



WESTERN AREA OF STAGS FELL,

NORTH YORKSHIRE

Archaeological Survey



Oxford Archaeology North

February 2012

Yorkshire Peat Partnership

Issue No: 2012-13/1263
OA North Job No: L10434
NGR: SD 877 935

Document Title: WESTERN AREA OF STAGS FELL, NORTH YORKSHIRE

Document Type: Archaeological Survey

Client Name: Yorkshire Peat Partnership

Issue Number: 2012-13/1263

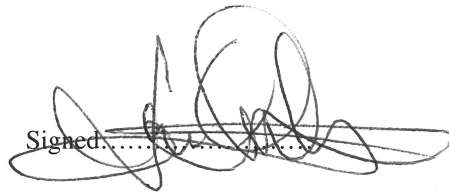
OA Job Number: L10434

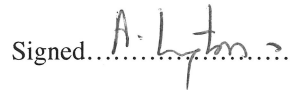
National Grid Reference: SD 877 935

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SUMMARY

Oxford Archaeology North (OA North) was invited by Yorkshire Peat Partnership to undertake an archaeological landscape survey and an assessment of re-wetting on a portion of the western part of Stags Fell, North Yorkshire (SD 877 935). The work was undertaken in order to provide an assessment of the archaeological impact of a programme of grip (drain) blocking on the mossland. The survey was undertaken as an enhanced Level 1-type survey (EH 2007) over an area of 6.34km².

In total, 81 features of archaeological interest were identified across the study area, although these were mainly confined to the hill slopes at the south and western edges of the study area, with very few sites being encountered within the core of the upland plateaux. Where sites were encountered within the latter, they tended to be distributed within areas of stone outcrops and escarpments, and were generally associated with stone or mineral extraction.

The sites can be divided into 12 broad categories: extraction industries; lime kilns; millstone manufacturing sites; trackways; a ford; sites associated with shooting; stock enclosures and sheepfolds; barns; a well; beacons; walker's cairns; and findspots of worked flint. Most are difficult to date closely in the absence of additional data from documentary sources or archaeological excavation. However, most of these sites are likely to date to either the post-medieval (1540-1750) or industrial (1750-1914) periods, although a limited number might date to the medieval period and the worked flint findspots are of prehistoric date.

Few of the sites identified during the survey are likely to be susceptible to damage as a result of work to block the drainage grips, although there is a limited risk to standing structures from the movement of vehicles and machines across the site, and from the excavation of material to infill the grips. The beacon sites are not represented by standing structures, but should also be avoided as sub-surface remains might survive that may include datable material. In addition, five sites were identified in the HER, which are not highly visible but also retain the potential to be damaged as a result of intrusive groundworks that might excavate peat for use in the infilling of grips. These include the areas where worked flints were found (Sites **70** and **71**) and the sites of three putative earthwork enclosures (Sites **43**, **78-80**).

ACKNOWLEDGEMENTS

Oxford Archaeology North would like to thank Tessa Levens of the Yorkshire Peat Partnership for commissioning the project, and Miles Johnson of Yorkshire Dales National Park Authority (YDNPA) for advice and the provision of Historic Environment Record (HER) data.

The landscape survey was undertaken by Jamie Quartermaine and Mairead Rutherford and the palaeoenvironmental sampling and assessment was undertaken by Mairead Rutherford. The report was written by Alastair Vannan, and Mairead Rutherford and the illustrations were prepared by Anne Stewardson. 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) were invited by Yorkshire Peat Partnership to undertake an archaeological landscape survey and an assessment of re-wetting on a portion of the western part of Stags Fell, North Yorkshire (SD 877 935) (Fig 1). This restoration project work is a part of a Higher Level Stewardship agreement that is in place on the land holding, and will entail the blocking, utilising machine-cut peat plugs, of a number of active grips (drains) that were cut into the peat, probably at some point between the end of the Second World War and the end of the 1970s. The archaeological recording work was undertaken to provide an assessment of the archaeological impact of this restoration programme, and was undertaken in accordance with a brief by Miles Johnson of Yorkshire Dales National Park Authority (YDNPA).

1.2 LOCATION, TOPOGRAPHY AND GEOLOGY

- 1.2.1 The area where the peat restoration has been proposed consists of an elevated area of blanket peat measuring 6.34km², within the western portion of Stags Fell and Abbotside Common in the Yorkshire Dales (Figs 1 and 2). The area consists of large, gently sloping, plateaux lying between 530m and 640m (aOD), which are separated by escarpments of Millstone Grit and stream gullies. Steep escarpments, including limestone outcrops and grassed hill slopes define the southern and western extents of the elevated plateaux, and the lowest portions of the study area lie at 340m (aOD). This part of the Pennines features limestone bedrock, which is overlain by alternating bands of carboniferous limestone, sandstones, and shales, which are known collectively as Yoredale Facies (Countryside Commission 1998). The Facies are in turn overlain by Millstone Grit, which forms a capping to the highest hills (*ibid*). The local and wider environment has been extensively shaped by glacial activity and resultant scoured material has been re-deposited in some areas (*ibid*). Numerous shake holes and pot holes occur within the study area. The current character of the study area, like much of the uplands of the northern Dales, comprises heather moorland, which is managed for game shooting.

1.3 HISTORICAL BACKGROUND

- 1.3.1 Historically, the study area lay within the early-medieval manor of Aysgarth, which was held by Cnut prior to the Norman Conquest and subsequently passed to Count Alan (Page 1914, 200-14). This manor included the Forest of Wensleydale and much of the portion of the forest that lay to the north of the River Ure came gradually into the possession of the abbey of Jervaulx (*ibid*). This led to much of the area to the north of the river being known as Abbotside, including the study area, which lies within Abbotside Common (*ibid*). During the medieval period, the abbey kept vaccaries within Abbotside and the monks were entitled to a grant of free pasture with the rights of felling timber for building from the forest, working lead and iron mines, and taking game that had been found, having been killed by wolves (*ibid*). The Abbotside holding became a disputed independent estate called

the manor of Wensleydale, from which the abbey was dispossessed by Henry VIII at the Dissolution (*ibid*).

- 1.3.2 Aysgarth was the name of the parish that incorporated the study area, and comprised the townships of High and Low Abbotside, Askrigg, Aysgarth, Bainbridge, Bishopdale, West Burton, Carperby cum Thoresby, Hawes, Newbiggin, Thoraby, and Thornton-Rust (Lewis 1848, 120-4) An enclosure award was granted for Abbotside Common in 1881 (Page 1914, 200-14), however, much of this land has not been subject to sub-division and remains as unenclosed moorland that has not had agricultural improvement.

2. METHODOLOGY

2.1 INTRODUCTION

2.1.1 The survey was undertaken as an enhanced Level 1-type survey, following the guidelines for Level 1 surveys as defined by English Heritage (2007). The survey study area encompassed an area of 6.34km² and comprised five elements:

- reconnaissance;
- mapping;
- description;
- photography;
- environmental assessment.

2.2 LANDSCAPE SURVEY

2.2.1 **Reconnaissance:** the reconnaissance consisted of close field walking, with line intervals varying between 10m and 20m wide, dependent on visibility and safety considerations. The survey identified, located and recorded sites and features of archaeological interest on the ground. The survey took considerable care to examine areas of disturbance through the peat, erosion scars from vehicle damage, and all other peat exposures.

2.2.2 **Survey mapping:** a Satellite Global Positioning System (GPS) was utilised to conform to English Heritage (2007) Level 1 survey requirements. The GPS is a Leica differential system and achieves much greater accuracy than can be achieved with a hand-held GPS. The accuracy of the OA North GPS system is capable of +/- 0.02m and provides a quick and effective means of recording the position and extent of sites. The GPS techniques were used to record the extent of the sites. All sites of archaeological interest were recorded as point data, with any features exceeding 3m in diameter being recorded with line or polygon data. The locations of areas of environmental sampling were also recorded.

2.2.3 **Site Description and Assessment:** the data was directly input on site into a palm computer, and was then incorporated into an Access-compatible database. The data was backed up onto a portable computer running Access is suitable for direct import to the YDNPA HER. The input into the system was guided by a *pro forma* to ensure uniformity and consistency of input, and included the following core fields:

- whether the site was exposed within peat exposures;
- the depth at which it was revealed.

2.2.4 Where possible, the descriptions incorporate provisional interpretations of the function, purpose, and chronology of each site.

2.2.5 **Photographic Survey:** a digital photographic archive was generated in the course of the field work, comprising landscape and detailed photography. This recorded all features and sites of archaeological interest. Detailed photographs were taken of all sites using a scale bar. All photography was recorded on photographic *pro forma* sheets which detail the subject, orientation, and date. Digital imagery was

used for the photographic recording and 10 megapixel resolution was used as a minimum. A full image catalogue was produced as part of the archive.

- 2.2.6 ***Ecological and Artefact Retrieval:*** the retrieval of ecofacts was confined to small targeted samples that were either suitably diagnostic for species identification, or were substantial and well-preserved enough to be suitable for obtaining radiocarbon dating. Large areas of tree remains exposed in hag sections were recorded and individual exposed artefact finds of significance were collected, catalogued, and stored. An assessment of the character of the peats and environment was based on the site investigation by an experienced palynologist.

2.3 ARCHIVE

- 2.3.1 The results of all archaeological work carried out will form the basis for a full archive to professional standards, in accordance with current English Heritage guidelines (*Management of Research Projects in the Historic Environment*, 2006). The original record archive of the project will be deposited with the Yorkshire Dales National Park Authority.
- 2.3.2 The Arts and Humanities Data Service (AHDS) online database *Online Access to index of Archaeological Investigations* (OASIS) will be completed as part of the archiving phase of the project

3. SURVEY RESULTS

3.1 INTRODUCTION

3.1.1 The landscape survey was conducted across 6.34km² of Stags Fell in order to identify, locate, and record sites and features of archaeological interest (Figs 2-5). In total, 81 features of archaeological interest were identified across the study area, although these were mainly confined to the hill slopes at the south and western edges of the study area, with very few sites being encountered within the core of the upland plateaux (*Appendix 2*; Figs 3-5). Where sites were encountered within the latter, they tended to be distributed within areas of stone outcrops and escarpments, and were generally associated with stone or mineral extraction.

3.2 RESULTS

3.2.1 The sites identified within the study area during the survey and through the HER can be divided into 12 broad categories: extraction industries (including quarrying and mining), lime kilns, millstone manufacturing sites; trackways; a ford; sites associated with shooting; stock enclosures and sheepfolds; barns; a well; beacons; walkers' cairns; and findspots of worked flint (Table 1). Most of the sites are difficult to date closely in the absence of additional data from documentary sources or archaeological excavation; however, most are likely to date to either the post-medieval (1540-1750) or industrial (1750-1914) periods. Some of them might date to the medieval period and the worked flint findspots are of prehistoric date.

Category of Site	Number of sites	Gazetteer Number
Extraction Industries		
<i>Mine shafts</i>	10	Sites 11-14, 32-3, 35, 37-9
<i>Lead mining</i>	12	Sites 4, 40, 41-2, 44-51,
<i>Quarry/surface extraction</i>	17	Sites 3, 8-9, 16-18, 20-1, 29, 55, 57, 60, 64, 74-77
<i>Coal pit</i>	1	Site 1
Stone Processing Sites		
<i>Limekilns</i>	4	Sites 30, 31, 56, 66,
<i>Millstone manufacturing</i>	6	Sites 23-5, 52-4
<i>Trackways</i>	5	Sites 2, 15, 22, 36, 81
<i>Ford</i>	1	Site 68
Sites associated with shooting		
<i>Shelter</i>	1	Site 19
<i>Feeders</i>	2	Sites 5 and 28
Stock enclosures		
<i>Sheepfolds</i>	6	Site 27, 34, 58-9, 61, 63,
<i>Enclosures</i>	7	Sites 10, 43, 72-3, 78-80
Ancillary Sites		
<i>Barns</i>	2	Sites 62 and 67
<i>Well</i>	1	Site 65

<i>Beacons</i>	2	Sites 26 and 69
<i>Walkers' cairns</i>	2	Sites 6 and 7
<i>Findspots</i>	2	Sites 70 and 71

Table 1: Sites of archaeological interest by category

- 3.2.2 **Extraction Industries:** several types of stone and mineral extraction were identified within the study area, and included mining and stone quarrying. This category of site is the most numerous within the study area, with 40 sites of this type having been identified and several additional sites, such as lime kilns and sites of millstone manufacture, being related sites.
- 3.2.3 **Mining:** 22 sites associated with mining were identified, of which 12 were attributed specifically to lead mining. It is, however, probable that many of the other mine shafts recorded during the survey were also associated with lead mining, as this mineral is not only present in the local geology but was attested historically as being locally exploited. Many of the sites consisted of collapsed or infilled mine shafts, which are visible as grassed rings of embanked spoil that surround central depressions (Plates 1 and 2). It is these central depressions that represent the former shafts and, although they would have been of varying depths when in use, they are now rarely more than 2m or 3m deep. However, the apparently solid infill is likely to contain numerous voids and there exists the potential for further collapse and subsidence. Site **13** was one of the larger sites, as visible from the surface, and featured a spoil ring with an external diameter of 13m and an inner shaft diameter of 5m.



Plate 1: Mine shaft close to Willy Road End (Site 4)



Plate 2: Mine shaft above High Glint (Site 32)

- 3.2.4 *Quarrying and surface extraction:* there was considerable evidence for surface extraction and stone quarrying within the study area, with 17 sites having been identified. These included sandstone quarries (Site **55**, **57**, **60**, **64**), limestone quarries (Sites **20-1**, **29**; Plate 3), and numerous pits that were grassed over and could have related to the extraction of stone lying close to the surface (Sites **16-18**) or, in some cases, gravel or shale (Sites **8-9**; Plate 4). The proximity of some of the pits to areas of mining could also indicate that some of these sites (*eg* Site **3**) might have been used as trial pits for mineral prospecting prior to the establishment of larger workings. Many of the quarry sites exploited outcrops and escarpments of exposed stone, which often resulted in vertical quarry faces projecting above the surrounding ground level (Plate 3), or lining gullies and fissures, rather than the formation of large quarry pits. A coal pit was also situated in the northern portion of the area (Site **1**; Plate 5), which was able to be identified as such due to its annotation on OS mapping and because rabbit burrowing had exposed coal spoil. Other surface extraction sites that were grassed over, therefore, might also represent coal pits.



Plate 3: Limestone Quarry close to Smuker Hill (Site 29)



Plate 4: A shale spoil mound (Site 8)



Plate 5: Spoil from coal extraction revealed as a result of rabbit burrowing at Site 1

- 3.2.5 **Lime kilns:** the lime kilns within the study area (Sites **30-1**, **56**, **66**) were directly related to limestone extraction sites (Sites **29** and **21**; Plate 3) and were sited in order to minimise the distance between the quarrying sites and the kilns. The tall, cylindrical, draw kilns would have been filled with alternating layers of fuel and crushed limestone, and were fired from a furnace aperture at the base in order to roast the stone to produce quick lime. Quick lime was used as a way of adding nutrients to, and moderating the acidity of, agricultural fields, as well as in the production of cement and white-wash. Three of the kilns (Sites **30-1**, **56**; Plate 6) lie immediately to the south, and down-slope of, a limestone escarpment to the south of Smuker Hill. These kilns were associated with a series of quarry faces along the escarpment (Site **29**) and a trackway ran parallel, and to the south of, the outcrop and provided access for the kilns and quarries (*see* Site **31**). The fourth kiln (Site **66**) lay close to a limestone outcrop, to the west of Pike Hill, and this outcrop exhibited indications of quarrying (Site **21**).
- 3.2.6 The two kilns at Smuker Hill were particularly well preserved; especially Site **30** (Plate 6), which survived to its full height of 4.3m and had an accessible and intact corbelled furnace aperture (Plate 7). This aperture was 6m wide, 1.5m high, and 2.5m deep (Plate 8) and sat within a stone tower that was rectangular in plan and measured 4.5m wide and 5m long. The main kiln chamber was cylindrical and measured 2m in diameter, although it had been almost entirely infilled (Plate 9). There was distinctive vitrification of the stone forming the inner edge of this chamber, which provided evidence of the extremely high temperatures generated when the kiln was in use. This kiln also featured a date stone set above the furnace aperture and which probably read '1844', although wear on the stone suggested that the last digit has a figure 1 (Plate 10). This kiln was located adjacent to a quarry face, which had clearly provided the source of limestone (Plate 11). Both of the kilns at Smuker Hill were equipped with entrance passageways (Plate 6), which were defined by dry-stone walls, all of which had collapsed.



Plate 6: A well-preserved lime kiln to the south of Smuker Hill (Site 30)



Plate 7: View of the front of the lime kiln (Site 30)



Plate 8: Detail view of the corbelled furnace aperture



Plate 9: The top of the draw kiln, showing a corner of the rectangular tower and the infilled cylindrical furnace chamber, looking west. The stone forming the inner edge is vitrified.



Plate 10: The date stone above the furnace aperture, which appears to read '1844'



Plate 11: The quarry face directly behind the lime kiln (Site 30)

- 3.2.7 **Millstone Manufacturing:** a second site-type associated with the extraction industries relates to the manufacture of millstones. One of the types of stone that occurs as outcrops in the local area is a millstone grit, which derives its name from the suitability of this hard and abrasive rock for use as grinding stones. The place-names of Low Millstone (Site 52), Millstones End (Site 53), and High Millstones (Sites 54) are indicative of the production of millstones, although it is possible that

such names could be assigned in relation to the local stone type, rather than direct links to millstone manufacture.

- 3.2.8 The landscape survey provided an opportunity to investigate the link between these names and the local landscape and definitive evidence for millstone production was identified within all of the areas represented by these place-names (Sites **23-5**). At each of these sites there were rough-outs for millstones and unfinished stones in varying degrees of completion. Site **23**, located at Low Millstones, includes a rough-out from an early stage in the manufacturing process, which has been fashioned into a rudimentary disc in advance of accurate shaping and finishing (Plate 12). A second stone, found in close proximity, had been shaped into a uniform circular disc measuring 1.6m in diameter and 0.3m thick (Plate 12). Neither stone featured the central perforated hole that would be necessary to accept a drive shaft. The presence of snow at the time of survey precluded the identification of stone debitage deriving from the production of the stones.



Plate 12: A pair of millstone rough-outs at Low Millstones (Site 23). The rear stone had been subject to initial shaping and the stone at the front had reached a more advanced stage in the manufacturing process

- 3.2.9 A further millstone was found at the eastern end of High Millstones (Site **24**) and featured a domed upper surface (Plate 13). This stone appeared to have been more highly finished than the stones found at Site **23**, although again there was no central hole; it measured almost exactly the same size, with a slightly larger diameter of 1.65m. A third stone was found at Millstones end, which featured the same dimensions as that at Site **24**, but was not as highly finished.



Plate 13: A millstone at High Millstones (Site 24) which had been subject to a high degree of shaping

- 3.2.10 **Trackways:** several trackways were identified within the survey area (Sites 2, 15, 22, 36, 81) and many of these were associated with former extractive industries. Site 2 was a track known as Willy Road End and led from the fell road (Cliff Gate Road) to Willy Pit coal pits (Site 1). Site 15 is a terraced trackway (Plate 14) that was located in the vicinity of several shafts and lead workings, such as Sites 38, 40, and 46, and extended to the north-west of Pike Hill. This was probably associated with Site 22, a hollow-way (Plate 15), that runs north-north-west/south-south-east across this part of the survey area and provided an alternative southward access route over the plateau above High Glint and down into the valley that avoided the current fell road. Site 36 ran east/west upslope from the fell road and was heavily rutted and might have been a relatively modern track, or an earlier feature that has continued to be used by modern quads. Site 81 might have been associated with the sheepfold (Site 27) that lay close to Sargill.



Plate 14: A terraced trackway (Site 15) that probably related to lead workings



Plate 15: A hollow-way (Site 22) forming part of an extended routeway across the south-western side of Stags Fell

- 3.2.11 **Features associated with shooting:** numerous sites relating to the current use of the fell for game shooting were identified during the survey, but only those sites that were stone-built and appeared likely to have been *in situ* for some considerable time were recorded. It is possible that some of these sites might have been established during the use of the fell for shooting during an earlier period, such as the late nineteenth or early twentieth centuries and such sites could,

therefore, be of archaeological interest as indicators of historic land use. Alternatively, some of the sites might have been reused as feeders or shelters but have been constructed for different earlier uses. Due to the use of dry-stone construction, which is ubiquitous in rural areas where stone is available during all historical periods, it is extremely difficult to date such sites and it is possible that some or all of them might be of relatively recent origin.

- 3.2.12 A collapsed dry-stone structure with a corbelled internal space was encountered at the northern end of the survey area, to the south-west of Lovely Seat (Site 5, Plate 16). This was an extremely unusual structure with no obvious use in terms of pastoral agriculture or local extractive industries. The discontinuous pattern of lichen on the stones suggested that this was not particularly old, and one tentative possibility is that it was an animal trap, or even a sheltered bird feeder. A dry-stone structure that was used as a platform for the provision of bird feed was encountered to the east of Dry Gill (Site 28; Plate 17). It is possible that this feeder reused an earlier structure, although this can not be confirmed. A dry-stone shelter to the west of Pike Hill (Site 19) had been built into a rock fissure within a hollow so that the base of the structure sat lower than the surrounding ground level (Plate 18); it had been well constructed and a covering of camouflage scrim showed that it was currently in use as a bird hide. Such structures are common in upland areas as shelters associated with pastoral agriculture or extractive industries and it is unclear whether this shelter was built for game shooting or if it had been re-used.



Plate 16: An unusual corbelled structure of uncertain function (Site 5)



Plate 17: A bird hide that might have been formed from an earlier shelter (Site 28)



Plate 18: A dry-stone shelter (Site 19) built into a hollow and rock crevice

- 3.2.13 **Stock Enclosures:** several sheepfolds (Sites **27, 34, 58-9, 61, 63**) and enclosures were recorded by the present survey, although there is a conspicuous absence of bields, or sheep shelters, which are common in upland pasture and provide protection from poor weather in exposed areas. One of the largest of the sheepfolds was situated within the angle of the confluence of Dry Gill and Sargill (Site **27**; Plates 19 and 20) and provided a four-celled fold complex that could be used for stock management, as well as two sheep smoots that led into the adjacent

gills and enabled the fold to be utilised as a washfold. This was an extremely well-built structure with surviving cover bands; the entrances had been rebuilt and incorporated quoins. This structure had clearly been reused over many decades, or even centuries. A keep-hole had also been built into one of the interior walls (Plate 21).



Plate 19: The southern part of a multi-celled sheepfold and washfold complex at the confluence of Dry Gill and Sargill (Site 27)



Plate 20: The northern part of the multi-celled sheepfold (Site 27)



Plate 21: A keep-hole built into an internal wall, with a more recently rebuilt wall in the background (Site 27)

- 3.2.14 Several other simple enclosures, some of which might also be sheepfolds, have also been identified within the survey area (Sites **10**, **43**, **72-3**, **78-80**). These sites range from large dry-stone structures (Site **10**) to small ruined structures (Sites **72-3**) and putative earthwork enclosures (Sites **43**, **78-80**). Such sites are likely to have been used for stock management but, in the absence of further evidence, are extremely difficult to date. The detail of the putative earthwork enclosures (Sites **43**, **78-80**) were extremely difficult to examine due to the presence of heather cover.
- 3.2.15 **Other Sites:** ruined structures have been recorded within the survey area that are likely to represent the remains of field barns (Sites **62** and **67**). A well (Site **65**), named as Hungry Well on the first edition Ordnance Survey mapping, is situated adjacent to the fell road at the western side of the survey area. Numerous walkers' cairns were encountered on high points and close to paths throughout the western side of the study area, where there is a topographic transition from hill slope to plateau, although only two such sites (Sites **6** and **7**) were recorded; typically these monuments are of modern origin and few are likely to be of archaeological interest. Two beacon sites were recorded within the study area in the HER (Sites **26** and **69**) and further beacon sites are named on the current OS mapping; these sites are not represented by structures but are pieces of open ground with expansive views where beacons, in the form of bonfires, would have been lit. Site **26**, for example, consisted of a slight rise with a level summit that overlooked a wide area, although it did not occupy the highest hilltop in the vicinity.
- 3.2.16 Evidence for the earliest known human activity within the survey area is provided by two findspots of prehistoric worked flint (Sites **70** and **71**). One of these (Site **70**) was a microlith, which is a very small piece of worked stone, and is likely to date to the Mesolithic period. The second find was of a Bronze Age barbed and tanged arrowhead (Site **71**).

4. PEAT ASSESSMENT

4.1 PEAT ASSESSMENT

- 4.1.1 In the area around the coal pit (Site 1), the peat exposed in the grips was generally 0.5m thick. Occasional pieces of wood were observed close to the boundary between the base of the peat and the underlying mineral soil, samples of which were collected. In places, the peat was very dry, showing characteristic desiccation cracks (Hag 146); in other places, water in the grips has eroded the peat, forming gullies (Hags 146, 24, 145, 42).
- 4.1.2 At higher levels, exposed peat (Hags 147 and 149) has demonstrated active erosion, as the peat hags formed; collapsing hags were also obvious around Hag 115. The greatest apparent thickness of peat was observed at Hag 142, which was formed by Coal Gill and included peat that was at least 2.5m thick; however, great cascades of eroding peat camouflaged the underlying peat exposures, making the thickness of these areas difficult to gauge. At Hag 142, a clear contact between the peat and the underlying silts was evident, as was the interface between the silts and the underlying Carboniferous shales.
- 4.1.3 At Hag 144, an extensive lateral exposure of peat contained a continuous row of small pieces of wood, which were all located at the same level; just above the silts in the base of the peat; a sample (ecofact) was taken for wood identification. The wood from all of the collected samples were identified as *Salix* (willow)/*Populus* (poplar) spp. (D Druce, pers comm). The wood is more likely to be *Salix*, which was a common component of plant assemblages from wet environments at the opening of the Holocene, during the very early stages of peat formation. The work of Honeyman (1985) on both exposed and cored sequences of peat from Whirley Gill and Thornton Mire in Wensleydale has shown that the earliest peat development was dated to the Early Holocene (8950±80 BP). On the Ingleborough massif, Swales (1987) has dated the earliest peat formation to 9240 ± 100 BP and also reported that extensive areas of the Ingleborough massif were covered by spreading blanket bog from the Early Bronze Age. A radiocarbon date from the wood samples would, however, be necessary to establish a precise date for the peat at Stag Fell, and to understand the vegetational and human changes that could be interpreted from the peat at Stag Fell, a full palaeoecological coring survey of the peat and pollen analytical work would be necessary.

5. DISCUSSION

5.1 DISCUSSION

- 5.1.1 The earliest evidence for human occupation at Stags Fell consists of the casual finds of worked flint of Mesolithic (Site 70) and Bronze-Age (Site 71) date, and raises the potential that there was prehistoric activity across the area. At Stags Fell, there were considerable depths of peat across the survey area, all of which are very likely to have begun forming during the prehistoric periods (*Section 4*). Typically the prehistoric material would be recovered at the interface between the peats and underlying mineral soils, and the recovery of further evidence of early activity was reliant upon the examination of these horizons. While there were numerous exposures of peat at Stags Fell, few of the exposures provided the opportunity to examine these critical horizons, either because the exposures were not deep enough (particularly in the grips) or peat slumping had obscured the lower deposits, and will have obscured the prehistoric land surfaces. Despite this the eroded peat hags and the exposed edges of some of the grips provided the main potential for sub-surface inspection; though the potential for the identification of such finds was limited and none were found, this does not preclude the presence of worked flints, or associated features at Stag Fell.
- 5.1.2 The most numerous types of site identified within the survey area were associated with mining or quarrying. Although many of the sites associated with mining have been attributed to lead extraction, as early as the medieval period, it was also recorded that both lead and iron were being extracted from this general area (Page 1914, 200-14). Therefore, it would be unwise to assume that every mining site was necessarily associated with lead extraction. Further historical research would be required in order to identify more specifically which types of extraction were undertaken during different historical periods, in which areas, and by whom. Such research would also be necessary to allow closer date-ranges to be suggested for the sites, which are currently considered to be of broad post-medieval or industrial date.
- 5.1.3 Although the survey area has been used as an agricultural area since at least as early as the medieval period (*ibid*), very few agricultural sites were identified. This is probably a result of the predominance of the use of the uplands for pastoral agriculture, with a particular emphasis on transhumance pastoralism, whereby the uplands were used for summer grazing. With the exception of a limited number of sheepfolds and, in some areas, fields, or sheep shelters, such agriculture leaves few physical traces.
- 5.1.4 Beacon sites are unusually common within the locale, although it is extremely difficult to date such sites, in the absence of archaeological excavation, sampling, or documentary research. Many such beacons were established in England in the nineteenth century in association with celebrations to mark Queen Victoria's jubilee. However, the presence of earlier beacons in the local area is attested by Penhill, at which a beacon is said to have been fired to announce the coming of the Spanish Armada in 1588 (Page 1914, 286-90), and an earlier origin for at least some of these beacons is possible, although perhaps unlikely.

- 5.1.5 The current land use of the study area is as an upland moorland game shoot. This land use, and the continued use of the area in this way during the recent past, is reflected in many of the man-made structures that are visible currently at Stags Fell, with several types of bird feeder, hide, and shooting stands scattered across the area. The longevity of use of the dry-stone features is uncertain, although documentary research and communication with members of the current and former game-keeping staff might elucidate the history of game keeping on Stags Fell.
- 5.1.6 **Conclusion:** although numerous site-types associated with a diverse range of land uses were identified within the study area, few of the sites identified during the survey are likely to be susceptible to damage as a result of work to block the drainage grips. Most of the identified sites were remote from the areas of grips and would therefore be unaffected by gripping operations. However, this is dependant upon standing structures being avoided by vehicles and machines, and these areas not being used to generate material for the infilling of grips. The beacon sites are not represented by standing structures, but should also be avoided as sub-surface remains might survive that may include datable material. Five sites that were identified in the HER, but which are not highly visible, also retain the potential to be damaged as a result of intrusive groundworks that might excavate peat for use in the infilling of grips. These are the areas where the worked flints were found (Sites **70** and **71**) and the sites of three putative earthwork enclosures (Sites **43**, **78-80**).

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APPENDIX 1: PROJECT DESIGN

1. INTRODUCTION

1.1 CONTRACT BACKGROUND

- 1.1.1 Miles Johnson of Yorkshire Dales National Park Authority (YDNPA), on behalf of the Yorkshire Peat Partnership has invited Oxford Archaeology North (OA North) to submit a project design for a programme of landscape survey and an assessment of re-wetting on the Western part of Stags Fell, North Yorkshire (SD 877 935). The proposed programme is in accordance with a project brief by YDNPA and is intended to provide an assessment of the archaeological impact of a programme of grip blocking on the mossland.

1.2 ARCHAEOLOGICAL BACKGROUND

- 1.2.1 The survey work is to inform a proposal for grip blocking works to be undertaken using machine cut peat plugs. To provide pre-intervention records of archaeological remains in the area, and highlighting where unnecessary damage to archaeological features from cutting of peat plugs and/or through access with tracked excavators can be avoided. The currently exposed sections of eroded grips provide an opportunity to gauge the palaeoenvironmental value of the peat at this location, including the recovery (and potential identification and dating) of sample ecofacts.
- 1.2.2 OA North undertook a major assessment of the Upland Peats in England on behalf of English Heritage (OA North 2010), which has identified that there is an enormous archaeological resource within the peat covered uplands, but which is as yet unknown because of poor site visibility arising from the peat cover. The peat cover, while obscuring the sites, also has the potential to preserve them in a waterlogged state and as such has the potential to preserve an enormously significant resource. If the peat is degraded, drained or desiccated the peat is lost and the water logging that has preserved the organic components is lost then the sites will rapidly decompose. There are numerous examples of organic sites that have degraded over a matter of a few years once they have become desiccated as a result of changing drainage patterns.
- 1.2.3 The situation at Stags Fell is such that the moss is on the top of a high level plateau, and has been extensively drained in the past. That may have caused irrevocable damage to the organic components of any sites, in which case the programme of re-wetting may be too late to save them. Alternatively there may still be surviving archaeology at locations remote from the individual grips. In any case there is still the potential for the survival of inorganic components of any sites. If peat developed from an early date on the moss this may have discouraged anthropogenic activity, and it is not uncommon to find that the archaeological resource beneath the peat is typically of an early date (eg Mesolithic). The impact of all of this is that it is necessary to assess the character and condition of the peats in order to determine the potential for underlying archaeological remains.
- 1.2.4 The western area of Stags Fell proposed for survey is an elevated area of blanket peat. The survey area is centred at NGR SD 877 935. The survey area covers 6.34 km². As part of a Higher Level Stewardship agreement in place on the holding, a moorland restoration project is proposed. The restoration project will block a number of active grips (drains) that were cut into the peat (probably at some point between the end of the Second World War and the end of the 1970s).

1.3 OXFORD ARCHAEOLOGY NORTH

- 1.3.1 OA North has considerable experience of the investigation of wetlands. OA North (formerly Lancaster University Archaeological Unit) undertook a major programme of survey of the North West lowland wetlands and has recently undertaken a programme of assessment of the Upland Peats by means of trial surveys across Northern England. OA North has undertaken an assessment of the impact of upland management strategies upon archaeological monuments on behalf of Natural England (ADAS and OA North 2009). This latter programme is specifically examining the issue of grips and means and strategies to block them, without causing undue impact upon the archaeological remains.

- 1.3.2 OA North has undertaken a large number of upland landscape surveys for a variety of clients (both private and national agencies such as English Heritage and Royal Commission on the Historical Monuments of England (RCHM(E)) and employs a qualified surveyor (Jamie Quartermaine, BA, DipSurv, MIFA) who has many years experience of the identification and survey of upland landscapes, having worked closely with the RCHM(E) and the Lake District National Park Authority on a large number of projects.
- 1.3.3 Since 1982 OA North has been undertaking extensive upland landscape surveys throughout Northern England and Wales. Surveys include the Lake District National Park Survey, the Torver Common surveys (Lake District), Haweswater and Thirlmere estate surveys (Lake District), Lyme Park (Peak District), most of the Forest of Bowland AONB, Lancashire, and a multitude of smaller landscape projects which include the Otterburn Range surveys in the Northumberland National Park. In particular OA North has undertaken a detailed survey of an upland estate at Hartley, Eden Valley involving a detailed documentary study and surface survey. To date OA North has undertaken archaeological field surveys of over 930sqkm of upland landscapes and has recorded over 24,000 field monuments. OA North can claim to be one of the foremost specialists in the field of upland landscape recording.
- 1.3.4 OA North and all its members of staff operate subject to the Institute for Archaeologists (IfA) Code of Conduct.

2. OBJECTIVES

- 2.1 The primary purpose of the project is to inform future management decisions with regard to the application of grip blocking and moorland re-wetting. The proposed study is intended to identify archaeological remains on the surface or within the peat. It is also important that an assessment is made of the impact upon the peats as these protect the buried archaeological resource and any severe damage to them will inevitably damage or destroy the underlying resource. The aims of this initial project are broadly as follows:
- to establish sufficient information to establish the location, extent, character, period, condition, fragility and potential of any surviving surface archaeological features;
 - to establish any evidence of impact by the gripping operations and machine access upon extant archaeological sites.
 - to inspect a 50% sample of grips across the project area, recording any features, lithics or other small finds exposed within the sections. Recover a sample of ecofacts for identification and possible dating. Areas of actively eroding and hagged peat at the should also be inspected.

3. METHODS STATEMENT

- 3.1 The following work programme is submitted in line with the objectives of the archaeological work summarised above. It is divided into three elements, archaeological field survey, ecological assessment and reporting.

3.2 FIELD SURVEY METHODOLOGY

- 3.2.1 The survey will be undertaken as an enhanced Level 1 type survey (details of OA North's survey levels are contained in *Appendix I*). The survey study area is as defined in the project brief and encompasses 6.34 sq km. The survey will involve four elements: Reconnaissance, Mapping, Description and Photography.
- 3.2.2 **Reconnaissance:** the reconnaissance will consist of close field walking, varying from 10m to 20m line intervals dependent on visibility and safety considerations. The survey will aim to identify, locate and record archaeological sites and features on the ground and thus all sites noted will be recorded. The extent of any areas where there is no access will be defined on maps and depicted on the CAD/GIS mapping. The survey will take considerable care to examine areas of disturbance through the peat, be that borrow pits created by the grip blocking, the undisturbed grips, erosion scars from vehicle damage and any other peat exposures. The survey will investigate and record all

archaeological features and retrieve sample ecofacts and artefacts from a defined sample group of consisting of 50% of extant grips across the study area of all identified peat hag scars across the study area. These will specifically examine evidence for finds or structural entities within the section and the interface between the peat and the mineral soil. It should be born in mind that finds are not normally revealed within newly disturbed section; instead the sections need to be exposed for a while to allow them to weather in order to highlight any artefactual material.

- 3.2.3 **Survey mapping:** a Satellite Global Positioning System (GPS) will be utilised to satisfy English Heritage defined Level 1 survey requirements (English Heritage 2007). The GPS is a Leica differential system achieves much greater accuracies than can be achieved with a hand held GPS. The accuracy of the OA North GPS system is capable of +/- 0.02m and provides for a quick and effective means of recording the position and extent of sites. The GPS techniques will be used to record the extent of the site. The survey will record all archaeological sites as point data and any significantly sized archaeological features (more than 3m in diameter) with line or polygon data. The locations of any retrieved archaeological artefacts and ecofacts identified and/or retrieved during the project will also be recorded.
- 3.2.4 **Site Description and Assessment:** the key to economy of survey is being able to compile a descriptive record for each site in a fast and accurate manner, which can be implemented in all weather conditions. It is proposed that the data be directly input on site into a palm computer, which is within a weatherproof case. The data will be incorporated into an Access compatible database. The data will be backed up onto a portable computer running Access suitable for direct import to the YDNPA HER. The input into the system will be guided by a proforma to ensure uniformity and consistency of input, and will provide input for the following core fields:
- 3.2.5 The description will record if it has been impacted by any of the grip blocking operations, or how close it is to any surface disturbance. It will examine if it has been exposed within peat exposures and at what depth it is revealed.
- 3.2.6 The description will incorporate a provisional interpretation of the function and purpose of a site, where possible, and similarly will provide a provisional interpretation of the site's chronology where possible.
- 3.2.7 **Photographic Survey:** a digital photographic archive will be generated in the course of the field work, comprising landscape and detailed photography. This will record any significant ecofacts, archaeological features, lithics or other small finds located within the grip sections or areas of bare peat inspected. Detailed photographs will be taken of all sites using a scale bar. All photography will be recorded on photographic pro-forma sheets which will show the subject, orientation and date. Digital imagery, rather than conventional film photography, is acceptable for the photographic recording although 10mega pixel resolution will be used as a minimum. Unedited images should be archived as tiff files, as well as processed images. A full image catalogue is required as part of the archive. Metadata will be embedded in the DNG file, which will include an agreed name for the site, the subject of the photograph, the date of the photograph, the OS grid coordinates, the name of the organisation taking the photograph, the direction of shot.
- 3.2.8 **Ecological and Artefact Retrieval:** the retrieval of ecofacts will be confined to small targeted samples that are either suitably diagnostic for species identification, or are substantial and well preserved enough to be suitable for obtaining radiocarbon dating. Large areas of tree remains exposed in hag sections will be recorded Individual exposed artefact finds of significance will be collected, catalogued and stored, and where a complex site such as a lithic scatter is encountered, a small sample will be gathered. The extents of any concentrated areas of finds will be recorded by GPS.

3.3 PROJECT ARCHIVE

- 3.3.1 **Archive:** the results of the fieldwork will form the basis of a full archive to professional standards, in accordance with current English Heritage guidelines (Management of Archaeological Projects, 2nd edition, 1991). The project archive represents the collation and indexing of all the data and material gathered during the course of the project. This archive will be provided in the English Heritage Centre for Archaeology format, both as a printed document and digitally. Digital survey data will be provided in a suitable format for incorporation into the MapInfo Geographical Information System

(GIS). A synopsis (normally the index to the archive and the report) should be placed in the Yorkshire Dales Sites and Monuments Record.

- 3.3.2 **Digital Presentation:** the survey data will be digitally transferred into a GIS system and superimposed with digital 1:10,000 OS data. The dimensioned site drawings will be digitally superimposed onto the raw survey data, thereby ensuring a high level of both numeric and representational accuracy. The final output drawings will be output in DXF, and Autocad format. The drawings can be output at any required scale, although the accuracy of generation assumes that the drawings will not be reproduced at scales of greater than 1:50,00. The archive will be passed to the North Yorkshire Record Office and a digital copy will be passed to the client on completion of the survey alongside the final report.

3.4 REPORTING

- 3.4.1 **Assessment of Archaeological Resource:** an assessment will be made of the extent, character and diversity of the archaeological resource across the extent of the study area. It will make an assessment of the potential for buried archaeology on the basis of the observed evidence and by comparison with areas examined as part of the Upland Peats Project.
- 3.4.2 **Report Content:** the full report will consist of an acknowledgements statement, lists of contents, summary, introduction summarising the brief and project design and any agreed departures from them, methodology, interpretative account of remains found, assessment of the impact of the re-wetting upon the peats, assessment of the impact of the re-wetting upon the archaeological resource, conclusions, a gazetteer of sites, list of archive contents and bibliography. Illustrative material will include location maps and plans. The report will make recommendations for the management of future grip-blocking in relation to the archaeological resource
- 3.4.3 **Output:** four bound and one pdf copy of the full report will be submitted to the Yorkshire Dales National Park Authority. GIS database/ CAD files will be presented in a format to be agreed with the YDNPA HER and the Yorkshire Peat Partnership to ensure integration both with current HER records and the utility for the grip blocking contractor. Digital geographic data are to be presented in ESRI .shp and/or MapInfo .tab. format.
- 3.4.4 **Publication:** information from the project will be fed into the OASIS project (On-line Access to Index of Archaeological Investigation).

3.5 CONFIDENTIALITY

- 3.5.1 The report is designed as a document for the specific use of the Client, for the particular purpose as defined in the project brief and project design, and should be treated as such; it is not suitable for publication as an academic report, or otherwise, without amendment or revision. Any requirement to revise or reorder the material for submission or presentation to third parties beyond the project brief and project design, or for any other explicit purpose, can be fulfilled, but will require separate discussion and funding.

4. OTHER MATTERS

4.1 ACCESS

- 4.1.1 It is assumed that OA North will have unrestricted pedestrian access to the study area for the duration of the survey, and that access will be negotiated with the land owner.

4.2 HEALTH AND SAFETY

- 4.2.1 Full regard will, of course, be given to all constraints (services) during the survey, as well as to all Health and Safety considerations. The OA North Health and Safety Statement conforms to all the provisions of the SCAUM (Standing Conference of Unit Managers) Health and Safety manual, as well as the OA Health and Safety Statement. Risk assessments are undertaken as a matter of course for all projects, and will anticipate the potential hazards arising from the project.

4.3 INSURANCE

- 4.3.1 The insurance in respect of claims for personal injury to or the death of any person under a contract of service with the Unit and arising in the course of such person's employment shall comply with the employers' liability (Compulsory Insurance) Act 1969 and any statutory orders made there under. For all other claims to cover the liability of OA North in respect of personal injury or damage to property by negligence of OA North or any of its employees there applies the insurance cover of £10m for any one occurrence or series of occurrences arising out of one event.

4.4 WORKING HOURS

- 4.4.1 Survey works will be undertaken on the basis of a five day week, within daylight hours only.

4.5 PROJECT MONITORING

- 4.5.1 Monitoring meetings, if required, will be established with the YDNPA Historic Environment staff at the outset of the project. It is anticipated that these will involve a preliminary meeting at the commencement of the project and possibly progress meetings during fieldwork.
- 4.5.2 OA North will inform the client of all significant developments, and any potential departures from the agreed programme will be discussed and agreed with them prior to implementation.

5. WORK TIMETABLE

5.1 PHASES OF WORK COMPRISING:

5.1.1 *Field Survey*

Six days will be required for the field survey

5.1.2 *Archive and Reporting*

15 days would be required to complete this element.

- 5.1.3 The project can be undertaken at short notice, subject to the requirements of the client and to fit in with any scheduled work programme.

6. OUTLINE RESOURCES

6.1 STAFFING

- 6.1.1 The project will be under the management of **Jamie Quartermaine BA DipSurv** (OA North Project Manager) to whom all correspondence should be addressed. He will monitor the progress of the project ensuring adherence to all agreed programmes and timetables. He will also provide technical back-up, advice, and will have editorial control over the compilation of the full report. He has many years experience of surveying upland landscapes, particularly in the Lake District. Jamie will provide a post-survey assessment of the results in conjunction with the project director.
- 6.1.2 The field survey will be led by **Peter Schofield** (OA North Project Officer) who works full time on landscape surveys across the north of England and Wales. He has undertaken surveys at Little Asby Common, Hardknott Forest and Hartley Fold Estate, Cumbria. Whole valley surveys of Ennerdale, Buttermere, Borrowdale and Wasdale in the central Lake District fells, and eight seasons of landscape survey across over 200sq km of upland areas in North Wales. With the exception of Jamie Quartermaine, he is our most experienced landscape archaeologist.
- 6.1.3 Ecological Advice will be provided by **Elizabeth Huckerby BA MSc MIFA** (Senior Palaeoenvironmentalist). She is Experienced in producing reports for assessment and publication. She joined OA North in 1990 when she worked as Palynological Project officer for the North West Wetlands Survey (NWWs). She specialises in palynology and collaborated in the successful isolation of Icelandic tephra from a lowland raised mire in England. Since the completion of the NWWs she been involved mainly in developer funded Archaeology both as a palynologist and archaeobotanist, and has incorporated work on prehistoric, Roman, Medieval and historic sites in the north and south of England. Prehistoric sites include two Bronze Age burnt mounds in Cumbria, at

Drigg and Sparrowmire. She has worked on environmental remains from Roman and Medieval sites in Lancaster, Carlisle, Kirkby Thore Cumbria, Berwick and Gateshead, the latter two in Northumberland. Studies from these sites incorporated the assessment and analysis of charred and waterlogged plant remains and pollen. Her main skills are archaeobotany, pollen and plant macrofossil identification. Extensive knowledge of the palaeoecology of North West England. Environmental sampling and processing procedures. She has considerable experience of selecting and submitting samples for radiocarbon dating, and she has co-authored countless books, papers and client reports.

APPENDIX 2: GAZETTEER OF SITES

Period	Date Range
Palaeolithic	30,000 – 10,000 BC
Mesolithic	10,000 – 4000 BC
Neolithic	4000 – 2400 BC
Bronze Age	2400 – 700 BC
Iron Age	700 BC – AD 43
Romano-British	AD 43 – AD 410
Early Medieval	AD 410 – AD 1066
Late Medieval	AD 1066 – AD 1540
Post-medieval	AD 1540 – c1750
Industrial Period	cAD 1750 – 1914
Modern	Post-1914

Table 2: Summary of British archaeological periods and date ranges

Site Number	1
Site Name	Willy Pit
NGR	387100 495150
Site Type	Disused coal pit
Period	Post-medieval
HER no	26127
Source	Walkover Survey; OS first edition of 1856; HER
Description	An area of surface extraction marked as a disused coal pit on the first edition and current OS maps. A spoil heap is located on the southern side and measures approximately 7m long by 5m wide and 0.4m high. An exposed scar to the north reveals coal exposed through rabbit burrowing.

Site Number	2
Site Name	Trackway
NGR	387003 494928
Site Type	Trackway
Period	?Post-medieval
Source	Walkover Survey
Description	A sinuous trackway named Willy Road End runs upslope in a south-west/north-east orientation towards a coal pit (Site 1). The trackway is terraced and measures up to 4m wide and a maximum of 1m high.

Site Number **3**

Site Name Quarry
NGR 386818 494303
Site Type Earthworks
Period ?Post-medieval
Source Walkover Survey
Description A series of hollows relating to quarrying are situated at the side of the road and adjacent to shafts on the west side of the road (outside the study area). An access track leads upslope from the road.

Site Number 4
Site Name Mine Shaft
NGR 386863 494697
Site Type Extraction
Period ?Post-medieval
HER no 26570
Source Walkover Survey; HER
Description A raised spoil mound with a central depression lies adjacent to the road. There are no other shafts in the immediate vicinity. The HER records a ventilation shaft for Stags Fell Grooves Lead Mine in this area.

Site Number 5
Site Name Corbelled Structure
NGR 386940 494105
Site Type Structure
Period ?Industrial
Source Walkover Survey
Description An irregular mound of stones, which is vaulted at one end and measures 4m long and 2m wide with a maximum height of 0.6m. There are indications of a structure with some collapsed stone on top. At the eastern end is a corbelled area forming a rough dome. The void beneath the vault is 0.3m wide. Patchy lichen on some of the stones suggests that the mound may not be particularly old. The function is unknown but it might be a particularly well-built bird feeder or even an animal trap.

Site Number 6
Site Name Cairn
NGR 386973 494127
Site Type Cairn
Period Modern
Source Walkover Survey
Description A small cairn comprised of five or six stones. The cairn was 1m in diameter and likely to be a walkers' marker cairn.

Site Number 7
Site Name Cairn
NGR 387003 494139
Site Type Cairn
Period Modern
Source Walkover Survey
Description A cairn measuring 3m in diameter and 0.5m high and which is constructed of flat slabs. The cairn is surrounded by outcropping stone and the presence of patchy lichen suggests that it is not an ancient feature and is likely to be a walkers' marker cairn.

Site Number 8
Site Name Mound

NGR 387631 494075
Site Type Extraction
Period Post-medieval/industrial
Source Walkover Survey
Description A mound of exposed shales, which contrast markedly with the surrounding peatland. The mound is approximately 10m in diameter and 1m high. It is slightly irregular in shape and is likely to be a spoil mound. The mound is one of a line of three, one of which has a distinctive hollow adjacent to it.

Site Number 9
Site Name **Spoil Heaps**
NGR 387680 494048
Site Type Extraction
Period Post-medieval/industrial
Source Walkover Survey
Description An irregular shale mound, topped with grass and surrounding a distinct hollow. The mound is open to the west and measures approximately 1m in diameter and 1m high. The mound is one of three that form a line. The mounds may represent spoil from extraction.

Site Number 10
Site Name **Stock Enclosure**
NGR 38665 493355
Site Type Enclosure
Period Industrial
Source Walkover Survey
Description A stock enclosure incorporated into the line of crag. The walls are in good condition and are set around a particularly craggy edge. The interior of the enclosure is flat and has been artificially levelled. Some of the walls were bonded into the crag in order to block the movement of stock to the north. Given the good condition of the enclosure, which has walls measuring up to 1.5m high, it is likely that it relates to pastoral agriculture undertaken during the nineteenth or earlier twentieth centuries. There are no other such features in the immediate vicinity.

Site Number 11
Site Name **Mine Shaft**
NGR 386734 494162
Site Type Extraction
Period Post-medieval/industrial
Source Walkover Survey
Description A large mine shaft comprising a very substantial mound with a large central depression is located on the edge of a stream gully. There is a separate spoil mound to the north, which spills down into the gully. The mound measures about 2m high but appears higher in contrast to the descending ground to the north.

Site Number 12
Site Name **Mine shaft**
NGR 386729 494127
Site Type Extraction
Period Post-medieval/industrial
Source Walkover Survey
Description A disturbed mine shaft that lies immediately to the south of Site 11. The main deposits of spoil mound lie to the west and a bank extends around the mound to the east. It has a low depression in the centre. The maximum height of the mound is 0.5m

Site Number 13
Site Name Mine shaft
NGR 386669 493552
Site Type Extraction
Period Post-medieval/industrial
Source Walkover Survey
Description A mine shaft with an outer ring of spoil. The outer diameter is 13m and the inner diameter of the shaft is 5m. A smaller trial shaft lies adjacent to this one.

Site Number 14
Site Name Trial shaft
NGR 386677 493518
Site Type Extraction
Period Post-medieval/industrial
Source Walkover Survey
Description A small group of trial shafts with average diameters of 14m.

Site Number 15
Site Name Trackway
NGR 387435 494360
Site Type Trackway
Period ?Post-medieval/industrial
Source Walkover Survey
Description A terraced trackway leading to a gully with exposed natural rock. It is 1.5m wide and cut into the slope to a depth of 0.6m.

Site Number 16
Site Name Mound
NGR 386565 493185
Site Type Extraction
Period ?Post-medieval/industrial
Source Walkover Survey
Description A group of possible spoil heaps and mounds of stones deriving from extraction workings located at the base of a stone outcrop, within a gully that lies *c* 100m from the fell road.

Site Number 17
Site Name Quarry
NGR 386615 493274
Site Type Extraction
Period ?Post-medieval/industrial
Source Walkover Survey
Description A small quarry adjacent to an outcrop and a gully. It measures 6m in diameter and is 1.2m deep. A series of three or four further hollows lie 20m to the west.

Site Number 18
Site Name Quarry
NGR 386654 493235
Site Type Extraction
Period ?Post-medieval/industrial
Source Walkover Survey
Description A series of four small pits, which possibly relate to quarry extraction. They measure up to 7m in diameter.

Site Number 19

Site Name Shelter
NGR 386669 493326
Site Type Structure
Period ?Post-medieval/industrial
Source Walkover Survey
Description A stone shelter built into a natural hollow or fissure and measuring 3m by 2m and 1.1m high. This structure utilises single-thickness dry-stone walls that are irregularly coursed. The structure is now in use as a shelter or hide associated with shooting and has been equipped with a covering of camouflage scrim.

Site Number 20
Site Name Quarry
NGR 386745 493567
Site Type Extraction
Period ?Post-medieval/industrial
Source Walkover Survey
Description A group of approximately 10 quarries. The largest of these is 2m deep and up to 6m in diameter.

Site Number 21
Site Name Quarry
NGR 386923 493277
Site Type Extraction
Period ?Post-medieval/industrial
Source Walkover Survey
Description A portion of exposed rock with some adjacent rock debris and spoil that appears to represent a disused quarry face. The face is up to 1.5m high and the stone within the spoil heaps appears to have been graded by size.

Site Number 22
Site Name Trackway
NGR 386950 493267
Site Type Trackway
Period ?Post-medieval/industrial
Source Walkover Survey
Description A trackway that is up to 1.5m wide and up to 0.5m deep. Although represented by a linear hollow, it does not appear to have been terraced and is, therefore, an eroded hollow way.

Site Number 23
Site Name Millstone
NGR 387725 493525
Site Type Millstone
Period Unknown
Source ?Post-medieval/industrial
Description A millstone measuring 1.6m in diameter and with a uniform thickness of 0.3m. The central hole had not been cut, nor are any obvious tool marks or striations. Other millstone lie adjacent, but appear less rounded.

Site Number 24
Site Name Millstone
NGR 387791 493590
Site Type Millstone
Period ?Post-medieval/industrial
Source Walkover Survey

Description A millstone with a slightly domed upper surface. It measures approximately 1.65m in diameter and is 0.3m thick.

Site Number 25
Site Name Millstone
NGR 388023 493559
Site Type Millstone
Period ?Post-medieval/industrial
Source Walkover Survey
Description A millstone, measuring approximately 0.3 thick and 1.65m in diameter.

Site Number 26
Site Name Beacon
NGR 388893 493552
Site Type Beacon
Period ?Post-medieval/industrial
HER no 26576
Source Walkover Survey; HER
Description The site of a beacon recorded in the HER but is not represented by any visible modified physical remains. The site is represented by a low natural rise that forms a high point within a very localised area, although much higher hill tops lie within the wider area.

Site Number 27
Site Name Sheepfold
NGR 388931 492875
Site Type Sheepfold
Period ?Post-medieval/industrial
HER no 26577
Source Walkover Survey
Description A four-celled sheepfold with a plan as shown on current OS mapping. It is up to 9m wide and 56m long. There are sheep smoots at the northern and southern ends, both of which lead to gills to facilitate sheep washing. The walls are well-built, with double dry-stone construction, and have angled coverbands. The entrances are also well-built and feature through-stones and quoins, and are likely to have been rebuilt or consolidated regularly. The eastern entrance retains the iron fixings for a gate. The walls use roughly quarried and irregular stones that are up to 1.5m by 0.5m. A small niche, or keep-hole, is present in one wall.

Site Number 28
Site Name Feeding station
NGR 389105 492849
Site Type Structure
Period Modern
Source Walkover Survey
Description A mound of stones that is now in use as a bird feeding station. It is of dry-stone construction and is ovoid in shape, measuring 3m by 2m and 0.6m high. It is not clear how recently the structure was built or whether it has always served the current purpose.

Site Number 29
Site Name Quarry
NGR 388699 492093
Site Type Extraction
Period Post-medieval
HER no 26416
Source Walkover Survey; HER

Description A group of quarries and spoil heaps situated to the south of Smuker Hill. These all exploited a linear limestone outcrop that was also the site of two lime kilns (Sites **30** and **31**). It is suggested to be of post-medieval date in the HER.

Site Number **30**
Site Name **Lime Kiln**
NGR 388497 492095
Site Type Structure
Period Industrial (1844)
HER no 53846; 26417
Source Walkover Survey; HER
Description The substantial and well-preserved remains of a dry-stone limekiln. It is square in plan and situated at the edge of a limestone outcrop. The furnace aperture at the base of the kiln has a corbelled roof, vertical sides, and incorporates a stone lintel. The aperture is 1.6m wide, 1.5m high, and 2.5m deep. The central shaft is circular in plan but has been in-filled. The inner surface of the central shaft features vitrified stone, which is testament to the extremely high temperatures achieved in the kiln. There are tumbled stones to each side of the lower aperture that represent the remains of parallel walls forming a flanked entrance to the structure. The structure measures 4.3m in height, 4.5m wide and 5m long. The inner shaft is 2m in diameter. There is a date stone above the lower aperture that was recorded in the HER as reading 1841, but which might actually state 1844, having become worn. A quarry face is present within the limestone outcrop to the north. The site was shown on the first edition OS mapping. According to the HER, the site was visited on 19/03/06 as part of the YDLKS [Yorkshire Dales Limestone Kiln Survey] when two kilns were recorded as HIGH ABB 15 and HIGH ABB 35.

Site Number **31**
Site Name **Lime Kiln**
NGR 388439 492099
Site Type Structure
Period Industrial (nineteenth century)
HER no 26417
Source Walkover Survey
Description A collapsed limekiln with a quarry face within the limestone outcrop to the rear. A trackway runs east/west to the limekiln and continues to Site **31**. The kiln is approximately 7m by 5m, and the collapsed walls are part of an entrance passage to the furnace aperture. According to the HER, the site was visited on 19/03/06 as part of the YDLKS [Yorkshire Dales Limestone Kiln Survey] when two kilns were recorded as HIGH ABB 15 and HIGH ABB 35.

Site Number **32**
Site Name **Mine shaft**
NGR 388384 492409
Site Type Extraction
Period Post-medieval/industrial
Source Walkover Survey
Description A mine shaft that is grassed over but is clearly identifiable as a circular mound with a central hollow. It is approximately 1m deep, with an outer diameter of up to 9m and an inner diameter of up to 4m.

Site Number **33**
Site Name **Mine shaft**
NGR 388003 492264
Site Type Extraction
Period ?Post-medieval/industrial
Source Walkover Survey

Description A series of mine working consisting of nine or ten shafts, many of which might be trials with the exception of two particularly large shafts. One of the larger shafts has a maximum outer diameter of 9m and an inner diameter of 3m, and is 0.8m deep. A line of stones runs through this area and leads northwards towards an area of peat hags and the current trackway. This might be the remains of a wall foundation, but this is not certain. A disused shaft is marked in this area on current OS mapping.

Site Number 34
Site Name ?Sheepfold
NGR 387393 493916
Site Type Structure
Period ?Post-medieval/industrial
HER no 26566
Source Walkover Survey; HER
Description A possible sheepfold.

Site Number 35
Site Name Mine shaft
NGR 386579 493577
Site Type Extraction
Period ?Post-medieval/industrial
Source Walkover Survey
Description A mine shaft of unknown date.

Site Number 36
Site Name Trackway
NGR 386903 493638
Site Type Trackway
Period Modern
Source Walkover Survey
Description A trackway that is possibly of recent origin that lies adjacent to a series of sink holes.

Site Number 37
Site Name Mine shaft
NGR 386676 493296
Site Type Extraction
Period ?Post-medieval/industrial
Source Walkover Survey
Description A mine shaft of unknown date.

Site Number 38
Site Name Mine shaft
NGR 386829 493430
Site Type Extraction
Period ?Post-medieval/industrial
Source Walkover Survey
Description A mine shaft of unknown date.

Site Number 39
Site Name Mine shaft
NGR 386708 493337
Site Type Extraction
Period ?Post-medieval/industrial
Source Walkover Survey

Description	A mine shaft of unknown date.
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Site number	40-42
Site name	Lead working complex
NGR	386690 493670
Site type	Mine shaft, lead mine
Period	Medieval to late nineteenth century
HER no	44896
Sources	HER
Description	A probable lead working of unknown date, observed as an earthwork and stonework and mapped from aerial photographs.

Site number	43
Site name	Possible earthwork enclosure
NGR	38909 49285
Site type	Enclosure
Period	Early Neolithic to medieval
HER No	44922
Sources	HER
Description	A possible enclosure seen as an earthwork, and mapped from aerial photographs. The site appears as an incomplete, sub-circular enclosure that measures 15m in diameter and is defined by a bank. It was not identified during the field survey in this location.

Site number	44
Site name	Sargill Level.
NGR	389380 4928730
Site type	Spoil heap, drainage level, lead mine
Period	Nineteenth century
HER No	43724
Sources	HER
Description	Sargill level associated with Sargill lead mine.

Site number	45
Site name	Sargill Level
NGR	389380 4928730
Site type	Spoil heap, drainage level, lead mine
Period	Nineteenth century
HER No	43724
Sources	HER
Description	Sargill level associated with Sargill lead mine.

Site number	46-48
Site name	Lead working complex
NGR	38669 49367
Site type	Mine shaft, industrial site, hush, leat, lead workings
Period	Medieval to late nineteenth century
HER No	44896
Sources	HER
Description	An area of probable lead working of unknown date, observed as an earthwork and stonework and mapped from aerial photographs.

Site number	47
Site name	Lead working complex
NGR	38669 493670

Site type Mine shaft, industrial site, hush, leat, lead workings
Period Medieval to late nineteenth century
HER No 44896
Sources HER
Description A probable lead working complex of unknown date, observed as an earthwork and stonework and mapped from poor quality aerial photographs.

Site number **48-50**
Site name **Lead working complex**
NGR 38669 493670
Site type Mine shaft, industrial site, hush, leat, lead workings
Period Medieval to late nineteenth century
HER No 44896
Sources HER
Description A probable lead working of unknown date, observed as an earthwork and stonework and mapped from poor quality aerial photographs.

Site number **51**
Site name **Lead working complex**
NGR 38669 49367
Site type Mine shaft, industrial site, hush, leat, lead workings
Period Medieval to late nineteenth century
HER No 44896
Sources HER
Description A probable lead working of unknown date, observed as an earthwork and stonework and mapped from poor quality aerial photographs.

Site number **52**
Site name **Low Millstone**
NGR 387522 493587
Site type Millstone working site?
Period Unknown
HER No 53501
Sources HER
Description Place-name suggesting a millstone grit outcrop or millstone workings.

Site number **53**
Site name **Millstones End**
NGR 387896 493561
Site type Millstone working site?
Period Unknown
HER No 53502
Sources HER
Description Place-name suggesting a millstone grit outcrop or millstone workings.

Site number **54**
Site name **High Millstones**
NGR 387340 493974
Site type Millstone working site?
Period Unknown
HER No 53503
Sources HER
Description Place-name suggesting a millstone grit outcrop or millstone workings.

Site number 55
Site name Stags Fell Quarries
NGR 8714 49234
Site type Quarry, sandstone quarry
Period Nineteenth century
HER No 53504
Sources HER
Description Stags Fell Quarries including "High Quarry", "New Quarry", "Old Quarry" and "Low Quarries".

Site number 56
Site name Lime kiln
NGR 38881 49211
Site type Lime kiln
Period Post-medieval
HER No 26415
Sources HER
Description The reported location of a limekiln in the HER, but one was not identified in this location. It probably corresponds to Site 30 or 31.

Site number 57
Site name Low Quarry
NGR 38707 49226
Site type Sandstone quarry
Period Post-medieval
HER No 26477
Sources HER
Description The location of a quarry, and is part of the Site 55 quarry complex.

Site number 58
Site name Sheepfold
NGR 38728 49200
Site type Sheepfold
Period Undated
HER No 26478
Sources HER
Description Sheepfold

Site number 59
Site name Sheepfold
NGR 38734 49195
Site type Sheepfold
Period Undated
HER No 26479
Sources HER
Description Sheepfold

Site number 60
Site name New Quarry
NGR 38768 49189
Site type Sandstone quarry
Period Post-medieval
HER No 26481
Sources HER
Description Sandstone quarry

Site number 61
Site name Sheepfold
NGR 38774 49180
Site type Sheepfold
Period Undated
HER No 26482
Sources HER
Description Sheepfold

Site number 62
Site name Barn
NGR 38768 49180
Site type Barn?
Period Medieval to late nineteenth century
HER No 26483
Sources HER
Description The OS 1:10,000 map of 1981 showed slight walling remains of a barn.

Site number 63
Site name Sheepfold
NGR 38674 49261
Site type Sheepfold
Period Undated
HER No 26558
Sources HER
Description Sheepfold

Site number 64
Site name High Quarry
NGR 38664 49280
Site type Sandstone quarry
Period Post-medieval
HER No 26559
Sources HER
Description Sandstone Quarry

Site number 65
Site name Hungry Well
NGR 38657 49297
Site type Well
Period Unknown
HER No 26560
Sources HER
Description Well, named on the first edition 6" OS map.

Site number 66
Site name Limekiln
NGR 38694 49330
Site type Limekiln
Period Post-medieval
HER No 26563
Sources HER

Description Limekiln depicted on the OS first edition map and visited as part of YDLKS on 13/12/05.

Site number 67
Site name Ruined Structure
NGR 38662 49366
Site type Structure
Period Undated
HER No 26564
Sources HER
Description This walled structure is possibly the remains of a barn. It was an unidentified ruinous walled structure at the time of the original survey for the first edition OS map in 1854.

Site number 68
Site name Ford
NGR 38685 49360
Site type Ford
Period Unknown
HER No 26565
Sources HER
Description A ford depicted on the first edition 6" OS map.

Site number 69
Site name Beacon
NGR 38798 49406
Site type Beacon
Period Undated
HER No 26575
Sources HER
Description Reported site of a beacon. Nothing was identified at the site during the survey.

Site number 70
Site name Flint find near Shivery Gill
NGR 386825 493612
Site type Find Spot
Period ?Mesolithic
HER No 36487
Sources HER
Description Possible microlith that is approximately 20mm in length.

Site number 71
Site name Bronze Age Arrowhead
NGR 3876 4924
Site type Find Spot
Period Bronze Age
HER No 3878
Sources HER
Description A Bronze Age barbed and tanged arrowhead found at Stagsfell.

Site number 72
Site name Animal pens
NGR 3868 4932
Site type Pens
Period Modern

HER No 3879
Sources HER
Description An alleged complex of hut circles and enclosures was reported in 1974. Subsequent field investigation suggests that the features seen were just crude animal pens formed out of the scree.

Site number 73
Site name **Animal pens**
NGR 3868 4932
Site type Pens
Period Modern
HER No 3879
Sources HER
Description An alleged complex of hut circles and enclosures was reported in 1974. Subsequent field investigation suggests that the features seen were just crude animal pens formed out of the scree.

Site number 74
Site name **Stags Fell High Quarry**
NGR 38665 49275
Site type Mine
Period Undated
HER No 43779
Sources HER
Description Lead mine working complex represented by a series of spoil mounds.

Site number 75
Site name **Stags Fell High Quarry**
NGR 38768 49190
Site type Mine
Period Undated
HER No 43780
Sources HER
Description Lead mine working complex represented by a series of spoil mounds.

Site number 76
Site name **Stags Fell High Quarry**
NGR 38742 49200
Site type Mine
Period Undated
HER No 43882
Sources HER
Description Lead mine working complex represented by a series of spoil mounds.

Site number 77
Site name **Quarry and trackway**
NGR 38694 49244
Site type Industrial Site
Period Post-medieval
HER No 44897
Sources HER
Description A probable trackway and a probable quarry of post-medieval date, seen as earthworks and exposed stone and mapped from poor quality aerial photographs.

Site number 78
Site name Enclosure
NGR 38760 49203
Site type Enclosure
Period Unknown
HER No 44899
Sources HER
Description A possible enclosure of unknown date, seen as an earthwork and mapped from aerial photographs. The site appears as a rectangular enclosure measuring 20m by 18m and defined by a bank.

Site number 79
Site name Enclosure
NGR 38686 49267
Site type Enclosure
Period Unknown
HER No 44900
Sources HER
Description A possible enclosure of unknown date, seen as an earthwork, and mapped from aerial photographs. The site appears as a sub-circular enclosure that measures 10m in diameter and is defined by a bank.

Site number 80
Site name Enclosure
NGR 38721 49270
Site type Enclosure
Period Unknown
HER No 44901
Sources HER
Description A possible enclosure of unknown date, seen as an earthwork, and mapped from aerial photographs. The site appears as an oval enclosure that measures 40m by 30m and is defined by a bank.

Site number 81
Site name Trackway
NGR 38893 49269
Site type Linear Feature
Period ?Medieval
HER No 44921
Sources HER
Description A possible trackway that might be of medieval date, seen as an earthwork, and mapped from poor quality aerial photographs.

ILLUSTRATIONS

FIGURES

Figure 1: Location of Study Area

Figure 2: Overall Site Map

Figure 3: Gazetteer Sites - Northern Map

Figure 4: Gazetteer Sites - Central Map

Figure 5: Gazetteer Sites - Southern Map

PLATES

Plate 1: Mine shaft close to Willy Road End (Site **4**)

Plate 2: Mine shaft above High Glint (Site **32**)

Plate 3: Limestone Quarry close to Smuker Hill (Site **29**)

Plate 4: A shale spoil mound (Site **8**)

Plate 5: Spoil from coal extraction revealed as a result of rabbit burrowing at Site **1**

Plate 6: A well-preserved lime kiln to the south of Smuker Hill (Site **30**)

Plate 7: View of the front of the lime kiln (Site **30**)

Plate 8: Detail view of the corbelled furnace aperture

Plate 9: The top of the draw kiln (Site **30**), showing a corner of the rectangular tower and the infilled cylindrical furnace chamber, looking west. The stone forming the inner edge is vitrified

Plate 10: The date stone above the furnace aperture, which appears to read '1844'

Plate 11: The quarry face directly behind the lime kiln (Site **30**)

Plate 12: A pair of millstone rough-outs at Low Millstones (Site **23**). The rear stone had been subject to initial shaping and the stone at the front had reached a more advanced stage in the manufacturing process

Plate 13: A millstone at High Millstones (Site **24**) which had been subject to a high degree of shaping

Plate 14: A terraced trackway (Site **15**) that probably related to lead workings

Plate 15: A hollow-way (Site **12**) forming part of an extended routeway across the south-western side of Stags Fell

Plate 16: An unusual corbelled structure of uncertain function (Site **5**)

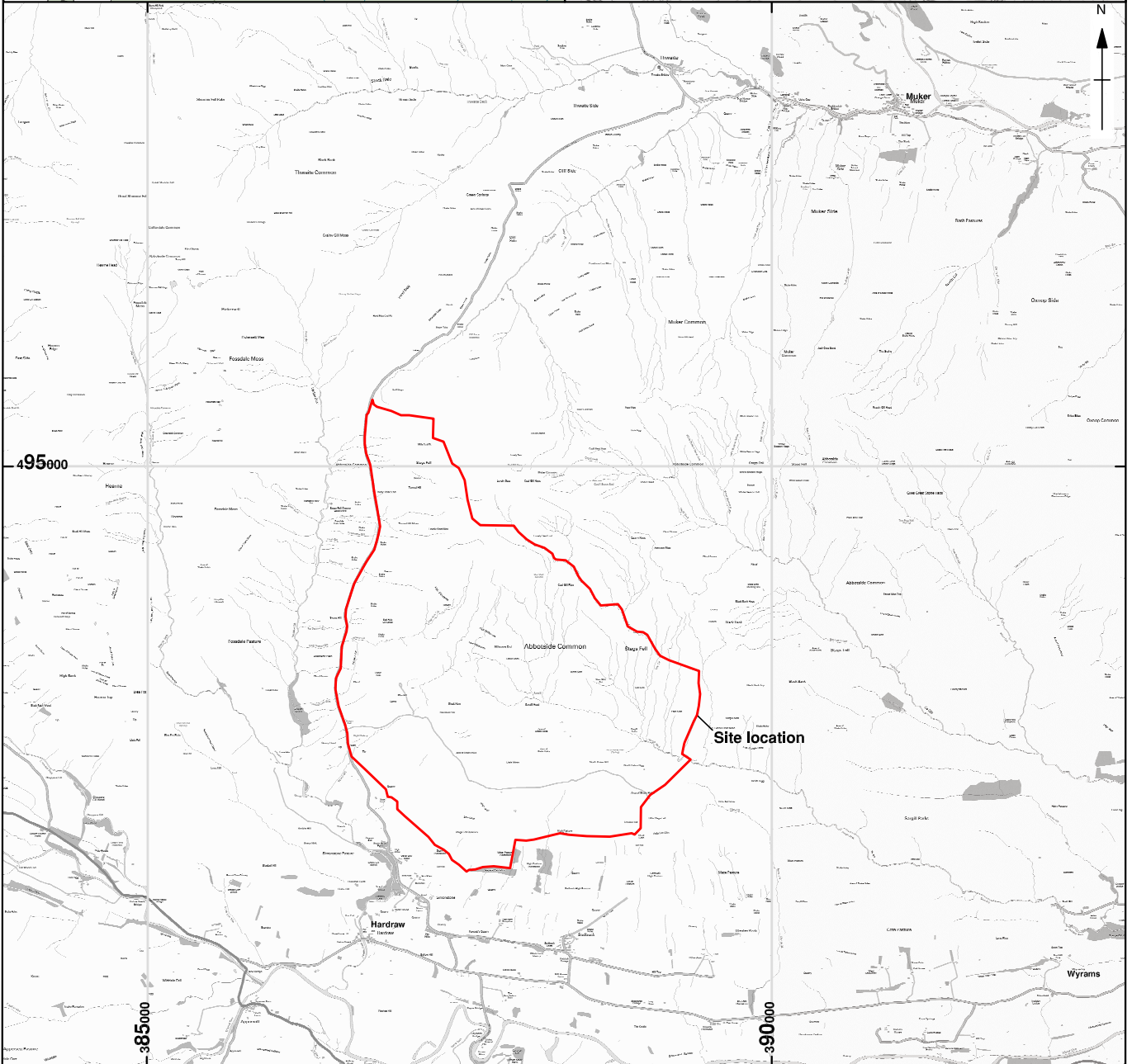
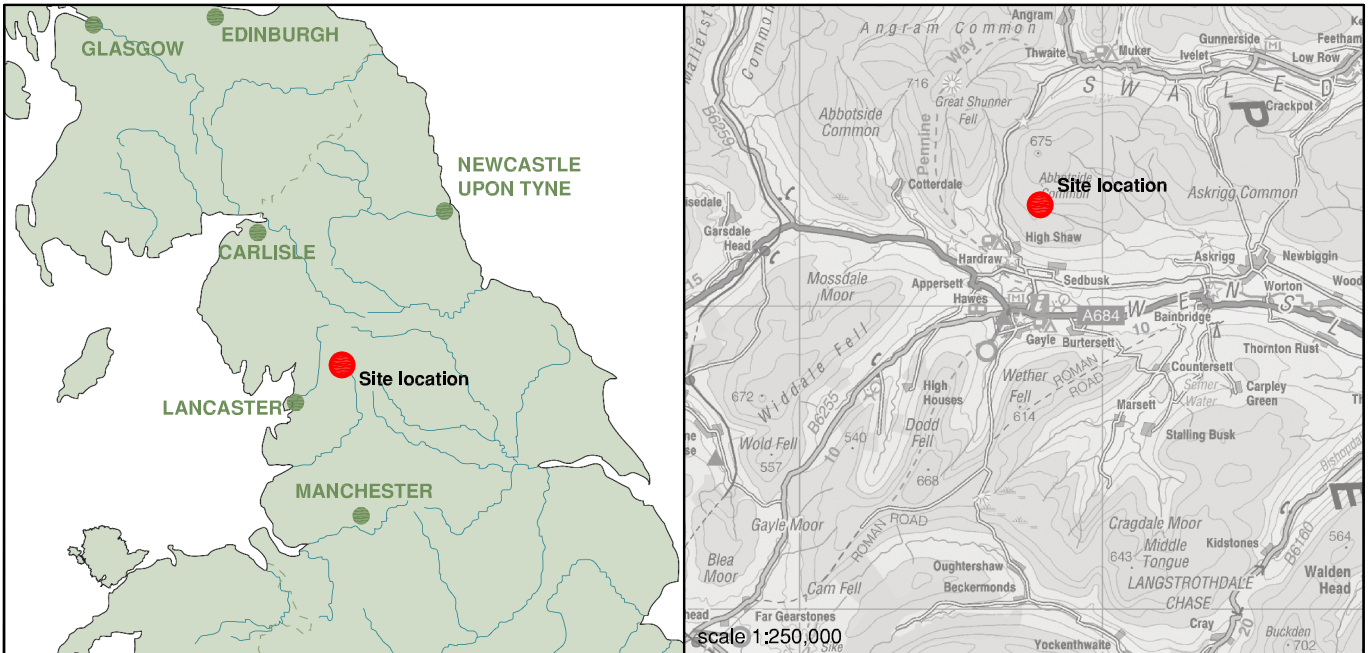
Plate 17: A bird hide that might have been formed from an earlier shelter (Site **28**)

Plate 18: A dry-stone shelter (Site **19**) built into a hollow and rock crevice

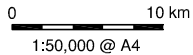
Plate 19: The southern part of a multi-celled sheepfold and washfold complex at the confluence of Dry Gill and Sargill (Site **27**)

Plate 20: The northern part of the multi-celled sheepfold (Site **27**)

Plate 21: A keep-hole built into an internal wall, with a more recently rebuilt wall in the background (Site **27**)

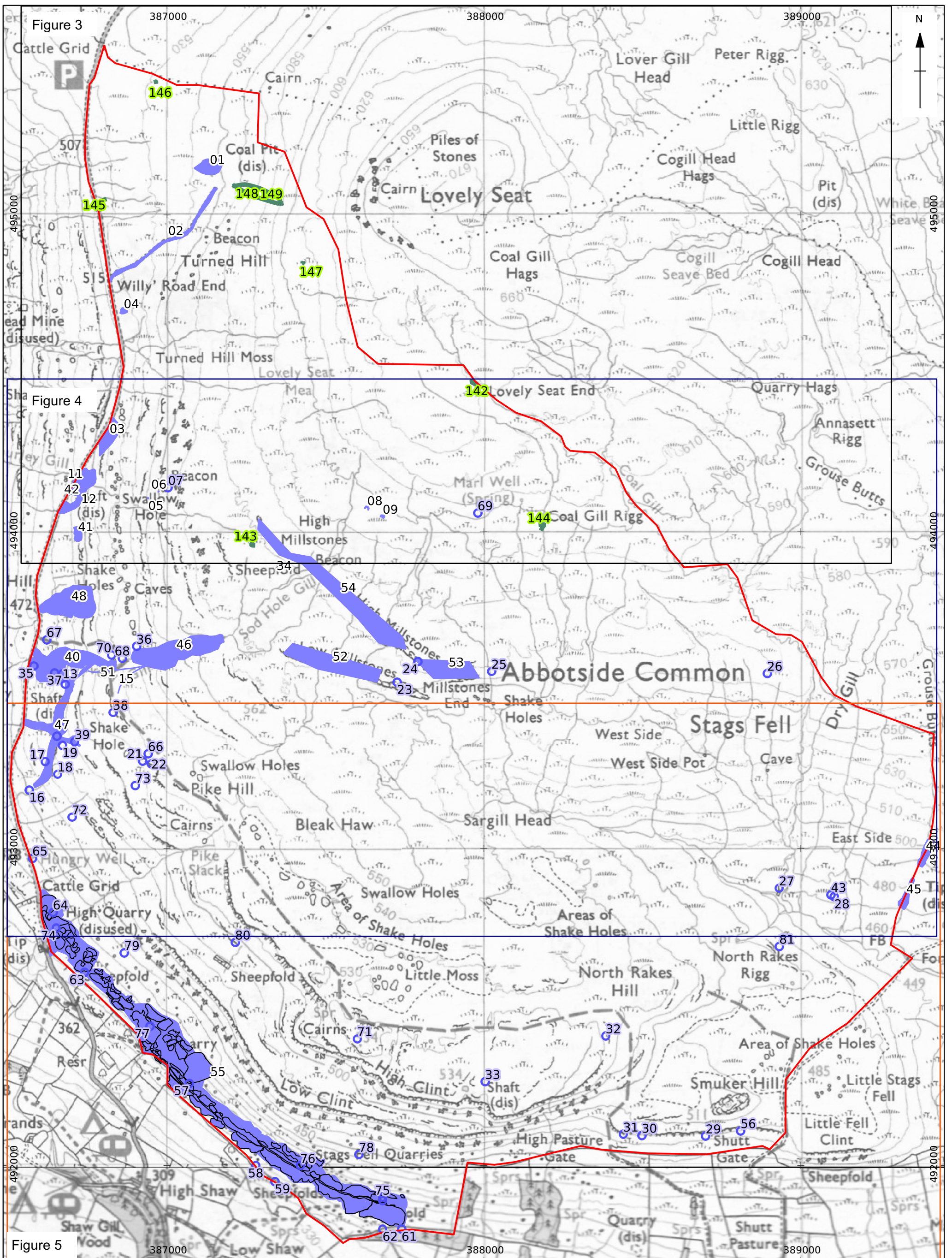


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Figure 1: Site location



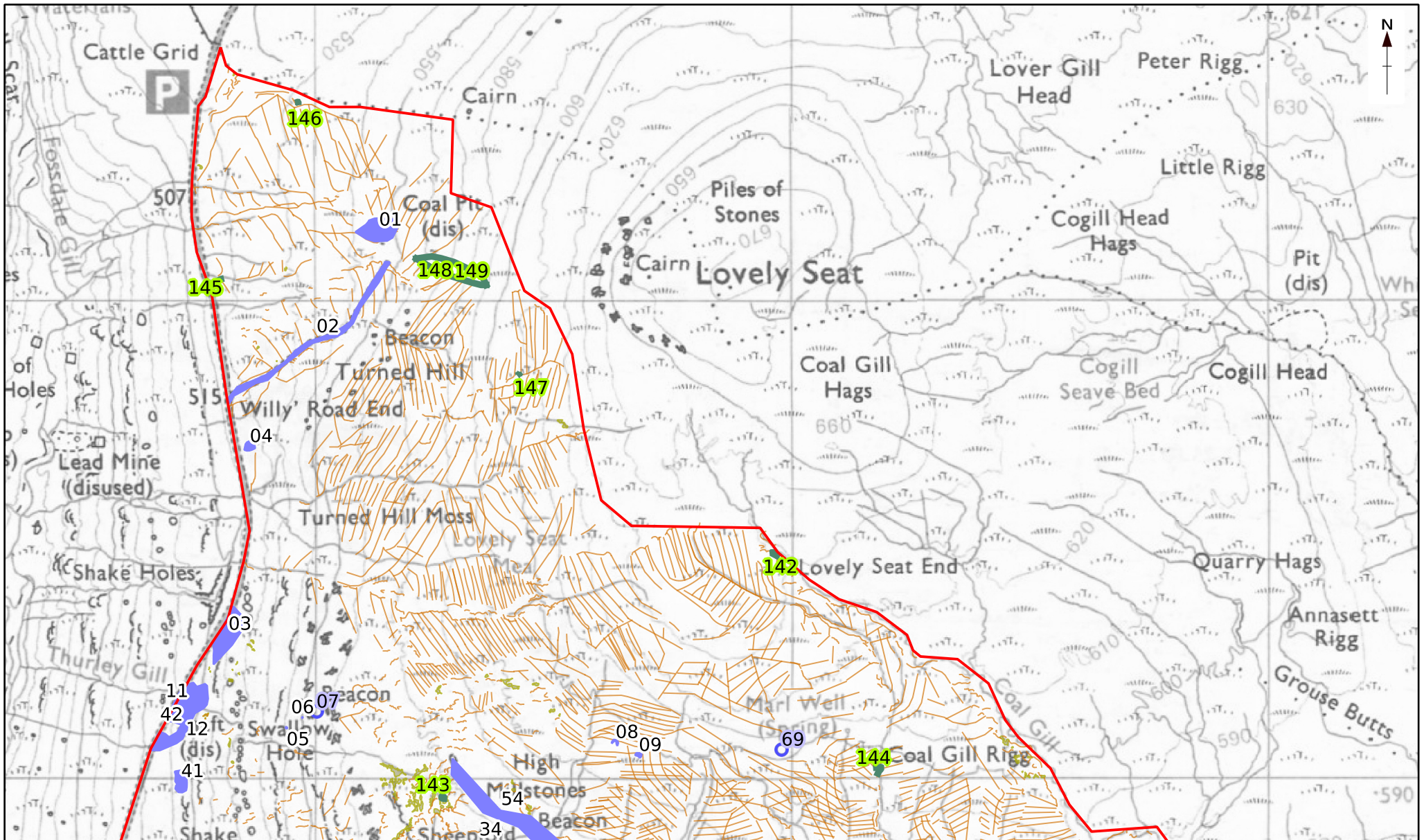
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- Study area ▭
- Peat sampling areas ▭
- Gazetteer sites ●








0 250 500 m



Figure 2: Stag Fell gazetteer sites



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- | | |
|---|--|
| Study area | Peat sampling area |
|  |  |
| Gazetteer sites | Grips |
|  |  |
|  | scars |
|  |  |

0 0.25 0.5 km





Figure 3: Gazetteer sites



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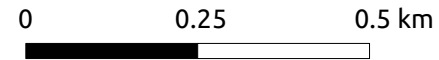
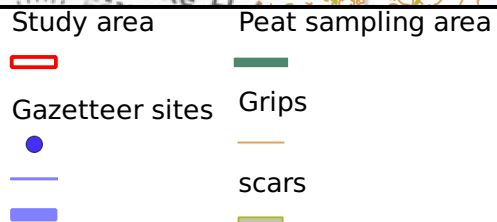
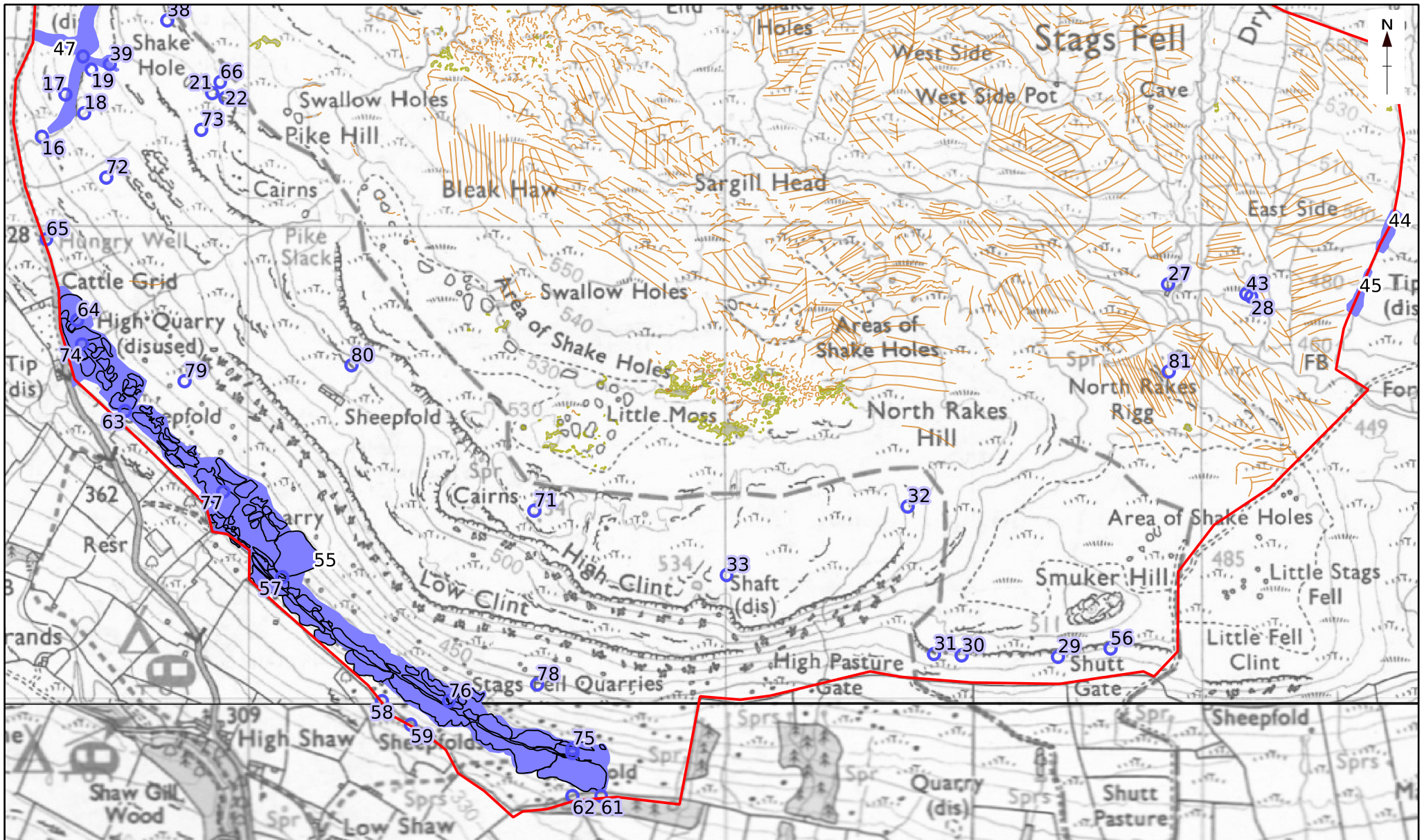


Figure 4: Gazetteer sites



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- | | |
|-----------------|--------------------|
| Study area | Peat sampling area |
| | |
| Gazetteer sites | Grips |
| | |
| | scars |
| | |

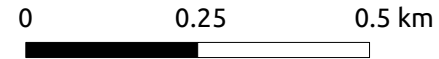


Figure 5: Gazetteer sites