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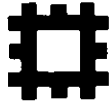
David McOmish & Cathy Tuck

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SURVEY REPORT

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Report author: David McOmish
Illustrations by: David McOmish
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Comments or queries regarding the content of the report should be made to the author(s) at the Cambridge Office:
24 Brooklands Avenue, Cambridge, CB2 2BU
Tel: 01223 582700 *Fax:* 01223 582708

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1. INTRODUCTION AND BACKGROUND TO THE SURVEY

Between September and December 2003, English Heritage carried out a field investigation of the prehistoric enclosure and field system complex at Plumpton Plain, near Lewes in East Sussex (Fig 1). The site lies approximately 1km to the south-west of the village of Plumpton in the parish of the same name and in the district of Lewes and the cluster of enclosure upon which the survey is focussed is centred at National Grid Reference TQ 357 122. The site lies some 400m to the south of the South Downs Way long distance footpath and sits within the East Sussex AONB. The entire area is included within the boundary currently proposed for the South Downs National Park anticipated for designation in 2006.

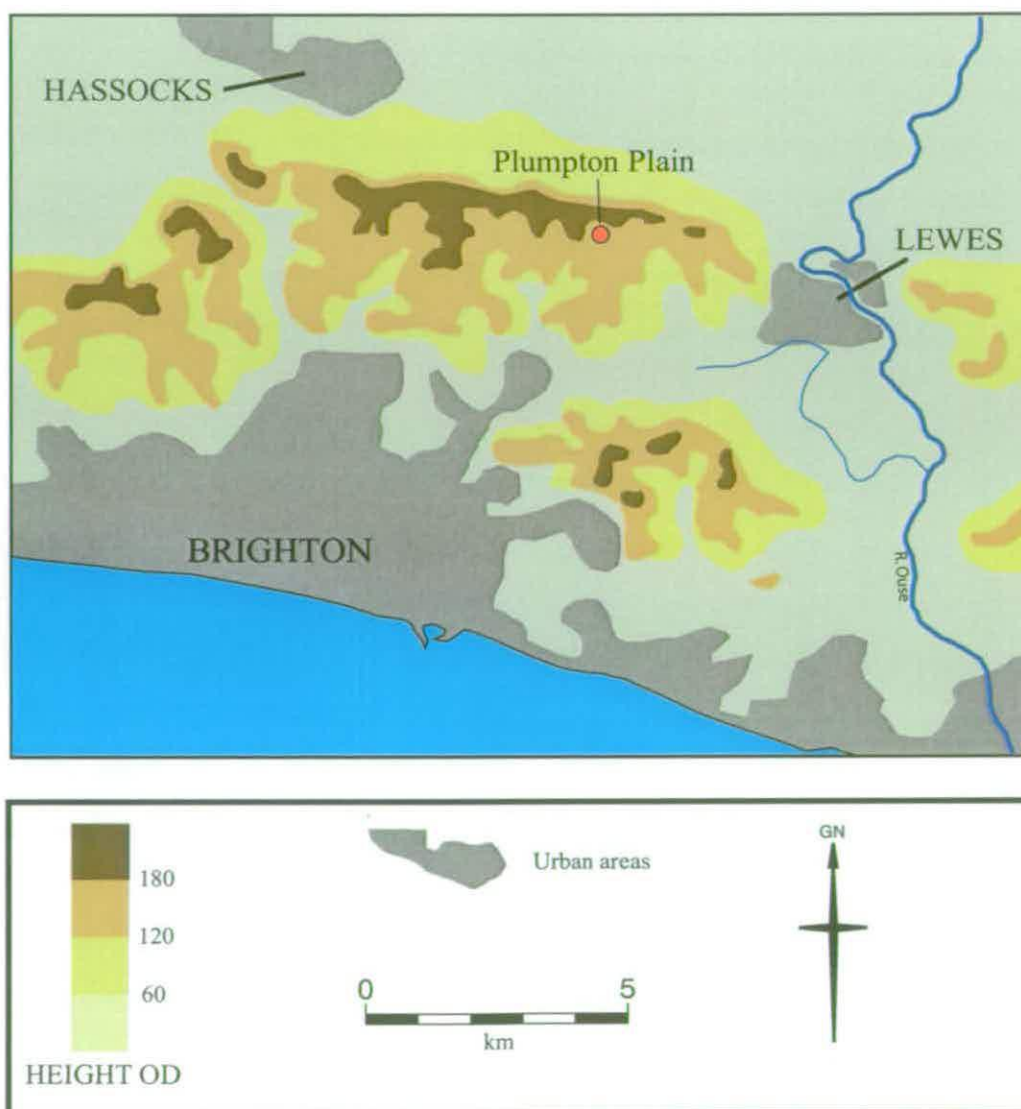


Fig 1:
Map
showing
general
location of
site.

The analytical field survey was undertaken as part of the *Historic Environment of the South Downs* project. At its heart this project acknowledges that while there has been much piecemeal appraisal of archaeological monuments and historic buildings on the South Downs, no coherent synthesis of the distinctiveness, patterning and origins of this historic environment is available. This work will therefore create a series of initiatives that are both exemplary and illustrative and will allow a characterisation of the rich historic resource on the South Downs. Through a process of field investigation and desktop analysis, the distinctive quality of the wider South Downs environment will be communicated to as wide and diverse an audience as is possible. This includes a fuller understanding of landscape change across the millennia, as well as clear statements, for example, about economic change and the related social history through time thus enabling current status and future developments to be put in context. This work will bring together a number of specialists across the Research and Standards Directorate but will rely principally on fieldwork undertaken by Archaeological Investigation and Historic Buildings and Areas Research Department.

The principal monuments under review here are the four main enclosures that constitute the site of Plumpton Plain as well as an associated field system. These are grouped together and listed in the National Monuments Record as TQ 31 SE 20 and they are protected as a Scheduled Ancient Monument group, East Sussex number 52. The enclosures and associated features are clearly part of a much more complex landscape sequence that survives within the current fenced enclosure. In addition to these enclosures and fields there are further traces of unenclosed settlement, cairns and a possible round barrow, as well as additional ancient fields on the west and south, ridge-and-furrow cultivation in a number of places and a woodland boundary. More recent activity is represented in the form of army digging with a number of slit trenches and hollows of presumed Second World War date located on the slopes to the south of the enclosure complex.

2. GEOLOGY, TOPOGRAPHY AND LAND USE

The site sits approximately 400m to the south of the northern escarpment edge of the South Downs. This landscape is characterised by an elevated spine of chalk that extends from Eastbourne, westwards for a distance of nearly 116km, terminating close to Winchester. It is a very prominent topographical landmark and is defined on the north by a very steep and abrupt escarpment edge (Plate 1); on the south, the landform is much gentler and comprises shallow valleys, coombes and level plateaux.



*Plate 1:
The steep northern
escarpment edge of
the chalk ridge close
to Plumpton Plain.*

The enclosure complex sits at approximately 190m above Ordnance Datum at the head of a now dry valley, Moustone, that extends in a narrow loop to the south-east; a segment of the South Downs ridge that is flanked by the River Adur on the west and by the River Ouse on the east. Although in a fairly prominent position, they do not command views in all directions but seem positioned so as to view south and east and be seen from these areas too. The complex is overlooked by higher ground on the north and north-east but from these vantage points, no indication of the settlement is apparent until a very short distance from its location. It is a sheltered spot, protected from westerly and northerly winds and positioned to take maximum advantage of prevailing light conditions. To the west of the enclosures the land drops off sharply again towards the steep-sided slopes above Faulkner's Bottom and the enclosures and fields have developed on the gently south and south-east facing incline of the spur defined on the east and west by the dry valleys. Moustone is

relatively flat-bottomed with a width that varies between 10m and 30m and it maintains fairly uniform dimensions for much of its extent in the vicinity of the prehistoric earthworks. Its course extends for another 200m to the north of the complex on its east side and smaller channels branch off from it close to its terminal. A more substantial lateral spur leads from the western side of Moustone Valley and this accommodates Plumpton Plain Site B.

The slopes on the east and west of the main valley rise sharply from the floor and create a prominent step varying between 3m and 7m in height; their upper margins appear to have been built up or accentuated by later activity, probably cultivation. The slopes above the valley floor are relatively gentle and have a south- or south-east facing aspect and in a couple of places these have been dissected by other less substantial re-entrant valleys. That leading off from the east side of the main dry valley 300m to the east of the enclosure complex is perhaps the most prominent and is sharply defined with a uniform basal width of 2m to 5m. Flanking scarps are slighter but well demarcated and, again, the upper edges have been enhanced by ploughing. Indeed, it is apparent that this natural trough has been used as a boundary in the layout of early fields here with two different patterns evident on either side.

The underlying geology is chalk with the enclosures and fields being located on Middle and Lower Chalk. The soil coverage is dominated by the usual chalky rendzinas and calcareous brown earths, shallow soils but very much favoured by early agriculturalists because of their easily worked and free-draining nature. Other tertiary deposits, notably, clay-with-flints, were observed close to the enclosure complex and capping the whole of the spur top at Plumpton. These deposits, overlain by thin paleoargillic brown earth soils, seem to have been particularly favoured by earlier communities who exploited the readily available sources of flint for tool manufacture.

It is an arid environment with no flowing water source close by. The River Ouse lies 4.5km to the east but there are a number of ponds of post-medieval date closer to hand and it is interesting to note that at the head of Moustone Valley there are the remains of what appears to be a medieval or later pond. In all likelihood, then, and with a higher water table, the valley may have held flowing water at an earlier date; there are no surface indications of a water channel, however, along the base of the valley.

The current land use is dominated by arable, so much so that the enclosures and a small portion of the associated field system survive only because of their location within a small fenced-off area of pasture. The encircling fields are permanent arable but a large area of set-aside has recently been established to the west of the enclosures and on the slopes of Faulkner's Bottom. The pasture is partly wooded with mixed deciduous species and scrub and bracken coverage is extensive and growing despite the grazing of cattle, occasionally herded within the penning. This is a surviving fragment of what must once have been a more extensive expanse of undisturbed chalk grassland; after the Second World War large areas of chalk grassland were ploughed up for arable farming and it has been estimated that up to 25% of the chalk grassland of the South Downs was lost between 1945 and 1980

(Brandon 1999). Today the small enclave at Plumpton Plain provides an important habitat for a range of flora and fauna long lost on other, extensively damaged, areas of the South Downs chalk ridge.

Previous Investigations

The earliest known depiction of the settlement complex at Plumpton Plain is that shown on the Ordnance Survey 2nd edition 6-inch map of 1909 (sheet liii, NE). On this the enclosures are illustrated in a very schematic manner, their disposition and outline seemingly more approximate than real. This was likely due to the extensive coverage of impenetrable vegetation that cloaked the site at the time and which hindered a full appreciation of its extent and setting. Toms' survey published in 1927 accurately records the enclosure complex in detail for the first time (Toms 1927, 128) (Fig 2).

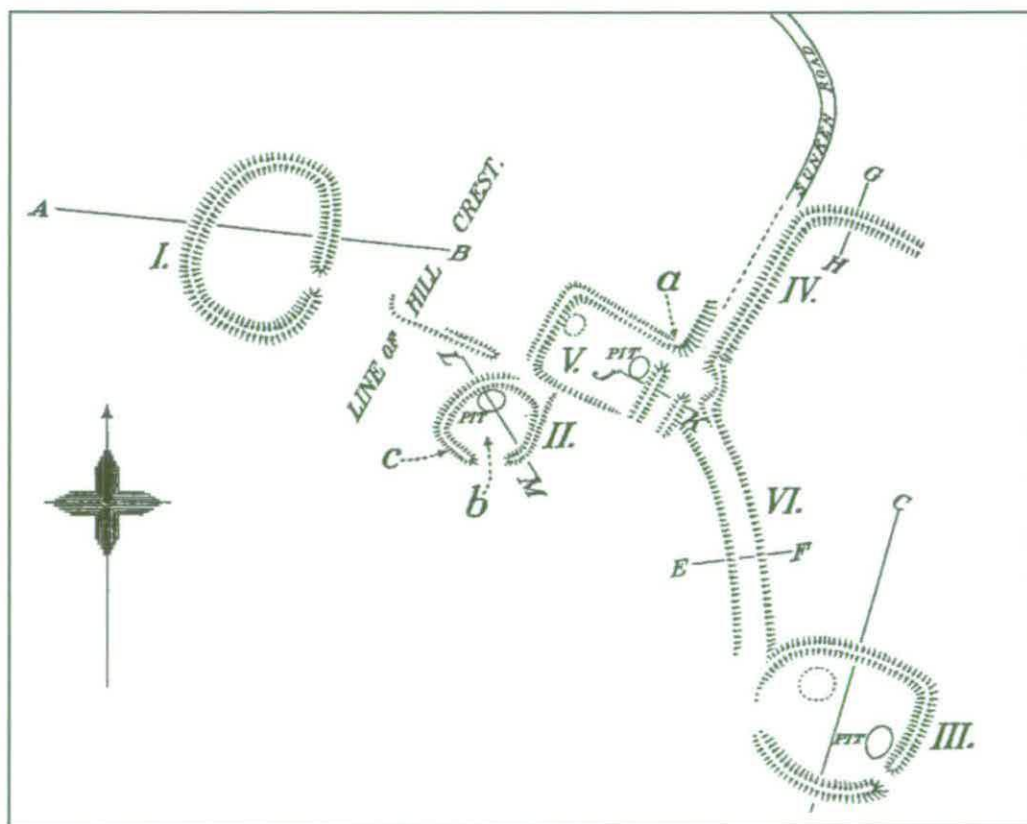


Fig 2:
Tom's plan of the
earthwork complex at
Plumpton Plain
surveyed in the years
leading up to the First
World War.

He had, in fact, first 'discovered' the site in 1913 and had then given a presentation about it to the Sussex Archaeological Society in 1917, expressing his belief at the time, that it was unique in the county of Sussex. His plan records the position and outline of the four main enclosures but here too, their depiction appears somewhat inaccurate; enclosure 4, in

particular, is shown as being almost square in shape (Tom's Enclosure V). In addition to the enclosures, Toms also surveyed the two main integrated hollow ways observing that enclosure 3 was later than the track that extended towards it from the north. Surprisingly, Toms made little mention of the contiguous field system only dwelling on one or two of the most prominent components and he did not identify the hollow way that extends between enclosures 1 and 2. Toms was struck by the lack of ditches and concluded that the bank material had been scraped up from the interior of the enclosures resulting in a marked hollowing out. The function of the enclosures puzzled Toms and as well as acknowledging their probable role as settlements, he speculated that their form might also have been designed to aid the catchment of rainwater, the shallow internal pits acting as reservoirs. Over the course of a number of years Toms picked up a wide variety of material from the surface of the enclosures, usually revealed in mole hills, rabbit scrapes or other areas of disturbance. Much struck flint was found, including a flaked axe, as well as fragments of a sarsen quern stone. In addition to this, he collected large numbers of pottery sherds, heavily flint-tempered and of probable Middle Bronze Age date. In one particular location, close to the south-western corner of enclosure 2, he gathered numerous fragments, including body sherds and the base of a late phase Beaker vessel of Late Neolithic date. This was an important discovery given the lengthy history of occupation and land use at the site.

A far more accurate and extensive plan was produced in advance of the Brighton and Hove Archaeological Club excavation in the early 1930s. These were directed in the field by GA Holleyman and EC Curwen and published in 1935 at a time when much of the downland surrounding Plumpton Plain was still in pasture. The area plan (Fig 3) shows the wider context of the settlement set within a landscape that includes extensive early fields and other contemporary sites, both enclosed and open. It is especially noteworthy that arable cultivation close to the site is confined to a small paddock to the south-west of the enclosures. Another parcel of enclosed arable was established to the south lying across the valley floor of Faulkner's Bottom but the largest extent of early 20th century arable lay to the west of Streathill Farm 500m to the west of the Plumpton settlements. The area plan is derived from a combination of aerial transcription and supporting field survey but the effects of modern cultivation on the ancient fields and settlements are evident even at this early date. No remains were noted within the arable compound close to the enclosure complex and that farmed from Streathill. Very slight and incomplete fragments of fields were noted within the Faulkner's Bottom parcel and the contrast with the well-preserved remains on the unploughed ground immediately on the west offers a stark example of the damaging and irreversible impact of modern cultivation.

Holleyman and Curwen's plan of the enclosures is certainly more accurate than that produced by Toms and shows a more realistic depiction of the enclosure morphology and with a little more detail on the contiguous field system and integrated tracks (Fig. 4). The excavators considered it unlikely that the fields pre-dated the enclosures and instead viewed them as contemporary; it was acknowledged however, that enclosure 3 was later purely on the surface indications that it blocked the line of the track approaching from the north-west. At

the time of their survey enclosure 1 was shrouded in dense vegetation and so no further work was done on it; excavation concentrated on enclosure 2, 3 and 4.

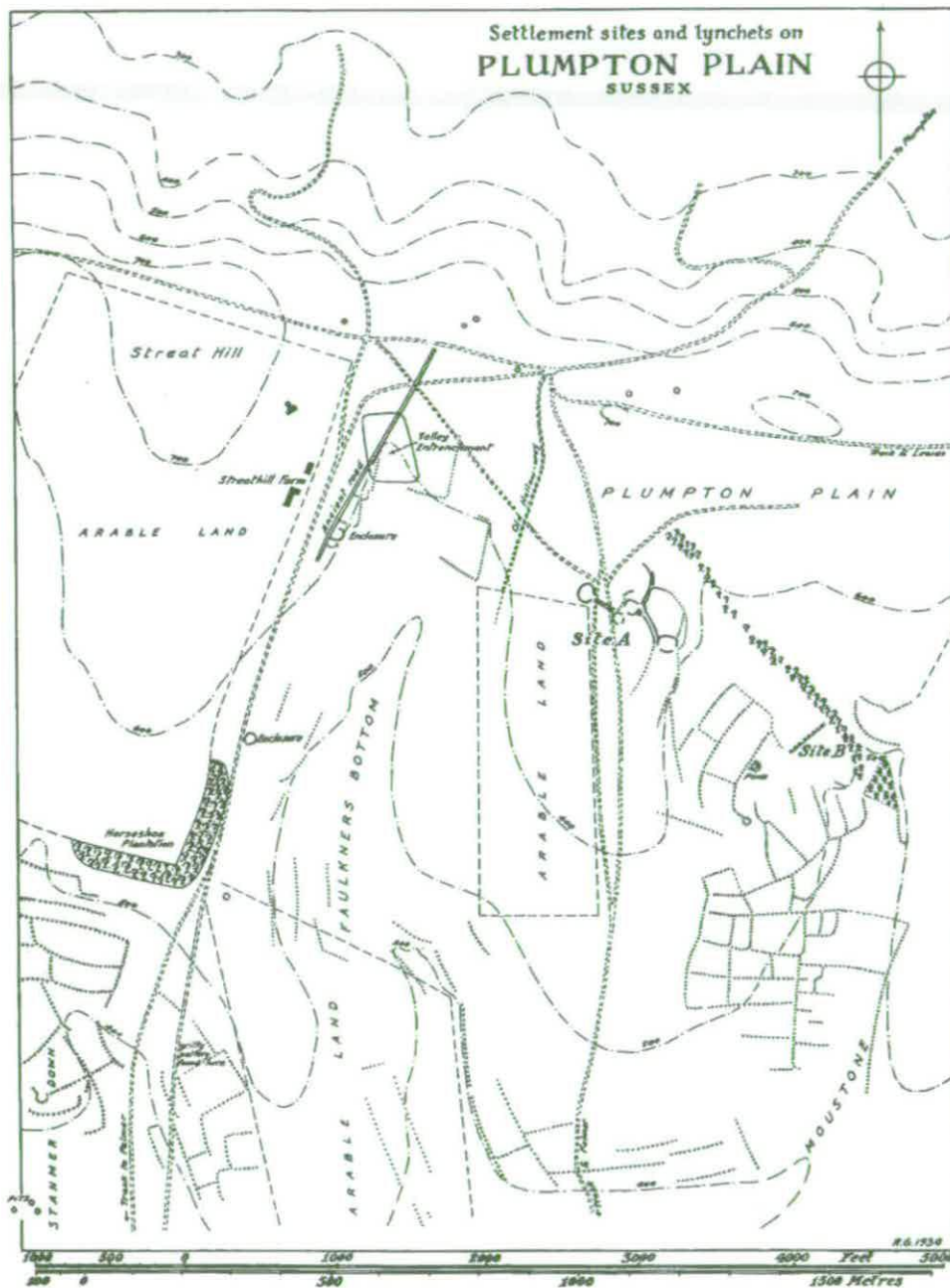


Fig 3:
Holleyman and
Curwen's plan of the
area surrounding
the enclosure
complex. Note how
little of the area is
under plough at this
stage (1930s).
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Fig. 1. General Plan.

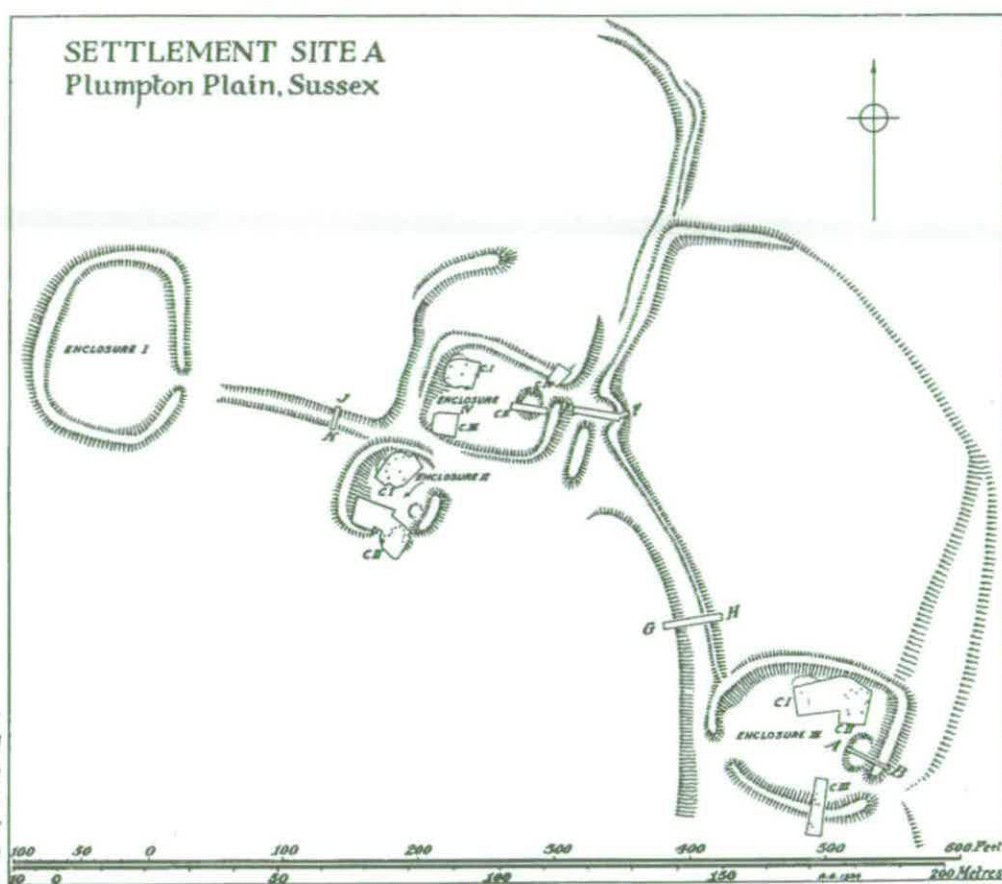


Fig 4:
Holleyman and
Curwen's plan of the
enclosure complex.
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In each case interiors were targeted in an attempt to find structural remains and also to produce quantities of dateable artefactual material. In total, three definite post-built round houses were uncovered with at least two other circular post-built structures apparent. Good amounts of pottery, stone and clay artefacts such as spindle whorls were found in at least two of these constructions enabling the excavators to propose a Late Bronze Age date for the enclosed elements of the settlement. The presence of Plumpton Plain Site B was indicated by substantial quantities of pottery and burnt flint lying on the ground surface. Excavation in those areas where the greatest densities of finds were noted produced evidence for at least two post-built features, possibly house sites and part of an extensive open settlement here. Hawkes's analysis of the pottery from both sites suggests that Site A was earlier, at a date of about 1000 BC and that Site B post-dated it by at least 250 years. Furthermore, it was suggested that the occupants of Site B had migrated there from Site A.

3. THE SURVEY

Detailed field investigation extended over an area of close to 13 hectares and was confined largely to that area of the site now contained within a fenced boundary and reserved for pasture. The earthwork remains are surrounded by permanent arable fields on all sides apart from the west. Here, the extensive block of downland that reaches to Faulkner's Bottom has recently reverted to set-aside pasture. Activity on the site conceivably extends over a period of several hundred years and whilst not necessarily representing continuous occupation there are clearly a number of intensive bursts of activity that have left surface traces. The most prominent remains are those of four small univallate enclosures, three of which were recorded during the most recent episode of fieldwork (Fig 5). The fourth member of this group, the westernmost example, was not recorded in detail as it now lies in dense vegetation. In close association with these there are widespread remains of ancient fields in the form of lynchets and field banks and, a rare survival, clearance cairns (Fig 6). At least two segments of integrated tracks or hollow ways were also recorded, one of which pre-dates the south-easternmost enclosure. Other elements of later lynched and embanked fields were identified and superimposed upon them are occasional fragments of ridged cultivation. In addition to these, a number of building platforms were noted, probably part of a prehistoric unenclosed settlement and one short length of cross-ridge boundary survives close to the south-eastern limit of the surveyed area. More recent activity in the form of an earthwork woodland boundary and other assorted military diggings were also investigated.

The Enclosures

Enclosure 1: A brief reconnaissance did confirm that its character, as shown on Holleyman and Curwen's plan, was correct – it survives as an oval-shaped enclosure defined by a single low bank comprising flint, chalk and soil without an accompanying ditch. It is 43m in length on its north-south axis but is much narrower on the east-west at 30m in width measured from the centre of the bank. It has been furnished with one single east-facing entrance consisting of a gap 3m wide between the bank terminals which are themselves slightly widened at this point. Generally, the bank has an average width of 2-4m but at the terminals this has widened to nearer 5m in width. Externally, the bank survives to a height that varies between 0.5m and 1.0m above ground level but this has been exacerbated in more recent times by the encroachment of cultivation, particularly on the north, west and south, so that a slight plough-step encircles the enclosure on these parts and gives an artificially enhanced prominence to the earthworks here (Plate2). The interior of this enclosure is considerably sunken and so the bank stands to a height of up to 1.5m above internal ground level. Prohibitive vegetation cover hindered a detailed analysis of the interior but it is clear from surface indications that there is at least one substantial sub-circular hollow that survives to a depth of 0.3m at best close to the northern apex of the enclosure.

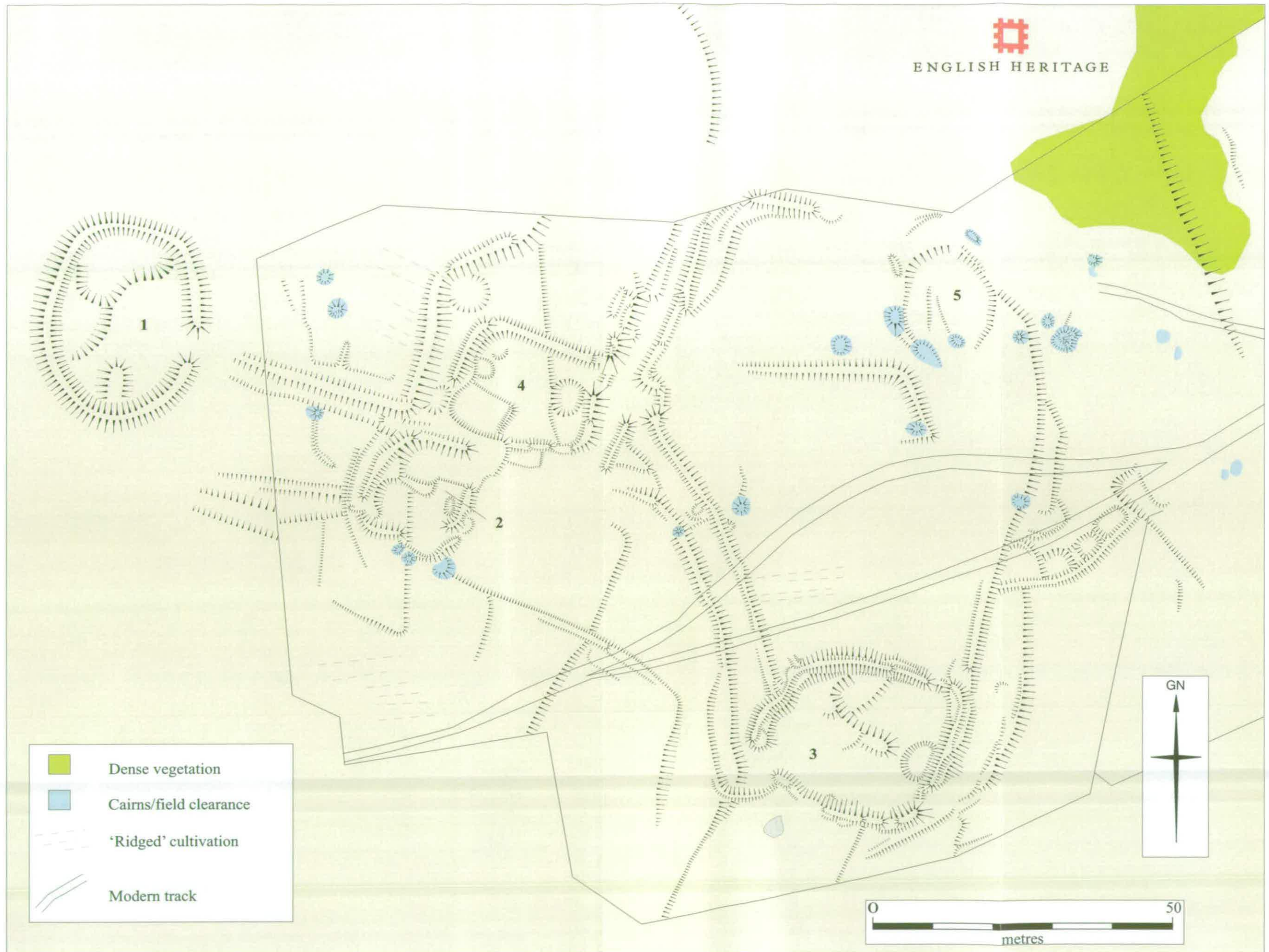


Fig 5:
The English Heritage
survey. Enclosures are
numbered for cross-
reference to the text.

At least one other recessed platform or shallow scoop can be seen immediately to the south of this and the surface of the enclosure and the bank that surrounds it is littered with flint blades and flakes. The enclosure is approached from the east by a narrow embanked trackway whose course has now been largely destroyed by the construction of a farm track and wear-and-tear along it. This embanked trackway did not extend fully to the enclosure but terminates several metres short of it providing an open area in front of the entrance.



Plate 2:
Enclosure 1
viewed from the
south-west.

Enclosure 2: This enclosure lies c. 50m to the east of enclosure 1; enclosure 4 lies close by, 5m to the north-east. The enclosure lies on fairly level ground and is defined by what appear to be individual sections of embankment, so no formal and complete enclosure is evident. The circuit has been damaged on the south largely through the impact of Holleyman and Curwen's excavation trench (CII) but it is evident from their excavation plan that the ellipse notable today in the line of the enclosure, was present in advance of the early fieldwork and, so, recorded at this stage. There are four main segments to the enclosure and together they describe something that approximates to a rectangle with rounded corners, particularly on the north-eastern and south-eastern angles. The maximum overall width of the enclosure is close to 25m on the north-west – south-east axis but is wider on the perpendicular at nearly 30m, measured externally from the base of the bank. The most pronounced element of the enclosure circuit is the L-shaped length on the north and west which extends for a distance of 30m. Its eastern limit consists of a well-formed and rounded terminal, clearly unaltered through more recent activity, implying that it was part of

an early constructional design and suggesting, furthermore, that it may have been the northern element of a simple gap entrance into the enclosure.



*Plate 3:
Enclosure 2
viewed from the
north-west.*

The bank on the north is low and rounded seemingly constructed in a combination of soil and chalk rubble with a great deal of flint, some of it worked, incorporated too. It survives to a height externally of 0.2m above ground level; internally this increases to 0.4m due to the recessed nature of the interior. The terminal is neither heightened nor widened and, in general, this stretch of boundary maintains a constant width of c. 5.0m. As it turns sharply at the north-eastern corner, the enclosure boundary is noticeably more pronounced and retains traces of surface complexity, principally, that the bank has been remodelled or rebuilt at some subsequent stage. Cross-sections across the earthwork here clearly indicate this and there is a noticeable step in the profile on the south-eastern flank. The most prominent element of the boundary at this point is a bank of chalky soil and flint delineated by rounded terminals on the north and south. The bank extends for a length of 18.0m and stands to a height of 0.3m above the external ground level. The overall width varied between 2.0 and 5.0m and it follows a less a linear path, having the appearance of conjoined heaps of soil rather than a carefully planned and built structure. A narrow berm that varies between 0.5m and 1.0m separates this mound from another scarp running parallel to it; both merge close to the north-western angle. The scarp reaches a height of 0.2m above the interior ground surface and it is plausible that it represents the remnants of an earlier enclosure boundary subsequently rebuilt in the form of an irregular linear bank. The southern extent of this scarp is truncated by later damage but its alignment suggests an uneasy junction with

the enclosure segment that extends along the southern flank. This is marked by two separate elements; a low curvilinear bank, and an arcing segment of low bank with a mound on the south. The former resembles the later bank on the west in that it consists of a low dump of chalky soil with flint inclusions. It extends for a length of 11.0m and reaches a maximum width of 5.5m at its centre point and a height of 0.3m; the western end has been altered by later activity so its junction and relationship to the bank on the west is lost. The survey implication, however, is that this bank merged with that on the west and so was part of an L-shaped arrangement, possibly a rebuild of an earlier enclosure boundary.

The south-eastern corner of the enclosure is delineated by a curvilinear scarp, embanked at the northern end and attaining a maximum width of close to 4.0m. The bank on the north stands to a height of 0.3m above ground level and is embellished by the addition of at least three other small circular mounds of soil. The largest of these extends to a diameter of 5.0m and height of 0.1m above ground level and all three clearly overlie the bank. It is likely that they represent uncleared spoil from the Brighton and Hove Archaeological Club's excavations which, at this point indicated clearly that the curve in the line of the bank is 'original' and enfolds what the excavators viewed as an irregular timber structure. The final segment of the enclosure extends for a length of 13.0m along the eastern flank and consists of a low bank 4.0m wide at the base that stands to a height of 0.2m above ground level. Like all of the other components in this enclosure boundary the bank is composed of chalky soil with flint inclusions, some of which appear to be the discarded debris of flint-working. That this stretch of bank is isolated from its near neighbour on the south is apparent in that the terminals of both are off-set from one another. On the north the bank ends in a poorly defined terminal but it is likely that the resulting gap between it and the northern bank would have been used as an entrance into the enclosure. The slight linear scarp extending across the entrance is a pre-existing lynchet-like feature. Again, the bank is accompanied externally by a low mound of spoil. Internally, at the midpoint, there is a shallow oval hollow 4.0m in maximum length and 0.2m deep, resembling a small pond or pool. There is no hint of any associated ditch, internally or externally, with this enclosure but there are a number of noteworthy internal features. Interestingly, the interior ground level is not sunken to the same degree as that witnessed in enclosure 1, and the only significant hollowing occurs close to the north-western apex (Plate 4). Here, a circular hollow, 8.0m in diameter to a depth of 0.2m is flanked on the west by a low scarp previously identified as a possible earlier enclosure boundary, and on the south, by a low bank. The hollow was shown on excavation to house a post-built roundhouse with a probable entrance on the east, facing the enclosure entrance. The bank which is low and flat-topped and extends for 8.0m, has a markedly flattened terminal on the east and at least two minor scarps emanate from it on the north and south. Its junction with the enclosure on the west is marked by a swelling and heightening of the boundary suggesting that it pre-dates it; indeed, it seems likely that the bank forms part of a remnant field system underneath the enclosure. The two scarps leading off from the bank are also part of the underlying field system and that on the south connects with elements of this outside of the enclosure.



*Plate 4:
The interior of
enclosure 2 viewed
from the south-east.
A shallow hut
depression can be
seen in the far
corner.*

Enclosure 3: This enclosure is the largest of the complex and lies at a distance of 65m to the south-east of the main cluster. Like all of the other surveyed examples, it displays a very complex morphology with at least two major phases of refurbishment evident. The ground falls to the south-east at this point much more sharply than in the vicinity of the other enclosures further to the north-west and the boundary, terraced into the natural slope, reflects this with its much more substantial dimensions. The enclosure is roughly sub-rectangular in outline with a maximum external width of 46m on the east – west axis; the enclosure is narrower on the north – south axis with an external width of 39m. The main body is C-shaped in outline with an open side on the south. This is ‘closed off’ by a well formed bank that extends in a shallow arc for a length of 38m (Plate 5). Although similar in construction to the C-shaped element it sits slightly eccentrically to it with a wide gap on the south-west being mirrored by a much narrower one on the south-east each displaying a marked misalignment in the respective bank segments. Both elements of the enclosure boundary are formidable barriers particularly on the east and north-east where it has been accentuated by terracing into the natural slope. For the majority of its circuit the C-shaped component comprises a substantial broad-based bank. There is clear complexity to its structure however, with indications that, as with the other enclosures noted during the survey, the most prominent embanked elements rest on top of a pre-existing boundary. This is evident on the northern and eastern arms of the enclosure where the external face of the primary bank is separated from its later embellishment by a berm at best 1.5m wide. In most other instances the junction between the two is indicated by a sharp break in the slope.

Similar breaks of slope on the inner face imply that the primary bank was wider with a basal width of 7.0m and that the later additions have heightened the bank to its present day levels of 0.5m at best.



*Plate 5:
The southern
boundary of
enclosure 3.*

The bank is now flat-topped but narrow, with a width at the crest of 1m and although the irregular form of the added bank material might suggest an accreted process of deposition, there is also evidence for later damage principally through animal erosion. Exposed material from this makes it apparent that the bank is constructed of an amalgamation of chalky soil, clay and flints, a number of which appear, again, to derive from flint-working. The gentle curve of the north-western corner stands in marked contrast to that on the south-east. At this point the line of the embankment turns sharply at 90° and this abruptness reflects the influence of a substantial underlying feature that approaches the enclosure from the north. Both terminals of this element of the enclosure are undifferentiated in terms of heightening and widening as would be expected of entrance gaps. The terminals are well preserved but that on the south-west may have been partially truncated by later activity. The most convincing location for an entrance is on the south-east where the gap between the two enclosure segments is narrow at 1.8m (Plate 6). The shorter arcing segment again consists of a broad and spread primary bank that varies between 4.0m and 5.5m in width surmounted by a later mound. Breaks of slope both internally and externally mark their junction and the undulous nature of this secondary bank would appear to indicate a piecemeal construction process or attest to later damaging activity. The eastern limit of this bank is off-set from that on the north and it is noticeably more enlarged than its neighbour; a slight scarp extending

across the gap on the south-east might represent collapsed rampart material or relate to a pre-enclosure structure. Similarly, on the south-west, a broad and low mound links both terminals and would have created a minor obstruction to movement through this entranceway.



*Plate 6:
The south-
eastern
entrance to
enclosure 3.*

As with all of the enclosures at Plumpton Plain, there are no accompanying ditches. The interior of the enclosure is relatively recessed in comparison to the surrounding ground surface and it appears to have been levelled off (Plate 7). Two internal terraces can be discerned; the smaller of the two, and the most heavily indented, occupies the north-eastern corner of the enclosure. It is defined by a scarp 0.3m high on the west and by a shallow bank 7.0m wide on the south. Excavation within this hollow produced good evidence for activity with at least one circular post-built timber structure and a number of other post-holes and truncated slots; the circular structure is evidently a round house with a south-facing entrance. The other negative features may also represent former structures or activity areas. Again, there is a shallow hollow close to the south-eastern terminal of the C-shaped enclosure; this depression reaches a maximum width of 10.0m and is 0.3m deep. It is most likely a pond though excavation across it did not reveal any evidence for puddling or clay-lining. The close juxtaposition of this feature and the round house might suggest that they were not contemporary and, furthermore, that the house was earlier. The cutting across the southern side of the enclosure revealed traces of pre-bank structures, so a long history of occupation is implied.

*Plate 7:
The interior of
enclosure 3. The
ranging pole
marks the position
of the possible
pond.*



Enclosure 4: This enclosure lies only 5m to the north of its nearest neighbour, enclosure 2, and appears to have been constructed in much the same fashion. It is situated on ground that slopes gently to the south-east and is rectilinear in outline, 28m wide on the north-south axis and 35m on its longer east-west line. With an internal area of 980 sqm, it is substantially larger than its neighbour. The enclosure boundary consists of a primary bank with later additions and embellishments; no accompanying ditch can be seen. The earlier component is best seen on the northern flank where it survives as a low flattened bank with a basal width of 4.0m that rises to a height of 0.1m. Similar traces of the primary phase boundary are evident on the opposite southern flank. Here, the edge has been damaged by later activity but it can still be traced as a single scarp 0.1m high for most of its length, only on the eastern end is it embanked to a basal width of 3.8m and height of 0.1m. On the east and west the enclosure boundary has been enhanced by the superimposition of additional bank material. That on the west is the most pronounced and the bank extends for a length of 18.0m and to a height of 0.2m with well preserved terminals on the north and south; the junction with the pre-existing structure indicated by a narrow berm and sharp break in the line of the inner slope. That on the east is less distinctive but, nevertheless, the additional bank material can be seen to extend for a length of 13m and reaches a maximum width of 6.0m and height of 0.2m at the northern end. The narrow gap in the line of the enclosure at this point indicates the likely location of an entranceway and the increase in dimensions of the bank adds further weight to this suggestion (Plate 8). That it was the original entrance

to the enclosure is unclear as a low bank, either an element of a pre-existing field system or part of the first-phase enclosure, extends across the open space.



*Plate 8:
The south-facing
entrance into
enclosure 4*

Both interior and exterior ground levels are at the same height, with no real indications of surface hollowing within the enclosure. The most notable internal feature is an oval hollow 0.2m deep with a maximum width of 8.0m lying close to the bank terminal on the south side of the terminal. Excavation across this feature provided no clue as to its function but it strongly resembles a small pond. Further excavation of the interior uncovered a post-built timber structure close to the north-western corner, the site of this now marked by a small dump of spoil. Additional digging on the south-western corner failed to identify any sub-surface features of note. The most pronounced internal feature in this corner is an L-shaped scarp that stands to a height of 0.1m. It is embanked for a short distance on the east and it may represent the site of the early 20th century excavations. However, it aligns well with components of the pre-enclosure field system on the south and on the west, at the point of intersection with the enclosure, there is pronounced alteration in the line of the boundary with the implication that the scarp underlies it.

Enclosure 5: This largely destroyed enclosure was discovered during the most recent survey and lies some 65m to the north of enclosure 3 and 60m to the east of enclosure 4. Its form is now very unclear, having been severely eroded by later cultivation but is apparently curvilinear in outline, 20m by 25m in area, with hints of rectilinearity on the south-west. It has been constructed on ground that gently slopes to the east and so has entailed little

terracing into the slope. The enclosure is defined by a curving scarp 28m in length on the west side. At the southern end of this it appears to be embanked with a basal width of 5.0m, surviving to height of 0.1m. Another low circular mound appended to the enclosure boundary might either be a remnant bank or, alternatively, a low mound of spoil from field clearance. The eastern arm of the enclosure comprises a low bank 27.0m in length, 7.0m wide at the base and surviving to a height of 0.1m. The wide gap on the south might point to the position of an entrance to the enclosure but it is equally plausible that the interruption derives from later activity. The slight linear scarps within the interior may also relate to later activity such as cultivation and clearance.

Unenclosed Settlement (Fig 6)

In addition to the four, possibly five, enclosures at Plumpton Plain, there is enough evidence in the form of surviving remains as well as inference from the excavation account, to suggest that there is an unenclosed settlement at the site. Plumpton Plain site B is, of course, not set within a formal enclosure and the implication of findings made during the excavation is that a number of the timber structures recorded possibly pre-dated the surrounding enclosures.

In both cases, the settlement features were set within the paddocks of a field system. During the present survey at least one cluster of open house sites was noted. This lies approximately 190m to the south-east of enclosure 3 on the north side of the re-entrant valley that extends southwards from the enclosure complex. The much denuded remains of at least three circular structures can be discerned but their full investigation is hindered by dense vegetation on these south-facing slopes. That on the south is the most convincing and consists of an arcing length of ditch that extends for 22m. The ditch is, at best, 0.6m wide to a depth of 0.1m, and is flanked internally by a low bank 0.1m in height and 0.7m wide; the internal floor area may have reached a maximum diameter of 16.0m. A second potential building stance lies approximately 15.0m to the north-west and is defined by a single scarp barely 0.1m in height enfolding a recessed platform with a maximum diameter of 12.0m. The scarp is flanked on the north-west by a short stretch of bank surviving to a height of 0.1m. The smallest of the three structures lies a further 10m to the north and is defined by a slight terrace into the hillslope. The rear of the terrace survives to a height of 0.2m and it is fronted by a slight apron scarp standing to a height of 0.1m above the ground level. The resulting building platform is small with a maximum diameter of 10m. Like the other elements of unenclosed settlement at Plumpton Plain, these structures are placed within enclosed fields which in this particular area, are poorly defined.

Another area of note lies midway between enclosures 3 and 5. Here, there are a number of irregular linear banks and scarps that spring eastwards from one of the lynchet boundaries emanating from beneath enclosure 3. One curving linear bank is particularly prominent and this survives to a width of 4.0m and height of 0.2m. It extends for a total length of 35m but on the east it has been truncated by a more recent trackway, wear and tear from which has revealed much struck flint. On the north side of this field bank there are the much damaged



	Ancient fields		Cairns
	Enclosure phase 1		Unenclosed settlement
	Enclosure phase 2		Pond
	Trackway		Ridged cultivation
	Cross-ridge boundary		Woodland boundary
	Dry valley		Dense vegetation



Figure 6:
Area plan showing
location of the
enclosure complex
and its relationship to
surrounding
archaeological
features.

remains of what might be two structural platforms. They are both rectangular in outline, covering an area 8m by 3m and are further damaged by activity on their northern flanks. Two other curving scarps immediately to the north-west may also be part of an open settlement irretrievably damaged by later activity.

Ancient Fields, Cairns and Trackways

The remains of ancient fields can be seen across all of the surveyed area. In addition to this, further lynchets are evident extending away from the enclosure complex on all sides and it is clear that what survives is only a fragment of a once more extensive landscape of cultivation remains. The embanked and lynched remains of fields represent activity over a long period of time and in their earliest form predate all of the enclosures at Plumpton Plain, whose morphology is evidently dependent upon the shape of the underlying field system. Later fields are apparent too, and the remains of cultivation have built up against the boundaries of the enclosures and in one case, severely damaged it. As well as the linear remains of field boundaries there is additional evidence for stone clearance in the form of cairns which litter the landscape at Plumpton.

Within the surveyed area there are at least two main layouts of fields visible. The first of these lies to the south of the re-entrant valley and extends as far northward as the enclosure complex. There is undoubtedly phasing visible within the fields here but the earliest clearly pre-date the construction of the enclosures. All of the enclosures are superimposed upon the lynchets of a field system and on numerous occasions it is clear that the pre-existing landmarks influenced the form of the enclosures. The fields are square or rectangular in outline and have been laid out on north-west to south-east alignment with the main axis of development reflecting, to a large extent, the underlying topography. The lynchets are slight features surviving to a height, at best, of 0.2m and it is apparent that the resulting plot size is equally diminutive with areas as small as 25m² being defined (Plate 9). Enclosure 2 overlies lynchets on all sides and it is plausible that the entire circuit of this enclosure fossilises pre-existing field boundaries. Other obvious indications of the slighted fields are evident within the interior and continue to the south. Likewise, the form of enclosure 4 seems to reflect the alignment of underlying field edges certainly on the south and east and plausibly too, on the north and west. The abrupt angle change at the north-eastern corner of enclosure 3 marks the point where the underlying field bank and the superimposed enclosure boundary diverge. Similarly, the putative enclosure further to the north may also have been constructed on top of a pre-existing field bank. Occasionally elements of the early field system are embanked but again the surviving features are much reduced and rarely exceed a height of 0.2m and width of 3.0m. The remains of cultivation either contemporary with or later than the enclosures are evident in a number of places. A negative lynchet standing to a height of 0.2m, shadows the western side of enclosure 2 and a large embanked field boundary 6.0m wide, extends northwards with a marked dog-leg immediately to the west of enclosure 4. It does seem likely, however, that even this feature may have originated in a pre-enclosure

phase as it comprises a positive build up of soil to a height of 0.3m on the western side but dips to a maximum of 0.5m on the east where it takes the form of a negative lynchet that must have started forming, at least, before the construction of an enclosure in this area brought a halt to intensive cultivation. A similar sequence of cultivated soil accumulation can be seen to the north of the possible entrance to enclosure 4. On the west side of the track, and for a length of 20.0m leading away from the enclosure, a linear spread of chalky soil and flint 3.0m wide and 0.2m in height strongly resembles the debris of ploughing. Another massive build up of soil is evident flanking the east side of the trackway 25.0m to the north-east and a well defined negative lynchet 0.3m in height extends parallel to it for at least 20.0m. In addition to this much of the material that is incorporated within the enclosure boundaries resembles field clearance and so there is a possibility that this material, derived from cultivation, is at least contemporary with the enclosures.



*Plate 9:
Lynched field
boundary to the east
of enclosure 2.*

Later activity has caused much damage in the area to the south of the enclosure complex but enough fragmentary remains of field boundaries survive to indicate that early cultivation continued in this area. A series of parallel, south-facing scarps close to the western fence boundary and to the west of the re-entrant valley are likely to be part of the same early field configuration that pre-dates the enclosures. The lynchets here are on a more noticeably east to west alignment but this alteration reflects the underlying topography along this section of the chalk downland where the narrowing spur slopes gently to the south. The lynchets survive to a height of 0.2m at best and are occasionally accompanied by slight banks up to 2.0m in width, usually on the uphill side and indicative of positive soil accumulation. They

terminate on the east against an intermittently well preserved end scarp set at right angles and surviving to a height of 0.4m in places.

A well defined cross-ridge earthwork fits into the overall field pattern in this area. It sits close to the south-eastern extent of the surveyed area and consists of a single bank 4.5m wide and 0.2m above ground level on an east to west alignment; it is flanked on the north by a ditch 2.2m wide and up to 0.2m deep and it would have continued for some distance to the west judging by the clarity of its truncation at this extent; on the east it gradually peters out some 5.0m from the break of slope above the re-entrant valley. The earthwork was evidently designed to provide a barrier across the relatively narrow chalk spur at this point but its relationship to the surrounding fields is unknown. Holleyman and Curwen's Plumpton Plain *Site B* dating to the Late Bronze Age lies adjacent on the south but again there is no chronological link between the two. These fields belong to a fairly distinctive grouping of paddocks mostly sharing the same alignment and laid out across a relatively homogeneous topography. Holleyman and Curwen's General Plan clearly indicates a change in the alignment of the layout c. 200m to the south of Site B. Ground reconnaissance confirms that the fields in this area are very much more substantial in character and are part of a separate layout. On the basis of the survey evidence and further field reconnaissance it is plausible to suggest that the Plumpton Plain enclosures may have had an attendant field system that covered a minimum of 42 hectares or just over 100 acres of land.

Additional remains of fields can be seen to the east of the main north-west to south-east re-entrant valley, but these have a very different morphology than those to the west. The eastern block of fields is bifurcated by another dry valley set perpendicularly to the main one but the traces of fields to the north and south are similar enough to suggest a common origin. The fields here do not show the same regularity of layout as those on the west and there are hints of at least two phases of field construction. Only a narrow strip of field system survives as they are slighted by cultivation to the east but the most prominent components are those terminal lynchets that lie parallel to the dry valley at the break of slope. They survive as west-facing scarps 0.3m high at best and are accentuated by the east to west slope of the land in this area. The fields appear to be associated with the unenclosed settlement to the north of the subsidiary dry valley and in this area there are hints of superficial regularity with parallel sided field enclosures and other elements set at right angles to these. They are very slight features no more than 0.1 – 0.2m in height and are occasionally only marked by changes in vegetation.

To the south of the smaller dry valley the field remains display a similar fragility with slopes rarely higher than 0.1m. Larger dimensions are noted at breaks of slope and, particularly on the western fringes, there are indications of one set of lynchets overlying another, implying local re-organisation of the fields at some stage. In one area there are surface indications of a series of close-set lynchets, the full extent of which are masked by bracken. These scarps are ephemeral, lower than 0.1m in height, but would seem to mark fossilised plough steps 0.75m to 1.5m wide, perhaps contemporary with the use of the field system here. If so, these would be amongst the earliest surviving remains of ridged cultivation discovered in

southern England. The larger dimensions were noted at the southern end of this block of fields with one noteworthy arcing lynchet defining the edge of the field system. This lynchet stands to a maximum height of 2m above ground level and the narrow terrace up to 8m wide, at its midpoint suggests that it was used as a double-lynchet trackway through the fields, a feature more commonly associated with Romano-British cultivation. The continuation of this field system further to the south is indeed associated with settlements of this date but the suggestions of sequencing within the layout points to an earlier origin for the fields here.

Clusters of clearance cairns dot the area of survey and these are very rare survivals on the South Downs chalklands. They occur across all parts of the survey area and consist of generally circular mounds of flint and chalky soil. Normally they fall into the range of 1.0m to 4.0m in diameter and stand to a height of up to 0.4m but infrequently there are larger examples. Two instances can be seen at the south-western corner of the survey where two mounds, one circular the other oval can be seen. The oval-shaped mound survives as a platform 12.0m in length on its north-south axis and 0.2m high and is composed of large nodules of flint presumably gathered from adjoining cultivated areas. The most significant clustering of clearance cairns lies close to the enclosure complex and might reflect a more intense use of land in their vicinity. At least a dozen cairns are evident each composed of large flint nodules but one of these mounds is more substantial than the others. This lies 13.0m to the south-east of enclosure 5 and the circular mound with a basal diameter of 6.0m, is composed of flint nodules and chalky soil standing to a height of 0.3m. This mound strongly resembles a small round barrow of the sort frequently associated with Middle Bronze Age settlements and its summit is interestingly cratered much in the style of antiquarian barrow digging.

There are at least two major trackways associated with the enclosure complex and surrounding field system. The least substantial of the two leads from enclosure 1 eastwards towards enclosures 2 and 4. It consists of a narrow ditch 2.0m wide and up to 0.2m deep flanked on the north by a low bank 4.0m in width and 0.1m high and both have been truncated on the north by the fence boundary and modern track. The course of the ancient trackway closer to its eastern limit is problematical; its continuation eastwards appears to be blocked by the construction of the final phase enclosure 2 rampart. So it is likely that the trackway predates the latest activity at the enclosure but is conceivably contemporary with the earliest occupation here. It is plausible that this trackway turned sharply to the north close to its intersection with the enclosures, and ran along the foot of the prominent dog-legged field bank in this area. In all likelihood it seems feasible that this narrow track continued on an east to west alignment and joined with its larger neighbour on the east. That it continued to the east and joined with the major embanked trackway here is hinted at by a slight bank that springs from the west side of the latter and extends for 15m towards the smaller hollowed track approaching from the west (Plate 10).

*Plate 10:
Disturbed area at
the junction of the
earlier route with
the double-
lyncheted trackway
leading to enclosure
3.*



The most prominent of the trackways connects enclosure 3 and 4 and clearly pre-dates the former (Plate 11). It consists of a double embankment flanking a central hollow way 4.0m to 10.0m wide and up to 0.4m in depth. The flanking banks are well preserved and survive to a width of 4.0m and height of 0.3m and both have been enhanced by the effects of cultivation alongside. This is especially noticeable on the east where the external face has been accentuated by the impact of cultivation. This bank is overlain by the boundary to enclosure 3 whose course would have effectively blocked movement along the trackway. The gentle north-westerly arc of the trackway alters abruptly close to enclosure 4 and suggests that it was already in existence when the enclosure boundary was built. At that point where it changes to a more north – south alignment, its width is much constricted and the new alignment appears to be a subsequent development. This is delineated by an isolated bank 15.0m in length and 0.3m high which partly blocks the trackway and extends parallel to the eastern flank of enclosure 4 and appears to feed into an open area to the east of enclosure 2. Beyond the angle change and opposite the entrance to enclosure 4, there is an access point through the east side of the trackway. This narrows from 8.0m to 3.0m in width and is flanked on either side by prominent terminals; these loop to the east and provide a short funnel into an open area. There is an indication of later blocking across this gap.

*Plate 11:
the double-lynchet
trackway looking
southwards towards
enclosure 3.*



Other Land Use

The remains of ridge-and-furrow cultivation were noted in a number of locations across the area of survey. A series of particularly narrow strips at best 1.5m in width with a maximum height of 0.1m above the base of the furrow, extend perpendicularly from the substantial bank that lies immediately to the west of enclosure 4. Only short lengths of ploughing are visible here, later activity having removed any trace to the west, and the cultivation terminates shortly before the top edge of the bank. Additional ephemeral fragments of this phase of cultivation can be seen further to the south where short lengths of furrow, often revealed by changes in vegetation, adhere to the overall symmetry of the earlier lynched fields. Other ridged cultivation is visible at the top end of the re-entrant valley, particularly on the west side close to the break in slope. No overall pattern to these plots is apparent and they vary in width from 1.0m to 2.0m, extending for a maximum length of 10.0m. Again, their layout broadly corresponds to that of the underlying field system, with a general east to west trend but one that has been disrupted by later wear-and-tear. A number of fragmentary scarps in the wooded compartment on the western slope of the re-entrant, set obliquely across the contour, might also be the remains of cultivation but they are too incomplete to be characterised. The same must be said of the 'field-like' earthworks along the base of the dry valley.

The woodland compartment is enclosed on the east by a boundary bank 3.0m and 0.1m in height. It extends intermittently for a length of c. 190m and is flanked on the east by a short length of ditch 2.0m and 0.2m deep close to its northern limit. More recent paths and vehicle tracks scar the area and the field system close to the south-eastern corner of the surveyed area has been damaged by the development of a narrow track. The routeway that leads from the current field entrance to the south of enclosure 2, may be of some antiquity as it is truncated on its east by the modern fenceline along which a substantial positive lynchet has developed. Other recent accumulations of ploughsoil have gathered at various points along this boundary and occasionally incorporate substantial deposits of flint.

4. DISCUSSION

The collection of enclosures, associated fields, clearance cairns and trackways are a very rare survival of a farming community that lived and worked on the South Downs in the middle of the second millennium BC. The date range of this type of settlement is approximately 1600–900 BC and the development of these, what might be termed, domestic units and their associated remnants of fields and tracks represent some of the most profound transformations in the landscape of the South Downs, certainly since the end of the last glaciation; characterised in this southern English context with development and creation of widespread field enclosures alongside the earliest identified enclosed settlements. Throughout much of the preceding 4th and 3rd millennia BC there is little physical trace of established settlement in the form of enclosures or substantial building platforms and certainly no surviving evidence for cultivation in southern England, at least. Instead, the landscape is dominated by a range of monuments more likely associated with burial and ceremonial activities. This is particularly true of the South Downs environment that contains good evidence for non-secular activities in the form of varied burial monuments, causewayed enclosures and, more rarely, henges. Neolithic settlement is known from a number of locales (see Drewett 2003) but this does not survive with the recognisable signature of an enclosing bank and ditch. Likewise, fields and early clearance, though undoubtedly a feature of the early communities on the Downs, have not left any surviving surface traces. The extent and intensity of this earliest exploitation is not known but the majority of environmental data point to a real intensification in clearance and a rise in the occurrence of cereal pollen in the 3rd and early 2nd millennia BC. This apparent shift towards more prosaic concerns does not necessarily imply that ritual or religious matters were of no relevance to communities, rather that monuments primarily concerned with this function were no longer built on such a scale. What is clearer is that those burial monuments that were constructed were assembled on a much smaller scale than previously and that earlier burial mounds were often re-used for secondary interment. The focus of ritual activities appears to have shifted to sites with an ostensibly domestic character and was more closely integrated with domestic activities.

Other forms of early land use would have made a significant impact on how subsequent communities viewed and used the later landscape. The remains of flint mining seen at a number of locales across the South Downs chalk ridge drew the focus of later activity in the form of burial monuments and, occasionally, settlement-type enclosures such as at Harrow Hill and Cissbury (Barber *et al*, 1999). It is worth speculating that a similar process occurred at Plumpton Plain. Here, the settlement and field complex developed at the head of a now dry valley. This was an important location for a number of reasons. Firstly, if the valley had contained a source of fresh water, as might be presumed with a higher water table, a place close to this would have been desirable with its supply of clean, accessible water for domestic, ‘industrial’ and ritual requirements. Springlines are favoured locations for all early settlement and this is reflected in much of the patterning of Bronze Age settlement seen throughout the British Isles. Secondly, the valley would have provided a good and

reliable avenue of communication affording easy movement to and from the settlement and its fields. The location of the settlement was clearly carefully chosen to avoid the most extreme elements of the weather. The settlement enclosures avoid the most exposed parts of the South Downs plateau; they lie 450m to the south of the sharply defined northern escarpment edge of the South Downs and nestle in to the upper end of the dry valley in a fairly sheltered spot. The vista from this position is very much disposed towards the south and east and this seems to be the focus of much of the associated agricultural activity. A number of other contemporary sites are currently visible from Plumpton Plain, including Itford Hill. It seems likely, however, that vegetational constraints would have prohibited a visual connection at the time of their occupation.

Fieldwalking in the ploughland surrounding the enclosures at Plumpton Plain revealed two major concentrations of knapping debris. The first of these lies 70m to the south-west of enclosure 2 on a prominent part of the chalk spur leading south from the settlement. Here, an intense debris scatter spread over an area of approximately 60m² and comprised a wide range of flakes and blades. Also, notable in this concentration of flint were a number of cores at various stages of working. Large Levalloisian-type cores were observed as well as smaller cylindrical examples alongside core-reducing flakes and other related material. The edges of this patch of activity were well defined and the intensity of deposition and recovery dropped off dramatically beyond the main focus. A second, but more diffuse, knapping area lies to the north-west of enclosure 4.



*Plate 12:
Heavy scraper-like
implement.*

Again, in a prominent location of the ridge top there is a dense cluster of struck and worked flint extending over an area of at least 50m²; smaller concentrations of flint-working activity were noted further to the north and east with a good concentration of various cores associated with large flakes and blades. A number of pieces show evidence of crude re-working (Plate 12) and at least one edge-scraper was noted.

In addition to this a large flake-axe was found at the heart of the surface flint-working (Plate 13). This axe is a complete example, 260mm in length with a rounded cutting edge that tapers towards the narrow rounded butt end. It is thick bodied, 65mm at its midpoint but it thins rapidly at the blade and butt ends. The axe is coarsely worked with all-over

flaking evident, some of it particularly crude and a pronounced medial ridge can be seen on both faces of the implement; at the butt end there is a fossil declivity. Retouch along the side edges is coarse too and the tool is relatively undamaged. It is heavily but evenly patinated with one small patch of cortex visible as well as some oxide staining close to a lateral cutting edge. The overall impression of the piece is that it was unused or may have been intended as a blank for further working, perhaps grinding and polishing.



*Plate 13:
Flaked axe
roughout found
during the survey.*

Clearly, the exposed clay-with-flints on the ridge top were exploited for their easily accessible sources of flint, as has been noted elsewhere on chalk downlands, but it is probable that the zone of Neolithic surface mining extended over an area at least 400m in length and that the Middle Bronze Age enclosures developed directly on top of this. This may have been a purely coincidental connection, after all, several hundred years may have separated these phases of activity, but it is worth speculating that the builders of the settlement were aware

of the importance of the place to earlier communities through oral histories. They may well have been descendents of those who extracted and worked the flint here but the co-location would seem deliberate and intentionally designed to make a link across time, for symbolic reasons, between the two divergent activities or communities.

Elsewhere in the surrounding landscape there are large numbers of round barrows which are probably earlier in date than the first enclosures at Plumpton. These barrows are found in an irregular linear disposition close to the northern escarpment edge of the South Downs and are built and positioned with long distance visibility in mind. Views from the barrows vary from place to place but many offer outlooks in all directions predominantly northwards across the Weald and south, to the dip slope of the South Downs ridge. However, views to the monuments are more restricted and heavily dependent upon the associated topography. Thus many of the barrows close to the escarpment edge can only be seen from a considerable distance further to the north in lower lying areas. Others are afforded more open and extensive views from the south, east and west. In an open environment, observers standing in the area of enclosures, would have their northern and, particularly, western horizons punctuated by these prominent burial mounds; a forceful reminder of the world of their ancestors which would have formed a constant presence.

The earliest recognisable settlement components at the site may have taken the form of circular buildings unbounded by an enclosure but set within a contemporary field system. At least three unenclosed buildings have been noted and there are suggestions from the excavation record that the main foci of activity at the top end of the dry valley could have comprised a similar collection of open structures set within fields. The structures were clearly small with an internal diameter of no more than 6m but the nature and extent of the surrounding field system is equally unclear. The field system is composed of square or rectangular paddocks which may be as small as 25m² in area, conjoined and forming what might be described as a coaxial pattern (Fleming 1987) in that there is a uniform overall symmetry of layout. The development of such field systems is debateable and it is unclear if fields were laid out over a short or long period of time. In a number of places at Plumpton Plain, however, it is apparent that minor alterations to the design were carried out with one lynchet overlying another. Nonetheless, the overall symmetry was evidently adhered to, with a dominant axis of north-east to south-west. The angle of alignment is close to 35° east of grid north and does not reflect the influence of the natural lie of the land. Only on the southern fringes of this block of fields is there a slight alteration to the angle and this does indeed reflect the tilt of local topography; the change, however, is slight. It has been suggested that this uniformity of layout is determined by ideological constraints (McOmish *et al*, 2002) but in the case of the fields at Plumpton Plain, the consistency of orientation is perhaps related to tenure or ownership; the well defined block of coaxial fields that extends over an area of at least 100 acres was worked from the contiguous settlements at the head of the dry valley. The southern boundary to this block of fields lies 100m to the south of Plumpton Plain Site B and is marked by a substantial south-east facing lynchet on a north-east to south-west alignment. The fields to the south of this, do again, form an overall cohesive or coaxial alignment but they are arranged on a more north to south axis. They extend over a

similar area to that associated with the Bronze Age settlements but the constituent field boundaries and lynchets are much more massive and give the appearance of having been ploughed for a greater length of time and at a more recent date. These fields are, indeed, interwoven with Romano-British settlements further to the south and so their use is likely to be contemporary but there is also the possibility that they have a much earlier origin perhaps as early as the early 2nd millennium BC.

The environmental evidence for vegetational change on the South Downs presents a varied picture of a mosaic landscape with small scale clearance in places and accompanied by substantial episodes of soil erosion which point to more intensive and widespread episodes of clearance. Evidence for cereals has been found at Whitehawk and Bishopstone dating to the middle of the 4th millennium BC but not in sufficient quantities to imply intensive and organised cultivation. A similar process of clearance both large- and small-scale, permanent and semi-permanent in nature, occurs across much of the South Downs throughout the later 4th and 3rd millennia BC. Only in the later 3rd and 2nd millennia is there any indication of intensification and a permanency of clearance and land use. Somerville (2003, 241-2) outlines the evidence for widespread woodland clearance in the 2nd millennium BC with localised development of colluvial sediment intensifying until the early 1st millennium BC. Generally, it is perceived that by the Middle Bronze Age (contemporary with the main phase of settlement at Plumpton Plain) deforestation of the South Downs was extensive (Robinson and Williams 1983). Pollen spectra at this time are dominated by cereal and weeds of clearance or disturbed ground and much of the colluvial build-up is directly related to the occupation of settlements and the use of the land around them for arable cultivation. This is seen clearly at sites such as Highdown Hill (Wilson 1950) and at Itford Hill (Bell 1983) where pottery fragments contemporary with the settlements were found in colluvial soils nearby. No cereal pollen was recovered from Plumpton Plain but the land snail evidence, with its inherent biases, is notable for its total absence of characteristic open downland species (Kennard in Holleyman and Curwen 1935, 37). Instead, the list is dominated by species that preferred damp ground with a light scrub cover; possibly former open cultivated land reverting to pasture. Site B further to the south produced no molluscan evidence and this suggested to Kennard that the site had long been cleared of all scrub and had been under cultivation for a long time, probably by the occupants of Site A (*ibid.*, 38).

The date and form of the earliest cultivation at Plumpton Plain remains unclear. Field survey clearly indicates that the enclosures overlie or cut through elements of an earlier field system and in the absence of absolute dates for these features a relative assessment would place the fields in the middle of the 2nd millennium BC at least. Furthermore, it is apparent that the shape of the enclosures is determined by the pre-existing banks of the field system and so the outline of enclosure 2, for example, picks up on underlying field boundaries and may, in fact, represent a fossilised paddock. The existing field evidence indicates pre-enclosure cultivation and this is given further corroboration from the results of excavation.

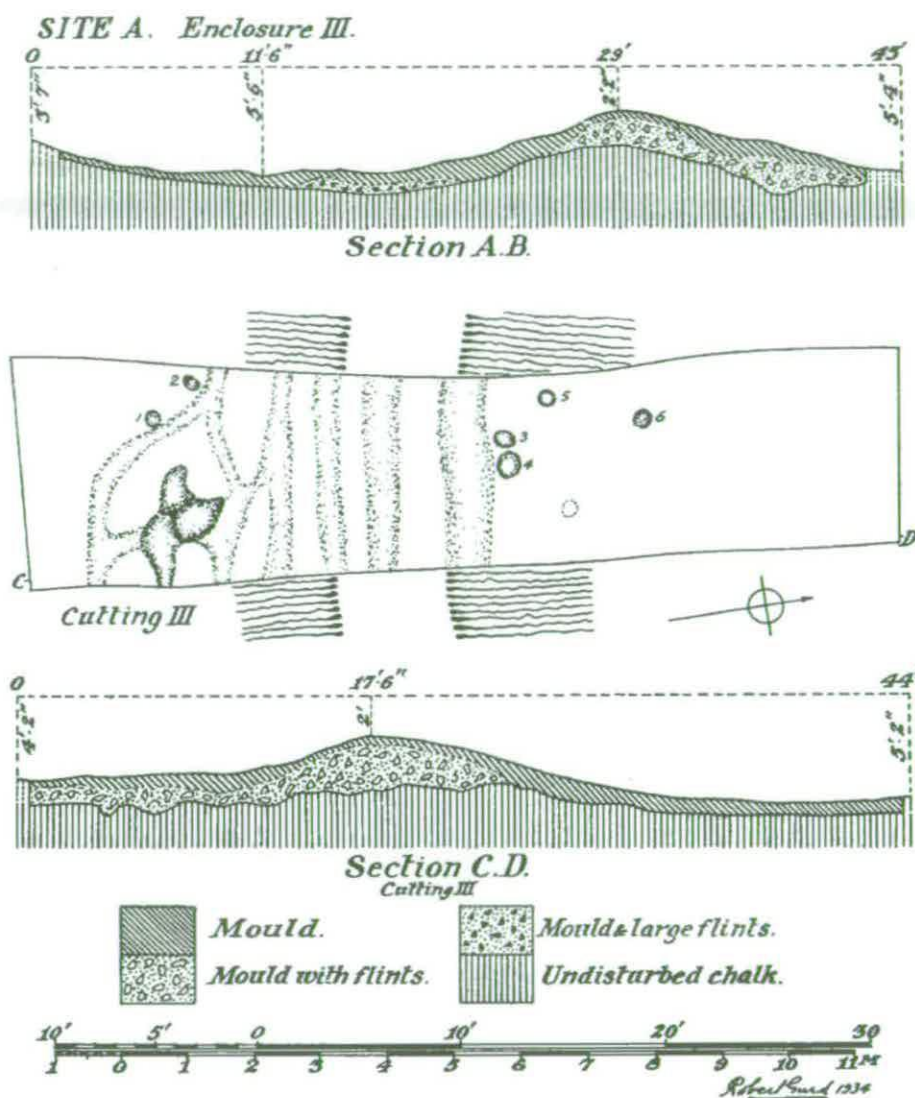


Figure 7:
Detail of Holleyman
and Curwen's
excavation in the
area of enclosure 3.
Shallow rilling can
be seen clearly
underlying the bank
of the enclosure.
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Cutting III across the bank of enclosure 3 (Fig 7, above) uncovered a number of small post- or stake-holes but one of the most striking features was the parallel striations sealed beneath the bank,

'...the unusual feature of the cutting was the furrowing in the solid chalk beneath the bank, in a direction parallel with the latter. The furrows were irregular though roughly parallel with one another, of no great depth, and extended from 5 feet within the inner scarp to about 8 feet beyond the outer scarp. It is not clear whether there (sic) are artificial or natural features.' (Holleyman and Curwen, 1935, 22 & 25).

Their cross-section clearly demonstrates these narrow slots stratified beneath the bank, cut into the natural chalk surface and averaging 1m in width from the centre of grooves. The most obvious interpretation of these features (but one not considered by the excavators who had not identified the possibility of pre-enclosure cultivation) is that they are early plough furrows preserved as a result of their fossilisation underneath the bank. Extending their line to the east would place them at right angles to the projected line of the pre-enclosure field bank that approaches from the north-west and it may be that if they are indeed related to an early phase of cultivation, they are at least contemporary with this field system. It is worth noting, too, that an 'irregular furrowed area' was found at the north-eastern corner of enclosure 4 during excavation. Other pre-enclosure activity in this area included large dumps of burnt flint, possibly the remnant of burnt mounds, placed in hollows cut into the chalk land surface. Providing an accurate date for this pre-enclosure activity is not possible but that it might pre-date the Middle Bronze Age phase of occupation is a distinct possibility. The excavations produced good quantities of earlier lithics including ends-scrapers, plano-convex examples as well as a fragment of a flint axe and a leaf-shaped arrowhead. This industry may well have been associated with the areas of surface extraction noted previously but it is also worth speculating that a Neolithic and Early Bronze Age settlement existed on this site at an earlier date as suggested by the lithic material. If the earliest phase of cultivation on site is contemporary with this early occupation, it would represent some of the earliest positively identified cultivation remains in southern England.

The surveyed enclosures display evidence of some complexity in their construction and refurbishment. This takes the form, most visibly, of an earlier single banked enclosure rebuilt by the dumping of additional material on the same line as that already in existence. The rebuilds were apparently never completed and the new material survives in isolated dumps of soil. This gives the enclosures an irregular appearance and it may be that in their final form they were not perceived as being complete units. The raw material for the rebuild resembles field clearance detritus as well as soil and smaller fragments of flint and it is likely that contemporary cultivation around the pre-existing enclosures resulted in the accumulation of this soil. The loop in the line of enclosure 2 on the southern corner reflects the influence of an already standing post-built structure, possibly a house and it is plausible that the final refurbishment of the enclosures occurred late in the sequence of their occupation. The 'function' of the enclosures is also ill-defined and at best they appear to demarcate the space around a domestic unit. They have no defensive attributes whatsoever, being of slight form and located on sloping ground overlooked on the north. In addition to this there is no indication on any of the enclosures of a surrounding ditch perhaps reflecting their origin as embanked fields. In contrast to a number of other sites in southern Britain, this seems to be a feature of many other contemporary enclosures across the South Downs and the lack of a surrounding ditch perhaps re-affirms the non-defensive nature of these units and also, perhaps, points to the piecemeal nature of the construction of the boundary. Digging a ditch implies a planned aspect to the layout of the enclosure or certainly one with a conceived original plan whereas the existing outline of the enclosures reflects more sporadic episodes of building. These enclosures thus stand in marked contrast to those that are built at a later stage in the Bronze Age and Iron Age and as such their construction can be

regarded as forming a significant cultural event in the South Downs landscape. Indeed, much the same can be said for other contemporary enclosures further afield and focuses on the Middle Bronze Age as a time of major landscape transformation in a number of locales in southern England, rather than the more frequently discussed events during the Late Bronze Age – Early Iron Age transition characterised by the development of hillforts and other forms of settlement.

There are at least 26 Middle Bronze Age settlements identified across the South Downs (Hamilton 2003, 70). A number of these including Itford Hill and Black Patch show evidence of settlement shift over time and for extended occupational sequences (Needham 1996). The evidence from excavations at Plumpton Plain would appear to support the hypothesis of shifting residential units; each enclosure with its own main house and ancillary structures that in at least two occasions comprises a pond or well. Holleyman and Curwen make the point that the buildings uncovered are all single-phase structures suggesting that these do not represent long-standing farming communities. Instead, it is entirely plausible that the focus of settlement did shift through time to fresh locations close to the recently abandoned homestead. The abandoned sites may then have been used for a variety of ancillary activities including, storage, industrial or something relatively unrelated such as ritual undertakings. The close co-location of the enclosures implies some sort of connection even if they were not contemporaneous. Enclosure 1 may well be the earliest; it is associated with a hollow way that is blocked by the construction of the bank surrounding enclosure 2, which is also likely to post-date the first enclosure. It is, of course, entirely feasible that the enclosures were contemporary and that they represent the remains of Middle Bronze Age farmstead but the field evidence points to a much more episodic and fluid nature of occupation with early open settlement becoming enclosed within embanked boundaries and these enclosures being irregularly refurbished at later stages; this sequence is unlikely to have been synchronous across the whole site. Hamilton (2003, 70) has characterised this as:

‘...perhaps signifying single generation occupation and a non-parental habitus tradition for the adult off-spring.’

A full range of activities was undertaken at the Plumpton Plain Middle Bronze Age settlement but these sorts of sites, often regarded as being self-sufficient units of domestic occupation do not produce sufficient evidence for a full range of activities. The discovery of large quantities of burnt flint close to enclosure 4 do suggest the presence of communal activities such as cooking and eating; it may well be that the ponds noted within each of the enclosures were related to this activity, the water being used in the cooking process. A similar juxtaposition of ponds and burnt mound debris has been noted at other contemporary sites on the South Downs including Potlands Farm (Stevens 1997) and New Barn Down (Curwen 1934). In addition to this the presence of spindle whorls implies that textile production, and therefore sheep farming, was an important activity at Plumpton. The recovery of items of bronze metalwork at the site again conforms to a pattern recognised on other similar sites. At Plumpton these finds include a bronze knife; part of a ‘winged’ axe was also found at Site B, one of at least three found at this place. No evidence of metalworking is evident on Site

A, however, and on the basis of the finds from the excavation each of the hut sites was used to differing levels of intensity. A number were relatively empty of artefacts on exposure, others such as that in cutting I within enclosure 2 were strewn with midden material including large fragments of pottery as well as worked stone and flint. This debris has accumulated on the floor of a formerly occupied structure and serves to indicate a radical change in use and presumably, a shift in the location of domestic occupation. It is, of course, worth speculating that this midden material encompassing as it does, material implicitly connected with the domestic sphere, is being used in a symbolic manner. Firstly, to characterise its former use as a domestic residence perhaps associated with an earlier kin-group (even parents or siblings) and, secondly, to act as a closing activity or sealing episode marking the 'end of the life' of the house before abandonment.

Based on the relative chronology provided by the ceramics found during excavation it would appear that the main focus of settlement at Plumpton Plain shifted southwards towards Site B sometime between the 10th and 8th centuries BC. The majority of the pottery recovered here is slightly later in date than that recovered at Site A and includes 'Urnfield' forms associated with a 'winged' axe on at least one occasion. Other later forms are also found at Site B including a number of fragments from what look like post-Deverel-Rimbury vessels with simple everted rims infrequently adorned with finger-tip impressions or cord slashings.

Holleyman and Curwen opened a number of trenches in the area to the south of the cross-ridge boundary but found only a thin scatter of features (Fig 8). In each case a cluster of poorly-defined and shallow pits were observed with no apparent overall structure to them; they probably represent timber buildings. One or two instances of re-cut post-holes were found indicating that these structures may have been rebuilt on at least one occasion but no overall plan of these buildings can be ascertained from the published drawings. As mentioned earlier, on the basis of the molluscan evidence, Site B was built in an open and cultivated area but the full extent and date range of the settlement is unknown. Like Site A, midden deposits were noted in close association with at least one of the timber built structures; cutting VIII at Site B produced spindle whorls, pottery including 'exotic' forms, a bronze knife and fragments of a flanged axe. Again, it is worth speculating that these deposits are more than simple waste. The bronze material would have been a valuable and recyclable commodity and a casual discard or loss would not explain its occurrence on the floor of a former house. As in Site A, these goods may have served a symbolic role sealing or closing off an area and been associated with ritual activities in a domestic setting including feasting and deliberate deposition.

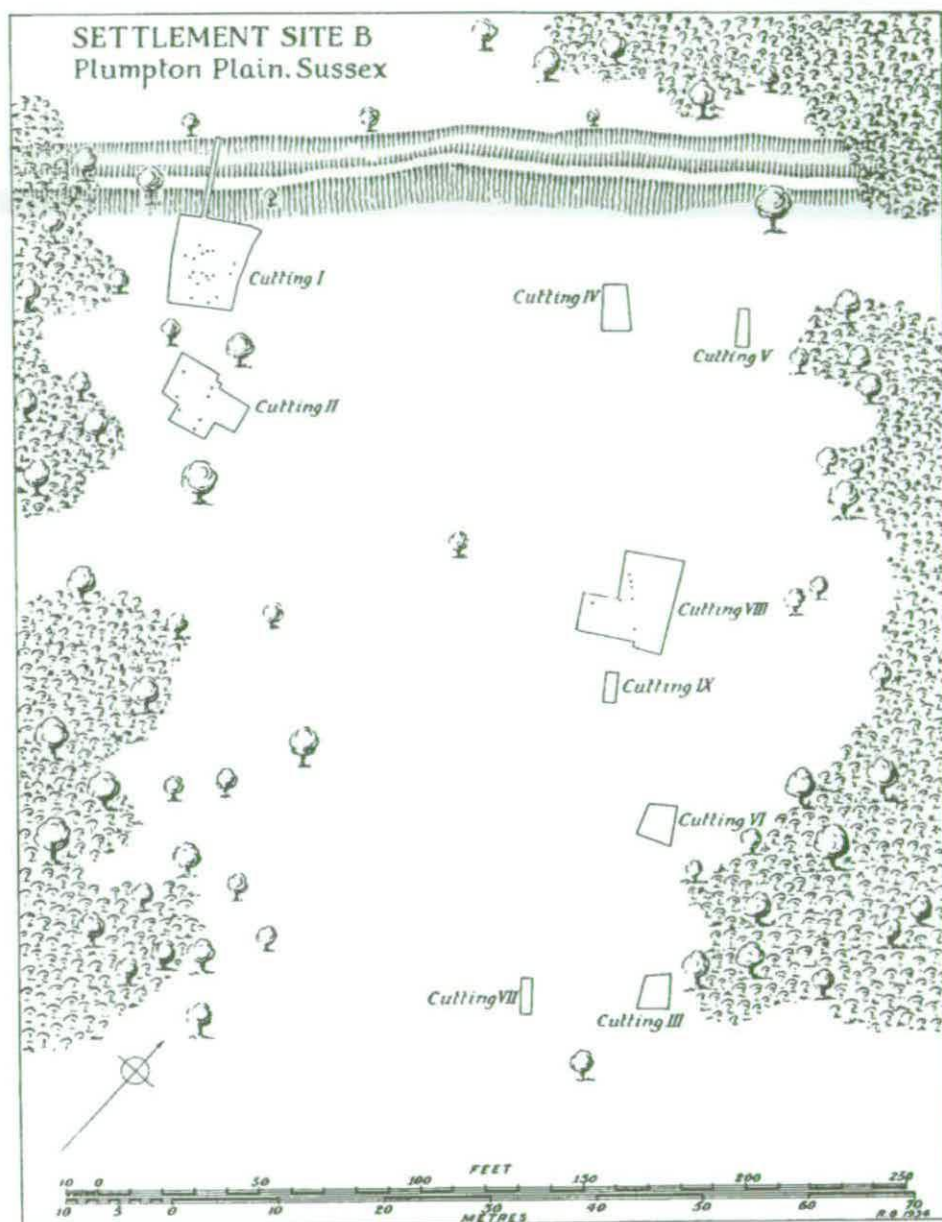


Figure 8:
Holleyman and
Curwen's plan of
Plumpton Plain Site
B. Reproduced with
permission of the
Prehistoric Society.

Later land use at Plumpton Plain is more difficult to characterise. There are few remains of later activity on site and apart from traces of ?post-Roman ridge-and-furrow cultivation there is little else of any note. This cultivation is indicated by occasional and very slight plough furrows of indeterminate date. There is no overall pattern to this episode of ploughing and no convincing evidence for a field layout but it is apparent that in the majority of cases this phase of arable has respected the earlier fields and on occasion has used pre-existing boundaries as headlands.

Average ridge width varies between 2 and 6m and it is clear from their ephemeral nature that this was not an intensive and long-lived episode of use. The fact that much of the earlier landscape survives intact suggests that once abandoned, the settlements and fields reverted to pasture and remained that way for a considerable period of time. There is good evidence to suggest that the field system in the area of Site B and to the south was incorporated within a Romano-British layout that also included those fields to the north-east of the dry valley re-entrant. It would appear, however, that the enclosures and their attendant fields lay at the edges of this later system and so avoided much damage.

Post-Roman land use on this section of the South Downs is equally unclear but enough evidence exists to indicate that large-scale arable cultivation had ceased by the 5th and 6th centuries AD and was not a feature of the high downs until, at least, the 13th century AD. Evidence from a number of locales shows arable land reverting to pasture and a reconfiguration of settlement with a move to new locations in river valleys and coastal plains (see Gardiner 2003). In some places woodland developed and it seems feasible to postulate that the remarkable earthwork survival at Plumpton Plain is due to this. Other areas of ancient woodland exist nearby, such as at Ashcombe Bottom 1km to the east, a section of downland surrounded by evidence for field system but entirely devoid of evidence for pre-medieval activity. The present day woodland at Plumpton is largely confined to the western slopes of the dry valley to the south of the enclosures and here it is defined on the east by a former woodland boundary. Other areas of forestry lie to the south of the surveyed area and at the north end too, close to the head of the dry valley but there are also a number of isolated trees, oak mainly, as well as numerous tree-holes, and these imply a once more extensive wooded area. Throughout much of the medieval and later periods substantial blocks of the High Downs were reserved as sheep walks with the majority of the open fields lying to the south on the lower slopes of the valleys and coastal fringe. Again, this aided the preservation of the monuments at Plumpton and it wasn't until the 2nd World War that the site and its environs came under real threat. Holleyman and Curwen's plan of the area produced in the early 1930s shows a landscape comprising arable compartments with large swathes of pasture. This changed rapidly in the later decades of the 20th century when much of the downland was converted to arable obliterating the remains of lynched fields and leaving the enclosure and field complex as an isolated survival covered in gorse, scrub and woodland.

In the surrounding area there are a number of other prehistoric settlement and field complexes most notably in the area of Stanmer Down and Horseshoe Plantation, just over 1km to the south-west. Here, there were good remains of early field system now largely destroyed by more recent cultivation and within the fields there were surface traces of unenclosed settlement that produced ceramic forms similar to those found at Plumpton Plain Site B. At least one other enclosed element is part of this diffuse collection of settlement activity and it bears a strong resemblance to those noted at Plumpton Plain. The Horseshoe Plantation enclosure comprises a roughly circular area nearly 40m in diameter contained within a simple bank with no accompanying ditch. At least one recessed platform could be seen within the sunken interior and there are the remains of what may also be a small pond.

Mole casts from the interior of the enclosure have produced Middle Bronze Age ceramics and so a similar date for this site may be deduced. At least one other probably contemporary circular enclosure lies a further 500m to the north on the same ridge and both are intervisible with enclosure 1 at Plumpton. So, it is apparent that in this relatively small block of chalk downland approaching 2km² in area, there are four known foci of Middle Bronze Age settlement. This fits a pattern recognisable on other southern English chalklands especially along the Oxfordshire Ridgeway and further west on the Marlborough Downs (McOmish forthcoming). Here, clusters of Middle Bronze Age settlement have developed on top of pre-existing fields and are grouped together in units of three or four enclosures. This nodal distribution pattern of Middle Bronze Age activity is repeated at a number of places across the Wiltshire downs and it is suggested that a similar configuration is evident on the South Downs too.

Recommendations for future management

The cultural value of the sites at Plumpton Plain cannot be underestimated. At this place there is good surviving evidence for one of the most remarkable transformations apparent in the archaeological record of southern England. The rise in new forms of settlement, fields and a change in the associated material culture was allied to the development of intensive agriculture, territorial land divisions and long-lived nucleated settlements. On site, this was played out over a period of perhaps three centuries and it left a legacy that shaped subsequent events. The main crop regimes that typified agricultural traditions extant throughout the Iron Age and Roman periods were established, and land enclosures that in some areas continued to influence tenure into the Roman period and beyond were put in place.

Plumpton Plain has an excellent amenity value too, sitting as it does, close to the South Downs Way long-distance footpath. A great many visitors pass-by close to it unaware of the significance of the monuments, their setting and their role in the development of the South Downs landscape and it is suggested here that better awareness would raise its value to the community and add to the enjoyment and understanding of those visiting the area. This could be achieved by:-

- improved sign-posting and opening rights of way
- improving access to the results of current fieldwork possibly *via* an archaeological trail.

Site management should:-

- reinforce the special quality of the landscape at Plumpton Plain
- be geared towards stopping arable encroachment
- alleviating the effects of vehicle wear-and-tear close to the monuments

5. SURVEY METHODOLOGY

The field investigation was undertaken by David McOmish, Cathy Tuck, Nathalie Barrett, Louise Barker and Sarah Spooner between September and December 2003. The measured survey of the earthwork complex at Plumpton Plain was carried out entirely digitally by using a Trimble 5600 total station EDM and the resulting plan was plotted via Key Terrafirma, AutoCAD, and Adobe Illustrator software.

The survey was calibrated to the National Grid using a Trimble dual frequency Global Positioning Satellite (GPS) system. The base receiver was set up on a temporary survey station with a receiver (Trimble 4800) recording the position of the permanent survey markers which formed part of the survey traverse. The co-ordinates of the base receiver were calibrated to the National grid (OSGB 36) using Trimble Geomatics software, based on the position of the receiver relative to Ordnance Survey active GPS stations.

All of the CAD-based drawings were completed using Adobe Illustrator 10 software by David McOmish and the report was prepared in Adobe PageMaker 7. The report was researched and written by David McOmish and edited by Peter Topping.

The site archive and copies of this report have been deposited in the archive of English Heritage at the National Monuments Record Centre, Great Western Village, Kemble Drive, Swindon, SN2 2GZ, to where applications for copyright should be made and further enquiries directed.

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6. BIBLIOGRAPHY

Barber, M., Field, D., and Topping, P. 1999 *The Neolithic Flint-mines in England*. London: English Heritage.

Bell, M. 1983 Valley Sediments as Evidence of Prehistoric Land-Use on the South Downs, *Proc. Prehist. Soc.*, **49**, 119-150.

Brandon, P. 1999 *The South Downs*. Phillimore.

Burstow, G.P. and Holleyman, G.A. 1957 Late Bronze Age settlement on Itford Hill, Sussex, *Proc. Prehist. Soc.*, **23**, 167-212.

Curwen, E.C. 1934 A Bronze Age farm and neolithic pit-dwelling on New Barn Down, Clapham, near Worthing, *Sussex Arch. Coll.*, **75**, 137-170.

Curwen, E.C. 1937 *The Archaeology of Sussex*. London: Methuen

Drewett, P. 1982 Later Bronze Age downland economy and excavations at Black Patch, East Sussex, *Proc. Prehist. Soc.*, **48**, 321-400.

Drewett, P. 2003 Taming the Wild: The First Farming Communities in Sussex, in D. Rudling (ed), *The Archaeology of Sussex to AD 2000*, 39-46.

Ellison, A. 1978 The Bronze Age in Sussex, in P. Drewett (ed), *Archaeology of Sussex to AD 1500*. CBA Res. Rep. **29**, 130-137.

Fleming, A. 1987 Co-axial field systems: some questions of time and space, *Antiquity*, **61**, 188-203.

Hamilton, S. 2003 Sussex not Wessex: a regional perspective on Southern Britain c 1200-200BC, in D. Rudling (ed), *The Archaeology of Sussex to AD 2000*, 69-88.

Hawkes, C.F.C. 1935 The Pottery from the Sites on Plumpton Plain, Sussex, *Proc. Prehist. Soc.*, **1**, 39-59.

Holleyman, G.A. and Curwen, E.C. 1935 Late Bronze Age lynchet-settlements on Plumpton Plain, Sussex, *Proc. Prehist. Soc.*, **1**, 16-38.

McOmish, D., Field, D., and Brown, G. 2002 *The Field Archaeology of The Salisbury Plain Training Area*. London: English Heritage.

McOmish, D. forthcoming The Bronze Age on the Marlborough Downs, in D. Field, G. Brown and D. McOmish (eds), *The Field Archaeology of the Marlborough Downs*. Oxford: Oxbow Books.

Needham, S. 1996 Chronology and periodisation in the British Bronze Age, *Acta Archaeologica*, **67**, 121-40.

Robinson, D.A. and Williams, R.B.G. 1983 The soils and vegetational history of Sussex, in The Geographical Editorial Committee (ed), *Sussex: Environment, Landscape and Society*. Gloucester: Alan Sutton. 109-126.

Somerville, E. 2003 Sussex: from environmental change to landscape history, in D. Rudling (ed), *The Archaeology of Sussex to AD 2000*. 235-246.

Stevens, S. 1997 Excavations at Potlands Farm, Patching, West Sussex, *Sussex Arch. Coll.*, **135**, 59-70.

Toms, H. 1927 Miscellaneous Earthworks Near Brighton, *Sussex Arch. Coll.*, **68**, 128-148.

Wilson, A. 1950 Excavations on Highdown Hill, 1947, *Sussex Arch. Coll.*, **89**, 163-78.



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