



AIR PHOTO MAPPING,  
INTERPRETATION AND  
ANALYSIS FOR ALL  
ARCHAEOLOGICAL APPLICATIONS  
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**Pennine Dales Fringe NMP**  
Air Photo and LiDAR  
Mapping and Interpretation

Project Report  
V 1.1

EH Project No. 6626

May 2015  
Alison Deegan BSc MCIfA

*Produced on behalf of*  
**English Heritage**

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## SUMMARY

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The Pennine Dales Fringe (PDF) Air Photo and LiDAR Mapping and Interpretation Project was funded by English Heritage and undertaken by Alison Deegan between November 2013 and March 2015. Archaeological features dating from the Neolithic to the mid-20th century that were visible on air photos and/or LiDAR imagery as cropmarks, soilmarks and earthworks and, in certain cases, as structures were drawn as seen on maps and linked to text-based monument records. This work was undertaken according to the scope and standards of English Heritage's National Mapping Programme.

A large number of air photographs were consulted for this project. More than 2500 verticals, mostly taken from non-archaeological purposes and approximately 800 obliques that were mostly taken to record archaeological sites and historical buildings were examined. Digital aerial imagery, covering the whole of the project area and Light Detection and Ranging (LiDAR) data, covering approximately 61% were also examined. The information from these various sources, combined with data from existing monument records and historical Ordnance Survey maps was consolidated into a layer of GIS mapping and 970 monument records. The monument records can be accessed online through Historic England's [Pastscape](https://pastscape.org.uk) website and the mapping is available from Historic England's Archives Services ([archive@HistoricEngland.org.uk](mailto:archive@HistoricEngland.org.uk)).

The PDF area lies between upland and moorland areas of the Yorkshire Dales to the west and arable land of the Swale and Ure washlands to the east. It is a landscape dominated by pasture with sparse pockets of arable cultivation, some areas of moorland and a good distribution of woodland. It is drained west to east by the Rivers Laver, Skell and Nidd and north-west to south-east by the River Ure.

As is to be expected with this pattern of land use, the majority of the archaeological features recorded by this project were identified primarily as earthworks. Cropmarks and in particular cropmarks of possible pre-medieval sites were rare.

The rural character of the project area means that there have been few of the detailed and large scale archaeological excavations that come with housing developments and infrastructure schemes, the exceptions being investigations at Marfield Quarry and for the Penny Pot Lane windfarms. However these have revealed little of the pre-medieval landscape and for this it is necessary to look to a handful of excavations that took place in the first half of the 20th century.

Most of the features mapped and recorded by this project date to the medieval period or later. The [Neolithic and Bronze Age](#) are represented by a very small number of monuments, some previously known. Of particular note however are the remains of a possible Late Bronze Age to Iron Age field system on Nutwith Common.

Nutwith Common has a unique land use history within this project's area. Unusually it does not appear to have been ploughed in the medieval or post medieval periods and it remained unenclosed into the latter half of the mid-twentieth century, when it was converted to woodland. This may have allowed for the survival of a series of pre-medieval earthworks including the possible field system and enclosures of similar date. It is also the location of several late 19th or early 20th century firing ranges and associated features.

Features of potential [Iron Age](#) date are marginally better represented than the earlier prehistoric periods. This project has consolidated the aerial evidence for several previously-known sites such as Castles Farm and Roomer Common and has also brought to light possible new enclosures at Grewelthorpe and on Nutwith Common. There is however a noticeable absence of [Roman](#) period monuments.

This was an interesting area in the [medieval](#) period, encompassing parts of the Fountains Abbey hinterland and a tract of the Forest of Knaresborough. Both would have had a considerable influence on settlement, agriculture and industrial activities at that time.

This project has mapped and documented the remarkable extent of the known medieval settlements at Low Ellington, High Burton and Aldfield and the character of their surrounding field systems. Furthermore it has revealed fragments of possible medieval settlement that hint at drastic landscape changes at Azerley and Swinton.

It has also revealed the complex and intriguing earthworks that are present at two Fountains Abbey grange sites: Aldfield and Nutwith Cote, although even these do not match the scale and complexity of the earthworks that survive at the Morker Grange vaccary on the eastern edge of the project area.

Medieval or post medieval ploughing remains are extensive across most parts of the project area but analysis of these indicates an interesting correlation with post medieval narrow ridge and furrow on the poorly drained soils and medieval ridge and furrow and lynchets on the better drained soils. This is also reflected in the distribution of medieval settlements whilst the grange sites are more often located at the interface between the permeable and less permeable soils.

The [post medieval](#) features identified and recorded by this project fall into the following broad categories: industry, designed landscapes and military remains. Whilst the earlier landscapes are inevitably incomplete because of issues of visibility and survival, this project's mapping of the post medieval landscape is incomplete because so much of it survives intact and in use and so beyond the remit of this project.

Careful consideration of the results of the project has [suggested actions](#) for the management of certain archaeological features and landscapes. These actions include ground investigations, re-assessment of two existing scheduled monuments and consideration of protection measures ranging from Entry Level Stewardship through to Scheduled Monument designation for several sites and areas.

Project Name	Pennine Dales Fringe NMP Project
Project No.	6626
NRHE Parent Collection UID:	
NRHE Measured Drawing:	MD001386
NRHE Event UID:	1582205
Project dates:	November 2013 to March 2015
Project author:	Alison Deegan
Report author	Alison Deegan

## **1 INTRODUCTION**

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### **1.1 Project Background**

This report concerns Pennine Dales Fringe Air Photo and LiDAR Mapping and Interpretation Project.

The PDF project was funded by English Heritage and undertaken by Alison Deegan between November 2013 and March 2015. This work was undertaken to the standards of English Heritage's National Mapping Programme (NMP).

NMP standard projects are generating a comprehensive record of the archaeology that is visible on air photographs for large areas of England. As of December 2014 48% of the country had been covered by NMP-standard projects.

### **1.2 Geographical Background**

The project area, covering 179km<sup>2</sup>, is entirely contained within the district of Harrogate, in the county of North Yorkshire. It lies mainly within Natural England's Pennine Dales Fringe Natural Character Area (NCA), but also takes in a small part of the Yorkshire Dales NCA. The project area covers the part of the Nidderdale Area of Outstanding Natural Beauty (AONB) that was omitted when the rest of the AONB was covered by the Yorkshire Dales NMP Project (1988-1992).

This project area is described by Natural England as a "transitional landscape", lying as it does between the upland and moorland areas of the Yorkshire Dales to the west and the arable land to the east (2013). Here, grazing land predominates although there has been a small increase in arable cultivation in recent years.

Woodland and forestry are also well represented with a good distribution of Ancient and Semi-Natural Woodland lining the small rivers and becks, and several large plantations on the broad plateaux. There is a little surviving moorland including the nationally important Brimham Moor with its natural rock formations: Brimham Rocks is under the guardianship of the National Trust. In this predominantly rural environment the settlements are small in number and size and are widely-spaced, the largest town being Masham and the larger villages Kirkby Malzeard and Grewelthorpe.

The project area rises to over 260m along its western edge and falls to below 100m in the east and is incised by several steep-sided and sinuous water courses: the Rivers Nidd, Laver and

Skell and Beavers Dike flowing west to east and the Rivers Ure flowing north-west to south-east. Broadly speaking the topography is reflected in the size of the extant fields, with smaller and more irregular fields on the valley and hill sides and larger more rectilinear enclosures on the former moors and plateaux.

In relation to other NMP projects this area lies between and is partly contiguous with the Yorkshire Dales project to the west, the Yorkshire Henges and their Environs and the Thornborough Henges projects to the east and the Lower Wharfedale Project to the south (see Figure 1).

At the outset of this project the archaeological picture for the project area was built largely on a small number of archaeological excavations, building recording and non-intrusive surveys such as field walking, field survey and documentary research. As there have been no large-scale residential developments or infrastructure schemes such as road building in this area there have been few major and detailed archaeological excavations. Excavations of purported tumuli at Pippin Castle, an Iron Age barrow on Roomer Common and undated cairns on Graffa Plain all took place in the first half of the 20th century and 12th to 13th century pottery kilns were excavated at Woodhouse Farm in the mid 1960s.

Since that time only two sites have attracted extensive and detailed investigation: Marfield Quarry and the Penny Pot Lane Wind Farms. Watching briefs and excavations at Marfield have identified a loose group of Early Neolithic pits near Wind Hill and post medieval limekilns (MAP 2006). In 2010 field walking and geophysical survey for a planned southern extension of the quarry have suggested the presence of linears, pits and possible enclosures (SLR 2010).

The reported watching briefs and evaluations at the Penny Pot Lane windfarms have yielded few dateable archaeological features (Archaeological Services 2005, Oxford Archaeology North 2007 and Archaeological Services WYAS 2013)

### **1.3 Method Summary**

In general this project recorded archaeological features dating from the Neolithic to the mid-20th century that were visible on the aerial imagery as cropmarks, soilmarks, earthworks and in some cases as structures. The archaeological scope broadly mirrors the NMP Sphere of Interest (Winton 2012, Section 5). The main aspects that are pertinent to this particular project and any divergence from it are summarised in [Appendix 1](#).

This project utilised print and digital air photos and LiDAR imagery together with existing monument records and historical Ordnance Survey maps. Three collections of air photographs



were consulted for this project and the holdings for these are summarised in Table 1 and further details are given in [Appendix 2](#).

*Table 1. Air photo collections and summary of material consulted (includes duplicates between collections)*

Collection Name	Quantity consulted	
	oblique air photos	vertical air photos
English Heritage Archive (EHA)	496 specialist 55 military obliques	2868
Cambridge University Committee for Aerial Photography (CUCAP)	142	6
North Yorkshire County Council (NYCC)	175	-
<b>Total</b>	<b>803</b>	<b>2524</b>

The vertical air photographs were taken by the Royal Air Force, Meridian Air Maps Ltd and Ordnance Survey for military, civil engineering and cartographic purposes rather than to record archaeological sites. However many of these images do show earthwork features and cover all parts of the Survey Area on several occasions from the mid 1940s to the 1990s.

By contrast the oblique air photographs though numerous are much more sparsely distributed. Many were focussed on standing structures such as historical mills and hospitals and so their targets were beyond this project's remit. However recent reconnaissance has produced useful and informative images of earthwork remains that have complimented the LiDAR imagery (see Figure 5 for example).

Geo-referenced 25cm resolution colour digital air photos produced by GeoPerspectives was supplied through the Pan Governmental Agreement (PGA) as georeferenced 1km<sup>2</sup> tiles. Imagery from two dates was available for each kilometre square, the earlier from various dates in 2002 and the later from various dates in 2009 and 2010.

Environment Agency LiDAR data was available for approximately 61% of the overall project areas (see Figure 1). This was obtained as 1m resolution ASCII data and processed either as 16 direction hill-shade models or as a series of single-direction lit views, depending on the resources available at the time.

The print air photographs were examined under magnification and stereoscopically where possible. Photographs selected for transcription (rectification and mapping) were then scanned at 400 dpi, and output as uncompressed TIFF format images (.TIF).

Scanned images were rectified using the specialist software AERIAL5.33. Control information was mostly derived from the Ordnance Survey Land-Line™ 1:2500 scale vector maps, which were also used as a base for mapping. Accuracy for the Ordnance Survey raster 1:2500 maps is in the range of  $\pm 2\text{m}$  and acceptable tolerance for rectification of photographs is generally  $\pm 2.5\text{m}$ .

The rectified air photographs and digital imagery, including the LiDAR outputs were then collated in the GIS (MAPINFO Professional 11.5) where the archaeological features were digitised into a mapping layer. Ditched, banked and structural features were depicted with detailed polygons that depicted their width and shape. Earthwork slopes were depicted with a T-hachure convention indicating the top and direction of slope. Ridge and furrow was mapped with an outline to indicate the extent of the land or block and an annotated with an arrow to show the direction of the plough furrows.

There are two strands to the project's recording strategy: the creation of new or the enhancement of existing monument records in the NRHE and the addition of object data within the GIS. The NRHE monument records created or enhance by this project record the location, the monument types present and their dating, the latest condition, a free text description of the monument or monument group, the source of record information (i.e. photograph, LiDAR tile and any bibliographic or cartographic references) and administrative details such as concordance with SMR/HER records, record authorship, and links to NRHE event records and archives. The content of the GIS object data is listed in Appendix 3 and enables the management and interrogation of the map data.

During the lifetime of the project the air photos, mapping and recording for sample areas were examined and checked by EH's own Aerial Investigators to ensure the product met the NMP standard.

## **2 PROJECT RESULTS**

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### **2.1 Overview**

A review of this project's outcomes against the aims and objectives defined in the original project design is provided in [Appendix 4](#).

This project generated 940 new monument records and enhanced or amended 30 existing monument records.

This section provides a brief overview of the results of this project by period. References to NRHE monument records are provided in brackets eg (23599), references to North Yorkshire HER monument records are prefixed with MNY and MYD indicates a Yorkshire Dales monument record.

As might be expected from a predominantly pastoral and moorland environment the majority of the monuments recorded by this project were identified primarily as earthworks. Although a proportion of these had been levelled by the date of the most recent imagery relatively few then showed as cropmarks or soilmarks.

Fewer than 10% all monument were recorded primarily as cropmarks or soilmarks (ie with no earthwork evidence even on the earliest air photos). Of the cropmarks and soilmarks that were seen a considerable proportion were ridge and furrow and post medieval features. Cropmarks indicating possible prehistoric features were founded in just a few small areas.

### **2.2 Neolithic and Bronze Age**

Only a handful of monuments of potential Neolithic or Bronze Age date were recorded by this project. These include the round cairn on Roomer Common that was excavated in mid-1950s (52097). The air photos and LiDAR imagery show a small disturbed mound. According to the monument record the excavators identified the cairn, its inhumation and grave goods as early Iron Age but a subsequent assessment suggests a Late Bronze Age origin (Challis and Harding 1975:176-7).

Two enclosures revealed by cropmarks, have been identified as the possible remains of Bronze Age or Neolithic monuments. Both are located on low lying ground close to rivers. The larger of the two is located close to the River Burn, to the east of the Swinton (1590525). This enclosure is not quite a true circle and with a diameter of c. 36m it is larger than most of the levelled round barrows identified in the Thornborough Henges complex, which lies to the east

of this project's area (eg 1406093 and 52248). Although this feature may not be the remains of a burial monument it may have had some other ceremonial function.

The other example lies at the neck of a deep meander of the River Ure near Clifton Castle (1431252), at 10m diameter it is plausible that this ring ditch encircled a small barrow or cairn.

The most intriguing feature of possible Neolithic or Bronze Age origin observed on the air photos was the partial circuit of a large sub-circular enclosure at the site of Pippin Castle (51839) in the parish of Haverah Park. According to the monument record this site had been submerged in the early 20th century by the Scargill Reservoir but prior to this a group of two to three barrows had been investigated and finds including a cremated burial, a putative runic stone and a 9th-10th century iron axe-head were recovered. Grinsell suggested that the finds may have been a secondary deposit and other authorities have concluded that the stone markings were natural incisions (1953, Coatsworth 2008: 288)

At a time of very low water in the reservoir an incomplete ring of darker soil just above the water line suggests the presence of exposed archaeological deposits. The internal diameter of the ring is approximately 41m, which is very large for a barrow ring ditch but may be commensurate with other forms of prehistoric monument. This may be the remains of one of the earthen mounds noted in this anonymous description:

"A burial place it has undoubtedly been, and that long before a stone was laid of the now ruined peel. It is situate on the western side of a narrow rugged valley, or rather at the junction of two shallow valleys, and consists of three large earthen mounds, adjoining each other".

The current state of this monument is not known, beyond the fact that it lies beneath the normal water level in the reservoir.

Another area of interest is Nutwith Common, where a possible co-axial field system of possible Late Bronze Age or Iron Age date was recorded from historical air photos (1590568). This area is discussed in more detail in [Section 2.3](#).

This paucity of evidence may reflect the visibility and survival of the Neolithic and Bronze Age monuments rather than their original distribution. However very few other monuments have come to light from other sources. Notable exceptions include the known and potential cairns on Graffa Plain on Brimham Moor) (MNY7220 and MNY29443)/ These were investigated in the early 20th century (The Naturalist 1909) . The excavated examples had been dismantled and

the others were not visible on the air photos or LiDAR survey.

This project has assessed the evidence for a putative Bronze Age round barrow (MNY29216) at Biggin Grange and concluded that it is one of four post medieval tree enclosure rings (1588789).

### **2.3 Iron Age and Roman**

A small but interesting array of potential Iron Age monuments have been recorded across the project area, Roman sites are, however, rather sparse.

The sites of significance are a newly identified enclosure near Grewelthorpe and earthworks on Nutwith Common. The LiDAR imagery revealed approximately three-quarters of the shallow ditched circuit of a curvilinear enclosure to the west of Grewelthorpe and just to the south of Foulgate Lane (1590341) (see Figure 2). Part of the circuit can also be seen on historical air photos. The open section coincides with an old field boundary course and the enclosure sits just above a bend in Crimble Beck. The closest and nearest comparison to this site within this Project's area is the Iron Age enclosure on Roomer Common (52098), approximately 3km north. Although the Roomer Common enclosure is more rectilinear in form and better preserved with internal and external banks, the Grewelthorpe enclosure is of similar size to its near-neighbour.

A second previously unrecorded curvilinear enclosure of possible later prehistoric date was identified on Nutwith Common (1590572). This is one of a number of earthworks on the common that were visible on historical air photos before the land was put under forestry in the mid 1970s (see Figure 3). Some of the earthworks on the common are certainly of more recent origin (see [Section 2.6](#)) but some elements may be considerably older. A fragmentary co-axial arrangement of banks and scarps suggests a system of small fields running for up to 1km along the northern edge of the common (1590568). These fields run down the north-facing slope, seemingly from a north-west to south-east aligned terminal boundary. They are associated with two possible small rectilinear enclosures, the larger curvilinear enclosure mentioned above and are in sight of the Roomer Common enclosure, which lies 1km to the north-east. Although there are extensive ridge and furrow and lynchets systems in fields to the north (eg 1590467) the absence of such features on the common itself suggest that it may have escaped medieval and post medieval ploughing. On this basis it is plausible to suggest that this system of small fields are akin to the late Bronze Age to Roman period coaxial fields systems exemplified at Grassington and found elsewhere in the Yorkshire Dales (MYD4028,

Laurie et al 2010). The apparent absence of a stone in the fabric of these boundaries, which is as yet unverified by ground investigations, may simply reflect the local geology, these being on sandstone and millstone grit rather than the limestone of the Dales examples.

If this fragment of landscape is of later prehistoric or Roman origin then it is the most easterly known survivor, either upstanding or levelled, of this type and presents an interesting juxtaposition to the cropmarked evidence of later Bronze Age and Iron Age land division just 5km to the east at Nosterfield (see 320581). Unfortunately 1m resolution LiDAR data was not available for most of Nutwith Common but the lower resolution dataset indicates that most of these earthworks do survive beneath the tree cover and that further investigation is certainly warranted.

The Grewelthorpe and Nutwith Common enclosures together with the examples on Roomer Common form a distinct cluster. Also close to these is the Camp Hill enclosure, three sides in a rectilinear plan with the fourth side formed by an abrupt escarpments (52093). The three sides are topped with post medieval stone walls. This is a Scheduled Monument identified as a Roman Camp but on its own the evidence of the air photos and LiDAR imagery cannot confirm this interpretation. The banks of the purported enclosure are indistinguishable from the lynchets and scarps that developed from medieval or post medieval ploughing in this area.

A little further to the south-west at Cast Hills, but still within 8km of the Roomer Common group are the mutilated remains of a curvilinear enclosure of purported Iron Age date (52167). On the northern edge of Dallowgill Moor and overlooking the River Laver to the north the enclosure is now occupied largely by Castles Farm but has possible bank and ditched outworks extending across the moorland to the south. Although identified as being of Iron Age origin, more recent ground examination has prompted the theory that the internal orthostats (not seen on the air photos) may in fact be the remains of an earlier stone circle (Challis and Harding 1987: 52, LAUA 2000: 50).

Moving further south there are several small rectilinear enclosures that are identified by this project with varying degrees of confidence. The most plausible lies on the eastern edge of Skelding Moor (1588651) and has a disturbance that may indicate the remains of a hut at its centre. It measures 40x34m. A feature of similar size near Norwood Bottom appears to have a low bank and rubble circuit but it is less certain that these are the remains of an enclosure rather than quarry workings or a natural feature (1582217). Both are however similar to a D-shaped enclosure (50732) on moorland at Galloper, Ilton which was recorded by the neighbouring Yorkshire Dales Project and is listed as an Iron Age enclosure by Challis and

Harding (1987:50).

Two other potential enclosures, one near Park House, Hartwith cum Winsley (1584991), the other at Longscales, Birstwith (1584020) are of similar size but appear only as rather ephemeral cropmarks and it is not certain that they are of archaeological origin.

One of the more enigmatic monuments presumed to be of this period is the linear earthwork complex known as Bank Slack (51823). This earthwork runs, with gaps, between Spinksburn Beck in the west and the along the north side of the Beaver Dyke Reservoirs to the east. For the most part it follows the break of slope above Beaver Dyke (now dammed to form the reservoirs). As with all of these newly-identified and even many of the long-accepted later prehistoric monuments there is a distinct lack of dating evidence for this earthwork.

The recovery of two Roman gravestones from a gravel pit at Mar Field (52286) attests to the likely presence of Roman settlement within the project area but the evidence for this on the air photos and LiDAR imagery is scant to the point of absence. As discussed above the Camp Hill enclosure (52093) near Grewelthorpe is scheduled on the basis that it is a Roman enclosure but this hypothesis that may require further investigation. The only confirmed Roman feature recorded by this project is a short stretch of Roman Road at Felliscliffe (1584145). This is probably part of the road that ran from Hampsthwaite to Ilkley (1326379).

## **2.4 Medieval**

This project covers an interesting area in the context of the medieval landscape with Fountains Abbey just to the east and the Forest of Knaresborough extending as far north as the River Nidd (see Figure 4).

The abbey was established in the early 12th century and it grew to be one of the largest and most powerful of the 20 Cistercian monasteries in Yorkshire. Most of the project area lies within what would have been 1-2 days riding from the Abbey and so it would have been a significant hinterland to the Fountain's monks and the wider Cistercian community. As will be seen below several satellite settlements called granges were established within this hinterland (and beyond).

The Forest of Knaresborough was first mentioned in 1167 but this royal hunting forest may have been established some time earlier. The forest would have contained a mix of woodland (covert, for game cover) and open ground (launds, for winter fodder) and though this was not to the exclusion of all settlement Forest Law did impose restrictions on occupation and farming in order to protect the interests of the game and the hunters. There was a legal

process under which forest lands could, with the land holder's permission, be appropriated for other purposes: this was known as assarting. However there were also illegal encroachments (Turner 1987, 10). The increase of encroachments in the post medieval period culminated with the 1770 Enclosure Act for the Forest of Knaresborough: this enabled the enclosure of the forest lands for agricultural use (House of Lords Journal 1770, 581).

### Settlements

There are well preserved and extensive settlement remains of likely medieval origins around the living settlements and farms at Low Ellington, High Burton and Aldfield. The Low Ellington earthworks appear to correlate with the location of the Domesday settlement of Swarthorpe (1344464) (see Figure 5). The remains around High Burton farm on the eastern banks for the River Ure are acknowledged to be Domesday Burton (152290 & 1591286). A large structure identified to the north of the farm may be the remains of the church that was listed in this settlement's Domesday entry (1591282). Aldfield is also listed in the Domesday Book (51921, 1588112, & 1588185).

Just to the south of the Low Ellington at Sutton Penn possible building platforms and ponds may indicate the location of Domesday's Sutton (1591346).

Swinton and Azerley are also listed in Domesday but there is meagre evidence of medieval settlement at these locations. The putative building platforms and banks (1591425) in a small area to the south-west of Swinton Grange Farm are overshadowed by the impressive and extensive medieval fields systems that run northward to the River Burn and southward to Den Beck (eg 1590674). It is reasonable to deduce that the greater part of the medieval village was swept away for Swinton Park in the late 17th century.

Similarly the presence of medieval settlement at Azerley is suggested by slight scarps slopes (1589348) north of Azerley Grange, a possible enclosure (1589339) south of Mill Farm and lynchet systems (1589335) but the area has been undergone considerable change on the post medieval period, including the digging of a large lake (1589344) in late 19th century.

Further to the south there is a small pocket of earthworks to the south of the church at Hampsthwaite (1584448). This site lies close to the River Nidd and a crossing point that has been in use at least since Roman times when it was the route of the road between Ilkely and Aldborough (1326379). The earthworks include the footings of a substantial building.

There are possible medieval settlement remains on either side of Middycar Bank a little to the south of the modern core of the small village of Sawley (1591424). These earthworks are



poorly defined on the available air photos but may include building platforms. Unfortunately there was no LiDAR coverage of this area at the time of mapping but the most recent photographs indicate that the area has not yet been ploughed and it may reward further investigation. Similarly ephemeral remains were revealed just to the south of Laverton, on Missies Lane (1588741).

Masham, Kirkby Malzeard and Grewelthorpe were each centres of medieval settlement but there is scant evidence on the air photos and LiDAR imagery of surviving earthworks within their curtilage. Kirkby Malzeard has its 11th century motte and bailey castle (52175) and there are fragments of possible tofts and building platforms in fields at the north end of Grewelthorpe (1590337) but the continued and expanding occupation at all three has largely subsumed the medieval element. However the layout of these living small towns and larger villages and in particular the remains of medieval cultivation in the surrounding fields attests to their medieval forebears (see Figure 6) and may be a key to the location of other 'lost' villages.

Birstwith is a living settlement on the banks of the River Nidd. Domesday records a place with this name but no settlement earthworks have been identified in this parish and the small and dispersed nature of the existing population of Birstwith is unlikely to have totally subsumed the medieval elements. However the presence of broad ridges, plough headlands and lynchets between Birstwith and Clapham Green, amongst and beneath the later cultivation remains does support the possibility of a small medieval settlement in this vicinity (1584043, 1584044 and 1584049).

### Granges

One of the more extensive and complex areas of medieval earthworks within this project lies to the south of Fountains Abbey at High Morker (now known as Ninevah) (51900). The Domesday Book records a settlement by the name of Herleshow or How Hill at this location and it would seem plausible that some of the earthworks on the south side of Ninevah relate to this occupation. Later historical records indicate that the land was gifted to Fountains Abbey in the mid-13th century. The earthworks to the north of Ninevah, including an orderly arrangement of building platforms and possible ponds, and the large enclosing boundaries that encircle the two fields on either side of Ninevah, are likely to relate to the farming grange and vaccary.

Morker is one of a number of Fountain's granges documented in the project area (Coppack Fig 64). Historical records indicate that granges at Aldburgh and Nutwith Cote, like land at

Herleshow (Morker), were acquired by Fountains Abbey in the 12th century. This survey has produced a detailed plan of the earthworks on opposite banks of the River Ure at Nutwith Cote (1590659) and Aldburgh (eg 1590614 & 1590618), including a number of low building remains, embanked enclosures and ponds. Amongst these on the Aldburgh side is a rectilinear structure that appears to straddle a water channel running down to the river, these are likely to be the remains of a water mill and race (1590613). On the opposite bank at Nutwith Cote there are ponds, a water channel, fields and a mound that may be the remains of a windmill (1590664). It is possible that these earthworks relate to the activities of the monastic granges, though later origins cannot be discounted. Aldburgh is noted as being the site of the monastic forges (North Yorkshire Atlas:95). Features on the Aldburgh side have been impacted by landscaping associated with Aldburgh Hall (see Figure 7).

The grange at Haddockstones was enclosed by the 'Monk Wall', large parts of which still survive as an upstanding stone wall (see 1588157) and some short sections as low earthworks for example on Coney Hill (1588159). This wall enclosed some 175 hectares of park to the south-west of the abbey and to the immediate west of Morker Grange. The remains of a fishpond complex (51927) with associated dams and water channels survive in the northern part of the park by Park House Farm.

Physical evidence for the other documented monastic granges is less forthcoming. A possible medieval fishpond, ditches and banks were identified by this project at Brimham Hall (1584935, 1584937 and 1584939). However the trial excavations conducted by Wessex Archaeology in 2006 found no direct evidence of 12th to 13th century activity and demonstrated the continued use of the site until the present day (Wessex Archaeology 2006:18-19).

Slight earthworks to the east of Warsill Hall Farm have been associated with Warsill Grange (51962). This site lies close to Butterson Bridge (51947) which was built by Fountains Abbey to cross Picking Gill as part of the pack horse trail that led from the abbey westward and into the Yorkshire Dales. The trail itself is visible as deeply-incised trackways descending into the gill and over the fields above (1585837). Warsill Grange was associated with lead production and this site is in a good position with its proximity to water and fuel in the wooded gill, and on the route between the lead mines to the west and the abbey to the east.

At Bramley Grange there is a chain of three fishponds (1590299) fed by a natural spring and a long broad ditch which may be the remains of an artificial water channel (1590752). It is not certain that either of these features were directly associated with the grange. Similarly at

Galphay fragments of tofts, a pond and well-defined hollow way leading onto Galphay Lane are perhaps more likely to be the remains of village settlement of medieval or post medieval date than to indicate the site of the grange (1589167 & 1589165). Coppack also indicates a grange at Sawley, but more evidence will be needed to link it to any of the features recorded in this parish (1993:Fig 64).

### Castles

The motte and bailey castle known as Mowbray Castle lies at the eastern end of Kirkby Malzeard, overlooking the steep banks of Kex Beck (52175). In the southern part of the project area, John of Gaunt's Castle (51828), was a royal hunting lodge perched above Beaver Dyke (now Beaver Dyke Reservoirs) and on the edge of the medieval royal chase known as Haverah Park (51850), part of the Forest of Knaresborough. It survives as a moated building platform with an upstanding gatehouse. A farm was built on the edge of this monument in the post medieval period (1582409) and field walls of that date run along the top of the outer bank of the moat.

The site known as Pippin Castle, lying 1.5km to the south-east of John of Gaunt's castle and now submerged by Scargill Reservoir appears to be a misnomer (see [Section 2.2](#) above). The presence of a 12th century castle at Aldburgh (see 52101) has been discounted.

Earthworks at Magdalen Field, West Tanfield have been linked to a documented medieval manor house but the nature of this site is not clear (52105). They sit on a promontory above the River Ure, defended on three sides by the steep-sided river valley and on the fourth by a substantial ditch and bank dyke. Within the enclosed area there is a rectilinear enclosure defined by ditches and banks on three sides and the natural escarpment on the fourth. This enclosure contains low structural remains which have been variously interpreted as a tower, chapel and a well. Although the precise nature of these remains may not be clear, defence does seem to have been a key factor in the selection of this location.

### Ridge and furrow, lynchets and post medieval narrow ridge and furrow

The remains of historical plough ridges, plough headlands and lynchets are widespread across the project area. Narrow ridge and furrow of post medieval date is relatively easy to identify. The distance between the crown of each ridge is 5m or less and the furrows between them are very straight and parallel. Very often these narrow plough ridges are contained within stone-walled or hedged field boundaries that have their origins in the parliamentary enclosure acts of the mid-18th century and later. Distinct from this but more difficult to date precisely are the

broader plough ridges. When these are associated with plough headlands and/or lynchets it is reasonable to deduce a medieval origin but there are many isolated fragments of broader ridges that lack the diagnostic medieval attributes of curving or S-shaped ridges and in some cases it seems likely that medieval plough ridges were reused and/or remodelled. With these dating problem in mind Figure 4 shows that there is a distinct correlation between the poorly drained soils and the post medieval narrow plough ridges remains and the better drained soils and the earlier post medieval and medieval ridge and furrow and lynchets. The better-preserved settlements, and therefore almost by definition those that were abandoned or significantly de-populated are all located on the better drained soils. The monastic granges at Nutwith and Aldburgh are also located on these more permeable soils whilst the other known granges are almost all located at the interface between the permeable and less permeable soils.

This poses an interesting question as to whether the pattern of distribution of medieval cultivation landscapes and settlements reflects the original distribution ie they were limited to the well-drained soils or whether this distribution only reflects their survival. Parliamentary enclosure and post medieval ploughing on the less-permeable soils may have swept away much of the evidence of the earlier field systems and settlement.

Certainly the area of poorer soils falling within the Forest of Knaresborough would have had an alternate landuse history to areas further to north. Although the Domesday Book does record settlements at Felliscliffe, Rowden and Birsthwaite the need of the inhabitants would have been constrained by the overriding requirement of the Forest to provide cover and hunting.

In the context of this discussion perhaps the most intriguing features are the arrangement of low banks on either side of the road at Field House, Hartwith cum Winsley (1584947). These features are visible on historical air photos and LiDAR imagery and they appear to underlie the dry stone walls of the post medieval field system and in some parts they underlie narrow ridge and furrow. These earthworks are tentatively interpreted as the plough headlands of earlier, possibly medieval field system.

## **2.5 Post Medieval Monuments**

As noted above, the most numerous type of feature recorded by this project for the post medieval period is narrow ridge and furrow. Narrow ridge and furrow is widespread on the less well-drained soils and noticeably sparser on the more permeable soils. It is closely linked

to the landscape of parliamentary enclosure and probably dates to this time.

Overall the current landscape of the project area is largely unchanged since the Enclosure Acts and has experienced relatively little modern intrusion. Since so many elements are extant and have not yet been reduced to archaeological earthworks, cropmarks or soilmarks or ruined structures much of the post medieval agrarian landscape lies beyond the remit of this project and the NMP in general.

Some instances of abandonment of post medieval elements prior to the mid-19th century have however been noted, for example the relict field boundaries (1588743) around Missies, Laverton and a network of water channels (1590521 & 1590541) at Low Swinton. A handful of ruined or removed post medieval farm buildings have been recorded: a possible barn near Low Burn Bridge (1590748), another with a yard at Bramley Wood (1590275) and, a small cluster of abandoned farms along the banks of Beaver Dyke (1582409, 1582382 & 1582401). The abandonment of these farms may be associated with the construction of the reservoir.

Other types of post medieval features recorded by this project are either associated with specific industrial activities, components of designed landscapes or, from the latter part of this period, sites with military or militia associations. The military landscapes will be dealt with alongside the 20th century military remains in [Section 2.6](#).

#### Industrial landscapes

The project area is rich in the remains of post medieval mill complexes. Standing structures like mill buildings were not recorded by this project and these are usually depicted on the historical Ordnance Survey maps. Some associated features such as mill races, tail races and ponds were mapped and recorded for this project, either as seen or by an outline indicating the extent of the feature. The earthworks remains of potential mill sites were also mapped and recorded.

As the table below shows most of the mill-related features that were identified by this project were associated with corn milling, at least at the time of the 1850s Ordnance Survey maps, but some were associated with the textile industry.

Table 2. Mill races in the project area

MILL TYPE (BASED ON OS 1853-56 maps)	UID	NOTE
Masham Mill (Corn) *	1591227	Short mill race diverting from River Ure with tail race re-joining beyond bend in river
Render Mill (Corn & Flax)*	946873	Mill pond, dam and mill race diverted from Thornton Beck
Fringill Mill (Flax)*	1583876	Sequence of mill ponds and dams using the waters of Heck Hill
Corn Mill*	1584949 + 1584953	Reservoir, mill pond and dam using the waters of local springs
High Mill (Flax 1854, Silk Dressing 1896)	1585012	Mill pond, race diverting water from Thornton Beck
Yarn Factory *	1588675	Long mill race diverted from River Laver at Winksley Banks and a short tail race.
Gate Bridge Mill (Corn)	1588879	Mill race and pond diverted from River Laver
Galphay Mill (Corn)*	1589233	1.25km mill race diverts from River Laver near Rough House and a short tail race.
Azerley Mill (Corn)	1589333	650m of mill race diverted from Kex Beck but now truncated along with the original mill pond by a late 19th century lake.
no mill identified	1591392	1.25km long 'Old Mill Race' running along east bank of River Ure below High Burton Farm
no mill identified	1590648	Possible race and mill site near Tanfield Lodge
no mill identified	1589346	Possible race and mill site at Azerley

The latter three examples cannot be reconciled with a specific mill on the mid-19th century Ordnance Survey maps. The 'Old Mill Race' near High Burton is depicted and labelled on the 1856 Ordnance Survey map but no structures are shown anywhere along its length (1591392). By contrast there is no indication of the broad ditched feature and footings of a small building that sit adjacent to the River Ure just below Tanfield Lodge (1590648). The last example on the table appears to be physically linked to the race that fed Azerley Mill (1589333) but unlike that race these features are not depicted on the 1856 Ordnance Survey map. They are located between the known mill race and Kex Beck and may have been partly impacted by the construction of a large lake in the 19th century (1589344). They comprise a broad ditched feature diverting from and back into Kex Beck with possible building platforms close to the beck banks (1589346). It is possible that these are the remains of mill buildings and a tail race but it they might alternatively be ornamental features associated with the landscaping at Azerley.

The extractive industries, with the exception of the 20th century workings at Marfield (1591266) have only been practised on a small scale within the project area. There are limestone quarries at Hollin Wood, Aldfield (1589377 & 158937) and a lime kiln in the far north of the project area near High Mains Farm, Masham (1591374). There are clusters of coal

shafts and spoil on Dallowgill and Skelding Moors (eg 1588624, 1588637 & 1588685), coal workings at Winksley Banks on the River Laver (1588673) and single shafts at Birstwith (1584047) and at South Gate Cottages, Hartwith cum Winsley (1588624). Small-scale gravel and other stone extraction is widespread across the project area.

#### Designed landscapes

The project area encompasses ornamental parkland at Swinton Park, Azerley Chase, Aldburgh and Hackfall and this project has recorded a variety of design elements including complex water gardens and ha has at Swinton Park and formal garden terraces and tree rings at Aldburgh. The landscaping at Aldburgh is particularly interesting because of its impact on the earlier of the possible monastic grange (see [Section 2.4](#)).

Of particular interest in the Aldburgh landscape are a series of rectangular tree-covered mounds that run perpendicular to the River Ure from High House Farm near Aldburgh Hall (1590588). The LiDAR data indicates that these mounds rise 3-4m above the valley floor. The mound apices are below the level of the ground to the east but level with that on the opposite river bank. They resemble earthen bridge piers and, intriguingly, are aligned with a drove road on the opposite bank that lead by Nutwith Cote and on to Roomer Common (Wiglesworth 2005. Fig 16). There were clearly close historic links between the two monastic granges at Aldburgh and Nutwith Cote, however Wiglesworth observes that the river is shallow at this point and could have been forded (2005: Figs 40 & 41). This would seem to do away with the need for a bridge between the two sites in the medieval period. However it is possible that these mounds may be later features associated with the designed landscape: perhaps a folly intended to mimic a ruined bridge.

#### **2.6 19th and 20th century military remains.**

As well as a small number of anti-aircraft and searchlight batteries (eg 1584162 and 1584984) and a radio telegraphy station (1584160) this project identified three main areas of known or potential military activity: Menwith Hill, Nutwith Common and Laver Banks.

Menwith Hill is still a RAF Station and it is made available for use to the US Department of Defence. This project recorded the original layout of a large mid-twentieth century antenna array at Menwith Hill from historical air photos (1583969). The antennae were distributed in a concentric pattern over an area of more than 140 hectares. The Menwith Hill array was a key component of the station's monitoring strategy during the Cold War. It intercepted radio transmissions from the Soviet Union. Most of the antennae have now been removed.

At Laver Banks a complex network of trackways run through the woodland and, on historical air photos, appear to be associated with some small, discretely-placed structures, possibly bell tents (1589429). Comparison of the 1940s air photos and late 19th century maps indicates that many of these trackways were in use in the mid-20th century date but some may have reused existing paths the woods. Laver Banks is close to the military training areas just beyond the current project area at Ellington Banks (1517474) and the Claro and Deverell Barracks, Ripon (1517586 & 1517593) so it is possible that these features had some military origin.

As mentioned in [Section 2.3](#) there are earthworks on Nutwith Common from a potentially wide range of dates. The Ordnance Survey map of 1895 (but not the earlier 1856 edition) notes the presence of a 'Rifle Range' on the common and it is likely that a small rectilinear mound (1590566) is the target stop for this (see Figure 8). This map indicates that the range extended up to 600 yards with firing in near east to west orientation. In contrast to this the air photos shows the remains of a possible shorter range in a near north to south orientation with the distances marked by a series of banks and ditches and clusters of small impact craters (1590559). This firing range is not depicted on historical maps of 1856, 1995 or 1910 but is perhaps of later post medieval date. However the more striking features are a series of twelve adjacent platforms cut into the north facing hill slope and embanked on the downslope side (1590559). The platforms are aligned side by side and measure approximately 27m from the outer side of the embankment to the rear of the platform cutting and are 13m wide. Although this form and its size are consistent with short range target practise it is unusual for this facility to be found in groups of more than 3 or 4 (R. Thomas pers comm).



### **3 DATA ARCHIVING AND DISSEMINATION**

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#### **3.1 Copyright**

The copyright of the air photo mapping and associated records produced by this project lies with English Heritage.

#### **3.2 Project Archive**

The results of this project's mapping and interpretation are contained within two ESRI shape files, one for the detailed mapping and the other for the simplified polygons that mark the extents of the NRHE record descriptions. These will be deposited with the English Heritage Archive. Aerial Survey and Investigation shall also retain digital copies.

The records resulting from this project are contained within and are integral to the NRHE. They may also be accessed online via PastScape ([www.pastscape.org.uk](http://www.pastscape.org.uk)).

There are no formal arrangements for the archiving of other digital files created during the course of this project: scanned image files (.TIF), rectified image files (.TIF), World files (.TFW), AERIAL rectification files (.RDA), LiDAR models (various) and lists of consulted material (.XLS). Copies of these will be deposited on the English Heritage file server under Aerial Survey. For this project decisions regarding the preservation of these files will be the responsibility of English Heritage but this is an area that needs consideration for future projects.

#### **3.3 External Partners**

A copy of the project's mapping and interpretation data was sent to North Yorkshire County Council. This council uses MapInfo Professional and so the data was sent in its native format.

#### **4 SUGGESTED ACTIONS REGARDING PROTECTION AND DESIGNATION**

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The following recommendations are arising from the mapping, interpretation and recording undertaken for this project:

- Ground based assessment of the nature and condition of multi-period earthworks and buried features on Nutwith Common (eg 1590559, 1590566, 1590568 and 1590572, see [Sections 2.3](#) and [2.6](#)). This area was previously open ground but is now a tree plantation.
- Consider the impact of ongoing extraction and future licences at Mar Field on the so far well-preserved medieval field systems and settlement remains at Low Ellington (eg 1591359 , 159125, 1591365 and 1344464) and formulate possible protection and/or mitigation strategies (see Figure 9).
- Encourage Higher Level Stewardship Agreement for the fields containing earthworks around High Burton Farm (ie those containing 1591282, 52290, 1591286 and 1591286). These fields may contain the remains of a medieval settlement and possible the footings of a church (see [Section 2.4](#) and Figure 10). They are currently subject to Entry Level Agreement.
- Earthworks to the south of Aldburgh Hall are on land which is without an Environmental Stewardship Agreement (eg 1590618 and 1590613, 1590627, 1590625). These and earthworks on the west bank of the River Ure at Nutwith Cote (eg 1590658 and 1590659) may be associated with Fountains Granges and would both benefit from Higher Level Stewardship Agreements (see Figure 7).
- The Scheduled Monument Camp Hill (List Entry 1017894, 52093) was first designated in 1938 and last updated in 1997. Although there appears to have been little change to the monument's condition it may warrant a re-inspection to see if the interpretation and dating still hold in light of the observations made in [Section 2.3](#) above.
- Encourage Higher Level Stewardship Agreement for the fields containing earthworks at Aldfield. These may contain extensive upstanding medieval settlement remains (eg 1588112, 1588185 and 1588103). Some but not all of these fields are currently under Entry Level Agreement.
- Consider whether the Bank Slack Scheduled Monument (List Entry no. 1004898) should be extended to include newly-recorded sections of this linear earthwork (51823 and 1582386).

- Consider ground investigation to consider the nature, condition and possible protection measures for the possible Iron Age enclosure near Grewelthorpe (1590341, see [Section 2.3](#))
- Formalisation of archiving procedures for non-core data eg photo lists
- Provision should be made for the archiving and dissemination of a version of the project mapping that contains ALL the original object data (see note below [Appendix 3](#))

## REFERENCES

- Anon ND Haverah Park.  
([http://beckwithshaw.2day.uk/siteFiles/files/beckwithshaw\\_Haverahallhtml\\_171575620.htm](http://beckwithshaw.2day.uk/siteFiles/files/beckwithshaw_Haverahallhtml_171575620.htm))
- Archaeological Services, University of Durham. Knabs Ridge, Harrogate. Archaeological Evaluation by Trial Trenching. Unpublished report 08/2005
- Archaeological Services WYAS 2013. Penny Pot Wind Farm, Harrogate. Archaeological Evaluation. Unpublished report 04/2013.
- Challis A J and Harding D W 1975. Later Prehistory from Trent to Tyne. BAR Oxford.
- Coppack, G. 1993. Fountains Abbey. English Heritage.
- Coatsworth, E 2008. Corpus of Anglo-Saxon Stone Sculpture Volume VIII: Western Yorkshire. OUP/British Academy.
- Deegan, A 2013. Project Design: Pennine Dale Fringe NMP Project V 1.1 (6626 PD) produced for the National Heritage Protection Commissions, English Heritage 13th March 2013
- English Heritage nd. Research Agenda 2005-2010. <http://www.english-heritage.org.uk/publications/eh-research-agenda/researchagenda.pdf>
- English Heritage nd. National Heritage Protection Plan. Framework. <http://www.english-heritage.org.uk/publications/nhpp-plan-framework/nhpp-plan-framework.pdf>
- Grinsell, L V 1953. The Ancient Burial-mounds of England.
- Horne, P 2009 A Strategy for The National Mapping Programme. English Heritage
- House of Lords Journal Volume 32: May 1770, 11-20 581 accessed via <http://www.british-history.ac.uk/lords-jrnl/vol32/pp579-600#h3-0017>
- Lancaster University Archaeological Unit (LUAU) 2000. Nidderdale AONB North Yorkshire. Archaeological Survey Report. Unpub. Report for North Yorkshire County Council and Nidderdale AONB Project. August 2000.
- Laurie, T C, Mahaffy, N W, and White, R F 2010, Coaxial field systems in Swaledale. A reassessment. Publishjed online July 2010.

<http://www.swaag.org/publicationsTL15CFS.htm#>

MAP Archaeological Consultancy 2009. 'Marfield Quarry, Masham, North Yorkshire. Phase 3 &

4. SE 2110 8277. Archaeological Watching Brief.

<http://archaeologydataservice.ac.uk/archiveDS/archiveDownload?t=arch->

1642-1/dissemination/pdf/SNY15261.pdf

Nidderdale AONB Team nd. The Nidderdale AONB Heritage Strategy 2009-2014.

<http://www.nidderdaleaonb.org.uk/documents/heritagestrategy2009->

[2014.pdf](http://www.nidderdaleaonb.org.uk/documents/heritagestrategy2009-2014.pdf)

Natural England 2013 NCA Profile: 22 Pennine Dales Fringe (NE474)

<http://publications.naturalengland.org.uk/publication/5619375490990080>

The Naturalist 1909. No title. 89.

<http://archaeologydataservice.ac.uk/archsearch/record.jsf?titleId=1794192>

Oxford Archaeology North. 06/2007. Knabs Ridge Wind farm, North Yorks. Archaeological

Excavation Project Design. Unpublished report 08/2005

SLR Consulting Ltd 2010, Marfield Quarry Southern Extension. Phase 1 Archaeological Site

Investigation Interim Report. Unpublished report.

Turner, M 1987, Post-Medieval Colonisation in the Forests of Bowland, Knaresborough and

Pickering. Unpub. PhD Thesis. University of Hull.

Wiglesworth, J 2005. Nutwith Cote. A grange to Fountains Abbey, Unpublished report.

[3darchaeology.co.uk/docs/reports/cote.pdf](http://3darchaeology.co.uk/docs/reports/cote.pdf)

Winton, H 2012 Standards for National Mapping Programme projects 2012. English Heritage.

Internal document.

<http://domesdaymap.co.uk/>

## **APPENDIX 1 SPHERE OF INTEREST**

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Summarised from Winton 2012.

### **Cropmarks, parchmarks, soilmarks**

All sub-surface archaeological remains are recorded when visible as cropmarks, parchmarks or soilmarks.

### **Earthworks**

All archaeological earthworks that are visible on aerial photographs or LiDAR imagery. This includes features visible as earthworks on early photographs but which have subsequently been levelled.

### **Buildings and Structures**

All foundations of buildings visible as cropmarks, soilmarks, parchmarks, earthworks or ruined stonework. Standing roofed or unroofed buildings are usually more appropriately recorded by other methods, so will not normally be mapped. The exceptions are in specific archaeological contexts (e.g. industrial and military complexes and country houses), or when associated with other cropmark and earthwork features. Other non-roofed structures particularly 20th century military structures, sheepfolds and shooting butts can be mapped if considered to be of archaeological significance to the project.

### **Ridge and Furrow**

All medieval and post medieval ridge and furrow and prehistoric cord rig, regardless of preservation, according to NMP conventions.

### **Post Medieval Field Boundaries**

Exclude post medieval field boundaries, whether seen as cropmarks, earthworks, or still extant, with the exception of circumstances when they may be of particular archaeological significance (e.g. when field systems are not mapped by the Ordnance Survey).

### **Parkland, Landscape Parks, Gardens and Country Houses**

Map all man made garden or landscape features, but not major landscaping.

### **Industrial Features and Extraction**

Small local use quarries were recorded and all quarries of all dates up to the most recent air photos were depicted.

### **Transport**

The Sphere of Interest suggests that transport features such as canals and railways should not be recorded by NMP if they are depicted on historic Ordnance Survey maps. The approach of this project was more inclusive and disused mineral railways in particular were depicted where they were integral to the industrial landscape.

### **Urban areas**

This was not particularly relevant to this project but refer to Winton 2012 if required.

### **20th Century Military Features**

All First and Second World War as well as Cold War features were recorded.

### **Natural features**

All natural features which are geological or geomorphological in origin are excluded. If there is risk of confusion in contexts with other archaeological features, then the natural features should be mentioned in the text record; they should not be mapped.

## APPENDIX 2 AIR PHOTO COLLECTION DETAILS

**English Heritage Archive (EHA)** (formerly National Monuments Record): English Heritage, National Monuments Record Centre, Great Western Village, Kemble Drive, Swindon SN2 2GZ. The vertical, specialist oblique and military oblique air photographs held by the EHA were made available to this project in a series of loans.

*Table 3. Summary of EHA loans.*

Project blocks	EHA loan ref.	Loaned verticals	Loaned obliques	Loaned military obliques
Block 1	82083	1116	107	1
Block 2	82082	1752	389	54
<b>Total</b>		<b>2868</b>	<b>496</b>	<b>55</b>

The prompt and efficient servicing of photo loans by the Archives team, and in particular Luke Griffin ensured that this project was able to progress smoothly. A small proportion of photographs could not be loaned and laser copies were supplied in lieu. Some recent digital photography was supplied as digital files because no physical prints have been produced. Unfortunately there was, at the time of mapping, no mechanism for the stereoscopic examination of digital photographs for the NMP, which may have been useful in some cases.

**Cambridge University Committee for Aerial Photography (CUCAP)** collection: University of Cambridge, Air Photograph Library, Sir William Hardy Building, Tennis Court Road, Cambridge CB2 1QB. This project was carried out in collaboration with CUCAP: its contribution being the loan of air photographs to EH's Aerial Survey and Investigation (York). Loans were limited to 100 photographs at a time. A list of the photographs in this collection that were examined for this project is contained in the file PDF\_CUCAPlist (in Mapinfo table and Excel formats)

**North Yorkshire County Council (CCC)**: County Record Office. Malpas Road, Northallerton, North Yorkshire DL7 8TB. NYCC holds a collection of oblique air photographs at the County Record Office in Northallerton. This collection is a mix of duplicates of CUCAP and EHA-held material and unique photos taken by Anthony Crawshaw, Peter Addyman, Yorkshire Dales National Park and North Yorkshire CC officers. Photographs taken by the latter have been scanned and the digital versions were made available to this project.

The NYCC collection was consulted towards the end of the project when mapping and recording from other sources had been completed from the other sources. These photographs were checked against the project's mapping and records and amendments and additions were made as necessary. A list of the photographs in this collection that were examined for this project is contained in the file PDF\_NYCClist (in Mapinfo table and Excel



formats)

### **Digital air photos supplied through the Pan Governmental Agreement**

Geo-referenced 25cm resolution colour digital air photos produced by GeoPerspectives were made available at the start of this project through the Pan Governmental Agreement (PGA). These were supplied as georeferenced 1km<sup>2</sup> tiles. Imagery from two dates was available for each kilometre square, the earlier from various dates in 2002 and the later from various dates in 2009 and 2010. This imagery is a digital only-product (no prints) so it was viewed on screen during the course of mapping from the other sources and again towards the end of the mapping process for each quarter sheet to inform the monument condition assessment.

### **Light Detection and Ranging (LiDAR)**

Environment Agency LiDAR data was available for approximately 61% of the overall project areas. This was obtained as 1m resolution ASCII data processed either as 16 direction hill-shade models or as a series of single-direction lit views, depending on the resources available at the time. In addition 2m resolution data was obtained for the Nutwith and Roomer Common area, where higher resolution data was not available, to investigate the condition of features now in woodland. Elsewhere though the 2m was not used to supplement the dataset. Digital surface models were examined in preference to digital terrain models except in areas of extensive tree cover. Figure 1 shows the ASCII LiDAR data coverage that was available to and consulted for this project.

### **Existing records**

The textual and spatial monument and event records in the National Record of the Historic Environment (NRHE) were routinely consulted during the course of this project. Existing NRHE monument records were updated with new information from the air photos and mapping. Where there was no existing monument record pertaining to the archaeological features mapped from the air photos and/or LiDAR imagery, then a new record was created.

North Yorkshire Historic Environment Record (NYHER) supplied monument and events data for the project area. This informed the mapping and recording and where possible the NRHE records that were created or enhanced by this project were concorded with the NYHER records.

### **Historical Maps**

The historical Ordnance Survey maps delivered through EH's WEBGIS were consulted in

tandem with the air photos and LiDAR imagery. These informed interpretations and where appropriate were identified as a source in the NRHE monument record.

**APPENDIX 3 MONUMENT DATA (GIS)**

The Monument Data table consists of eleven data fields. These are associated with and specific to each graphical element in a monument depiction.

Field name	Field content	Sample data
QSHEET	Name of OS map quarter sheet within which the object lies	SE 25 SW
EHLAYER*	Name of NMP layer to which the object belongs	BANK, DITCH, EXTENT OF FEATURE, RFARROW, RFOUTLINE, MONUMENT POLYGON, STRUCTURE, THACHURE
MONARCH	NRHE Unique Identifier (UID)	1460426
NYHER*	Corresponding monument record in North Yorkshire HER (where appropriate)	MNY123456
PERIOD	Date of features (EH Thesaurus)	LATER PREHISTORIC
TYPE	Monument type (EH Thesaurus)	ROUND HOUSE (DOMESTIC)
EVIDENCE	Form of remains as recorded on the source photograph (EH Thesaurus)	CROPMARK
PHOTO1	Reference for the photograph from which the feature was plotted and its date of photography	MAL/68025 V 69 25-APR-1968
LATEST CONDITION*	Condition of the monument as suggested by the latest available photos or LiDAR-derived images (this field may be blank if EVIDENCE was CROPMARK)	LEVELLED EARTHWORK
PHOTO2*	Reference for the most recent photograph from which LATEST CONDITION was deduced (this field may be blank if the EVIDENCE was cropmark or latest condition relied on the evidence of the LiDAR-derived images.)	Next Perspectives PGA Imagery SE2050 16-JUN-2010
LiDAR*	If the monument could be detected on the LiDAR-derived images the relevant tile reference was recorded here.	LIDAR SE2896 ENVIRONMENT AGENCY D0057155 20TH-JUL-2006

\* these are not core NMP-standard data fields and they may not be retained in the files that are formally archived by the EHA and/or uploaded to the EH GIS. However it is highly desirable that arrangements are made for the archive and dissemination of the full data versions as this information cannot easily be recovered from the NRHE records alone.

## APPENDIX 4 PROJECT REVIEW

This is a review of the aims and objectives defined in the original project design (Deegan 2013, 6-7).

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### English Heritage Research Agenda 2005-2010 theme and sub-theme

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*AIM: To generate baseline archaeological information to inform national heritage management strategies, county-level heritage management strategies and heritage management in an AONB.*  
*[Theme A1]*

Outcome: Baseline data has been generated for 179km<sup>2</sup> of land of which 130km<sup>2</sup> lies within Nidderdale AONB

---

*AIM: To provide a basic statement of monument condition [Theme D1]*

Outcome: The most recently observed condition of each monument has been recorded in the GIS spatial data and is summarised in the NHRE records. This will allow both an overview and a fine grain analysis of monument condition.

---

*AIM: To heighten the awareness of the NMP, this form of remote sensing and this project amongst a broad audience [Theme C2]*

Outcome: A webpage has been created to signpost the existence of this project data, to demonstrate the diversity of the remote sensing imagery that contributed to this project and to highlight some of the project's findings.

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*EHRA theme A3 UNLOCKING THE RICHES: Realising the potential of the research dividend.*

Outcome: With the completion of this project there is a substantial transect of air photo mapping available across the width of North Yorkshire and East Riding now available. Analysis of this, alone or in conjunction with other geographically extensive data sets, has the potential to contribute to diverse period and thematic studies.

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### The National Heritage Protection Plan (English Heritage)

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*Activity 3A4 Identification of Terrestrial Assets Via Non-Intrusive Survey*

Outcome: This project has identified and recorded 940 new monuments and enhanced the documentation of a further 30 monuments.

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*Protection Result 3A4.2 Identification and contextual understanding from aerial photographs/LiDAR mapping*

Outcome: This project now allows for base level protection by recognition and documentation for a "transitional landscape" between two existing NMP Projects that have explored quite different environments.

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*Activity 4G2 Ploughzone Archaeology*

Outcome: By production of a NMP dataset this project now has the potential to contribute to this activity.

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### **Strategic Framework for Historic environment Activities and Programme in English Heritage (SHAPE)**

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*11111.110 Understanding Place: New historic assets discovered from remote sensing surveys*

Outcome: This project has identified 940 previously unrecorded assets including several that may be of regional importance.

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*32111.110 National Mapping Programme: recording and mapping archaeological landscapes using aerial photographs.*

Outcome: This project had contributed directly to this programme

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### **A Strategy for the National Mapping Programme (Horne 2009)**

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Outcome: This project has addressed a key recommendation in the NMP Strategy, that being “Encourage NMP projects in National Parks and AONBs”, by providing NMP coverage for the area of Nidderdale AONB that lies outside of the earlier Yorkshire Dales National Park Project.

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### **The Nidderdale AONB Management Strategy 2009-2014 (Nidderdale AONB Team)**

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*2.3 Strategic-Level Archaeological Survey “to fill a key gap in the historic environment record evidence base for the AONB, namely the area east of Easting line 20, which was excluded from the National Mapping Programme Yorkshire Dales pilot project.”*

Outcome: This project has met this aim

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*1.13 Encourage owners of heritage assets to enter into ESS.*

Outcome: The maps and records produced by the project will help heritage professional to explain and demonstrate to land owners and their agents the nature and significance of above and below ground monuments on the holding.

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*2.16 Designation Review (AONB Project Plan)*

Outcome: this project can assist Designation Review by identifying, mapping and recording previously unknown above and below ground monuments, supplementing information on known monuments, providing condition statements to inform designation decisions.

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*2.20 Local List*

Outcome: this project will contributed to the curation of the local list by providing baseline evidence for the portion of the AONB currently that was previously without NMP coverage.

**APPENDIX 5 EH PERIOD TERMS INDEXED BY THE PROJECT**


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NEOLITHIC	POST MEDIEVAL
BRONZE AGE	VICTORIAN
IRON AGE	20TH CENTURY
ROMAN	EARLY 20TH CENTURY
LATER PREHISTORIC	SECOND WORLD WAR
EARLY MEDIEVAL	MID 20TH CENTURY
MEDIEVAL	LATE 20TH CENTURY

**APPENDIX 6 EH THESAURUS TERMS INDEXED BY THE PROJECT**


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ANTENNA ARRAY	MOUND
ANTI AIRCRAFT BATTERY	NARROW RIDGE AND
BAILEY	FURROW
BANK (EARTHWORK)	NATURAL FEATURE
BARN	ORCHARD
BOUNDARY	ORNAMENTAL CANAL
BOUNDARY BANK	OVAL ENCLOSURE
BOUNDARY DITCH	PACKHORSE BRIDGE
BRICKWORKS	PACKHORSE ROAD
BRIDGE	PADDOCK
BUILDING	PARK WALL
BUILDING PLATFORM	PATH
CAUSEWAY	PEN
CHURCH	PIT
COAL DEPOT	PLATFORM
COAL WORKINGS	PLOUGH HEADLAND
COMMAND HUT	POND
COVERED WAY	PRECINCT WALL
CROFT	QUARRY
CULVERT	QUARRY PIT
CURVILINEAR ENCLOSURE	RADIO TELEGRAPHY STATION
DAM	RAILWAY
DITCH	RAILWAY CUTTING
DRAINAGE DITCH	RAILWAY EMBANKMENT
DRAINAGE LEVEL	RAILWAY SIDING
DROVE ROAD	RECTILINEAR ENCLOSURE
DUCK POND	RIDGE AND FURROW
DYKE (DEFENCE)	RIFLE RANGE
EARTHWORK	RING DITCH
ENCLOSED SETTLEMENT	ROAD
ENCLOSURE	ROUND CAIRN
	ROYAL OBSERVER CORPS SITE
	SAND AND GRAVEL
EXTRACTIVE PIT	EXTRACTION SITE
FARM BUILDING	SAND PIT
FARMSTEAD	SANDSTONE QUARRY

FIELD BOUNDARY	SCARP
FIELD SYSTEM	SEARCHLIGHT BATTERY
FIRING RANGE	SETTLEMENT
FISHPOND	SHAFT
FOOTPATH	SHAFT MOUND
FORMAL GARDEN	SHEEP FOLD
GARDEN TERRACE	SHOOTING STAND
GATEHOUSE	SPOIL HEAP
GRAVEL PIT	STONE QUARRY
GRUBENHAUS	STRUCTURE
HA HA	SUB CIRCULAR ENCLOSURE
HOLLOW	TAIL RACE
HOLLOW WAY	TARGET
HUT CIRCLE	TERRACE
ICEHOUSE	TERRACED GROUND
IMPACT CRATER	TOFT
LAKE	TRACKWAY
LEVEL	TREE ENCLOSURE RING
LIME KILN	TREE MOUND
LIMESTONE QUARRY	TREE RING
LINEAR EARTHWORK	TREE THROW
LYNCHET	WALL
MILITARY SITE	WALLED GARDEN
MILL	WATER CHANNEL
MILL DAM	WATERCOURSE
MILL POND	WATERMILL
MILL RACE	WEAPONS PIT
MINERAL RAILWAY	WINDMILL MOUND
MOAT	WOOD BANK
MOTTE	YARD

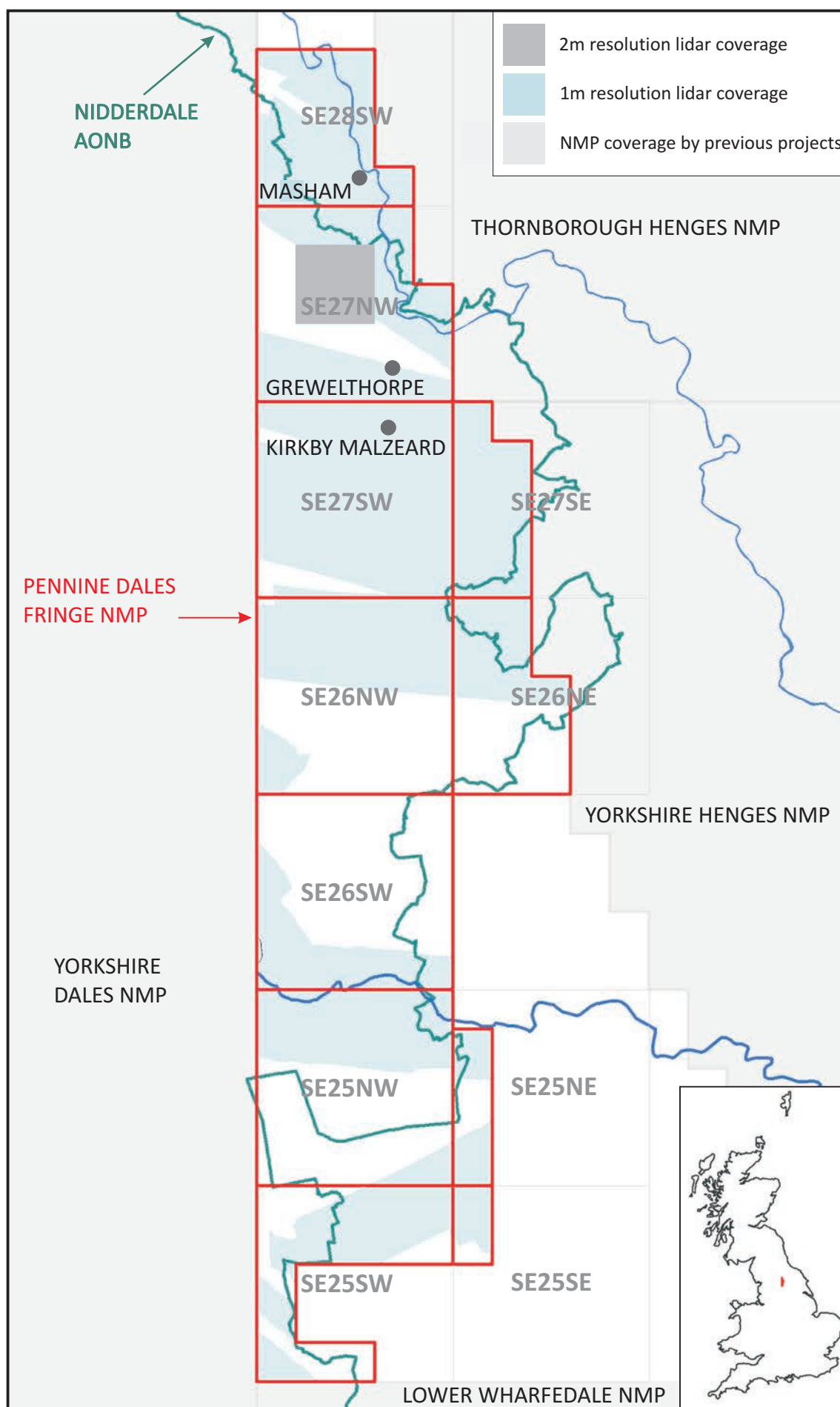


Figure 1. Location of the Pennine Dales Fringe NMP Project and overview of the available LiDAR coverage.



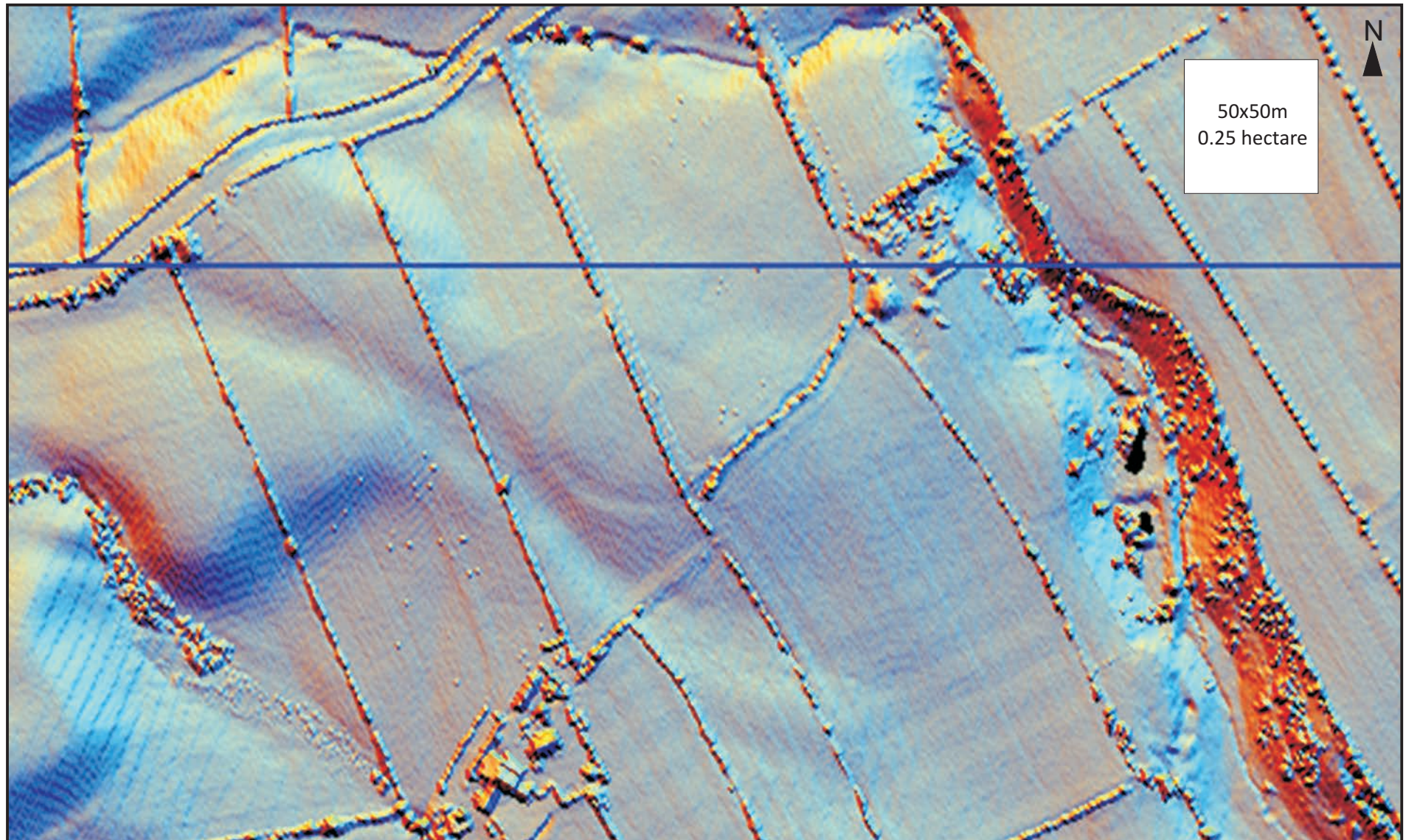


Figure 2. Possible Iron Age curvilinear enclosure near Grewelthorpe. A 16 direction hill-shaded model generated from 1m resolution LiDAR data.  
© English Heritage; source LIDAR SE2275 & SE2276 Environment Agency DSM



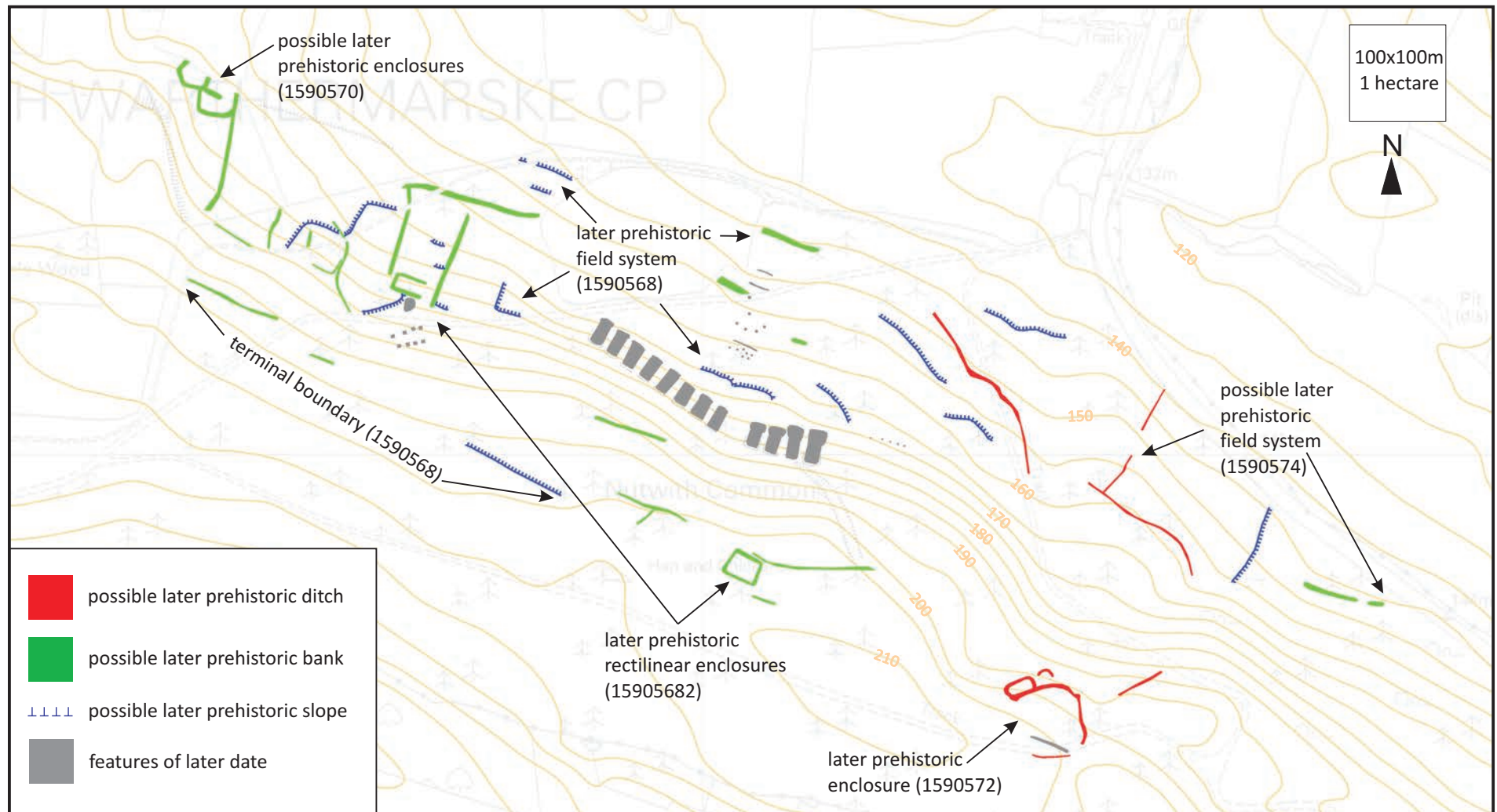


Figure 3. Possible prehistoric field systems and enclosures on Nutwith Common. Extracted and manipulated from the project mapping. © English Heritage (The base map is © Crown Copyright and database right 2015. All rights reserved. Ordnance Survey Licence number 100019088.)

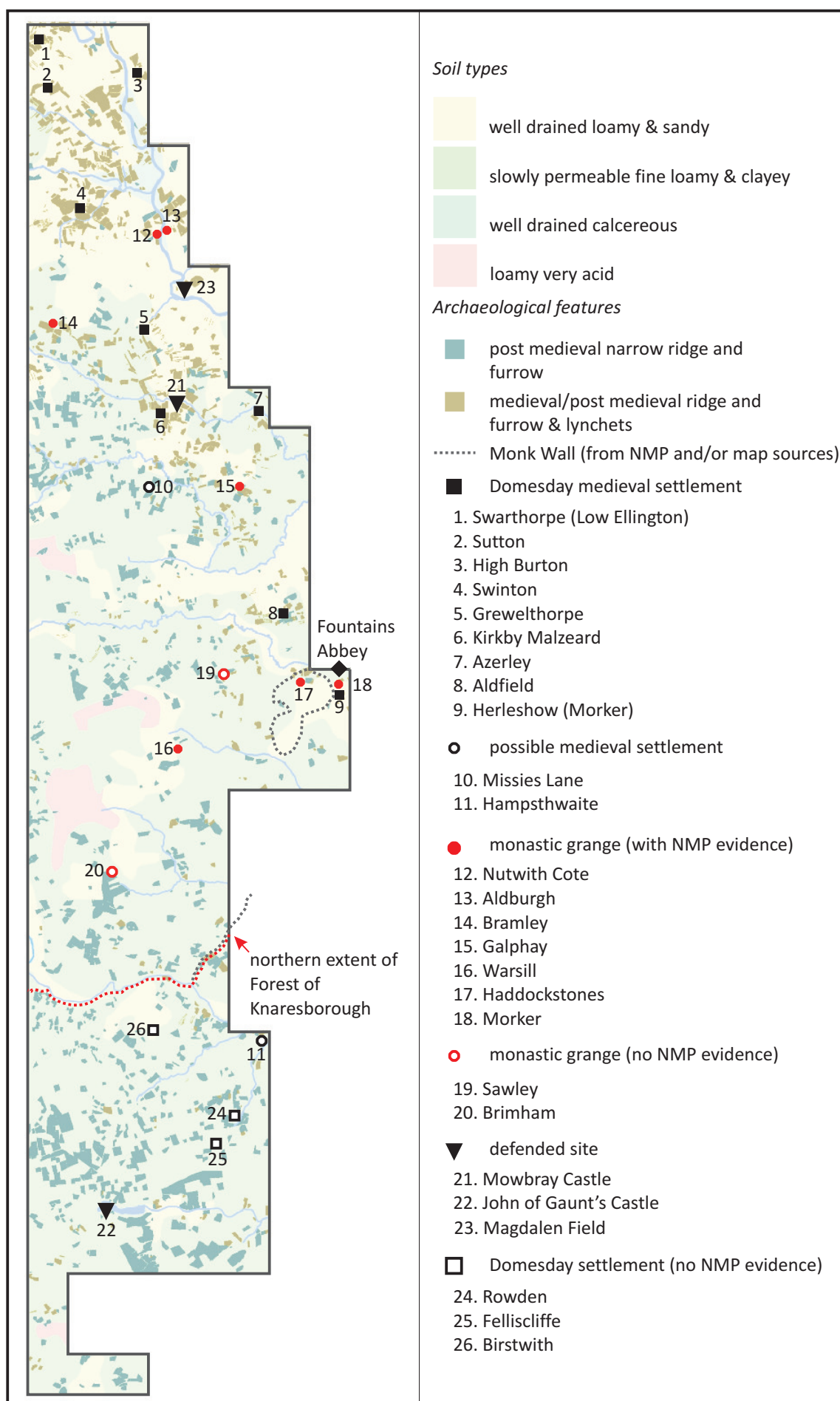


Figure 4. Distribution of medieval settlements, ridge and furrow, granges and castles together with post medieval narrow ridge and furrow against a background of generalised soil types.





Figure 5. Possible medieval settlement remains at Low Ellington and visible as earthworks and parchmarks. NMR 17333/8 27-JUL-1999 © English Heritage





Figure 6. Kirkby Malzeard medieval linear settlement flanked by fossilised strip fields and ridge and furrow. NMR 20727/31 12-NOV-2007 © English Heritage





Figure 7. Earthworks including low building remains, ponds and a possible watermill on the banks of the River Ure at Aldburgh.  
NMR 20729/14 12-NOV-2007 © English Heritage

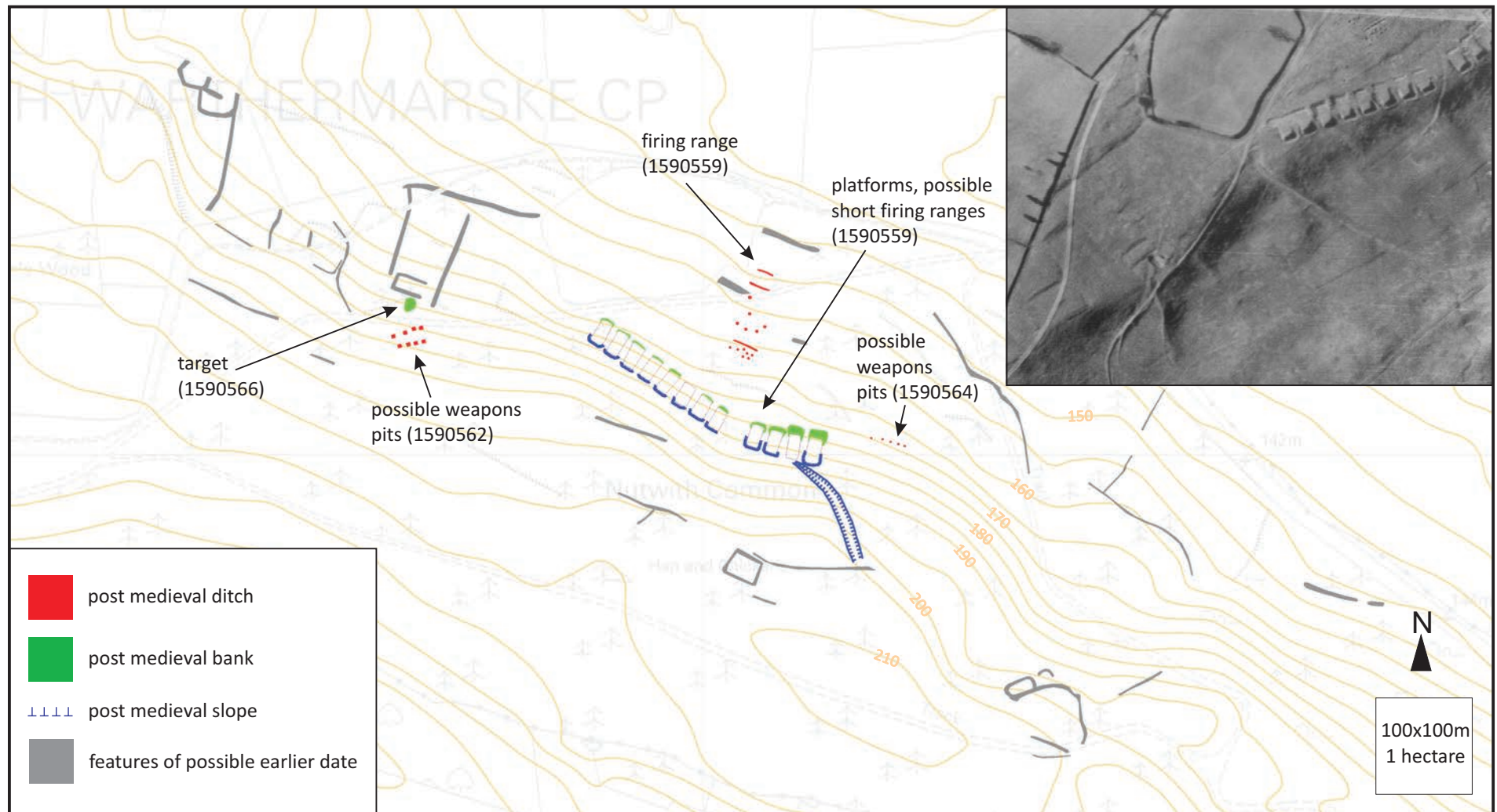


Figure 8. Possible post medieval firing ranges and associated features on Nutwith Common. Extracted and manipulated from the project mapping. © English Heritage. Photo inset RAF/106g/UK1181 English Heritage RAF Photography. (The base map is © Crown Copyright and database right 2015. All rights reserved. Ordnance Survey Licence number 100019088.)





Figure 9. Medieval lynchets and 20th century sand and gravel extraction at Mar Field. EHA 28486/14 12-NOV-2013 © English Heritage





Figure 10. Earthworks in unploughed fields around High Burton Farm. EHA 28485/51 12-NOV-2013 © English Heritage