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Bryophyte survey of Great Ormes Head SSSI, 2026



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Evidence Report No 1028

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1. Crynodeb gweithredol

Bu Matt Sutton yn arolygu bryoffytau (mwsoglau, llysiau'r afu a chyrnddail) ar draws SoDdGA Pen y Gogarth. Cynhaliwyd yr arolwg dros naw diwrnod ym mis Chwefror a mis Mawrth 2026.

Mae'r pentir calchfaen hwn wedi cael ei arolygu'n helaeth gan fryolegwyr dros y blynnyddoedd, ac wedi arwain at gydnabyddiaeth o Gasgliad o Laswelltir Calchaid Agored. Cadarnhawyd pob rhywogaeth sy'n perthyn i'r casgliad hwn yn ystod yr arolwg cyfredol a, chyda phum ychwanegiad (*Pterygoneurum papillosum*, *Didymodon acutus* s.s., *Tortella inclinata*, *Bryum concinatum* a *Bryum torquescens*), mae'r sgôr bellach wedi codi i 51. Mae hyn yn golygu mai'r Gogarth yw'r trydydd safle pwysicaf yng Nghymru ar gyfer y casgliad hwn, y tu ôl yn unig i ddau SoDdGA Sir Benfro - SoDdGA Stagbwl a SoDdGA Maes Tanio Castellmartin sydd â sgôr o 57 bob un.

Mae'r casgliad o Greigiau Calchaid yr Iseldir yn parhau i fod ar 9 pwynt, islaw'r trothwy cymhwyster o 12 pwynt.

Cofnodwyd sawl rhywogaeth nodedig arall: Roedd *Grimmia dissimulata*, *Bryum gemmilucens*, *Weissia longifolia* s.s. a *Didymodon ferrugineus* i gyd yn newydd i'r is-sir. Ailgofnodwyd nifer o rywogaethau prin neu brin yn lleol, a gwnaed nifer o ychwanegiadau at restr bryoffytau'r SoDdGa, gan gynnwys *Fissidens exilis*, *Riccia beyrichiana*, *Rhynchostegium megapolitanum*, *Drepanocladus polygamus*, *Bryoerythrophyllum ferruginascens*, *Schistidium strictum* a *Lophozia excisa*.

Mae'n amlwg bod y SoDdGA o ddiddordeb bryolegol sylweddol. Er bod cynnydd amlwg wedi bod mewn is-boblogaethau o rywogaethau Glaswelltir Calchaid Agored, efallai y dylid ystyried bod statws cadwraeth y nodwedd hon yn anffafriol gan nad yw lledaeniad llwyni anfrodorol goresgynnol ar draws rhannau allweddol o'r safle yn cael ei reoli'n effeithiol trwy bori neu drwy wneud gwaith clirio wedi'i dargedu â llaw.

2. Executive summary

Matt Sutton undertook surveillance of bryophytes (mosses, liverworts and hornworts) across Great Ormes Head SSSI. Survey was carried out over nine days in February and March 2026.

This limestone headland has been extensively surveyed by bryologists over the years, leading to recognition of an Open Calcareous Grassland Assemblage. All component species of this assemblage were confirmed during the current survey and, with five additions (*Pterygoneurum papillosum*, *Didymodon acutus* s.s., *Tortella inclinata*, *Bryum concinnum* and *Bryum torquescens*), the score is now raised to 51. This makes Great Orme the third most important site in Wales for this assemblage, behind only two Pembrokeshire SSSIs - Stackpole SSSI and Castlemartin Range SSSI which both have a score of 57.

The Lowland Calcareous Rocks assemblage remains at 9 points, below the 12-point qualification threshold.

Records of several other notable species were made: *Grimmia dissimulata*, *Bryum gemmilucens*, *Weissia longifolia* s.s. and *Didymodon ferrugineus* were all new to the vice-county. Several locally-rare or scarce species were re-recorded, and a number of additions were made to the SSSI bryophyte list, including *Fissidens exilis*, *Riccia beyrichiana*, *Rhynchostegium megapolitanum*, *Drepanocladus polygamus*, *Bryoerythrophyllum ferruginascens*, *Schistidium strictum* and *Lophozia excisa*.

The SSSI is clearly of great bryological interest. Although there has been an apparent increase in sub-populations of Open Calcareous Grassland assemblage species, the conservation status of this feature should perhaps be considered unfavourable as the spread of invasive non-native shrubs across key parts of the site is not being effectively controlled by grazing or targeted manual clearance.

3. Introduction

Pen y Gogarth / Great Ormes Head SSSI comprises approximately 329ha of limestone headland in North Wales. It has long been known as an important bryophyte site. Various experienced bryologists have explored here, from William Wilson in the 1820s, to Tony Smith in the 1960s, Jeff Duckett and Mark Hill in the 1970s and 80s, and several Bangor-based CCW staff including Marcus Yeo and Tim Blackstock in the 1990s. A number of bryophyte records were generated during Phase II Grassland Survey (Guest et al, 1994) but the first dedicated bryophyte survey was undertaken by Nick Hodgetts (2003). More recently, Sharon Pilkington surveyed areas of the distinctive *Scapanietum asperae* community of calcareous liverworts and pleurocarpous mosses on the northern side of the head (Pilkington, 2017).

Bosanquet (2019) recognises an 'Open Calcareous Grassland' assemblage of bryophytes, which clearly exceeds the 12-point threshold with a total score of 27. This qualifying SSSI feature had not been subject to surveillance or monitoring since the survey by Hodgetts (2003), necessitating an updated assessment. Significant changes to management have occurred since 2003, including the reintroduction of systematic sheep grazing. Combined with an increasing frequency of extreme weather events such as droughts, changes to the bryophyte flora of the site were anticipated.

4. Survey work February to March 2026



Figure 1. A Geode GPS unit was used to record bryophytes to sub-metre accuracy

Survey work for the present contract entailed a total of nine field days. The first five day period, in mid-February, focussed on achieving broad coverage of the site, including revisiting recorded locations of notable species. These had been extracted from the BBS database and uploaded to a QField app on an Android smartphone. Wet weather prior to and regularly during the survey meant that bryophytes were generally in a fully-hydrated state. A second four-day survey period in March allowed searches of peripheral areas of the site and a further investigation of the more species-rich areas. Conditions were initially ideal, but deteriorated on the last day and the survey had to be curtailed due to gale-force winds.

The focus of the survey was on members of the open calcareous grassland and lowland calcareous rock assemblages together with any other notable species; incidental records were made of other bryophytes but an accurate assessment of their frequency was not made. The surveyor considered the possibility of species not previously recorded from Wales (or the UK), but nonetheless

plausible on biogeographical grounds, for example checking *Didymodon* samples for *D. desertorum* and *Weissia* samples for *W. levieri* or *W. condensata*.

Locations of notable species were recorded as 12 figure grid references, using a Geode GPS unit (Juniper Systems). Many locations were photographed, although wet, windy conditions sometimes made this difficult, and several notable species proved relatively widespread. Samples of critical species were confirmed microscopically. New vice-county moss records were confirmed by the national recorder; a new national record together with a few *Didymodon* and *Weissia* specimens were subsequently DNA barcoded by Ruby Bye at Aberystwyth University. Vouchers are now housed in the BBSUK herbarium in Cardiff; some other specimens have been retained by the author.

5. Results

5.1 British Red-listed species

5.1.1 Papillose Pottia *Pterygoneurum papillosum* (Vulnerable)



Figure 1 Ripe capsules of *Pterygoneurum papillosum*

A single small patch of this rare southern species was recorded, representing the first Welsh record. It was collected from a ledge on the south-face of the old limestone quarry to the south-east of Bishop's Quarry. The stepped-face here has a thin covering of clay-rich soil on one central section which slopes more

gently; the *Pterygoneurum* here grew near *Tortula lindbergii*, *Pottiopsis caespitosa* and *Aloina aloides*.



Figure 2 *Pterygoneurum papillosum* location, ringed, on quarry face

5.1.2 Pointed Beardmoss *Didymodon acutus* (Data Deficient)



Figure 3 Brownish-green shoots of *Didymodon acutus*

Didymodon icmadophilus, the commoner of the two segregates of *Didymodon acutus* sensu lato, had been recorded on site by Hodgetts (2003) and others. The current survey found *D. icmadophilus* in small quantity, mostly in eastern parts of the site, but *D. acutus* – currently regarded as Nationally Rare - was also recorded in three areas of the site. It occupies trampled or otherwise open ground in short-grazed limestone turf near a limestone pavement, on a south-

facing slope above Marine Drive, and below Ogof Deuben. The population comprises at least 10 individual equivalents.



Figure 4 *Didymodon acutus* location, SH7534583868

5.1.3 Pretty Cordmoss *Entosthodon pulchellus* (Near Threatened)



Figure 5 *Entosthodon pulchellus* with unripe capsules

This moss, part of the Open Calcareous Grassland Assemblage, had previously been recorded from the site, but in small quantity and with only two recent records. The current survey re-found it at the location described by Hodgetts (2003), in similarly tiny quantity (2x2cm). A tiny patch was also found near the southern edge of Maes-y-Facrell in an area where it had been recorded in 1973. However, it was also found on soil-covered rock ledges in two other areas, with the most extensive series of sub-populations near the eastern boundary of

Maes-y-Facrell around Pen-y-Ffridd farm. 12 'individual equivalents' were found here, each generally comprising a few small patches or tens of fruiting shoots. The largest here, pictured in Figure 9, comprised around 100-150 fruiting shoots. A further patch of over 100 shoots was found on thin soil at a cliff top on the northern side of the head (Figure 10).



Figure 6 Typical *Entosthodon pulchellus* location on rock ledge by Pen-y-ffridd Farm



Figure 7 This low ridge near the eastern boundary of Maes-y-Facrell has several small colonies of *Entosthodon puchellus*



Figure 8 At least 100 shoots of *Entosthodon pulchellus* grow on this thin cliff-top soil to the east of Hwylfa'r Ceirw, with *Reboulia hemisphaerica* just below

5.2 Other Open Calcareous Grassland Assemblage Species

5.2.1 Slender Silver-moss *Bryum concinnum*



Figure 9 Tall, silver-green shoots of *Bryum concinnum*

A few small patches and scattered shoots of this species, not previously recorded from the site, were found on the south-east facing slope of Maes y Facrell. The largest sub-population, totalling 2 individual equivalents, occurs on thin soil over a low ridge of rock where this is crossed by a distinct path. Some shoots had axillary bulbils, allowing vegetative dispersal. A smaller sub-population, with 2 individual equivalents but only low numbers of shoots, occurs on a similar low ridge further down the slope.



Figure 10 *Bryum concinnum* location, upper Maes-y-Facrell



Figure 11 *Bryum concinnatum* location, lower Maes-y-Facrell

5.2.2 Canary Threadmoss *Bryum canariense*



Figure 12 *Bryum canariense*

Hodgetts (2003) found this species scattered on the lower south-facing slopes above Llandudno (SH772823). It was refound in this area, and several further locations were found during the current survey. It occurs on the higher slopes of Maes y Facrell where scattered shoots were found on soil over one of the main outcrops. There are several patches on similar soil-covered rocks on the northern side of the head, on the cliffs above Marine Drive and on the coastal slope below it.



Figure 13 *Bryum canariense* grows in small quantity on this ridge on Maes-y-Facrell

5.2.3 Kunze's Threadmoss *Bryum kunzei*



Figure 14 *Bryum kunzei* patch on the south facing slope west of Gogarth

First found on the site by Hodgetts (2003), in a single small patch west of the toll lodge near the southern edge of the site. The original patch here was not relocated, but a second patch was found in a similar path-side location slightly higher up the slope. The current survey also found small patches on the south facing slope above and to the west of Gogarth. Some samples appeared close to *Bryum elegans* and had somewhat porose cells, characteristic of that species. The opinion of two referees differed on these; attempted sequencing of two specimens failed so identification could not be confirmed.



Figure 15 Small patches of *Bryum kunzei* grow in this location on the south side of Mynydd Isaf

5.2.4 Twisting Threadmoss *Bryum torquescens*

Three locations for this moss were confirmed by dissecting of its synoicous inflorescence. Small patches were found on soil over rocks on the eastern part of Maes y Facrell, the south-facing slope above Gogarth, and on trampled ground near the summit car park. It is likely that other '*Bryum capillare*' specimens growing on soil over limestone were also this scarcer species; wet conditions during survey meant that the main field character – the less twisted leaves when dry – could not be used to pick out likely candidates.

5.2.5 Heath Threadwort *Cephaloziella stellulifera*



Figure 16 This former quarry held small patches of *Cephaloziella stellulifera*

Hodgetts (2003) found this Nationally Scarce and locally-rare liverwort to be locally-frequent just to the north of the copper mines by Bishop's Quarry Road. The current survey found fertile material in a small quarry west of Bishop's Quarry, but other putative samples collected proved to be infertile so could not be confirmed.

5.2.6 Luisier's Tufa-moss *Gymnostomum viridulum*



Figure 17 *Gymnostomum viridulum* patch on slope west of Haulfre Gardens

Hodgetts (2003) found this small moss on old quarry spoil at the eastern end of Ogof Deuben, and in tiny quantity near the old copper mines. These sub-

populations were not relocated, but the current survey found small patches totalling 5 individual equivalents in three locations: on eroded ground just below the roadside wall in the western part of the site, on the south-facing lower slope just west of Haulfre Gardens, and on the east-facing lower slope above Happy Valley, just west of the Toll House. Other small patches may have been missed in similar locations.



Figure 18 *Gymnostomum viridulum* location, just west of Haulfre Gardens



Figure 19 *Gymnostomum viridulum* location, slope above Happy Valley

5.2.7 Starke's Pottia *Microbryum starckeanum*



Figure 20 Soil over broken rock on south-facing slopes in the western part of the site provides suitable habitat for *Microbryum starckeanum*

Hodgetts (2003) describes this small moss as fairly frequent, but easily overlooked, on the south-facing slopes particularly towards Llandudno. The current survey recorded it in at least three places on and below the south-facing cliffs of Ogof Deuben; on eroded ground just below the roadside wall in the western part of the site; on soil over broken limestone on the south-facing slopes in the southern and western parts of the site and on the south-facing slope to the east of the ski centre. *Microbryums* with ripening capsules which may well have been this species were frequently encountered in similar habitats across the southern and western parts of the site, and this species is likely to remain frequent here.

5.2.8 Side-fruited Crisp-moss *Tortella squarrosa*

Hodgetts (2003) listed 8 locations for this distinctive moss, assumed to be a recent colonist and perhaps a beneficiary of climate change. The current survey found it to be widespread and locally-abundant; it became impractical to record each extensive sub-population but widely-scattered records were made and the population is clearly now large. It was regularly encountered in short, open

vegetation, most frequently on thin soil on south-facing slopes. This moss is always sterile, and has no mechanism for vegetative dispersal – it relies on whole plants being transferred, for example by sheep. As such, the current grazing regime is clearly benefitting this species.

5.2.9 Round-fruited *Pottia* *Pottiopsis caespitosa*



Figure 21 *Pottiopsis caespitosa* location below Ogof Deuben

A single small colony of this moss was found new to Wales by Hodgetts (2003) at the eastern end of Ogof Deuben; it has subsequently been found on two limestone sites in Pembrokeshire. The current survey found it further west on Ogof Deuben, and also recorded it more widely, with sub-populations on old spoil in the Bishop's Quarry, soil over ledges on the old quarry face to the south-east, trampled soil over limestone by the summit car park, and in four locations on the south-facing slopes and limestone pavement area in the western part of the site.



Figure 22 *Pottiopsis* was found in small quantity on the spoil heap at Bishop's Quarry

5.2.10 Clint Crisp-moss *Tortella densa*



Figure 23 Cushions of *Tortella densa* are occasional on thin soil and limestone across parts of the site

This scarce species is distinctive in having upright, straight leaves when moist. First found on the south-facing slope west of Ffynnon Gogarth, and relocated near there by Hodgetts (2003) and in one other location. The current survey found it to be sparsely but quite widely distributed across the site, with concentrations of records on the south-facing slopes above Gogarth and on Maes-y-Farcell, but other records coming from limestone pavement areas in the north and west of the site. It is locally-frequent in some areas, such as on broken limestone on the upper parts of Maes-y-Farcell, and a full assessment of the

population size was not made here. The number of individual equivalents is likely to exceed 100. This apparent increase may be an artefact of more detailed recording.



Figure 24 Typical *Tortella densa* location with cushion arrowed, SH7559883472



Figure 25 *Tortella densa* location with cushion arrowed, SH7776283141



Figure 26 *Tortella densa* location with cushion arrowed, SH7630483127

5.2.11 Bent Crisp-moss *Tortella inclinata*



Figure 27 *Tortella inclinata* patch, southern edge of Maes y Facrell

This scarce moss had not previously been recorded on the site. It may have been overlooked as *T. densa* or *T. tortuosa*, although the current survey found only a single cushion on the lower south-facing slopes of Maes-y-Facrell, to the west of the former toll house on Marine Drive.



Figure 28 *Tortella inclinata* location, southern side of Maes-y-Facrell

5.3 Lowland Calcareous Rock Assemblage Species

5.3.1 Round-fruited *Grimmia* *Grimmia orbicularis*



Figure 29 Cushions of *Grimmia orbicularis* are frequent on limestone across the site

Although Nationally Scarce, this moss is frequent and locally abundant across Great Orme, sometimes mixed with the commoner *Grimmia pulvinata*. Both smaller rocks and larger crags are occupied. Although records were sometimes made, particularly in more marginal parts of the site, no attempt was made to comprehensively survey this species.

5.3.2 Lesser Striated Feather-moss *Plasteurynchium striatulum*

This robust moss was only recorded once during the current survey, with a single large patch on shaded rock on Pen-y-Dinas.

5.3.3 Dapple-mouthed *Grimmia* *Grimmia tergestina*

A single small patch of this rare species was found by Hodgetts (2003). The 8-figure grid reference provided covers a relatively wide area comprising smaller boulders rather than the main crag-face suggested by the description associated

with the record, and Hodgetts (pers. comm.) had no further location details. It was not refound during the current survey.

5.3.4 Canary Threadmoss *Bryum canariense*

This moss is included in the Lowland Calcareous Rock assemblage, as well as the Open Calcareous Grassland Assemblage. The sub-populations on Great Orme are mostly associated with thin soil over rock, rather than growing directly on the rock itself, so it has been included only in the latter assemblage.

5.4 Locally rare species



Figure 30 Both *Grimmia dissimulata* and *Didymodon ferrugineus* were found here

Dissimilar *Grimmia* *Grimmia dissimulata* was found new to the county on limestone pavement near the car park in the western end of the site. Approximately 10 individual equivalents, comprising around 60 cushions, were found on a line of flat rock partially embedded in turf. There is only one prior Welsh record of this limestone specialist, in Brecknock.

Rusty Beardmoss *Didymodon ferrugineus* was previously unrecorded in the vice-county. Scattered shoots were found alongside *Grimmia dissimulata* at the northern end of the line of flat rock; the small population totals 2 individual equivalents.

Yellow-bud Bryum *Bryum gemmilucens* was found on Maes-y-Facrell, on thin soil over a ridge of limestone in common with the two other rare *Bryums* here. Only a single small patch was noted. There are only two other Welsh records; on limestone on Castlemartin Range (Sutton, 2021), and on a sandy forestry track in Ceredigion.

Crisp Beardless Moss *Weissia longifolia* was collected in small quantity from the western end of the site; the similar *Weissia angustifolia* is much more frequent across the site. Although there are several previous site records of the aggregate species, there were no previous county records of *W. longifolia* sensu stricto.

Various locally-rare species that had been recorded by Hodgetts (2003) were re-recorded. *Flexitrichum flexicaule* and *Encalypta vulgaris* are generally frequent and locally-abundant in open areas across the site. *Flexitrichum gracile* was occasionally recorded; it is abundant in some places such as on old spoil by Bishop's Quarry. *Campylium chrysophyllum* was occasionally noted in short turf. *Tortula protobryoides*, *T. lindbergii*, *Microbryum curvicollum* and *M. rectum* were regularly recorded in open ground on the south and east-facing slopes. *Reboulia hemisphaerica* was found on thin soil over cliff edges in two places. *Riccia subbifurca* occupied a similar habitat in a couple of places on Maes y Farcell and the north side, whilst *Riccia sorocarpa* was regularly recorded. One

population of *R. sorocarpa* below Ogof Deuben had the rarely recorded micro-fungus *Neottiella ricciae*. *Rhodobryum roseum* was recorded in small quantity in two locations on and above cliffs on the north side, on old spoil in Bishop's Quarry, and on a cliff edge on Pen-y-Dinas. *Thuidium assimile* was recorded on a north-facing slope near the summit car park. *Tortula subulata* was recorded in two places on the north side. *Hymenostylium recurvirostrum* was re-recorded in a cliff-edge flush on the north side.



Figure 31 *Rhodobryum roseum*



Figure 32 Small patches of *Microbryum curvicollum* with pale brown capsules are locally frequent on open ground

A few other species were added to the site bryophyte list. Two patches of the locally-scarce *Riccia beyrichiana* were found on shallow soil over rock on Maes-y-Facrell. *Bryoerythrophyllum ferruginascens* and *Lophozia excisa* were found on trampled paths or compacted soil areas in a handful of places. *Drepanocladus polygamus* is present in two coastal flushes on the north side.



Figure 33 *Riccia beyrichiana* location, Maes-y-Facrell SH7690483006

A patch of the locally-rare *Rhynchostegium megapolitanum* was found on a cliff slope to the west of the lighthouse. *Fissidens exilis*, also locally-rare, was found fruiting on clay soils on the face of the old quarry to the south of Bishop's Road. *Schistidium strictum* was found in small quantity on flushed flat rock near the limestone pavement car-park at the western end of the site. *Trichostomum littorale*, a recent segregate of *T. brachydontium*, is widespread on the site.

6. Discussion

The Open Calcareous Grassland assemblage score is now 51. This means that the site has the third highest score for this assemblage in Wales, behind Stackpole SSSI and Castlemartin Range SSSI. These both score 57 (following Sutton, 2020 and Sutton, 2021 with subsequent additions).

Hodgetts (2003) commented that the site was grazed by feral goats and a few escaped sheep. Rabbit grazing was very localised. There were extensive areas of coarse grassland across the site at that time, and it was considered that the grazing regime was insufficient to keep this down. On the other hand, the grazing was considered more than enough for the steep south-facing slopes, where other factors interact with the grazing to keep the vegetation open and suitable for shorter bryophytes. Some of the slopes nearer the town were considered over-stocked, with large accumulations of droppings and nitrogen-enrichment evident. It was suggested that grazing on these slopes should not be increased.

Visitor pressure was considered to be causing excessive disturbance in a few areas, such as on the south-facing slopes near the ski centre. Interestingly, however, Hodgetts makes no mention of non-native cotoneasters or other invasive species which may not have been occupied much of the site at that time.



Figure 34 *Pyracantha* bushes on the slope east of the ski centre

Since 2003, the feral goat herd has been reduced through injection of females with contraception once every three years, and numbers are now around 120. Although known as browsing animals, they avoid non-native cotoneasters. Organised sheep grazing was reintroduced to the site ten years ago, with maximum numbers set at 416. Highest numbers are present from October – March, with the flock reduced in the summer months. This grazing regime has opened up previously rank grassland, but the current survey noted that some areas on the south-facing slopes west of Gogarth (centred on SH759 833 and includes the south-facing slope above the road to both east and west) – also subject to exposure and summer droughts – were over-grazed and trampled, with bare ground and shattered rock at a level which limits all but a few hardy bryophytes. Ridges and the tops of outcrops – niches which could be expected to have rich bryophyte assemblages – appear to be disproportionately affected. This may result from sheep seeking good vantage points, or drier, grass-free ground to lie on during wet weather.



Figure 35 Sheep favour stony ridges on the south-facing slopes



Figure 36 South-facing slopes in some places have a high proportion of bare-ground; grazing pressure could be reduced here

7. Conclusion and recommendations

The survey further demonstrated the importance of the Great Orme's Head SSSI for bryophyte conservation. The addition of species including the Nationally Rare *Pterygoneurum papillosum* and *Didymodon acutus*, and the Nationally Scarce *Tortella inclinata* to the Open Calcareous Grassland assemblage here positions the site as the third most important in Wales for the assemblage. The addition of *P. papillosum* to the Welsh flora shows the value of rigorous survey in extensive sites, however well-recorded they appear to be.

The survey suggested that populations of key assemblage species may have expanded across the site over the last two decades, potentially due to increased grazing levels and changing climatic conditions. However, the grazing and trampling impacts on parts of the southern side of the head are perhaps now on the cusp of becoming excessive, and livestock numbers should ideally be subject to continual, careful review. Populations of non-native cotoneasters and other invasive species pose a long-term threat to the ecology of the site, including bryophyte populations, especially in the more open calcareous grassland. Favourable Conservation Status for the calcareous bryophyte assemblages would only be attained when this factor is under control.



Figure 37 Non-native cotoneasters are abundant on some of the south-facing slopes

8. Acknowledgements

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10. Data Archive Appendix

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

The data archive contains:

The final report in Microsoft Word and Adobe PDF formats.
A spreadsheet of records in Microsoft Excel format.

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'.

Appendix 1: map of notable species



Appendix 2: data from the survey

This data table has been removed because it is not possible to make it comply with accessibility legislation. The data are available on NBN, and a full copy of the report can be requested from Natural Resources Wales.