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A probable Neolithic causewayed enclosure on Green How, Cumbria

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SURVEY REPORT

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A PROBABLE NEOLITHIC CAUSEWAYED ENCLOSURE ON GREEN HOW, CUMBRIA

Archaeological Investigation Report Series AI/19/2000

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1. INTRODUCTION AND BACKGROUND TO THE SURVEY

In mid-June 2000, aerial reconnaissance by English Heritage identified a probable Neolithic causewayed enclosure on a hill known as Green How in Cumbria. Causewayed enclosures were built between *c*.3,700 BC and *c*.3,400 BC, probably to serve as arenas for episodic communal gatherings; they are amongst the oldest and rarest field monuments known in the British Isles. The example on Green How, should it prove genuine, would be the first identified in northern England. In view of the potentially exceptional importance of the remains, an analytical field survey was carried out by English Heritage in early October of the same year. The discovery of the site followed soon after the completion of a project undertaken by the Royal Commission on the Historical Monuments of England (RCHME), which had been designed to record causewayed enclosures throughout the country as a class (Oswald, Dyer and Barber in preparation).

Green How forms part of Uldale Common, which lies towards the western end of Aughertree Fell, in the parish of Ireby and Uldale and the district of Allerdale. The villages of Uldale and Aughertree are situated respectively 1.0km to the west and 1.1kms to the north, but the area is otherwise very sparsely populated. Aughertree Fell lies just within the northern boundary of the Lake District National Park. The

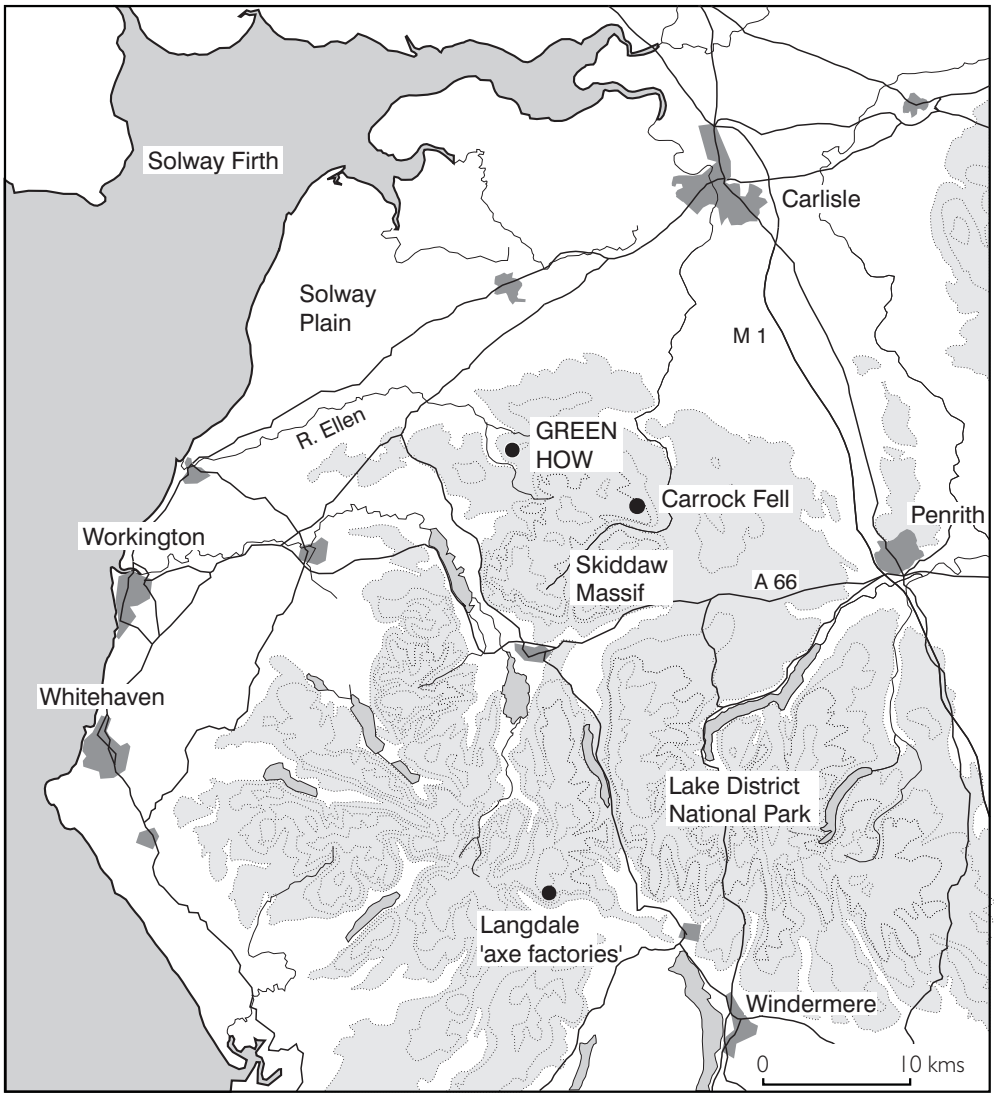

Figure 1. Location map

probable causewayed enclosure is centred at National Grid Reference NY 2574 3746, slightly to the west of the highest point of the hill.

Three Iron Age or Romano-British enclosures to the north-east of Green How are protected as Scheduled Ancient Monuments, along with part of an associated embanked field system (English Heritage RSM number: 27652). However, at the time of the survey the probable causewayed enclosure was not included within the protected area, nor was it recorded specifically in the Sites and Monuments Record for Cumbria. The discovery resulted in the creation of a new record in the National Monuments Record (NMR) database, reference NY 23 NE 12.

2. GEOLOGY, TOPOGRAPHY AND LAND-USE

Aughertree Fell forms part of an extensive tract of limestone moorland between 250m and 450m above sea level, lying to the north-west of the higher Skiddaw slate massif, on the north-western fringes of the English Lake District. Scattered across the undulating moorland are sink-holes, created by the erosion by water of joints in the underlying limestone, and eskers and drumlins, which are mounds composed of material deposited by glaciers. Both types of natural feature can reach a considerable size and can have an almost artificial appearance. Green How effectively forms the tip of a spur that projects north-westwards between the valley of the River Ellen on the south-west and the valley of a smaller tributary on the north. The summit of the hill reaches an altitude of 321m and commands panoramic views, with a particularly impressive prospect north-westwards towards the Solway Plain and the Solway Firth beyond it, some 24kms (15 miles) away. Conversely, when seen from the low-lying plain, the hilltop is an eye-catching topographic feature against the background of the Skiddaw massif.

The moorland currently supports unimproved pasture which is for the most part lightly grazed by sheep. As common land, the area has been subject to various forms of small-scale exploitation in the relatively recent past, including the quarrying of limestone, both as a building material and for the production of lime-based fertilisers. The earthwork remains of numerous small lime kilns exist in the vicinity of Green How. Two complexes, each comprising several kilns, seem to have reached what might be termed an 'industrial' level of production, although most of the quarries that supplied them are relatively small. It is possible that some prospection for minerals, particularly lead, may have taken place on Aughertree Fell, but there is no evidence for large-scale extraction. Land-use may have been somewhat more intensive in the distant past: three supposed enclosed settlements, thought to be of Iron Age or Romano-British date, lie *c.*1km to the north-east of Green How. These settlements appear to be broadly contemporary with an extensive embanked field system in the environs of the hilltop, which is associated with a number of hollowed trackway routes and smaller enclosures (Bellhouse 1967; Higham 1978).

3. HISTORY OF RESEARCH

The probable causewayed enclosure was first interpreted as such on the basis of the aerial photographs taken in June 2000 (see Figures 2 and 3; NMR a). It had first been photographed from the air in August 1975 by Barri Jones (NMR b), but does not appear to have been interpreted as any form of enclosure. Using the photographs taken by Jones, Nick Higham sketch-plotted most of the circuit, but seems to have interpreted it as an element of the pattern of late prehistoric or Romano-British field boundaries in the vicinity (Higham 1978, fig. 16.6). Therefore, the English Heritage surveys were effectively the first intensive archaeological investigation of the site. The aerial photographs were taken under low-light conditions, during the course of regular reconnaissance of Scheduled monuments in the area. The field survey was carried out at Level 2 standard (as defined in RCHME 1999, 3-4), and was limited to an area of 2 hectares (5 acres) immediately surrounding the monument. An analytical and metrically accurate plan was produced at a scale of 1:1000.

Figure 2. English Heritage rectified aerial photograph of the environs of Green How

4. DESCRIPTION AND INTERPRETATION OF THE EARTHWORKS (see Figures 3 and 4)

The probable causewayed enclosure

The probable causewayed enclosure comprises a single circuit of discontinuous bank and ditch; there is no evidence for any contemporary features in the interior. In plan, the perimeter describes an elongated oval with its long axis aligned west-north-west to east-south-east, corresponding more or less to the orientation of the natural topography of the spur. The interior of the enclosure has maximum dimensions of 132m long by 56m wide, and an area of 0.62ha (1.53 acres). The circuit cannot strictly be said to occupy the summit of the hill, for while the eastern end does just encompass the highest point, the western end lies some 10m down the slope. This pronounced 'tilt' across the contours effectively orients the enclosure north-westwards towards the low-lying Solway Plain.

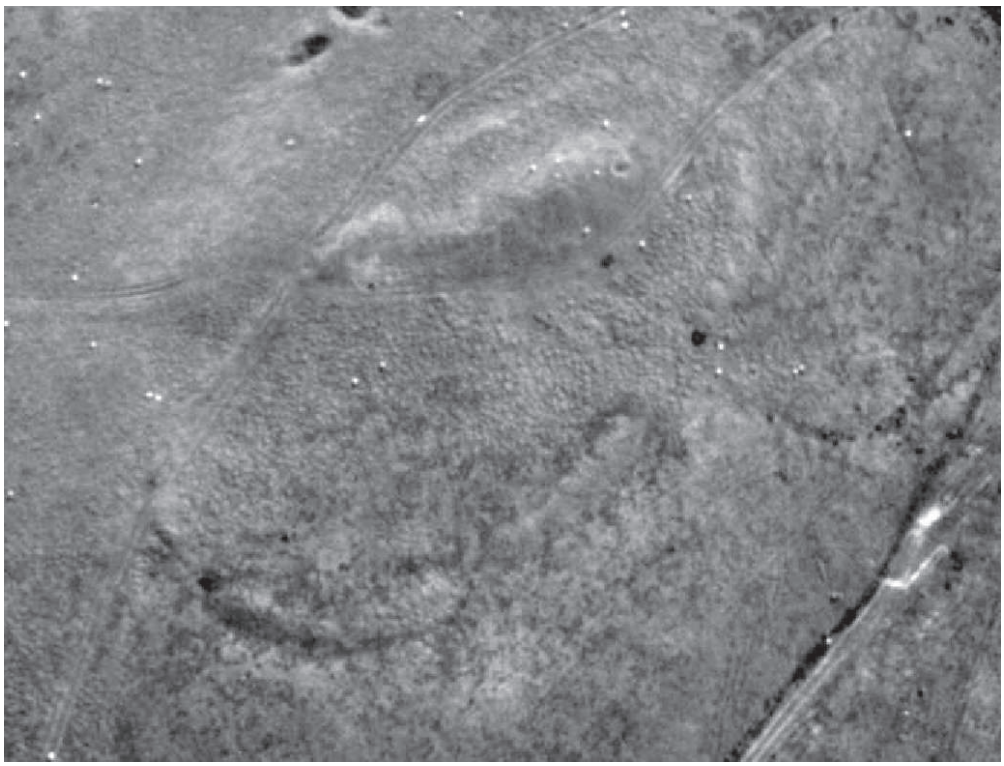

Figure 3. Extract from English Heritage oblique aerial photograph taken from the north-west

The plan of the enclosure also seems to take account of an elongated natural mound, located immediately to the west of the summit, which appears to be formed by a glacial esker or an underlying outcrop of limestone. The mound is approximately 22m wide at the base and 2m tall at its western end, tapering gradually to around 10m wide and 0.5m high at its eastern end. The western end of the enclosure skirts around the base of the mound, while the southern side passes over its eastern end, as though the siting of the circuit was deliberately designed to enclose the whole of the topographic feature.

The circuit of the enclosure is essentially complete, but comprises segments of bank of irregular length, generally with corresponding causeways in the course of the ditch. On the English Heritage aerial photographs, it would appear that there are about seven major segments of bank, but field survey identified more frequent minor interruptions. Even where the bank is best preserved, it has a smooth and degraded

appearance, with a maximum width of 6.0m and a maximum height of 0.3m. The outer face is generally somewhat more prominent, especially towards the western end of the circuit, where the artificial scarp is accentuated by the steeper natural gradient and stands up to 0.8m high. The causeways in the bank are generally *c*.2m wide, though some have been broadened or otherwise distorted by later trackways (see below). On the north-eastern side of the enclosure, there is a distinct change of angle at the point where two major segments join, and there are slighter mis-matches at some of the other causeways.

In places, a level berm up to 1.0m wide separates the base of the bank from the lip of the adjacent ditch. The ditch segments are generally 4.0m wide and 0.2m deep where most pronounced. Like the bank, even the most distinct sections have a smooth appearance, while long stretches are either of minimal depth or do not survive at all as earthworks. Between the major causeways along the line of the ditch, the field survey identified slight traces of 'semi-causeways', where the ditch, though continuous, is interrupted by very slight ridges, or steps where the gradient is steeper. These ephemeral traces may reflect the existence of causeways that were originally very narrow and were subsequently reduced by erosion, or causeways that were deliberately partially dug away by the builders of the enclosure. The ditch would therefore appear to have been segmented to a greater extent than the adjacent bank.

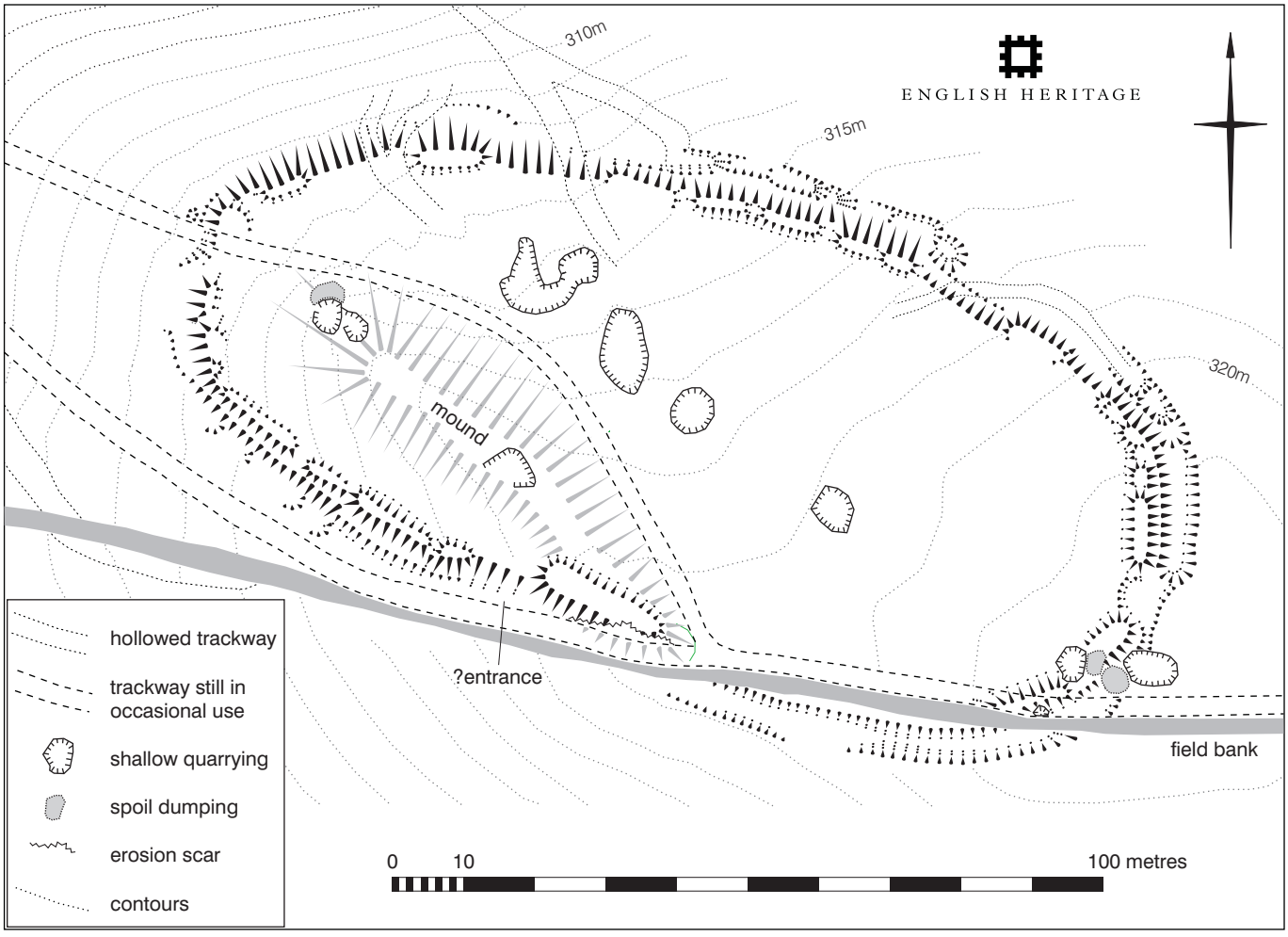

Figure 4. English Heritage plan of the site at 1:1000 scale

Mid-way along the southern side of the circuit, there is a more pronounced off-set between the terminals of the adjacent segments and the intervening causeway of intact ground is particularly broad. This causeway is interpreted as a principal, or perhaps the only, entrance into the enclosure. The causeway at the eastern end, which is particularly broad, may perhaps represent another entrance.

Other features

Various earthworks overlie or cut into the earthwork of the probable causewayed enclosure and are therefore demonstrably of later date. However, the field investigation was limited to the immediate environs of the enclosure, and a more extensive investigation would be necessary to ascertain the likely date of the later remains.

On the northern side of the circuit, a series of hollowed trackways can be traced fairly clearly where they ascend the outer face of the earlier bank, generally making use of the pre-existing causeways to pass into the interior of the enclosure. Except for these more distinct sections, the trackways are of minimal depth and cannot be traced for more than a few metres either outside or within the circuit. This probably indicates that they were in use for a brief period. Where the trackways pass over the earlier earthwork, it has generally been considerably reduced or pushed to one side, so that its original form is difficult to discern with confidence.

The trackways are evidently associated with a number of shallow depressions of irregular plan, mostly located in the north-western part of the interior of the enclosure. These are interpreted as the products of an episode of surface quarrying, presumably to obtain limestone or turf. The natural mound has also been subject to various small diggings, the deepest lying at its higher western end.

The southern side of the enclosure is overlain by a field boundary bank which extends in a fairly straight line roughly from west to east. A trackway, one of two which have clearly been used by vehicles in the recent past, in part follows the northern side of the boundary. The field bank also overlies a hollowed trackway to the south-west of the enclosure. There is no reason to assume that this trackway is of the same date as those which cut into the northern side of the circuit; indeed, it is different in appearance, with well defined edges and a maximum depth of 0.4m. This may indicate that the route was used intensively or over a longer period, while the trackways that served the shallow quarries in the interior were evidently in use for a very short time. Unlike the earthwork of the probable causewayed enclosure, the field bank is sharply-defined, on average 3.0m wide and up to 0.4m high. Its condition and the stratigraphic relationship with the hollowed trackway suggest the boundary to be of late medieval or later origin, although Higham (1978, Figure 16.6) depicts it as part of the later prehistoric or Romano-British field system. Certainly, it seems unlikely that the boundary originated very late in the post-medieval period, given that Aughertree Fell has been used as common land for a considerable period. The bank appears to define the northern edge of an area where the surface has a smoothed appearance, suggestive of some form of arable agriculture. The short stretch of the probable causewayed enclosure to the south of this boundary has evidently been affected by this cultivation, for it survives much less well and can only be traced as degraded scarps.

5. DISCUSSION AND CONCLUSIONS

The interpretation of the enclosure as a Neolithic causewayed enclosure currently relies principally on the morphology of its perimeter, as revealed by aerial and field survey. There has been no excavation, nor is there any relevant anecdotal evidence from the vicinity in the form of stray finds of artifacts. More thorough survey, both from the air and on the ground, might well strengthen the argument for asserting a Neolithic date, by demonstrating the relationship of some of the features that overlie the enclosure to the Iron Age or Romano-British field system in the area. However, such an extensive investigation is beyond the scope of the current project and would not necessarily achieve more than confirmation that the enclosure is indeed of broadly prehistoric date.

Notwithstanding the lack of unequivocal dating evidence, the form and condition of the perimeter of the enclosure strongly suggest that it can be interpreted as an earlier Neolithic causewayed enclosure. The oval plan could be consistent with most forms of prehistoric enclosure, but size of the enclosed area is very close to the most common size of causewayed enclosure (0.5ha or 1.2 acres). More importantly, the interrupted form of the boundary, with a few major causeways in the bank corresponding to major causeways in the ditch, and a greater frequency of 'semi-causeways' in the course of the ditch, is absolutely typical of such enclosures elsewhere in England (Oswald, Dyer and Barber in preparation). The slightness of the earthworks and their smooth appearance is equally typical, and contrasts markedly with the sharply-defined condition of the supposed Iron Age or Romano-British enclosures a short distance to the north-east. The narrow level berm which can occasionally be traced separating the bank from the ditch is also evident at a number of proven causewayed enclosures. The off-set design of the probable main (or only) entrance is comparable to the arrangement at causewayed enclosures whose date has been established by excavation, such as those on Donegore Hill in County Antrim, Northern Ireland, and Whitesheet Hill in Wiltshire.

The siting of the enclosure in relation to the natural topography is significant: the pronounced 'tilt' of the circuit across the contours means that the highest point of the hill is only just enclosed, a trait common to almost every other causewayed enclosure in an upland location. On the other hand, this distinctive characteristic is not commonly found amongst Iron Age hillforts and similar hilltop enclosures. The tilt across the slope effectively orients the causewayed enclosure north-westwards towards the low-lying Solway Plain, an area with abundant evidence for Mesolithic and earlier Neolithic settlement. In this context it may be significant that Green How is an eye-catching topographic feature when seen from the Solway Plain, and that the enclosure commands such an impressive view across the area. This form of orientation towards a low-lying plain or river valley is again a characteristic of numerous proven causewayed enclosures; the siting of the example on Green How can be compared to those on Donegore Hill, Offham Hill in East Sussex and Windmill Hill in Wiltshire, amongst others.

The relationship of the enclosure to the elongated natural mound deserves comment and may be relevant to the question of its date. The mound is unquestionably of natural origin, but bears a fairly strong resemblance in terms of its size, shape and position in the landscape to many earlier Neolithic long barrows. It is not impossible that the name Green How – How being a local term for a burial mound - derives from the belief of more recent inhabitants of the area that the mound was a prehistoric funerary monument. Long barrows and long cairns are generally agreed to the oldest

class of monuments still surviving as earthworks in the British Isles, the earliest having probably been built several centuries before the earliest causewayed enclosures. In the light of the apparently deliberate relationship of the enclosure to the mound, it is possible that the natural feature was misinterpreted as a long barrow by the builders of the enclosure. The link between causewayed enclosures and long barrows is well attested, and the two forms of monument are found in close proximity at a number of sites, including Hambledon Hill in Dorset, Abingdon in Oxfordshire and Haddenham in Cambridgeshire.

If the interpretation of the enclosure as an earlier Neolithic causewayed enclosure should prove correct, the discovery of the monument is of exceptional archaeological importance. The monument would be one of only seventy causewayed enclosures known in the British Isles and, as a well preserved earthwork, one of only twelve that survive to a comparable standard.

The discovery also has important implications for the understanding of the earlier Neolithic in the British Isles. The most northerly sites previously identified in England lie at Alrewas and at Mavesyn Ridware in Staffordshire, in the valley of the River Trent, some 240kms (150 miles) to the south. The distribution of causewayed enclosures in England has therefore conventionally been thought to be restricted to the southern half of the country (eg Palmer 1976). This pattern has been seen to support the hypothesis that there were strong regional trends in the British Neolithic and that communities in northern Britain rejected the alien concept of building enclosures. On the other hand, it has been suggested more recently that the concept may actually have been widely adopted, but that previous research may have overlooked other forms of enclosure in northern England and southern Scotland which could have fulfilled the role played by causewayed enclosures further south. The enclosures on Carrock Fell and at Howe Robin in Cumbria, usually considered to be of Iron Age date, have been put forward as possible examples, on the grounds that they are in some senses unusual in form (Pearson and Topping in preparation; Brown in preparation). The newly discovered site overlooking the Solway Firth, together with those on Donegore Hill in Northern Ireland, at Bryn Celli Wen on the Isle of Anglesey in Wales, and at Billown on the Isle of Man, suggests that a small number of conventional causewayed enclosures were scattered around the fringes of the Irish Sea. In terms of understanding the overall distribution of causewayed enclosures, these few which conform closely to the stereotype known from southern England may be the exceptions that prove the rule. In other words, the concept of how causewayed enclosures should be designed and constructed was evidently very similar in widely separated parts of the British Isles, and did not change greatly according to distance from the European mainland or geological circumstances. It may therefore be unnecessary to search for variant forms of early Neolithic enclosure in an attempt to 'fill in the blanks' in the distribution, on the assumption that the concept would have been more widely adopted.

4. METHODOLOGY

The aerial photographs were taken by Peter Horne, with assistance from David MacLeod, and rectified by Peter Horne. The subsequent field investigation was carried out by Alastair Oswald and David McOmish.

The aerial photography was rectified using Aerial 5.1 software, which offers accuracy equivalent to that of the control information, in this case the Ordnance Survey 1:10,000 scale map.

The field survey was carried out using a Trimble dual frequency Global Positioning Satellite (GPS) system. The base receiver was set up on the summit at NGR 325737.203 537464.162 and two receivers (Trimble 4700 and 4800) were used to record the earthworks, working independently in real-time kinematic mode. The co-ordinates of the base receiver were initially calibrated to the National Grid (OSGB36) through a Trimble Geomatics transformation programme, based on the position of the base station relative to Ordnance Survey passive GPS station C1NY2938, located near Greenrigg Farm, 3.6ms to the east-north-east. The resulting plan, accurate to approximately 1cm, was plotted at 1:1000 scale via Key Terrafirma and AutoCAD software. The archive plan, completed using CorelDraw8 software, was prepared by Alastair Oswald with assistance from Trevor Pearson. The report was written by Alastair Oswald with contributions by Peter Horne, and edited by David McOmish.

The site archive has been deposited in English Heritage's National Monuments Record, Great Western Village, Kemble Drive, Swindon SN2 2GZ, to where applications for copyright should be made (reference number: NY 23 NE 12).

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NMR a English Heritage aerial photographs held in the National Monuments Record ref: 17468 frame 10 16-JUN-2000

NMR b Aerial photographs by Barri Jones, held in the National Monuments Record ref: NY2537 frames 1-3 AUG-1975

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