

Research Department Report 78/2006

**Scordale, Cumbria:
an archaeological survey and investigation of
a Bronze Age field system and dispersed settlement**

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National Grid Reference: NY 7467 2130

Register of Scheduled Monuments number: 32821

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ISSN 1749-8775

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**Scordale, Cumbria:
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Summary

In May 2006 English Heritage carried out an archaeological investigation of a probable Bronze Age field system with dispersed settlement remains, designated as Scheduled Ancient Monument (SAM) 32821. The analytical field survey covered an area of some 9 hectares, including just under half of the area of the Scheduled Ancient Monument. The survey demonstrated that the field remains extend westwards and possibly eastwards beyond the existing boundary of the Scheduled Ancient Monument. The main features can be characterised as a pattern of irregular, but generally quadrangular, fields, which are morphologically typical of the Bronze Age (2000BC - 750BC). These are associated with a scatter of cairns of various sizes, equally typical of Bronze Age agriculture, resulting from the clearance of unwanted stone, both exposed on the surface before cultivation and brought to the surface over time by ploughing. There are also a few probable roundhouse platforms, their distribution dispersed and generally adjacent to field boundaries. One or two smaller enclosures within the broader field system may be directly linked with the roundhouses. The cultivated area stretches across the whole of the south-facing slope down to the edge of the scarp defining the edge of the current flood plain. This exploitation of a south-facing slope is typical of Bronze Age cultivation. During the course of the field survey, a flint, a secondary waste flake probably generated by the production of small tools, was found in a molehill. Whilst this is not diagnostic of any specific period, it is most likely to be of Neolithic or Bronze Age date.

The Bronze Age field system is situated on the northern side of Hilton Beck, on a south-facing slope which is relatively gentle, apart from the steep scarp created by the river cutting down into colluvial deposits on the valley floor (Figure 1). The land is currently used for sheep and cattle grazing and the excellent preservation of the earthworks must indicate that it has remained unploughed, probably rough pasture, since the Bronze Age.

Hilton Beck, fed by Swindale Beck to the south-east and Scordale Beck to the north-east, is a sub-catchment of the River Eden, which drains the North Pennines escarpment. The situation of the sub-catchment makes Hilton Beck prone to flooding after heavy rainfall, particularly in winter, which has contributed to a severe sediment delivery problem (Lane

and Dugdale 2006a, 2). This has been exacerbated by the erosion of the large spoil tips associated with Hilton and Murton Lead Mines and the subsequent redistribution of that material. The processing areas associated with the mines, which are protected as a Scheduled Ancient Monument (SAM 27842), have also been severely affected by the erosion. In the vicinity of the Bronze Age field system, the erosion is cutting into both banks of the beck, threatening the Scheduled Ancient Monument on the north, and progressively cutting into the access track on the south. In order to formulate a management response to both problems and to the wider environmental impacts of erosion and sediment distribution, the Defence Estates Environmental Support Team, in collaboration with the Eden Rivers Trust, commissioned a report to analyse the fluvial issues and make appropriate recommendations.

One of the primary recommendations of the report is to allow Hilton Beck to migrate naturally in order to redistribute sediment. It was recognised that this scheme could impact upon SAM 32821, primarily through the potential encroachment of the Beck on to the southern edge of the field system, but also due to the need to set back the drystone wall that currently delineates the southern edge of the Scheduled Ancient Monument. In view of this, English Heritage's Archaeological Survey and Investigation Team agreed to carry out the investigation of the site in order to establish the exact nature and extent of the Scheduled Ancient Monument alongside Hilton Beck and to identify any specifically threatened features. This was carried out in advance of a more extensive investigation of the threatened elements of the Hilton and Murton Lead Mines. To provide background mapping for the analytical field survey, English Heritage's Metric Survey Team transcribed topographic detail from rectified vertical aerial photography of the site.

A comparison of modern and historic maps of the area demonstrates the range of river migration since 1861, the date of publication of the first edition Ordnance Survey (OS) map (see Figures 2 and 3). Further documentary research on this site was limited to a search of English Heritage's own historic environment record. In the limited time available, priority was given to recording and understanding the threatened part of the site (the area immediately adjacent to Hilton Beck). A strip further up the slope to the north was recorded in order to put the threatened area into context.

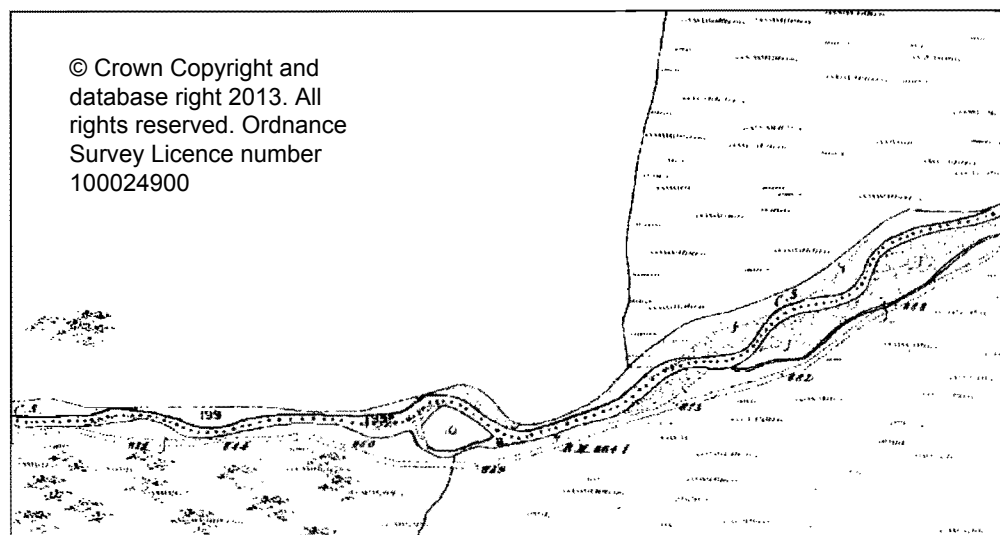


Figure 2
Reproduced from the
1861 Ordnance
Survey First Edition
25-inch scale map.

2. The archaeological remains (SAM 32821) (Figures 3 & 4)

The numbers and letters in the text refer to features labelled on Figure 3.

The analytical field survey covered an area of some 9 hectares, including just under half of the area of the Scheduled Ancient Monument. The survey demonstrated that the field remains extend westwards and possibly eastwards beyond the existing boundary of the Scheduled Ancient Monument.

The main features can be characterised as a pattern of irregular, but generally quadrangular, fields, which are morphologically typical of the Bronze Age (2000BC - 750BC). These are associated with a scatter of cairns of various sizes, equally typical of Bronze Age agriculture, resulting from the clearance of unwanted stone, both exposed on the surface before cultivation and possibly brought to the surface over time by ploughing. There are also a few probable roundhouse platforms, generally lying adjacent to field boundaries, their distribution dispersed. One or two smaller enclosures within the broader field system may be linked with the roundhouses (see Figure 4). The cultivated area stretches across the whole of the south-facing slope down to the edge of the scarp defining the edge of the current flood plain. This exploitation of a south-facing slope is typical of Bronze Age cultivation. During the course of the field survey, a flint, a secondary waste flake probably generated by the production of small tools, was found in a molehill (marked '+' on Figure 3). Whilst this is not diagnostic of any specific period, it is most likely to be of Neolithic or Bronze Age date.

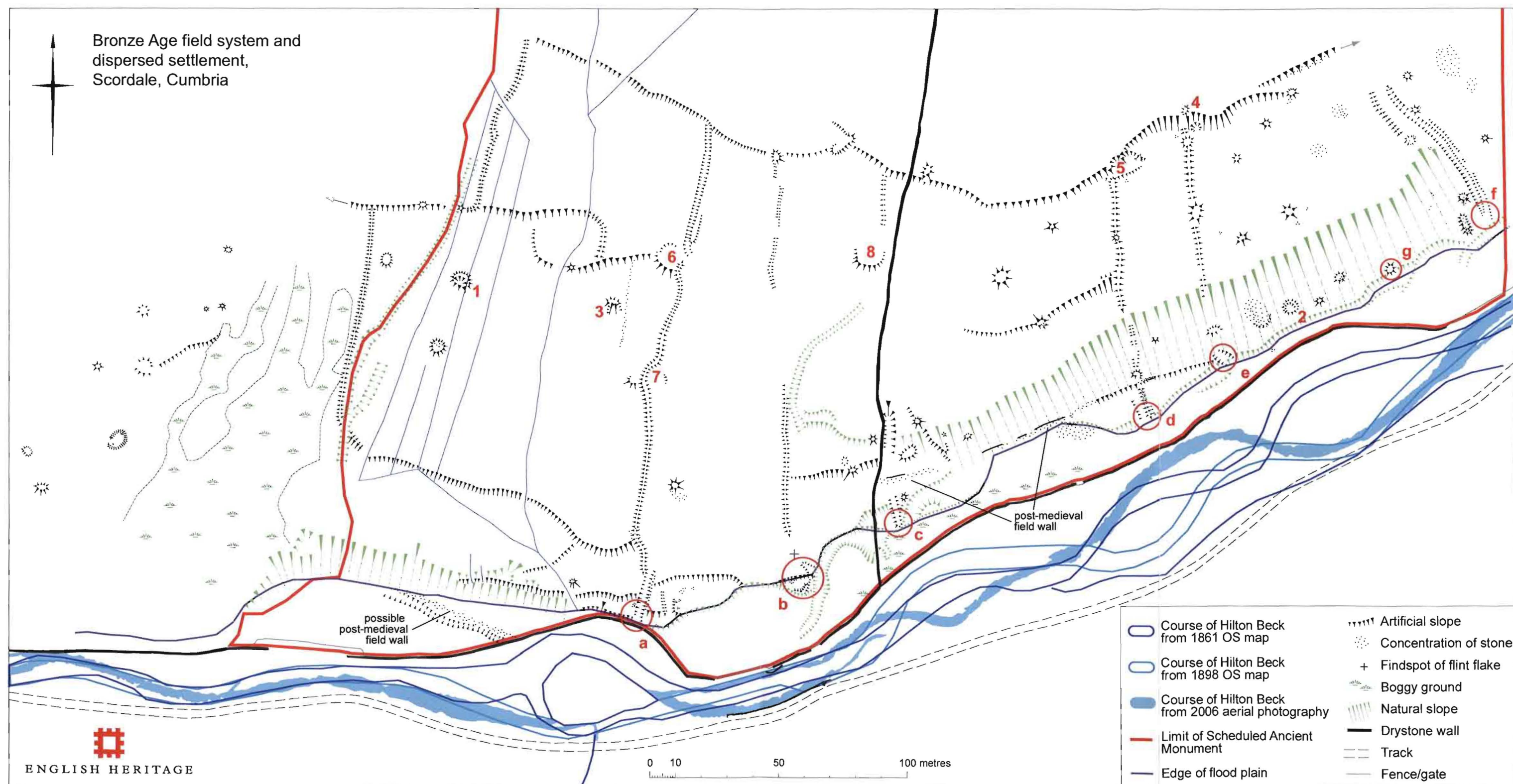
2.1 Bronze Age period (Figure 4)

Field system and clearance cairns

The fields are defined by banks and positive lynchets, the latter created by the accumulation of soil against the lower edge of fields. No physical remains of cultivation are visible within these field boundaries. The banks are all on an approximate north-south alignment, running perpendicular to the slope of the valley side. Many are stony and some are associated with ditches of minimal depth. The best preserved only survive to a maximum height of 0.5m. Six of the banks appear to have extended to the very edge of the flood plain and are therefore potentially vulnerable to future fluvial erosion. In three of these cases (a, c, and d), it would appear that the banks originally ended at the current edge of the flood plain: the ditch at 'a' splays as it reaches the flood plain, whilst the banks ending at 'c' and 'd' display rounded terminals. The ends of the banks at 'b', 'e' and 'f' are less clearly defined, and it is possible that these have been truncated to some degree by past fluvial erosion, though almost certainly not by more than a few metres.

The positive lynchets generally define the north and south sides of the fields. These are on an east-west alignment, following the contours of the natural slope. The scarp that defines the current edge of the flood plain, though natural in origin, is likely to have been accentuated by a similar accumulation of ploughsoil, though surface survey cannot prove this categorically. Within the broader field system are several smaller enclosures, possibly paddocks associated with nearby roundhouses.

Figure 3
English Heritage earthwork
survey plan (reduced from the
original 1:1000 scale plan)



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The most numerous features that make up the Scheduled Ancient Monument are stony mounds interpreted as clearance cairns, the by-products of agriculture normally assumed to be of Bronze Age date. There are in excess of 40 cairns within the survey area alone, typical examples of which measure approximately 4-6m across and measure 0.3m high. Some display evidence of disturbance, possibly having been dug into in the recent past or robbed to provide material for the post-medieval field walls (for example, 1, 2 and 3). In places, the cairns overlie lynchets, which gives the impression of some chronological depth. There are more cairns surviving to the east of the central drystone wall than to the west. This could be explained by differing post-medieval land management on either side of the wall affecting the survival of the features, as evidenced by the 1861 OS map, which shows rougher, unimproved land to the east of the drystone wall (Ordnance Survey 1861; Figure 2). However, it is noticeable that the cairns to the west are generally larger than those to the east, suggesting more prolonged or more intensive Bronze Age field clearance, perhaps involving the amalgamation of smaller cairns. If this inference is correct, the differing post-medieval land management suggested by the depiction of the pasture on the 1861 OS map may itself reflect the differing quality of the pasture produced by the Bronze Age agriculture.

The interpretation of the cairns as clearance cairns does not preclude the possibility that some may also have been used as funerary monuments. Although the majority of the cairns are of a typical form, there are examples which are slightly unusual, such as 4, which is situated on a lynchet at its intersection with a field bank. Unusually, this cairm is oval in shape and appears to have a larger stone deliberately set upright at either end (to the north and south).

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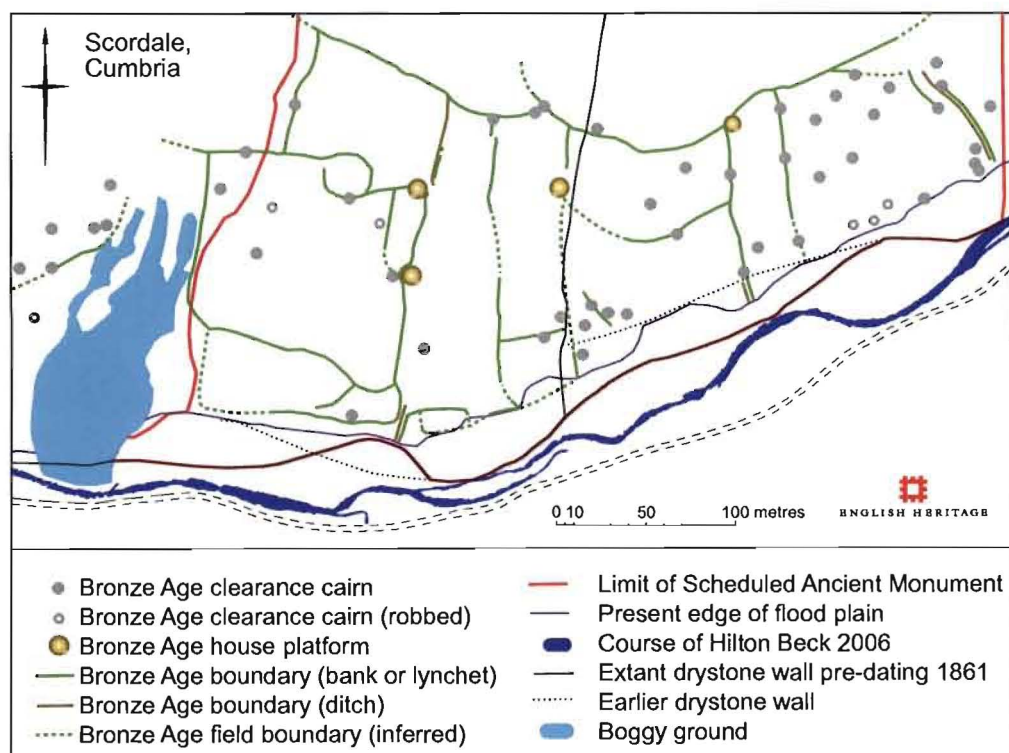


Figure 4
Interpretative plan of
the Bronze Age field
remains

There are a number of cairns on a similar alignment close to the foot of the steep natural slope to the east of the central drystone wall, possibly a reflection of the higher natural density of stone on this slope. Some of the cairns are several metres above the flood plain, but those closest to it are potentially the most at risk of erosion by the migrating river, for example 'g', which lies right on the edge of the flood plain.

Roundhouse platforms

Four probable roundhouse platforms (5 - 8) were identified within the survey area. Platform 5 appears to be subdivided and might represent two roundhouses rather than one. Typically, such platforms are 5 - 10m in diameter and approximately circular, created to support a timber-framed roundhouse. Where the ground is relatively level, slight deflections in the course of field boundaries, as for example at 7, are often the clearest indication of the former existence of a roundhouse. Platform 6 is also not particularly clearly defined, but its position at the corner of a field would be typical. It is not uncommon to find small enclosures, such as that immediately south of Platform 6, associated with roundhouses. In this context, the small enclosures and other unintelligible earthworks in the vicinity of 'a' may be significant.

2.2 Post-medieval period

The few remains within the Scheduled Area dating to any period other than the Bronze Age are almost certainly post-medieval. To the east of the central drystone wall, and apparently abutting it (and therefore post-dating it), is a discontinuous stony bank which must represent the remains of a deliberately dismantled drystone wall, since it contains aligned facing stones still *in situ*. This is almost certainly a precursor of the drystone wall that has defined the southern boundary of the eastern field since c.1860 (Ordnance Survey 1861; Figure 2). A second section of stony bank, with an associated length of ditch, lies to the west of the central drystone wall, and is apparently overlain by it. Though less clearly the remains of a wall, the regularity of the bank, together with its alignment, which appears to coincide with an abrupt angle change in the extant drystone wall further east, hints that this too may be a precursor of the present field boundary (see Figure 4). The sinuous course of the extant wall may have been dictated by the migration of the river, prior to 1861.

3. Conclusions and recommendations

The Bronze Age field system and associated dispersed settlement certainly extend westwards, and perhaps eastwards, beyond the present limits of the Scheduled Ancient Monument. In terms of the monument's relationship to Hilton Beck, the 2006 investigation suggests that the field system extended down to the scarp that defined the edge of the flood plain in the Bronze Age, but not beyond it. That scarp coincides for the most part with the current edge of the floodplain. In the three out of six cases where there is an appreciable relationship (a, c and d), field boundaries seem to terminate at the current edge of the flood plain, with no evidence of the banks and ditches in question having been truncated by historic fluvial erosion. This suggests that for the most part, post-Bronze Age fluvial migration has not encroached beyond the Bronze Age limit of the floodplain. However, in the other three cases, where the evidence is not clear-cut, it is possible that fluvial migration, apparently prior to the establishment of the extant post-medieval field walls, has already truncated the ends of boundaries to some limited degree. It follows that the threat of erosion resulting from future fluvial migration is genuine, particularly because one of the major factors influencing the fluid mechanics of the Hilton Beck is of relatively recent date: the extraction and processing of lead and barytes at the Hilton and Murton Mines, which has taken place from at least the early nineteenth century onwards. Many thousands of cubic metres of debris, particularly from the process of 'hushing' the valley sides with sudden releases of penned water, have been deposited into the Beck, and the subsequent erosion and dispersal of this material must have affected flow rates and the movement of the channel downstream. The drystone wall that defines the southern boundary of the Scheduled Area has remained immune from erosion by fluvial migration since c.1860, but the fact that sections of this are currently being undercut suggests that the erosion problem has worsened in recent decades. Therefore, while most Bronze Age features have survived without being significantly affected by river migration for approximately the past 3000 years, this cannot be taken as an assurance of their continued survival. The 2006 investigation has highlighted seven specific places where Bronze Age earthworks are at high risk of potential damage by erosion; in all these cases, preservation by record might be the most appropriate response. Investigation of the cairn at 'g' might not produce significant additional information about the structure of the cairn itself, but the mound could potentially seal palaeo-environmental deposits beneath it. However, there is likely to have been severe leaching in this context, so such preservation could not be guaranteed.

The proposal to set back the drystone wall defining the southern boundary of the Scheduled Ancient Monument represents an additional potential threat to the archaeological remains. However, with sensitive placement of the wall and re-use of the stone from the present wall, there should be no great danger to the Bronze Age remains. If the re-routing of the boundary requires intrusive works, this could necessitate a watching brief or small-scale excavation, which could potentially contribute to the archaeological understanding of the site.

4. References

Lane, S N and Dugdale, L J 2006a *Hilton Beck, River Eden, Cumbria. Fluvial Audit: Science Report*. Unpublished report.

Lane, S N and Dugdale, L J 2006b *Hilton Beck, River Eden, Cumbria. Fluvial Audit: Management Recommendations*. Unpublished report.

Ordnance Survey 1861 *County Series First Edition 25-inch map. Westmorland, sheet X.13*

RCHME 1999 *Recording Archaeological Field Monuments: A Descriptive Specification*. Swindon: RCHME

5. Survey methodology and acknowledgements

The field investigation was carried out in May 2006 by Abby Hunt and Al Oswald. Trimble 4800 and 5800 dual frequency Global Positioning Satellite (GPS) systems were used to establish a base station on site and to record the archaeological remains. The plot of the site was produced from the GPS data using Trimble Geomatics Office, Geosite and AutoCAD software and output at a scale of 1:1000. The plan was completed in AutoCAD and Adobe Illustrator.

The report was written and illustrated by Abby Hunt (with assistance from Phillip Sinton on Figure 3). Al Oswald and Stewart Ainsworth commented on the text.

Thanks are due to Clare Hetherington (Defence Estates) and Andrew Clarke (Landmarc) for organising access and to Mr Harker, who farms the land.