn Gwynant, East of	SH6477851567
<i>Chionoloma cylindrotheca</i>	04-03-2026	Llyn Gwynant, East of	SH6488951483
<i>Cirriphyllum piliferum</i>	02-03-2026	Hafod Rhisgl, North-east of	SH6585453120
<i>Cirriphyllum piliferum</i>	04-03-2026	Llyn Gwynant, East of	SH6508451941
<i>Cololejeunea microscopica</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6577052520
<i>Cololejeunea microscopica</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6577252528
<i>Cololejeunea microscopica</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6579352523
<i>Cololejeunea microscopica</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6579952521
<i>Cololejeunea microscopica</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6585252503
<i>Cololejeunea microscopica</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6587652491
<i>Colura calyptrifolia</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6585052505
<i>Colura calyptrifolia</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6586952494
<i>Colura calyptrifolia</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6589652398
<i>Colura calyptrifolia</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6587652405
<i>Conocephalum conicum</i>	04-03-2026	Hafod lwyfog	SH6539252226
<i>Conocephalum salebrosum</i>	02-03-2026	Hafod Rhisgl, North-east of	SH6583453120
<i>Cynodontium bruntonii</i>	03-03-2026	Dinas Emrys	SH6066149321
<i>Dicranodontium denudatum</i>	02-03-2026	Hafod Rhisgl, North-east of	SH6603053138
<i>Dicranum scottianum</i>	03-03-2026	Dinas Emrys	SH6061249262
<i>Dicranum scottianum</i>	03-03-2026	Dinas Emrys	SH6060449263

Species	Date	Location	Spatial reference
<i>Drepanolejeunea hamatifolia</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6577352527
<i>Drepanolejeunea hamatifolia</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6583052513
<i>Drepanolejeunea hamatifolia</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6586352499
<i>Drepanolejeunea hamatifolia</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6588152488
<i>Drepanolejeunea hamatifolia</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6589052403
<i>Drepanolejeunea hamatifolia</i>	04-03-2026	Llyn Gwynant, East of	SH6489651732
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6182449362
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6181949361
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6181549351
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6180549329
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6180549329
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6180749322
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6180449317
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6180449317
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6180649307
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6180749309
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6180049300
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6180049300
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6180049279
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6178949275
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6178949275
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6178949275
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6178949275
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6178549259
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6178649247
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6178649247
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6178949240
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6178749229
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6178749229
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6179149219
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6179149216
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6179149216
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6178849206
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6178849206
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6178849206
<i>Fissidens polyphyllus</i>	03-03-2026	Coed Bwlch-derw	SH6177949195
<i>Fontinalis antipyretica</i> subsp. <i>antipyretica</i>	04-03-2026	Hafod Iwyfog	SH6544652166
<i>Frullania fragilifolia</i>	03-03-2026	Dinas Emrys	SH6052649244
<i>Grimmia hartmanii</i>	30-12-2025	Afon Feingam valley	SH6613152909
<i>Gymnomitrium crenulatum</i>	04-03-2026	Llyn Gwynant, East of	SH6494151616
<i>Harpalejeunea molleri</i>	02-03-2026	Gwastadannas, East of	SH6597653510
<i>Harpalejeunea molleri</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6577052520
<i>Harpalejeunea molleri</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6577452529
<i>Harpalejeunea molleri</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6579152524
<i>Harpalejeunea molleri</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6579952521
<i>Harpalejeunea molleri</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6581452519
<i>Harpalejeunea molleri</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6582752515
<i>Harpalejeunea molleri</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6583352513
<i>Harpalejeunea molleri</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6585052505
<i>Harpalejeunea molleri</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6586152501
<i>Harpalejeunea molleri</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6587352492

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Harpalejeunea molleri	31-12-2025	Hafod Rhisgl, South-east of	SH6587652491
Harpalejeunea molleri	31-12-2025	Hafod Rhisgl, South-east of	SH6588452486
Harpalejeunea molleri	31-12-2025	Hafod Rhisgl, South-east of	SH6589052484
Harpalejeunea molleri	31-12-2025	Hafod Rhisgl, South-east of	SH6589752486
Harpalejeunea molleri	31-12-2025	Hafod Rhisgl, South-east of	SH6590152485
Harpalejeunea molleri	31-12-2025	Hafod Rhisgl, South-east of	SH6595852462
Harpalejeunea molleri	31-12-2025	Hafod Rhisgl, South-east of	SH6589152402
Harpalejeunea molleri	31-12-2025	Hafod Rhisgl, South-east of	SH6581452414
Harpalejeunea molleri	31-12-2025	Hafod Rhisgl, South-east of	SH6578652401
Harpalejeunea molleri	31-12-2025	Hafod Rhisgl, South-east of	SH6576052423
Harpalejeunea molleri	31-12-2025	Hafod Rhisgl, South-east of	SH6594152453
Harpalejeunea molleri	31-12-2025	Hafod Rhisgl, South-east of	SH6586252462
Harpalejeunea molleri	04-03-2026	Llyn Gwynant, East of	SH6479751555
Harpalejeunea molleri	04-03-2026	Llyn Gwynant, East of	SH6505651965
Harpalejeunea molleri	04-03-2026	Llyn Gwynant, East of	SH6507451947
Heterocladium wulfsbergii	03-03-2026	Coed Bwlch-derw	SH6180649307
Hookeria lucens	04-03-2026	Llyn Gwynant, East of	SH6489051483
Hylocomiastrum umbratum	31-12-2025	Hafod Rhisgl, South-east of	SH6585952343
Hypnum cupressiforme var. cupressiforme	03-03-2026	Coed Bwlch-derw	SH6176749227
Hypnum cupressiforme var. cupressiforme	02-03-2026	Hafod Rhisgl, North-east of	SH6603153136
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6583752769
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6584252770
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6584552767
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6588152758
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6588852755
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6591752774
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6593452790
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6595052806
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6595952810
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6598052813
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6598452813
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6598552814
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6600752842
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6603552879
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6603752880
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6604052884
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6604152886
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6605552888
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6605852888
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6606452889
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6606652888
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6607152889
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6608052893
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6608852891
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6609152891
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6609652891
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6609552891
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6611252901
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6613152907
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6613052911
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6612852913

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Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6613652920
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6613952922
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6614652928
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6615252926
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6616052927
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6616152928
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6616952933
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6618352941
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6621252961
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6621952969
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6622152970
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6604452809
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6601352821
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6600752820
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6598952815
Jubula hutchinsiae	30-12-2025	Afon Feingam valley	SH6598852816
Jubula hutchinsiae	04-03-2026	Hafod Iwyfog	SH6539652223
Jubula hutchinsiae	31-12-2025	Hafod Rhisgl, South-east of	SH6575152534
Jubula hutchinsiae	31-12-2025	Hafod Rhisgl, South-east of	SH6575552533
Jubula hutchinsiae	31-12-2025	Hafod Rhisgl, South-east of	SH6578152525
Jubula hutchinsiae	31-12-2025	Hafod Rhisgl, South-east of	SH6579652520
Jubula hutchinsiae	31-12-2025	Hafod Rhisgl, South-east of	SH6586352497
Jubula hutchinsiae	31-12-2025	Hafod Rhisgl, South-east of	SH6591452481
Jubula hutchinsiae	31-12-2025	Hafod Rhisgl, South-east of	SH6600452458
Jubula hutchinsiae	31-12-2025	Hafod Rhisgl, South-east of	SH6576752550
Lejeunea lamacerina	30-12-2025	Afon Feingam valley	SH6581152750
Lejeunea lamacerina	30-12-2025	Afon Feingam valley	SH6600352836
Lejeunea lamacerina	04-03-2026	Hafod Iwyfog	SH6549552096
Lejeunea lamacerina	04-03-2026	Hafod Iwyfog	SH6539452226
Lejeunea lamacerina	02-03-2026	Hafod Rhisgl, North-east of	SH6599653173
Lejeunea lamacerina	31-12-2025	Hafod Rhisgl, South-east of	SH6568652554
Lejeunea lamacerina	04-03-2026	Llyn Gwynant, East of	SH6507751945
Lejeunea lamacerina	04-03-2026	Llyn Gwynant, East of	SH6514451884
Lejeunea patens	30-12-2025	Afon Feingam valley	SH6582752763
Lejeunea patens	30-12-2025	Afon Feingam valley	SH6599052822
Lejeunea patens	30-12-2025	Afon Feingam valley	SH6612352894
Lejeunea patens	30-12-2025	Afon Feingam valley	SH6618052940
Lejeunea patens	30-12-2025	Afon Feingam valley	SH6620552901
Lejeunea patens	30-12-2025	Afon Feingam valley	SH6607352789
Lejeunea patens	30-12-2025	Afon Feingam valley	SH6601352821
Lejeunea patens	30-12-2025	Afon Feingam valley	SH6588952716
Lejeunea patens	02-03-2026	Gwastadannas, East of	SH6592853470
Lejeunea patens	02-03-2026	Gwastadannas, East of	SH6597653509
Lejeunea patens	02-03-2026	Gwastadannas, East of	SH6601053513
Lejeunea patens	02-03-2026	Gwastadannas, East of	SH6602553451
Lejeunea patens	04-03-2026	Hafod Iwyfog	SH6550852079
Lejeunea patens	04-03-2026	Hafod Iwyfog	SH6548752104
Lejeunea patens	04-03-2026	Hafod Iwyfog	SH6531552275
Lejeunea patens	02-03-2026	Hafod Rhisgl, North-east of	SH6586153123
Lejeunea patens	02-03-2026	Hafod Rhisgl, North-east of	SH6592353135
Lejeunea patens	02-03-2026	Hafod Rhisgl, North-east of	SH6593153134

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<i>Lejeunea patens</i>	02-03-2026	Hafod Rhisgl, North-east of	SH6595353136
<i>Lejeunea patens</i>	02-03-2026	Hafod Rhisgl, North-east of	SH6603653193
<i>Lejeunea patens</i>	02-03-2026	Hafod Rhisgl, North-east of	SH6604353197
<i>Lejeunea patens</i>	02-03-2026	Hafod Rhisgl, North-east of	SH6604553183
<i>Lejeunea patens</i>	02-03-2026	Hafod Rhisgl, North-east of	SH6603153181
<i>Lejeunea patens</i>	02-03-2026	Hafod Rhisgl, North-east of	SH6602653180
<i>Lejeunea patens</i>	02-03-2026	Hafod Rhisgl, North-east of	SH6602153132
<i>Lejeunea patens</i>	02-03-2026	Hafod Rhisgl, North-east of	SH6598653136
<i>Lejeunea patens</i>	02-03-2026	Hafod Rhisgl, North-east of	SH6591953115
<i>Lejeunea patens</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6588652483
<i>Lejeunea patens</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6595852462
<i>Lejeunea patens</i>	04-03-2026	Llyn Gwynant, East of	SH6477351570
<i>Lejeunea patens</i>	04-03-2026	Llyn Gwynant, East of	SH6480351546
<i>Lejeunea patens</i>	04-03-2026	Llyn Gwynant, East of	SH6486251491
<i>Lejeunea patens</i>	04-03-2026	Llyn Gwynant, East of	SH6487351488
<i>Lejeunea patens</i>	04-03-2026	Llyn Gwynant, East of	SH6487751487
<i>Lejeunea patens</i>	04-03-2026	Llyn Gwynant, East of	SH6488551483
<i>Lejeunea patens</i>	04-03-2026	Llyn Gwynant, East of	SH6489951488
<i>Lejeunea patens</i>	04-03-2026	Llyn Gwynant, East of	SH6491551492
<i>Lejeunea patens</i>	04-03-2026	Llyn Gwynant, East of	SH6506151964
<i>Lejeunea patens</i>	04-03-2026	Llyn Gwynant, East of	SH6508951939
<i>Lejeunea patens</i>	04-03-2026	Llyn Gwynant, East of	SH6510951937
<i>Lejeunea patens</i>	04-03-2026	Llyn Gwynant, East of	SH6511651894
<i>Lepidozia cupressina</i>	03-03-2026	Dinas Emrys	SH6064449262
<i>Lepidozia cupressina</i>	03-03-2026	Dinas Emrys	SH6061449267
<i>Lepidozia cupressina</i>	03-03-2026	Dinas Emrys	SH6061249267
<i>Lepidozia cupressina</i>	03-03-2026	Dinas Emrys	SH6064349284
<i>Lepidozia pearsonii</i>	03-03-2026	Dinas Emrys	SH6068649283
<i>Lepidozia pearsonii</i>	03-03-2026	Dinas Emrys	SH6066349316
<i>Marchesinia mackaii</i>	02-03-2026	Hafod Rhisgl, North-east of	SH6579753217
<i>Marsupella aquatica</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6586352497
<i>Metzgeria consanguinea</i>	30-12-2025	Afon Feingam valley	SH6598852818
<i>Metzgeria consanguinea</i>	04-03-2026	Hafod Iwyfog	SH6548852103
<i>Metzgeria consanguinea</i>	04-03-2026	Llyn Gwynant, East of	SH6507751947
<i>Microlejeunea ulicina</i>	03-03-2026	Coed Bwlch-derw	SH6178949275
<i>Microlejeunea ulicina</i>	03-03-2026	Dinas Emrys	SH6074549182
<i>Mylia taylorii</i>	03-03-2026	Coed Bwlch-derw	SH6178849206
<i>Mylia taylorii</i>	03-03-2026	Coed Bwlch-derw	SH6195949307
<i>Neckera crispa</i>	30-12-2025	Afon Feingam valley	SH6586852761
<i>Neckera crispa</i>	30-12-2025	Afon Feingam valley	SH6598052813
<i>Neckera crispa</i>	02-03-2026	Gwastadannas, East of	SH6597553494
<i>Neckera crispa</i>	04-03-2026	Hafod Iwyfog	SH6539652222
<i>Neckera crispa</i>	04-03-2026	Llyn Gwynant, East of	SH6489051483
<i>Orthocaulis attenuatus</i>	04-03-2026	Llyn Gwynant, East of	SH6462051620
<i>Plagiochila asplenioides</i>	04-03-2026	Llyn Gwynant, East of	SH6487951487
<i>Plagiochila bifaria</i>	30-12-2025	Afon Feingam valley	SH6582552760
<i>Plagiochila bifaria</i>	30-12-2025	Afon Feingam valley	SH6593852795
<i>Plagiochila bifaria</i>	30-12-2025	Afon Feingam valley	SH6607552889
<i>Plagiochila bifaria</i>	30-12-2025	Afon Feingam valley	SH6610052889
<i>Plagiochila bifaria</i>	30-12-2025	Afon Feingam valley	SH6620452901
<i>Plagiochila bifaria</i>	30-12-2025	Afon Feingam valley	SH6618652868

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Plagiochila bifaria	30-12-2025	Afon Feingam valley	SH6615952809
Plagiochila bifaria	30-12-2025	Afon Feingam valley	SH6615252762
Plagiochila bifaria	30-12-2025	Afon Feingam valley	SH6613852766
Plagiochila bifaria	30-12-2025	Afon Feingam valley	SH6610952782
Plagiochila bifaria	30-12-2025	Afon Feingam valley	SH6607352789
Plagiochila bifaria	30-12-2025	Afon Feingam valley	SH6604752808
Plagiochila bifaria	30-12-2025	Afon Feingam valley	SH6600152822
Plagiochila bifaria	30-12-2025	Afon Feingam valley	SH6584852682
Plagiochila bifaria	02-03-2026	Gwastadannas, East of	SH6597053497
Plagiochila bifaria	02-03-2026	Gwastadannas, East of	SH6599753519
Plagiochila bifaria	02-03-2026	Gwastadannas, East of	SH6603053475
Plagiochila bifaria	02-03-2026	Hafod Rhisgl, North-east of	SH6581153213
Plagiochila bifaria	02-03-2026	Hafod Rhisgl, North-east of	SH6583553121
Plagiochila bifaria	02-03-2026	Hafod Rhisgl, North-east of	SH6603753192
Plagiochila bifaria	02-03-2026	Hafod Rhisgl, North-east of	SH6603753193
Plagiochila bifaria	02-03-2026	Hafod Rhisgl, North-east of	SH6596753138
Plagiochila bifaria	31-12-2025	Hafod Rhisgl, South-east of	SH6569852552
Plagiochila bifaria	31-12-2025	Hafod Rhisgl, South-east of	SH6592652350
Plagiochila bifaria	31-12-2025	Hafod Rhisgl, South-east of	SH6582852400
Plagiochila bifaria	31-12-2025	Hafod Rhisgl, South-east of	SH6594752435
Plagiochila bifaria	04-03-2026	Llyn Gwynant, East of	SH6490551491
Plagiochila exigua	30-12-2025	Afon Feingam valley	SH6607152794
Plagiochila exigua	02-03-2026	Gwastadannas, East of	SH6597653510
Plagiochila exigua	31-12-2025	Hafod Rhisgl, South-east of	SH6584252506
Plagiochila exigua	31-12-2025	Hafod Rhisgl, South-east of	SH6586152503
Plagiochila exigua	31-12-2025	Hafod Rhisgl, South-east of	SH6588552486
Plagiochila exigua	31-12-2025	Hafod Rhisgl, South-east of	SH6576052423
Plagiochila heterophylla	03-03-2026	Dinas Emrys	SH6066049270
Plagiochila punctata	03-03-2026	Coed Bwlch-derw	SH6177749258
Plagiochila punctata	03-03-2026	Dinas Emrys	SH6074449182
Plagiochila punctata	03-03-2026	Dinas Emrys	SH6076849293
Plagiochila punctata	03-03-2026	Dinas Emrys	SH6075549308
Plagiochila punctata	03-03-2026	Dinas Emrys	SH6070049297
Plagiochila punctata	03-03-2026	Dinas Emrys	SH6068449283
Plagiochila punctata	03-03-2026	Dinas Emrys	SH6067849275
Plagiochila punctata	03-03-2026	Dinas Emrys	SH6065149261
Plagiochila punctata	03-03-2026	Dinas Emrys	SH6061249267
Plagiochila punctata	03-03-2026	Dinas Emrys	SH6064749296
Plagiochila punctata	03-03-2026	Dinas Emrys	SH6065249300
Plagiochila punctata	03-03-2026	Dinas Emrys	SH6065849309
Plagiochila punctata	03-03-2026	Dinas Emrys	SH6066049311
Plagiochila punctata	03-03-2026	Dinas Emrys	SH6050049239
Plagiochila punctata	03-03-2026	Dinas Emrys	SH6049549230
Plagiochila punctata	03-03-2026	Dinas Emrys	SH6049349231
Plagiochila punctata	02-03-2026	Gwastadannas, East of	SH6597453503
Plagiochila punctata	02-03-2026	Gwastadannas, East of	SH6602753479
Plagiochila punctata	02-03-2026	Hafod Rhisgl, North-east of	SH6593453130
Plagiochila punctata	31-12-2025	Hafod Rhisgl, South-east of	SH6572952541
Plagiochila punctata	31-12-2025	Hafod Rhisgl, South-east of	SH6576152531
Plagiochila punctata	31-12-2025	Hafod Rhisgl, South-east of	SH6583552511
Plagiochila punctata	31-12-2025	Hafod Rhisgl, South-east of	SH6587152492

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Plagiochila punctata	31-12-2025	Hafod Rhisgl, South-east of	SH6597152466
Plagiochila punctata	31-12-2025	Hafod Rhisgl, South-east of	SH6589052403
Plagiochila punctata	31-12-2025	Hafod Rhisgl, South-east of	SH6588152403
Plagiochila punctata	04-03-2026	Llyn Gwynant, East of	SH6489351482
Plagiochila spinulosa	30-12-2025	Afon Feingam valley	SH6610152890
Plagiochila spinulosa	30-12-2025	Afon Feingam valley	SH6612452895
Plagiochila spinulosa	30-12-2025	Afon Feingam valley	SH6614352766
Plagiochila spinulosa	30-12-2025	Afon Feingam valley	SH6610252779
Plagiochila spinulosa	30-12-2025	Afon Feingam valley	SH6596352780
Plagiochila spinulosa	30-12-2025	Afon Feingam valley	SH6594852761
Plagiochila spinulosa	30-12-2025	Afon Feingam valley	SH6588652721
Plagiochila spinulosa	03-03-2026	Coed Bwlch-derw	SH6178849206
Plagiochila spinulosa	03-03-2026	Coed Bwlch-derw	SH6188649304
Plagiochila spinulosa	03-03-2026	Coed Bwlch-derw	SH6194649319
Plagiochila spinulosa	03-03-2026	Coed Bwlch-derw	SH6195349318
Plagiochila spinulosa	03-03-2026	Coed Bwlch-derw	SH6195949307
Plagiochila spinulosa	03-03-2026	Dinas Emrys	SH6074549176
Plagiochila spinulosa	03-03-2026	Dinas Emrys	SH6074249183
Plagiochila spinulosa	03-03-2026	Dinas Emrys	SH6074449189
Plagiochila spinulosa	03-03-2026	Dinas Emrys	SH6075149281
Plagiochila spinulosa	03-03-2026	Dinas Emrys	SH6073649358
Plagiochila spinulosa	03-03-2026	Dinas Emrys	SH6073349354
Plagiochila spinulosa	03-03-2026	Dinas Emrys	SH6071349320
Plagiochila spinulosa	03-03-2026	Dinas Emrys	SH6070449301
Plagiochila spinulosa	03-03-2026	Dinas Emrys	SH6069949294
Plagiochila spinulosa	03-03-2026	Dinas Emrys	SH6065149261
Plagiochila spinulosa	03-03-2026	Dinas Emrys	SH6064349270
Plagiochila spinulosa	03-03-2026	Dinas Emrys	SH6061049265
Plagiochila spinulosa	03-03-2026	Dinas Emrys	SH6065349301
Plagiochila spinulosa	03-03-2026	Dinas Emrys	SH6052849271
Plagiochila spinulosa	03-03-2026	Dinas Emrys	SH6050549239
Plagiochila spinulosa	03-03-2026	Dinas Emrys	SH6048149163
Plagiochila spinulosa	03-03-2026	Dinas Emrys	SH6051749121
Plagiochila spinulosa	02-03-2026	Gwastadannas, East of	SH6598353514
Plagiochila spinulosa	02-03-2026	Gwastadannas, East of	SH6599353518
Plagiochila spinulosa	02-03-2026	Gwastadannas, East of	SH6601953508
Plagiochila spinulosa	02-03-2026	Gwastadannas, East of	SH6603953520
Plagiochila spinulosa	02-03-2026	Gwastadannas, East of	SH6606653528
Plagiochila spinulosa	02-03-2026	Gwastadannas, East of	SH6602953474
Plagiochila spinulosa	04-03-2026	Hafod lwyfog	SH6550852079
Plagiochila spinulosa	02-03-2026	Hafod Rhisgl, North-east of	SH6590853137
Plagiochila spinulosa	02-03-2026	Hafod Rhisgl, North-east of	SH6592753130
Plagiochila spinulosa	02-03-2026	Hafod Rhisgl, North-east of	SH6593153134
Plagiochila spinulosa	02-03-2026	Hafod Rhisgl, North-east of	SH6603153136
Plagiochila spinulosa	02-03-2026	Hafod Rhisgl, North-east of	SH6600853129
Plagiochila spinulosa	02-03-2026	Hafod Rhisgl, North-east of	SH6597653138
Plagiochila spinulosa	31-12-2025	Hafod Rhisgl, South-east of	SH6577452528
Plagiochila spinulosa	31-12-2025	Hafod Rhisgl, South-east of	SH6578252524
Plagiochila spinulosa	04-03-2026	Llyn Gwynant, East of	SH6486951489
Plagiochila spinulosa	04-03-2026	Llyn Gwynant, East of	SH6489151484
Plagiochila spinulosa	04-03-2026	Llyn Gwynant, East of	SH6490151488

Species	Date	Location	Spatial reference
<i>Plagiochila spinulosa</i>	04-03-2026	Llyn Gwynant, East of	SH6497951826
<i>Porella arboris-vitae</i>	02-03-2026	Gwastadannas, East of	SH6597353495
<i>Porella arboris-vitae</i>	04-03-2026	Hafod Iwyfog	SH6539252226
<i>Pseudohygrohypnum eugyrium</i>	30-12-2025	Afon Feingam valley	SH6588252757
<i>Pseudohygrohypnum eugyrium</i>	02-03-2026	Hafod Rhisgl, North-east of	SH6584253115
<i>Pseudohygrohypnum eugyrium</i>	02-03-2026	Hafod Rhisgl, North-east of	SH6605353197
<i>Pseudomarsupidium decipiens</i>	30-12-2025	Afon Feingam valley	SH6593652723
<i>Pseudomarsupidium decipiens</i>	03-03-2026	Dinas Emrys	SH6065249261
<i>Pseudomarsupidium decipiens</i>	03-03-2026	Dinas Emrys	SH6064149269
<i>Pseudomarsupidium decipiens</i>	03-03-2026	Dinas Emrys	SH6064649295
<i>Pseudomarsupidium decipiens</i>	03-03-2026	Dinas Emrys	SH6059349335
<i>Radula aquilegia</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6579152524
<i>Radula aquilegia</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6579452522
<i>Radula aquilegia</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6581752517
<i>Radula aquilegia</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6582452516
<i>Radula aquilegia</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6585652504
<i>Radula voluta</i>	30-12-2025	Afon Feingam valley	SH6606652889
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6569252551
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6569652551
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6569752550
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6569952552
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6570752547
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6571952543
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6572152545
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6572752541
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6573152542
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6573552542
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6573652541
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6573952539
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6574252537
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6574352536
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6574552535
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6574852534
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6575152534
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6575352534
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6575552533
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6575852533
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6576352527
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6577052520
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6576952527
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6577352528
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6577352529
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6577552527
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6578252524
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6579652520
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6579952521
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6582752516
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6584052507
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6577352548
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6576052553
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6575852553

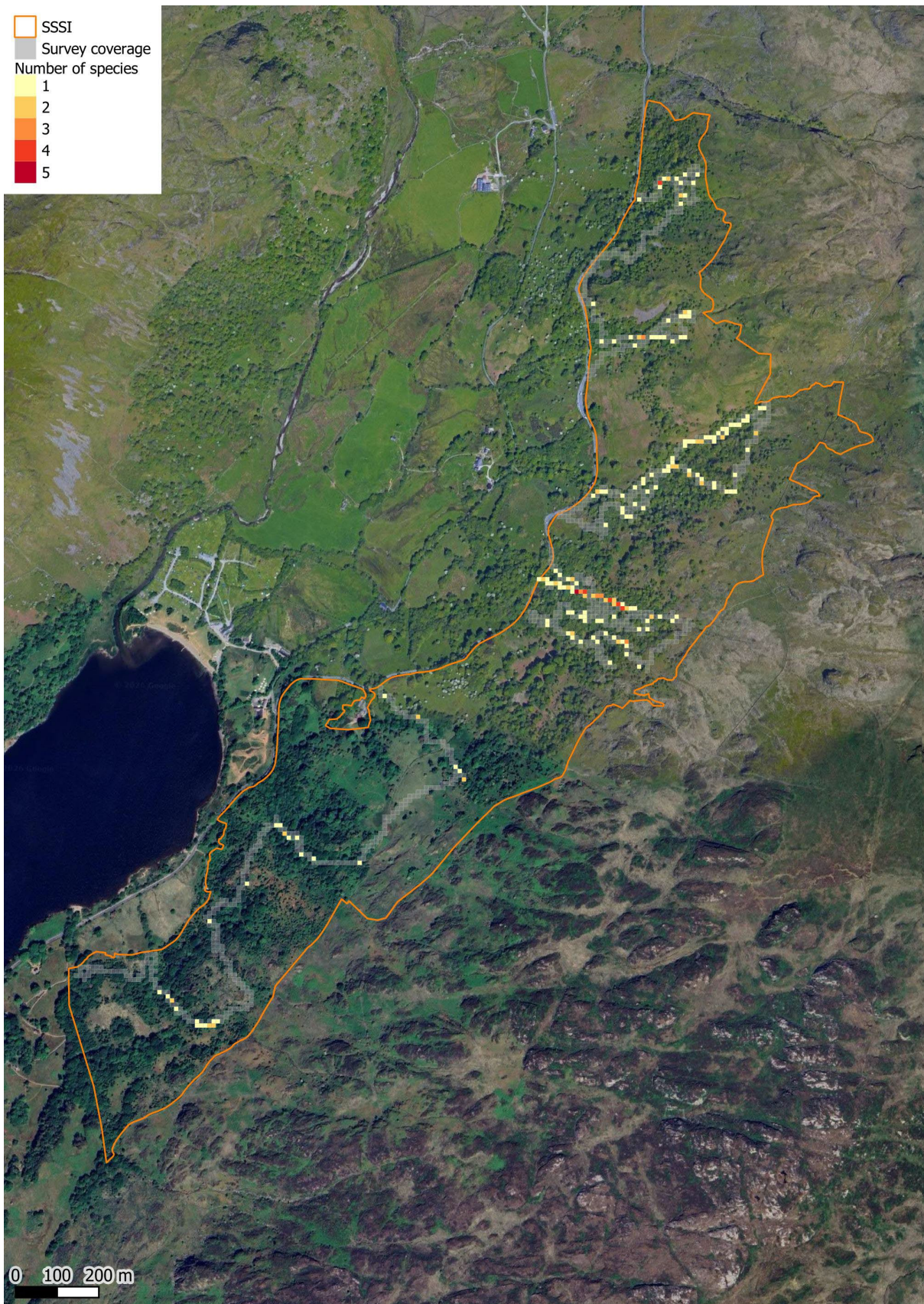
Species	Date	Location	Spatial reference
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6573552565
<i>Radula voluta</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6572752574
<i>Rhabdoweisia crenulata</i>	03-03-2026	Dinas Emrys	SH6074649174
<i>Rhabdoweisia crenulata</i>	03-03-2026	Dinas Emrys	SH6074849254
<i>Rhabdoweisia crenulata</i>	03-03-2026	Dinas Emrys	SH6070049294
<i>Rhabdoweisia crenulata</i>	03-03-2026	Dinas Emrys	SH6069049279
<i>Rhabdoweisia crenulata</i>	04-03-2026	Llyn Gwynant, East of	SH6490951672
<i>Rhynchostegium riparioides</i>	04-03-2026	Hafod lwyfog	SH6544652166
<i>Riccardia palmata</i>	30-12-2025	Afon Feingam valley	SH6593052782
<i>Riccardia palmata</i>	02-03-2026	Gwastadannas, East of	SH6605753547
<i>Riccardia palmata</i>	04-03-2026	Hafod lwyfog	SH6548852104
<i>Scapania gracilis</i>	30-12-2025	Afon Feingam valley	SH6611552900
<i>Scapania gracilis</i>	30-12-2025	Afon Feingam valley	SH6615852808
<i>Scapania gracilis</i>	30-12-2025	Afon Feingam valley	SH6615252762
<i>Scapania gracilis</i>	30-12-2025	Afon Feingam valley	SH6614352766
<i>Scapania gracilis</i>	30-12-2025	Afon Feingam valley	SH6611052779
<i>Scapania gracilis</i>	30-12-2025	Afon Feingam valley	SH6609552781
<i>Scapania gracilis</i>	03-03-2026	Coed Bwlch-derw	SH6162049357
<i>Scapania gracilis</i>	03-03-2026	Dinas Emrys	SH6076749294
<i>Scapania gracilis</i>	03-03-2026	Dinas Emrys	SH6076749362
<i>Scapania gracilis</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6595752462
<i>Scapania gracilis</i>	04-03-2026	Llyn Gwynant, East of	SH6472651601
<i>Sematophyllum demissum</i>	30-12-2025	Afon Feingam valley	SH6591552736
<i>Sematophyllum demissum</i>	30-12-2025	Afon Feingam valley	SH6591852731
<i>Sematophyllum demissum</i>	30-12-2025	Afon Feingam valley	SH6590552706
<i>Sematophyllum demissum</i>	30-12-2025	Afon Feingam valley	SH6589252702
<i>Sematophyllum demissum</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6587252408
<i>Sematophyllum demissum</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6586852411
<i>Sematophyllum demissum</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6586852413
<i>Sematophyllum demissum</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6584152425
<i>Sematophyllum demissum</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6584952351
<i>Sematophyllum demissum</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6576252412
<i>Sematophyllum demissum</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6576652418
<i>Sematophyllum demissum</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6575552424
<i>Sematophyllum demissum</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6570352445
<i>Sematophyllum demissum</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6570252445
<i>Sematophyllum demissum</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6570252456
<i>Sematophyllum demissum</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6575952480
<i>Sematophyllum demissum</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6575952471
<i>Sematophyllum demissum</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6578752470
<i>Sematophyllum demissum</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6579052473
<i>Sematophyllum demissum</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6579052472
<i>Sematophyllum demissum</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6579352460
<i>Sematophyllum demissum</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6579552454
<i>Sematophyllum demissum</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6579952458
<i>Sematophyllum demissum</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6582852454
<i>Sematophyllum demissum</i>	31-12-2025	Hafod Rhisgl, South-east of	SH6583652454
<i>Sphagnum fimbriatum</i>	03-03-2026	Dinas Emrys	SH6073949362
<i>Trichocolea tomentella</i>	30-12-2025	Afon Feingam valley	SH6588552754
<i>Trichocolea tomentella</i>	02-03-2026	Gwastadannas, East of	SH6603253516
<i>Trichocolea tomentella</i>	02-03-2026	Hafod Rhisgl, North-east of	SH6583653134

<b>Species</b>	<b>Date</b>	<b>Location</b>	<b>Spatial reference</b>
Trichocolea tomentella	02-03-2026	Hafod Rhisgl, North-east of	SH6604753183
Trichocolea tomentella	02-03-2026	Hafod Rhisgl, North-east of	SH6598253136
Trichocolea tomentella	04-03-2026	Llyn Gwynant, East of	SH6511151927
Tritomaria exsectiformis	03-03-2026	Dinas Emrys	SH6076749293
Tritomaria quinquedentata	02-03-2026	Gwastadannas, East of	SH6602753503
Zygodon rupestris	02-03-2026	Hafod Rhisgl, North-east of	SH6591453138

## 9.2. Appendix 2: Grid-maps of Atlantic bryophyte species



**Figure 1** Distribution and richness of the Atlantic woodland bryophyte assemblage within Units 1 and 2 of Coedydd Nantgwynant SSSI. Note: *Scapania gracilis* is excluded because it occurred too frequently to map accurately.



**Figure 2** Distribution and richness of the Atlantic woodland bryophyte assemblage within Unit 3 of Coedydd Nantgwynant SSSI. Note: *Scapania gracilis* is excluded because it occurred too frequently to map accurately.

- SSSI
- Survey coverage
- Occupied grid cell

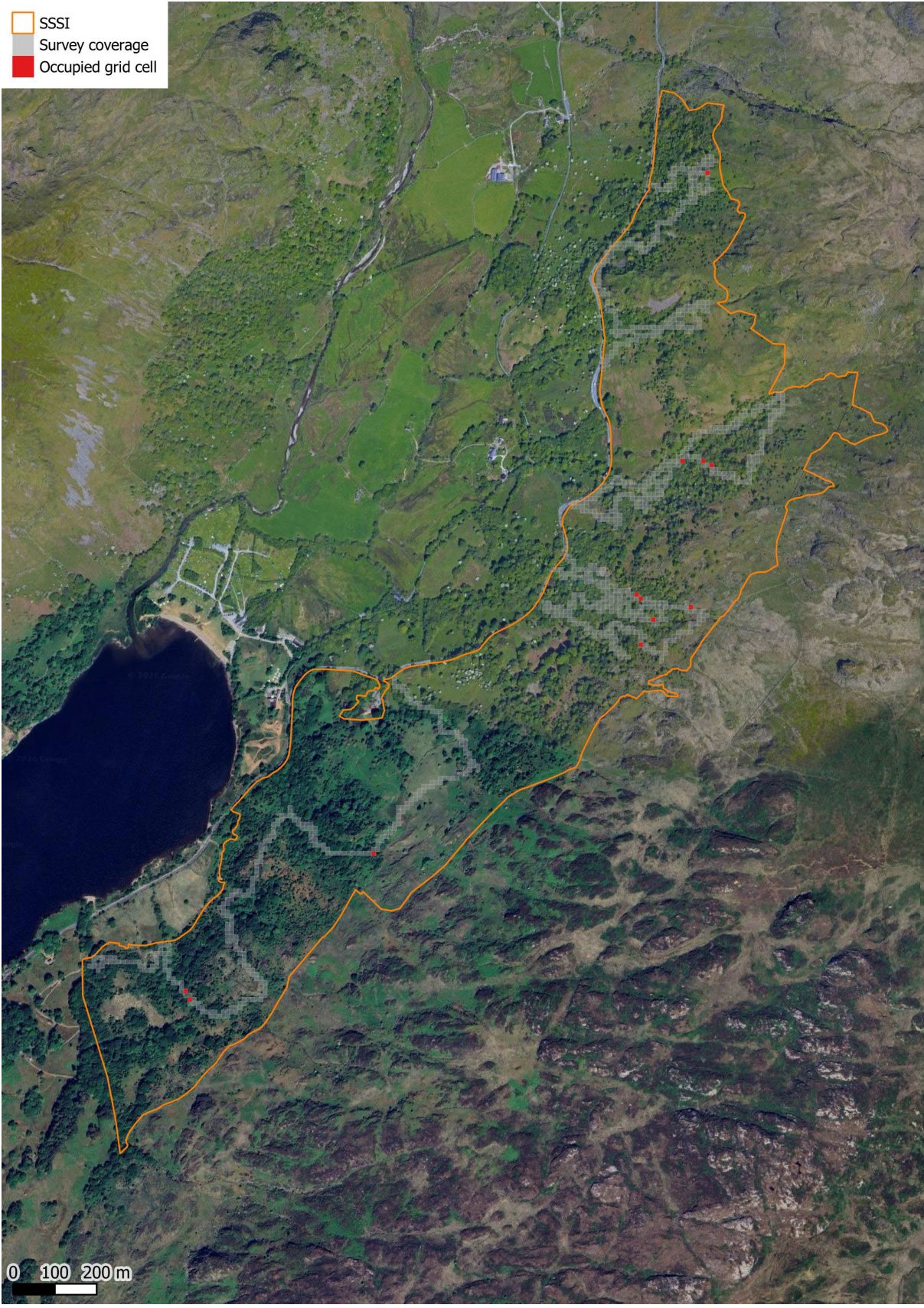
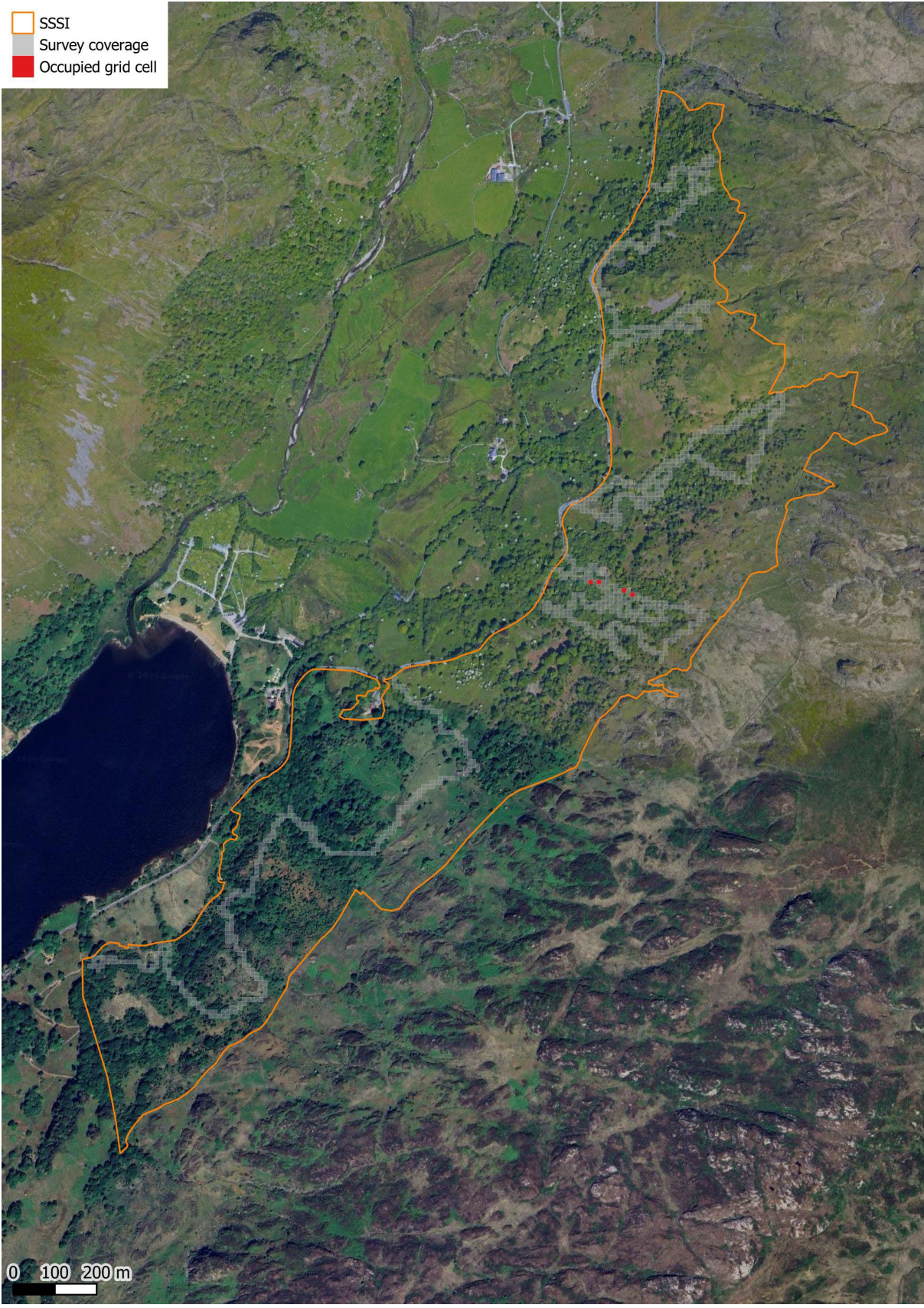


Figure 3 Distribution of *Breutelia chrysocoma* within Unit 3 of Coedydd Nantgwynant SSSI.

- SSSI
- Survey coverage
- Occupied grid cell



**Figure 4** Distribution of *Colelejeunea microscopica* within Unit 3 of Coedydd Nantgwynant SSSI.

- SSSI
- Survey coverage
- Occupied grid cell

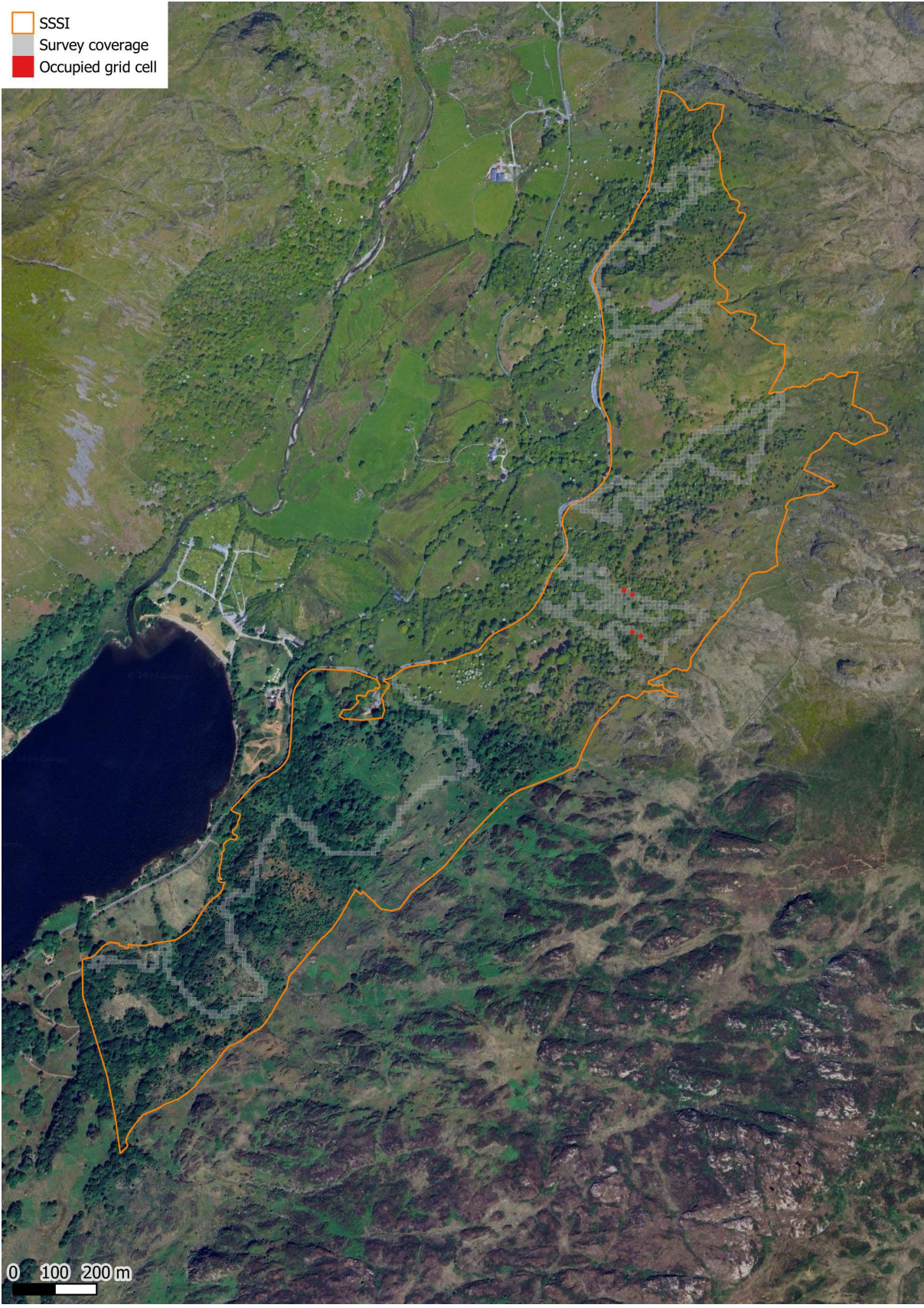
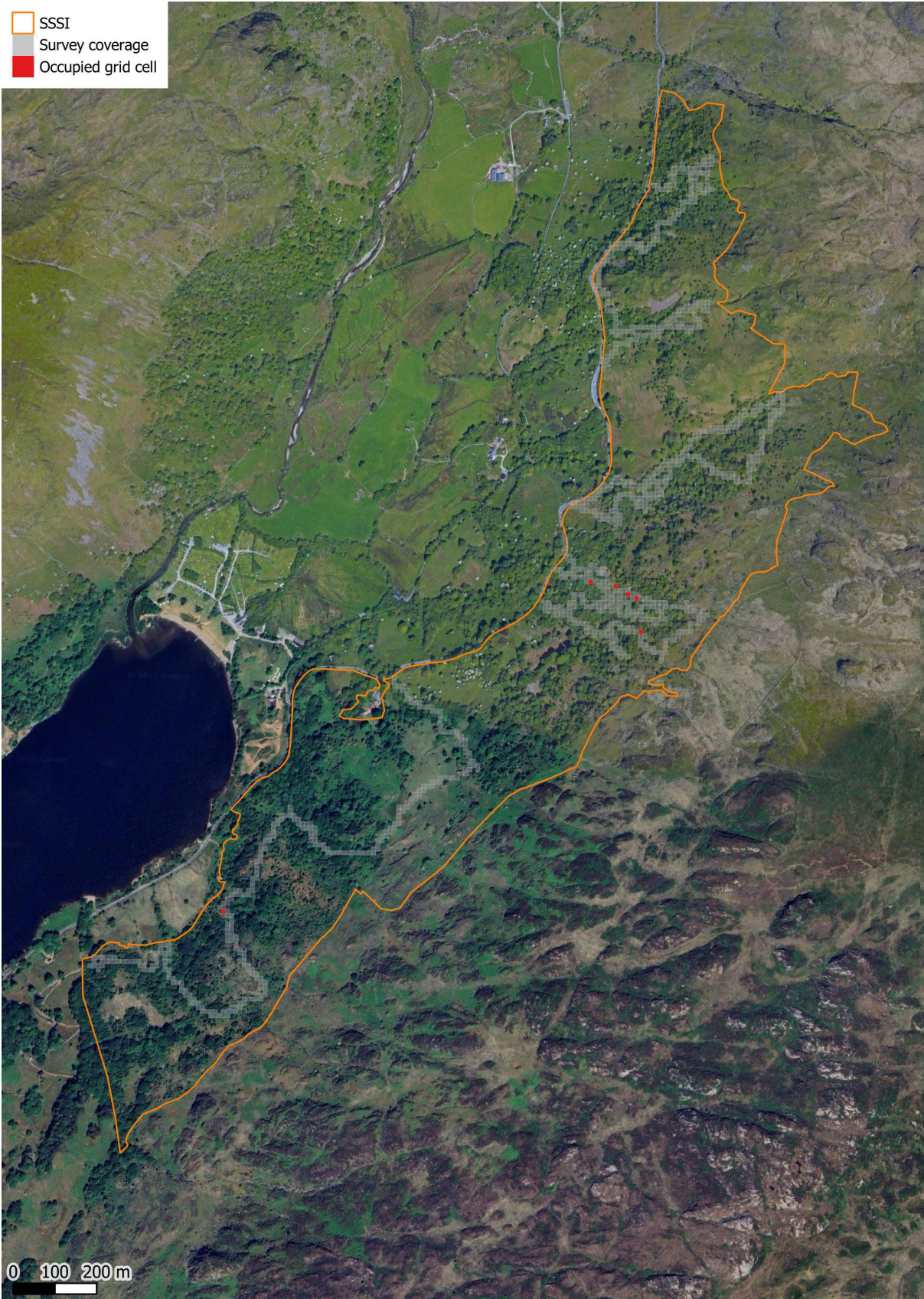
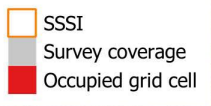


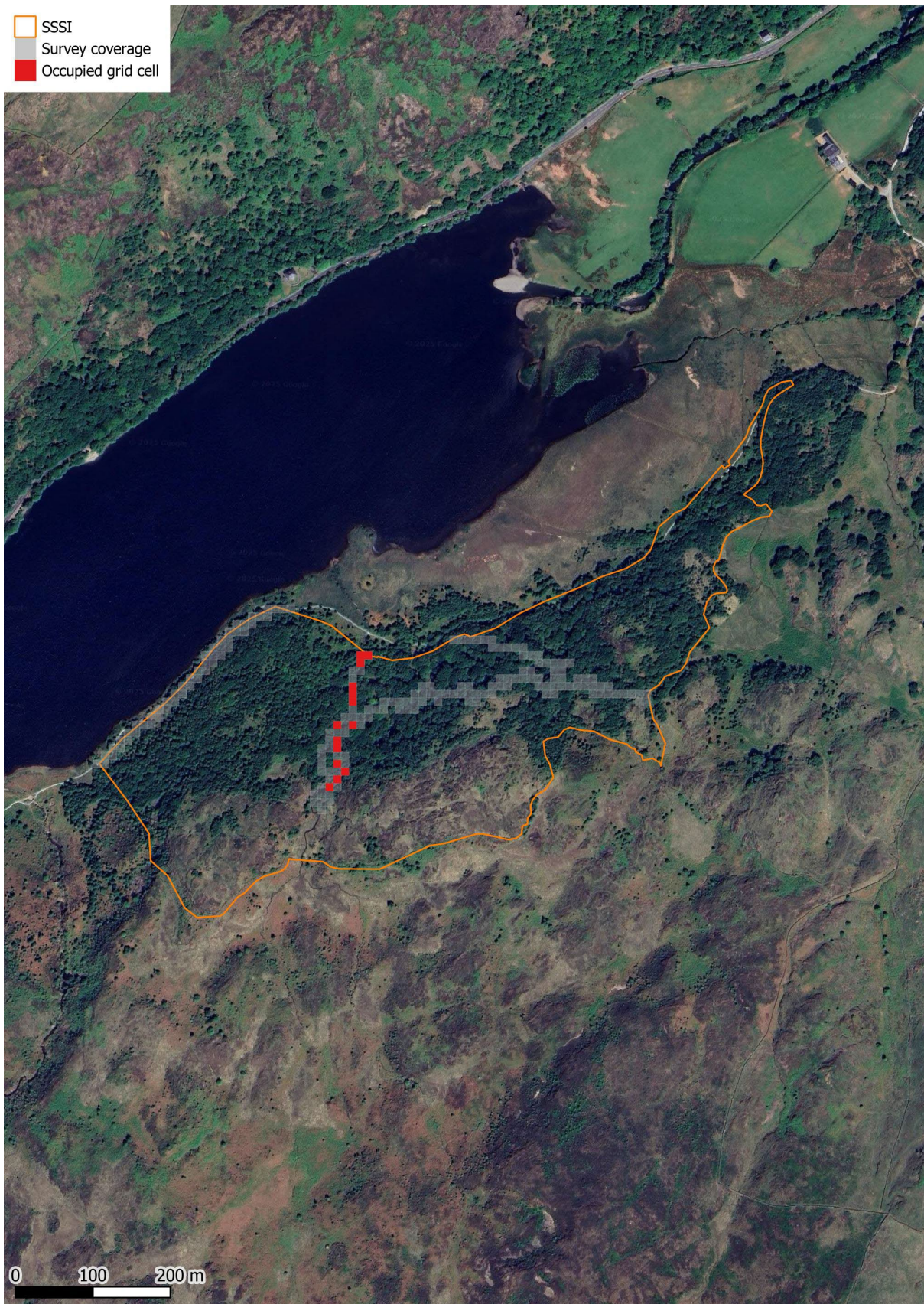
Figure 5 Distribution of *Colura calyptrifolia* within Unit 3 of Coedydd Nantgwynant SSSI.



**Figure 6** Distribution of *Dicranum scottianum* within Unit 1 of Coedydd Nantgwynant SSSI.



**Figure 7** Distribution of *Drepanolejeunea hamatifolia* within Unit 3 of Coedydd Nantgwynant SSSI.



**Figure 8** Distribution of *Fissidens polyphyllus* within Unit 2 of Coedydd Nantgwynant SSSI.

- SSSI
- Survey coverage
- Occupied grid cell

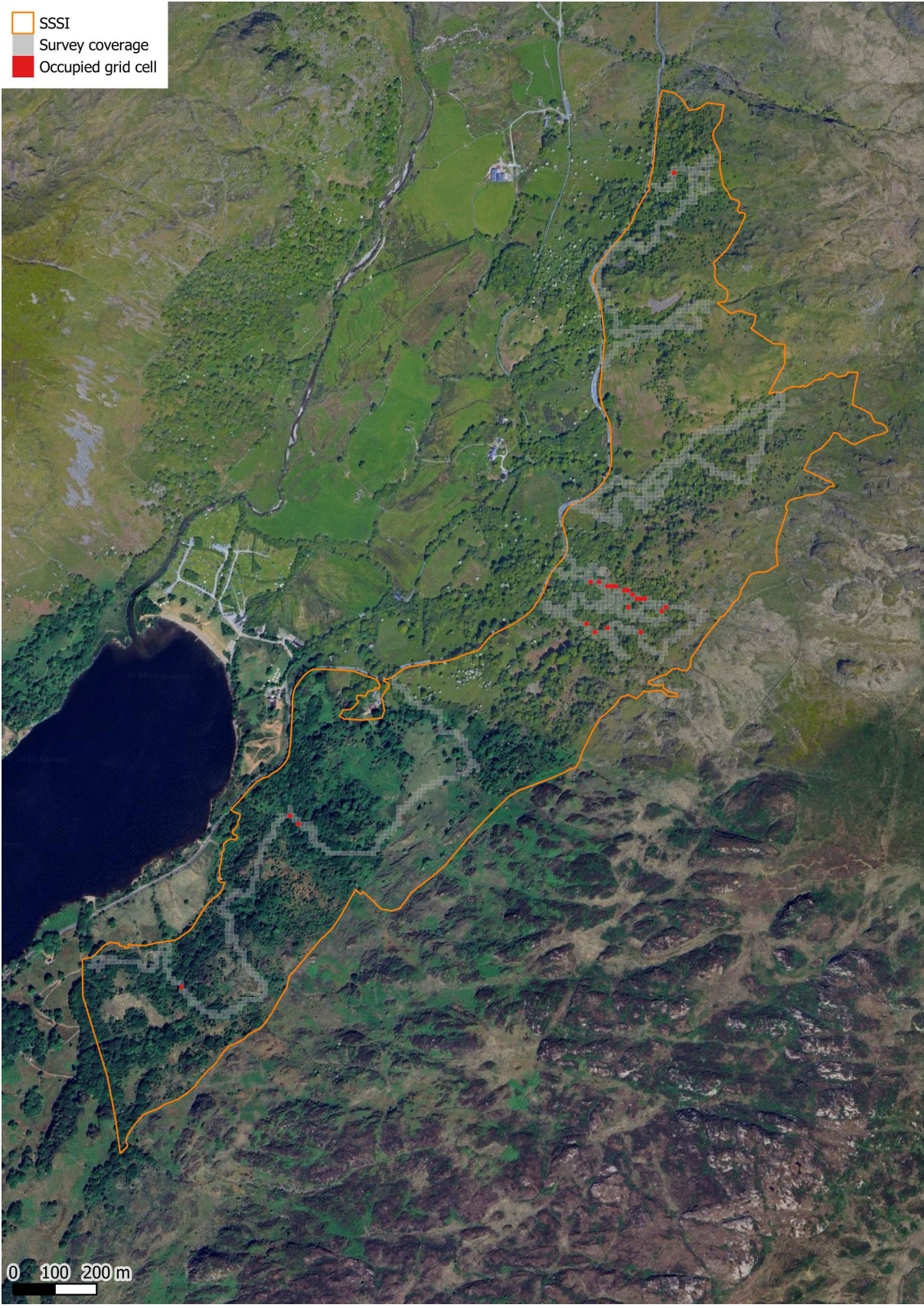
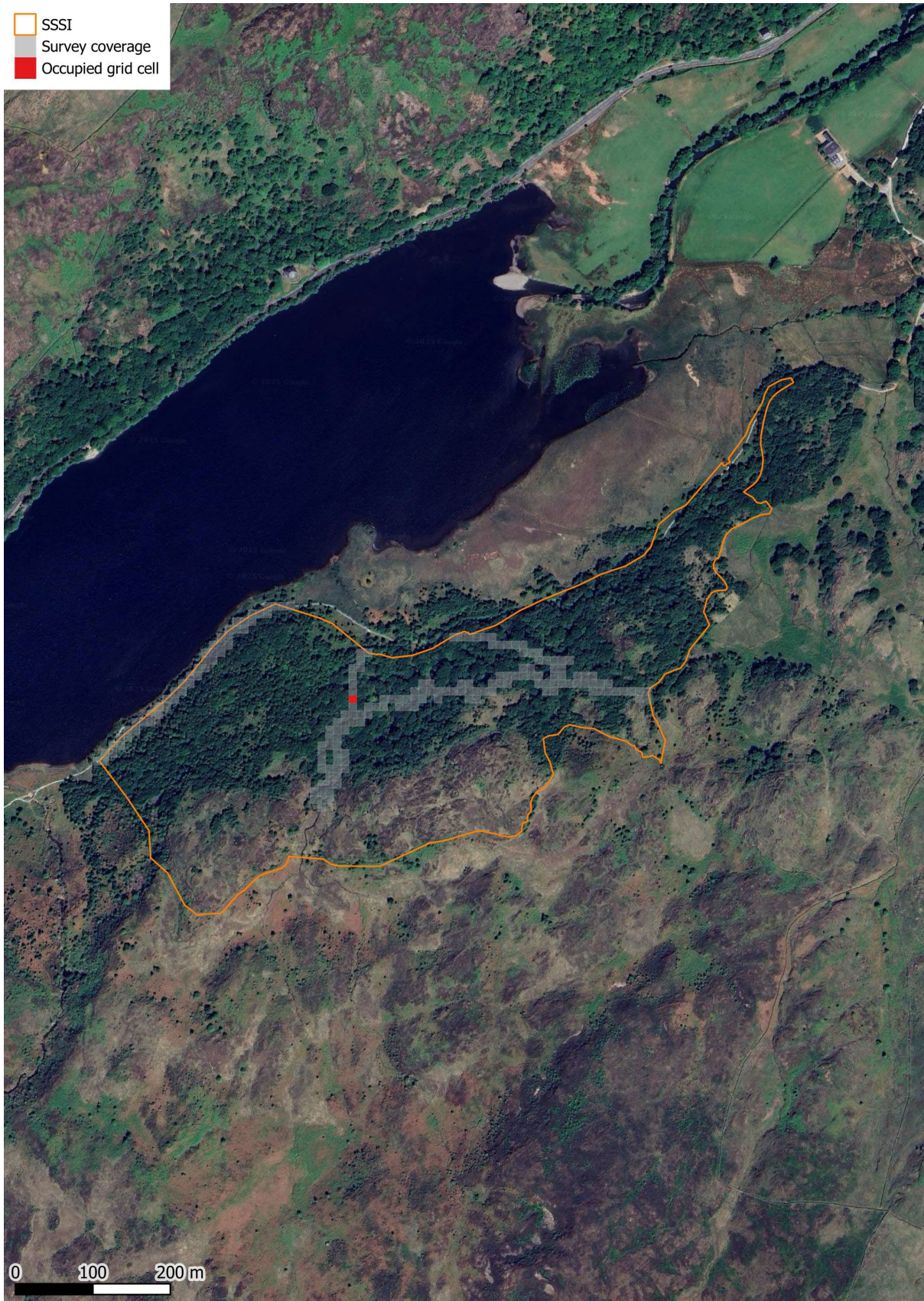


Figure 9 Distribution of *Harpalejeunea molleri* within Unit 3 of Coedydd Nantgwynant SSSI.



**Figure 10** Distribution of *Heterocladium wulfsbergii* within Unit 2 of Coedydd Nantgwynant SSSI.

- SSSI
- Survey coverage
- Occupied grid cell

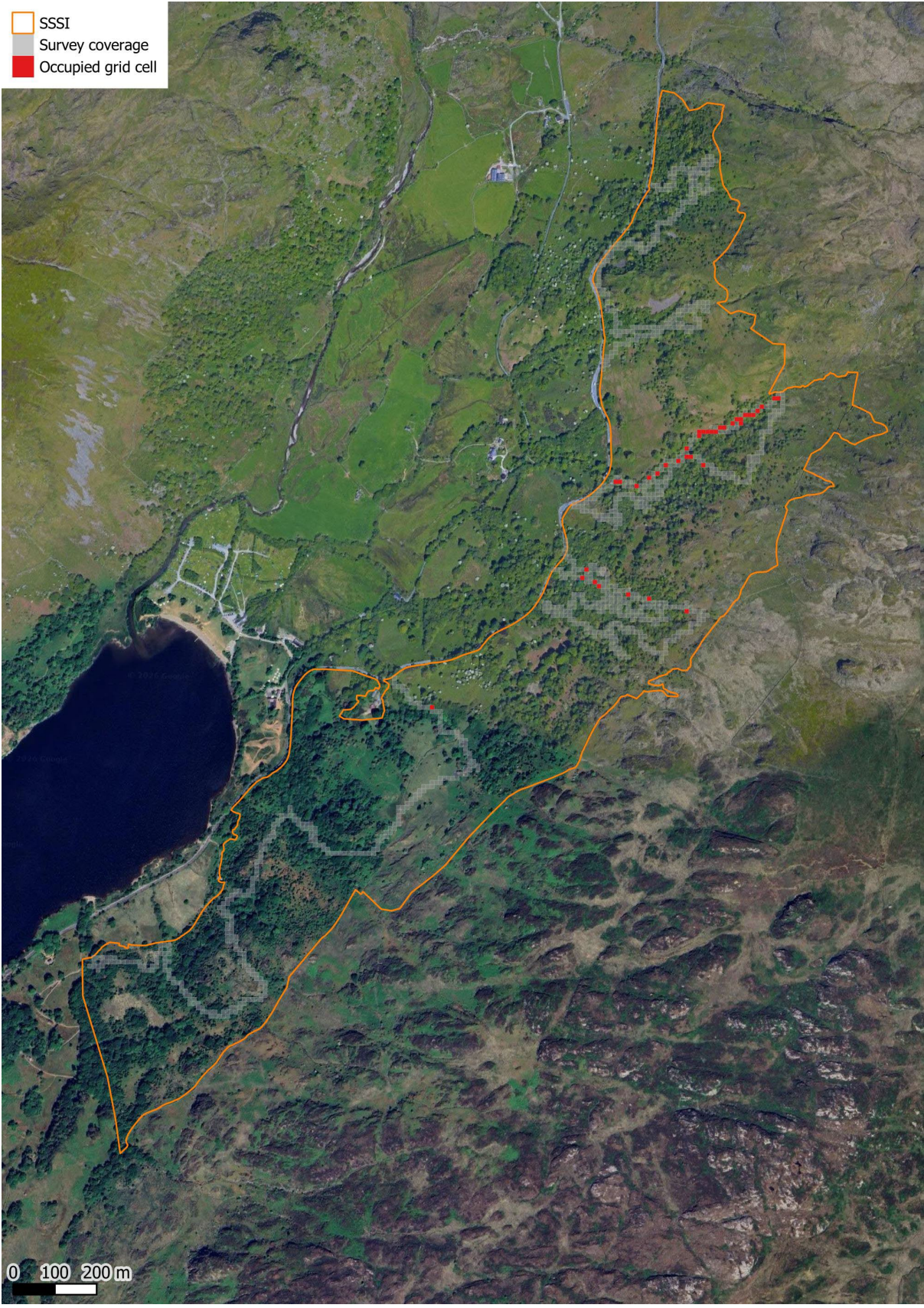


Figure 11 Distribution of *Jubula hutchinsiae* within Unit 3 of Coedydd Nantgwynant SSSI.

- SSSI
- Survey coverage
- Occupied grid cell

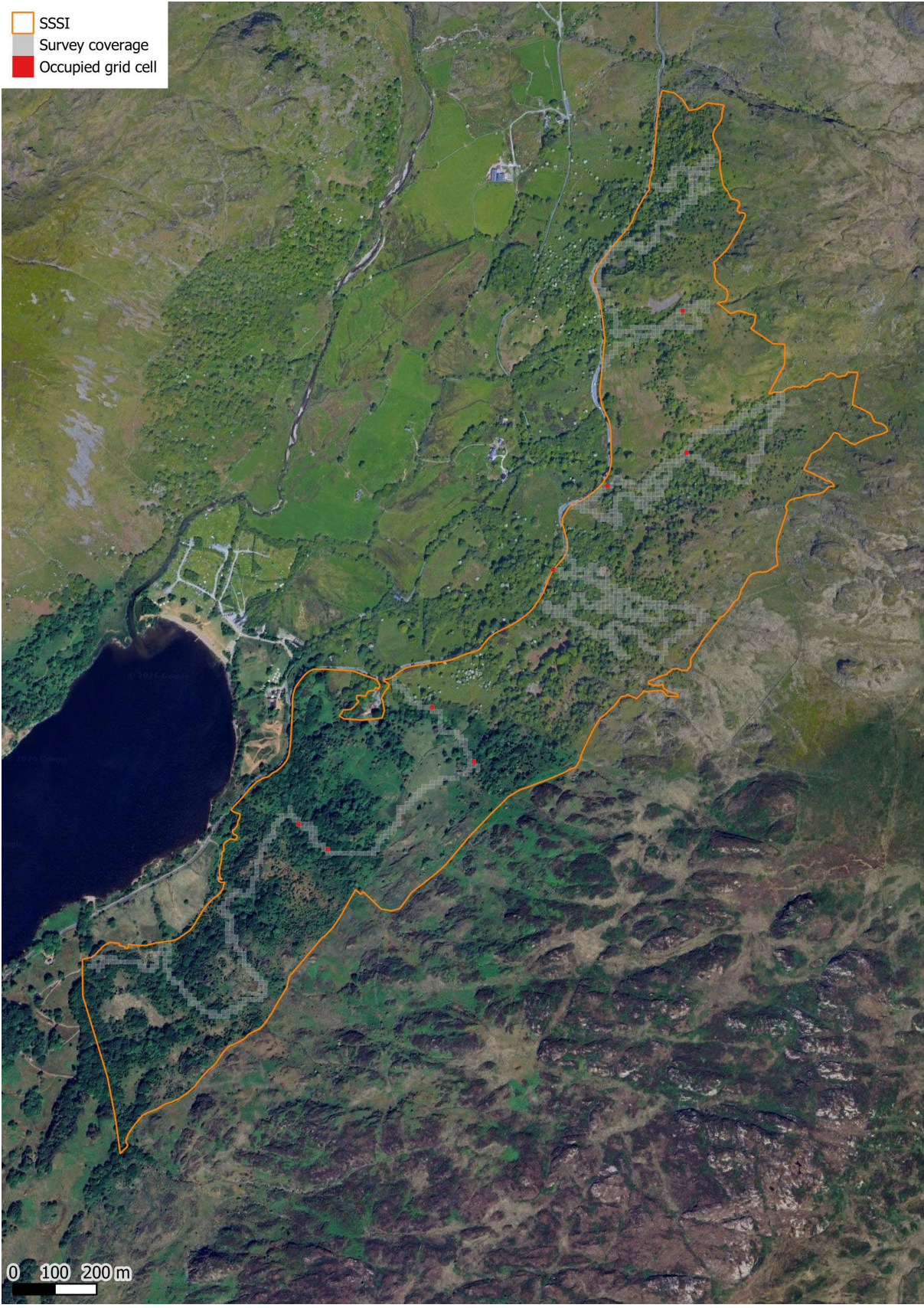


Figure 12 Distribution of *Lejeunea lamacerina* within Unit 3 of Coedydd Nantgwynant SSSI.

- SSSI
- Survey coverage
- Occupied grid cell

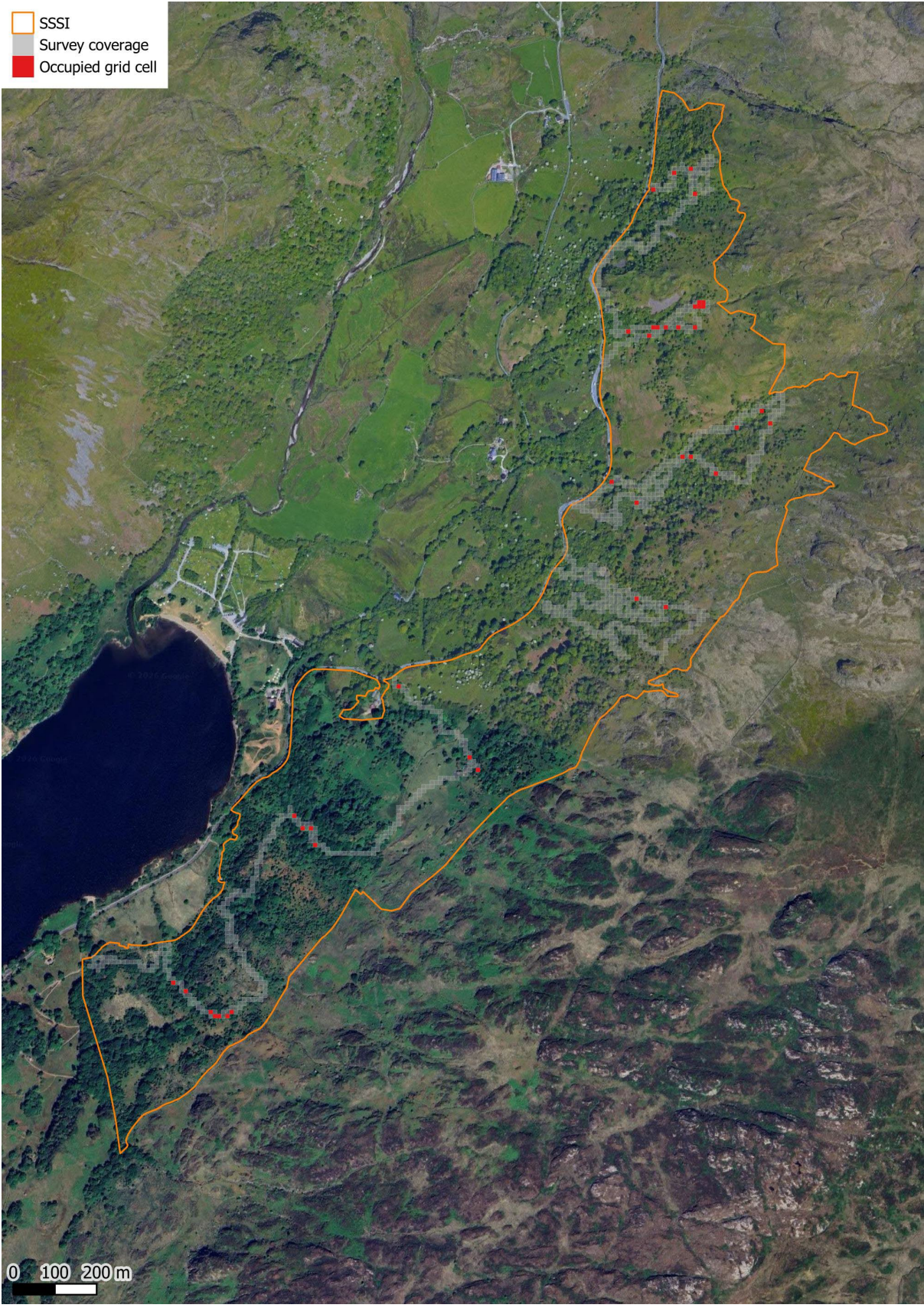


Figure 13 Distribution of *Lejeunea patens* within Unit 3 of Coedydd Nantgwynant SSSI.

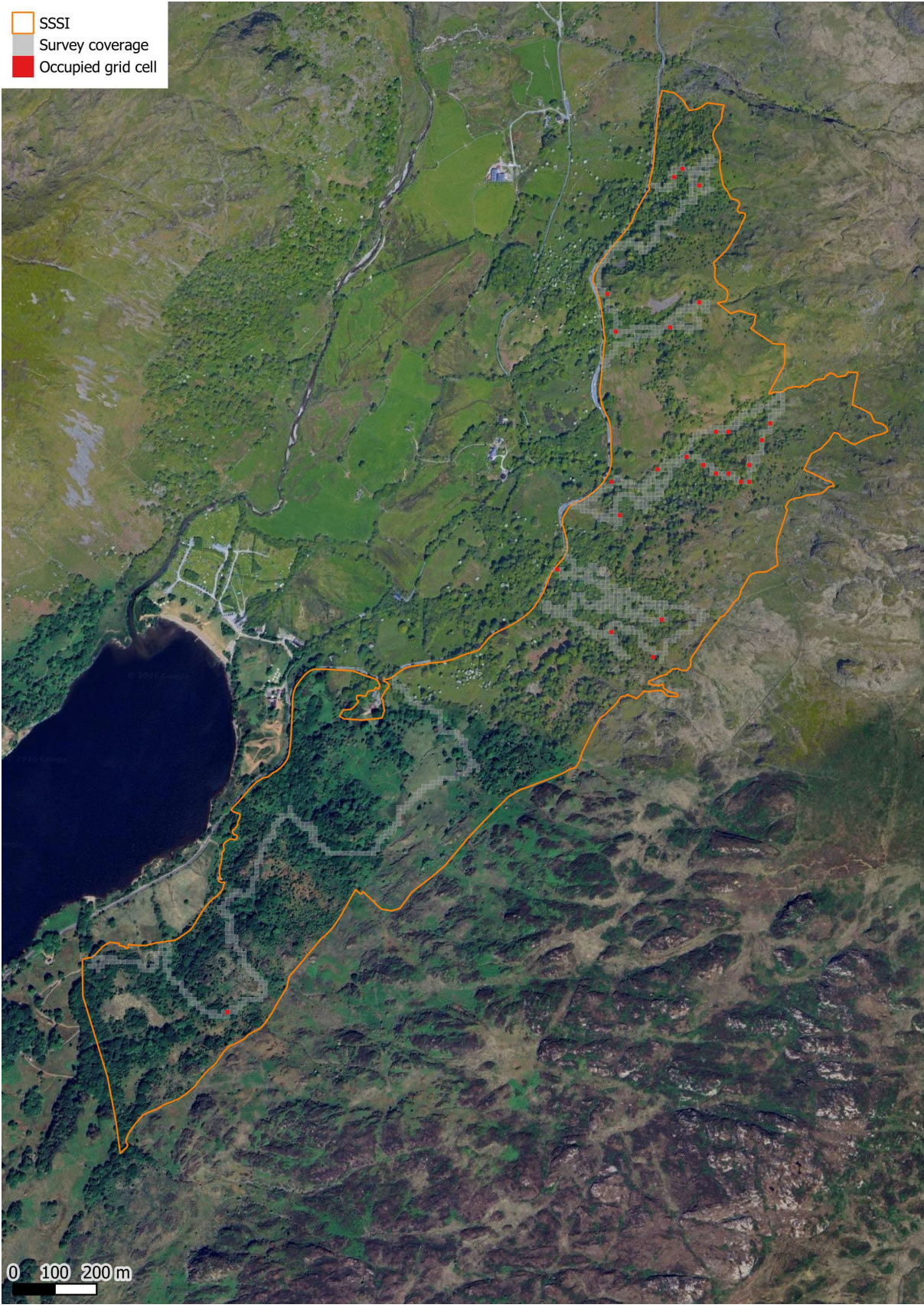
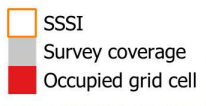
- SSSI
- Survey coverage
- Occupied grid cell



Figure 14 Distribution of *Lepidozia cupressina* within Unit 1 of Coedydd Nantgwynant SSSI.



Figure 15 Distribution of *Lepidozia pearsonii* within Unit 1 of Coedydd Nantgwynant SSSI.



**Figure 16** Distribution of *Plagiochila bifaria* within Unit 3 of Coedydd Nantgwynant SSSI.

- SSSI
- Survey coverage
- Occupied grid cell

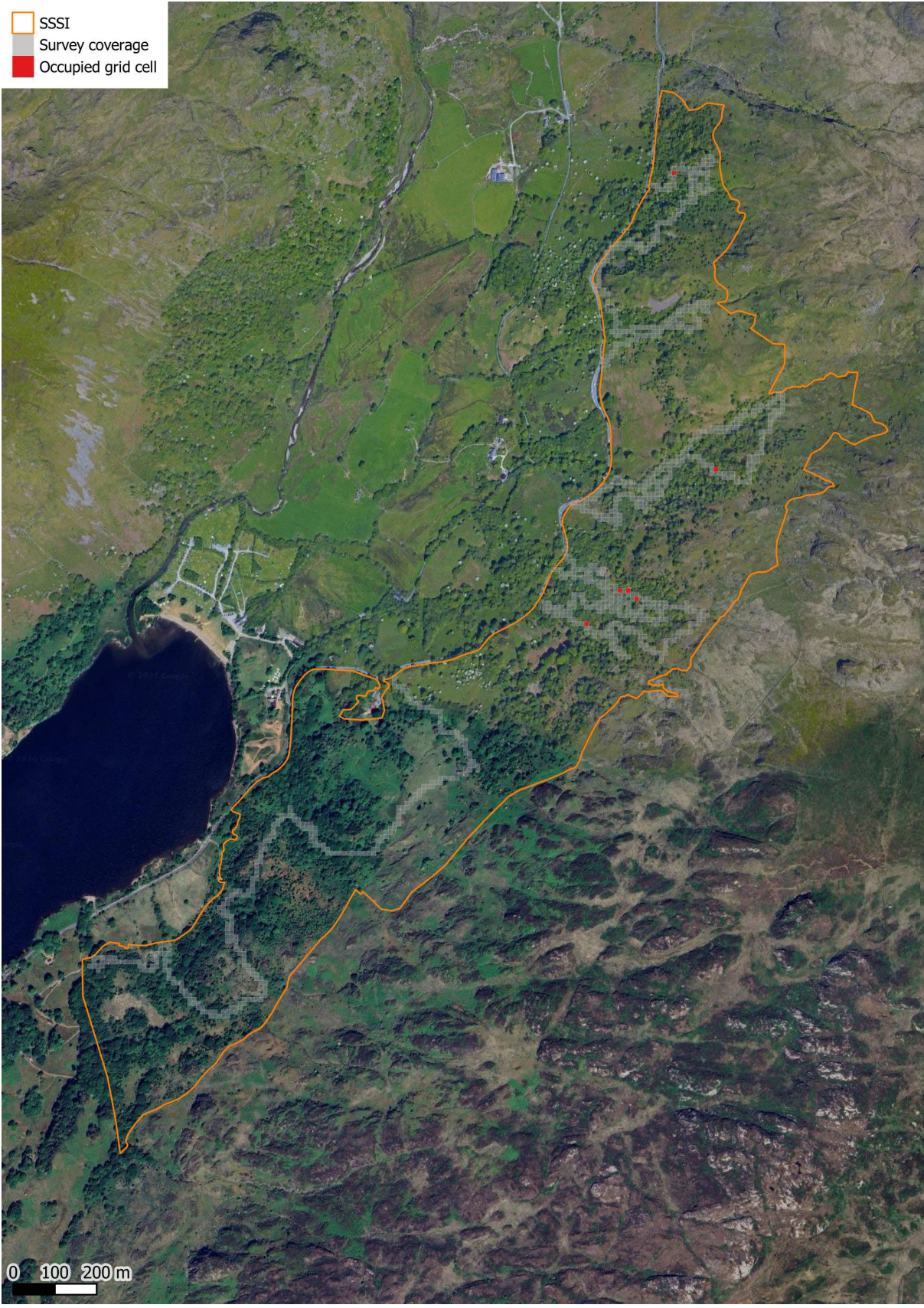
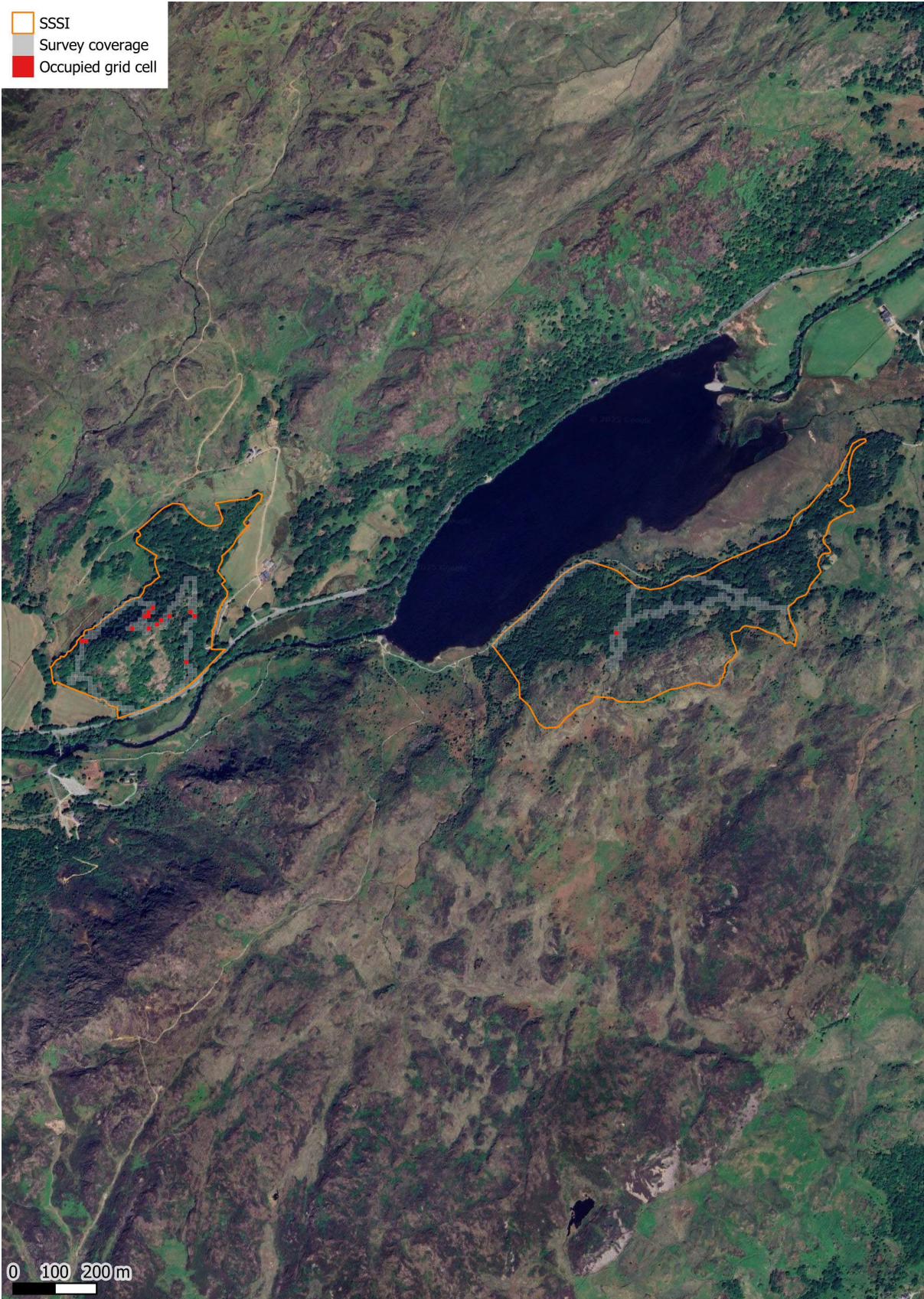
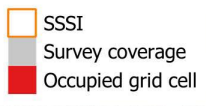


Figure 17 Distribution of *Plagiochila exigua* within Unit 3 of Coedydd Nantgwynant SSSI.

- SSSI
- Survey coverage
- Occupied grid cell



Figure 18 Distribution of *Plagiochila heterophylla* within Unit 1 of Coedydd Nantgwynant SSSI.



**Figure 19** Distribution of *Plagiochila punctata* within Units 1 and 2 of Coedydd Nantgwynant SSSI.

- SSSI
- Survey coverage
- Occupied grid cell

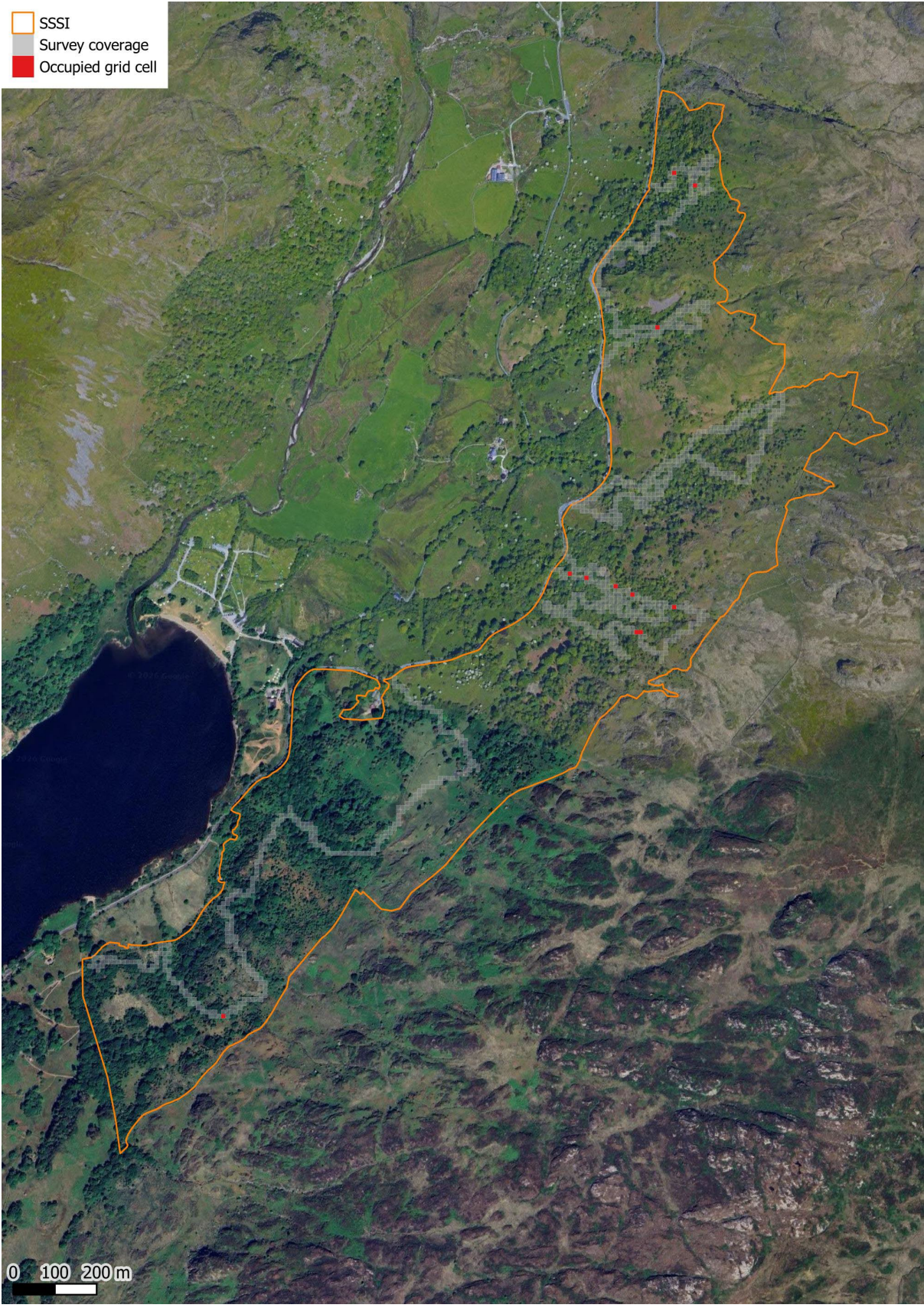
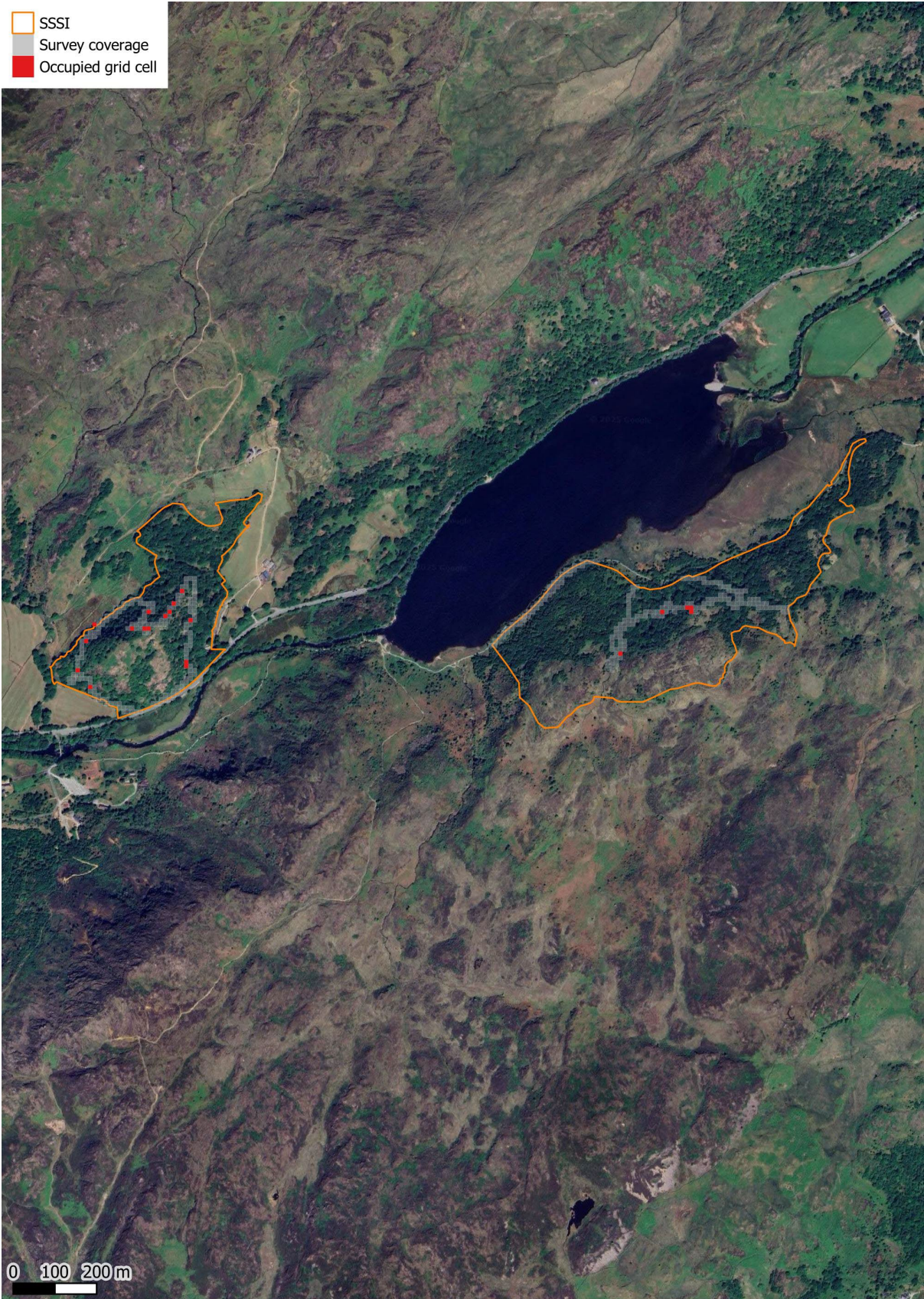
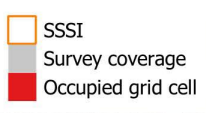


Figure 20 Distribution of *Plagiochila punctata* within Unit 3 of Coedydd Nantgwynant SSSI.



**Figure 21** Distribution of *Plagiochila spinulosa* within Units 1 and 2 of Coedydd Nantgwynant SSSI.

- SSSI
- Survey coverage
- Occupied grid cell

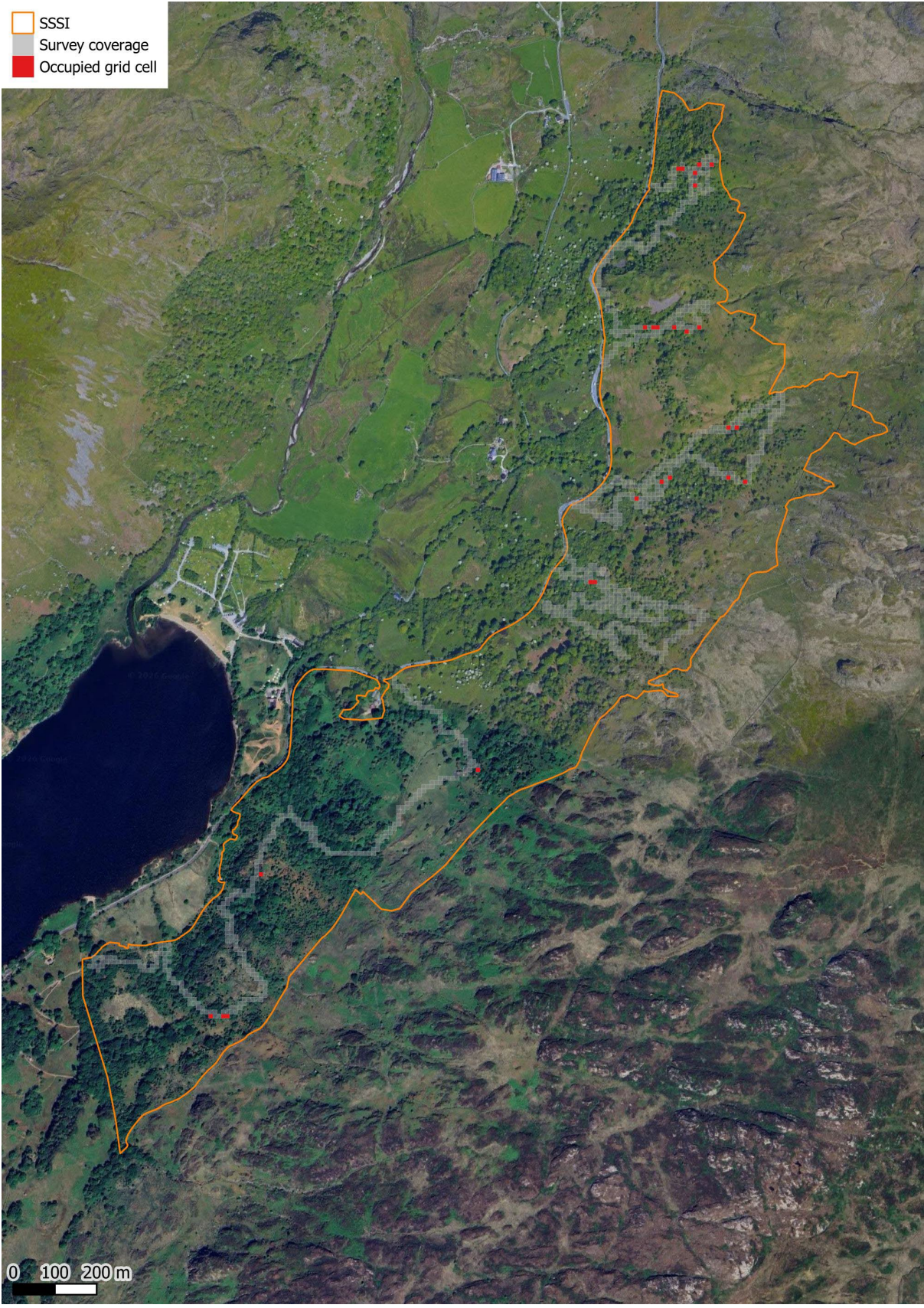
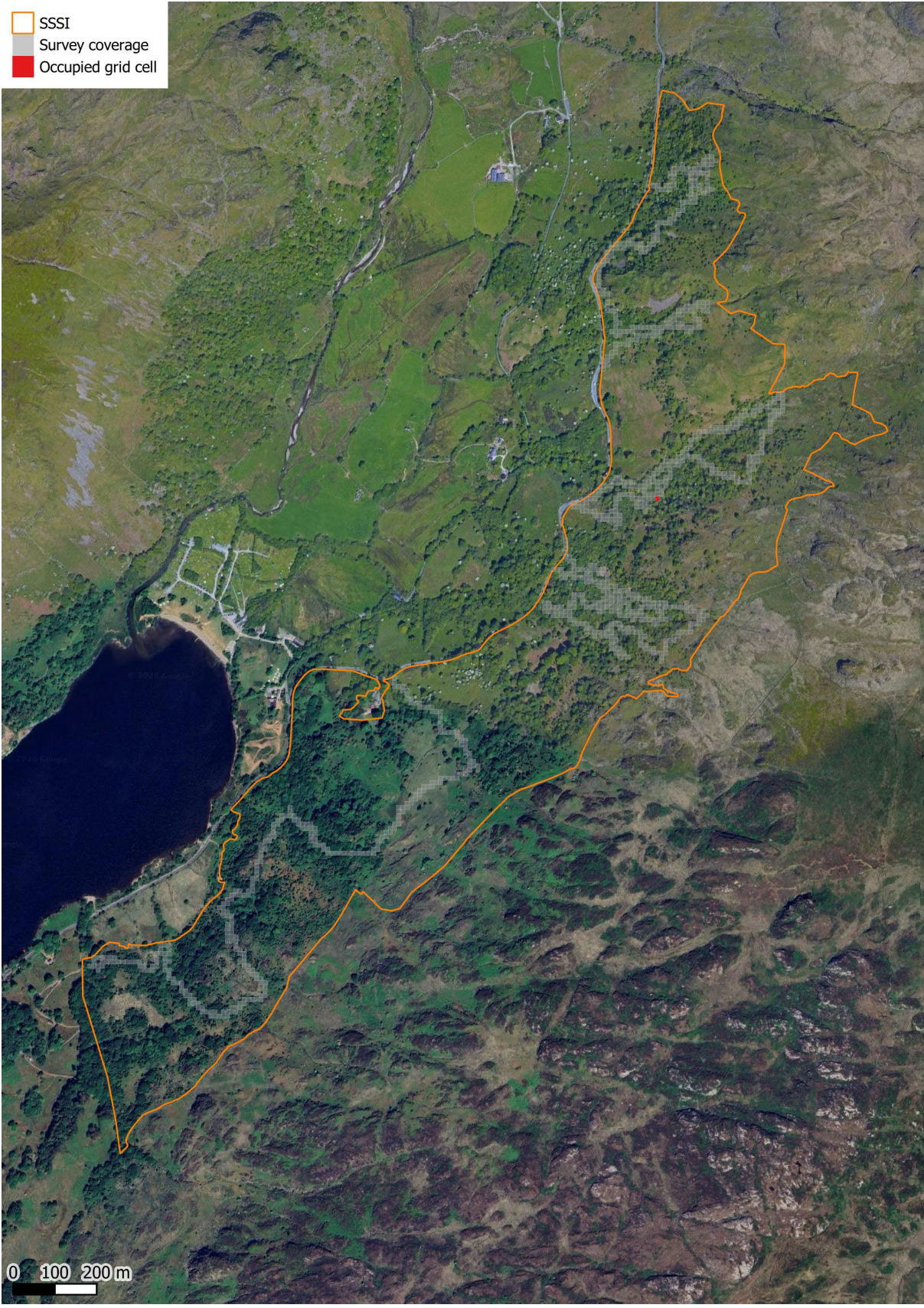


Figure 22 Distribution of *Plagiochila spinulosa* within Unit 3 of Coedydd Nantgwynant SSSI.



**Figure 23** Distribution of *Pseudomarsupidium decipiens* within Unit 1 of Coedydd Nantgwynant SSSI.

- SSSI
- Survey coverage
- Occupied grid cell



**Figure 24** Distribution of *Pseudomarsupidium decipiens* within Unit 3 of Coedydd Nantgwynant SSSI.

- SSSI
- Survey coverage
- Occupied grid cell

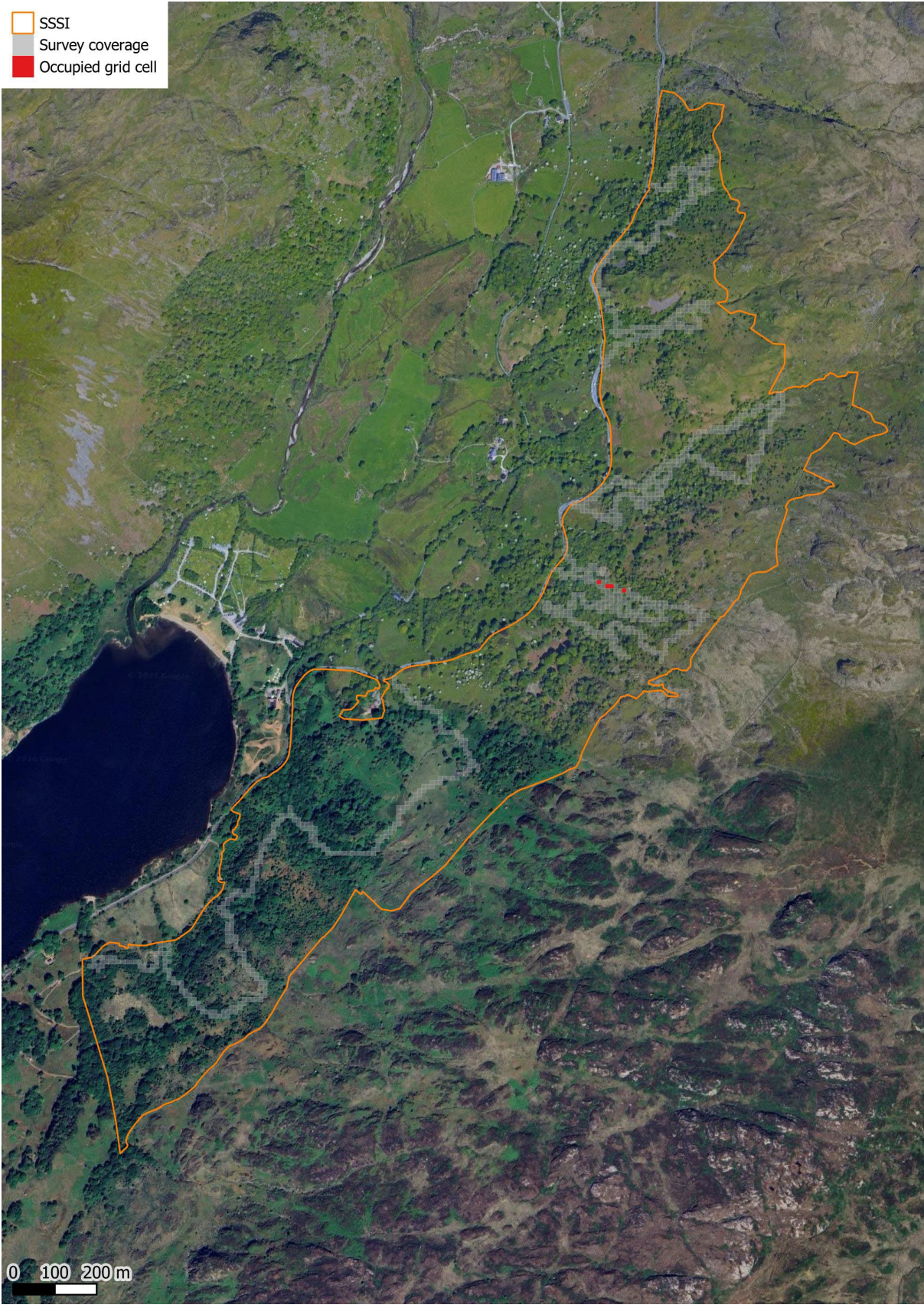
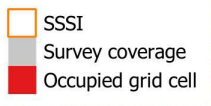
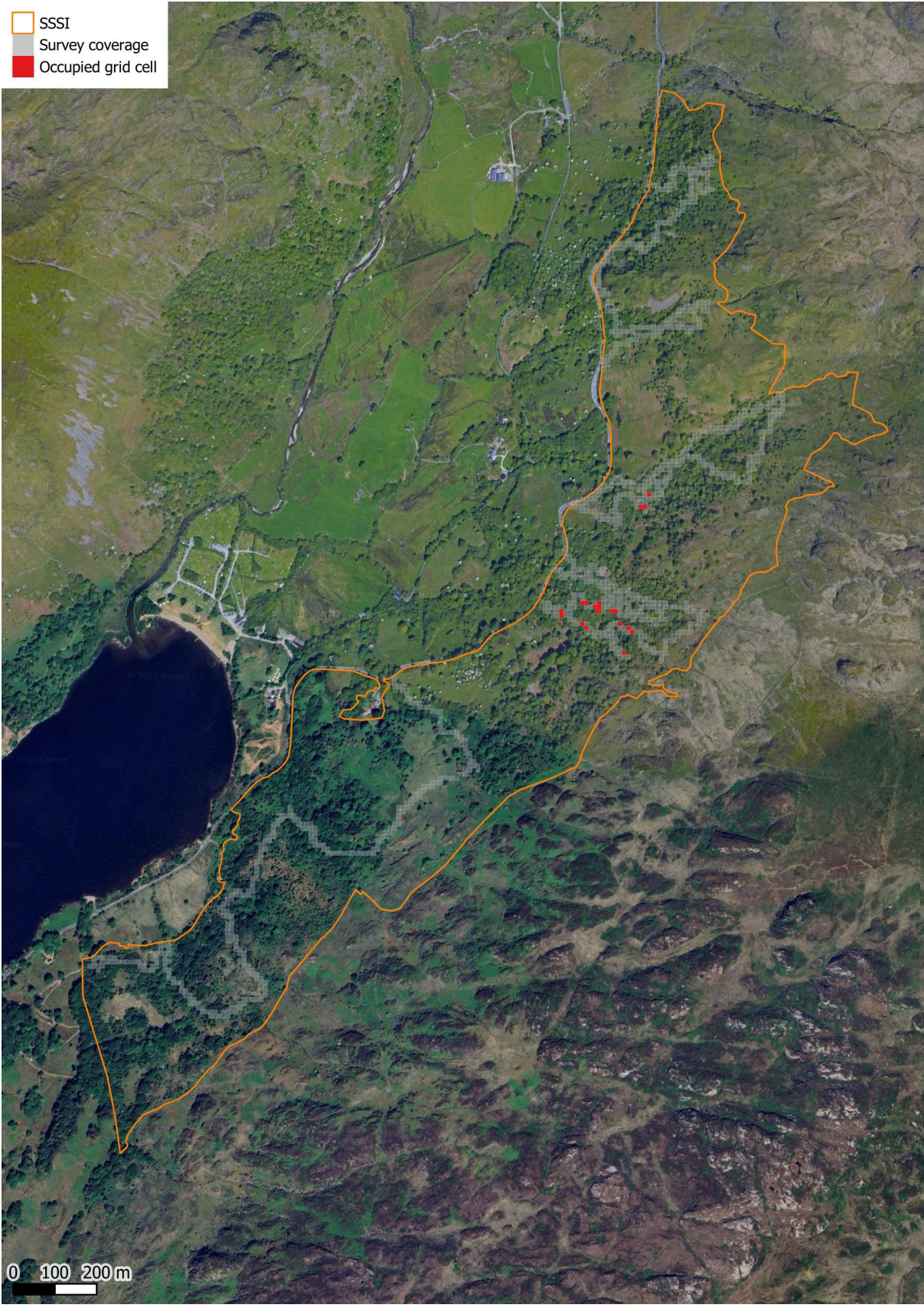
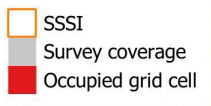


Figure 25 Distribution of *Radula aquilegia* within Unit 3 of Coedydd Nantgwynant SSSI.



**Figure 26** Distribution of *Radula voluta* within Unit 3 of Coedydd Nantgwynant SSSI.



**Figure 27** Distribution of *Sematophyllum demissum* within Unit 3 of Coedydd Nantgwynant SSSI.

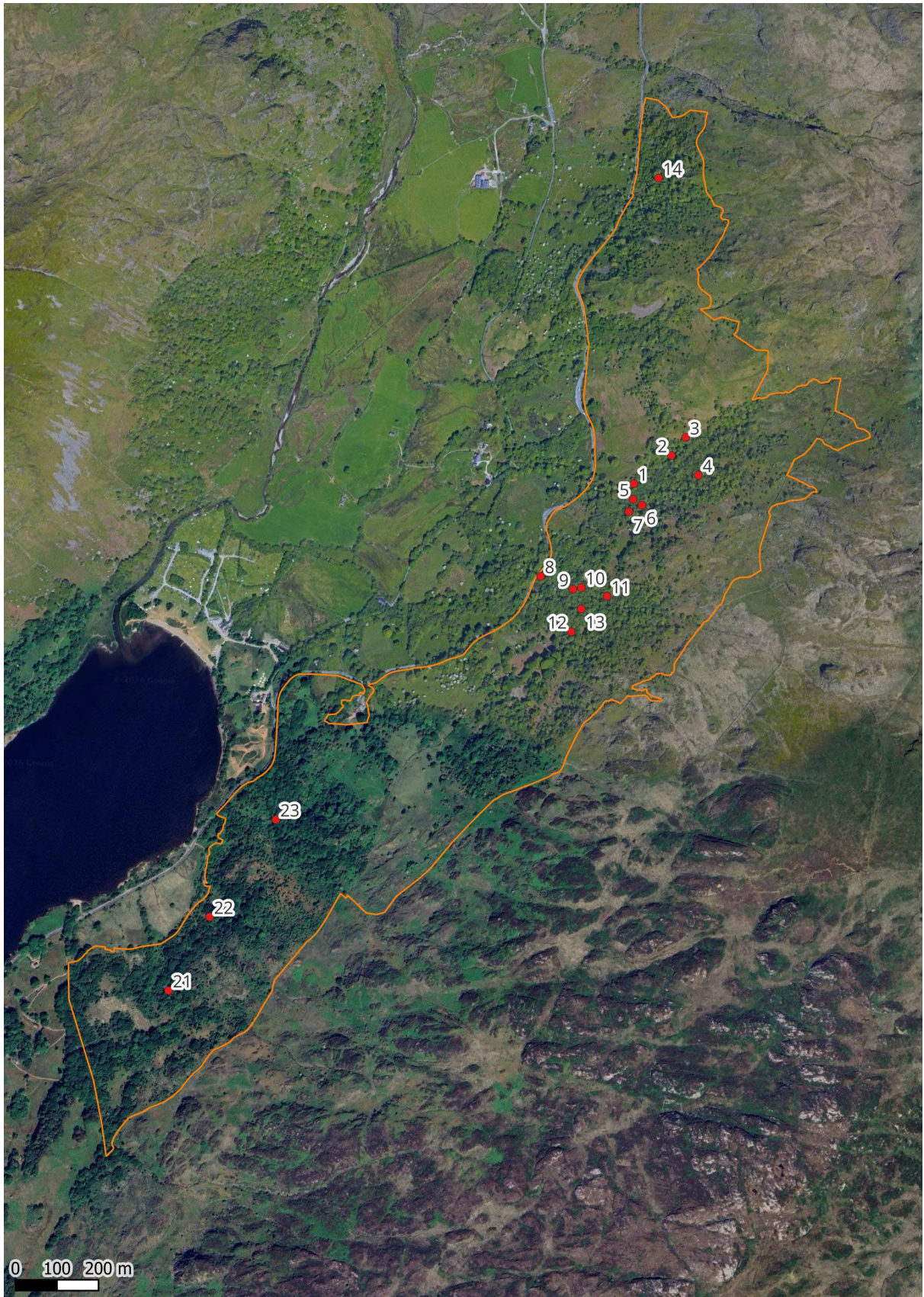
### 9.3. Appendix 3: Fixed-point photographic monitoring plots



**Figure 1** Locations of fixed-point photographic monitoring plots within Unit 1 of Coedydd Nantgwynant SSSI.



**Figure 2** Locations of fixed-point photographic monitoring plots within Unit 2 of Coedydd Nantgwynant SSSI.



**Figure 3** Locations of fixed-point photographic monitoring plots within Unit 3 of Coedydd Nantgwynant SSSI.

### 9.3.1. Plot 1



Focal species: *Jubula hutchinsiae* (red)

Grid reference: SH6591752774

Assessment: Scattered small colonies of *Jubula hutchinsiae* on rock beside cascade in stream.

### 9.3.2. Plot 2

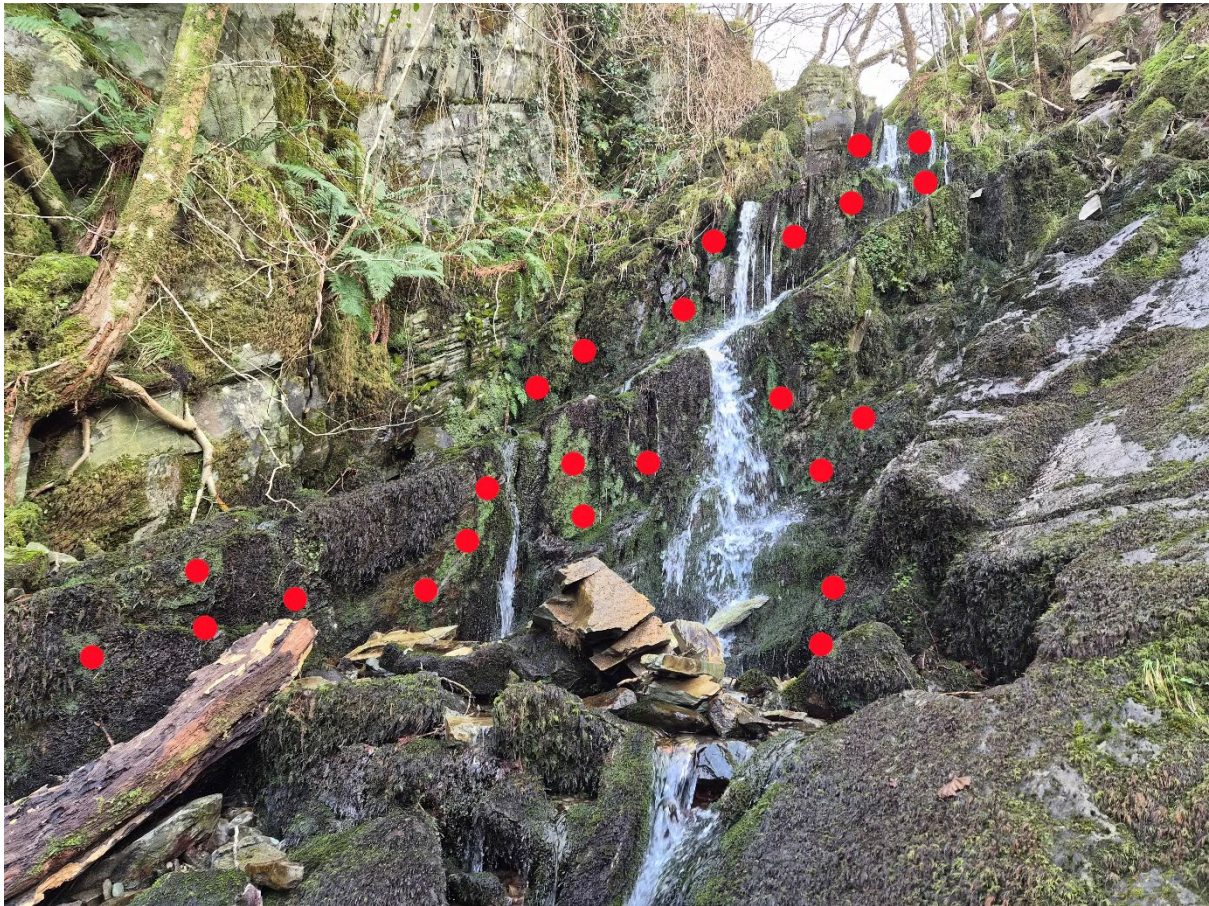


Focal species: *Jubula hutchinsiae* (red)

Grid reference: SH6600752842

Assessment: Large colonies of *Jubula hutchinsiae* at base of boulders within cascade in stream.

### 9.3.3. Plot 3



Focal species: *Jubula hutchinsiae* (red)

Grid reference: SH6604152886

Assessment: Many large colonies of *Jubula hutchinsiae* on rock beside tall cascade in stream.

#### 9.3.4. Plot 4



Focal species: *Plagiochila exigua* (red)

Grid reference: SH6607152794

Assessment: Strong colony (ca. 50 cm long) of *Plagiochila exigua* on face of boulder.

### 9.3.5. Plot 5



Focal species: *Sematophyllum demissum* (red)

Grid reference: SH6591552736

Assessment: Strong colonies of *Sematophyllum demissum* on low boulders beside small stream, along diffuse path used by sheep and whose disturbance prevents overgrowth of boulders by larger mosses.

### 9.3.6. Plot 6



Focal species: *Pseudomarsupidium decipiens* (red)

Grid reference: SH6593652723

Assessment: Strong colonies of *Pseudomarsupidium decipiens* on boulder.

### 9.3.7. Plot 7



Focal species: *Sematophyllum demissum* (red)

Grid reference: SH6590552706

Assessment: Small colony (lower) and large colonies (upper) of *Sematophyllum demissum* on two boulders, unusually not associated with a watercourse, but along diffuse path used by sheep and whose disturbance prevents overgrowth of boulders by larger mosses.

9.3.8. Plot 8



Focal species: *Radula voluta* (red)

Grid reference: SH6569252551

Assessment: Scattered small colonies of *Radula voluta* on rocks within stream.

### 9.3.9. Plot 9



Focal species: *Cololejeunea microscopica* (red), *Harpalejeunea molleri* (blue), *Radula voluta* (turquoise)

Grid reference: SH6577052520

Assessment: Two tiny colonies of *Cololejeunea microscopica*, a tiny colony of *Harpalejeunea molleri*, and two colonies of *Radula voluta* on rocks in stream.

9.3.10. Plot 10



Focal species: *Cololejeunea microscopica* (turquoise), *Harpalejeunea molleri* (red), *Radula aquilegia* (blue)

Grid reference: SH6579152524

Assessment: Small colonies of *Cololejeunea microscopica*, *Harpalejeunea molleri* and *Radula aquilegia* on rocks in stream.

9.3.11. Plot 11



Focal species: *Cololejeunea microscopica* (blue), *Colura calyptrifolia* (red), *Harpalejeunea molleri* (turquoise), *Radula aquilegia* (orange)

Grid reference: SH6585252503

Assessment: Small colonies of *Cololejeunea microscopica*, *Colura calyptrifolia*, *Harpalejeunea molleri* and *Radula aquilegia* on rocks in stream, plus extensive colony of *H. molleri* on trunk of young ash.

9.3.12. Plot 12

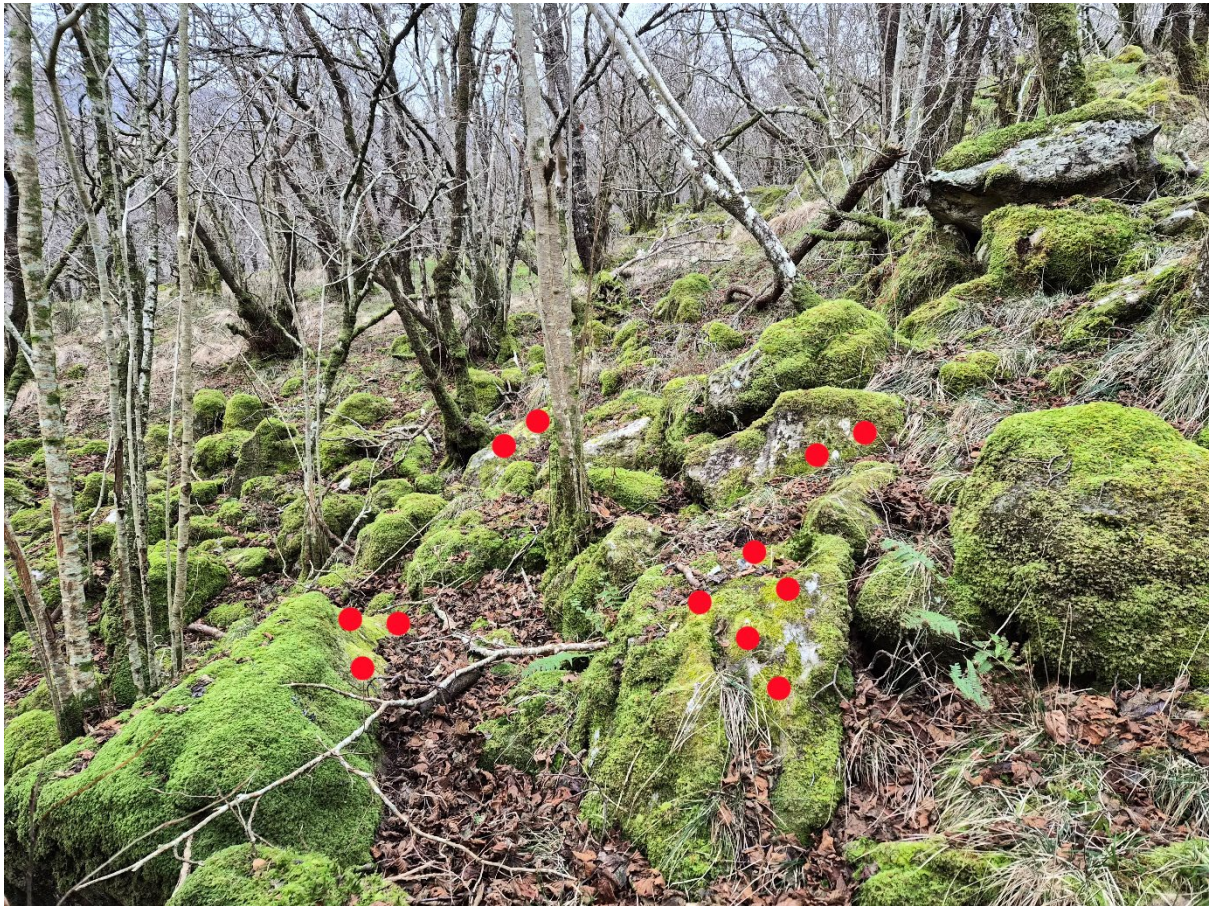


Focal species: *Sematophyllum demissum* (red)

Grid reference: SH6576652418

Assessment: Strong colonies of *Sematophyllum demissum* on rocks.

9.3.13. Plot 13

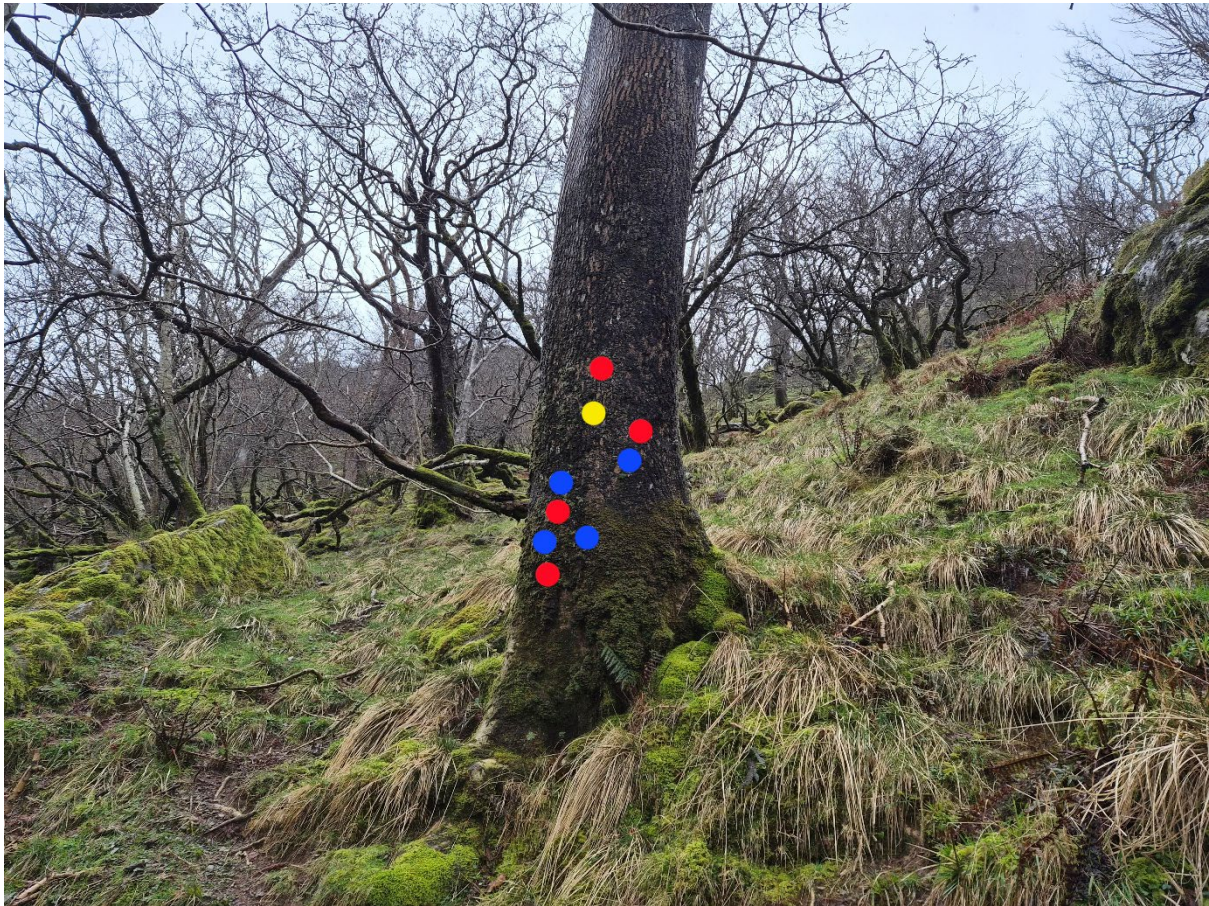


Focal species: *Sematophyllum demissum* (red)

Grid reference:

Assessment: Extensive colonies of *Sematophyllum demissum* on boulders of bank, not closely associated with any stream. These are the strongest colonies of the species seen during the current survey.

9.3.14. Plot 14



Focal species: *Harpalejeunea molleri* (red), *Plagiochila exigua* (yellow), *Lejeunea patens* (blue)

Grid reference: SH6597653510

Assessment: Scattered small colonies of *Harpalejeunea molleri*, *Plagiochila exigua* and *Lejeunea patens* on trunk of large ash on steep slope.

9.3.15. Plot 15



Focal species: *Anastrophyllum hellerianum* (red)

Grid reference: SH6069449291

Assessment: Thinly scattered shoots of *Anastrophyllum hellerianum* on underside of rotten log.

9.3.16. Plot 16



Focal species: *Plagiochila heterophylla* (red)

Grid reference: SH6066049270

Assessment: Small colony (15 x 10 cm) of *Plagiochila heterophylla*, comprising scattered shoots over 15 x 10 cm, intermixed with *Isothecium myosuroides* and *Scapania gracilis*.

9.3.17. Plot 17



Focal species: *Pseudomarsupidium decipiens* (red)

Grid reference: SH6065249261

Assessment: Small colony (5 x 5 cm) of *Pseudomarsupidium decipiens* on vertical face of rock outcrop.

9.3.18. Plot 18



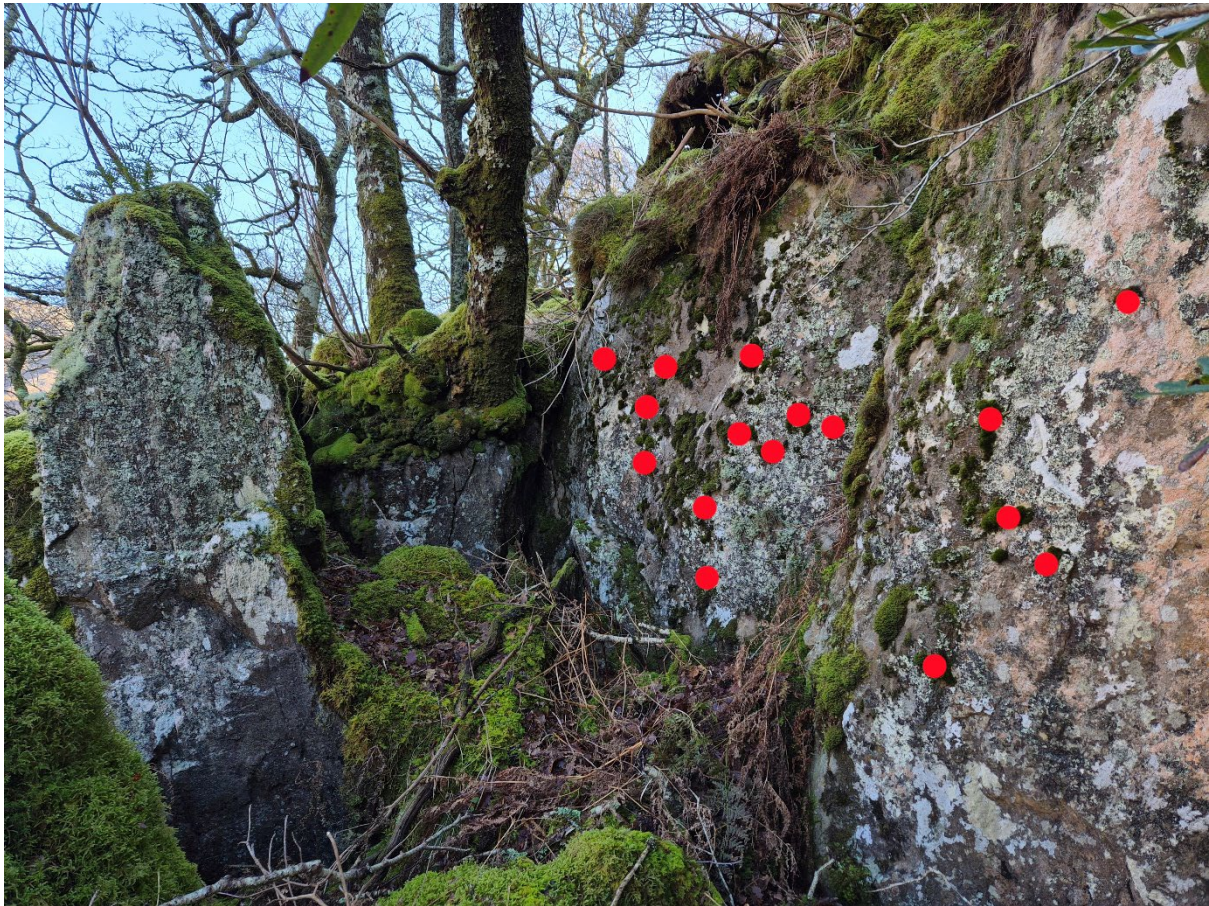
Focal species: *Lepidozia cupressina* (red)

Grid reference: SH6064449262

Assessment: Many strong colonies of *Lepidozia cupressina* on rotten log.

9.3.19.

Plot 19

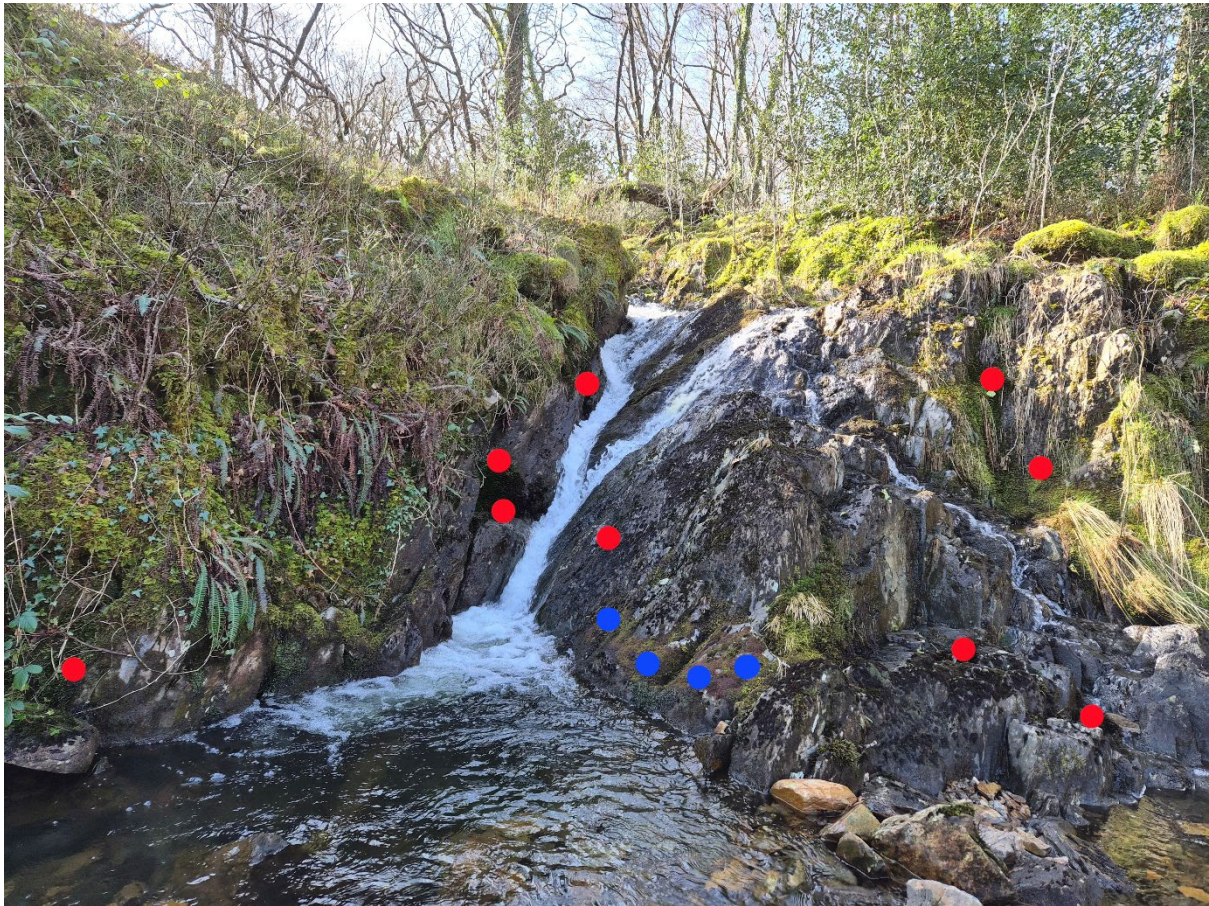


Focal species: *Dicranum scottianum* (red)

Grid reference: SH6061249262

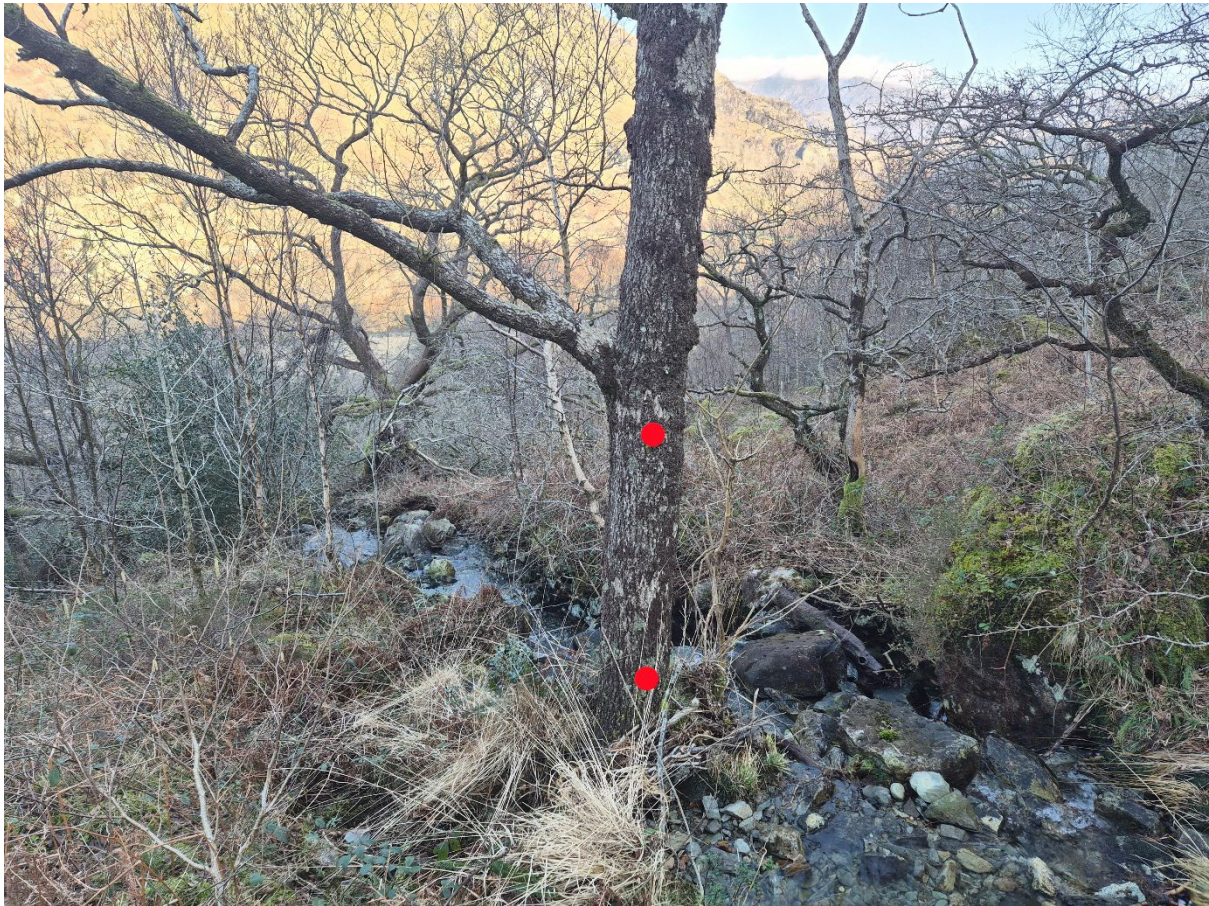
Assessment: Many strong, fruiting colonies of *Dicranum scottianum* on vertical rock face.

9.3.20. Plot 20



Focal species: *Fissidens polyphyllus* (red) and *Heterocladium wulfsbergii* (blue)  
Grid reference: SH6180649307  
Assessment: Strong colonies of both *Fissidens polyphyllus* and *Heterocladium wulfsbergii* on rock beside cascade.

9.3.21. Plot 21



Focal species: *Harpalejeunea molleri* (red)

Grid reference: SH6479751555

Assessment: Small colonies of *Harpalejeunea molleri* on trunk of ash beside stream

9.3.22. Plot 22

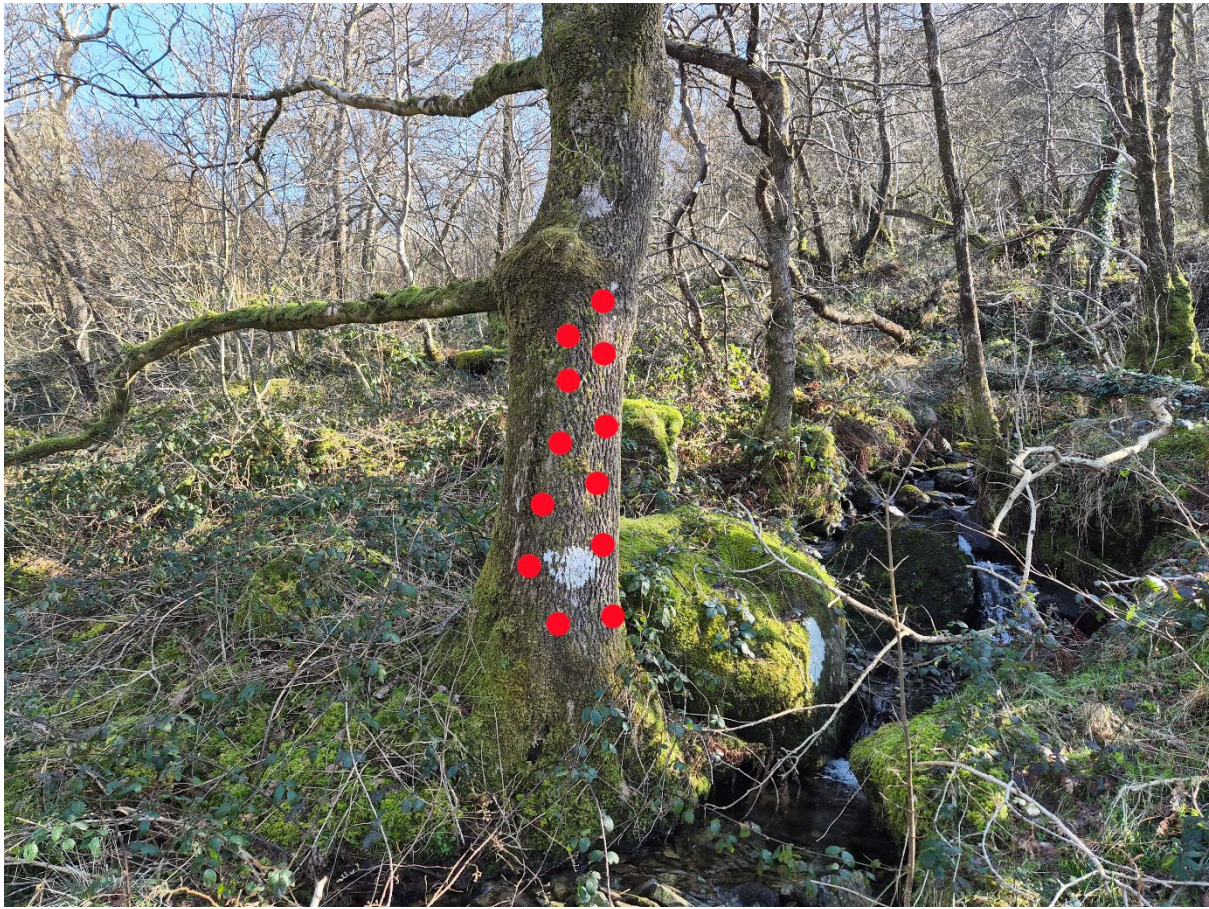


Focal species: *Drepanolejeunea hamatifolia* (red)

Grid reference: SH6489651732

Assessment: Small colonies of *Drepanolejeunea hamatifolia* on boulder beside stream.

9.3.23. Plot 23



Focal species: *Harpalejeunea molleri* (red)

Grid reference: SH6505651965

Assessment: Strong colonies of *Harpalejeunea molleri* on trunk of ash beside stream.

## 10. Data Archive Appendix

Data outputs associated with this project are archived on server-based storage at Natural Resources Wales.

The data archive contains:

[A] The final report in Microsoft Word and Adobe PDF formats.

Metadata for this project is publicly accessible through Natural Resources Wales' Library Catalogue <https://libcat.naturalresources.wales> (English Version) and <https://catllyfr.cyfoethnaturiol.cymru> (Welsh Version) by searching 'Dataset Titles'. The metadata is held as record no NRW\_DS161507

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