



**UPLANDS
INITIATIVE FIELD
PROJECTS
2011-12,
Cwm Lliw
Survey Area,**

North Wales

**Archaeological Survey
Report**



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SUMMARY

An archaeological identification survey was undertaken of a mountainous region to the south-west of Llyn Tegid (SH 814 310 centred), near Bala, North Wales from November 2011 to January 2012, by Oxford Archaeology North (OA North) on behalf of the Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW) as part of the Uplands Initiative. The project comprised an initial archaeological desk-based study, followed by a field identification survey.

The study area of Cwm Lliw covers an area of 14.26 sqkm of relatively rolling mountainous upland landscape of hills between the isolated valleys of Pennant Lliw and Cwm yr Allt-lwyd.

Eight sites were identified by the desk-based study as being recorded within the HER and NMR, of which all were updated and five were given additional new NMR numbers. In total, a further 208 new sites were identified by the field survey, representing a substantial numerical increase in the number of sites within the study area.

The previously discovered early sites were limited to an early medieval findspot of a glass bead found near to the medieval-dated Castell Carndochan and a longhouse of potentially the same period. The Carndochan gold mine and an associated shaft were recorded for the post-medieval period along with a single peat stand, as well as a platform and a placename of unknown date.

The present survey identified a small group of potentially damaged prehistoric cairns, which included some summit cairns, but also some on shoulders below the summits. They are located for the most part in select groups and have good outward vistas.

The survey has added a large proportion of new medieval longhouse sites which skirt the outside of the enclosed lands on the edge of the study area. These are both individual sites and clustered settlements, which, in their simplest form, were associated with upland transhumance but others had evidently developed into more permanent farmsteads.

In total, 165 sites have been ascribed to the post-medieval period, and seven are of unknown date. The majority of the identified sites reflect the relatively recent exploitation of large tracts of open moorland sheepwalks. Industrial extraction is well represented in the study area; there are various trial mines with some slightly larger examples of manganese workings with associated miner's huts. The edge of the Carndochan gold mine falls just within the study area. Although the site of the main processing floors and crushing mill were not investigated, there were examples of open stoped workings, an adit and a mine building evident.

CRYNODEB

Cyflawnwyd arolwg adnabod archeolegol o ardal fynyddig i'r de-ddwyrain o Lyn Tegid (wedi'i ganoli ar SH 814 310), ger y Bala, Gogledd Cymru o fis Tachwedd 2011 hyd Ionawr 2012, gan Oxford Archaeology North (OA North) ar ran Comisiwn Brenhinol Henebion Cymru (CBHC) fel rhan o Fenter yr Ucheldiroedd. Roedd y prosiect yn cynnwys astudiaeth ddesg archeolegol gychwynnol, a ddilynwyd gan arolwg adnabod yn y maes.

Mae ardal yr astudiaeth yng Nghwm Lliw yn gorchuddio ardal 14.26 cilomedr sgwâr o ucheldir mynyddig cymharol donnog rhwng dyffrynnoedd anghysbell Pennant Lliw a Chwm yr Allt-lwyd.

Nodwyd wyth o safleoedd gan yr astudiaeth ddesg fel rhai a gofnodwyd o fewn Cofnodion yr Amgylchedd Hanesyddol (CAH) a'r Cofnodion Henebion Cenedlaethol (CHC). O blith y rhain roedd pob un wedi'i diweddarau ac roedd pump wedi cael rhifau CHC newydd ychwanegol. Gyda'i gilydd, canfuwyd 208 o safleoedd newydd drwy'r arolwg maes, sy'n gynydd sylweddol yn nifer y safleoedd yn ardal yr astudiaeth.

Cyfyngwyd y safleoedd cynnar a ddarganfuwyd yn flaenorol i fan darganfod glain gwydr canoloesol cynnar a ddarganfuwyd ger castell canoloesol Carndochan a thŷ hir a allai fod o'r un cyfnod. Cofnodwyd cloddfa aur Carndochan a siafft gysylltiedig, ynghyd â stand mawn ar gyfer y cyfnod ôl-ganoloesol, yn ogystal â llwyfan ac enw lle o ddyddiad anhysbys.

Darganfu yr arolwg presennol grŵp bychan o garneddau cynhanesyddol - a oedd o bosibl wedi'u difrodi - gan gynnwys rhai carneddau copa, ond hefyd rhai ar warrau islaw'r copaon. Maent wedi'u lleoli mewn grwpiau dethol ar y cyfan, pob un â golygfeydd da.

Mae'r arolwg wedi ychwanegu cyfran fawr o safleoedd newydd o dai hir canoloesol ar gyrion y tiroedd amgaeedig sy'n ymylu ag ardal yr astudiaeth. Mae'r rhain yn cynnwys safleoedd unigol yn ogystal ag aneddiadau clystyrog a oedd, yn eu ffurf symlaf, yn gysylltiedig â thrawstrefa yn yr ucheldiroedd, ond mae'n ymddangos bod eraill wedi datblygu'n ffermydd mwy parhaol.

Gyda'i gilydd, priodolwyd 165 o safleoedd i'r cyfnod ôl-ganoloesol, ac mae saith o ddyddiad anhysbys. Mae'r rhan fwyaf o'r safleoedd a nodwyd yn dynodi datblygiad cymharol ddiweddar ardaloedd mawr o rostir agored lle porai defaid cyn hynny. Mae ardal yr astudiaeth yn cynnwys sawl enghraifft o echdynnu diwydiannol; mae yna lawer o gloddfeydd arbrofol a rhai enghreifftiau ychydig yn fwy o weithfeydd manganîs ynghyd â chytiau'r mwyngloddwyr. Mae ymyl cloddfa aur Carndochan yn syrthio o fewn ardal yr astudiaeth o drwch blewyn. Er nad astudiwyd safle'r prif loriau prosesu a'r felin fathru, roedd yn amlwg bod yna enghreifftiau o weithfeydd agored, mynedfa ac adeilad mwynglawdd.

ACKNOWLEDGEMENTS

Oxford Archaeology North (OA North) would like to thank the Staff of the Royal Commission on Ancient and Historical Monuments of Wales (RCAHMW), in particular David Leighton, Philip Ray and Medwyn Parry, and also the staff of the reader services of the National Library of Wales, Aberystwyth. OA North is also grateful to all the landowners and estate managers who generously allowed the survey team onto their land.

We would also like to thank Angharad Stockwell of the Gwynedd Archaeological Trust for providing Historic Environment Record (HER) details.

The field survey and desk-based assessment were undertaken by Peter Schofield, assisted by David Maron. The report was written by Peter Schofield, who also produced the illustrations. The summary translation was by Geraint Macdonald. The report was edited by Jamie Quartermaine, who also managed the project.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF THE PROJECT

1.1.1 Oxford Archaeology North (OA North) was invited to undertake an archaeological identification survey of the mountainous region on the south-west side of Llyn Tegid (SH 814 310 centred), North Wales, on behalf of the Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW) as part of the Uplands Initiative (RCAHMW 2010). The study area was 14.26 sqkm in extent and encompassed land above the village of Llanuwchllyn. The land consists of relatively rolling mountainous upland landscape (Fig 1), that is contained within the Snowdonia National Park and skirts the western edge of the Bala and Bala Lakesides registered Historic Landscape No. 53 (Cadw/ICOMOS 1998).

1.2 OBJECTIVES

1.2.1 The objectives of the project were:

- to promote a wider and deeper understanding of upland areas and their role in Welsh history, in accordance with the aims of the Uplands Initiative;
- to provide an accurate Level 1 survey of all identified monuments (OA North 2002).

1.2.2 To achieve these objectives the study area was subjected to a desk-based assessment and identification survey. The desk-based study, carried out in October 2011, consisted of a search of both published and unpublished records held by the National Monuments Record (NMR) of Wales, the Historic Environment Records (HER) of the Gwynedd Archaeological Trust, and the library and archives at OA North's offices in Lancaster. The fieldwork was carried out to fit in with access availability and weather conditions, and was undertaken between November 2011 and January 2012

1.2.3 This report sets out the results of the work, accompanied by a summary gazetteer of new sites (*Appendix 1*).

2. METHODOLOGY

2.1 PROJECT DESIGN

2.1.1 A project design (OA North 2011) was submitted by OA North in response to a request for archaeological surveys of extensive areas of the Welsh Uplands; it was designed to meet the requirements of a brief issued by RCAHMW (2010). The project design provided for an initial archaeological desk-based study, followed by a field identification survey for the following areas: Yr Aran, Foel Goch and Cwm Prysor and Cwm Lliw. OA North was commissioned to undertake survey of two of these project areas, Foel Goch and Cwm Lliw, and the present report relates to the Cwm Lliw area (Figs 1 and 2).

2.2 DESK-BASED SURVEY

2.2.1 *National Monuments Record (NMR)*: an assessment was made of data held by the RCAHMW, Aberystwyth, which was overlain onto digital 1:10,000 mapping for the study area.

2.2.2 *Aerial Photographs*: aerial photography from the NMR office was also consulted along with RCAHMW aerial photographic interpretation of the study area. Information relating to possible new sites was annotated onto the field walking maps in GIS format.

2.2.3 *Historic Environment Record (HER)*: an assessment was made of HER data held by the Gwynedd Archaeological Trusts (GAT), which was overlain onto the digital base map for the area.

2.2.4 *Ordnance Survey Mapping*: all available historic mapping for the study area (provided by RCAHMW), was examined for the study area for indications of historic sites that were not previously represented in the NMR and HER databases.

2.2.5 *World Wide Web*: historic landscape characterisation, parish records, census data and transcripts of some public records were obtained from archives and local histories on the internet. More modern data on the parish was also gleaned, which provided information about recent developments in the area.

2.3 IDENTIFICATION SURVEY

2.3.1 An identification survey to Level 1 (OA North 2002) was undertaken on the Cwm Lliw study area. The identification survey represents the minimum standard of record for field investigation, and is aimed at the discovery of previously unrecorded sites. Its objective is to record the existence, location, and extent of any archaeological site. The emphasis of the record lies in the written description, which includes comments on character and condition, and sites have been graded in terms of condition and archaeological significance. Sites already identified within the study area by the NMR and HER were checked and recorded at the same level of consistency as the newly discovered sites. The whole study area, including both the upland commons and surrounding improved and enclosed fringes, was

examined. The survey involved four elements: reconnaissance; mapping; description; and digital photography. This generated core information for entry into the NMR and additional archive information, in accordance with the RCAHMW Revised Data Standard for Upland Survey (RCAHMW 2004).

- 2.3.2 Each area was walked in transects of between 30m and 50m apart, depending on local topography and ground cover. The archaeological detail was mapped using Leica differential GPS equipment. The digital survey data was transferred as shapefiles into a GIS system (ArcGIS 9.3), and was superimposed onto the embedded digital Ordnance Survey data (Fig 3). The descriptive records were input on-site into a database on a Psion portable palm computer; the more complex sites were also sketched onto paper *pro-forma* sheets. A photographic record of the sites was maintained using digital colour imagery and the images were used to accompany the present report.

2.4 GAZETTEER OF SITES

- 2.4.1 All of the information concerning archaeological sites within the assessed area was collated into a gazetteer (*Appendix 1*), which provides brief details of their location, period, type and altitude. Locations are given as ten-figure National Grid References where possible, and the position of each site is indicated on Figure 3.

2.5 ARCHIVE

- 2.5.1 A full archive has been produced to a professional standard in accordance with current English Heritage guidelines (1991) and the *Guidelines for the Preparation of Excavation Archives for Long Term Storage* (UKIC 1990). The project archive represents the collation and indexing of all the data and material gathered during the course of the project. The archive is provided in the English Heritage Centre for Archaeology format, both as a printed document and digitally. A synopsis, including the index to the archive and a copy of the report, will be placed in the NMR, RCAHMW at Aberystwyth, and the Gwynedd HER at GAT, Bangor.

3. TOPOGRAPHICAL AND HISTORICAL BACKGROUND

3.1 LOCATION AND TOPOGRAPHY

3.1.1 The study area of Cwm Lliw covers an area of 14.26 sqkm and consists of rolling moorland flanked to the east and south-west by the narrow isolated valleys of Pennant Lliw and Cwm yr Allt-lwyd (Plate 1). The study area is demarcated to the west and south by modern forestry plantations and to the north-east by the Pennant Lliw drainage line. Flanking this line is a chain of hills between 400-550m OD in height, which from north-west to south-east the hills are Clogwyn Llwyd, Bryn Mawr, Mynydd Bryn-llech, Clogwyn Carreg yr Holtt, Craig Dolfudr, Gerrig Chwibanog, Craig y Llestri, Castell Carndochan, Graig ddu and Foely Graig. The centre of the study area is wrapped around an extensive basin containing blanket peat at Waun y Griafolen which was excluded from the survey and the area had an extension running south-west onto the hills of Cefn Griafolen and Ffridd yr Allt-lwyd which overlook the valley of Cwm yr Allt-lwyd. The study area contains numerous fenced ffridd enclosures and several examples of walled and earth-banked ffridd enclosures at Graig ddu, Y Ddau Faen Llwyd, Blaenlliw Isaf and Ffridd y Bont.



Plate 1: The undulating hilly moorland in the centre of the Cwm Lliw study area

3.2 GEOLOGY

3.2.1 The solid geology of the study area is highly faulted and consists of extrusive igneous rocks of Ordovician age (acid tuffs and basic lava and tuff) that form the bulk of the study area. The igneous rocks around the rugged Arenig mountains form volcanic sills that are part of a band of geology forming escarpments similar to, but less impressive than, those on Cadair Idris to the west (Bowen and Gresham 1967, 1). Further discrete bands of exposed sedimentary rocks of Ordovician age (Arenig,

Caradoc and Llandeilo series) are found scattered throughout the study area and the northern tip of the area is of older Cambrian age sedimentary rocks of the Merioneth association (British Geological Survey 1994; Neville George and Smith 1961). The overlying soils are a mixture of various soil types dependant on the parent rock (Soil Survey 1983). The area is dominated by very acidic peaty soils of the Crowdy 2, Hexworthy and Bangor associations. Other areas consist of bands of a mixture of permeable or well-drained loamy upland soils of the Wilcocks 2 and Hafren associations (*ibid*).

3.3 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

- 3.3.1 **Prehistoric to Roman:** prior to the present survey no sites were recorded within the study area as being of prehistoric origin. It is thought that, due to its prominence overlooking both Pennant Lliw and the valley containing Llyn Tegid, the promontory of Castell Carndochan may have once been the site of an Iron Age hillfort; however, the construction of the medieval castle seems to have removed all evidence for such a structure. The adjacent Llyn Tegid area contains no known enclosed settlements or defended enclosures or hillforts (GAT 2006), but there is evidence to the north-east of Bala for a partially bivallate hillfort at Cefn Caer Euni (NMR 93712).
- 3.3.2 Iron Age/Romano-British activity in the region seems to have had strong defensive and military components, although most sites are further to the east of the study area in the lowlands, mainly around the natural routeway in the valley containing Bala Lake (Cadw *et al* 1998, 69). There is little evidence from the HER of upland occupation in the region immediately surrounding the present study area, although this may reflect a lack of archaeological investigation. Recent surveys have found that the prehistoric domestic settlements in the uplands of inland Merioneth are widespread but are scattered in distribution (GAT 2006).
- 3.3.3 The route through the valley around Bala Lake has the potential to have been used as far back as the prehistoric period, prior to Roman occupation (Bowen and Gresham 1967, 3). The distribution of lowland findspots of stone axes and axe hammers show a concentration on the flanks of the hills located on the north side of Bala Lake (Cadw *et al* 1998, 40) which may point towards lowland occupation in this area. The hillfort at Cefn Caer Euni is located overlooking the valley to the north-east of Bala (NMR 93712; Lynch 1995, 83; OA North 2012). There are Roman military complexes located at either end of Bala Lake, which are joined by the putative Roman road to Chester (NMR 303524). There are the remains of an auxiliary fort at Caer Gai on the south-west end of the lake (NMR 95436) and the cropmark remains of a large military complex at Llanfor on the north-east end of the lake (NMR 95436). The complexes at Llanfor also revealed a putative destroyed stone circle (Bowen and Gresham 1967, 283) and geophysical anomalies which may relate to putative Bronze Age burial and ritual sites (Cadw *et al* 1998, 69).
- 3.3.4 **Medieval:** only three sites of probable medieval date had previously been discovered within the study area. The most obvious structure was Castle Carndochan located on a prominent promontory on the eastern tip of the study area overlooking both Pennant Lliw and Llyn Tegid (NMR 303152). The promontory, because of its strength of position may have once been used as the site of an Iron

Age hillfort, although no structure has so far been identified. The castle is thought to have been built in the Penllyn cantref around the thirteenth century by the Welsh Princes of Gwynedd but there is no documentary evidence for the castle itself.

- 3.3.5 The only recorded findspot from the survey area was of a perforated blue glass bead ornamented with three coloured dots found during digging near Castell Carndochan in 1923 (NMR 59320), and probably part of fifth century AD grave furniture.
- 3.3.6 Within the medieval period the study area lay within the commote of Penllyn in Merionethshire and was under the control at first of the Princes of Gwynedd and, subsequently, the English Crown. The area was relatively uninhabited in the early medieval period, especially the rugged upland areas (Beverly-Smith and Beverly-Smith 2001, 209), although it was exploited latterly for its extensive upland woodland resources, hunting and moorland grazing as part of the Forest of Snowdon. Tenants of the Penllyn commote were taxed on their produce, which largely comprised renders in livestock and dairy produce and, to a lesser extent, oats (*op cit*, 42). The disposition of the prince's bond tenants, before the conquest, clearly point to Bala as the commotal centre with the prince's ffridd or cattle-lands on the high ground to the south-west of the lake (GAT 2006). The mountainous uplands formed suitable areas for both legal and illegal encroachment of ffridd enclosures in the late medieval period and possibly earlier, with widespread cattle-based transhumant hafod-style settlement and agriculture in the study area. It is probable that the majority of farming involved the pioneering exploitation of marginal uplands for the pasturage of cattle rather than sheep. That there was substantial farming activity in this area in the medieval period is reflected in the reference in a Lay Subsidy Roll of 1292-3 (Beverly-Smith and Beverly-Smith 2001, 172), that Madoc ap Iorwerth, a large landowner in Pennant Lliw, was taxed at over 30 shillings (with an average of four shillings for Penllyn commote).
- 3.3.7 There is only limited physical or documentary evidence for the dispersed upland habitation and exploitation in the study area in the medieval period, such as longhouses and/or other domestic structures and elements of field-systems, which are prevalent elsewhere in the region (OA North 2009; Davies 1973). A single longhouse was previously recorded in the HER as located on the hillside just to the south of Castle Carndochan (NMR 523921).
- 3.3.8 **Post-Medieval:** encroachments on the commons, held as Crown Lands, were undertaken by manorial lords, and tenants alike, with widespread cattle-based transhumant hafod-style settlement and agriculture in the region. These encroachments were to continue down the centuries by a process of neglect (by the Crown), corruption and stealth (*op cit*, 31). Large tracts of the upland moorland presumably remained ostensibly Crown Lands in the post-medieval period; although, the farms and cultivable lands surrounding these areas, together with certain encroachments on to the commons, were increasingly amalgamated into large estates through crown leases.
- 3.3.9 The evolution of land tenure in the study area developed after the Crown wrested control from the princes of Gwynedd; the land may then have come into the hands of the Vaughan family who controlled the nearby estate of Glanllyn. At least the eastern edge of the study area, around Castel Carndochan and gold mine, was held as part of the Glanllyn estate in the nineteenth/twentieth century. By that time, the estate as a whole (possibly including the study area) had passed through marriage to

the Wynnstay estate of Sir Watkin Williams Wynn (1692-1749) 3rd baronet of Wynnstay. By 1873 Sir Watkin Williams Wynn, Bt, of Wynnstay, Denbs owned an estimated 87,919 acres of Merioneth with a rental value of £43,274 (GAT 2006). The Glanllyn estate was accepted by the HM Revenue and Customs in lieu of death duties due in 1949.

- 3.3.10 The most extensive and important site of the period is that of the short-lived late-nineteenth century Carndochan gold mine (NMR 404224). The lode was based in the Ordovician Nant Hir Mudstones and the mine was first worked in 1862-1863 by Roberts & Company (probably Robert Roberts of Clogan mine) with permission of the Glanllyn Estate but without Crown consent (Hughes 1994). The Manchester-based Carndochan Mining Company was formed in May 1863 and they ran the enterprise until full scale production ceased in 1866 after the lode was lost at a fault. The mine had a water-powered ore-crushing mill and the amalgam was retorted and refined within the complex. A leat taken from Nant Ty Coch powered two gold pans and the company commissioned a larger crushing mill in 1864 driven by a 50ft wheel on Afon Lliw. The enterprise was revived in 1869-1871 by John Parry of Clogau and Figra Mines, but the mine quickly became non-viable and the company was wound-up in 1873. The mine was intermittently worked in the period 1894-1905 and a deep adit was driven in to try to access the lode (*ibid*).

4. RESULTS OF THE DESK-BASED STUDY

4.1 DESK-BASED STUDY SUMMARY

- 4.1.1 ***Cartographic Evidence:*** examination of the historic maps, the Ordnance Survey (OS) First and subsequent editions of the 6" and 25" to 1 mile mapping, has the potential to inform the development of enclosed lands and higher unenclosed moorland; however, in practice there was little significant difference revealed between the extensive OS First Edition mapping (1875-91) and that of today. There are several old ffridd enclosures at Graig ddu, Y Ddau Faen Llwyd, Ffridd y Bont and around the south side of Blaenlliw Isaf. Very few historic features are depicted on the mapping reflecting the relative dispersed nature of standing structures and monuments in the area. The majority of sites consist of old sheepfolds scattered over the hills, along with sinuous mountain trackways running onto the sheepwalks. Castell Carndochan is depicted on the mapping in the east of the study area along with an unroofed farmhouse at the northern end of Cefn Griafolen, and a roofed field barn in the ffridd enclosure to the south of Blaenlliw Isaf farm. In addition, the OS Second Edition mapping (1900-01) depicts stoped levels at Carndochan gold mine at the extreme east of the study area, although the majority of the mine is outside of the survey areas; there was also a roofed shooting hut depicted at Cerrig yr-lwrch.
- 4.1.2 ***Aerial Photographic Interpretation:*** digital aerial photographic mapping and interpretation was supplied by the RCAHMW under the auspices of the Uplands Initiative (Garfi 2010). The interpretation identified limited potential remains of archaeological interest, and included several walled structures, such as shelters and simple folds, that were not depicted on the OS mapping, as well as some extensive peat cuttings within Ffridd yr Allt-lwyd in the south-west of the study area. It is possible that the ground conditions, with areas of blanket peat and some heather coverage, allied with craggy undulating ground, may have adversely obscured features during aerial photographic interpretation.
- 4.1.3 ***Gwynedd Historic Environment Record (HER), National Monuments Record of Wales (NMR):*** in total, eight unduplicated sites were recorded within the HER and NMR; comprising one early medieval site, two medieval sites, three post-medieval sites and two sites of unknown date (Table 1; Fig 3).

5. SURVEY RESULTS

5.1 INTRODUCTION

- 5.1.1 The survey examined both known and previously unknown sites, which ranged in date from prehistory through to the post-medieval period. The majority of the sites consisted of widely dispersed single monuments, although groups of medieval/post-medieval domestic sites and trial mines were also found. All the sites identified by the documentary study were examined; their locations and extent were updated on the mapping, as required, and the site descriptions were enhanced. Both new and old sites are indicated on Figure 3.
- 5.1.2 *Previously Recorded Sites:* the desk-based study identified three pre-survey NMR sites, whilst a further five unduplicated HER sites were also updated and given new NMR numbers. The majority of the known sites were confirmed by the identification survey.
- 5.1.3 *New Sites:* in total, 208 new sites were identified representing a substantial numerical increase in the number of sites within the study area and are summarised below (Table 1).

Period	Pre-Survey Number	Post-Survey Number	Numerical Increase
Prehistoric	0	3	3
Iron Age	0	2	2
Early Medieval	1	1	0
Medieval	2	38	36
Post-Medieval	3	165	162
Unknown	2	7	5
Total	8	216	208

Table 1: Pre- and Post-Survey Site Numbers

- 5.1.4 *Altitude range of sites:* the overall site density was 15.14 sites per sqkm, which was spread according to altitude as shown in Table 2. The greatest density of sites was between the 425-449m OD range.

Height Range	Existing Sites	New Sites	Total
225-249m	0	1	1
250-274m	1	5	6
275-299m	0	4	4
300-324m	1	6	7
325-349m	5	20	25
350-374m	0	21	21

375-399m	0	32	32
400-424m	0	31	31
425-449m	1	36	37
450-474m	0	21	21
475-499m	0	14	14
500-524m	0	15	15
525-549m	0	2	2
Total	8	208	216

Table 2: Pre- and Post- survey site numbers with respect to altitude

5.1.5 **Range of site types:** the sites identified from the present survey, and previously identified within the NMR and HERs, fall into sixteen general types, which are defined as shown in Table 3.

Type	Existing Sites	New Sites	Total
Barn, Byre	0	6	6
Boundary Bank, Boundary Wall, Marker Cairn, Clearance Cairn, Stone	0	32	32
Building Platform, Longhouse, Platform, Shieling	2	35	37
Castle	1	0	1
Clapper Bridge, Weir	0	2	2
Field-System	0	1	1
Findspot	1	0	1
Gold Mine, Mine, Mine Building, Mine Shaft, Trial Mine	2	16	18
Hunting Lodge, Shooting Stand	0	7	7
Hut Circle	0	2	2
Limekiln, Quarry	0	2	2
Natural Feature	1	0	1
Peat Cutting, Peat Hut, Peat Stand	1	18	19
Round Cairn	0	3	3
Sheep Fold, Sheep Shelter, Shepherds Hut, Stock Enclosure, Store, Structure	0	77	77
Trackway	0	7	7
Total	8	208	216

Table 3: Range of Site Types

5.2 PREHISTORIC

5.2.1 *Prehistoric Cairns:* there is relatively little evidence for prehistoric period sites within the survey area, excepting six newly discovered burial monuments. These consist of a possible pair of damaged cairns on the summit of Craig y Llestri (NMR 523820 and 523821; Plate 2), with a further outlier located downslope just to the south on a shallow shelf (NMR 523811; Plate 3; Fig 4).



Plate 2: A pair of damaged round cairns on the summit of Craig y Llestri (NMR 523820 and 523821)

5.2.2 The majority of prehistoric sites recorded (and scheduled) in the mountainous region, immediately surrounding the study area, are summit cairns, although examples of cairns located on lower land were found nearby during previous investigations (OA North 2005; 2009; 2010 and 2012). There is a sub-oval penannular enclosure set against a glacial erratic boulder on Cors y Gwarthegllwydion that may have prehistoric origins (NMR 523761; Plate 4).



Plate 3: Putative round cairn on the south flank of Craig y Llestri (NMR 523811)



Plate 4: Pen-annular enclosure at Cors y Gwartheg-llwydion (NMR 523761)

5.2.3 **Iron Age/Roman:** there are two putative hut circles located at the head of Pennant Lliw, and are on the open common at the fringe of the enclosed lands in the valley at Graig Boeth and Clogwyn Carreg yr Hollt (NMR 523744 and 523882). The sites may have been used latterly as stock enclosures and have been used in the medieval/post-medieval period, as they lay adjacent to shieling/longhouse settlements.

5.3 MEDIEVAL

5.3.1 **Castell Carndochan:** the castle layout is of an irregular stone-walled enclosure, about 40m north-east to south-west by 25m north-west to south-east (Plate 5). The principal feature is the remains of a great apse-ended tower projecting from the enclosure (Plate 6). There are traces of two smaller rounded towers around the enclosure walls, but no trace of an entrance (descriptive entry for NMR 303152). The present survey recorded large stone quarries used for the construction of the castle on the south side (NMR 523866), as well as dispelling a putative well in the same location that was found to be a mineshaft (NMR 523919).

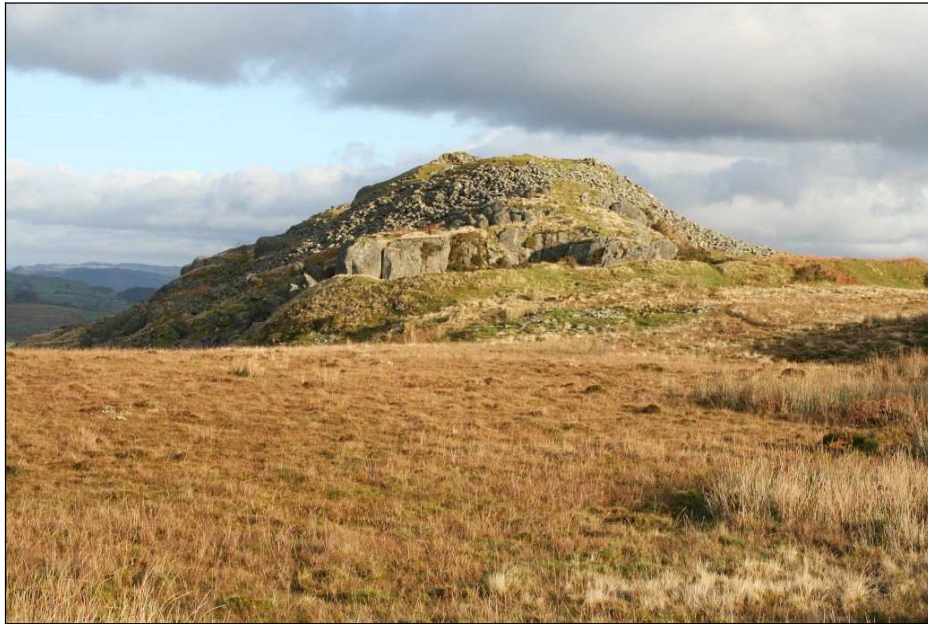


Plate 5: Castell Carndochan looking north-east (NMR 303152)



Plate 6: Castell Carndochan looking south-west (NMR 303152)

- 5.3.2 **Domestic Sites:** only one longhouse site, of probable medieval date, had previously been discovered within the study area, but the present survey has added 37 medieval longhouses and building platforms (Plate 7; Fig 5). The distribution of the longhouses formed a rough pattern around the fringes of the study area.



Plate 7: Longhouse foundations on the east flank of Craig Dolfudr (NMR 523848)

- 5.3.3 These were found both as isolated structures and in clusters with associated ancillary structures and peat stands; often the foundations had been re-used as footings for later sheepfolds or field barns. At their simplest, the structures form obvious hafod-type settlements and are located adjacent to access trackways on the marginal fringes of the mountains where they run up onto the commons from farms on the valley floor. This is particularly the case above Graig Y Tan and Buarthmeini farms in Pennant Lliw in the east of the study area and above Allt-lwyd farm in Cwm yr Allt-lwyd in the west of the area. Some of these sites, however, had developed into permanent farmsteads, and, in particular, a fragmentary field-system (NMR 523784) was discovered on the flat saddle of the hill at Nant Ty Coch just to the south of Castell Carndochan, where several trackways run onto the sheepwalks from the valley below. The field-system was related to small oval stock enclosures, longhouses, and extensive peat cuttings and stands.
- 5.3.4 A grouped longhouse settlement was identified at Clogwyn Carreg yr Holtt adjacent to a mountain trackway leading up from Buarthmeini farm in Pennant Lliw. The settlement may be related to a site found by documentary evidence in the form of the proceedings for the Crown Court of Exchequer for 1617 which recorded the mortgage of a *'house in the mountain called Yr Havotty Mawr'* in the township of Pennantlliw, parish of Llanuwchllyn. (Davies 1973, 16). The settlement contains several longhouses with ancillary structures, a hut circle that has been re-used as a stock enclosure, and later features, such as a well-constructed sheepfold and a limekiln. The latter is unusual as it is rare to see limekilns at such altitude (NMR 523749).

5.4 POST-MEDIEVAL/MODERN

- 5.4.1 ***Agricultural Landscape and Settlement:*** in total, 165 sites have been ascribed to the post-medieval period, and form the majority of the identified sites (Table 1).

The sites reflect the relatively recent exploitation of large tracts of moorland. The land is either currently open moorland common, gradually improved moorland enclosed by Enclosure Act, or small areas of agricultural fringe lands located adjacent above farms located within Pennant Lliw and Cwm Yr Allt-lwyd. The majority of sites were agricultural in origin, and comprise disparate sheepfolds; sheep shelters and shepherd's shelters (up to 77 examples) scattered widely across the whole study area. and demonstrate that sheep farming, and to some extent cattle farming, have been a major enterprise across the moorland at altitude during the post-medieval period.

- 5.4.2 There are several enclosed farmsteads located in the isolated centre of the study area at Cefn y Griafolen where the extensive peat cover has hemmed in agriculture (Plate 8). The farmsteads have clearly developed out of medieval settlement by replacing or re-using adjacent longhouse structures (NMR 523907, 523912 and 523914). The initial settlement probably first served as a simple shieling ground for the farms in the lowlands of Cwm yr Allt-lwyd to the south-west. It is evident, though, that many, if not most, of the longhouse sites in the study area have been re-used as footings for sheepfolds and field barns in the post-medieval period.



Plate 8: Expanse of blanket peat next to Cefn y Griafolen farmstead (NMR 523914)

- 5.4.3 **Communications:** there was evidence of communication routes across the study area, mostly in the form of trackways leading up onto the sheepwalks from the lowland farms below. It is not surprising that access up into, and also through and over the hills and moorland of the study area, has left obvious remains as they would have served as access for the sheepwalks, routes to peat grounds, quarries and the hafods.
- 5.4.4 **Recreation:** the study area contains a small group of recreational features, with a cluster of six shooting stands at Cors y Gwartheg-llwydion, and several shooting huts or structures; the best preserved at Cerrig yr Lwrch (NMR 523825; Plate 9)

consisted of a small, once slate-roofed, single celled-hut nestled behind a craggy summit, with a well constructed fireplace, stone seat and a doorway on the north side.



Plate 9: Hunting shelter on Cerrig yr Lwrch (NMR 523825)

5.4.5 **Industrial Landscape:** there is evidence for small-scale industrial trial extraction and quarrying at various places in the central parts of the study area, and for the most part this is related to manganese mining (Linton nd) (Fig 6). There are small open stoned workings with miner's huts for ore processing and also an engine base for winding gear at Craig y Llestri (NMR 523815, 523817-523819), as well as further more extensive workings on Bryn Mawr, comprising trial levels, stoned and quarried workings (NMR 523725, 523729 and 523730), a miner's hut (NMR 523731: Plate 10), with adjacent working floors and obvious spoil heaps.



Plate 10: Miner's hut at Bryn Mawr manganese mine (NMR 523731)

- 5.4.6 The remains of a single limekiln was identified at Graig Boeth (NMR 523749; Plate 11). It was located on an access trackway running downslope to the east of the mining features at Bryn Mawr, and was adjacent to a small settlement.



Plate 11: Eroded limekiln at Graig Boeth (NMR 523749)

- 5.4.7 The most extensive evidence for extractive activity was for the disparate, localised but occasionally extensive areas of peat cutting that reflecting local domestic needs (Owen 1975). The surviving cuttings were found throughout the fringes of the study area just above the limits of the ffridd enclosures where they were often located within easy reach of established farmsteads, or they were sited adjacent to the moorland access trackways running up onto the sheepwalks. It must also be borne in mind that the study area skirts the outside of a large topographic bowl containing an area of extensive blanket peat, and this was clearly accessed for fuel by the surrounding settlements (Plate 8). A number of ancillary structures, associated with the cutting, were identified, including footings for a potential peat hut south of Castell Carndochan (NMR 523863) and, in the same general area, numerous peat drying stands.

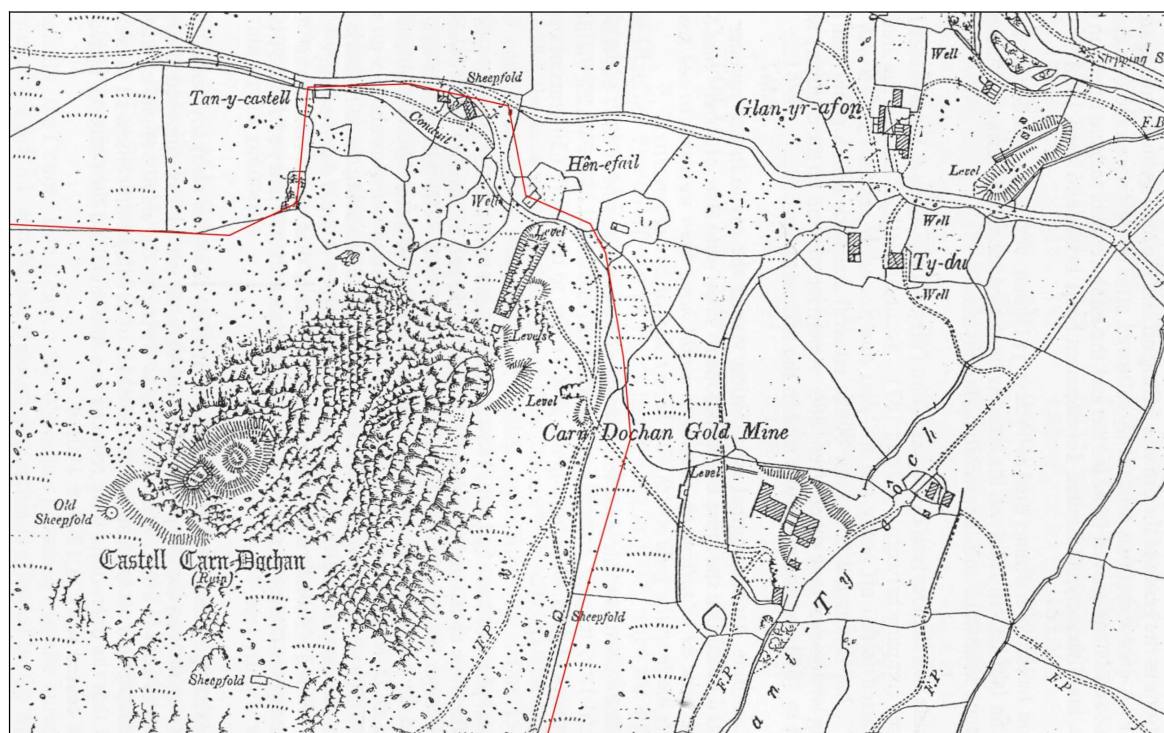


Plate 12: Historic OS mapping showing the parts of Carndochan gold mine (NMR 404224) located within the study area

5.4.8 The most extensive and important industrial complex was that of the short-lived late-nineteenth century Carndochan gold mine (NMR 404224; Plate 12) located beneath the castle promontory and partially within the eastern edge of the study area. The present survey area only encompassed the western edge of the mine, but it did identify extant remains of open stoned workings (NMR 523879 and 523881) (Plate 13), and an adit (NMR 523878) that are depicted on the early twentieth century OS mapping, as well as at least one ruinous mine building (NMR 523880), a trial working (NMR 523871), and a shaft (NMR 523919). The shaft, located adjacent to the castle, had previously been identified in the HER as a well.



Plate 13: Open stoped workings of Carndochan gold mine (NMR 523879)

6. CONCLUSION

6.1 DISCUSSION

- 6.1.1 The survey has identified a high density of sites distributed throughout the study area (15.14 sites per sqkm), most of which were associated with post-medieval stock management, agriculture and habitation, although there were also significant concentrations of medieval longhouses and post-medieval mining. Previous survey had highlighted very few sites, and all except one were within a fenced enclosure surrounding Castell Carndochan in the eastern part of the study area. The present survey has substantially increased the number of identified monuments within the NMR/HER by 2700%.
- 6.1.2 **Prehistoric Funerary/Ritual Sites:** the present survey has identified a small group of potential damaged prehistoric cairns in the study area. The majority of prehistoric sites recorded (and scheduled) in the mountainous region, immediately surrounding the study area, are summit cairns, although examples of cairns located on lower land have been found during previous investigations (OA North 2005; 2009; 2010 and 2012). The sub-oval pen-annular enclosure set against a glacial erratic boulder on Cors y Gwarthegllwydion may have prehistoric origins but its function remains unclear; similar sites have occasionally been found in earlier surveys and are a type of site recorded in the Lake District (OA North 2005) and have been found associated with domestic sites.
- 6.1.3 **Medieval to Post-Medieval Agriculture and Settlement:** only two sites of probable medieval date have previously been discovered within the study area, a single longhouse and Castell Carndochan. The present survey identified quarries associated with the construction of Castell Carndochan and, more significantly, identified a large number of longhouses, both individual and clustered settlements, which were dispersed around the fringes of the area. These sites, in their simplest form, were related to probable upland transhumant domestic occupation and were associated with ancillary stock enclosures. The distribution of such sites often conformed to the pattern of dispersed singular sites or small settlement groups on what would have been open common land; such a pattern is documented elsewhere in the region (Davies 1973, 57; Fig 2). The uplands provided suitable areas for both legal and illegal encroachment of ffridd enclosures, with pioneer settlement on the fringes of the uplands and permanent enclosure and homesteading on pockets of cultivable soil, such as that around Cefn y Griafolen.
- 6.1.4 **Post-Medieval/Modern Agriculture and Industry:** the remains of post-medieval agriculture make up the vast majority of sites within the study area, and comprise mostly thinly-dispersed stock management features located on the unenclosed moorland sheepwalks and within the enclosed fringe lands. Longhouses were often re-used as the base for sheepfolds and field barns. Access onto the sheep walks has required the construction of various sinuous trackways radiating up from the valleys below. Peat cutting was found to be of small-scale domestic use within the study area and a single limekiln was identified, which was similarly for domestic use.
- 6.1.5 A small group of shooting sites were found in the study area, suggesting some organisation in estate shooting, although, at a much smaller scale than elsewhere in

the surrounding region (OA North 2009). Industrial extraction is well represented in the sites identified in the study area; there are various trial mines with some slightly larger examples of manganese workings with associated miner's huts. The edge of the Carndochan gold mine falls just within the study the area, but the main processing floors and crushing mill were not investigated as they were outside the area. Within the area, however, were examples of open stoped workings, an adit and a mine building.

6.2 SITE VISIBILITY

- 6.2.1 The identification of surviving archaeological sites within the Upland Initiative study areas has, to a greater or lesser extent, been dictated by the topography and current ground conditions. The present study area could be classified as having moderate to good ground conditions and the visibility of monuments was dictated by the presence or absence of both heather and peat cover. The only areas that may have obscured remains would be the deep blanket peats within the basin that was omitted from the study area (Plate 8).

7. RECOMMENDATIONS

7.1 RECOMMENDATIONS FOR FURTHER WORK

- 7.1.1 It is recommended that investigation in the form of palynological sampling and peat coring be undertaken adjacent to the study area. Sampling should take place within the basin of blanket peat at Waun y Griafolen, to the south of the study area, where there is potential for deep peat deposits. The location of this basin peat is in close proximity to sites of probably all periods, and the palynological analysis would provide an indication of the impact that this settlement has had upon the local vegetation. This would not provide an absolute chronology for the sites, but palynological work from peat adjacent to the sites would be able to determine clearance episodes and periods of potential agricultural activity in the vicinity of the sites.
- 7.1.2 Detailed topographic survey should be undertaken on all of the identified prehistoric ritual/funerary cairns identified within the study area and at Castell Carndochan if this has not previously been undertaken. In addition, the longhouse groups and field-systems, at Graig Boeth, on the south side of Castell Carndochan and at Cefn y Griafolen show levels of complexity and re-use that warrant more detailed study.
- 7.1.3 There is plenty of scope for undertaking detailed surveys of post-medieval mining landscapes within the study area. The Carndochan gold mine has extensive stoped working and trials on the eastern edge of the study area, with working floors, leats and a crushing mill located further downslope and outside of the study area (Plate 12). In addition, there are two possible manganese mines with workings and miner's huts located at Bryn Mawr and Craig y Llestri.

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APPENDIX 1: GAZETTEER OF NEW SITES

NPRN	NGR	TYPE	PERIOD	ALTITUDE
43834	SH8240031940	Natural Feature	Unknown	440
303152	SH8470230656	Castle	Medieval	345
404224	SH8490030700	Gold Mine	Post-medieval	250
523710	SH7920533791	Sheep Shelter	Post-medieval	530
523711	SH7919033740	Store	Post-medieval	530
523712	SH7960433782	Boundary Bank	Post-medieval	460
523713	SH7933233586	Sheep Shelter	Post-medieval	510
523714	SH7940333509	Sheep Fold	Post-medieval	495
523715	SH7977733946	Trial Mine	Post-medieval	420
523716	SH7972633280	Sheep Shelter	Post-medieval	435
523717	SH8004633497	Longhouse	Medieval	395
523718	SH7999133645	Peat Cutting	Post-medieval	405
523719	SH8002433942	Peat Cutting	Post-medieval	400
523720	SH7999334063	Sheep Fold	Post-medieval	405
523721	SH7976834209	Byre	Post-medieval	415
523722	SH7948834467	Sheep Fold	Post-medieval	445
523723	SH7926733303	Sheep Fold	Post-medieval	480
523724	SH7934732322	Marker Cairn	Post-medieval	490
523725	SH8079031794	Trial Mine	Post-medieval	510
523726	SH8084631985	Marker Cairn	Post-medieval	485
523727	SH8067932063	Marker Cairn	Post-medieval	480
523728	SH8058531879	Marker Cairn	Post-medieval	505
523729	SH8049631849	Trial Mine	Post-medieval	510
523730	SH8043431817	Manganese Mine	Post-medieval	520
523731	SH8039531829	Mine Building	Post-medieval	515
523732	SH7951332496	Sheep Fold	Post-medieval	465
523733	SH8008733408	Sheep Shelter	Post-medieval	400
523734	SH8042033141	Sheep Fold	Post-medieval	380
523735	SH8046433071	Barn	Post-medieval	380
523736	SH8062133120	Sheep Shelter	Post-medieval	380

523737	SH8060633087	Sheep Fold	Post-medieval	380
523738	SH8060032990	Peat Cutting	Post-medieval	385
523739	SH8058232991	Peat Stand	Post-medieval	385
523740	SH8084633022	Peat Cutting	Post-medieval	370
523741	SH8126832630	Shooting Stand	Post-medieval	365
523742	SH8148932447	Sheep Shelter	Post-medieval	360
523743	SH8163932269	Sheep Fold	Post-medieval	355
523744	SH8159832308	Hut Circle	Iron Age	355
523745	SH8151032240	Longhouse	Medieval	370
523746	SH8147332258	Shepherds Hut	Post-medieval	380
523747	SH8154232271	Shieling	Medieval	365
523748	SH8156832272	Building Platform	Unknown	360
523749	SH8151332190	Lime Kiln	Post-medieval	365
523750	SH8147832176	Sheep Fold	Post-medieval	370
523751	SH8133632459	Sheep Fold	Post-medieval	380
523752	SH8129132484	Sheep Fold	Post-medieval	380
523753	SH8125132593	Shooting Stand	Post-medieval	370
523754	SH8122932542	Shooting Stand	Post-medieval	380
523755	SH8121632529	Shooting Stand	Post-medieval	385
523756	SH8123232509	Sheep Shelter	Post-medieval	390
523757	SH8121132495	Shooting Stand	Post-medieval	395
523758	SH8166432136	Longhouse	Medieval	365
523759	SH8125132097	Longhouse	Medieval	390
523760	SH8126932192	Trackway	Post-medieval	385
523761	SH8116432196	Enclosure	Unknown	395
523762	SH8114332206	Marker Cairn	Post-medieval	395
523763	SH8112432203	Longhouse	Medieval	400
523764	SH8105432218	Longhouse	Medieval	415
523765	SH8105732223	Marker Cairn	Post-medieval	415
523766	SH8098132222	Marker Cairn	Post-medieval	435
523767	SH8097632321	Shooting Stand	Post-medieval	420
523768	SH8098532033	Sheep Shelter	Post-medieval	460

523769	SH8098732026	Marker Cairn	Post-medieval	460
523770	SH8045230846	Trackway	Post-medieval	505
523771	SH8122631892	Marker Cairn	Post-medieval	430
523772	SH8140031939	Marker Cairn	Post-medieval	430
523773	SH8148931931	Marker Cairn	Post-medieval	430
523774	SH8167231979	Shepherds Hut	Post-medieval	430
523775	SH8466130213	Platform	Medieval	315
523776	SH8466930233	Longhouse	Medieval	315
523777	SH8461230199	Sheep Fold	Post-medieval	325
523778	SH8453630193	Peat Stand	Post-medieval	335
523779	SH8447930184	Peat Cutting	Post-medieval	340
523780	SH8437630024	Boundary Wall	Medieval	370
523781	SH8424529941	Trackway	Post-medieval	370
523782	SH8432029989	Sheep Fold	Post-medieval	375
523783	SH8443930307	Enclosure	Medieval	345
523784	SH8445930281	Field-System	Medieval	345
523785	SH8442530248	Longhouse	Medieval	345
523786	SH8440130221	Peat Stand	Post-medieval	345
523787	SH8440330143	Peat Stand	Post-medieval	350
523788	SH8435030159	Peat Stand	Post-medieval	350
523789	SH8430929639	Sheep Fold	Post-medieval	430
523790	SH8447629553	Marker Cairn	Post-medieval	470
523791	SH8382329018	Sheep Fold	Post-medieval	395
523792	SH8381929010	Shepherds Hut	Post-medieval	395
523793	SH8385029550	Sheep Fold	Post-medieval	390
523794	SH8383029544	Barn	Post-medieval	390
523795	SH8372628872	Sheep Shelter	Post-medieval	400
523796	SH8322229273	Weir	Post-medieval	405
523797	SH8301829354	Marker Cairn	Post-medieval	420
523798	SH8289429216	Sheep Shelter	Post-medieval	420
523799	SH8292529186	Marker Cairn	Post-medieval	410
523800	SH8286829188	Longhouse	Medieval	420

523801	SH8283729107	Marker Cairn	Post-medieval	415
523802	SH8271229028	Marker Cairn	Post-medieval	415
523803	SH8252528900	Sheep Fold	Post-medieval	430
523804	SH8251228865	Stock Enclosure	Post-medieval	430
523805	SH8416530329	Longhouse	Medieval	345
523806	SH8404430103	Sheep Fold	Post-medieval	365
523807	SH8356829538	Longhouse	Medieval	415
523808	SH8356729584	Sheep Fold	Post-medieval	420
523809	SH8356729632	Sheep Fold	Post-medieval	430
523810	SH8360029597	Marker Cairn	Post-medieval	420
523811	SH8372129703	Round Cairn	Prehistoric	440
523812	SH8373829712	Platform	Unknown	440
523813	SH8383629761	Shepherds Hut	Post-medieval	445
523814	SH8374730134	Marker Cairn	Post-medieval	470
523815	SH8376030171	Trial Mine	Post-medieval	465
523816	SH8356429993	Sheep Fold	Post-medieval	480
523817	SH8371730056	Trial Mine	Post-medieval	475
523818	SH8372830053	Mine Building	Post-medieval	475
523819	SH8374730083	Mine Structure	Post-medieval	470
523820	SH8373029922	Round Cairn	Prehistoric	485
523821	SH8371029917	Round Cairn	Unknown	490
523822	SH8351529619	Marker Cairn	Post-medieval	435
523823	SH8344029639	Marker Cairn	Post-medieval	445
523824	SH8342329585	Enclosure	Post-medieval	440
523825	SH8265629157	Hunting Lodge	Post-medieval	460
523826	SH8252529057	Marker Cairn	Post-medieval	470
523827	SH8233428809	Sheep Shelter	Post-medieval	435
523828	SH8231928835	Sheep Fold	Post-medieval	440
523829	SH8358130485	Longhouse	Medieval	425
523830	SH8361030444	Trackway	Post-medieval	430
523831	SH8359930482	Sheep Fold	Post-medieval	420
523832	SH8333330610	Sheep Fold	Post-medieval	425

523833	SH8334130475	Longhouse	Medieval	435
523834	SH8307930145	Sheep Fold	Post-medieval	475
523835	SH8305129962	Sheep Fold	Post-medieval	460
523836	SH8290630753	Marker Cairn	Post-medieval	510
523837	SH8291130801	Marker Cairn	Post-medieval	505
523838	SH8285731118	Marker Cairn	Post-medieval	510
523839	SH8277931016	Marker Cairn	Post-medieval	515
523840	SH8269731086	Marker Cairn	Post-medieval	510
523841	SH8310330569	Marker Cairn	Post-medieval	500
523842	SH8346030924	Sheep Fold	Post-medieval	395
523843	SH8344230945	Platform	Unknown	395
523844	SH8344530979	Sheep Fold	Post-medieval	395
523845	SH8352731175	Peat Cutting	Post-medieval	370
523846	SH8345631036	Longhouse	Medieval	385
523847	SH8341631104	Longhouse	Medieval	390
523848	SH8344931331	Longhouse	Medieval	375
523849	SH8310631476	Longhouse	Medieval	415
523850	SH8334231222	Sheep Fold	Post-medieval	405
523851	SH8490130567	Sheep Fold	Post-medieval	250
523852	SH8475930420	Trial Mine	Post-medieval	290
523853	SH8478430388	Sheep Fold	Post-medieval	285
523854	SH8476430376	Marker Cairn	Post-medieval	290
523855	SH8460230311	Trackway	Post-medieval	320
523856	SH8436230410	Sheep Shelter	Post-medieval	340
523857	SH8475230284	Trackway	Post-medieval	290
523858	SH8439630693	Trackway	Post-medieval	300
523859	SH8438930538	Peat Stand	Post-medieval	335
523860	SH8441830485	Platform	Unknown	345
523861	SH8444430487	Platform	Unknown	345
523862	SH8448830570	Peat Stand	Post-medieval	340
523863	SH8453830507	Peat Hut	Post-medieval	345
523864	SH8454430494	Structure	Post-medieval	345

523865	SH8456330605	Sheep Fold	Post-medieval	340
523866	SH8465430638	Quarry	Post-medieval	335
523867	SH8470230503	Sheep Fold	Post-medieval	320
523868	SH8471430535	Longhouse	Medieval	325
523869	SH8470030585	Sheep Fold	Post-medieval	330
523870	SH8476930630	Sheep Fold	Post-medieval	325
523871	SH8477130637	Mine Shaft	Post-medieval	325
523872	SH8471930447	Sheep Fold	Post-medieval	310
523873	SH8449230916	Clapper Bridge	Post-medieval	235
523874	SH8459130118	Sheep Shelter	Post-medieval	335
523875	SH8464729846	Longhouse	Medieval	365
523876	SH8463329842	Sheep Fold	Post-medieval	370
523877	SH8462729781	Longhouse	Medieval	375
523878	SH8486130678	Trial Mine	Post-medieval	270
523879	SH8486730708	Mine	Post-medieval	265
523880	SH8487830730	Mine Building	Post-medieval	265
523881	SH8488230759	Mine	Post-medieval	250
523882	SH8181631913	Hut Circle	Iron Age	430
523883	SH8225331705	Marker Cairn	Post-medieval	520
523884	SH8198931399	Sheep Fold	Post-medieval	500
523885	SH7972430095	Sheep Fold	Post-medieval	445
523886	SH7960630952	Marker Cairn	Post-medieval	490
523887	SH7997230523	Sheep Fold	Post-medieval	480
523888	SH7978630003	Peat Cutting	Post-medieval	455
523889	SH8013430090	Peat Cutting	Post-medieval	465
523890	SH8034729430	Sheep Fold	Post-medieval	440
523890	SH8011229455	Peat Cutting	Post-medieval	465
523891	SH7999929103	Peat Cutting	Post-medieval	470
523892	SH8005728892	Sheep Fold	Post-medieval	420
523893	SH8011628839	Longhouse	Medieval	405
523894	SH8013528836	Structure	Medieval	400
523895	SH8031928954	Sheep Fold	Post-medieval	425

523896	SH8050328949	Sheep Fold	Post-medieval	410
523897	SH8056928975	Barn	Post-medieval	405
523898	SH8056628931	Sheep Fold	Post-medieval	400
523899	SH8061228957	Longhouse	Medieval	395
523900	SH8061128990	Sheep Fold	Post-medieval	395
523901	SH8093629202	Sheep Fold	Post-medieval	405
523902	SH8101229894	Sheep Fold	Post-medieval	425
523903	SH8089030069	Barn	Post-medieval	450
523904	SH8099030248	Sheep Fold	Post-medieval	430
523905	SH8089030392	Barn	Post-medieval	460
523906	SH8090730424	Platform	Medieval	450
523907	SH8091530441	Longhouse	Medieval	445
523908	SH8090330445	Platform	Medieval	450
523909	SH8090930448	Building Platform	Medieval	445
523910	SH8090430450	Structure	Medieval	450
523911	SH8091730439	Sheep Fold	Post-medieval	445
523912	SH8092630436	Longhouse	Medieval	440
523913	SH8093930622	Longhouse	Post-medieval	440
523914	SH8092430623	Longhouse	Medieval	440
523915	SH8093530631	Peat Stand	Post-medieval	440
523916	SH8080730568	Sheep Fold	Post-medieval	465
523917	SH8402630329	Trial Mine	Post-medieval	350
523918	SH8307830326	Sheep Fold	Post-medieval	490
523919	SH8463430632	Trial Mine	Unknown	335
523920	SH8470030600	Findspot	Early Medieval	335
523921	SH8472930497	Longhouse	Medieval	315

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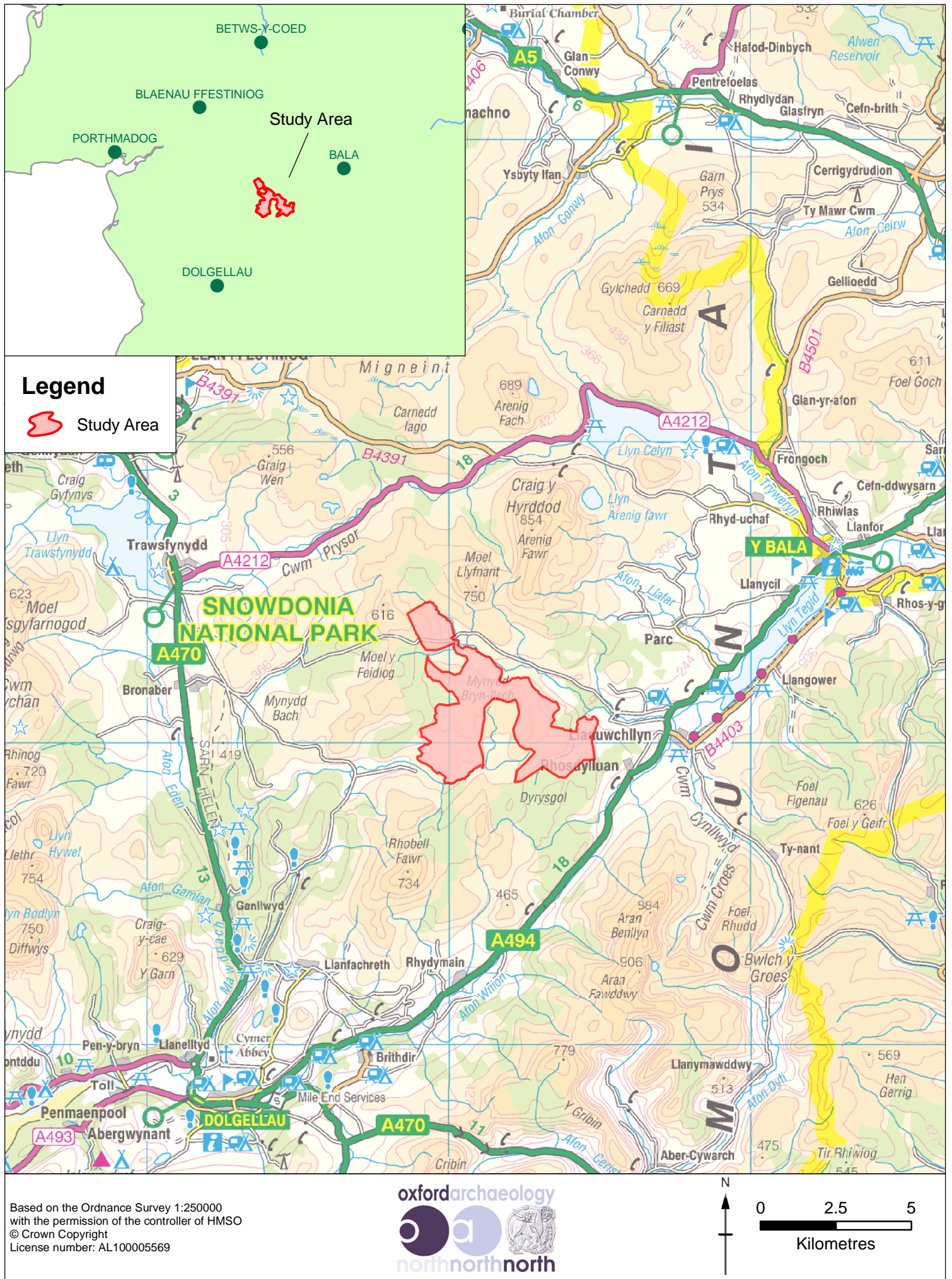



Figure 1: Location of Study Area



Legend

 Study Area

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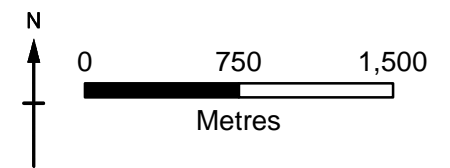
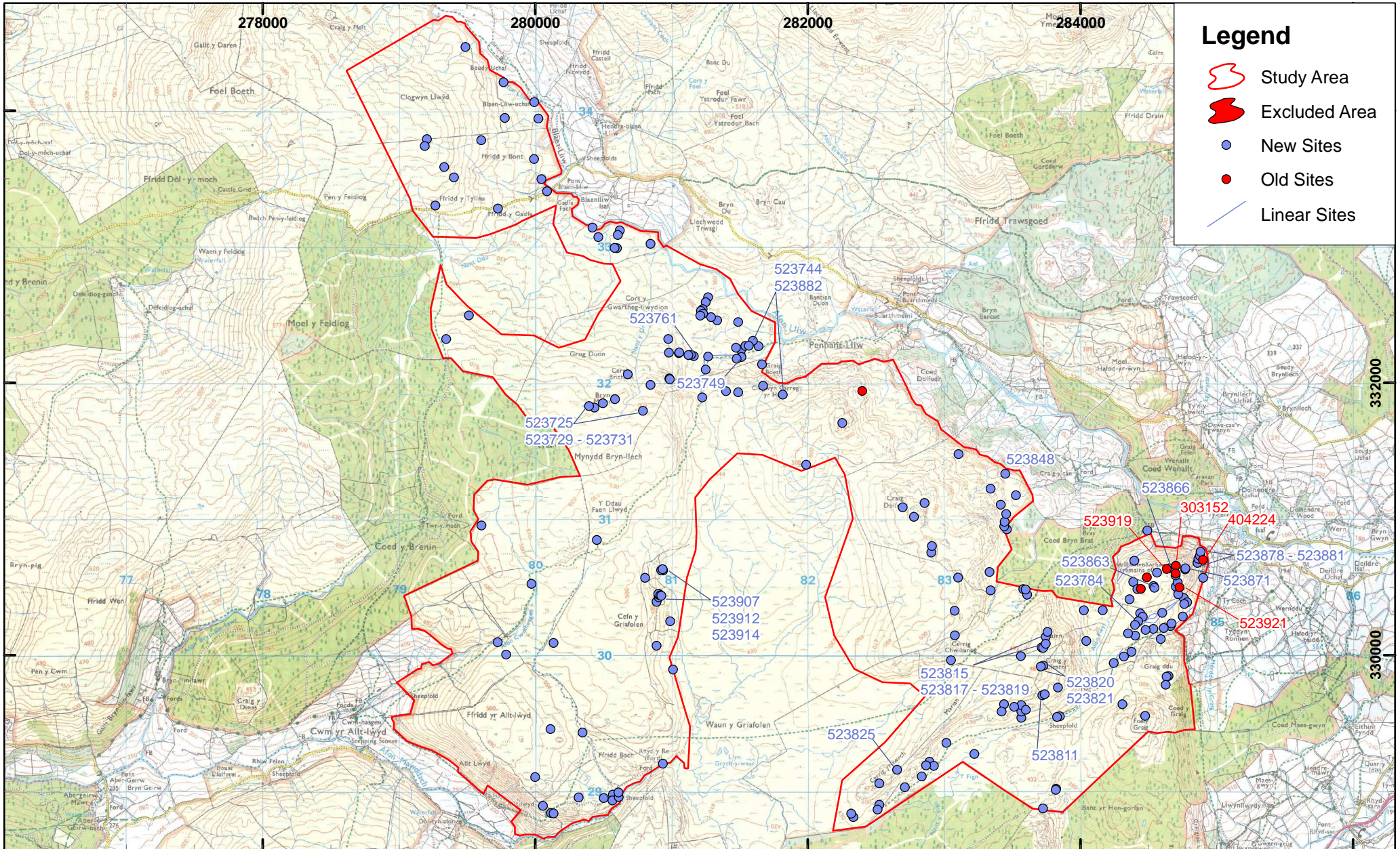


Figure 2: Cwm Lliw Study Area



Legend

-  Study Area
-  Excluded Area
-  New Sites
-  Old Sites
-  Linear Sites

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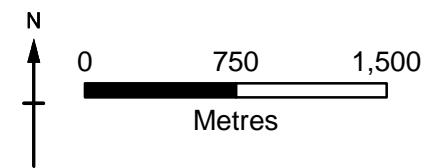
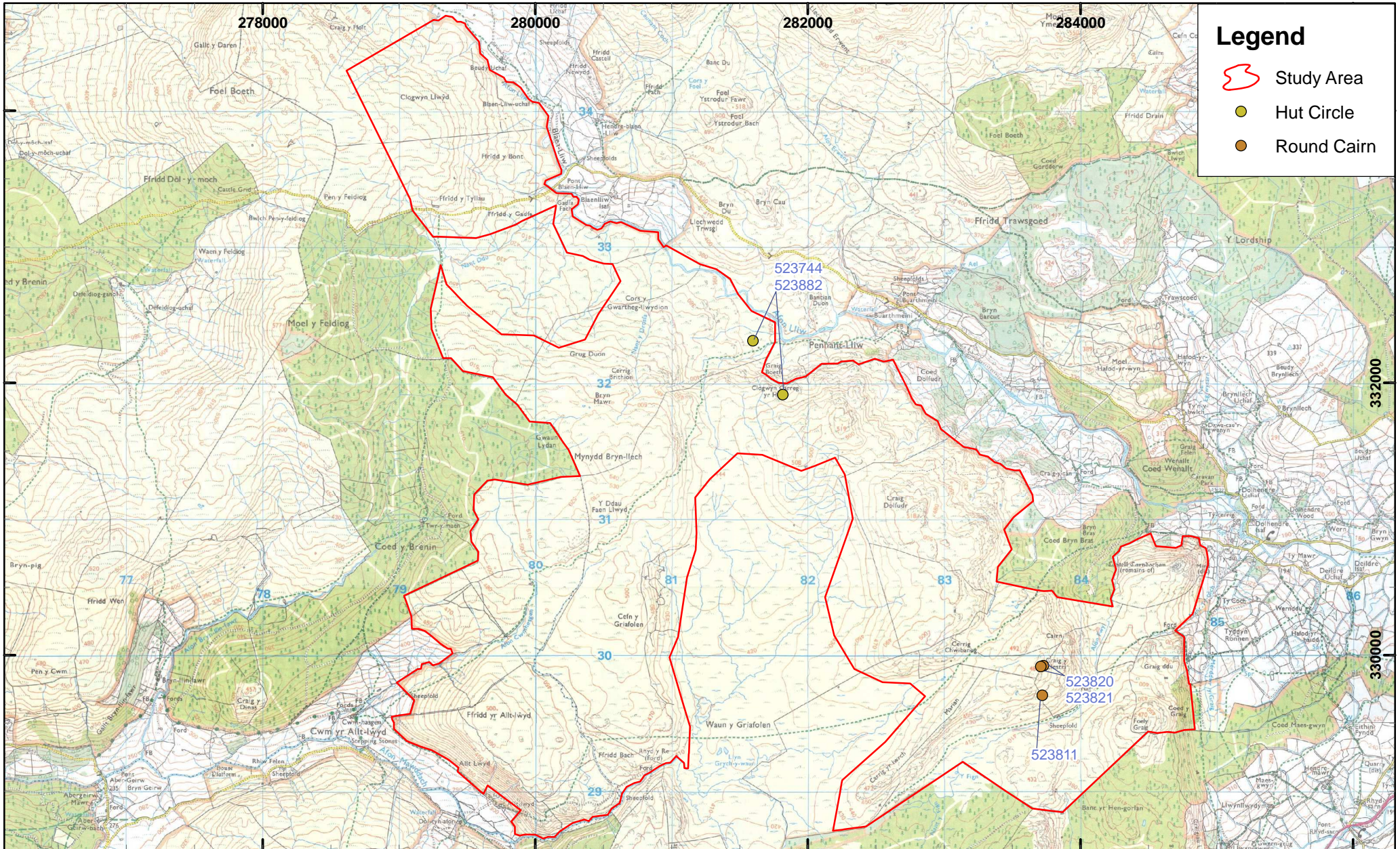





Figure 3: Site distribution showing both pre- and post-survey sites



Legend

-  Study Area
-  Hut Circle
-  Round Cairn

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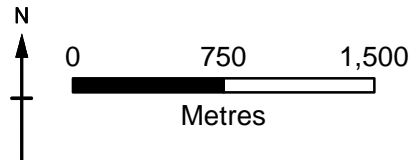


Figure 4: Identified prehistoric period sites

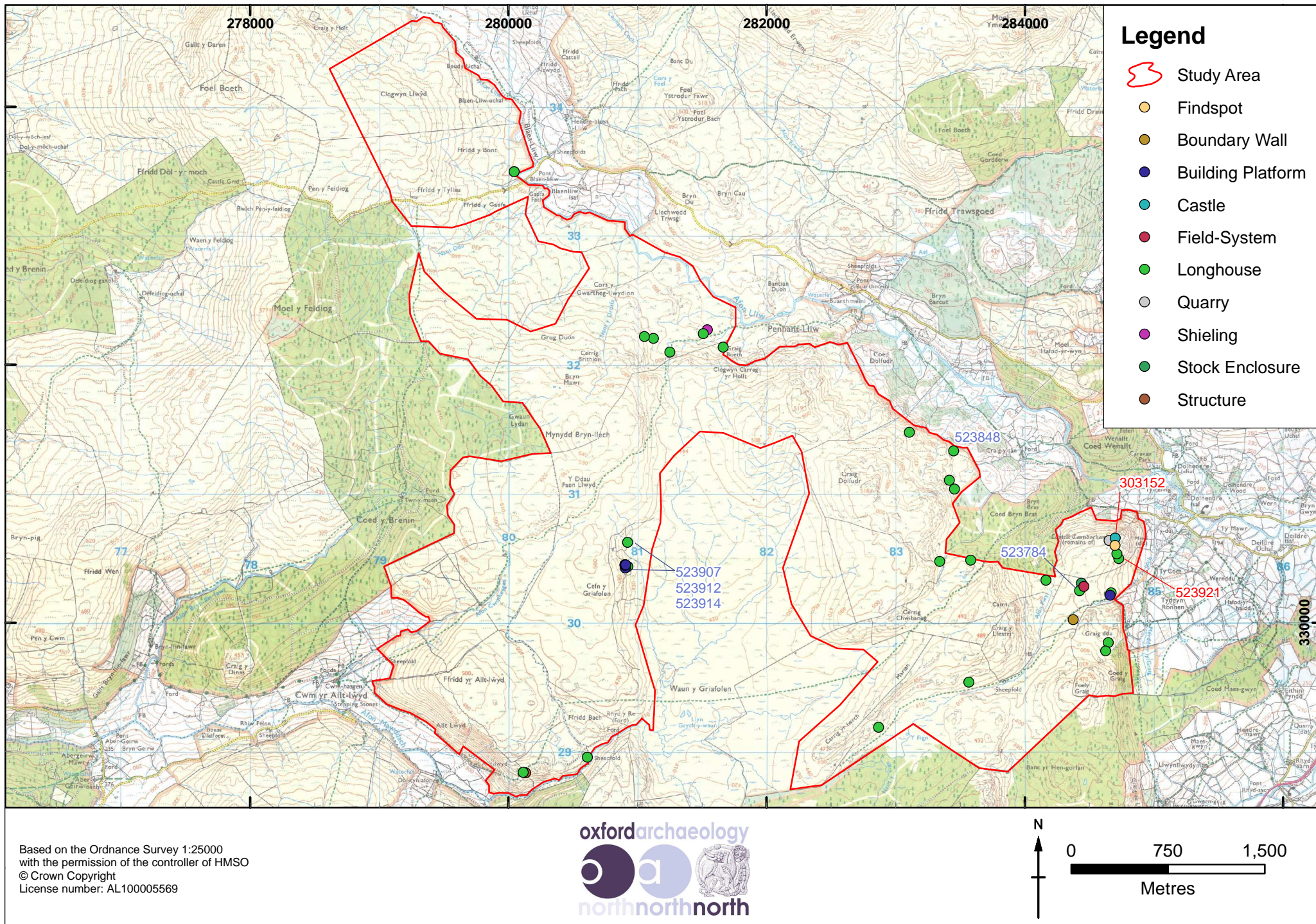
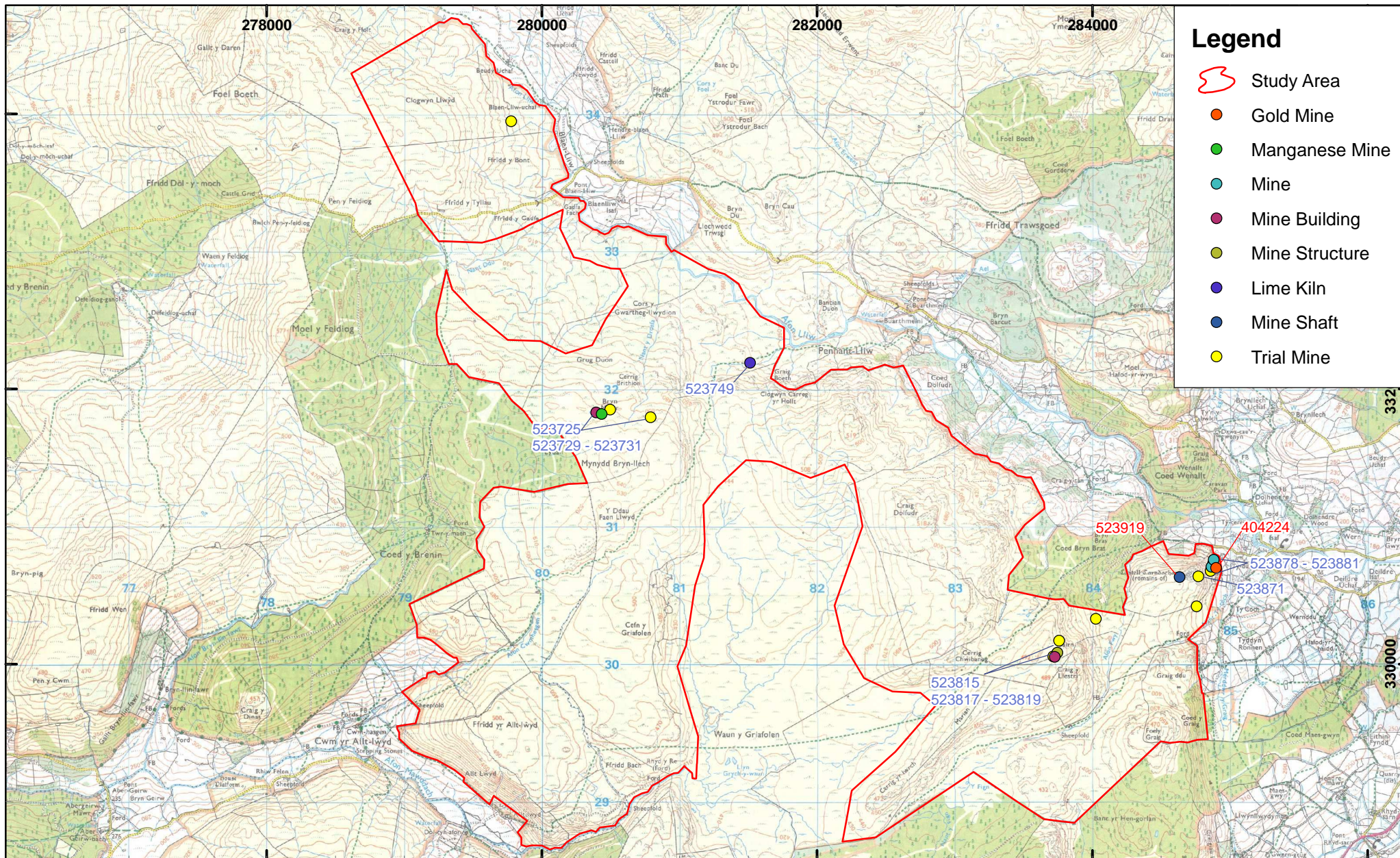











Figure 5: Identified medieval period sites



- ### Legend
-  Study Area
 -  Gold Mine
 -  Manganese Mine
 -  Mine
 -  Mine Building
 -  Mine Structure
 -  Lime Kiln
 -  Mine Shaft
 -  Trial Mine

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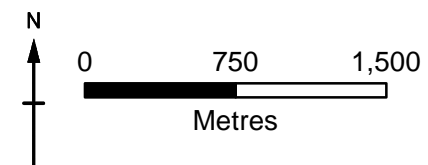


Figure 6: Identified post-medieval industrial sites