

**Pontburn Woods, Hamsterley Mill,
Co. Durham
earthwork survey**

on behalf of
The Woodland Trust

ASUD Report 1227
March 2005

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1. Summary

The project

- 1.1 This report presents the results of an earthwork survey conducted in advance of a proposed planting design in meadows within Pontburn Woods to the east of Hamsterley Mill, County Durham.
- 1.2 The works were commissioned by The Woodland Trust, and conducted by Archaeological Services University of Durham in accordance with a brief provided by The Woodland Trust.

Results

- 1.3 The survey identified a series of features relating to the pre-modern agricultural exploitation of the landscape. These were present over the majority of the area surveyed, in varying degrees of preservation. The features mainly comprised ridge and furrow and field boundaries.
- 1.4 Figure 5 shows the areas considered to be of most archaeological significance for consideration when formulating the proposed planting scheme.

Recommendations

- 1.5 Where these features are likely to be impacted upon by future planting, a further scheme of sample excavation, recording and reporting may be required.

2. Project background

Location (Figures 1 & 2)

- 2.1 The site comprises two meadows located within Pontburn Woods, on the eastern edge of Hamsterley Mill, Co. Durham (centred on: NGR: NZ 147 564). The meadows are separated from each other by a railway embankment, which is now a part of Derwent Walk. The meadow to the north of the embankment measures 4.11ha in area, whilst that to the south measures 2.66ha.

Landuse

- 2.2 The meadows comprising the study area lay under pasture at the time of the survey.

Topography and geology

- 2.3 The site is a plateau of raised land, sloping away to the south and surrounded by woodland, at a mean elevation of c.75m OD. The underlying solid geology is Westphalian Coal Measures and shales. The drift geology is boulder clay, overlain by clay-rich brown earths.

Development proposal

- 2.4 The meadows are scheduled to be planted with trees. The first phase of planting is due to start in November 2005.

Objective

- 2.5 The objective of the survey was to assess the nature, extent and potential significance of any surviving archaeological features within the proposed development area, so that an informed decision may be made allowing the incorporation and preservation of archaeologically sensitive areas within the planting design.

Methods statement

- 2.6 The works have been undertaken to fulfil a brief provided by The Woodland Trust.

Dates

- 2.7 Fieldwork was undertaken between 14th and 28th February 2005. This report was prepared between 1st and 9th March 2005.

Personnel

- 2.8 Fieldwork was conducted by Sam Roberts and Louise Robinson. This report was prepared by Sam Roberts, with illustrations by Martin Railton. The Project Manager was Peter Carne.

Archive/OASIS

- 2.9 The site code is **PBW05**, for **PontBurn Woods 2005**. It is anticipated that the survey archive will be transferred to County Durham SMR in due course. Archaeological Services University of Durham is registered with the Online

Access to the Index of archaeological investigationS project (OASIS). The OASIS ID number for this project is **archaeol3-7280**.

3. Historical and archaeological background

- 3.1 The earthworks commonly referred to as *ridge and furrow*, also known as *rigg*, are remains of a form of cultivation practised widely in the British Isles from the early medieval period up until the late 19th Century. Ridge and furrow remains can be broadly characterised into two types, Broad and Narrow (Foster & Smout 1994 pp.36-41).
- 3.2 Broad rigg is generally in excess of 4.5m in width, and sometimes as much as 20m, extending up to 250m in length and typically displaying a curve in the shape of a reverse-S, and is characteristic of the medieval period. A headland was formed at the ends of each block of ridge and furrow by the plough turning (Foster & Smout 1994 pp.37-38). The agricultural techniques that led to its formation went out of use in the late 18th and early 19th Century.
- 3.3 Narrow rigg is a later form of ridge and furrow, and can be found wherever improved agriculture was practised, prior to the introduction of underground drains in the later 19th Century. Narrow rigg was generally less than 5m in width, straight, with lower ridges. The differences between it and Broad rigg may be due to the introduction of lighter ploughs in the late 18th Century (Foster & Smout 1994 p.41).
- 3.4 During the medieval period agricultural land was mainly composed of large open field systems, divided into strips upon which individuals grew and harvested crops, all of which adhered to a common rotation scheme (Hunter & Ralston 1999 p.258). These strips were farmed in a manner that gave rise to the characteristic ridge and furrow; ridges of soil were built up during constant ploughing over a long period of time, creating beds of soil (ridges) with drainage channels (furrows) on either side (Taylor 1975). The conclusion that ridge and furrow cultivation was practised to enhance drainage is reinforced by the observation that ridge and furrow systems on slopes generally run at almost 90 degrees to the contours (Taylor 1975).
- 3.5 The greatest change to occur in the British countryside between the 16th and 19th centuries involved 'enclosure', the shift from communal farming in open fields to smaller fields farmed by individuals (Hunter & Ralston 1999 p.270). Private enclosure began in a piecemeal fashion in the 16th Century and continued through the 17th Century, but the Parliamentary Enclosure Acts operating during the late 18th and early 19th Centuries ensured enclosed field became the standard across Britain by the early 19th century. Parliamentary Enclosure acts acted at the level of the individual parish, but the use of standardised surveying procedures soon produced a distinctive uniformity of landscape composed mainly of square and rectangular fields bounded by hawthorn hedges (Hunter & Ralston 1999 pp.270-1).
- 3.6 The acceleration of enclosure caused by the Parliamentary Acts coincided with the introduction of agricultural improvements such as lighter ploughs, ensuring that narrow rigg is the predominant form within enclosed land of this

date (Aston & Rowley 1974 p.143; Taylor 1975). These two factors also coincided with the Napoleonic Wars which, fuelled by an increase in grain prices at this time and the increased demand for home-grown crops, led to an expansion of cultivation throughout Britain involving the enclosure of moorland and the upland fringes (Taylor 1975; Hunter & Ralston 1999).

- 3.7 Modern agricultural practice has led to widespread destruction of ridge and furrow remains, especially in lowland areas. As much of the upland regions only underwent temporary cultivation (Hunter & Ralston 1999 p.271), narrow rigg field systems in these areas are often well preserved.
- 3.8 Medieval and later field systems are in a unique position to provide information about land-use through the centuries, and their characteristic appearance has become an integral part of Britain's cultural landscape. An assessment of their archaeological importance depends on many factors, however, such as condition, rarity, situation, and the potential for acting as a data resource for future research (Foster & Smout 1994 pp.138-143).
- 3.9 There is little known about the history of the survey area. The fields now known as Pontburn Meadows are shown on the 1st edition OS map, surrounded by woodland. The adjacent settlement to the east, Hamsterley Mill, did not exist at this time (only coming into existence after the building of the railway) and seems to have taken its name from a corn mill, situated just below Pontburn Meadows on the eastern side. There was also a corn mill, Steelclose Mill, just to the north of Pontburn Meadows. Both mills are situated on streams, and would have been water-driven. There is a building known as Pontburn House shown just at the foot of the meadows, near to Pontburn Bridge and next to a smithy.
- 3.10 The land around Pontburn Meadows, beyond the woodland, is enclosed farmland, with the nearest settlements apart from Pontburn House being Hagg House to the east, which is an 18th - Century stone built house of 17th Century origins (SMR 1918), and Lintz Green to the west. Lintz Green preserves the name of Lintz, a deserted medieval village further to the west (SMR #####). The area was rural farmland up until the late 19th Century and the advent of coal mining, but earlier settlement can be deduced through the presence of Anglo-Saxon place names, Hamsterley being one. The presence of two mills in close proximity to each other and the survey area implies that this region did have an important place within the surrounding community.

4. The survey

Introduction

- 4.1 The area was surveyed using a Leica TR307 total survey station and datalogger using *Penmap* software, and tied-in to known, mapped Ordnance Survey points and benchmarks. The data was then transferred into *AutoCad* software, and located onto an OS digital basemap provided by the client. Figure 1 shows the location and extent of the survey. Figures 2 and 3 show each meadow in more detail, with references to a gazetteer, detailed below.

Results summary

- 4.2 Ridge and furrow survive across much of the site. Several associated field boundaries are also present. The ridge and furrow varies in visibility and standard of preservation, whereas the field boundaries are generally well-preserved.
- 4.3 An inspection of Ordnance Survey (OS) maps and air photographs shows that the main field boundaries (F2, F6 and F10) were in place on the 1st Edition OS map (c.1856 – 1865) and survived as hedgelines for many years, appearing on 1940's air photographs. The boundaries are still present on the 2nd Edition OS map, although now truncated by the railway embankment. The boundaries do not appear on OS maps from the 1980's onwards and are assumed to have been cleared by this point.
- 4.4 The form of the ridge and furrow in the North Meadow (including F10 in South Meadow) and the rectangular form of the field boundaries enclosing them into separate fields suggests an Enclosure date for the remains.
- 4.5 The nature of the remains in the South Meadow (apart from F10 and F11) differ slightly from those in North Meadow, and no enclosing boundaries are present. This may suggest a slightly earlier date for the ridge and furrow in this area, although no definite date can be assigned.
- 4.6 No other features or earthworks of archaeological significance were detected in the survey area.

Gazetteer

North Meadow (Figure 3)

- 4.7 **F1 Ridge and Furrow**
Type: Earthworks
Period: Post-Medieval
Preservation: Poor
Description: Block of ridge and furrow, measuring approximately 100m by 75m. The furrows are only visible in good light. A total of 16 furrows and partial furrows survive, with ridges between standing no higher than 0.05m and the distance between adjacent furrows being, on average, around 4m. The furrows are aligned north-east/south-west, and lie on a gentle slope downwards from north-east to south-west.
- 4.8 **F2 Bank**
Type: Earthwork
Period: Post-Medieval
Preservation: Very good
Description: Well-defined remains of hedge bank traversing the meadow for 95m on a north-east/south-west alignment, separating F1 from F2, terminating just short of the modern fenceline at the south-west end. The bank measures 3.5m in width, and stands 0.2m high. The bank is clearly visible.

4.9 F3 Ridge and Furrow

Type: Earthworks

Period: Post-Medieval

Preservation: Good

Description: A block of ridge and furrow measuring 160m by 125m aligned north-west/south-east. The distance between the furrows is between 3 and 5m, with ridges standing 0.1-0.15m high. The southern portion of the ridge and furrow is raised on a plateau, with the remainder running down-slope, bounded to the north by F2.

4.10 F4 Bank

Type: Earthwork

Period: Post-Medieval

Preservation: Fair / poor

Description: Low bank traversing the area for 62m north-westwards off F6, before turning eastwards for 50m and terminating short of the modern fence-line. The bank measures 3.5m at its widest point and has a maximum height of 0.2m. The bank is clearly visible on its south-east/north-west alignment, but becomes vague and unclear after turning to the east. This bank is probably a headland for the block of ridge and furrow to the east.

4.11 F5 Ridge and Furrow

Type: Earthwork

Period: Post-Medieval

Preservation: Poor

Description: Thirteen furrows, approximately 5m apart, measuring 50m in length, aligned north-east/south-west, situated on the down-slope from F4 in the west. The ridge and furrow in this area is poorly defined with ridges standing no more than 0.05m above furrows.

4.12 F6 Bank

Type: Earthwork

Period: Post-Medieval

Preservation: Very good

Description: Remains of a relict hedge-bank, enclosing an area of ridge and furrow, F7. The bank traverses the meadow north-eastwards for 140m from a mature tree on the east side of North Meadow, before turning south, and traversing south-south-east for 35m before being truncated by the railway embankment. The bank is 4m wide, 0.2m high with a flat top.

4.13 F7 Ridge and Furrow

Type: Earthwork

Period: Post-Medieval

Preservation: Fair - good

Description: A block of ridge and furrow aligned north-west/south-east and measuring 150m by 50m but truncated to the south by the railway embankment. The furrows only survive partially at the western end of the block but are clearly visible over the majority of the area. The furrows stand approximately 4-5m apart, with the ridges standing 0.1-0.2m high.

4.14 F8 Bank

Type: Earthwork

Period: Unknown

Preservation: Partial

Description: Remains of a curvilinear hedge bank, with two small trees still in place, located in the south-east corner of North Meadow. The parts that remain are well defined, however the bank is only partially preserved, and seems to have been truncated by the railway embankment and creation of an access route to North Meadow from South Meadow. The bank measures 3.5m in width and stands 0.3-0.4m high in places, and approximately 35m in length.

4.15 F9 Ridge and Furrow

Type: Earthwork

Period: Post-Medieval

Preservation: Fair

Description: Remnants of eight furrows running north-east/south west, sited on flat land in the south-eastern corner of North Meadow, measuring approximately 30m long and separated by 3 – 3.5m. The ridges stand at a height of 0.1-0.2m. This block of ridge and furrow has been truncated by the railway embankment and is visible continuing in South Meadow.

South Meadow (Figure 4)

4.16 F10 Ridge and Furrow

Type: Earthwork

Period: Post-Medieval

Preservation: Fair

Description: Remnants of seven furrows aligned north-east/south west, sited on flat land in the north-eastern corner of South Meadow, measuring approximately 30m and separated by 3 – 3.5m. The ridges stand at a height of 0.1-0.2m. This block is a continuation of F9 in North Meadow, having been truncated by the railway embankment.

4.17 F11 Bank

Type: Earthwork

Period: Post-Medieval

Preservation: Very good

Description: A field bank, standing 0.25m high and measuring 4m in width, and traversing 25m south-south-east from the railway embankment before turning eastwards and continuing 30m east-north-east before terminating. This earthwork is the same field boundary as F6, present in North Meadow.

4.18 F12 Ridge and Furrow

Type: Earthwork

Period: Medieval / Post-Medieval

Preservation: Fair - good

Description: A series of eight slightly curving furrows, measuring 60-70m and spaced 5-7m apart, and aligned north-east/south-west. The ridges stand approximately 0.1m high, and slight headlands are visible at the west end of the block, although too vague to be surveyed accurately. These furrows are

broader and more curved than those in North Meadow, and may be of earlier origin.

4.19 F13 Bank

Type: Earthwork

Period: Unknown

Preservation: Very poor

Description: Very slight bank, barely visible, measuring 25m in length and aligned north/south. The bank is 2.5m wide and stands 0.1m at its highest.

4.20 F14 Ridge and Furrow

Type: Earthwork

Period: Medieval / Post-Medieval

Preservation: Poor

Description: A block of 7 slightly curving furrows, measuring 75-100m in length and aligned north-west/south-east. The furrows are separated by approximately 5-7m, although due to their poor visibility accurate measurements of central lines may not have been determined. The ridges stand no higher than 0.05m.

4.21 F15 Ridge and Furrow

Type: Earthwork

Period: Medieval / Post-Medieval

Preservation: Poor

Description: A block of ten partial furrows, situated approximately 5m apart and aligned north-west/south-east. The longest furrows in this block measure approximately 60m in length, whilst the shortest surviving furrows surveyed on the east side of South Meadow measured 10m. These furrows are again only visible in good light, standing no more than 0.05m high.

4.22 F16 Bank

Type: Earthwork

Period: Unknown

Preservation: Partial

Description: Small earthwork surviving on raised ground at the south-western end of south meadow. The earthwork is 2m wide, measures 12m in length and stands 0.3m high.

5. Recommendations

5.1 Figure 5 illustrates the areas of greatest potential impact of any future planting scheme. The survey area has been divided into zones indicating most impact, some impact and least impact.

5.2 The earthwork remains in this area are of some importance in that they represent past activity and land-use on the site, and a planting scheme would impact upon them all. Earthworks of this type have been subject to statutory protection in the past when they have been either associated with other landscape features, unique instances or early examples. However, this is not the case in this instance, and their landscape value is therefore more limited.

- 5.3 The earthwork remains in North Meadow almost certainly are of Enclosure date, and as such are fairly common. Their archaeological significance is low, and would not normally be considered a priority for preservation. They do have intrinsic value as a landscape feature, however, and their isolated location lends extra significance, possibly associating them with the expansion of cultivation during the Napoleonic Wars, adding to their local historical importance.
- 5.4 The remains in South Meadow are of undetermined date, and possibly represent an earlier phase of agricultural activity than those remains in North Meadow. The case for preservation of these features may be somewhat stronger, although the earthworks as a whole are less well preserved than those in North Meadow. The best preserved ridge and furrow in this area (**F12**) have therefore been classified in this report as potentially the most significant remains to be threatened, with the less well preserved remains assigned the same classification as the post-Enclosure ridge and furrow in North Meadow.
- 5.5 No further survey to record these features is necessary. Were these features to be impacted upon by any future scheme, the planning authorities may require a further programme of photographic and intrusive recording. This would most likely take the form of a series of trenches located to sample the features on the site. The objective of the trenching would be to identify the nature and date of these features, record any phases of activity not reflected in the earthworks, record profiles through the features and recover any environmental evidence.

6. Sources

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