



Celebrating Our Woodland Heritage Hardcastle Crag, Hebden Bridge: An Archaeological Woodland Survey

*Pennine Prospects
Celebrating Our Woodland Heritage Project
Report No: PP30/160419*

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Abbreviations

BGS – British Geological Survey

HBLHSA – Hebden Bridge Local History Society Archives

HER – Historic Environment Record

NA – Nottinghamshire Archives

OS – Ordnance Survey

WYAS(H) – West Yorkshire Archive Service (Halifax)

This project would not have been possible without the support of the National Lottery Heritage Fund. Thank you to all of the National Lottery players, without whom, projects such as the Celebrating Our Woodland Heritage project would not be possible.

Summary

This report summarises and interprets the results of several archaeological woodland surveys undertaken by volunteers as part of the Celebrating Our Woodland Heritage project. The investigation took place within the area known as Hardcastle Crag, located in Calderdale to the north of Hebden Bridge, the majority of which is owned and managed by the National Trust. Across the 251 hectares (620 acres) of woodland, 157 hectares (393 acres) were surveyed and volunteers identified and recorded 299 previously unrecognised features of archaeological interest.

The features identified demonstrate a complex and nuanced use of the wooded landscape stretching back to the medieval period. This includes wood pasture, assarting and water management as well as industrial uses such as mineral extraction and charcoal burning. The woodland investigated is, in reality, a complex of around 24 different named woods, each with an individual management history and relationship to the surrounding farmed landscape.

1.0 Introduction

This report has been compiled as part of the Celebrating Our Woodland Heritage project. This three year project (2016-2019) is jointly funded by Yorkshire Water, Heritage Lottery Fund, Green Bank Trust and Newground Together and aims to identify, record and interpret the historic environment of woodlands across the South Pennines (National Character Area 36 – Natural England, 2014).

Led by Pennine Prospects, the project recognises, as a result of a desk-based study, 'Hidden Heritage of the South Pennine Woodlands' (Brown, 2013), that ... "number of sites recorded on the HER (Historic Environment Record) does not represent the true nature of the surviving archaeological resource". The report highlights that this underrepresentation (and general lack of knowledge) was the primary threat to woodland archaeology.

The Celebrating Our Woodland Heritage project therefore seeks to enhance the historic record for woodland across the South Pennines by means of a structured programme of archaeological walkover surveys. Where appropriate these surveys will provide the opportunity for members of the public, heritage and youth groups to engage and contribute towards the investigations.

Archaeological features recorded within areas of woodland can represent the whole of human history and use of the landscape. Features relating to the woodland itself can include historic or veteran trees; woodland boundaries; charcoal burning platforms; storage platforms; cottage sites; trackways and mills. Features may also predate the current woodland and represent prehistoric-medieval field boundaries; settlement sites or stones such as Iron-Age cup and ring carvings.

The information collated during the field surveys will be deposited in the form of an archaeological report (ClfA, 2014) and digital record to the landowner and the regional Historic Environment Record. This data will not only guide future research into the region, but also support and promote the preservation of the historic environment as a part of any future management programmes within woodlands.

2.0 Aims and Purpose of Assessment

This investigation forms a baseline record of the archaeological and historic features contained within the property. The general aims of the archaeological woodland survey described in this report were to:

1. Develop a history of land use for the property from readily available historic and archaeological documentation.
2. Identify previously unrecorded archaeological features and sites across the property.
3. Revisit and assess the condition of previously recorded archaeological features and sites across the property.
4. Provide management recommendations concerning each of the historic assets identified and recorded. This information will support any future management works within the woodland.
5. Produce a database (Appendix 2) for use by the National Trust and West Yorkshire Archaeology Advisory Service Historic Environment Record.

3.0 Methodology

3.1 Designations and geology

Data concerning the statutory and non-statutory conditions of land and habitats both on and within the vicinity of the property was obtained from Natural England and made available for commercial use under the Open Government Licence. In addition the Natural England maintained MAGIC website was consulted. The webpage provides authoritative geographic information about the natural environment from across government. The information covers rural, urban, coastal and marine environments across Great Britain.

Site geological and soil data was obtained online from the British Geological Survey OpenGeoscience webpage. The data was downloaded and displayed using QGIS 2.18.14 'Las Palmas', an Open Source Geographic Information System (GIS). Site maps were produced at a scale to best illustrate the full extent of the woodland under investigation.

3.2 Historical and Archaeological Background

Historical data was collected from a variety of sources, both published and archival, including Hebden Bridge Local History Society Archive and Nottinghamshire Archive. Previously collated archaeological data concerning the site under investigation (which includes a 200m buffer around the area) was obtained from West Yorkshire Archaeology Advisory Service (WYAAS) as well as a search of the Heritage Gateway. Listed building; parks and gardens and scheduled monument data was obtained from the National Heritage List for England and downloaded as shapefiles from Historic England.

3.3 Map Regression

Historic map regression of woodlands was undertaken as a means of identifying a broad account of landscape change and use. Where possible the available map coverage (which included 1st – 3rd Edition County Series Survey, 1st – 4th Edition National Grid and land utilisation mapping) were georeferenced using QGIS 2.18.14 'Las Palmas' and shapefiles produced to provide site specific data to map the historic development of woodlands and the immediate surroundings. The shapefiles are included within the digital appendix.

3.4 Light Detection and Ranging (LiDAR)

Light Detection and Ranging (LiDAR) data is unfortunately unavailable for this site.

3.5 Level 1 Reconnaissance Survey (Field Survey)

The field survey was undertaken in multiple stages between the 13th and 15th January 2017, 4th December 2017, 5th - 7th December 2018, 15th - 17th January 2019 and 16th - 18th February 2019. The investigation was systematic (where possible), with each woodland parcel walked in transects. Linear features encountered whilst walking each transect (such as relict field boundaries and trackways) were recorded in their entirety, before continuing along the transect.

The survey did not cover the building and infrastructure complex around Gibson Mill, because there has been previous analysis of this site (e.g. Historic England Listed Building Entry Number 1226169).

Each archaeological feature encountered (such as quarries, platforms and relict boundaries), was recorded in a field notebook and transcribed into an EXCEL spreadsheet (see Appendix 2). The information recorded included:

- **Grid Reference** (*using a handheld Garmin GPSmap 64s*)
- **Site Name**
- **Site Type** (*i.e. cottage site; quarry; charcoal burning platform; trackway*)
- **Description** (*i.e. dimensions; interpretation*)
- **Period** (*i.e. prehistoric; roman; medieval; post-medieval; modern; unknown*)
- **Condition/Threat** (*i.e. erosion caused by livestock*)
- **Recommendations** (*management suggestions*)
- **Reference** (*i.e. photographic reference; historic map reference*)
- **Importance** (*i.e. Local – Regional – National*)

3.6 Field Conditions

The survey area covered 149 hectares (367 acres) of woodland and some adjacent open fields. It was undertaken during cold, clear conditions. The survey was prohibited in certain areas due the steep nature of the ground.

4.0 Location and Geology



Figure 1: Hardcastle Crags woodland and surrounding area.

Hardcastle Crags is located astride the boundary between the modern parishes of Heptonstall and Wadsworth, in the Metropolitan Borough of Calderdale, West Yorkshire. The woodland occupies the sides and bottom of the valleys formed by two watercourses: Hebden Water and Crimsworth Dean Beck. It is surrounded by working farmland, exclusively pasture and meadows.

The woodland covers an area of 251 hectares (620 acres) and is recognised as ancient semi-natural woodland (ASNW) or plantation on ancient woodland site (PAWS) in the Ancient Woodland Inventory (Natural England, 2017). An ecological evaluation conducted by West Yorkshire Joint Services in 1997 concluded that:

“Hardcastle Crag is an extensive area of woodland and represents the largest clough complex in West Yorkshire. The woodlands support a good range of woodland communities which, despite their largely planted nature, show good gradation from the wet woodland on the stream side to the more lowland oak/birch woodland on the lower slopes to the typical W16 Pennine woodland communities on the upper slopes. There is also good gradation from woodland to open heath communities at the western end at the site.

All the communities show generally good species diversity which include a high proportion of regionally rare species. In particular *Pteridophytes* and *Bryophytes* are well represented, indicative of the damp, shady conditions in the stream side areas. The site is included on the Invertebrate Site Register and all of it is included on the Ancient Woodland Inventory, although some is recorded as Ancient Re-planted. The site also has the benefit of an extensive recorded history.”
(Barker, 1997)

The underlying bedrock consists of bands of sandstone of the Lower Kinderscout Grit formation and mudstones and siltstones of the Hebden formation (both originating around 322 million years ago in the Carboniferous Period when the local environment was dominated by rivers, swamps, estuaries and deltas). The slopes also contain areas of talus: angular, undifferentiated rock fragments on the surface which formed up to 3 million years ago (BGS, 2018).

Soil across the site is described as very acid loamy upland soil with a wet peaty surface (United Kingdom Soil Observatory, 2018).

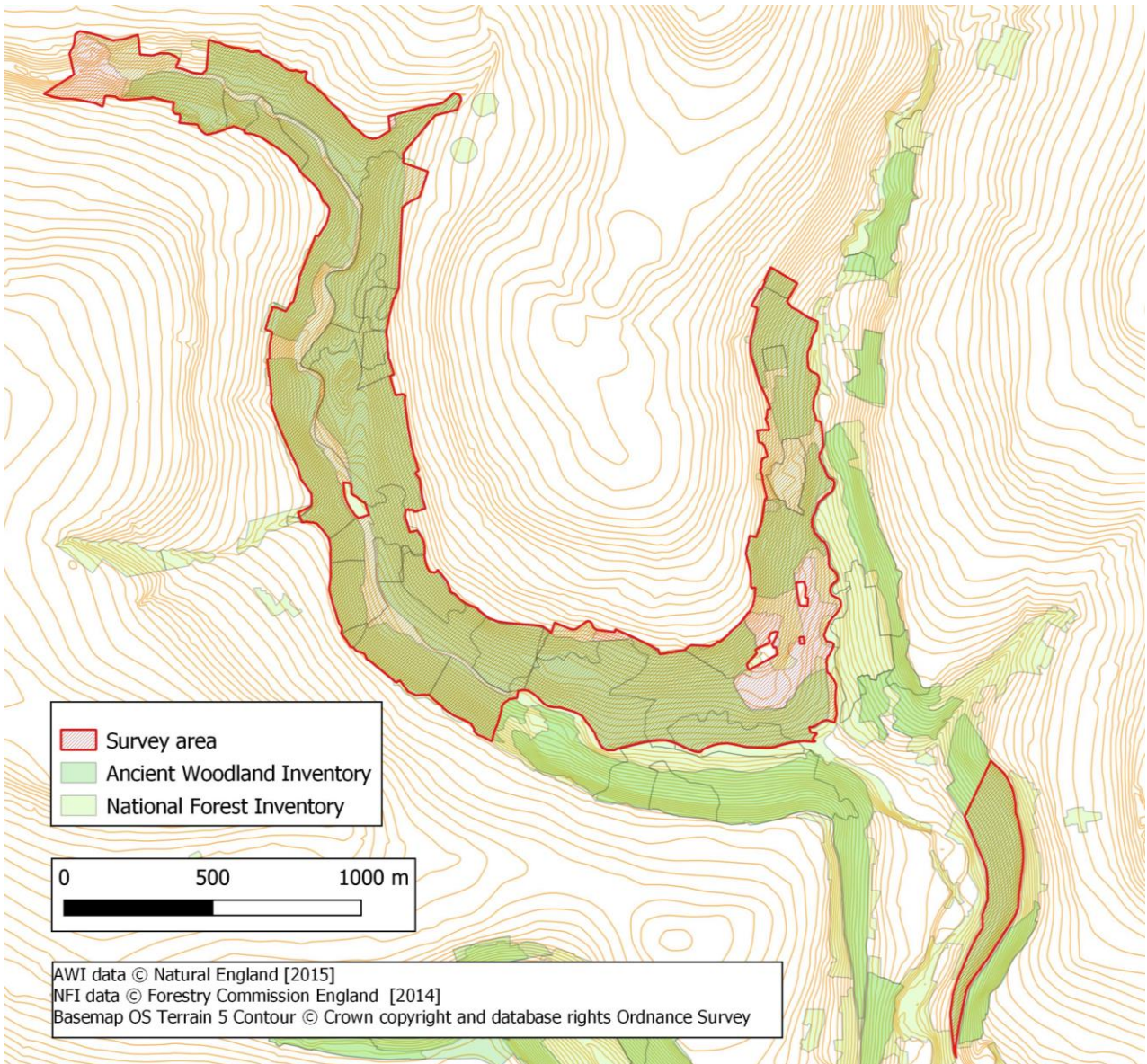


Figure 2: Archaeological survey area

5.0 Historical and Archaeological Background

5.1 Historical Background

Land ownership

The large extent and varied modern land ownership pattern of Hardcastle Crag makes the untangling of its past rather challenging. Historical context begins with the Domesday Book. Hardcastle Crag sits astride the boundary between the villis of Wadsworth and Heptonstall, the first of which is mentioned by name in the entry for the Manor of Wakefield, the latter certainly being part of the Manor but for some reason not named (Jennings, 2011).

The medieval extent of the woodlands which make up Hardcastle Crag was probably fairly similar to what we see today - albeit without many fields cleared within the woodlands. The topography of the valley provides a natural woodland boundary where the gentle slopes more suited to farming break into the steep-sided cloughs. Medieval Calderdale was sparsely populated, but farming was concentrated in the relatively level areas between 200m and 300m above sea level. Certainly by the 1270s the Upper Calder Valley was part of the Forest of Sowerbyshire, which was not a true royal forest, but subject to laws of chase and warren held by the Manor of Wakefield (Smith, 2009). Laws were upheld in the common courts, records of which form the Wakefield Court Rolls. The collection of transcripts of the Manor court proceedings continues nearly unbroken from 1274, forming an incredibly rich historical record for a large area of West Yorkshire. For over a century the Yorkshire Archaeological Society has been publishing transcriptions of selected years, an ongoing project which has so far produced 25 volumes (Barber, 2017).

The Court Rolls make it clear that tenants in the forest were using its woodlands for collecting fuel wood, timber for construction and the grazing of animals. Under the laws of chase and warren they would be fined for each infringement, or use of resources. The inconsistent and relatively low numbers of fines in the Court Rolls, however, suggest that enforcement of the laws was fairly arbitrary.

Unfortunately, there are no direct references to the woodlands of Hardcastle Crag within these publications. It is clear, however, that there was active iron smelting in the woodlands of the Upper Calder Valley from the late 13th to mid 14th centuries, which will be discussed later.



Figure 3: A portion of the Heptonstall Poor Rate Valuation map of 1835 showing woodlands on the western side of Hebden Water. The boundaries are clearly visible between High Greenwood Wood (at the top), Ingham Wood (to the east of Mould Grain farm), and Gibson Wood (at the bottom). The buildings on the river are Lord Holme Mill, now known as Gibson Mill (WYAS(H), MP10).

There is enough circumstantial evidence to suggest that at some point during the late medieval and early post-medieval periods, the wooded ground which we now call Hardcastle Crag was enclosed and split up into parcels. It ceased being managed under law of chase and warren, and instead different parts became attached to surrounding farmsteads. This process is clear in the woodland names. Of the 24 named parcels of woodland in the early 1800s, 14 share a name with a farm in close proximity (e.g. High Greenwood Wood). Boundaries between these parcels are clearly marked on early maps (e.g. Figures 3 & 4). The Savile estate was, until 1950, the largest landowner in the valley, and it is entirely possible that it acquired some of these woodlands as part of a land grant in 1449. The will of John Savile, dated 23rd November 1481, states that “Wife to have also for life the manor of Thornhill and lands in Ovenden, Waddesworth and Skircoittes, which Wm. Gascoigne, knt. and others granted to me and Alice my wife by deed dated 1 July 28 Hen VI.” (Clay, 1920). The Thornhill estate is known to have held vaccaries (medieval cattle farms) at Small Shaw and Widdop in the 1400s, both of which neighbour the wooded valley (Historic Environment Record 4749).

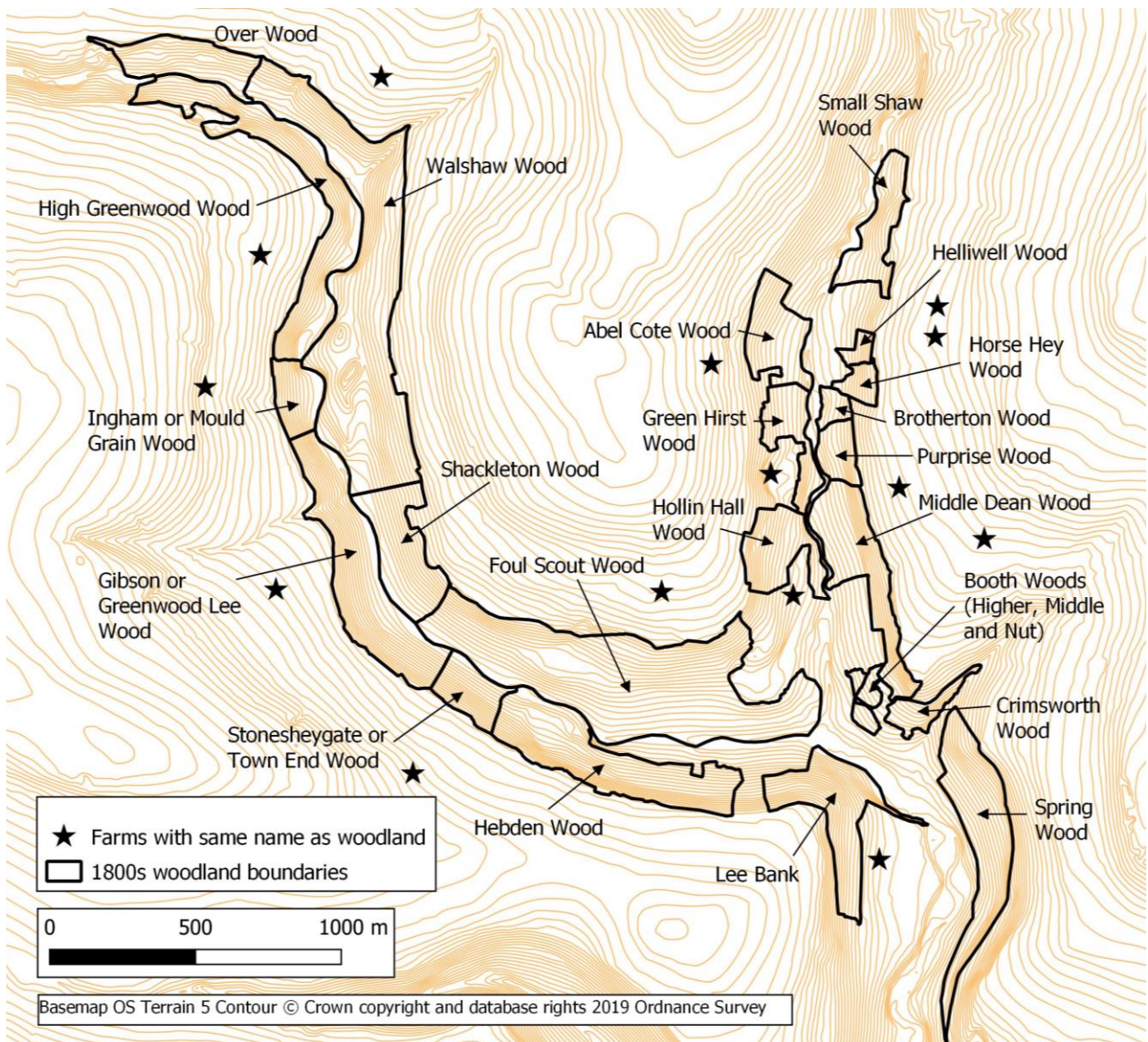


Figure 4: Named woodlands around Hardcastle Crags in the early 1800s. Of the 24 named parcels, 14 share a name with an adjacent farm. These farms are marked on the map. 5m contours show the steepness of the wooded valleys and the relatively flat farmland above.

It is not known over what period of time all the parcels of woodland left the ownership of the Manor of Wakefield, but it was almost certainly part of the more widespread evolution of land tenure during the late medieval period. The 15th century saw the dispalement and subdivision of nearby Erringden Park in 1451, with the land being divided between seven tenants (Smith, 2018). The Forest of Sowerbyshire was never legally disafforested, but its relevance gradually eroded due to changing economic conditions and the Manor of Wakefield encouraging tenants to take in land.

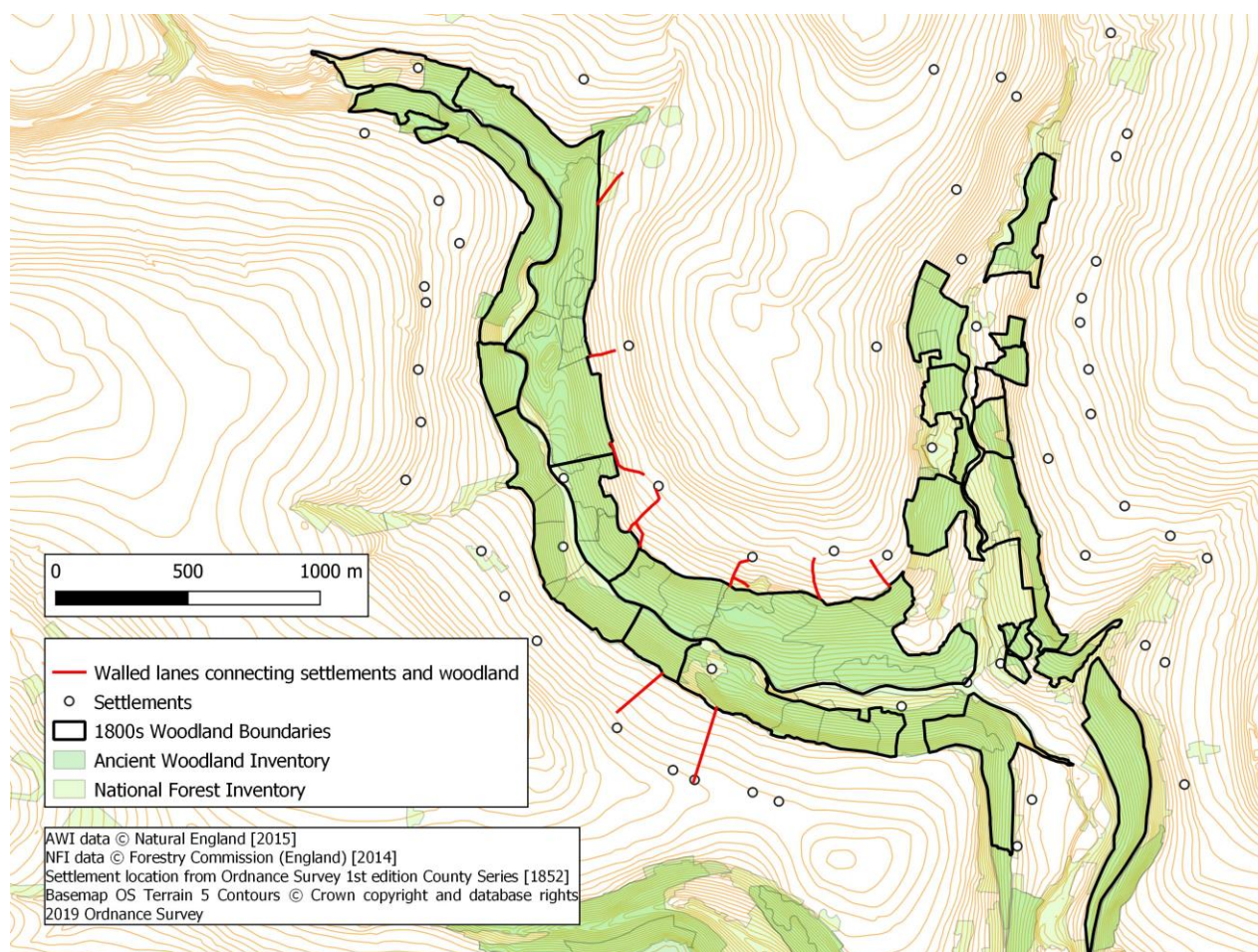


Figure 5: Settlements around Hardcastle Crags in the mid-19th century and walled lanes connecting them to the wooded valleys. Note that the majority of settlements sit at a similar contour.

It is worth considering what *surrounding* field boundaries, marked on 1st edition OS maps, can tell us about the history of stock grazing in the woodlands. Figure 5 shows walled lanes which link the farms above the valley to the woodland below. Some of these may well have served as routes to the fords across the river for people as well as animals, but others simply open into the wooded ground and provide no continuing track down the steep slopes, such as the lane below Owlars (SD97944 429440). These demonstrate that the valley was important as wood pasture.

Maps also show the extent of enclosures made within the original bounds of the woodland. Some of these included farm buildings or settlements, such as Hollin Hall (SD98786 29548), but others do not (e.g. SD98693 30312). Some remain open grassland, and some have

returned to woodland. The map evidence does not show when these encroachments were made, but they demonstrate a trend which may be clarified with archaeological data.

The first direct reference to named woodlands within the Hardcastle Craggs complex is in a document from 1706 detailing the condition and recent economic status of woodlands belonging to the Savile estate. After descriptions of the value and activity of estate woods in Soothill, Hunsworth and Denby, in Wadsworth there is

*“A Wood called Shackleton Wood & Walshaw Wood there [is] no Survey of itt
The tenant has some part of itt for pasturage the rest grows in the rocks
Itt was onnce sold for some small vallue but could not be [??], has not much worth now”*
(NA, DD.SR.30.65)

This terse assessment makes it clear that the woodland was of marginal value to the estate and was not managed for timber or as a coppice, or spring, wood. Account books for the years 1713-1718 give detailed descriptions of maintenance expenses and care given to other woodlands on the Savile estate (NA, DD.SR.205). Shackleton and Walshaw Woods receive no such love.

The next appearance of woodlands in the historical record is the Poor Law Valuation books of the early 1800s. The Heptonstall valuation of 1833, for example, demonstrates that ownership of the woodlands to the west of Hebden Water is very clearly in the hands of local men, and that each named parcel is part of the estate of the farm of the same name. Woodland rateable values are only around 6 or 7 shillings per acre, which is significantly less than the those of pasture and meadow (12s. to £1 17s. per acre) (WYAS(H), SU408).

Medieval iron smelting

As has been mentioned, the Wakefield Court Rolls show that small scale iron production was occurring in Calderdale during the late 13th and 14th centuries, and this is confirmed by numerous pieces of other documentary evidence (Faull & Moorhouse, 1981). A number of records of mounds of bloomery slag support the idea that the woodlands of Hardcastle Craggs were one of the medieval smelting locations.

The 1879 Guide to Hardcastle Craggs states that *“the footpath that leads northward from Hardcastle Craggs passes over a mass of bloomery refuse, about 400 yards beyond the “Craggs”, thus adding another object of interest to Hardcastle.”*

A newspaper article of 1913 entitled "Primitive Iron Smelting: Traces of a bloomery in the Hebden Valley" by J. Needham, begins:

"Nearly thirty years ago, when rambling about in the Hebden valley, I came across the late Thomas Ashworth, a geologist, of Hebden Bridge, and while on the narrow road at the bend just under Walshaw he called my attention to a large quantity of what looked like half-melted iron." This is almost certainly the same site as mentioned in the 1879 Guide, but Needham also mentions a smaller mound of bloomery slag found in Spring Wood alongside the footpath. Similarly, local antiquarian Abraham Newell found in Hardcastle Crag *"the remains of two, or more probably three, ancient furnaces; one of them situated at a place known by the suggestive name of Smithycliffe."* (Newell, 1925: p.211) It is not known where Smithycliffe is located.

In 1989, Heginbottom re-found the mound under Walshaw mentioned by Needham, and also slag near Hebden Hey Scout hostel (Heginbottom, 1997). Both these finds were entered into the Historic Environment Record but without accurate locational descriptions or photographs (HER 6479 & 6485).

Together, these records provide good evidence that the bloomery production of iron happened in the woodlands of Hardcastle Crag, in at least three separate locations. The type of deposit described and the documentary evidence suggest that iron smelting was happening during the medieval period. Firm dating of this activity will probably only be achieved through archaeological investigation.

Woodland management

The first documentary evidence we have of woodland management is in the papers of George Sutcliffe of Stonesheygate Farm, and is astonishing in its detail (HBLHSA, SG57-67).

Notebooks from 1849 and 1880 list every tree both for felling and reserving in Stonesheygate Wood and Ingham Wood. This felling gap of 31 years is useful. In the memorandum of SG57, George Sutcliffe mentions his grandfather felling trees in Ingham Wood, planting replacements, and making a road to lead the timber out. Wood was sold to Hanson's timber merchant of Todmorden. A chap called 'Old Ned', the memorandum states, worked on that project with his father. It is therefore likely that the previous period of felling occurred at some point 30 to 40 years prior to 1849.

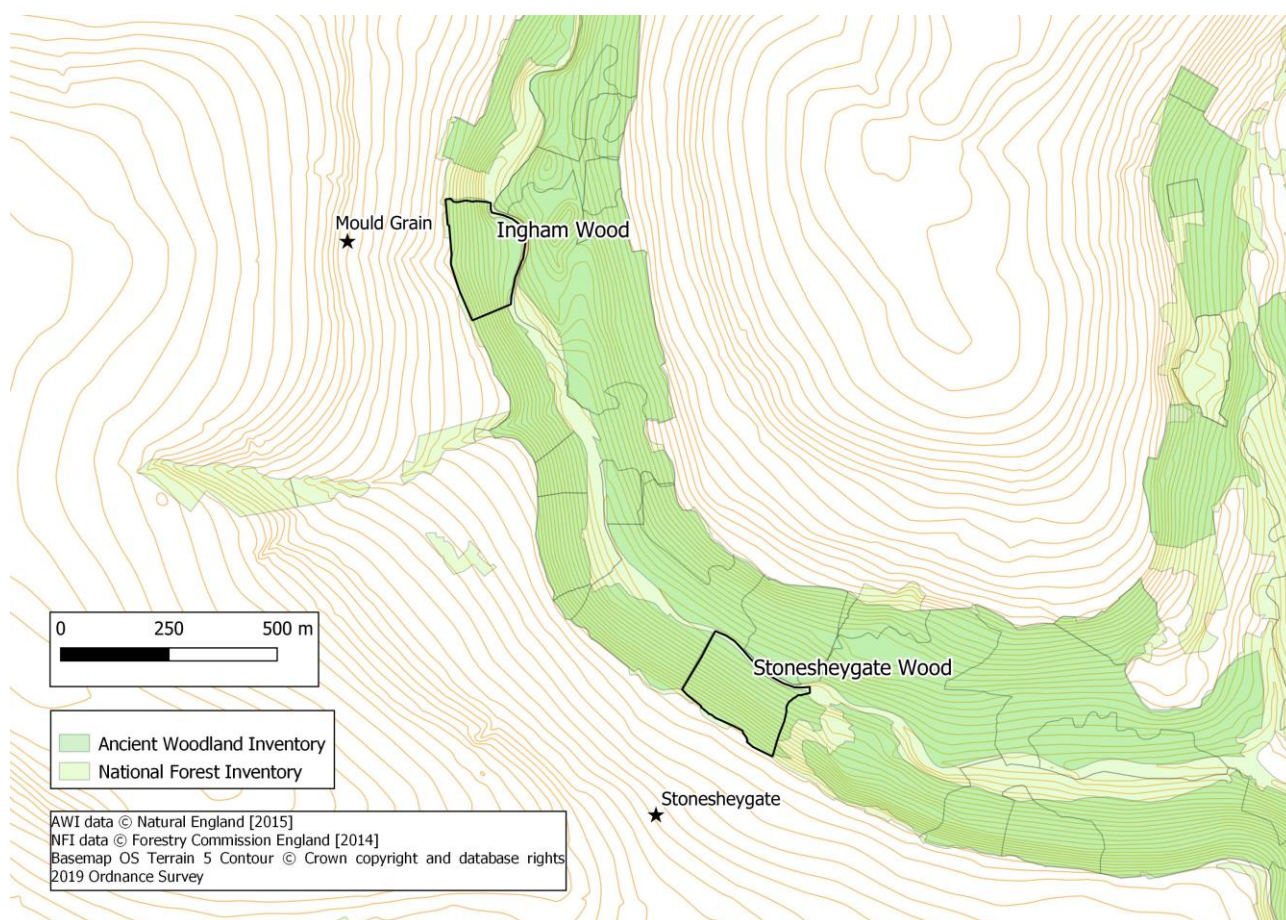


Figure 6: The locations of Ingham and Stonesheygate Woods, as described in the 19th century Stonesheygate Papers (HBLHSA, SG57-67). Ingham Wood is also called Mould Grain Wood. Stonesheygate Wood is also sometimes called Town End Wood. On OS maps from 1893 onwards, Stonesheygate Wood is mistakenly labelled as Mould Grain Wood.

The species mix in 1849 suggests that much of the timber was planted, e.g. larch (*Larix decidua*), sycamore (*Acer pseudoplatanus*) and “scotch fir” (*Pinus sylvestris*), but that plenty of regeneration is going on as well e.g. birch (*Betula pubescens/pendula*), “wicken” (*Sorbus aucuparia*) and “wich azzel” (*Corylus avellana*). The existence of some trees providing many poles (i.e. long thin stems) suggests that they had been cut before and regrown with many stems. This fits with Grandfather Sutcliffe felling and planting in the period 1810-1820.

The evidence supports the tradition of ‘generational felling’: a very heavy thin every 30 to 40 years. In Stonesheygate Wood in 1849, the waivers (trees marked to be left to grow on) were 47% of all the trees in the wood, and made up 55% of the total timber value. Waivers chosen were predominantly of low value (presumably young trees), but some large valuable trees are

clearly also left to grow on or to set seed. Although there are clearly multi-stemmed trees emerging from this management, it is certainly not coppicing.

In 1849, the timber in Stonesheygate Wood was worth significantly more than in Ingham Wood, suggesting better, probably older, trees. It is likely that the two woods were not previously felled in unison. There is probably no planting after the felling in the 1850s: this is suggested by the very small amount of larch left in 1880, no new species appearing in 1880, the increase in “wicken” (rowan, *Sorbus aucuparia*) in 1880 and also the large increase in sycamore (*Acer pseudoplatanus*). This period saw a significant rise in the frequency of sycamore in woods across the South Pennines, which vigorously grew from seed and was more able to withstand the high levels of air pollution than other species.

Timber values are given in 1880 as 13 pence per foot (almost certainly the Hoppus foot, a forester’s measure) for alder, birch and wicken; 15 pence per foot for larch; 16 pence per foot for ash and 18 pence per foot for oak. This means that birch and wicken, being small trees, consistently have the lowest value, presumably only good as fuel. Ash, larch and sycamore make up the second group. Oak trees are consistently the most valuable. In addition to this, oak bark is valued separately, and in 1849 adds around 35% on to the value of the oak trees. This represents 16% of the entire value of all species in Stonesheygate Wood, and 8% of the total value of Ingham Wood. In 1880 its value is not listed, but a note about measures shows that it is still being processed and sold. Oak bark was in high demand from the leather tanning trade, and small tanyards were found in most villages and towns. One of the largest in the locality, certainly during the early 19th century, was at White Lee in Mytholmroyd (WYAS(H), HTH.256).

In 1849, both sales conditions use the same phrase: “That the charcoal be burned in the old Pits, the sods & earth to be dug from the woody ground, the purchasers to be allowed into March to burn the charcoal.” As detailed in the survey results in section 6.4.4, two charcoal burning platforms were found in Stonesheygate Wood, and two were found in Ingham Wood. It may well be that this sentence is part of a template document used for wood sales at this time, suggesting that charcoal production was an assumed, normal part of tree felling.

In 1849, the trees in Stonesheygate Wood were sold to Joseph Sutcliffe of Hebden Bridge for £241 (they were valued at £244 including bark). The trees in Ingham Wood were sold to James Lister of Hebble End in Hebden Bridge for £185 (they were valued at £193 including bark).

In 1880, the trees in Stonesheygate Wood were sold to J. Charnock & Sons for £345 (valued at £342), and those in Ingham Wood to J. Lister for £280 (valued at £272).

The sale process was based on three rounds of sealed bids held in a set location at a set time (see sales poster in Plate 1). The 1880 wood sale, for example, attracted 11 different buyers. They seem to be timber merchants from the surrounding area. In the 1833 Heptonstall Poor Law Valuation book (HBLHSA, SU408) there are three wood merchants listed in Hebden Bridge: Richard Sutcliffe, William Barnes (on Hebden Bridge Old Road) and Samuel Wheelhouse (at Bridge Lanes). Clearly by 1849 there is also James Lister of Hebble End.

The amounts of money made from selling trees in the 19th century was a significant windfall, and was clearly worth the effort of planting and maintaining trees over the 30-40 years of growth.

In his 1849 memorandum, George Sutcliffe also mentions trees being felled in neighbouring woodlands: those belonging to Greenwood Lee (i.e. Gibson Wood) had just been “cleared off”, and there was at least some felling about to happen on “Mr. Mitchell’s land” (i.e. High Greenwood Wood) (HBLHSA, SG57).

WOOL

TO BE

SOLD BY TIG

AT THE HOUSE OF

MR. WM. PATCHETT, CROSS-INN, HEPTONSTALL,

On Wednesday, Dec. the 19th,

At Five o'Clock in the Afternoon,

Subject to Conditions then and there produced,

THE FOLLOWING VALUABLE

TIMBER

Now standing and growing in the woods called Stoneshay-Gate Wood, and Mould-Grain Wood, in Heptonstall, and consisting of the following TREES and POLES, numbered and crossed with the Scribe Iron, to be Sold in Two Lots, viz.

LOT 1. (STONESHAY-GATE WOOD.)

249	Numberd	Oak Trees		124	Oak Poles
99	"	Ash Trees		77	Ash Poles
47	"	Sycamore Trees		54	Sycamore Poles
131	"	Larch Trees		112	Larch Poles
94	"	Birch Trees		85	Birch Poles
31	"	Alder Trees		34	Alder Poles
15	"	Wicken Trees		11	Wicken Poles
4	"	Wich Hazel Trees		4	Wich Hazel Poles
3	"	Scotch Fir Trees			

LOT 2. (MOULD-GRAIN WOOD.)

84	Numberd	Oak Trees		13	Oak Poles
77	"	Ash Trees		47	Ash Poles
25	"	Sycamore Trees		12	Sycamore Poles
102	"	Alder Trees		39	Alder Poles
93	"	Birch Trees		42	Birch Poles
39	"	Larch Trees		11	Larch Poles
3	"	Wicken Trees		1	Wicken Pole
2	"	Elm Trees			

Together with the Bark, Top and Underwood.
The Reserves & Waivers are numbered or rung with white paint.

For further particulars apply to **MR. GEORGE SUTCLIFFE,**
STONESHAY-GATE.

William Garforth, Printer, Hebden-Bridge.

Plate 1: Handbill advertising sale of timber from Stoneheygate and Mould Grain (Ingham) Woods, 1849 (HBLHSA, SG61).

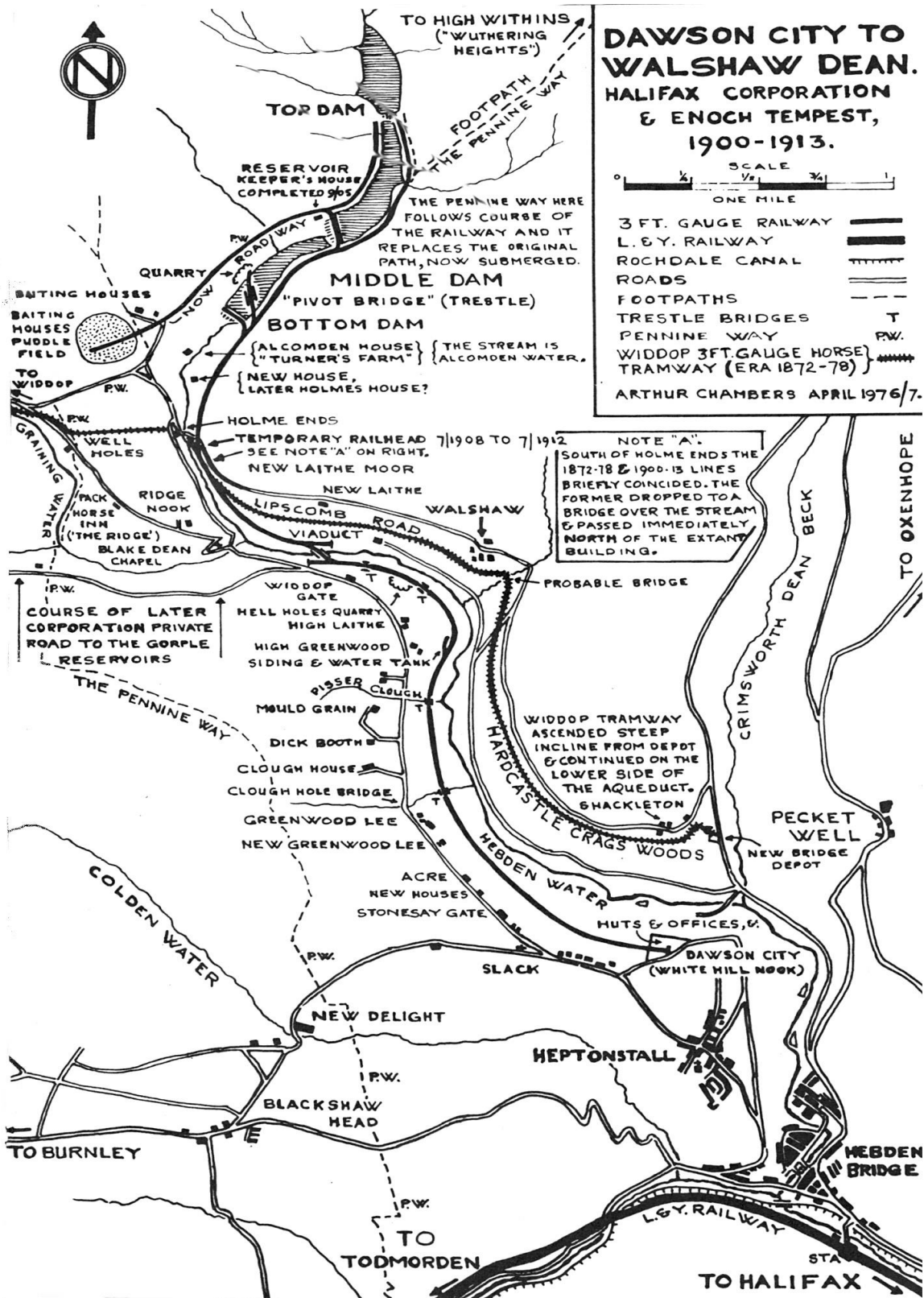


Figure 7: Map drawn by A. Chambers in 1977 showing the route of the railway from Dawson City near Heptonstall to the Walshaw Dean reservoirs. The route runs through the present woodland close to Hell Holes quarry (HBLHSA, WD1).

Hell Hole and the railway

There are a large number of historical records concerning the construction of reservoirs further up the Hebden valley from 1900 to 1908. This activity impacts the woodland survey because the north-western corner of the site is cut by the line of the short-lived railway which connected the construction site with Dawson City near Heptonstall, the home of the navvies working the project. As the map in figure 7 shows, the railway not only runs through the woodland, but past a quarry within the bounds of the survey area: Hell Holes. In the 1879 Guide to the valley, this area is described as “a place where there are numerous deep fissures in the rocks, which seem as if they had been rent open by some mighty convulsions of the earth. These are called “Hell Holes;”.... Some of the fissures at Hell Holes, are said to be mouths of caves leading for a considerable distance under the hill; but we believe none of these have been explored. The phenomenon, however, is a remarkable one, and will repay a visit to the scene of it.”

During the construction of the reservoirs, however, these rocks were extensively quarried and transported up the valley. From 1904 to 1908 much of the infrastructure of the railway and quarry was removed (Fitzgerald, 1967).

Gibson Mill

Although Gibson Mill was not part of the survey area, it is an important part of the history of the valley and the use of the surrounding landscape. From the Gibson Mill Building Design Guide (National Trust, 2005):

“Gibson Mill, built around 1800, is situated within Hardcastle Crags woodland beside Hebden Water. It was one of the first mills of the Industrial Revolution. The mill was driven by a water wheel and produced cotton cloth up until 1890. In 1833, 21 workers were employed, each working an average of 72 hours per week and living in the adjacent mill workers’ cottages. In the early 1900s, Gibson Mill began to be used as an ‘entertainment emporium’ for the local people. The facilities included dining saloons, a dance hall, a roller-skating rink, refreshment kiosks and boating on the mill pond. A hydro-electric turbine, dating from 1926, remains. After the Second World War, the mill slipped into disuse, and was acquired by the National Trust in 1950. It has remained largely unused since.”

Originally called Lord Holme Mill, it was constructed and run by the Gibson family of Greenwood Lee farm, wealthy local yeomen who also owned Gibson Wood. The adjacent locations of farm, mill, farmland and woodland are an excellent demonstration of how the

landscape was used by yeoman-clothiers of the early modern period. Agriculture, textile production, forestry and stone quarrying were all important aspects of how these estates were run, and they were often cheek-by-jowl: one 'unit' with many functions.

Tourism

Hardcastle Crag is an important site in the social history of tourism. As early as the 1860s it served as a destination and beauty spot for industrial workers from within, and outside of, the local area.

J. P. Walker (1993) writes:

"Since the closure of the mill in the first years of the C20 [Sic – Late C19] Hardcastle Crag has developed as a tourist site. This aspect of the property is emphasised by the use of the name Hardcastle Crag rather than any of the other options for naming the property. After the closure of the mill, the buildings were converted for use as a catering establishment. Robinson's Halifax and District Directory for 1905-6 records "Lord Holme restaurant, Hardcastle Crag". To serve this increase in the leisure industry, other buildings were erected in the woods of Hardcastle Crag. The best recorded of these was Mrs. Emma Greenwood's tearooms; also known as The Chalet. Downstream from Gibson Mill, perhaps two or three hundred yards, is a wooden building which was once a catering establishment. This building is on the left hand bank looking upstream, and behind it is a patch of flat land. In the 1920s and 1930s swings and roundabouts could be found here for the amusement of visitors and it is said that the last Abraham Gibson, "Young Ab" as he was called, ran a string of donkeys along this stretch, as on Blackpool sands."

The devotion of the public to the wooded valley as a site of recreation is demonstrated by organised resistance to three separate proposals during the 20th century from the Halifax Water Board to flood the upper part of the Hebden valley to form a reservoir. Hardcastle Crag Preservation Committee was created, and it collected extensive petitions from interested clubs and associations from across the north of England before taking their case to Parliament. The battles were all successful and formed part of an emerging national culture for protection of landscapes valued for recreation (HBLHSA, uncatalogued box of documents).

Within this context, the last heir of the Gibson line left Lord Holme Mill and surrounding woodland to the National Trust in his will. This pledge was joined by land from the Savile estate, and in 1950 the National Trust became the major landowner in the valley. To the present day, Hardcastle Crag remains a very popular destination for recreation.

5.2 Light Detection and Ranging (LiDAR)

Unfortunately there are currently no Light Detection and Ranging (LiDAR) data available for this site.

5.3 Archaeological Background

Prior to this investigation, 119 monuments had been recorded within and immediately outside of the Hardcastle Crag survey area, some of which appear on more than one database.

These are listed in Appendix 1, and shown in figures 8 and 9.

The monuments consist of 62 Grade II or II* Listed Buildings under statutory protection (10 of which are also on the West Yorkshire Archaeology Advisory Service Historic Environment Record). The vast majority of these are stone farmhouses on the hillsides above the woodlands of the valley dating to the 17th or 18th centuries. Those recorded within the survey area include Gibson Mill and associated buildings, some farm buildings in woodland enclosures, and two bridges.

In addition, another 12 features appear on the Historic Environment Record. These include farm buildings, find spots and historic place names.

The Pastscape database contains 3 features not mentioned in other records.

The National Trust maintains its own heritage database, which contains 50 records within its property at Hardcastle Crag. They include farm buildings, Gibson Mill and associated buildings, remains of the railway route in the north-west corner of the site, and 27 charcoal burning platforms.

No Scheduled Monuments, Registered Parks and Gardens or Battlefield Sites exist within or close to the survey area.

The earliest evidence for activity is a cup-marked carved stone to the south of Gibson Mill, demonstrating a Bronze Age presence in the valley (HER 8267). This stone was not found during the field survey.

The only Roman evidence in the locality is a find of two coins (2nd century AD) at High Greenwood Farm in the 18th century (HER 1784).

Activity during the early medieval period is represented only by a place name: Walshaw, a possible British settlement site (HER 4714).

Later medieval features show a slightly wider variety. The fourteenth century vaccary of Small Shaw (HER 4749) demonstrates agricultural activity, along with Shackleton being the likely site of medieval settlement Shackletonstall (HER 4924).

The remains of two bloomery iron smelting sites are likely from this period (HER 6479 & 6485), and it is probable that some of the numerous charcoal burning platforms within the woodlands of Hardcastle Crag date to the same period as the bloomeries.

The post-medieval period is well represented by the many stone farmhouses of the area, dating from the 16th to the 19th centuries. There are also four milestones and waymarkers, bridges, remains of the Blakedeane railway, Gibson Mill and associated buildings, and other structures associated with the later recreational history of the valley. These features almost exclusively represent archaeology in and around the woodlands, rather than archaeology of the woodland. Whilst providing much information about the changing use of the surrounding landscape and the socio-economic context, they do not shed light on how the woodlands were managed or divided. It is, however, possible that a number of the charcoal burning platforms within the woodland originate during this period.

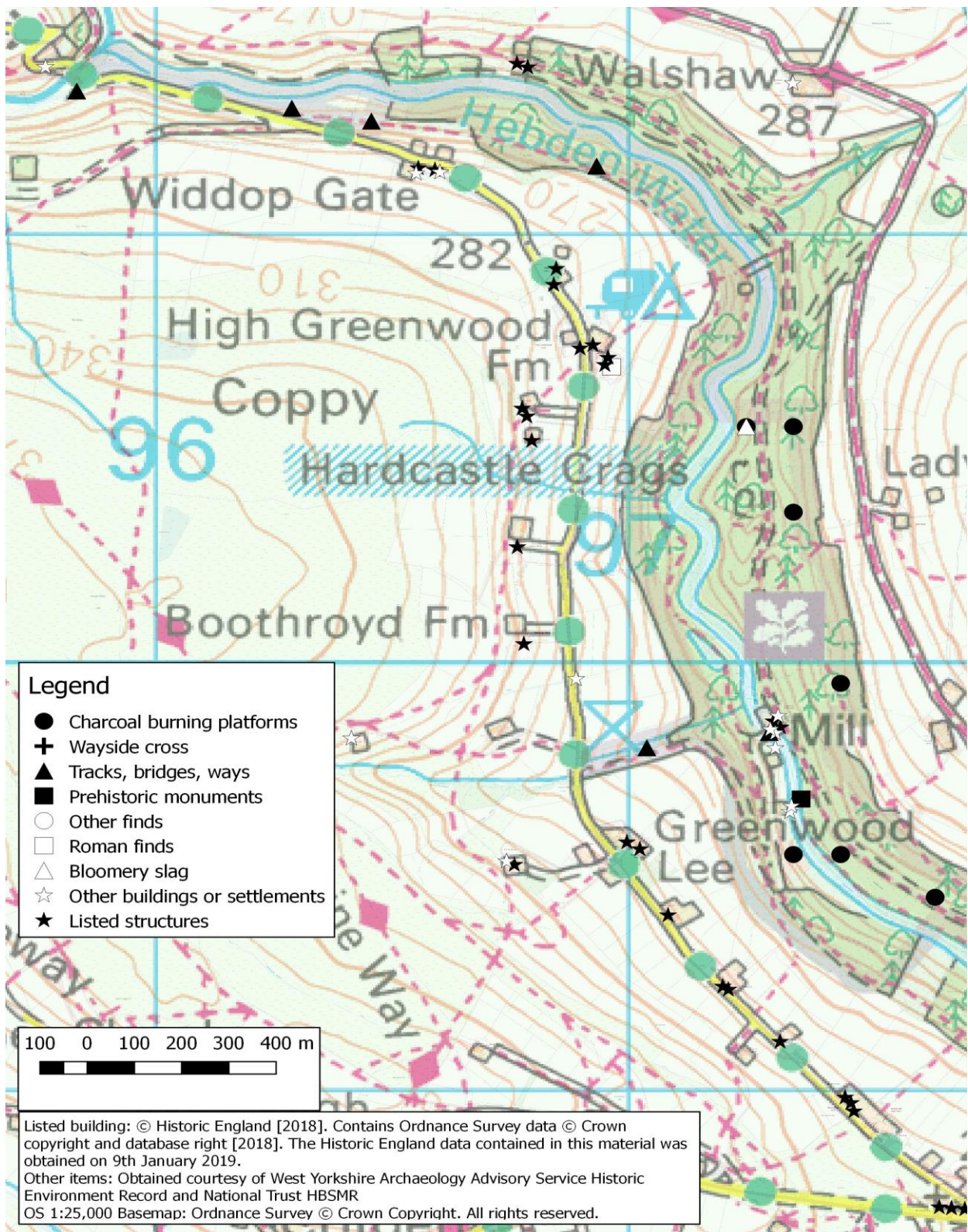


Figure 8: Features recorded on monument databases in the western section of Hardcastle Crag.

Celebrating Our Woodland Heritage, Hardcastle Crag, Hebden Bridge:
An Archaeological Woodland Survey



Figure 9: Features recorded on monument databases within the eastern section of Hardcastle Crag.

6.0 Survey results

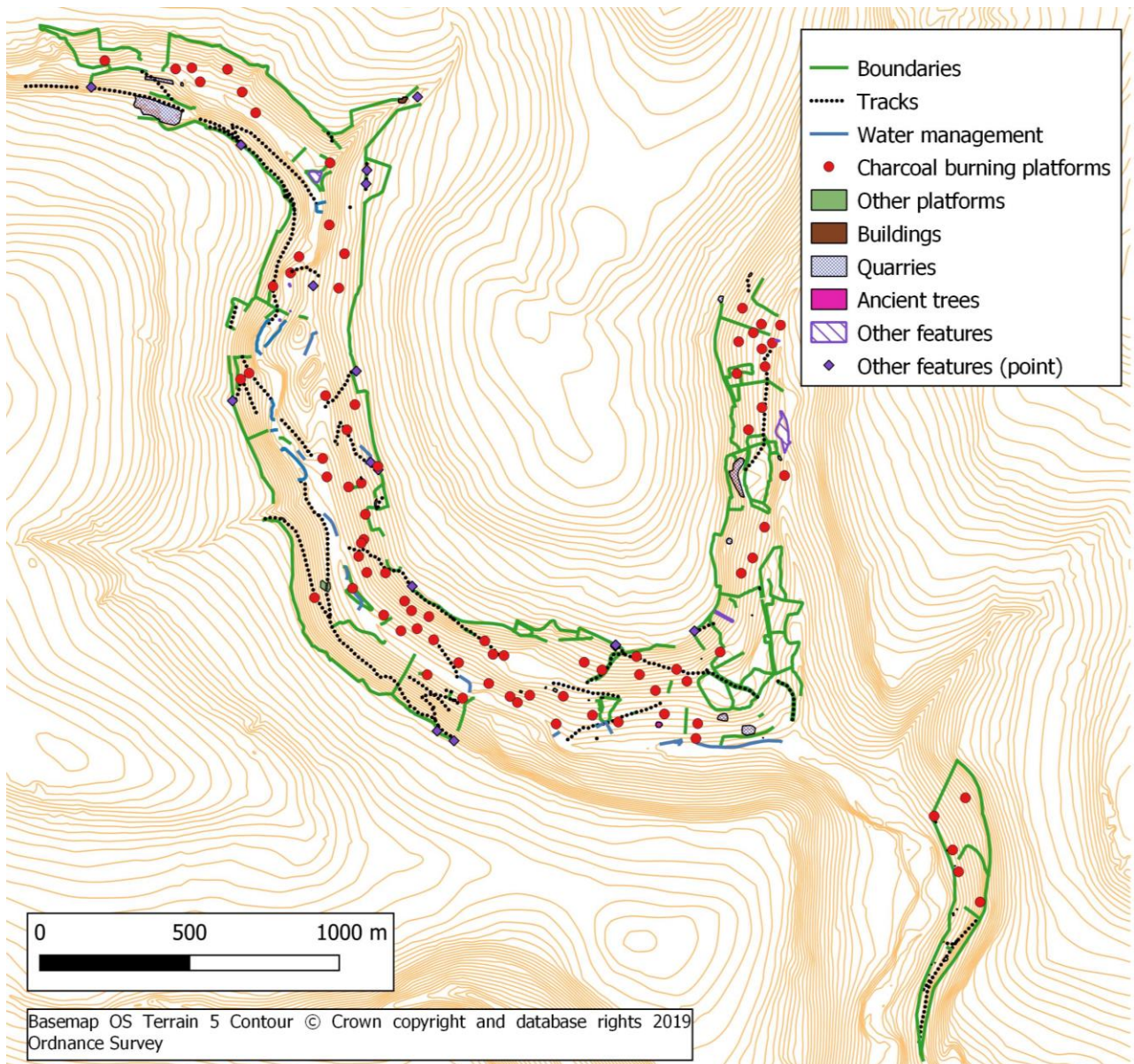


Figure 10: Total distribution of features of archaeological interest recorded during the woodland survey.

During the survey 301 features of archaeological interest were recorded, of which 299 had not previously been recorded. The following discussion serves to summarise the findings of the survey by period. A detailed dataset, including feature-specific management recommendations for each of the recorded features can be found in Appendix 2. The following maps show areas of the large woodland complex in more detail.

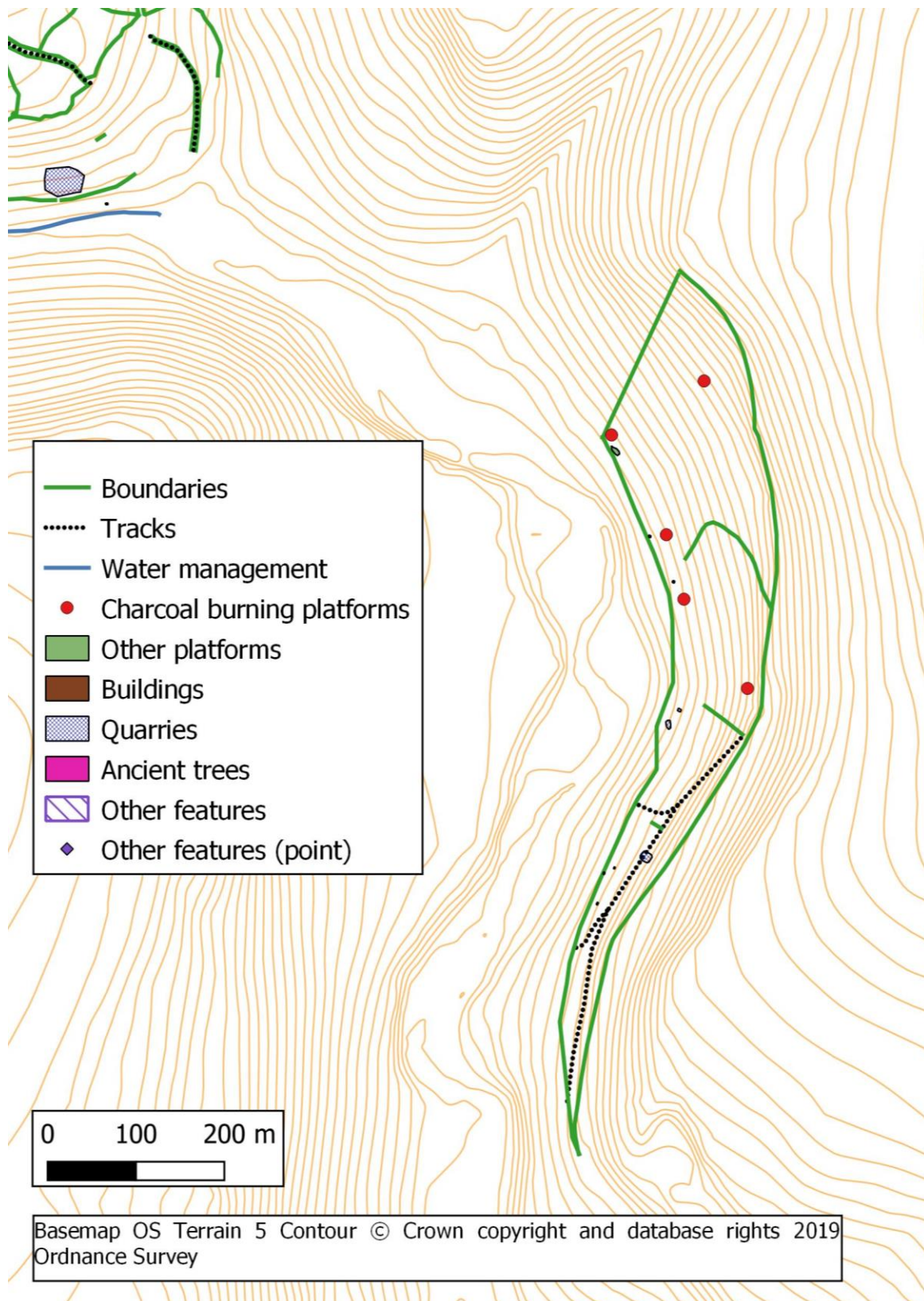


Figure 11: Distribution of archaeological features recorded during the survey in Spring Wood.

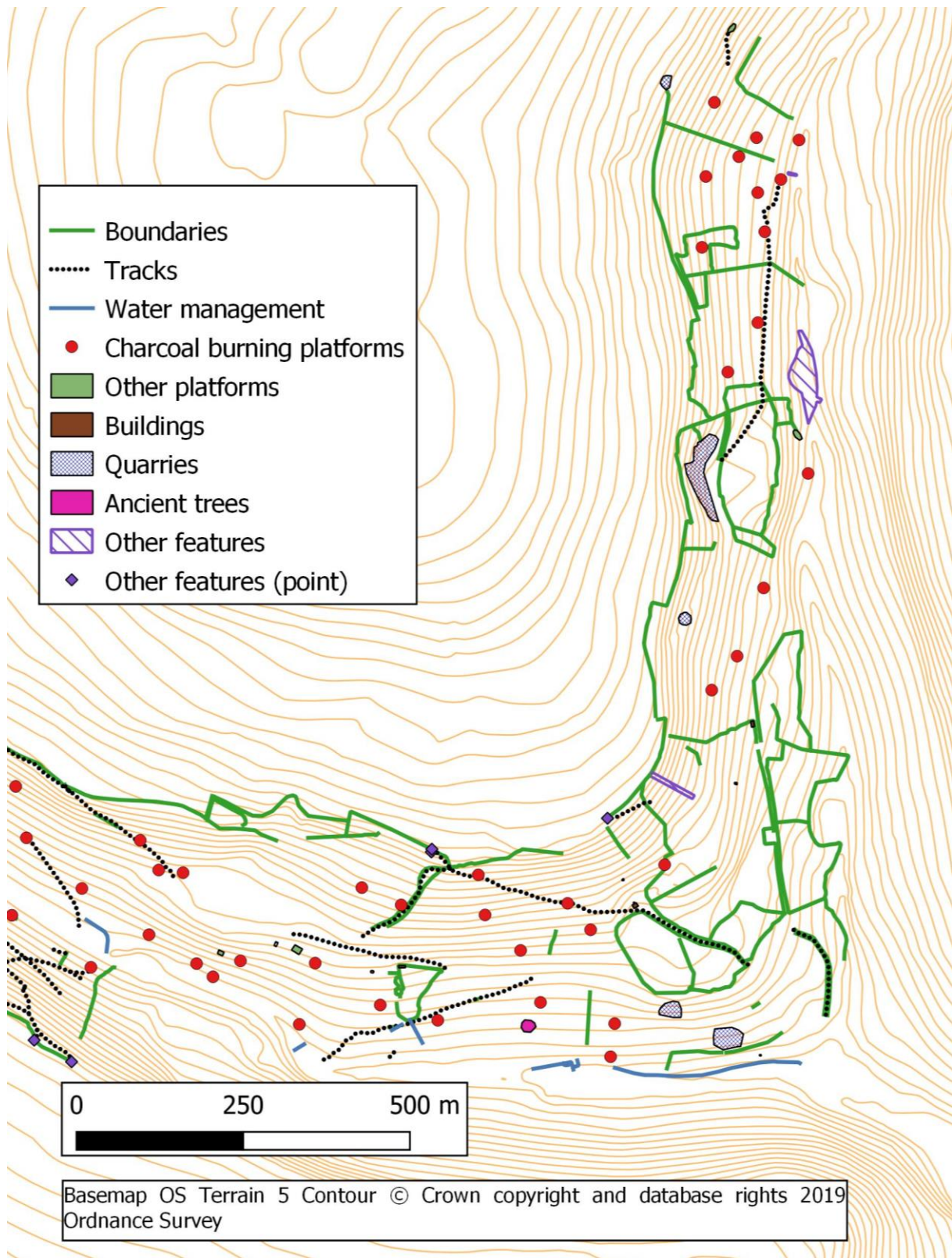


Figure 12: Distribution of archaeological features recorded during the survey in Abel Cote, Green Hirst, Hollin Hall and the eastern part of Foul Scout Woods.

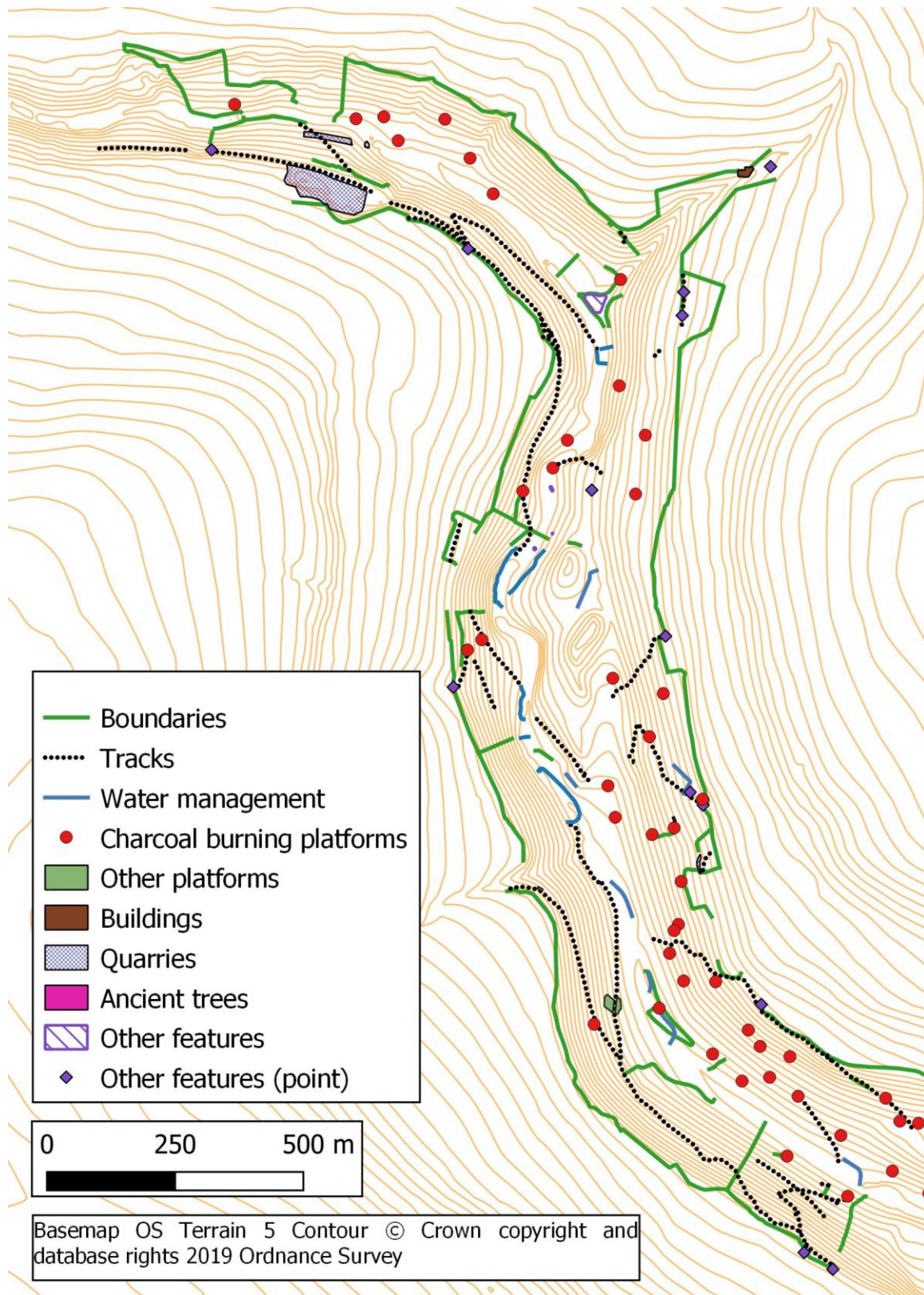


Figure 13: Distribution of archaeological features recorded during the survey in Foul Scout, Shackleton, Walshaw, Over, High Greenwood, Ingham, Gibson and Stonesheygate Woods.

6.1 Prehistoric

Although a Bronze Age cup-marked stone appears in the Historic Environment Record, this was not found during the survey, and no other features of likely prehistoric origin were discovered.

6.2 Romano-British

No evidence for Romano-British activity was identified during the survey.

6.3 Medieval

There were very few features recorded which were confidently dated to the medieval period, but there were many recorded which *could* be medieval or post-medieval. This is indicated in the text below and will be discussed again in the post-medieval section.

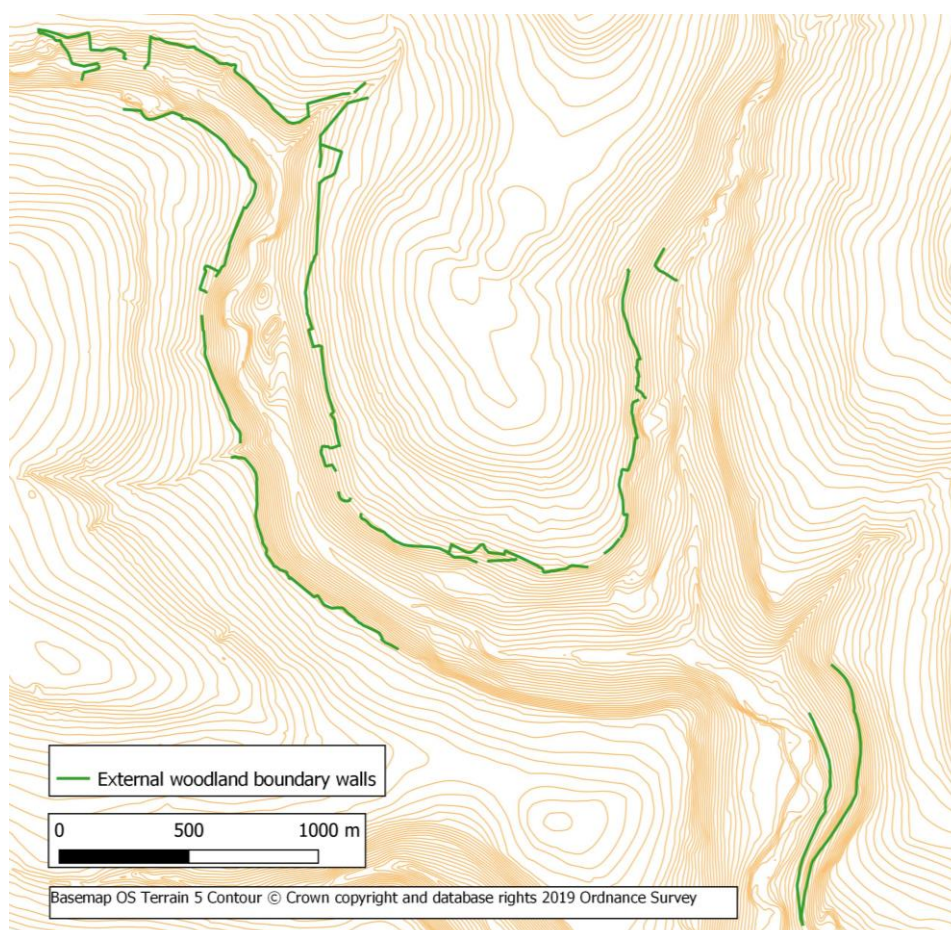


Figure 14: Dry stone walls recorded as the external boundary of the woodland either at present or on historic maps.

6.3.1 Boundaries

A total of 94 dry stone walls were found across the survey area, the majority of which define the outer boundary of the woodland where it borders on open farmland. As mentioned in the introduction, for nearly all of its length this boundary runs along a natural break in the slope, from relatively flat fields above to the steeper wooded valley sides below (Figure 14). It is highly likely therefore that medieval boundaries also ran along these lines, although the survey showed them to consist of a wide variety of dry stone walls: in height, style of build, size of stone and condition. It can be said with confidence that most of the standing walls are post-medieval in their current state, and that some of the more dilapidated stretches may date to the medieval period, but it cannot be proven.

There is another category of dry stone walls observable in the survey data, which run straight up and down the valley sides, and are built in a particular style. They tend to be low, constructed as a single skin with large, rough boulders which have probably been collected from the surrounding slopes rather than quarried (Plate 2). They do not look like they were built to be stock-proof, and are not arranged as enclosures. They are also all incomplete and in poor condition, clearly not having been maintained for a long period of time. The majority of these stretches correspond exactly to divisions between named parcels of woodland in the early 1800s (compare Figures 15 and 4). It is suggested that these stretches may have been built in the 1400s as part of the process of dividing up the woodland (see section 5.1).

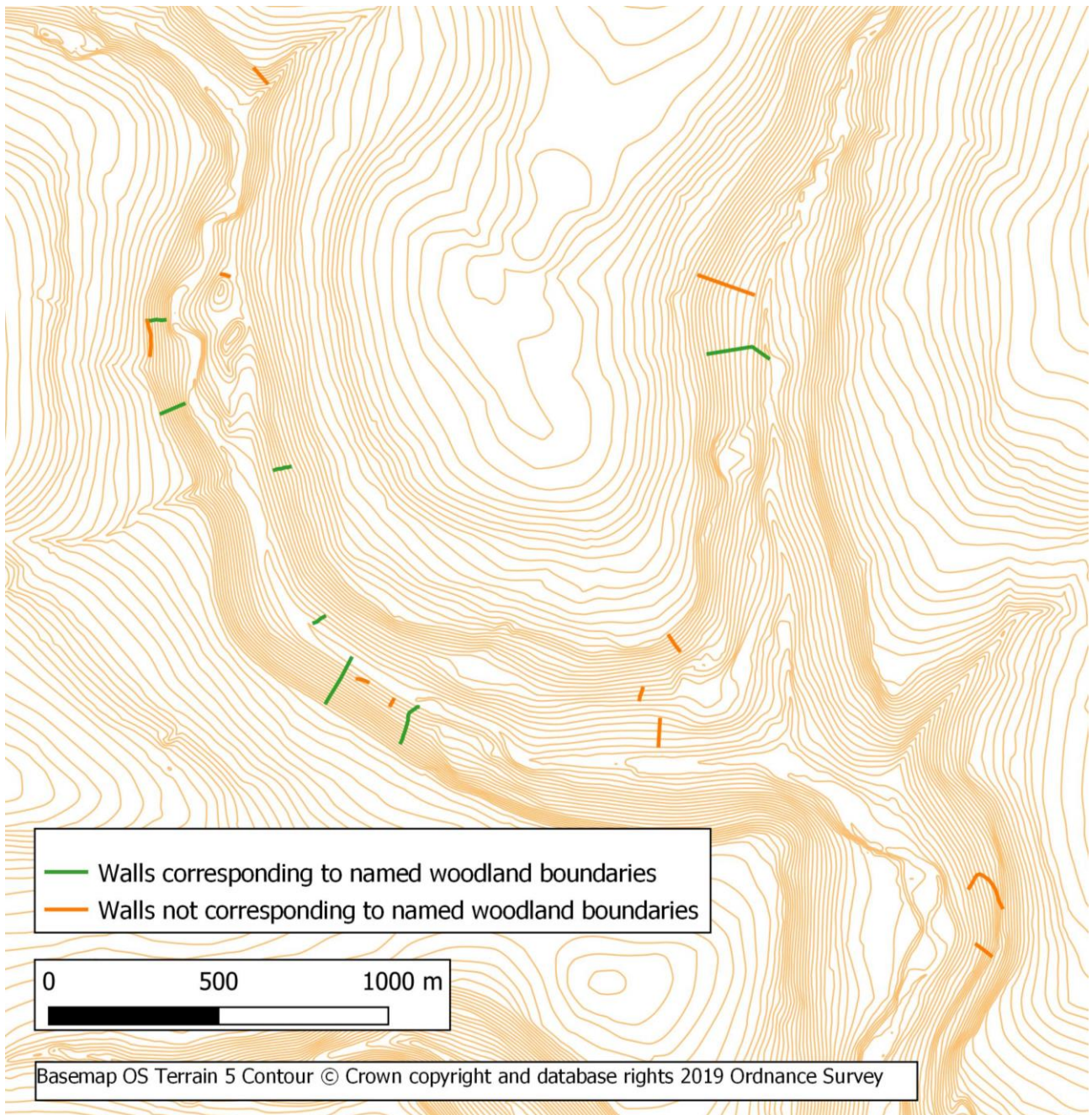


Figure 15: Low, rough boulder walls representing current or lost woodland divisions.

There are also a small number of short stretches of dry stone wall which match the style of these putative land divisions, running up and down the steep slopes, but which do not correspond to known boundaries between landholdings, and also do not appear to be part of enclosures (figure 15). This raises the question of whether these walls were also originally ownership boundaries, and that the woodlands were at one time split into smaller units, some of them becoming amalgamated over the centuries.



Plate 2: Typical low, rough boulder wall forming boundary between named woodlands (Site FS017). Image copyright Pennine Prospects.

Within the outline of the wooded valley, there are around 17 identifiable areas of enclosure (Figure 16). Some of them remain open, grazed grassland to this day, whilst others have returned to woodland. The enclosures are so different in size, shape and location that it is likely that they do not originate from a similar point in time, but have been created piecemeal through the centuries. It can not be shown conclusively that any of these enclosures have a medieval date, but there are some clues which suggest that some of them may do. For example, the fields directly uphill from the present National Trust car park, centred on SD98667 29228, are bounded by “true” orthostat stone walls (Site FS003). These are characterised by large boulders sunk end-on into the ground in a double or single row, often with smaller boulders placed on top to create a somewhat stock-proof boundary. This is an extremely rare occurrence in this part of the Pennines. Investigations of settlement and field systems further to the north in the Yorkshire Dales have found evidence that this style of wall

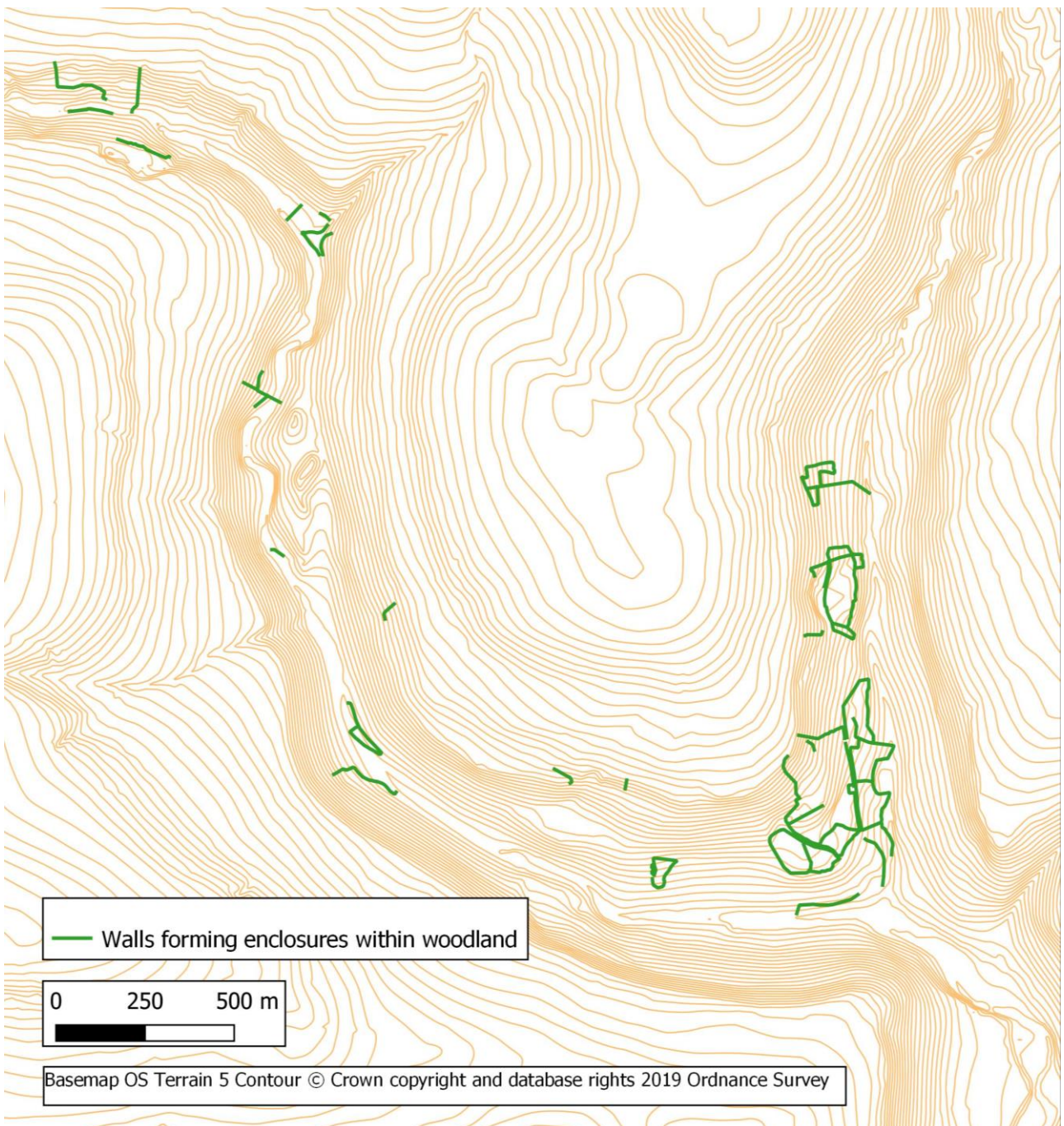


Figure 16: Dry stone walls forming enclosures within the woodland

suggests a medieval or even earlier date (Hodges, 1991). This is supported by the sinuous field boundary lines and arrangement around a major track leading to the likely medieval settlement of Shackleton (HER 4924).

Another form of enclosure consists of flat areas of land alongside the rivers at the valley bottom. These are usually small and irregularly shaped (e.g. Site FS138 at SD97404 29586). The typical dry stone wall surrounding these patches of potential grazing land is low (around 0.5m high), single-skinned, made from large rough boulders and in a poor condition (Plate 3). The wall style alone provides a very tentative suggestion that this type of enclosure dates from the medieval period. These walls can be contrasted with the later walls surrounding enclosures with settlements, e.g. Hollin Hall (SD9879 2956) and Over Wood (SD9677 4140), which are much higher and use smaller stones in a double skin construction. Although the settlement and clearance dates are unknown, these walls associated with settlements are, in their current form, likely to be post-medieval.



Plate 3: Low boulder wall around flat area adjacent to river south of Gibson Mill, forming an enclosure which is now wooded (Site FS138). Image copyright Pennine Prospects.

6.3.2 Tracks

The survey recorded 47 different tracks. This did not include the two main arterial tracks, one running up each valley approximately parallel to, but above, the main watercourses (Figure 17). These were not recorded because modern repairs and widening have removed virtually all trace of archaeological material, with the exception of a short stretch in Foul Scout Wood which may have been the original route of the track. Although impossible to date, it is thought that these important routes were probably in existence, in some form, during the medieval period. Their association with a medieval iron bloomery site and numerous charcoal burning platforms supports this idea.

The remaining recorded tracks can be roughly divided into two categories. The first consists of routes which clearly link to a settlement on the hillside above and snake down the valley side to either an arterial track or a river crossing. These are often rubble or stone surfaced and have stretches supported by stone revetment walls. Examples are Sites IH11 and FS026. Again, they cannot be dated accurately, but routes across the large valleys to and from known medieval settlements strongly suggests that at least some of them were used during the medieval period.

The other category can be described as small, rough, usually unsurfaced paths which wind through the woods, often with no obvious settlement or major track as a point of departure (e.g. FS085; Plate 4). These are interpreted as ways used whilst working in the woodland: for extracting wood, timber or charcoal, or stone from quarries. They are generally narrow and tend not to have any stone revetment walls. It is not possible to put firm dates to the vast majority of these ways, but it is entirely possible that they date to the medieval period.

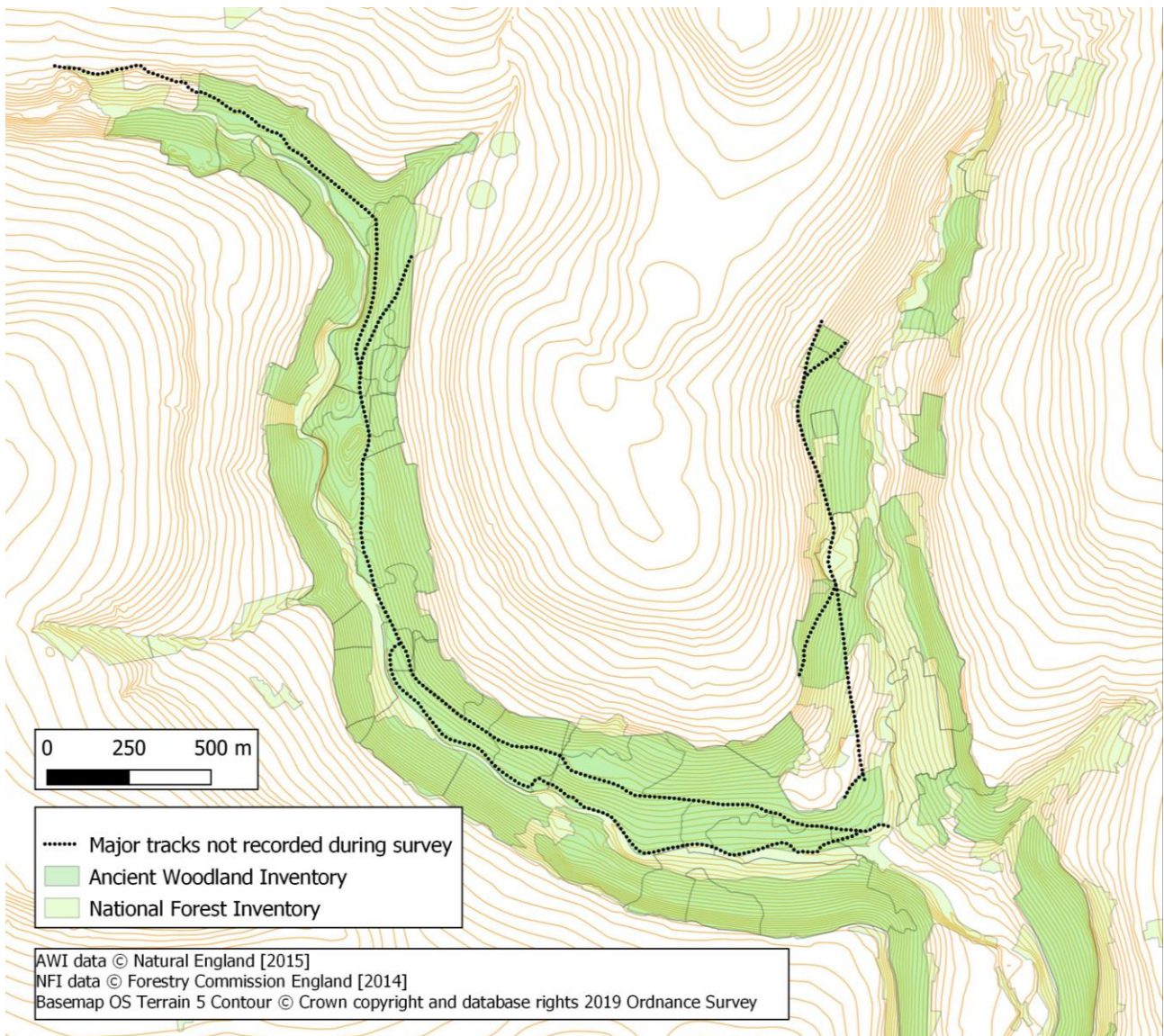


Figure 17: Tracks which were not recorded during the survey, but are highly likely to be historically significant.

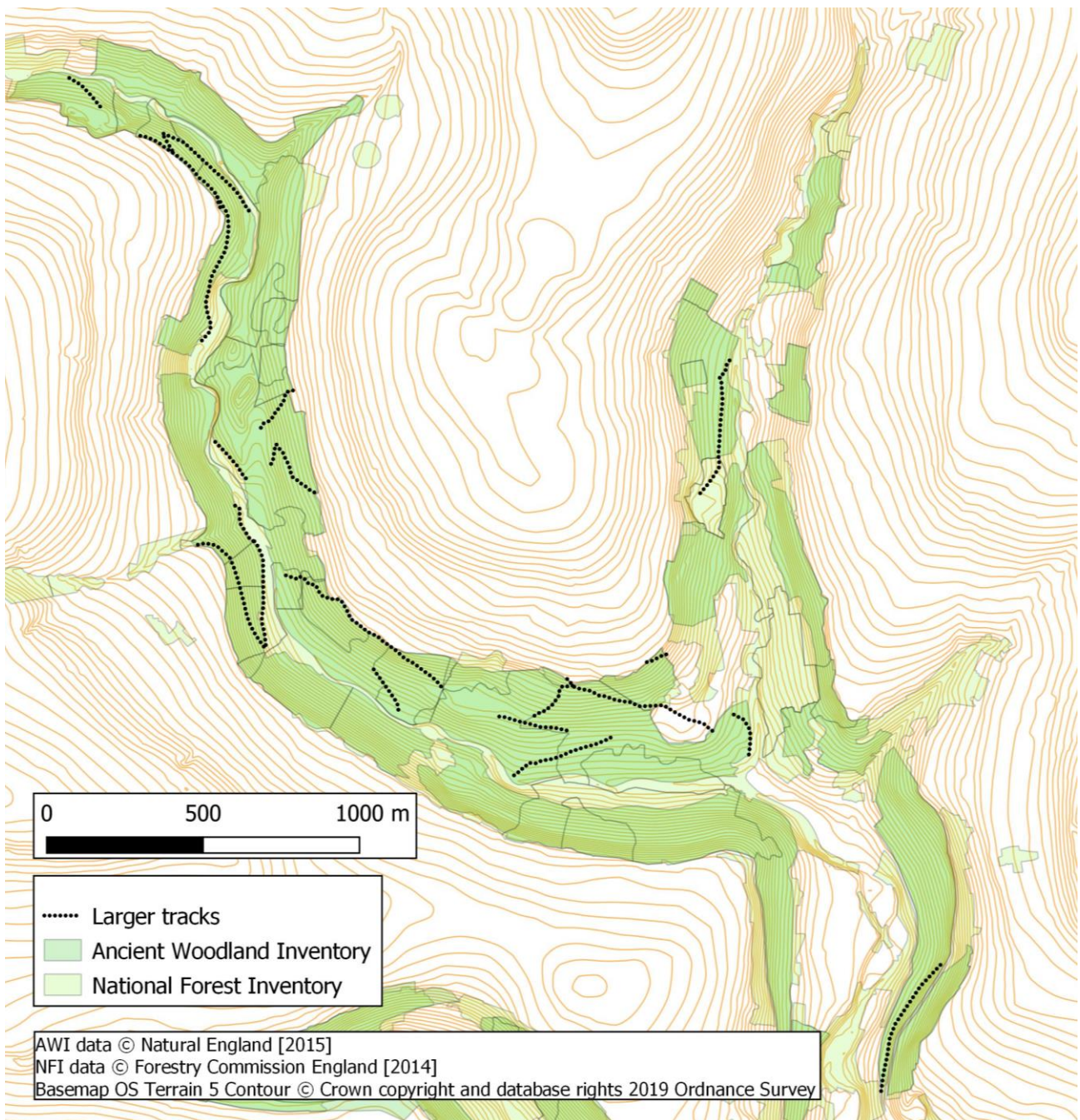


Figure 18: Larger tracks within the woodland, generally 2m-3m wide with rubble or stone surfacing.

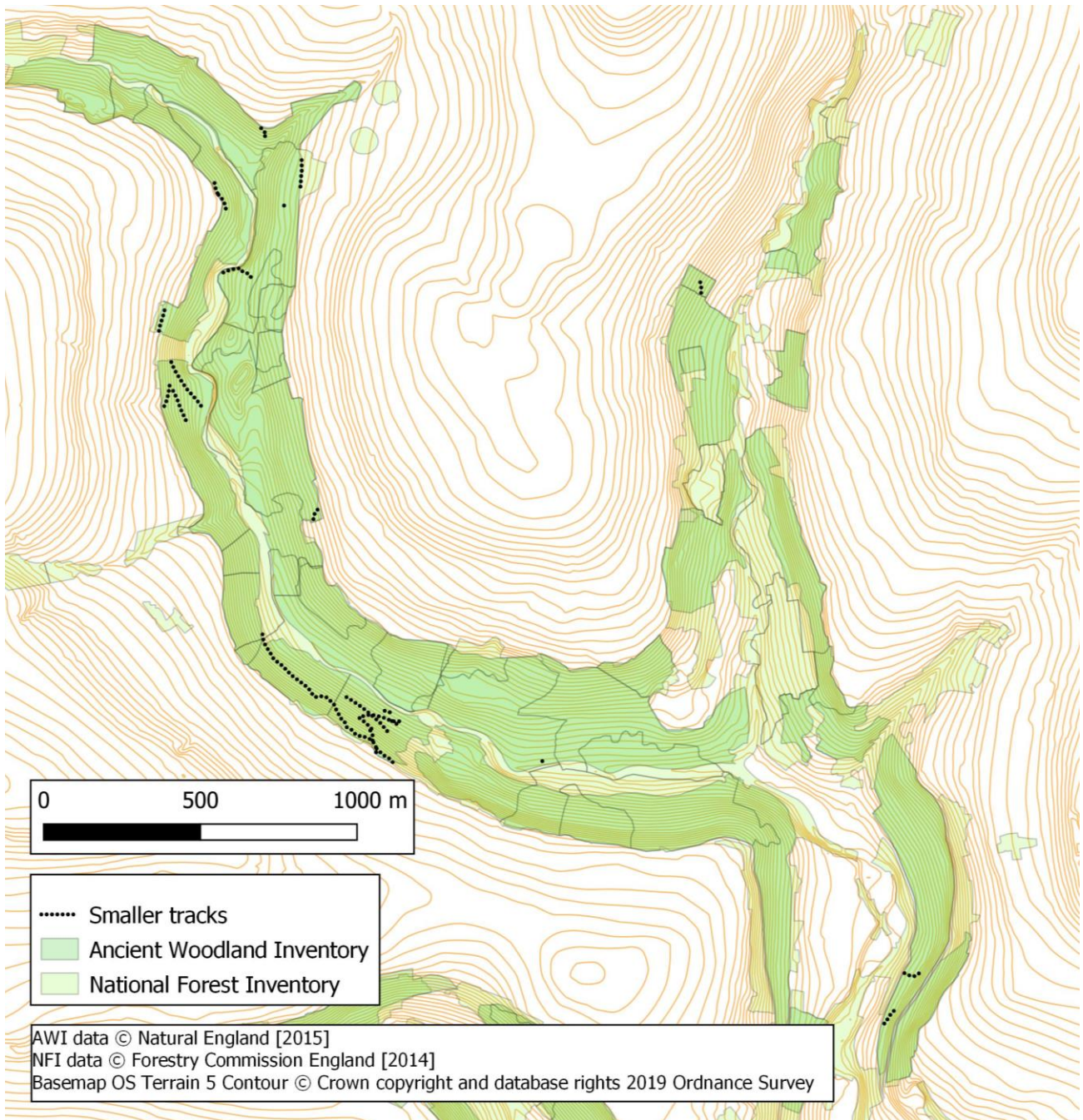


Figure 19: Smaller tracks within the woodland, generally 1m-2m wide and not surfaced.



Plate 4: Worn, narrow path through woodland potentially used for the movement of timber and wood products (Site FS085). Image copyright Pennine Prospects.

6.3.3 Wood pasture

There are numerous gateways and openings in the woodland boundary wall, providing a way between trees and open pasture. These support the historical record of letting stock graze in the woodland. Some look more like routes only for humans, with thin squeeze stiles (e.g. below Ladyroyd Farm, Site FS117), but others have stang posts for bar gates and don't connect to an obvious communication route (e.g. below Shackleton, Site FS098; Plate 5), suggesting that they were used primarily for stock. As with many features recorded during this survey, these could have a medieval or post-medieval origin.



Plate 5: Gateway with stang posts between walled lane and woodland. Below Shackleton, Site FS098). Image copyright Pennine Prospects.

6.3.4 Iron smelting

As discussed in section 5.1, numerous people have reported finding mounds of bloomery slag in the woodlands of Hardcastle Crag. At least two of these sites lie within the survey area.

The site in Spring Wood described by J. Needham in 1913 was not located. The site in Walshaw Wood described by Needham, Heginbottom in 1989, and probably by Newell in 1925, was located. It was identified by finds of tap slag and charcoal in a low mound cut by the modern track to Over Wood Cottage (Site FS084; Figure 20). Slag and charcoal finds in the bank cut by the track continue for another 20m to the west (Plate 6). Immediately to the north of the low mound is a small pit which may be associated with smelting, measuring approximately 1m by 2m, and 0.3m deep. A sample of the slag (Plate 7) was tentatively identified (based on visual evidence) as bloomery slag by an archaeometallurgist (D. Starley, pers. comm.).

As discussed in section 5.1, there are several records of iron smelting in the Upper Calder Valley during the late 13th and 14th centuries. The finding of a mound of bloomery slag supports the theory that small-scale iron production occurred in Hardcastle Crag during the medieval period. Further investigation, including excavation and dating of the site would be required to confirm this.

The extraction of iron ore from surface outcrops in the vicinity of reported bloomery sites is supported by a number of features identified in Spring Wood. These small 'scoops' out of the hillside, measuring 2m-3m, lie roughly along the same contour, and are far smaller than known stone or clay pits. They may be the remains of ore extraction. (Sites SW05, SW06, SW16, SW17 & SW19; Figure 21)

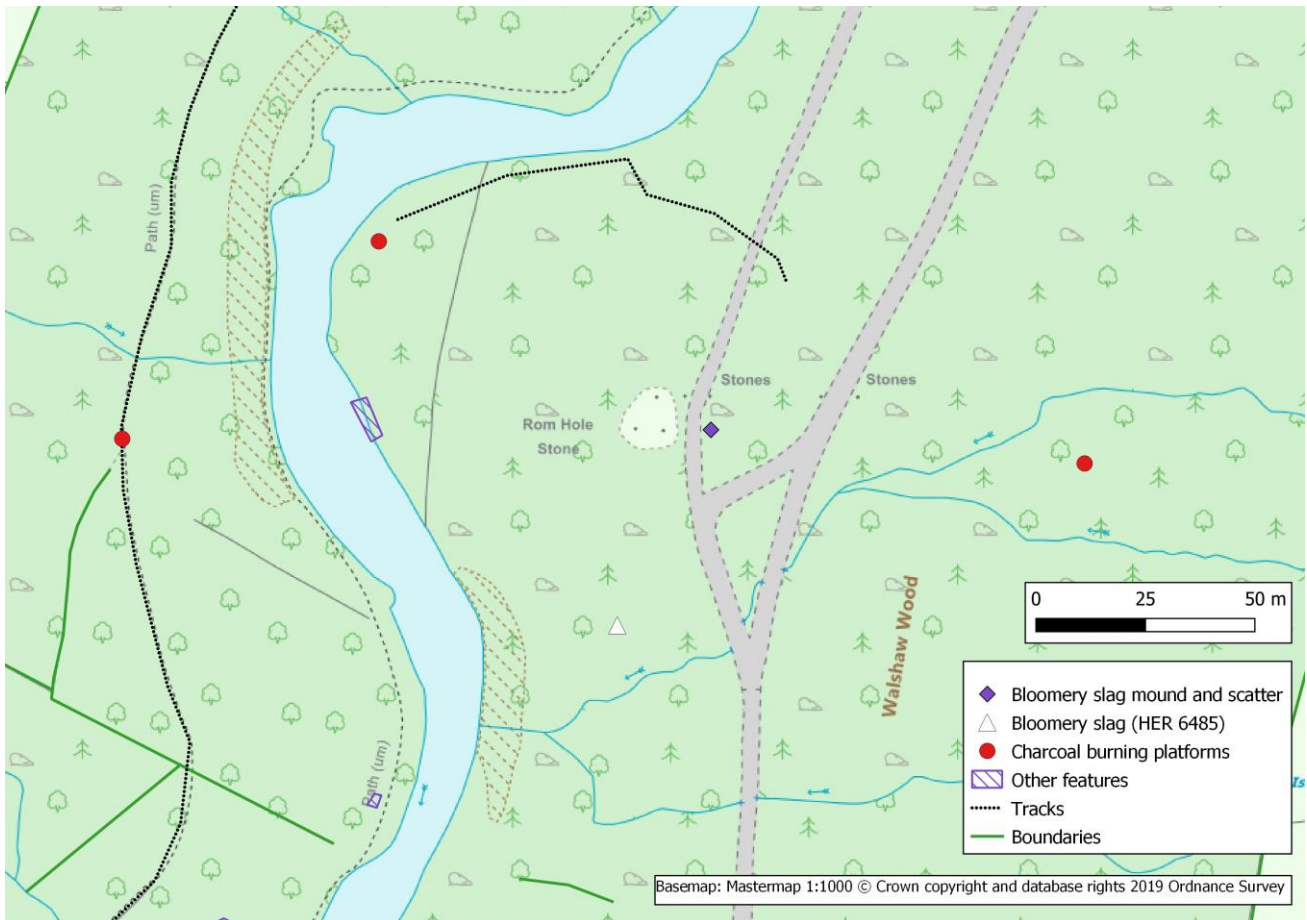


Figure 20: Location of bloomy slag mound and scatter in Walshaw Wood (Site FS084). The triangle marks the grid reference given for the HER record of Heginbottom's slag mound found in 1989. They are almost certainly the same feature.



Plate 6: Bloomery slag and charcoal found in the cut bank at the ranging pole and 20m along the track (Site FS084). Image copyright Pennine Prospects.



Plate 7: Piece of slag from Site FS084.



Plate 8: 'Scoop' out of the hillside in Spring Wood (Site SW17). Image copyright Pennine Prospects.

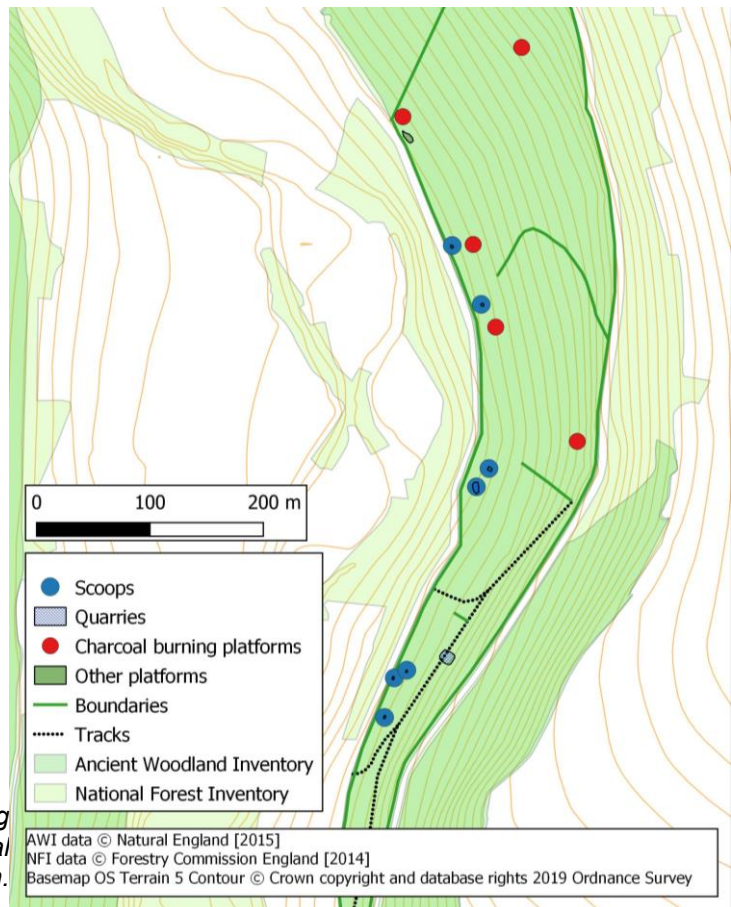


Figure 21: 'Scoops' out of the hillside in Spring Wood, possible sites of small-scale mineral extraction.

6.3.5 Charcoal burning platforms

A total of 84 charcoal burning platforms were recorded during the survey. This makes Hardcastle Crag one of the most impressive charcoal producing landscapes recorded in West Yorkshire (Figure 22). The platforms all have a similar morphology: cut into the hillside and built up on the down-slope to create a level area which is always circular or near circular, with diameters of between 6m and 8m (e.g. Plate 9). The characteristic shape is one diagnostic feature. Another is finding charcoal-rich soil, particularly on the downhill side where waste was scraped and dumped from the main platform. This can take the form of individual fragments, but more reliable is a dark soil containing a large amount of charcoal dust. A small number of platforms had stone revetment walls on the downhill side. Many were associated with tracks or paths, either leading to the platform, adjacent to the platform, or running right across the centre. A small number were located close to watercourses, but this was the exception rather than the rule.



Plate 9: Charcoal burning platform (Site FS074) bisected by stone-surfaced track leading to Shackleton (Site FS002). The surface of the causey stones lies around 20cm below the surface of the platform, suggesting that the stones were laid when the platform was in existence, and likely that the track had worn down for a long time after the platform was built. There is no evidence of high temperature burning on the causey stones, suggesting that charcoal was not made on this site after the stones were laid. Image copyright Pennine Prospects.

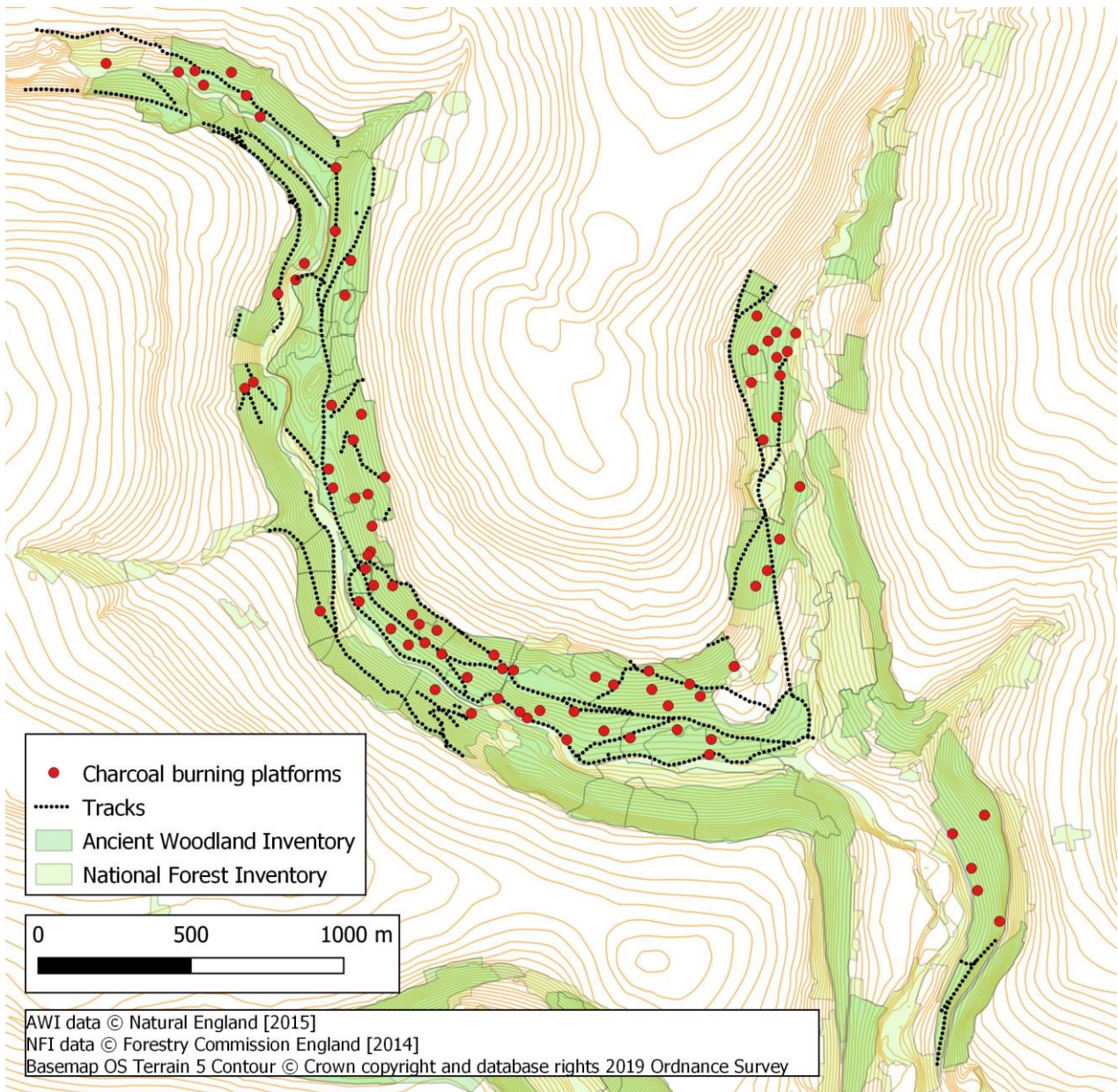


Figure 22: Charcoal burning platforms identified during the survey. Their most common association is with paths or tracks.

The different woodlands within Hardcastle Crag exhibit varying densities of platforms. Abel Cote Wood, for example, has one platform for every 0.7 hectares of woodland. Walshaw Wood has one platform for every 2.1 hectares. In most of the other named woodlands concentrations fall somewhere between these two figures, but Gibson Wood and High Greenwood Wood contain only small numbers: one platform for every 15 and 7.8 hectares respectively. This difference is probably explained by a combination of topography (both these woodlands are much steeper than the others), and different management history.

The distribution of charcoal burning platforms is fairly evenly spread within woodlands, which makes sense from practical point of view: each platform would serve a certain area of woodland around it, and reducing the distance that heavy wood had to be moved would be a prime motivation for deciding on platform location. There are, however, some areas of woodland in which one would expect to find charcoal burning platforms which were devoid of this feature type (e.g. in Walshaw Wood around SD9735 3043). Similarly, on flat areas of ground it is almost impossible to identify spots which were used and re-used for making charcoal because of the lack of earthworks. It may well be that on flat ground there was not one re-used location. These factors make it likely that there are more charcoal burning locations in the woodlands than were surveyed.

The recorded presence of iron smelting remains in Hardcastle Craggs means that charcoal was almost certainly made in the woodlands during the period of smelting activity. It is therefore likely that at least some of the identified platforms are medieval in origin. The scale of medieval charcoal production, however, is much more difficult to ascertain. The similarity of platform construction across the whole woodland complex suggests either a similar period of construction, or a stable and unchanging charcoal burning tradition extending across many centuries.

6.4 Post-medieval

As discussed in section 6.3, it was not possible to date many of the features that were recorded. Styles of construction of dry stone wall and track, for example, do suggest that most features originate from the post-medieval period.

6.4.1 Boundaries

As mentioned in section 6.3.1, the majority of dry stone walls which mark the outer boundary of the woodland have clearly been rebuilt numerous times over the centuries (Figure 14). Current walls show many different styles of construction, with changes in style often coinciding with changes in ownership of the farmland above. Although there is variation, they are generally double skinned, use small stone, are over 1m in height and feature both a cover



Plate 10: Typical post-medieval external woodland boundary wall (Site FS091). Image copyright Pennine Prospects.

band and top stones. They are likely to be post-medieval in their current form. An example at the eastern edge of Walshaw Wood is shown in Plate 10.

Numerous enclosures within the woodlands are also likely to be post-medieval (Figure 16). Some (e.g. at SD9868 3027) are extensions of farmland down onto the cleared wooded slopes. One of these fields contains a charcoal burning platform (Site HH13), suggesting the enclosure occurred after the construction of the platform. Other enclosures contain settlements, or the remains of cottages (e.g. Rom Folly, Site FS053). It is not possible to date the foundation of these clearings, but the style of dry stone walls around Over Wood Cottage, Green Hirst and Hollin Hall is consistently post-medieval. These walls are high (over 1m) and use small quarried stone in a double skin construction with through stones, cover band and top stones (e.g. Plate 11, showing some of the walls enclosing land belonging to Green Hirst. Site HH05). However, the absence of charcoal burning platforms within the vast majority of

enclosed fields provides some suggestion that most clearance occurred before the spread of these platforms to all corners of the woodland. Establishing better dates for any of these processes would help determine the sequence of changing woodland use.



Plate 11: Field boundaries around cleared farmland at Green Hirst (Site HH05). Image copyright Pennine Prospects.



Plate 12: Wide, rubble-surfaced post-medieval track (Site IH35). Image copyright Pennine Prospects.

6.4.2 Tracks

It is likely that the major routes and tracks through the woodlands, particularly those linking old settlements, date to the medieval period or earlier (see Figures 17, 18 & 19). However, many of the settlements surrounding the valley are post-medieval and the tracks that link them are likely to be of a corresponding date. In addition, it may well be that some earlier paths were replaced by wider routes, surfaced and retained with stone walls in later centuries. The track from the Widdop Road down to Gibson Mill is an excellent example of this (Site IH58), as is the track through High Greenwood Wood from the river crossing to the top of the hill (Site IH35; Plate 12). Continued improvement of existing tracks means that their visible fabric is firmly post-medieval, even if the route itself is ancient.

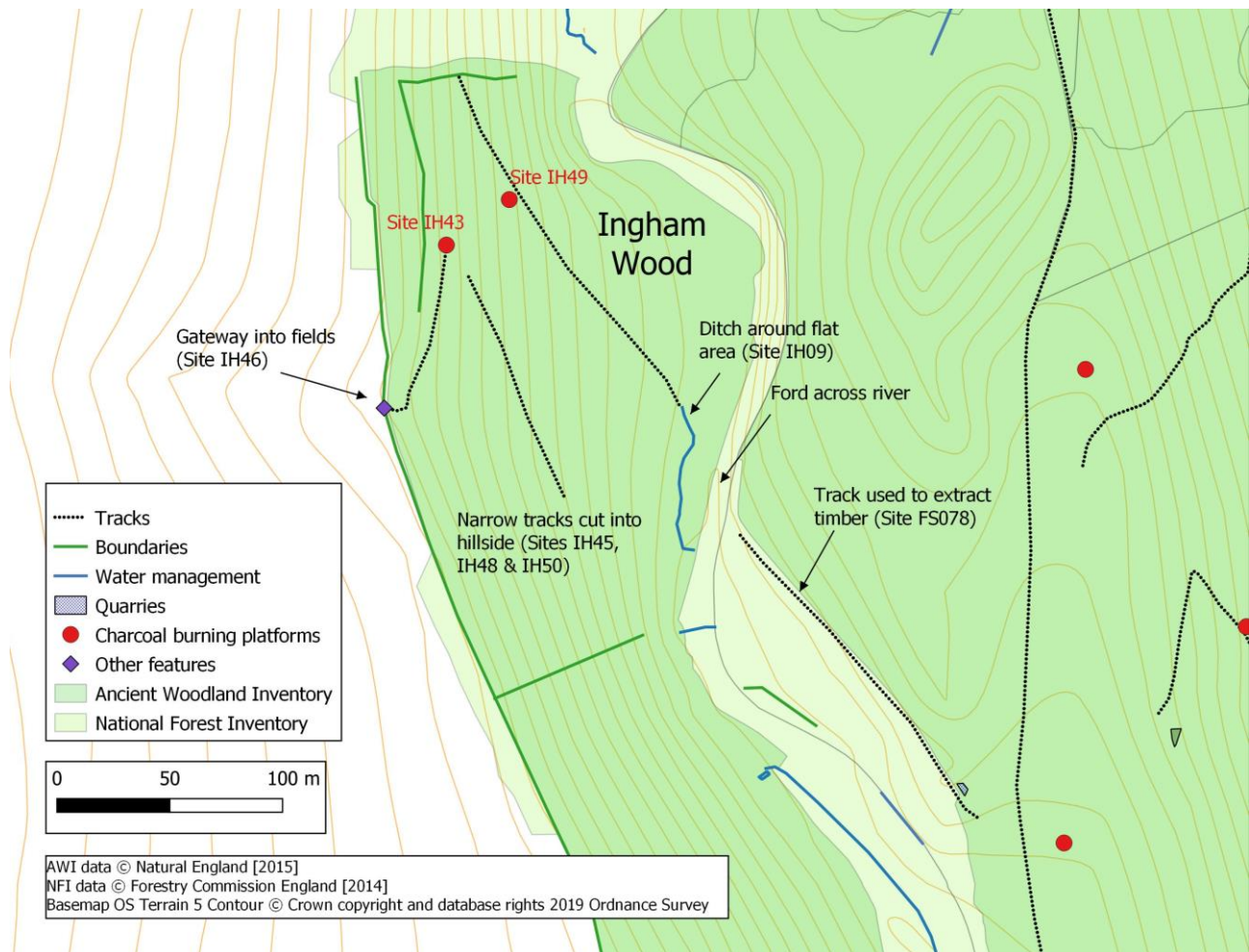


Figure 23: Woodland management infrastructure in Ingham Wood.

Some of the small working tracks identified in section 6.3.2 were certainly constructed or in use during the post-medieval period. For example, the Stonesheygate Papers (HBLHSA; SG57-67) mention that the track running from the river adjacent to Ingham Wood towards Gibson Mill (Site FS078) was constructed in the early 1800s by Gamaliel Sutcliffe to extract timber. The woodland management detailed in those papers also make it clear that the networks of narrow tracks criss-crossing Stonesheygate and Ingham Woods were in use during the 19th century. These are almost certainly the routes by which working horses moved timber and wood products up or down the steep slopes and out of the woodlands. The tracks link up neatly with the charcoal burning platforms and flat processing and stacking areas, and in Ingham Wood they have clear points of exit both at the top of the valley and the bottom (Figure 23). The exact points at which wood was extracted from Stonesheygate Wood are less clear. In all cases sections of these narrow tracks have become obscured by rock falls, landslips and leaf litter.



Plate 13: Stone clapper bridge at head of Rowshaw Clough, Walshaw Wood (Site FS094). Image copyright Pennine Prospects.

In a few places tracks cross watercourses over bridges. These range from small, simple stone culverts (e.g. Site FS153) and reinforced stream banks (e.g. Site FS152) to more impressive structures. The four-stone clapper bridge across the head of Rowshaw Clough (Site FS094; Plate 13) probably marks an earlier crossing of the stream before the current road bridge was created. The bridge surface is 3m long and 1.2m wide, sufficient for horse traffic but little more. At the other end of the site, Wheat (or Wet) Ing Bridge is a substantial single span stone arch over Crimsworth Dean Beck (Site HH38; Grade II listed building #1227617). It has a span of 5m and a 2m wide way over the bridge between the parapets. It was clearly intended for foot and packhorse traffic through Abel Cote Wood and up to the farms on the east side of the valley such as Purprise and Small Shaw, and then further towards Haworth and Keighley.

6.4.3 Wood pasture

Gateways and openings from the farmland above the valley to the wooded slopes allowed the movement of stock into the woodlands, as described in section 6.3.3 (Plate 14). There is no easy way to determine which period these originated from, but it is likely that many were created, and certainly used, during the post-medieval period. There is one example of a lane running through the woodland which is walled on either side (FS130; Plate 15), suggesting that it was used either to move livestock along (the walls kept them on the lane) or that livestock were kept off the track and were grazing in the surrounding areas of Foul Scout Wood.



Plate 14: Gateway between Foul Scout Wood and walled lane running between fields up to Shackleton (visible in top right of photograph). The surrounding dry stone walls are post-medieval. Site FS102. Image copyright Pennine Prospects.



Plate 15: Track running downhill from the direction of Shackleton towards the main arterial track through the valley (Site FS130). For most of its length it is bounded by dry stone walls (Sites FS060 & FS129). Image copyright Pennine Prospects.

6.4.4 Charcoal burning platforms

The survey results for recorded charcoal burning platforms are discussed in section 6.3.5 (Figure 22). Although some were certainly in use during the medieval period, there was much charcoal burning activity in later centuries. This is shown in historical documents from the 19th century relating to Ingham and Stonesheygate Woods (see section 5.1). There was also a significant rise in demand for charcoal in the locality during the 18th and first half of the 19th centuries from the burgeoning worsted textile industry. It is not known if the platforms throughout the woodlands had already been constructed by this period, or if more were dug and activity increased. The aforementioned documents make it clear that re-use of old platforms was encouraged.



Plate 16: Charcoal burning platform in Ingham Wood (Site IH43), mentioned in a document of 1849 as one of the “old pits” (HBLHSA; SG61). Image copyright Pennine Prospects.

6.4.5 Mineral extraction

The woodlands of Hardcastle Crag have experienced less quarrying activity than other woodlands in the region (e.g. North Dean or Knotts Wood). Aside from the small ‘scoops’ mentioned in section 6.3.4, there were only 12 sites of mineral extraction recorded during the survey. Seven of these are very similar: small scale stone quarries of no more than 20m in length, all adjacent to tracks (e.g. Site HH14; Plate 17). These are interpreted as quarries opened for a particular purpose, such as a set of buildings or a road, and then discontinued. The stone quarry at Green Hirst clearly had a larger scale of operation, and map evidence suggests that it was in operation during the second half of the 19th century (Site HH10; Figure 24).

The large quarry at Hell Holes, in the north west corner of the site, will be discussed in section 6.4.8.



Plate 17: Stone quarry alongside the track at the top of Abel Cote Wood (Site HH14). Image copyright Pennine Prospects.

Two adjacent earthwork features which are something of a mystery lie in High Greenwood Wood. A linear feature (Site IH33) running along the contour for 100m consisting of a wide ditch (3m-4m wide) and high bank (around 3m high) was, in the 1879 Guide to Hardcastle Crag, described as a Civil War fortification. This is extremely unlikely, given the location of the site and the nature of the earthworks. Considering the very large boulders on the crest of the 'bank', it is possible that they represent the natural ground level and the 'ditch' is a cutting into the hillside, feasibly for mineral extraction. Immediately to the east is a collection of small spoil heaps with no obvious site of excavation (IH34).

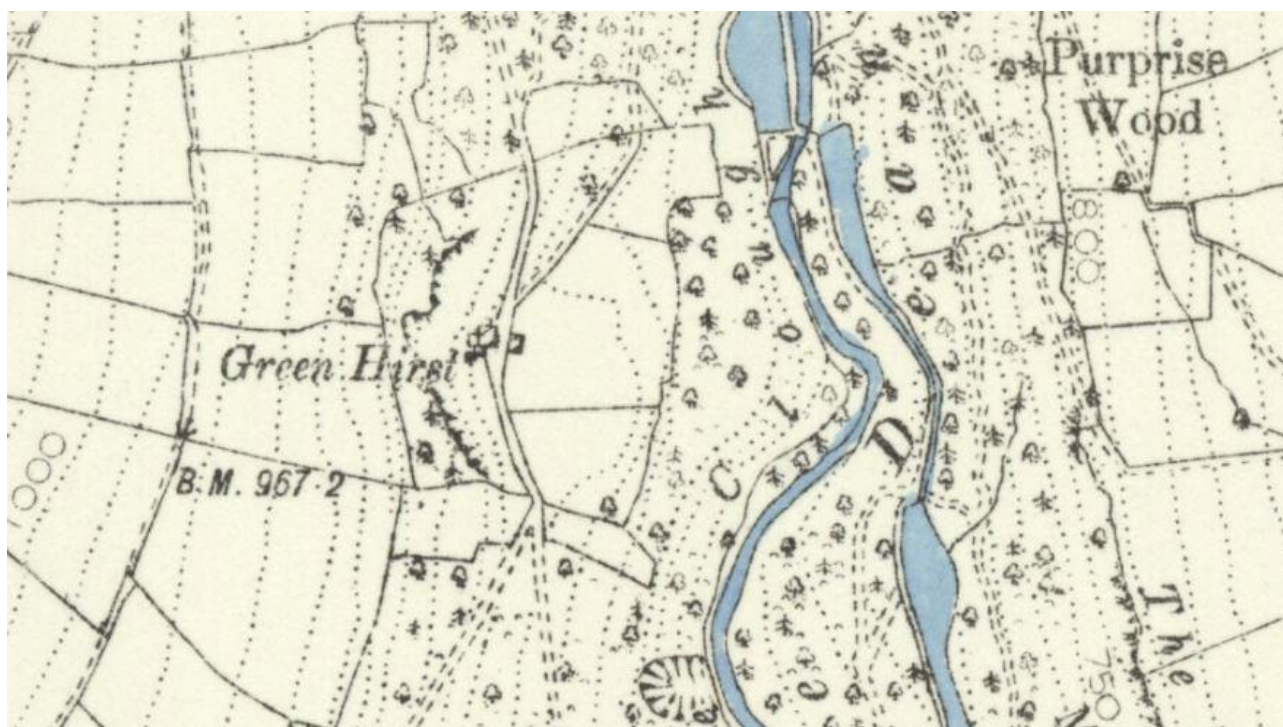


Figure 24: Quarry face behind Green Hirst as shown on the Ordnance Survey map of 1894 (Yorkshire 215 sheet). Reproduced with the permission of the National Library of Scotland.

6.4.6 Water management

There appear to be three broad categories of water management features which were recorded (see Figures 25 and 26). The first, a common and fairly well-studied feature of many valleys in the area, consists of weirs, ponds and culverts associated with the water-powered textile mills which were built during the late 18th and early 19th centuries. Features of this type on Hebden Water were part of the infrastructure for Gibson Mill (e.g. Site IH04; Plate 18) and New Bridge Mill. Those on Crimsworth Dean Beck served Crimsworth Dyeworks at Midgehole. These are often found in woodlands in the South Pennines because the river valleys where the mills were located are steep-sided and often wooded, or because secondary woodland has grown up on the industrial sites after they were abandoned.

The second type of recorded feature is stone retaining walls along the river banks. Although many of these may have been built at the same time as other mill infrastructure, there are numerous examples which seem to be reinforcing the river bank to protect flat areas alongside the water (e.g. Site IH01).

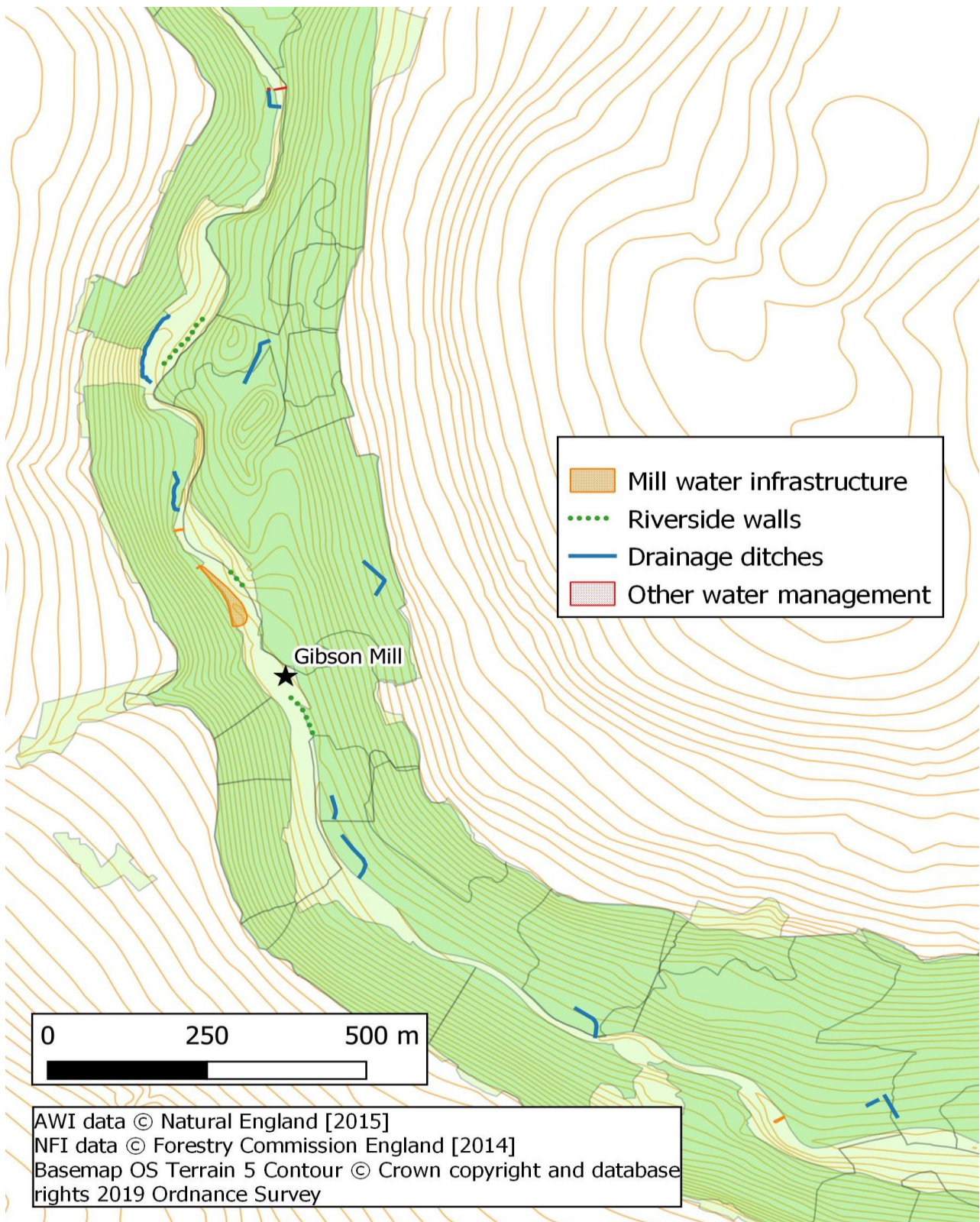


Figure 25: Water management features in the western section of the surveyed area.

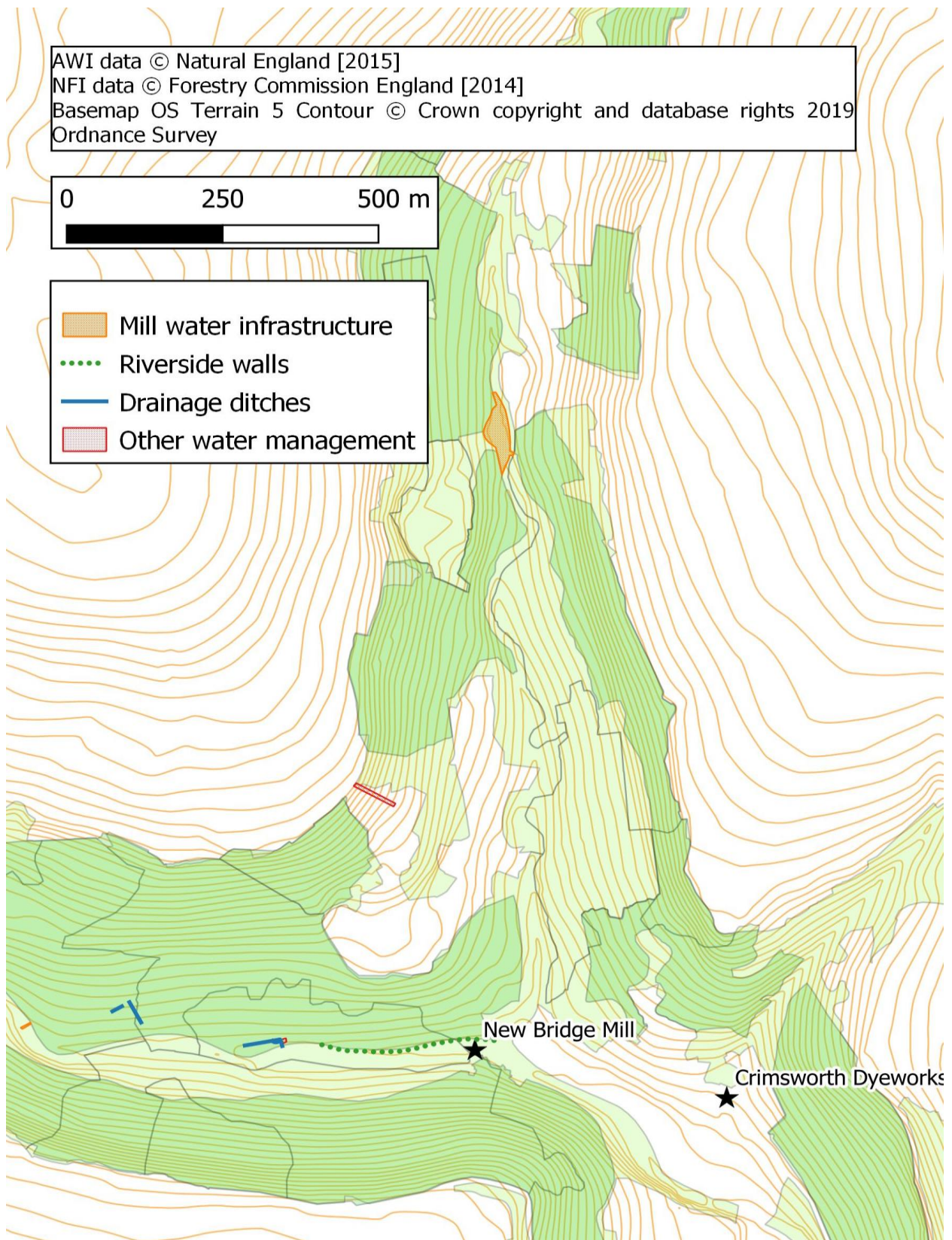


Figure 26: Water management features in the eastern section of the surveyed area.



Plate 18: Weir constructed of cast iron across Hebden Water, serving a culvert taking water to one of the mill ponds above Gibson Mill (site IH04). Image copyright Pennine Prospects.

The third category is drainage ditches, which are usually associated with flat areas in the woodland. It is assumed that the ditches serve to keep the areas dry, either for grazing or other activities, such as timber storage and processing at the foot of Ingham Wood (Site IH09; Plate 19).



Plate 19: Drainage ditch around the back edge of flat area in Ingham Wood (IH09). Image copyright Pennine Prospects.

In the fields above Hollin Hall is a long linear earthwork running up and down the slope with occasional sections of stone work on the top. The embankment is around 6m wide and 4m high along its length. It seems to be part of the infrastructure of an early 20th century aqueduct which took water from the reservoirs higher up the valley to the towns below. The embankment lines up with other features on the other side of the valley.

6.4.7 Trees

Ancient trees in Hardcastle Crag are noticeable by their absence. Most ancient woodland, even if replanted in more recent times, retains old trees in hard to reach corners. The overwhelming majority of trees across the whole of this woodland complex originate from after the mid-19th century. The cutting and planting regimes of that period were clearly very thorough – even on steep slopes trees were cleared and replaced. The planting choices of the 19th century certainly varied from landowner to landowner. Much of the eastern and northern sides of the valleys, which were part of the Savile estate, are dominated by pine species (*Pinus spp.*). The planters of High Greenwood Wood and Gibson Wood, however, favoured beech (*Fagus sylvaticus*).

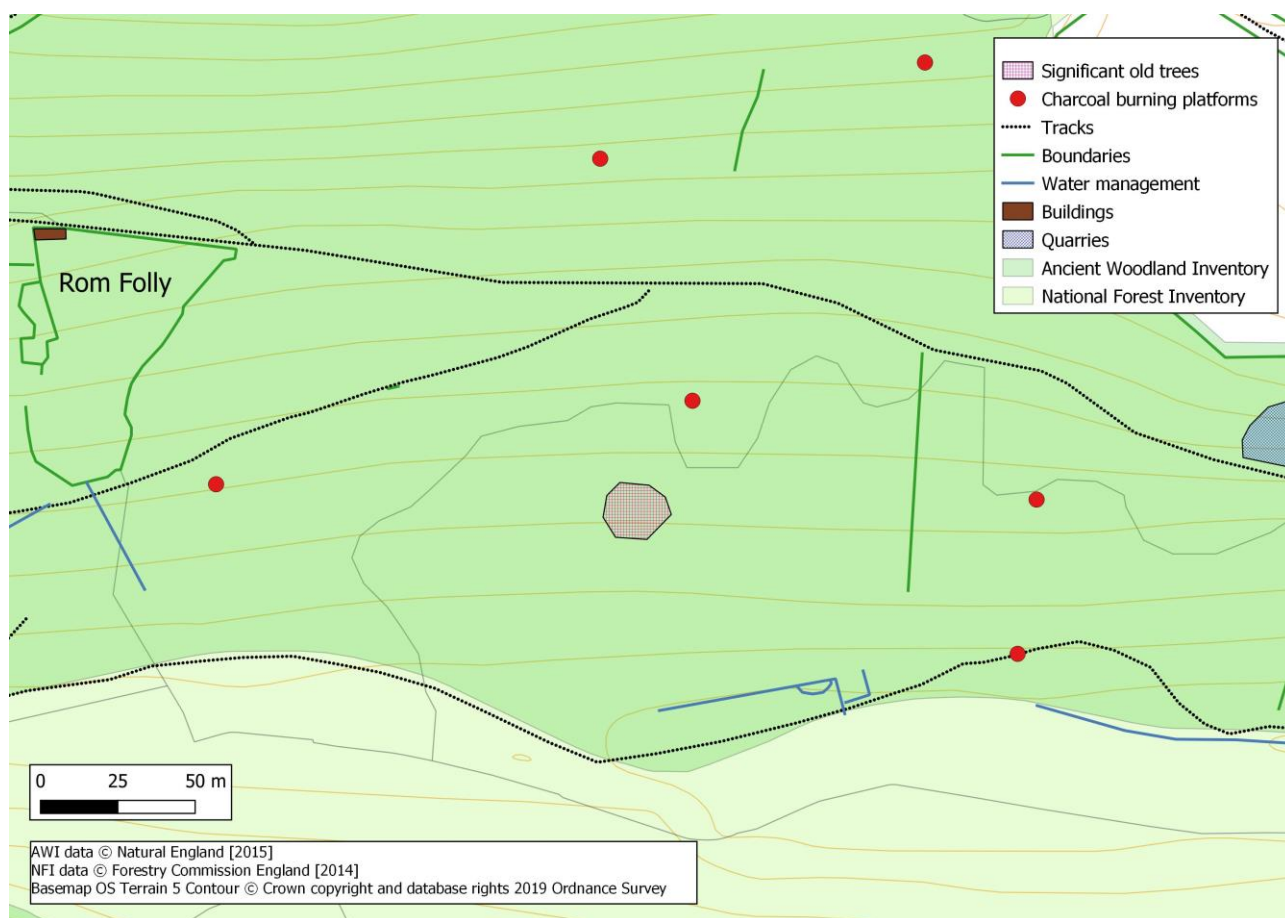


Figure 27: The one area of significant old trees found in Foul Scout Wood (Site FS040).

The field survey found only one group of trees which may give some clues to pre-19th century woodland management: an area of 6 multi-stemmed oak trees in fairly close proximity, with stems of between 0.3m and 0.6m diameter (Site FS040; Figure 27). The large basal diameter of the stools suggest that these trees could easily be a few hundred years old, and would have been cut and regrown many times during their lifetime. This provides a strong suggestion that in this part of Foul Scout Wood, woodland was managed as oak coppice: periodic felling with subsequent protection of the shooting stump. There are six charcoal burning platforms within 200m of the trees, so it was certainly an actively managed part of the woodland.

The occasional occurrence of lone multi-stemmed trees elsewhere in the woodlands *may* be a remnant of organised regular felling, but one specimen is not proof.

6.4.8 Buildings

The ruins or sites of six shacks, cottages or groups of cottages were recorded throughout the woodlands. These range from the very small, such as those above Hollin Hall, just above New Bridge and at Winter Cottage, to more 'normal' sized buildings, such as those at Rom Folly and above Gibson Mill. The latter only exist as a platform and high retaining wall alongside the track, but on the other side of the track their small gardens are still visible and garden plants still grow there. The 1894 OS map suggests there were three cottages on this site. The cottages at Winter Cottage and Rom Folly appear in the census records of the early 19th century and were occupied during that time. The three cottages alongside the track in Gibson Wood were occupied in 1833 by Richard Dewhirst, John Ackroyd and Jonas Crabtree, each paying an annual rent of £1 12s 8d (WYAS(H), SU408). It is not clear whether the very small shacks were occupied or had some other function.

At the north edge of Walshaw Wood, at the head of Rowshaw Clough, is a fascinating collection of ruined buildings and walls which appear to have been a formal garden. The large extent of planted rhododendron and several bridges across the watercourse suggest that this was a high status folly or woodland garden. It appears on the OS 1851 6-inch map (Yorkshire 214 sheet) as Cherry Hall. Presumably it is associated with the Savile family's use of Walshaw Lodge, a few hundred metres to the north west.

There is an extant small stone building adjacent to a weir across Hebden Water at SD97282 30870. This weir is not linked to water management for the mills further down the valley. Its history seems to be tied to the early twentieth century proposals to flood the upper Hebden valley to form a reservoir, as a way to measure water flow in the river. This is still practised by the relevant authority, presumably Yorkshire Water.

As stated in the introduction, the building complex around Gibson Mill was not included in the survey.

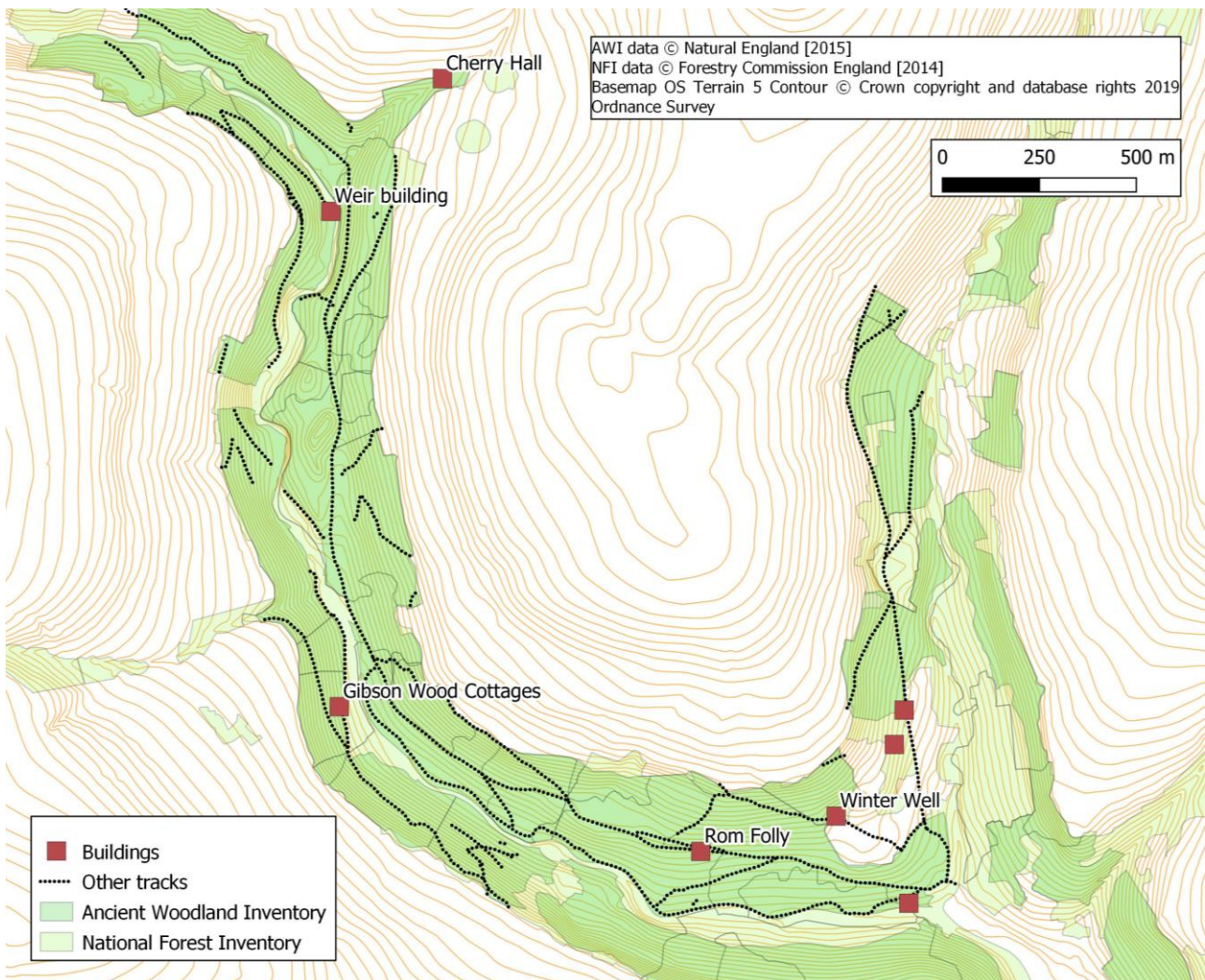


Figure 28: Buildings recorded during the field survey.

6.4.9 Railway

As discussed in section 5.1, a short-lived railway cut across the north west corner of the woodland during the late 19th and early 20th century. This ran from Dawson City near Heptonstall up to the Walshaw reservoirs and was built to transport both workers and materials (Fitzgerald, 1967).

The line of the track can be clearly traced by its cutting (e.g. Site IH26; Figure 29; Plate 20), and by the footings for the numerous wooden trestle bridges which carried it over depressions and cloughs. It passes alongside the largest stone quarry complex in the woodlands, an area known as Hell Holes. Quarried stone faces were recorded along with spoil heaps and one piece of ironwork associated with the operation of the quarry (Site IH25; Plate 21). It is notable

that there were far fewer remains of machinery, equipment and structures found than might be normally expected for this kind of feature. This applies to both the quarry and the railway. The best explanation is that the features were extensively and efficiently dismantled and taken away at the end of their working lives (see Figures 30 and 31). The quarry also contains fewer mounds of stone working waste than might be expected. Stone working may therefore have taken place at a different site. Since there is a good amount of historical documentation for these features, more research could reveal a lot more detail. The prominent archaeology of the railway and quarry, and its role in local industrial and social history, mean that it is an important feature which should be cherished and protected.

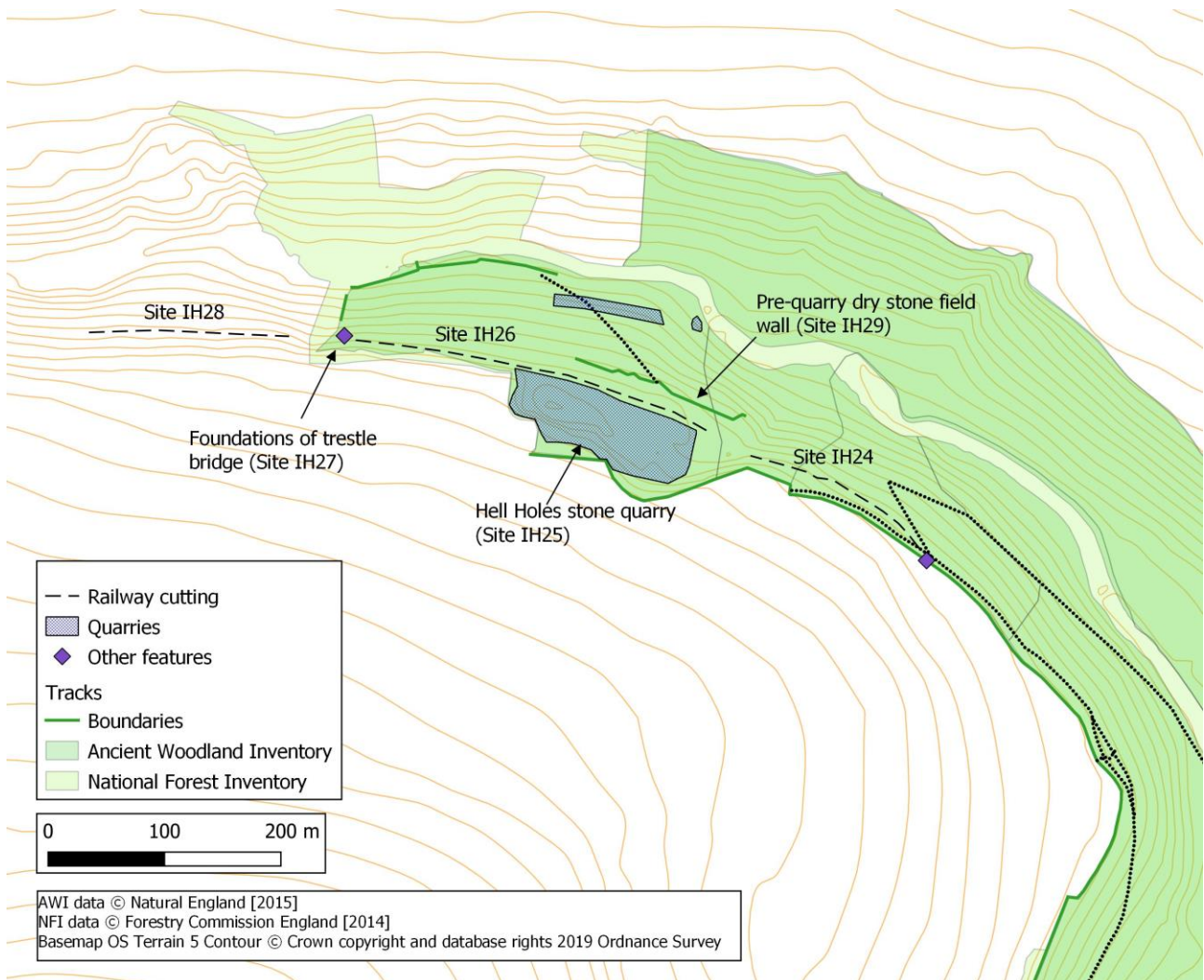


Figure 29: Features associated with the late 19th century railway and Hell Holes quarry.



Plate 20: Railway cutting close to Hell Holes quarry (Site IH26). Image copyright Pennine Prospects.



Plate 21: Stone base of quarrying equipment at the edge of Hell Holes (Site IH25). Image copyright Pennine Prospects.



Figure 30: Hell Holes as depicted on the OS 1894 six-inch map (Yorkshire 214 sheet; surveyed in 1892). Some of the markings possibly represent small-scale workings. Reproduced with the permission of the National Library of Scotland.

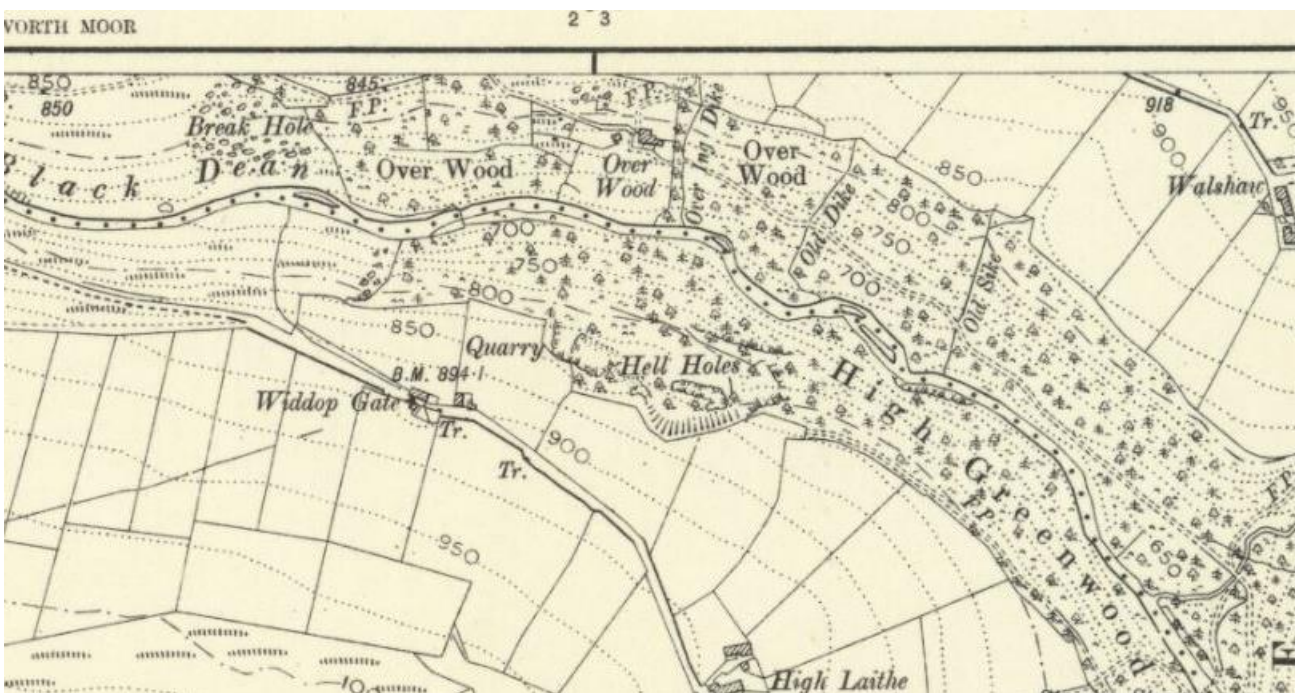


Figure 31: Hell Holes as depicted on the OS 1908 six-inch map (Yorkshire 214 sheet; surveyed in 1904). The large quarry is now marked on, but the route of the railway is not. Reproduced with the permission of the National Library of Scotland.

6.5 Unknown period

There are several features of unknown origin, purpose or date. The majority are platforms (12 in total) strewn through the woodland: a wide range of shapes and sizes, usually associated with tracks (e.g. Site FS031). They are certainly not charcoal burning platforms, having neither the typical shape nor charcoal-rich soil. A possible purpose for their construction was the stacking of timber or wood products during woodland management, such as drying tan bark. Similarly there are a small number of pits, of modest size and with no clear pattern to their distribution (e.g. Site FS114).

An artificial sub-rectangular pool, 10m long, adjacent to Hebden Water in Walshaw Wood has no clear function. One suggestion is that it could have been used for washing sheep.

In High Greenwood Wood, on a flat area of land close to the river, there is an intriguing circular earthwork consisting of a low circular bank (2.5m wide) with an external diameter of 12m. It is of unknown age and function.

The flat area of enclosed land at the bottom of Rowshaw Clough in Walshaw Wood is filled with a range of earthworks which might be spoil heaps, but there are no worked stone quarry faces in the vicinity or any recorded evidence of metal working. It is unlikely that this type of feature will yield up more information without closer archaeological inspection.

7.0 Discussion

The field survey undertaken during this project found a remarkable and unexpected number of features within the woodlands of the Hardcastle Craggs valleys. The features recorded span the medieval and post-medieval periods, and provide evidence of a well-used and busy landscape.

The extensive network of trackways throughout the site shows some clear patterns. First, that movement *across* the valley was important as well as *along*, and that the surrounding settlements were extremely well connected with each other. Activity within the woodlands such as quarrying, tree felling and processing were supported by a complex arrangement of paths, tracks and bridges. Connections with the farmland above the valley sides shows the importance of stock moving through, or grazing in, the woodlands. Although hard to date, it is highly likely that these patterns of communication were true of the medieval period as well as in later centuries.

The many miles of dry stone wall around and through the woodlands demonstrate various functions and phases of land use. The boundary walls separating woodland from open field have clearly been rebuilt many times over the centuries and have functioned as simple stock-proof fencing. The existence of low, rough walls denoting property boundaries is an exciting discovery: they may well be extant medieval stone work, possibly dating from the 15th century. The many enclosures and clearings within the woodlands reveal a fascinating range of activity at different times, including a likely medieval field system, and demonstrate the pressure to increase grazing land at numerous points through the centuries.

The survey has revealed the incredible extent of industrial activity throughout the wooded valleys. The pinpointing of a medieval iron smelting site will allow future research to explore this relatively unexamined industrial history of the Upper Calder Valley, and suggests that charcoal production was taking place during that period. This raises the possibility that at least some of the 84 identified charcoal burning platforms are medieval in origin. The high number of platforms places these woodlands as one of the largest charcoal producing landscapes in West Yorkshire, worthy of recognition and preservation. The scatter of stone quarries across

the site demonstrates the common use of woodland as a place of stone-getting across the centuries, something which is found in many other local woods.

Remains of the late 19th century railway and quarry system at the north west of the site provide a well-preserved snapshot into one short-lived but incredibly important relationship between people and the landscape. Other clusters of features tell similar stories, such as the water management infrastructure on both rivers.

Although many of the discussed features are also found in other woodlands in Calderdale and the wider South Pennine region, Hardcastle Crag is distinguished by the intensity and concentration of its archaeology. These findings show just how integral the woodland of Hardcastle Crag was to the surrounding settlements and to the ways in which the local landscape was used. It can be clearly seen that the wooded valleys were not secluded, unfrequented or tucked away. They were well connected, often busy, and very important sites of resource extraction. Although this was known to be the case during the 18th and 19th centuries, the results of this survey demonstrate that the woodlands have a rich history of use going back to the medieval period. The survey will hopefully provide a starting point and a foundation for future studies and research.

8.0 Management Recommendations

As a part of this survey, identified features were assessed in regards to condition; this information has been used to formulate management recommendations. The recommendations cover only those features identified within woodland areas.

8.1 General Guidelines

Forestry operations can be detrimental to both upstanding archaeological remains and below-ground archaeological deposits. Guidelines which meet the requirements of the United Kingdom Forestry Standard (UKFS) have been published by the Forestry Commission (Forestry Commission; 2011). The reader is advised to refer to this document for further information.

The guidelines recognise:

1. Forests should be designed and managed to take account of the historical character and cultural values of the landscape.
2. Windblown trees located upon features of archaeological interest can cause considerable damage due to the uplift of root plates. Any upstanding walls or structures may also be crushed as a result of windblown trees. General root action can also be disruptive to both below and above ground archaeological features.
3. Although low-level woodland browsing can control woody vegetation within woodland pastures and clearings; overgrazing by introduced livestock can cause significant erosion to upstanding earthworks and structures. Additional measures such as fencing may be required to protect the ground around individual sites of historic importance/interest.
4. Forest operations and civil engineering activities involve heavy machinery and earth-moving equipment. These can unintentionally destroy or damage archaeological remains and veteran trees directly, or in-directly due to soil vibration, compaction and erosion.
5. Ground disturbance and with that potential damage or destruction to archaeological features and below ground deposits can also be caused as a result of habitat restoration projects. This can involve the pulling out of tree stumps and the inverting of soil layers to reduce surface nutrient content. Alternatively, restocking can lead to new or additional damage to archaeological features and below-ground deposits.

6. There is considerable public interest in cultural heritage and the historic environment and interpretation of these aspects of woodlands can provide a focus for visitors (using the public rights of way through the woodland). This could be achieved as part of a wider access or recreation strategy. Historic environment features can be linked by heritage trails and explained through the use of interpretative panels, leaflets or maps. However these would need to be managed to avoid negative impacts on the historic environment, such as increased erosion.

In 2018 ancient woodland, including ancient semi-natural woodland and plantations on ancient woodland received specific legislation as part of the National Planning Policy Framework (Chapter 11. Conserving and enhancing the natural environment) concerning their protection. The reader is advised to refer to this document prior to any management or development activities.

The guidance states:

1. Direct impacts of development on ancient woodland or veteran trees include:

- damaging or destroying all or part of them (including their soils, ground flora, or fungi)
- damaging roots and understorey (all the vegetation under the taller trees)
- damaging or compacting soil around the tree roots
- polluting the ground around them
- changing the water table or drainage of woodland or individual trees
- damaging archaeological features or heritage assets

2. Nearby development can also have an indirect impact on ancient woodland or veteran trees and the species they support. These can include:

- breaking up or destroying connection between woodlands and veteran trees
- reducing the amount of semi-natural habitats next to ancient woodland
- increasing the amount of pollution, including dust
- increasing disturbance to wildlife from additional traffic and visitors
- increasing light pollution
- increasing damaging activities like fly-tipping and the impact of domestic pets
- changing the landscape character of the area

Legislation states: '*planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss ...*' (Chapter 11, Paragraph 118, NPPF, 2018).

8.2 Mitigation

1. At the earliest stage, in advance of any management operations within areas of woodland, the organisation commissioning the works should consult with the regional historic environment authority, in this instance West Yorkshire Archaeology Advisory Service (WYAAS): <http://www.wyjs.org.uk/archaeology-advisory-service/>; and Natural England. Due to the proximity of the woodlands to buildings of historical significance (Listed Buildings), and due to aspects of the woodland and recorded features as part of this survey, it is advised that the organisation commissioning the works contact Historic England.
2. Where an operation next to a historical feature is unavoidable, clear routes and exclusion areas should be marked out to provide protection to the monuments. Contractors could be provided with a 'cab-card', detailing in bullet-point and map format information concerning the heritage, exclusion zones and routes to and from site.
3. Regular visits to heritage sites to monitor the condition will identify any new threats or damage to the feature.
4. Trees and shrubs either on or within the immediate vicinity of archaeological sites/features should be managed to limit the extent and establishment of woody vegetation. It should be considered that large trees vulnerable to windthrow be removed or crowned to reduce the weight of the tree canopy. However, veteran trees should be retained where possible.

8.3 Specific Guidelines

Specific management recommendations for each feature recorded as part of the survey can be found in Appendix 2.

By far the most common threat to features within the woodlands is tree root action or damage from tree windthrow. Many features have mature trees established within them, and many contain young trees and saplings.

In order to prevent further deterioration and damage at these sites, scrub vegetation and sapling trees should be removed and prevented from establishing on masonry, earthwork, or other integral part of the feature. Mature trees within close proximity of all of the features recorded during the survey should also be monitored and, where appropriate, coppiced/pollarded, crowned, thinned or removed to prevent root or windthrow damage to the features. Unless otherwise noted in the individual feature notes, tree removal is not urgent and should be planned into future woodland management works.

A small number of features are suffering from water erosion, particularly those alongside watercourses. These features should be monitored and measures taken to reduce the erosion where possible.

9.0 Acknowledgements

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SU408: Heptonstall Poor Law Valuation book 1833

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