ISSN 1478-7008

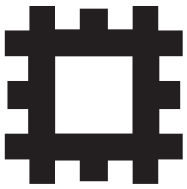
ENGLISH HERITAGE

Parrock Wood, Rigg Wood and Knott End Wood, Cumbria

Christopher Dunn, Amy Lax

SURVEY REPORT

Archaeological Investigation Report Series AI/17/1998



Parrock Wood, Rigg Wood and Knott End Wood
South Lakeland
Cumbria

Archaeological Investigation Report Series AI/17/1998

NMR No: SD 38 SW 29, SD 38 SW, SD 38 SW 31
NGRs: SD 3445 8445, SD 3425 8455, SD 3440 8435
SMR No: 6213

Surveyed December 1997/March 1998
Surveyed by C.J.Dunn and A.Lax
Report by C.J.Dunn
Drawings by P.Sinton and A.Lax
Photographs by K.M.Buck

English Heritage 1998
ISSN 1478-7008

Please note that this report was originally produced by the Royal Commission on the Historical Monuments of England, which merged with English Heritage on 1 April 1999

York Office: 37 Tanner Row, York YO1 6WP
Tel: 01904 601901 ***Fax:*** 01904 601998
National Monuments Record Centre, Great Western Village, Kemble Drive, Swindon. SN2 2GZ
Tel: 01793 414700 ***Fax:*** 01793 414707 ***World Wide Web:*** http//www.english-heritage.org.uk

CONTENTS

LIST OF ILLUSTRATIONS

Figures

Plates

INTRODUCTION AND BACKGROUND TO THE SURVEY

The measured field survey of archaeological sites in Parrock Wood, Rigg Wood and Knott End Wood, situated about 700m north-north-east of the village of Haverthwaite, was carried out between December 1997 and March 1998 by archaeology staff from the York office of the RCHME. It was undertaken as part of the Royal Commission's project on the Iron Industry and Related Woodland Industries of Furness and South-West Cumbria. The objective of the survey was to record and examine the evidence for the woodland industries in the vicinity of one of the major blast furnaces in the project area. The Haverthwaite area was chosen because this was the location of the important Backbarrow Ironworks (NMR No. SD 38 SE 3). In addition, earlier fieldwork (see below - History and Previous Research) had shown that the woods on the Haverthwaite Heights, above the site of the ironworks on the west and north-west, contained a wealth of remains relating to the woodland industries. Preliminary reconnaissance by the RCHME indicated that a particularly dense concentration of sites, with examples present of all the principal monument types, occurred in Parrock Wood and Knott End Wood at the western end of the Haverthwaite Heights. This was, therefore, chosen as the sample area for detailed survey. The survey coincided with an active programme of tree felling and thinning of the woods on the Heights which meant that the eastern part of Parrock Wood had to be excluded from the survey area. However, this made resources available so that neighbouring Rigg Wood could be included.

In Parrock Wood a total of sixteen charcoal burning platforms (pitsteads), two bark peeler's huts with dry-stone walls and a potash kiln were surveyed. Twelve and seven pitsteads were located and surveyed in Rigg Wood and Knott End Wood respectively. In addition, the remnants of former enclosure walls were recorded in all three woods suggesting that the area had once been divided up into fields. Some of these walls were clearly related to a track, defined on each side by a side wall, which is now the boundary between Parrock Wood and Rigg Wood.

TOPOGRAPHY AND CURRENT LAND USE

The Haverthwaite Heights form the western part of the range of hills which extend from the lower end of Lake Windermere south-westwards to the river called Rusland Pool and the start of the Leven estuary (Fig. 1). The hills form the steep, north-western side of the Leven valley and, adjacent to the village of Backbarrow, the Haverthwaite Heights rise to 150m above OD; their summit forms a plateau of Silurian bedrock (Davis 1977, 14 Fig. 6). The plateau is crossed by a number of prominent parallel ridges of outcropping bedrock, generally oriented north-east to south-west, which also extend onto the lower slopes with the result that they occur within the woods (Parrock, Knott End and Rigg) which occupy the western end of the Haverthwaite Heights. In some instances the presence of these ridges - with their bare rock faces which can be very steep - has reduced the number of locations suitable for the construction of sites, principally pitsteads, connected with the woodland industries.

The landforms which characterise the western end of the Haverthwaite Heights consist of two spurs separated by a prominent concave fold in the hillside. Rigg Wood occupies the north-west side of the westernmost spur while Parrock Wood extends in an easterly direction from the top of this spur to include the upper part of the 'fold' and the main body of the other or southern spur. The end of the latter is particularly steep and rocky and, with its western flank, lies within Knott End Wood. Two of the pitsteads (PS 2 and PS 3), set one above the other, have been deliberately placed at the back of the 'fold' - presumably so that the firing process could benefit from the concentration of any updrafts of air caused by the topography.

At the commencement of the survey most of Parrock Wood together with the north-eastern half of Rigg Wood consisted of conifer plantations with occasional broadleaved trees. The conifer trees are chiefly larch, however, two areas of closely planted sitka spruce were present in Parrock Wood at SD 3425 8445 and SD 3445 8450. The trees made these two areas very difficult both to reconnoitre and, when sites were encountered, to survey. By the end of the RCHME survey total felling of the spruce had commenced but the method of harvesting adopted completely covered the ground surface with a thick bed of branches thus obscuring any archaeology which may have been missed earlier. The woodland which occupies the south-western half of Rigg Wood contains much more of a mixture of conifer and broadleaved trees including a number of large yew trees. Areas of broadleaved woodland, rather limited in extent, also occur such as the sycamore trees which grow along the south-western fringe of Rigg Wood and the small pocket of the same species in Parrock Wood in which one of the bark peeler's huts (BPH 2) and adjacent potash kiln (PK 1) are situated. Much of Knott End Wood contains sessile oak although, especially near its western edge, other trees - such as the hazels which exhibit evidence of former coppicing - are also present.

On the south-west the woods terminate against a road which now ends abruptly just beyond Knott End Wood where it is joined by a track which still provides access to the eastern part of Parrock Wood. This road is a former section of the A 590 trunk road and was abandoned in the 1970s when the road was realigned and widened between Haverthwaite and Newby Bridge. At Lane Ends Farm the former route of the A 590 is joined by a minor road which skirts the western end of Rigg Wood. A lane leaving this minor road follows the north-west boundary of Rigg Wood and gives access to the fields beyond the wood.

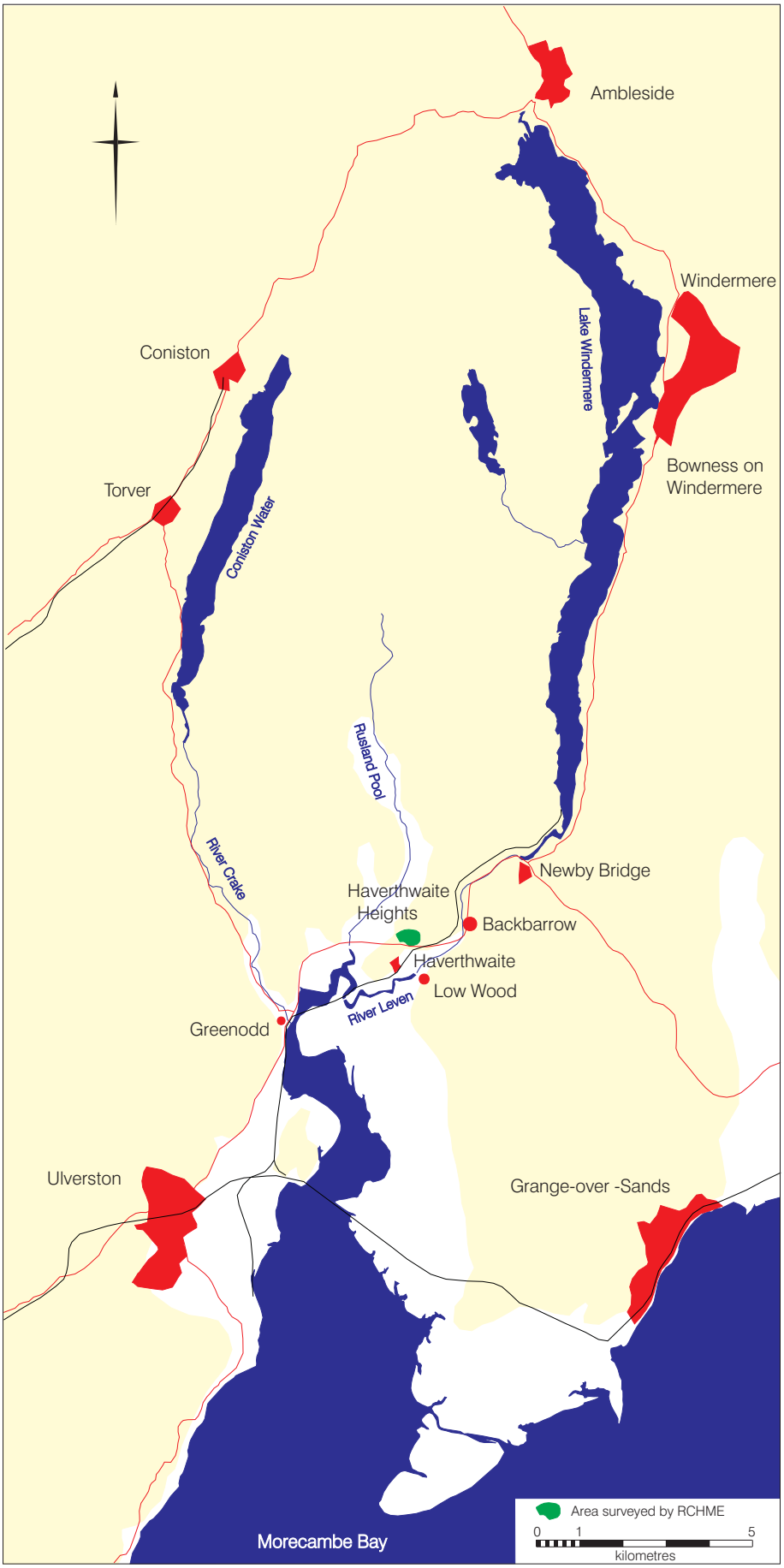


Figure 1.
The geographical location of the woods

HISTORY AND PREVIOUS RESEARCH

The exact age of these woods is not known from the non intensive research carried out to underpin this survey. However, Fell cites a certificate, dated 1st June 1567, which contains a list of woods in Furness connected with the local iron industry - Haverthwaite is specifically mentioned (Fell 1908, 110). One assumes, given the close proximity of the Backbarrow ironworks, that at least some of the charcoal used at this works came from the woods which occupy the Haverthwaite Heights. Backbarrow started off as a bloomery forge in the late 17th century and was replaced by a water-powered blast furnace (the first in the area) which commenced production in 1712 (Fell 1908, 200, 208). Charcoal was used to fire the furnace until replaced by coke in the 1920s (Riden 1993, 107). The charcoal record books relating to the purchase of charcoal by the ironworks during the late 19th and early 20th century, held at the Cumbria Record Office in Barrow, name the suppliers (some of whom were local people) but give no indication as to the location of the actual woods from which the supplies were obtained (CRO, BDB/2 5/9).

The three woods were all depicted and named on the Ordnance Survey first edition of the 1:2500 map of 1888 (Ordnance Survey 1890). If anything the wooded area was slightly more extensive at that time because the pasture field in the lower part of the natural ‘fold’, between the former course of the A 590 road and the south-western edge of Parrock Wood, was, according to the conventional signs used on the map, a deciduous wood. This wood, centred at SD 3423 8433, appears to have gone by the time the second edition of the 1:2500 map was published in 1913; the latter merely shows a field (Ordnance Survey 1913). Rigg Wood was a mixed wood of coniferous and deciduous trees in 1888 while Knott End Wood and Parrock Wood had deciduous trees although the use of conventional signs suggest that scattered coniferous trees were also present along the north-western edge of Parrock Wood. The depiction of the woodland is much the same on 1913 map with the exception that the conventional signs for a mixed wood were now used for most of the western part of Parrock Wood.

Between the late 1950s and early 1970s, while the area was being managed by the Forestry Commission, about one third of the old or semi-natural broadleaved woodland on the Haverthwaite Heights was converted into coniferous plantation; most of this planting was at the west end (Lake District Special Planning Board 1988). At a meeting held on the 10th February 1987, the Lake District National Park Management Committee agreed to the purchase of a large area of woodland on the Haverthwaite Heights; the three woods surveyed by the RCHME fall within the National Park's holding. Offers of financial support to assist with this purchase were made by the World Wildlife Fund and the Countryside Commission. One of the conditions set by the latter was that ‘the conifers will be converted to mixed native broadleaves, or removed, within a period of 30-40 years from present’ (Lake District Special Planning Board 1988, Appendix 1) - hence the felling and thinning during the winter of 1997/98 when the RCHME survey was being executed.

The Lake District National Park's draft management plan for the woods contained a short section describing the archaeology of the Haverthwaite Heights and its immediate environs (Lake District Special Planning Board 1988). In addition to the former ironworks at Backbarrow, the old gunpowder works at Low Wood was also

mentioned as being an important site in the vicinity. Low Wood (NMR No. SD 38 SW 9) was also once the site of a bloomery forge, built between 1603 and 1609, and later the location of a blast furnace (Fell 1908, 200). It is situated opposite Haverthwaite on the south-eastern bank of the River Leven. On the Haverthwaite Heights attention was drawn to the presence of numerous pitsteads, eight bark peeler's huts (referred to as 'charcoal burner's huts' in the plan) and a potash kiln. This account formed the basis of the Cumbria Sites and Monuments Record entry for the area (Cumbria SMR No 6213). Between 1989 and 1991 a sketch survey of sites related to the woodland industries together with prominent natural features on the Haverthwaite Heights was undertaken by M Davies-Shiel and H Fletcher (and in 1989 only, J Niepokojczycka). A copy of this survey, which contains a wealth of information, has been deposited with the Lake District National Park Authority (Archaeology Section).

The exact position of the boundaries which separate individual woods on the Haverthwaite Heights is not always clear either on the ground or from the various editions of the Ordnance Survey maps. For the purposes of this report the divisions which have been accepted as the boundaries between Parrock Wood, Rigg Wood and Knott End Wood are based on those depicted by the Ordnance Survey on their revision of the 1:2500 map of 1970 (Ordnance Survey 1971).

DESCRIPTION AND ANALYSIS OF THE FIELD MONUMENTS

The descriptions of the sites included in this section are derived from RCHME's archaeological survey which took place between December 1997 and March 1998 inclusive (Fig. 2). For the purposes of this report the sites recorded have been divided

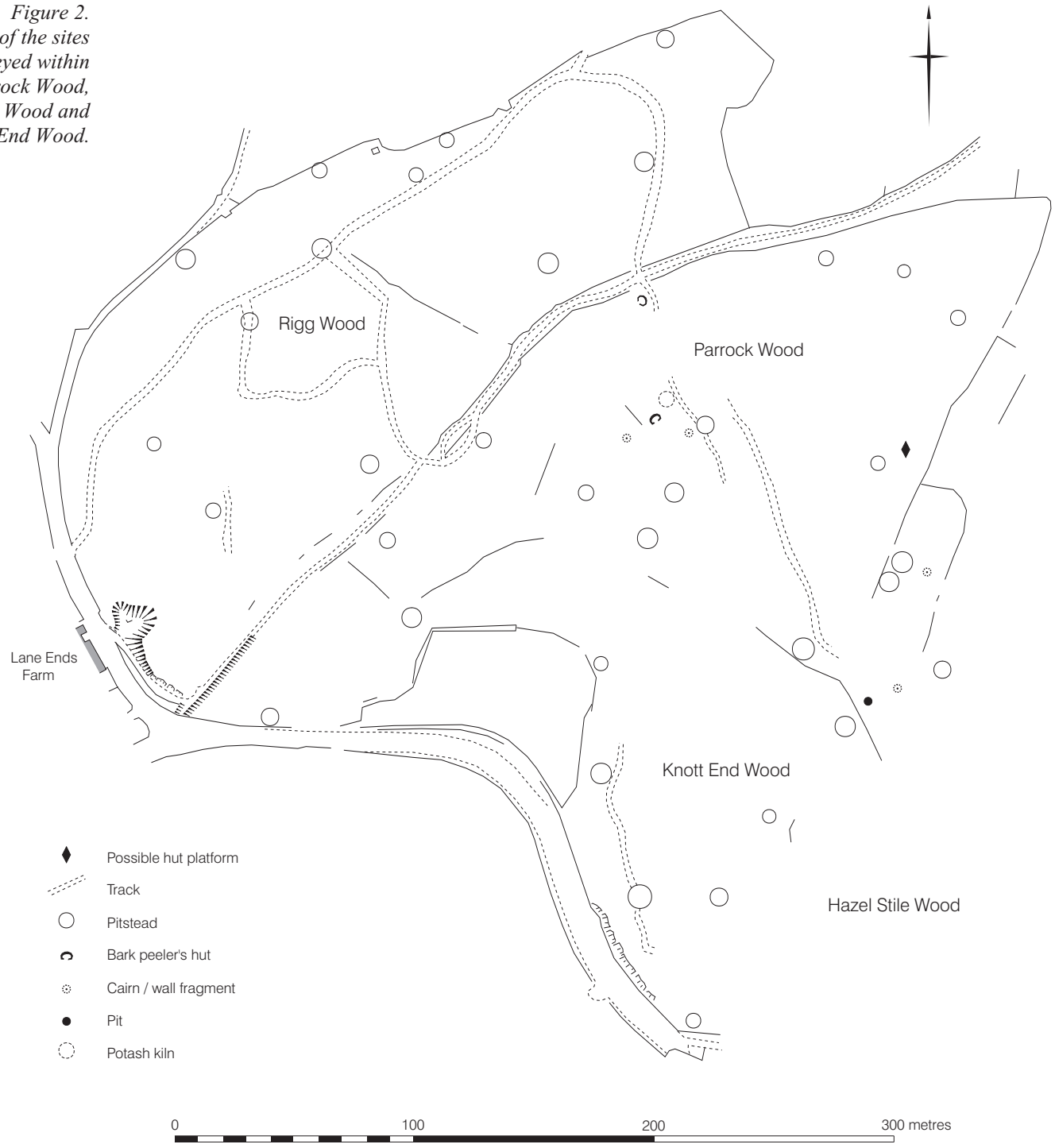


Figure 2. Plan of the sites surveyed within Parrock Wood, Rigg Wood and Knott End Wood.

into five categories: the field walls and principal track; the bark peeler's huts; the potash kiln; the pitsteads and associated tracks; and a miscellaneous group of monuments which do not fall within any of the first four categories. In order to accommodate the large number of sites, especially the pitsteads, individual monuments have been given feature letters and numbers which in general correspond with the five main categories.

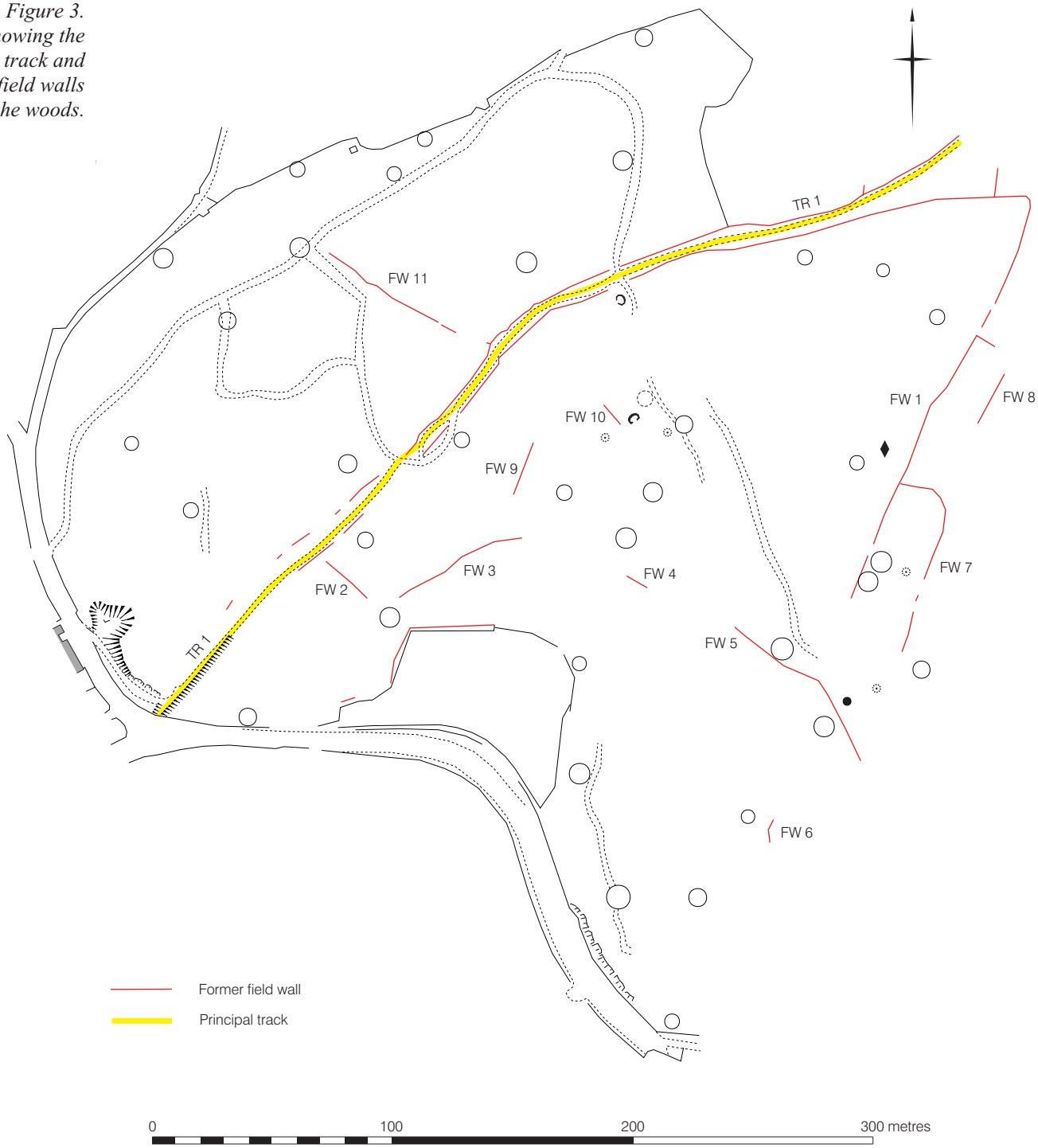
The field walls and principal track (Fig. 3)

During the survey of the monuments relating specifically to the woodland industries the remains of former field boundary walls were encountered and planned. For the most part the walls have a poor state of preservation and their courses are now incomplete with large gaps present. Some of these walls were shown by the Ordnance Survey on the first edition of the 1:2500 map. The northern two thirds of FW 1, situated near the summit of Parrock Wood, was depicted, together with a long wall which crossed the natural 'fold' in the hillside between the two spurs. All that survives of this last wall, part of which still separates Parrock Wood and Knott End Wood, are three sections still of a reasonable length (FW 2 and FW 3, FW 5) and a short fragment (FW 4). Towards the southern limit of the area surveyed by the RCHME, the Ordnance Survey mapped a wall separating Parrock and Knott End woods from a third wood called Hazel Stile; FW 6 - a wall corner - is all that remains.

The RCHME survey has located additional walls near the summit of Parrock Wood (FW 7 and FW 8) which with FW 1 seem to be the remnants of two small and rather narrow rectilinear fields. Two short lengths of fragmentary dry-stone walls (FW 9 and FW 10) indicate that there were probably once fields on that part of the hillside which now lies within the western section of Parrock Wood. A wall (FW 11), in ruinous condition, was also located by the RCHME in Rigg Wood; it appears to divide the area currently occupied by the wood into two unequal parts and is best preserved where it crosses a rock outcrop. The walls measure 0.6m wide on average and maximum heights for surviving sections range from 0.4m (FW 11 - but excluding extra height provided by natural outcrop) to 1.5m (FW 3). A former bee-bole may be represented by a niche in one of the walls on the north-eastern periphery of the survey area. It is located high up on the hillside at SD 3449 8459 and consists of a stone compartment, open on the east, extending into the body of the wall some 0.2m above the base of the latter. It measures 0.55m in both width and depth and the same again in height while its top consists of a stone lintel. On its southern side the field wall has been built to project 0.5m beyond the opening, probably to give protection from the prevailing winds.

The most prominent feature crossing the surveyed area is a track (TR 1) which is edged by side walls for much of its course; throughout this report it will be referred to as the principal track. It commences east of Lane Ends Farm at SD 3414 8437, just above a junction and bend in the course of the former A 590 road. The latter, as it approaches the bend from the direction of Greenodd, is aligned south-west to north-east. It is probably of significance that the route of the track up onto the top of the northern spur is a continuation of this alignment. Proceeding in a north-east direction, the track commences as a terrace-way which is 2.3m wide on average; the outward-facing scarp which marks its south-eastern perimeter is about 1.2m high.

Figure 3. Plan showing the principal track and former field walls within the woods.



After about 44m the track becomes a hollow-way, 0.8m deep and the bounding side walls commence. The wall on the north-western side appears first and for the next hundred metres, like its counterpart on the south-east, it is in a very poor state of preservation. Often it is little more than a rickle of stones with large gaps where it has been totally destroyed. This section ends at SD 3425 8448 which is the place where the slope of the hill steepens quite dramatically. The principal track is now joined by a track from the north-west (TR 7) (Fig. 7) and a recent bifurcation has occurred where

the former has negotiated the steep, natural slope. The state of preservation of the side walls also starts to improve. After about 40m the hillside becomes much less steep as the upper part of the spur is approached. The principal track is largely represented now by a shallow hollow between side walls which are relatively well preserved - at least as far as SD 3446 8460 where the track leaves the area surveyed by the RCHME. In this last section the north-western side wall is about 0.6m wide and survives to a maximum height of 1.4m. Its companion on the south-east measures 0.55m in width and where best preserved it approaches 1.6m in height.

The upper section of the principal track exhibits a number of interesting features which help to explain how the landscape associated with the track evolved and also its relationship with some aspects of the woodland industries. The field wall in Rigg Wood (FW 11), although no longer a continuous feature, once joined the north-western side wall of the track. The former junction is represented by a short length of field wall protruding from the apex of a marked outward-facing bulge in the wall of the track. At the north-eastern edge of the surveyed area the track opens out into a triangular space enclosed by walls. Both of these features suggest that the trackway and former fields, represented by the walls, developed not in a cohesive way but in a piecemeal manner over time. The south-eastern wall of the track has been demolished down to its foundations where it passes close to the northernmost of the bark peeler's huts (BPH 1) (Fig. 4). The extent of the gap thus created almost exactly mirrors that of the hut indicating that the side wall of the track was demolished to provide building stone for the hut; the gap also allowed access into Parrock Wood at this point.

Plate 1. Northernmost bark peeler's hut (BPH 1) in Parrock Wood.

The bark peeler's huts (Fig. 6)

The two stone-built huts which occur within the area surveyed by the RCHME both lie within the western part of Parrock Wood (BPH 1 and BPH 2). A further six bark peeler's huts have previously been recorded within the area owned by the Lake District National Park but these are all situated in the woods beyond the survey area (Lake District Special Planning Board 1988, Map 3). Of these the nearest to the ones surv

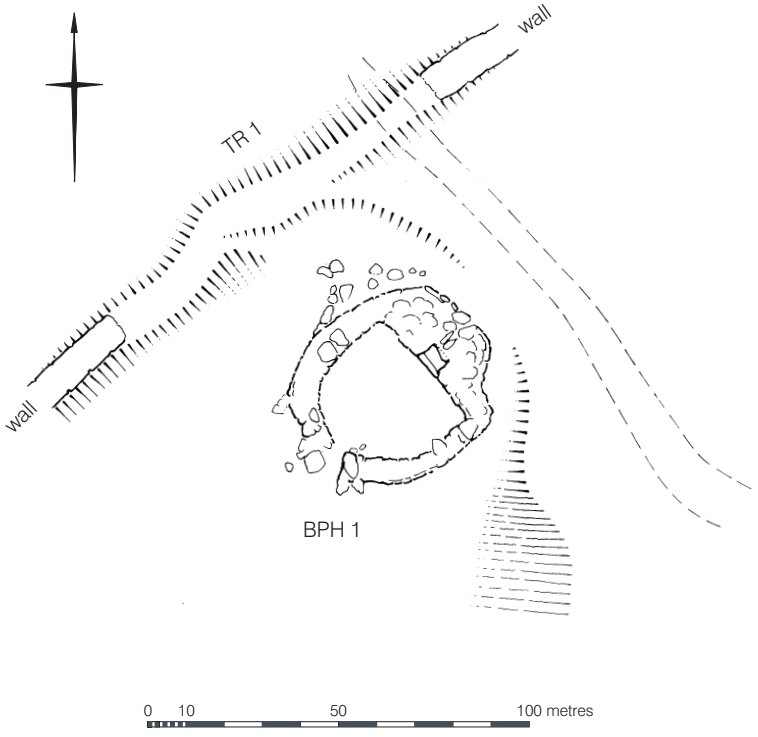


Figure 4. Plan of the northernmost bark peeler's hut (BPH 1).

eyed are the pair in the wood called Kirk Doors; they are located 300m and 500m respectively north-east of BPH 1 and one is very close to the continuation of the principal track (TR 1) outside the survey area.

The northernmost hut is BPH 1 which is located at SD 3434 8454 approximately 5.0m south-east of the southern side wall of the principal track (Fig. 4; Pl. 1). Just beyond it on the north-east are traces of a path. Its plan which internally is best described as heel-shaped, is rather unusual. The entrance is at the south-west and opposite it, in the centre of the back wall, is a fireplace. The latter is 0.4m deep, 0.5m wide and 1.0m high; the rectangular lintel, consisting of a large slab, is still in place. The side walls are about 0.6m wide and survive to a height of 0.5m. Internally the building measures 3.3m by 3.1m. In order that the fireplace and attendant chimney could be accommodated, the back wall was made thicker than the other walls. Near the south-east end of the back wall this extra width takes the form of a shouldered protuberance.

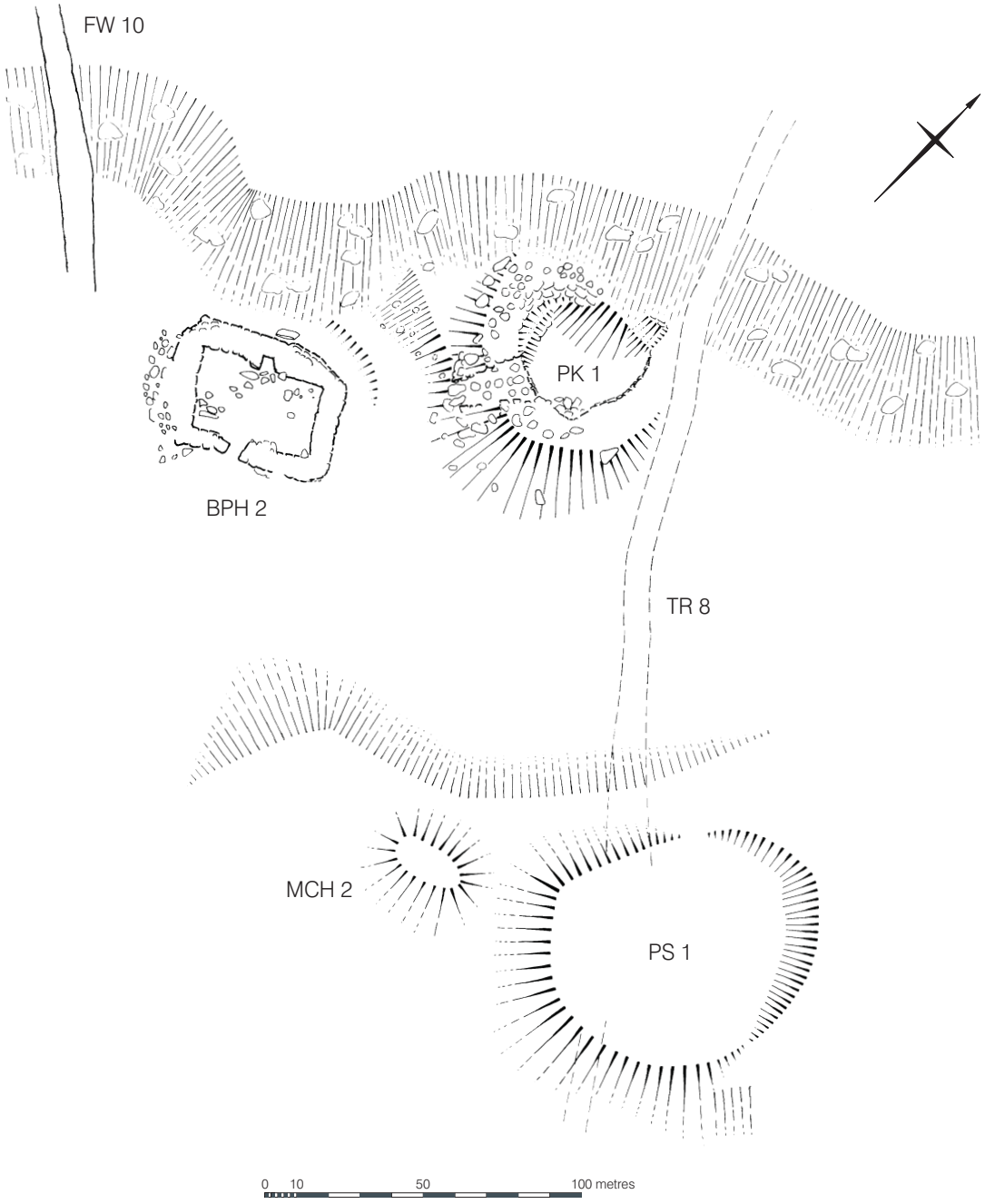


Figure 5. Plan of the southernmost bark peeler's hut (BPH 2), the potash kiln (PK 1) and other sites in the vicinity.

The other bark peeler's hut, BPH 2, is situated at the foot of a short, natural rocky scarp at SD 3434 8449 (Fig. 5; Pl. 2). Near it are a potash kiln (PK 1), a pitstead (PS 1), two small cairns (MCH 2 and MCH 3) and the last remnants of a short length of a field wall (FW 10). The hut is sub-rectangular in plan with its principal axis oriented north-east to south-west. The south-eastern side is broken by the entrance gap, 0.5m wide, which is located about one third of the way along the side from the southernmost corner. Centrally placed in the back or north-west wall is a recess, the remains of the fireplace;

it is 0.5m wide, 0.45m deep and a maximum of 1.1m in height. Internally the building measures about 4.0m by 2.4m and its walls are approximately 0.6m wide and stand 0.45m high above the interior. The outer face of the south-western end wall is

Plate 2. Southernmost bark peeler's hut(BPH 2) in Parrock Wood.

obscured by tumble while the slightly increased width of the north-west side wall, certainly when compared with the south-east and north-east walls, is a consequence of this being the location of the fireplace and former chimney.

The potash kiln (Fig. 6)

The outer edge of the potash kiln (PK 1) is situated about 3.4m north-north-east of the northernmost corner of the bark peeler's hut (BPH 2) described in the paragraph above. The kiln is at SD 3435 8450 and is partly built into the south face of a short, natural rocky slope (Fig. 5). It is approximately circular in plan with its interior, consisting of a pit, measuring 3.7m in diameter and 1.2m deep (Pl. 3). The enclosing dry-stone wall (the kiln wall) measures, except on the north, up to 3.0m in width. The inner face of the wall, which forms the side of the pit, is built of rounded stones laid in crude courses while the outer face is now a steep, outward facing scarp largely composed of collapsed rubble. The northern side of the interior is obscured by a fan-shaped spread of collapsed material, however, this side probably consisted of the cut back natural slope revetted with dry-stone walling. The site of the flue may be represented by a hollow in the top of the kiln wall on the south-south-west. The faces of two wall lines, at ninety degrees to the kiln wall, are visible in the bottom of the hollow - they are probably the remains of the side walls of the flue.

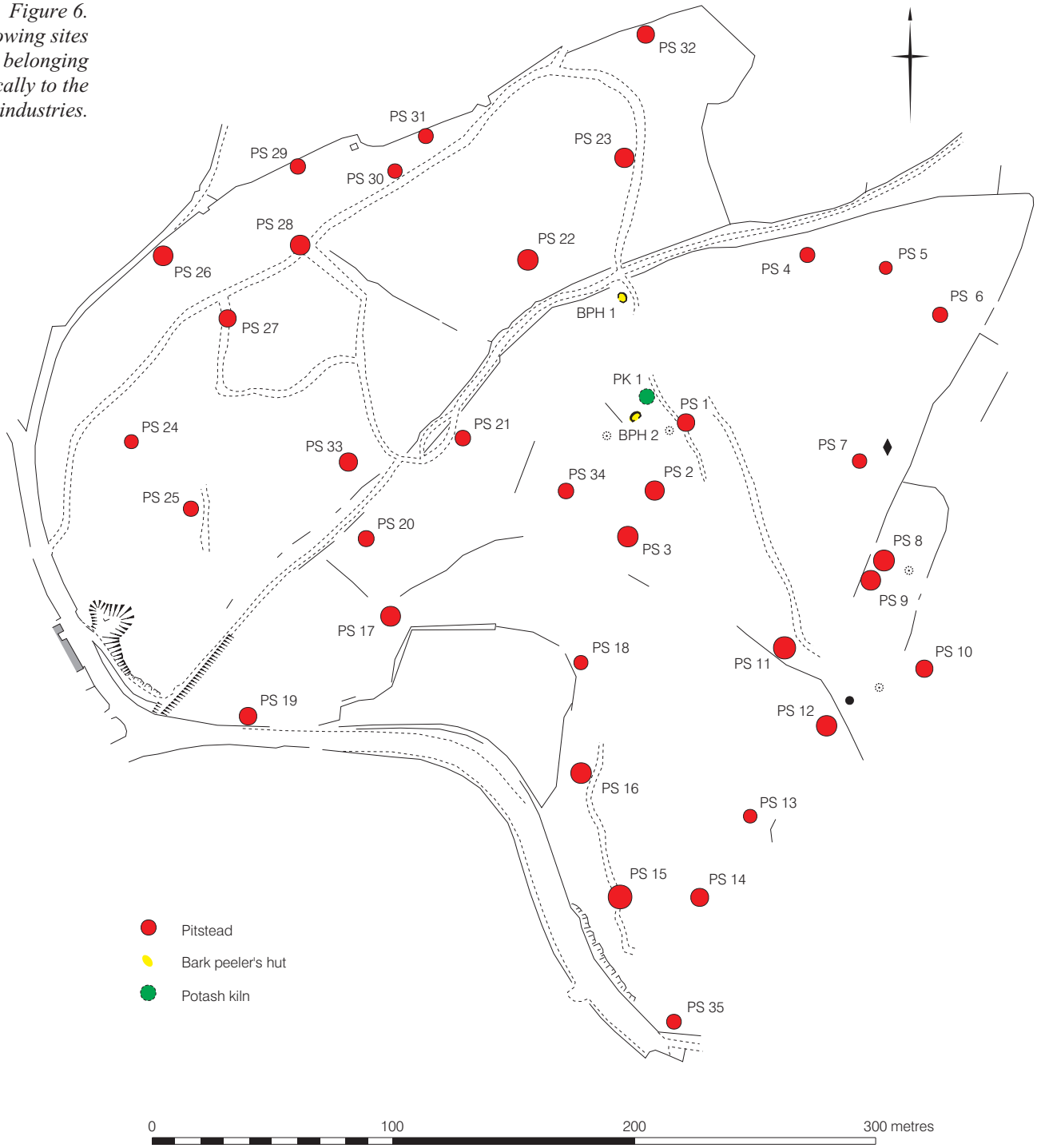
Plate 3. Interior of potash kiln (PK 1) in Parrock Wood.

The pitsteads and associated tracks (Figs 6-7)

A total of thirty five pitsteads were recorded during the RCHME survey (PS 1 - PS 35). Usually they consist of circular or slightly oval platforms which have been levelled into the hillside (Pl. 4). This type of pitstead was made by cutting back into the natural slope in order to obtain a level area for the rear of the platform with the excavated material being used to build up the front of the platform on the downslope side. This method of construction has left two scarps that are generally crescentic in plan: an outward facing scarp at the front of the platform (front scarp) which is the slope down the front of the built up material from the lip of the platform to the natural surface of the hillside; a scarp rising up at the back of the platform (back scarp) caused by the cutting back into the hillside and representing the fall from the natural surface of the hillside down onto the back of the platform. Appendix 1 contains a list of all the pitsteads surveyed together with their National Grid References, principal dimensions and, where relevant, the heights of these two scarps. PS 2 was built on a very steep slope and its front scarp consists of a stone built revetment, 1.0m high. Below this pitstead is PS 3 whose front scarp also displays evidence of a stone revetment. The relatively few pitsteads which occur in areas that are naturally fairly level tend to survive as perfectly flat or slightly dished circular areas whose perimeters are marked by a slight rim or low bank; PS 6 in Parrock Wood is a good example of this type of pitstead. Platform diameters, based on measurements taken from front to back and also at ninety degrees to this axis (side to side), range from 4.2m to 8.6m with the average being about 6.4m to 7.0m.

The pitsteads have a fairly even distribution and are located as follows: Parrock Wood PS 1 - PS 11, PS 17, PS 19 - PS 21 and PS 34; Rigg Wood PS 22 - PS 33 ; Knott End

Figure 6.
Plan showing sites belonging specifically to the woodland industries.



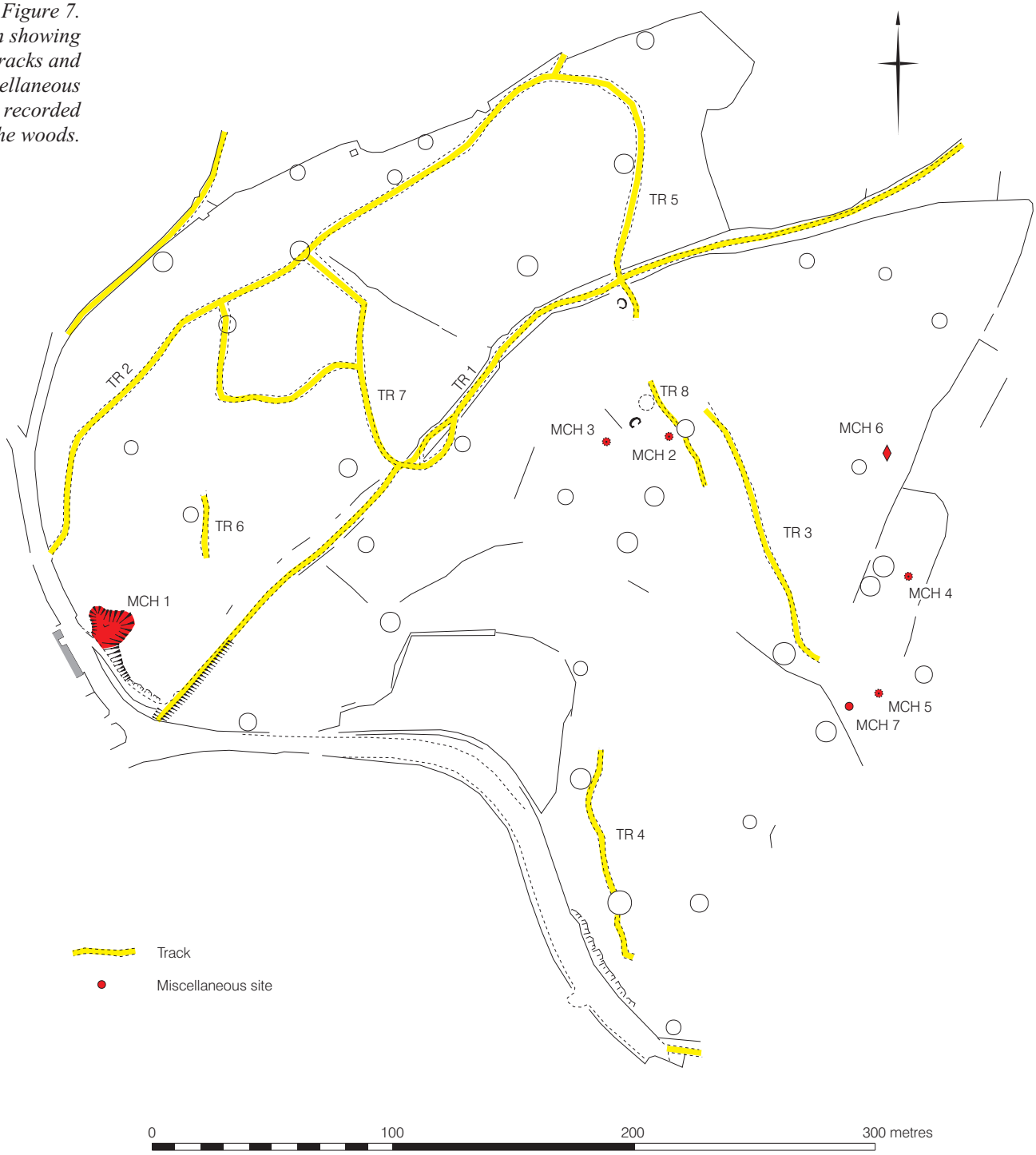
Wood PS 12 - PS 16, PS 18 and PS 35. Within these woods there is a tendency for the pitsteads to be located near the woodland edges. This is certainly true of all the pitsteads in Knott End Wood and is also a marked feature of a number of the sites in the other two woods. In Rigg Wood, for example, PS 26, PS 29 and PS 31 - PS 32 are very near to the north-western boundary wall of the wood - indeed PS 26 appears to be built against this boundary which here separates the wood from a farm lane. PS 31 is situated further up the hillside to the north-east where the wall is the division between

Plate 4. A pitstead (PS 11) on top of the southern spur in Parrock Wood

the wood and a pasture field. The former is so close to this wall that it is difficult to see how it could have functioned unless of course the present line of the wall at this point is later in date than the pitstead. In both Parrock Wood and Rigg Wood there is a grouping of pitsteads near their common boundary (PS 4, PS 20 - PS 22 and PS 33); in this instance the boundary is the principal track (TR 1). There are several examples, such as PS 8 - PS 11 and PS 17 in Parrock Wood, where the pitsteads were placed quite close to the old field walls. This suggests that the latter, or the boundaries which they once defined, were still of some significance to those involved with the woodland industries.

Within the woods a significant number of the pitsteads are near tracks or paths some of which, although still in use, may have a respectable antiquity. Indeed they could have been in existence at the time when the pitsteads were functioning and have been used both to bring wood to the pitsteads and take the charcoal away. The pitsteads near the principal track have already been mentioned but the best example of this probable relationship is the track (TR 2) which follows the foot of the north-east to south-west natural slope in the north-western part of Rigg Wood. This is now an access route between Lane Ends Farm and some of its fields beyond the wood on the north-east, however, it may well have been used by the charcoal burners because it has a sizeable number of pitsteads close to it (PS 24, PS 27 - PS 28 and PS 30 - PS 31). PS 23 and PS 25, also situated in Rigg Wood, are close to tracks TR 5 and TR 6 respectively, however, PS 23's apparent association with a track is considered to be no more than a coincidence because TR 5 may be a relatively recent forestry track; it is not depicted on any of the Ordnance Survey maps. PS 33, as well as being near the principal track, is also near TR 7. Four pitsteads are adjacent to what are now minor footpaths ascending the southern spur: in Parrock Wood PS 1 and PS 11 are south-west of TR 3; in Knott End Wood PS 15 and PS 16 appear to be linked by TR 4. PS 1 is also crossed

Figure 7. Plan showing tracks and miscellaneous sites recorded in the woods.



by a footpath (TR 8), however, its origins may be of fairly recent date because it seems to overlie the outer edge of the potash kiln (PK 1). PS 19 is located beside the former route of the A 590 road while PS 26 and PS 35 occupy similar positions in relation to a lane and track respectively; the latter are both ultimately related to the communication system associated with the former route of the A 590 (see above - Topography and Current Land Use).

In Parrock Wood some of the pitsteads are close to other monuments which are or may be specifically connected to the woodland industries. The closeness of PS 1 to a bark peeler's hut (BPH 2) and the potash kiln (PK 1) has already been noted (Fig. 5). In addition PS 1 is very close to a heap of stones or small cairn (MCH 2), situated on the south-west; the bottoms of their slopes almost touch. A rectangular setting of stones (MCH 4) lies in front of PS 8 while a broad, poorly defined platform (MCH 6) is situated a short distance to the north-east of PS 7 (see below). PS 8 and PS 9 are of particular interest because they have been constructed beside each other. Pieces of charcoal are visible on a number of the platforms, chiefly where their surfaces have been disturbed by either animal scrapes or tree roots; Appendix 1 includes information about those sites at which charcoal was observed.

Miscellaneous monuments (Fig. 7)

The most visible monument in this category is the small stone quarry (MCH 1) on the edge of Rigg Wood at SD 3412 8441, opposite Lane Ends Farm. It has no obvious connection with the woodland industries and may have been a source of stone for road metalling or for use on the adjacent farm. The pit is irregular in plan and measures a maximum of 20m by 13m across and 6.0m in depth; it has been largely infilled with rubbish from the farm, including discarded machinery. Poking through this infill, on the north side of the bottom of the quarry, is a section of revetment walling, 3.2m long and 1.0m high. The original purpose of this wall is unclear.

Several heaps of loose stones were also recorded during the RCHME survey. MCH 2 consists of a small cairn situated near PS 1 at SD 3436 8448 (Fig. 5). It is 4.6m by 3.2m in diameter and 0.9m high. Its close proximity to the pitstead hints at a relationship - perhaps MCH 2 is a clearance cairn created as a result of the initial clearance and preparation of the site for the pitstead. MCH 3 is another small cairn and is situated about 10m south-west of the southernmost bark peeler's hut (BPH 2) at approximately SD 3433 8449; it is oval in plan, 2.4m by 1.6m in diameter and 0.35m in height. MCH 4 consists of a rectangular setting of stones situated a short distance to the east-south-east and in front of a pitstead (PS 8). It measures 1.8m long, 0.5m wide and 0.4m high. It is aligned along the contour. It is similar to a short length of field wall but is rather squat and seems too well formed for this. The heap of stones which constitutes MCH 5 certainly looks as though it is the last remnants of a wall.

The ground surfaces of the three woods surveyed contain many hollows and depressions. The vast majority probably mark the sites of former trees which have blown over or relate to the activities of burrowing animals such as badgers; several deep depressions with irregular outlines appear to be where machines used in the past to remove felled timber became stuck and dug into the ground. Only one hollow (MCH 7), situated in Parrock Wood, is considered by the RCHME to have any possible significance. It is situated at approximately SD 3443 8438 and measures a maximum of 4.0m across and 0.6m deep with some stone visible in its side; its function is unclear. A slight platform (MCH 6), also in Parrock Wood and at about SD 3445 8448, is large enough to have been a hut stance.

DISCUSSION

The RCHME measured survey has drawn attention to a number of interesting aspects and facets. These include, in addition to the sites belonging to the woodland industries, elements relating to the pre-woodland landscape. The background research undertaken to support this survey has shown that, certainly in the more recent past, the history of the woods at the western end of the Haverthwaite Heights has not remained static. Indeed there has been, especially in Parrock Wood, a progressive increase in conifer trees at the expense of broadleaved woodland during the last hundred years. This process was accelerated from the late 1950s with the establishment of extensive areas of conifer plantation by the Forestry Commission. It is interesting that this trend is currently being reversed by the Lake District National Park Authority and the woods are gradually being returned to deciduous woodland.

The ruined field walls and the principal track (TR 1) make little sense in a purely woodland context and must relate to an agricultural phase before the woodland was established. The date of the origins of this phase of farming is unclear. The larger areas enclosed by the walls are very similar in shape and extent to some of the enclosed pasture fields which still survive to form a major component of the contemporary landscape outside the woods. However FW 7 and FW 8 belong to small rectilinear fields which are totally unlike anything in the contemporary landscape; they may, therefore, be comparatively early in date. The survey has found evidence which suggests that the principal track and associated fields developed in an aggregate way. The relationship of the principal track to that part of the former course of the A 590 road which approaches the survey area from the direction of Greenodd, suggests that the track was once an important route between the Leven valley and the upland above Haverthwaite. The track has side walls within the area of the RCHME survey because here the track originally passed through an enclosed landscape. What the survey has achieved, therefore, is the identification of some of the key early elements which both pre-date the woodland and also form the principal ‘bones’ of the contemporary landscape.

The relationship of the sites belonging to the woodland industries to the former field walls also requires comment and further explanation. In some cases the boundaries defined by the walls appear to have been adopted for the new woods while the closeness of some of the pitsteads to the abandoned field walls suggests that the latter continued to have a role for some time after their agricultural function had ceased. They may have provided, or at least have marked, useful divisions for the maintenance, management and exploitation of the coppiced woodland. The proximity of some of the pitsteads to the principal track (TR 1) indicates that this route was an important element for the transportation of the charcoal away from the production sites; some of the other tracks in the vicinity surveyed by the RCHME served a similar function. Apart from bounding the perimeter of the woodland as a whole, maintained standing walls were not required after the land use on this part of the Haverthwite Heights changed from farming to woodland. This accounts for the very fragmentary nature of some of the surviving former field walls and why their courses are now often so incomplete. In the case of the principal track, although it was still required for access, its side walls were no longer needed in a woodland

environment which is the reason why part of one wall could be demolished in order to provide building stone for a bark peeler's hut (BPH 1).

The concentration and representative range of sites connected with the woodland industries at the western end of the Haverthwaite Heights was one of the reasons which led to the RCHME choosing these particular woods to survey. If anything the final results have exceeded the expectation as to the potential of this area. Among the sites surveyed, there are a couple of interesting groupings or associations. In Parrock Wood, at the head of the natural 'fold' in the hillside, are the group containing a bark peeler's hut (BPH 2), a potash kiln (PK 1), a pitstead (PS 1), a field wall in ruinous condition (FW 10) and two cairns (MCH 2 and MCH 3). This is the first time during the Furness project that the RCHME has located small cairns in close association with sites related to the woodland industries. Previous RCHME fieldwork in Furness has indicated that it is unusual for pitsteads to built beside each other to form what could be termed a 'double pitstead' - yet this is the situation with PS 8 and PS 9. Sadly the former has been very badly disturbed by badgers who appear to have established a sett beneath the pitstead. Some of the individual sites display interesting structural features, these include the curious heel-shape of the northernmost bark peeler's hut (BPH 1) and the stone revetted fronts to two of the pitsteads (PS 2 and PS 3) on the steep natural slope in Parrock Wood (Pl. 5). It is curious that one of the pitsteads in Knott End Wood (PS 15), although built on a fairly level terrace, also has a stone-built revetment at its front end.

Plate 5. One of the pitsteads (PS 2) in Parrock Wood with a stone revetted front (visible on right between trees).

SURVEY METHODOLOGY

The RCHME archaeological survey of the woods at the western end of the Haverthwaite Heights was carried out at a scale of 1:2500. Parrock Wood and Knott End Wood were enclosed by a ring traverse using a Leica TC 1610 electronic theodolite with integral electromagnetic distance measuring. Supplementary traverses were laid out from the main traverse in order to enclose Rigg Wood and to capture TR 3 and PS 35. It was not possible to record the last two sites from stations on the main traverse as a result of dense tree cover (TR 3) and restricted visibility caused by stacks of felled timber (PS 35). Due to a combination of closely planted spruce trees and tree harvesting methods it proved impossible to record FW 3, FW 4, FW 9 and PS 34 with either a theodolite or plane table; these sites were surveyed from stations on the main traverse using a prismatic compass and tapes.

Large scale plans, at 1:100 scale, were produced of the bark peeler's huts (BPH 1 and BPH 2) and of sites close to BPH 2 (PK 1, PS 1, FW 10 and MCH 2). This exercise was undertaken using a Wild RK-1 self-reducing alidade and plane table.

ACKNOWLEDGMENTS

The archaeological survey was carried out by Christopher J Dunn and Amy Lax from the RCHME's York Office. The report was researched and written by Christopher J Dunn and edited by Amy Lax. The archive drawings included in this report were prepared by Philip M Sinton (RCHME York Office) and Amy Lax. The photographs were taken by Keith M Buck (also at the RCHME York Office).

The RCHME is grateful to the Lake District National Park Authority for permitting access to the woods. Bette Hopkins (Sites and Monuments Records Officer, Cumbria County Council, Kendal) kindly supplied information from the SMR.

BIBLIOGRAPHY

Unpublished Sources

Cumbria County Council Record Office, Barrow (CRO), CRO, BDB/2 5/9, six charcoal record books.

Lake District Special Planning Board, 1988, Haverthwaite Heights - Draft Management Policies, [National] Park Management Committee - 5 February 1988 Agenda Item: 4b, copy in SMR.

Published Sources

Davis, R V, 1977, *Geology of Cumbria*, Dalesman Books, Whitehaven.

Fell, A, 1908, *The Early Iron Industry of Furness and District,* Hume Kitchin, Ulverston.

Ordnance Survey, 1890, *County Series 1:2500, Lancashire sheet XII/1,* surveyed 1888, Southampton.

1913, *County Series 1:2500, Lancashire sheet XII/1, revised 1911,* Southampton.

1971, *National Grid Plans 1:2500, Plan SD 3484-3584,* revised 1970, Southampton.

Riden, P, 1993, *A Gazetteer of charcoal-fired Blast Furnaces in Great Britain in use since 1660* (2nd ed), Merton Priory Press, Cardiff.

APPENDIX 1

List of pitsteads recorded during the survey with approximate eight figure NGRs.

Abbreviations: SS = side to side; FB = front to back; BS = back scarp; FS = front scarp; P = Parrock Wood; K = Knott End Wood; R = Rigg Wood; C = charcoal pieces observed.

PITSTEAD NO.	NATIONAL GRID REF (NGR).	DIAMETER	HEIGHT	COMMENTS
PS 1	SD 3436 8449	8.6m (SS) x 7.2m (FB)	0.6m (BS) 0.9m (FS)	P. C.
PS 2	SD 3435 8446	8.2m (SS) x 6.0m (FB)	1.1m (BS) Up to 1m (FS)	P. It has a stone revetted front scarp.
PS 3	SD 3434 8444	8.2m (SS) x 6.2m (FB)	1.2m (BS) 1.1m (FS)	P. C. Traces of stone revetment are visible in its front scarp.
PS 4	SD 3441 8456	7.7m (SS) x 6.5m (FB)	0.6m (BS) 0.5m (FS)	P. Grass covered.
PS 5	SD 3445 8456	6.0m (SS) x 6.0m (FB)	0.5m (BS)	P. It has been cut into a natural terrace.
PS 6	SD 3447 8453	7.0m		P. A slightly dished, circular platform with a low surrounding bank; the latter is well defined on the south. The bank is 2.0m wide and 0.2m high.
PS 7	SD 3444 8448	7.3m (SS) x 5.7m (FB)	0.45m (BS)	P.
PS 8	SD 3445 8444	8.1m	0.5m (BS) 0.6m (FS)	P. C. Disturbed by badgers.
PS 9	SD 3444 8443	7.2m	0.3m (BS) 0.3m (FS)	P.
PS 10	SD 3446 8439	7,5m	1.3m (BS)	P.
PS 11	SD 3441 8440	8.2m	0.6m (BS)	P. It is situated on the edge of a natural scarp. The lip of its back scarp is slightly embanked.
PS 12	SD 3442 8437	8.3m (SS) x 7.0m (FB)	0.4m (BS)	K.
PS 13	SD 3439 8433	5,6m (SS) x 5.3m (FB)	0.8m (BS)	K. The woodland in this area consists of oak and birch saplings.
PS 14	SD 3437 8429	6.5m (SS) x 5.9m (FB)	0.5m (BS)	K.

PS 15	SD 3434 8429	7.2m (SS) x 7.2m (FB)	0.6m (BS) 0.5m (FS)	K. It is situated on a fairly level terrace half way up the steep north-western side of a rocky spur. It is near the end of the spur and is set slightly back from the terrace edge; this position would have provided some protection from the elements. Given its flattish terrace location it is surprising that its front has a very neat stone revetment of one to two courses.
PS 16	SD 3432 8435	8.2m (SS) x 7.0m (FB)	1.0m (BS) 1.6m (FS)	K. Hazels, formerly coppiced, grow in the vicinity.
PS 17	SD 3424 8441	7.9m (SS) x 7.0m (FB)	0.4m (BS)	P. Situated on the edge of a natural scarp.
PS 18	SD 3432 8439	5.9m (SS) x 5.6m (FB)	1.0m (BS)	K. The wall of the field on the west appears to bend to avoid the pitstead.
PS 19	SD 3418 8437	6.6m (SS) x 5.2m (FB)	Back scarp present but obscured by rubbish.	P. It is situated just above the former course of the A 490 road, opposite Gateside Cottage. It is being used as a dump for domestic and garden rubbish.
PS 20	SD 3423 8444	7.7m (SS) x 7.4m (FB)	0.5m (BS)	P. It was situated in a plantation of spruce at the start of the survey.
PS 21	SD 3427 8448	6.6m (SS) x 6.3m (FB)	0.7m (BS)	P. It was situated in a plantation of spruce at the start of the survey.
PS 22	SD 3430 8456	7.9m (SS) x 7.5m (FB)	0.4m (BS)	R.
PS 23	SD 3434 8460	8.0m (SS). Front obscured by felled trees.	0.8m (BS)	R. C. Sited on the upper part of a steep, natural slope.
PS 24	SD 3413 8448	5.9m (SS) x 5.2m (FB)		R. It is dished in form but lacks an encircling bank. Grass covered.
PS 25	SD 3416 8445	6.5m (SS) x 5.4m (FB)	0.4m (BS)	R. It is situated on a slight knoll which protrudes from a natural terrace in the hillside.
PS 26	SD 3415 8456	8.2m (SS) x 7.4m (FB)	1.2m (BS)	R. On its downslope side it appears to have been built against the boundary wall between the wood and a lane. Its surface is obscured by dead branches.
PS 27	SD 3417 8454	6.5m (SS) x 6.1m (FB)	0.6m (BS) 0.8m (FS)	R. It is crossed by a pair of deep wheel ruts and is grass and bracken covered.
PS 28	SD 3420 8456	6.6m (SS) x 6.6m (FB)	0.3m (BS)	R. It is situated on the side of a track (TR 2). The latter is joined on its south-eastern side by a relatively modern forestry track. Vehicles using this junction have spilled onto and partly destroyed the pitstead. It was rather wet and grass covered at the time of the survey.
PS 29	SD 3420 8460	5.9m (SS) x 4.6m (FB)	0.4m (BS)	R. It is downslope from a small water reservoir.

PS 30	SD 3424 8459	6.2m (SS) x 5.3m (FB)	0.5m (BS)	R. C. Rubbish has been dumped on it.
PS 31	SD 3425 8461	4.2m (SS) x 4.2m (FB)	0.5m (BS) 0.3m (FS)	R. It is very close to the boundary wall of the wood which may just 'clip' it.
PS 32	SD 3435 8465	6.4m (SS) x 6.2m (FB)	0.4m (BS) 0.3m (FS)	R.
PS 33	SD 3422 8447	5.9m (SS) x 7.6m (FB)	0.4m (BS) 0.2m (FS)	R. C. It is situated on a flattish part of the hillside and is markedly dished in form when viewed from certain angles.
PS 34	SD 3431 8446	5.8m (SS) x 6.4m (FB)	0.4m (BS) 0.6m (FS) Height of FS exaggerated by rim.	P. C. It is cut only slightly into the natural slope and, with its rim-like bank along its south-western edge, appears to be dished in form. Its interior is very flat and the rim measures 1.8m wide and stands 0.3m above the interior. The above description was made during initial reconnaissance. Accurate positioning during actual survey was made very difficult by a dense and unbroken surface covering of recently felled spruce branches.
PS 35	SD 3436 8424	5.5m (SS) x 4.5m (FB)	0.6m (BS) 0.4m (FS)	K. It is located just above the former course of the A 490 road and rubbish has been dumped on it.

APPENDIX 2

Table of NMR numbers linked to the survey

SITE NAME	COUNTY	DISTRICT	PARISH
Sites in Parrock Wood, Rigg Wood and Knott End Wood	Cumbria	South Lakeland	Haverthwaite

NMR No	Unique Identifier	NGR	Site Name
SD 38 SW 29	1139559	SD 3440 8445	Parrock Wood (charcoal burning platforms, tracks, two bark peeler's huts, a potash kiln and former field walls)
SD 38 SW 30	1139561	SD 3425 8455	Rigg Wood (charcoal burning platforms, tracks, a small abandoned stone quarry and a former field wall)
SD 36 SW 31	1139712	SD 3440 8435	Knott End Wood (charcoal burning platforms)