Farndon Fields, Nottinghamshire: assessment of the evidence for the Late Upper Palaeolithic activity and its importance

November 2004
T&PAU code: FNW.2
Filename: 2347/FNW/Farndon_Fields_assessment_reportdraft2.DOC

University Park,
Nottingham NG7 2RD.

Tel 0115 951 4823
Fax 0115 951 4824

Farndon Fields, Nottinghamshire : assessment of the evidence for the Late Upper Palaeolithic activity and its importance

FIGURES

Fig. 1. The proposed road-line in the area of Farndon Fields walked @ 10m transects in 1991-3 (green outline) showing only those lithics attributed to the Late Upper Palaeolithic scatter (key as Figs 2,3), and the extent of Holocene alluvium mapped by the British Geological Survey (1996). The whole area lies between 12-15m on the OS 1:25,0000 mapping, with heights between 10.8m and 12.0mOD within the fieldwalking area of 'total' coverage. The fields identified as permanent pasture from aerial photographs taken between 1993 and 1984 are located. Scale 1:5000.

Fig. 2. The fields walked at 2.5m interval transects in 1993 (green outline) with the LUP lithics categorized by form. The cluster of artefacts referred to in the text is arrowed. The grey dotted form lines are the contours of the subsoil surface at 0.10m interval derived from auger survey in 1994. Scale 1:2500.

Fig. 3. The areas walked at 'total coverage' in 1994 (green outline) with the LUP lithics categorized by form. The grey dotted form lines are the contours of the subsoil surface at 0.10m interval derived from auger survey in 1994. The 5x5 and 1x1m test-pits are located. Scale 1:2500.

Fig. 4. Summary plan of the thickness of the subsoil and the height of its surface in fields 373B and 374. The darker the red and the closer the hatch, the thicker the depth of subsoil. This is plotted against the contours of the surface of the subsoil N grey dotted form-lines. Both data sets derived from auger survey in 1994. The 5x5 and 1x1m test-pits are located. The cluster of LUP flintwork recovered in 1993/4 is arrowed. Scale 1:2500.

Fig. 5. Location of the auger-holes (blue) and test-pits (black squares N numbered) in fields 373B and 374 from which information about subsoil character, thickness and height is derived. The thickness of the subsoil is plotted by form-lines at 0.10m interval in red. Where the subsoil has at least two horizons (section 3.3.1), this is indicated by a larger circle, where the complete depth of the subsoil is unknown (3.3.1) a smaller circle. Scale 1:2500.

1. INTRODUCTION

1.1.1 The Late Upper Palaeolithic (hereafter LUP) flint scatter assessed here lies on alluvium/terrace gravels between the Rivers Trent and Devon just to the south-west of Newark, Nottinghamshire. It was first recognised in 1991/2 during fieldwork, funded by English Heritage, when the dualling of the A46 was proposed. Subsequent investigations, funded ultimately by the Highways Agency, aimed at establishing the impact of the road scheme on this site. These works produced a series of reports which have been used for this assessment: no new fieldwork has been conducted. In addition, unpublished information from trial-pits for assessment of the deposits, assessed and collated by Howard (2004), has also been consulted.

1.1.2 The fields investigated were numbered in sequence along the route during the initial phase of work N those numbers (370-375) are retained here (fields outlined in green in Fig. 1).

1.1.3 The flintwork considered to belong to periods later than the LUP is not considered in this document. Much of the LUP material has a white surface cortication, though a few diagnostic forms (e.g. a bec and a long end-scraper) are not at all corticated, instead having a glossy patina (terminology as Shepherd 1972, 114-9). In this report, it is only the corticated items, together with the uncorticated retouched tools that are diagnostic, that are considered as LUP: this may underestimate their number. None of the flintwork clearly of LUP character is burnt, so the burnt flint is also not considered here, though it is recognised that some could belong with the LUP activity.

1.2 Episodes of investigation

1991-3 fieldwalking @ 10m transect intervals in fields 370A+B, 373A+B, 374 and 375, finds plotted individually (Knight, D. & Kinsley, G. 1992).
1993 fieldwalking @2.5m transect intervals in fields 373B and 374, finds plotted individually + all flint collected on 10m spaced transects (Kinsley, A.G. 1993).
1993 assessment of the aerial photographs held at Cambridge and Swindon: no features relevant to LUP activity, but note the land-use (between 1933 and 1984) of long-term pasture to the east and south N plotted in Fig. 1 from Cox and Palmer, 1993.
1994 fieldwalking of 1000 (part of 373B) and 4000 (part of 374), 'total' coverage of 10m grids, finds plotted individually (Wessex Archaeology, 1995).
1994 Auger N 177 dutch auger bores @25m grid in 374 and 373B (Wessex Archaeology, 1995).
1994 fourteen 1x1m test-pits in 373B and 374, all soils sieved through 5mm mesh (Wessex Archaeology, 1995): flint results presented in Appendix 2, context descriptions presented in Appendix 3.
1994 six 5x5m test-pits in 373B and 374, 4% of ploughsoils sieved through 5mm mesh, approximately15% of the subsoils sieved (Wessex Archaeology, 1995): flint results presented in Appendix 7.2, context descriptions presented in Appendix 7.3.
1994 fluxgate magnetometry in field 374 showed a series of parallel features some 8m apart interpeted as possible drains (Geoquest Associates, 1994): the land-drain plotted within the base of test-pit 727 is on a different alignment (Wessex Archaeology archive). No other geophysical technique has been applied to this area.

1.3 Field parameters affecting the collections

1.3.1 Most of the flintwork has been collected by fieldwalking. The condition of the field-surface will affect the visibility of the artefacts, so these factors are important and are recorded in Appendix 7.4. The field surface must be weathered, with the stones/artefacts well-washed, but not obscured by vegetation, to give the fieldwalkers a chance of seeing the artefacts: these conditions were met in all bar field 371 which lies wholly to the north-west of the road-line. Strong sunlight, casting shadows, is not helpful, whereas overcast, even light is the ideal for seeing artefacts. Where recorded, the fields were walked in low sunlight or even light.

1.3.2 The detailed ploughing histories of these fields will also affect the artefact distributions: where ploughing is progressively deeper, new artefacts may be introduced into the ploughsoil. Discussion with the farmers, Mr & Mrs Hardy, in November 2004, elicited the following information. The land has been in a cereal (primarily barley), rape and bean rotation for at least 11 years. Potatoes had been grown, but not in last 11 years because of eelworm infestation: this corroborates the information gathered by Wessex Archaeology, that potatoes had ceased to be cultivated since 1987 (1995, A.3.1). It would appear that there have been no significant changes in the crop rotation, and perhaps the associated cultivation methods, since 1987.

2. THE LATE UPPER PALAEOLITHIC ARTEFACTS: DESCRIPTION AND DISTRIBUTION OF THE COLLECTIONS OF CORTICATED/LATE UPPER PALAEOLITHIC MATERIAL

2.1 1991@ 10m transects (Fig. 1)
A scatter of items diagnostic of the Late Upper Palaeolithic (i.e. two borers N a b•c and a reamer N two long end-scrapers and two blade cores with facetted platforms, and a blade core) and blades/flakes, most in a corticated condition, were recovered from fields 373B, 374 and 370B amongst struck flint clearly of later date.

2.2 1993 @ 2.5m transects (Fig. 2)
More intensive fieldwalking showed that besides the scatter of corticated items (the simplest, but not unequivocal, indicator of material of this date N section 1.1.3), was a clear cluster of over 30 items, nearly 20m across (arrowed in Figs 2, 3). Besides unretouched flakes and blades, the cluster included a shouldered point and a fragmentary tip from a similar piece, a long end-scraper, and edge-used flakes and blades. The wider scatter of items included further diagnostic material, including cores with facetted platforms and flakes from such cores including those with the distinctive 'en eperon' butts, and a long-end scraper combined with a piercer. The remarkable aspect of this collection is the excellent condition of most of the flint, which has sharp, undamaged edges.

2.3 1994 @ total coverage of 1000 and 4000 (Fig. 3)
Though conducted in a different manner, the results of these fieldwalked areas are directly comparable with those from 1993 @ 2.5m transects, and thus the plots of artefacts are presented side by side for comparison (Figs 2, 3). In addition to the tool, core and flake types recovered previously, there is a noticeable element of flakes, most probably from thinning large implements, and a burin on a truncation.

2.4 Test-pits (Figs 3-5)
2.4.1 Corticated flintwork was only recovered from two of the test-pits, 725 and 727 (Appendix 7.2: test-pits located in Fig. 5). Only one item from the ploughsoil from 725, a blade segment with modified margins, is certainly LUP.

2.4.2 Test-pit 727 was excavated on the north-eastern edge of the cluster discovered by fieldwalking in 1993 @2.5m (solid in Figs 3-5). 54 corticated flints were recovered from the topsoil (4% sieved), 6 from the subsoil (15% sieved). The topsoil also included two uncorticated flints, clearly from later activity, together with brick/tile, clay pipe, glass and pottery (all modern bar one samian and possible medieval sherd): similar materials were recovered in very small quantities from the subsoil.

2.4.3 The six flints from the subsoil of test-pit 727 include tools diagnostic to the Late Upper Palaeolithic, i.e. a burin on a truncation, a long end-scraper on a truncated blade, and a blade with a facetted 'en eperon' butt. The flints from the ploughsoil include similarly diagnostic scrapers, a shouldered point and a core with a facetted platform.

2.4.4 The ploughsoil was 0.40m thick in test-pit 727: flint was recorded from 0.10-0.30m below the surface, with more collected from the north-western part of the pit. The subsoil was 0.50m thick (Appendix 7.3): flintwork was recovered from between 0.04 and 0.07m deep into this deposit and all was located to the west of a field-drain running across the test-pit.

2.5 The condition of the flintwork

2.5.1 As has already been explained (section 1.1.3), much of the LUP material has a white surface cortication (terminology as Shepherd 1972, 114-9). This ancient alteration of the surface means that modern breaks are easily observed because the raw material is an orange-red-brown flint. Although many of the flints do have modern breaks (e.g. transverse breaks across blades), much of their unretouched edges are remarkably sharp and undamaged. The impression given from the whole collection is that it has not been subject to much battering in the ploughsoil and that it is in excellent condition.

2.6 The raw material

2.6.1 The flint pieces themselves are large for Trent Valley artefacts in the author's experience, and include a proportion of blade cores and blades in excess of 50mm long. The origin of such material is currently unknown, though the fine 'orange peel' texture of some of the unmodified cortex and flint surfaces suggests collection from a derived geological source rather than direct from the parent chalk. Non-destructive trace element analysis of a sample of 10 pieces from Farndon Fields (unpublished by Marcie Rockman) suggests a Southern English source.

3. GEOMORPHOLOGY + STRATIGRAPHY

3.1 Background

3.1.1 The site is mapped as Holme Pierrepont terrace deposits (Fig. 1) by the British Geological Survey (1996) considered to be of Late Pleistocene Age (25-12,000BP: Howard 2004). These terrace gravels form the interfluve between the Rivers Trent and Devon just to the south-west of Newark, Nottinghamshire.

3.1.2 Howard 2004 reports that the geotechnical records indicate that the terrace gravels are overlain by upto 1.10m of sandy alluvium (trial-pits190-194 located in Fig. 1). This can probably be correlated with a deposit, variably described as silty-sandy clay to a silty sand N loam, identified overlying gravels in a dutch auger survey on a 25m grid and 20 test-pits excavated in fields 373B/374 by Wessex Archaeology in 1994. No detailed analysis of these deposits has been conducted, however, the variable distribution of the LUP artefact scatter (Figs 2,3), together with their excellent condition (2.5.1), confirms that these deposits have not been reworked in the Holocene (i.e. recent post-glacial).

3.1.3 A layer of slightly sandy silt with many organic remains is recorded between 1.55-1.65m deep in trial-pit 191A (Fig. 1) at the base of these alluvial deposits. No organics were noted in the adjacent trial-pits 190, 191B, with alluvium only recorded to 0.60m and 1.10m depths respectively. This suggests a localized channel: its date is unknown.

3.1.4 The course of the River Devon is flanked by alluvium, mapped by the Geological Survey as Holocene, and therefore probably post-dating the LUP activity. A branch of alluvium runs off the current course of the river towards the south-west: its linear form is suggestive of a former channel (Fig. 1).

3.2 Methodology

3.2.1 The auger survey (3.1.2) was conducted to assess the sub-surface geology: form lines at 0.10m intervals OD were produced of the ground surface, subsoil surface (reproduced as grey dotted lines in Figs 2-4) and base of gravel.

3.2.2 The test-pits (located on Figs 3-5) were excavated to assess the soils and test for potential survival of *in situ* deposits unaffected by modern ploughing. In addition, artefacts were hand-collected, with a proportion sieved (1.2), from both ploughsoils and subsoils.

3.3 Results

3.3.1 The contours of the surface of the sand and gravels (= Holme Pierrepont terrace) and the subsoil (= sandy alluvium) were mapped by Wessex Archaeology: the latter are reproduced as dotted grey lines in Figs 2-4. In addition, the data tabulated by Wessex Archaeology (1995, Appendices 5 and 7), was used to generate form-lines at 0.10m intervals showing the thickness of subsoil (Fig. 5 - generated by SURFER using triangulation interpolation and medium smoothing). These form-line depths should only be considered as indicative, since many auger-holes were not bottomed onto terrace deposits (indicated by a small, dark circle in Fig. 5). However, taken together with the subsoil surface contours (Fig. 4), they do suggest a complexity of deposition. This suggests that the subsoils are thicker to the north of the cluster of LUP flintwork (arrowed in Figs 2, 3, 4).

3.3.2 Although it is recognised that the results of augering are relatively crude, since most were recorded by a single person (JL) the record should be consistent, so where two (or more) subsoil horizons are recorded, these should also be taken into consideration (larger green circles in Fig. 5. Two horizons of subsoils were also recorded in some of the test-pits (Appendix 7.3). In 706, 707 and 711 only the upper silty-clay subsoil contained charcoal, with the lower being yellower/paler in colour: such differences may reflect soil-processes or wider-scale sediment movements. In test-pit 731, a silty clay subsoil overlay a sandy layer, so forms a separate stratigraphic unit: its location on the edge of the Holocene alluvium mapped by the British Geological Survey may suggest that interpretation for the upper subsoil. The only indication of any differentiation in the area of mapped alluvium in the south-eastern corner of field 373B (yellow line in Figures) are sandier topsoils in the records of test-pits 701 and 702 (Fig. 5, Appendix 7.3).

3.3.3 The sediment horizons in test-pit 727 were the only ones sampled and described in detail (Appendix 7.3). The soil profile was considered typical of a ploughed podzolic or brown earth, with no standstill phases or buried sequences and common biological activity (Wessex Archaeology 1995, 12-13).

3.3.4 The variations in subsoils may indicate episodes of pre-Holocene alluviation and/or colluviation which could have preserved surfaces and/or horizons containing LUP material below the present ploughing level. Two horizons of subsoil are recorded around the hollow in the subsoil in field 373B in both auger-holes and test-pits: this coincides with a scatter of LUP flint recorded in 1994 in area 1000, but not previously (Figs 2,3). Two horizons of subsoil are also recorded just off, or along the edges of, most of the thicker areas of subsoil (Fig. 5): this may indicate an early episode of weathering/erosion and redeposition where there may be an increased chance of surfaces being preserved *in situ*, or at least beneath modern ploughing.

3.3.5 It is currently not clear how the variability in these subsoil horizons relate, if at all, to the scatter of LUP flintwork.

3.4 The stratigraphic position and evidence for translocation and disturbance to the LUP flintwork

3.4.1 The flintwork from fieldwalking was on the surface of the ploughsoil, and is therefore in a disturbed horizon. Artefacts on the ploughsoil surface are variously estimated to represent some 0.5-7% of that present in the ploughsoil at any one time (Ammerman 1985; Tingle 1987, 89; Clark and Schofield 1991, 94-100). Since at least 286 flints can be attributed to the LUP by their form or cortication, this suggests a ploughsoil population that could be well in excess of 4,000 items. This population is not evenly scattered: where the fieldwalking distribution is dense (arrowed in Figs 2,3), a high density of flints (54) was also found within ploughsoil in the test-pit (727 N section 2.4.2). Bar this test-pit and 725 (sections 2.4.1, 2.4.2), none of the other test-pits produced any

LUP flint (Appendix 7.2). On this basis, the test-pitting at least appears to mirror the *known* fieldwalking distribution. However, one of the key questions is whether the fieldwalking is an accurate reflection of the full spatial patterning of activity on this site. This requires consideration of two issues:

1) in what horizon does the flint lay

2) has this horizon been disturbed in a consistent manner by ploughing N alternatively is this horizon disposed in such a manner that that it will be disturbed consistently.

3.4.2 Flint was only recovered from the upper ●.10m of subsoil in test-pit 727 (6 items N section 2.4.2). This low number, compared with the ploughsoil population of 54, may suggest that by 1994 much of the LUP flint-bearing horizon by test-pit 727 had already been disturbed by ploughing. However, it is clear that the fieldwalking cluster arrowed in Figs 2, 3 lies on the edge of a slightly elevated rise of subsoil (grey dotted form-lines). The excellent condition of the flint (2.5) suggests that it had not been in the ploughsoil long when it was recovered in 1993/4. Such high points of subsoil will probably be subject to increasing plough damage with every season of ploughing. It cannot be certain whether the flints were found here because of some past preference for being located on slightly elevated ground, or because the flintwork was in a horizon that became severely truncated for the first time, or even a combination of both factors.

3.4.3 Test-pit 727 lies on the edge of a high-point of subsoil, and also on the southern edge of a deep area of subsoil (Figs 4, 5; Appendix 7.3). Here, flint was recovered from only the uppermost 0.07m of subsoil (section 2.4.4), but this stratigraphic position cannot be assumed to be the case for all areas of deep subsoil. It is not uncommon for flintwork scatters to be buried below the modern surface. Where this occurs, it is important to understand whether this is their primary, *in situ* context, or some secondary transformation of their position. Too small a sample has been excavated to demonstrate either scenario, but many subsoils are not stable enough to seal and protect from movement the absolute location of individual pieces of flintwork. This secondary transformation is often explained with reference to the incohesive nature of the sediments combined with biological activity, and is common to many prehistoric sites - Hengistbury Head being a classic example where the movement of the lithics was investigated (Collcutt 1992, 64-78). Here, in common with other similar sites, it could be shown that the vertical position of the flintwork had been translocated, but that the retained horizontal patterning of the flintwork could be interpreted in terms of prehistoric activities. Such remnant patterning might be suggested from the location of the flints from test-pit 727: the six flints from the undisturbed subsoil all being in the western one third of the pit, whilst most of the 54 items collected from ploughsoil where from the north-western part of the pit (section 2.4.4). The potential for the recovery of patterning of lithics within the ploughsoils, as well as undisturbed subsoils, should not be overlooked.

3.4.4 Modern artefacts were recovered from subsoils in 8 of the test-pits, with ancient artefacts only recovered from subsoils in another 6 of the test-pits excavated (Appendix 7.2). If these were in subsoils undisturbed by ploughing, this demonstrates considerable translocation of materials below the modern ploughsoil. In field 374, only test-pit 733 had modern artefacts in the subsoil: all the others were in field 373B, perhaps suggesting an increased level of recent manuring or disturbance in this field. This difference in intensity of modern 'domestic' refuse is also reflected in the fieldwalking finds (Wessex Archaeology 1995, Appendix 1).

3.4.5 A land-drain was recorded in one of the test-pits (727), and a pattern of geophysical anomalies interpreted as possible drains, were recorded in part of field 374 (Geoquest Associates, 1994). The damage from such drains, though extensive, tend to be restricted to the line of the trench, so large areas can be preserved between the drains. There is no record of ridge-and-furrow ploughing from aerial photographs, test-pits or geophysics.

4. ASSESSMENT OF THE FARNDON FIELDS LATE UPPER PALAEOLITHIC SITE

4.1 Assessment criteria

4.1.1 The format used to assess this site is based on **SCHEDULING CRITERIA** laid down in Annexe 4 of *Planning Policy Guidance 16: Archaeology and Planning* (PPG16) issued by the Department of Environment. These criteria are summarised in Appendix 7.1.

4.1.2 Provision of a much fuller background to the Late Upper Palaeolithic of the region can be found in the Frameworks Assessment and Research Agenda written by John McNabb which is available at http://www.le.ac.uk/archaeology/east_midlands_research_framework.htm where the site is referred to as at Newark.

4.2 Period

4.2.1 Dr Roger Jacobi inspected the material collected in 1991-3 from Farndon Fields by T&PAU: a cluster some 20m across included a shouldered point and a fragmentary tip from a similar piece, a long end-scraper, and edge-used flakes and blades, with the wider scatter including cores with facetted platforms and flakes from such cores including those with the distinctive 'en eperon' butts, a long-end scraper combined with a piercer and a bec (sections 2.1, 2.2). Jacobi was clearly of the opinion that both technological and morphological characteristics of the debitage and tool forms are clearly of Late Upper Palaeolithic belonging to the tradition known as Creswellian (Jacobi 1988, 431-2). Material collected by Wessex Archaeology in 1994 has been examined by W Boismier and D Garton: it is of similar character with diagnostic pieces including en eperon butts, long end-scrapers, burins, and two blade fragments with oblique truncations, together with flakes from thinning large implements (sections 2.3, 2.4).

4.2.2 The components of Creswellian assemblages, as summarized by Jacobi (1988, 431-2), Jacobi and Roberts (1992, 35-6), and Barton and Roberts (1996, 253-4), give the diagnostic tool form as backed and truncated blades of trapezoidal outline - Cheddar (with a pair of divergent truncations) and Creswell points (with a single truncation - though classification of fragments has led to erroneous proportions of each - Jacobi 1991, 133); end-scrapers on long blades, often with retouch on lateral margins; burins on truncations; piercers and becs - including zincken; worn-end blades; and a blade technology characterised by en eperon platform preparation on single-platform cores (Barton 1991). All these types, bar demonstrable Cheddar points, are present in the collections from Farndon Fields.

4.2.3 Radiocarbon dates associated with Creswellian lithics fall within the period 13-12,000BP (Barton and Roberts 1996, 259) which correlates with the North European Plain Bolling or Lateglacial Interstadial, also known as the earlier part of the Windermere Interstadial in Britain (*ibid.* Fig. 1). Radiocarbon dates from the East Midlands that are unequivocally associated with human activity are listed by Roger Jacobi at http://www.le.ac.uk/archaeology/east_midlands_research_framework.htm in appendix 1: they are all from caves.

4.2.4 Increasingly, authors are separating Final Palaeolithic assemblages, associated with curved-backed and penknife points, which seem to be from the latter part of the Windermere/Late Glacial Interstadial or Allerod (Barton and Roberts 1996, 258) after 12,000BP. The extensively-excavated 'open' settlement site at Hengistbury Head would probably fit into this time-frame on technological and typological grounds, and though dated by TL of its burnt flint, it is not considered 'satisfactory' by Barton and Roberts (1996, 258) almost certainly because of the large standard deviations (between 1290-2430 at 68% level of confidence) for individual determinations, though this is reduced to 1150 on averaging of six determinations (Huxtable 1992, 60). The assemblage from Launde, Leicestershire (Cooper 1997), is the only excavated Late Palaeolithic open settlement in the East Midlands, but the composition and forms suggests that it belongs to the very last phase of the Upper Palaeolithic long blade tradition dating broadly to the period before 9,700BP (Cooper and Jacobi 2001, 119; Gob 1991, 229; Barton 1991, 242).

4.3 Rarity

4.3.1 The name Creswellian was coined by Garrod (1926) to describe the material from caves at Creswell Crags, Derbyshire, which she considered related to the French Magdalenian (though these lack the microlithic backed bladelets - Jacobi 1991, 138). Jacobi has shown that the material of this date from the caves at Creswell is mixed (and therefore not an ideal type site), with the assemblages from Cheddar perhaps offering better contextual integrity for defining the toolkits (Jacobi 1991, 137).

4.3.2 Most of the material from this period is known from caves. Single diagnostic artefacts are known outside of caves from collections of later prehistoric lithics (Jacobi 1991, 129): those from Nottinghamshire and its immediate environs have recently been listed as a single Creswell point from Gonalston and Cheddar points from East Stoke and Lound (Jacobi *et al.* 2001), and a Cheddar point from the Trent Valley, Leicestershire at Lockington-Hemington (Cooper and Jacobi 2001, 118-9). Fieldwalking of a large block (209ha) of land in the Trent Valley north of Newark did not recover any LUP lithics (Garton 2002, 24). Barton, after commenting that 'still largely missing from the British record, are the Creswellian open-air equivalents of cave sites' and lists five sites (1997, 128). One of these sites is Farndon, with two others within 60km radius - Edlington Wood (South Yorks) and Froggatt (Derbyshire). The Froggatt material is published, and on the basis of the drawings, there are no diagnostic tool forms, though the long blade would appear to have an en eperon butt diagnostic of the Creswellian tradition (Henderson 1979, Fig. 1.1). The Froggatt material (said to be 11 items, though only 10 described of which two were chert) was recovered as a cache found buried under 0.15m of soil beneath a gritstone boulder: the location is described as 'on a small level above the alluvial belt of the valley 200 yards from, and about 30' above, the River Derwent' a location not dissimilar from the terrace on which Farndon Fields sit.

4.3.3 The Farndon Fields material was found with later flintwork: but the condition and form make that flintwork relatively easy to separate (section 1.1.3). Although not strictly demonstrable, the LUP material is typologically consistent and can be considered as essentially a single period group. Such large collections of identifiable single period activities is rare, never mind the spread of artefacts over an area in excess of 350x400m (Figs 2, 3).

4.3.4 Given the limited investigation thus far, the interpretation of the activities represented by the spread of artefacts must be speculative, though some preliminary comments can be offered. The arrowed cluster in Figs 2,3 (plus test-pit artefacts) include two backed tips and two shouldered points, a burin on a truncation, together with edge-used flakes and blades and five scrapers, alongside apparently unmodified flakes and blades: such a collection might suggest an assemblage from carcass dismemberment or processing. Since the cluster (thus far) only contains one core, any primary knapping seems minimal, and since none of these pieces are obviously burnt, it might be surmised that any processed meat could have been taken elsewhere for consumption. Cores and rejuvenation flakes from knapping are found thinly scattered over the area investigated by detailed fieldwalking (magenta circles in Figs 2, 3), but thus far, none are obviously in groups, or found together with clusters of primary knapping debris. However, since the composition of the fieldwalking collection will be partly determined by the size/visibility of material (and knapping debris tends to be small), and the amount of disturbance to the horizon in which the material lay (3.4.2), we might expect such activities to be present. The spread and range of material may represent a wide spectrum of subsistence-hunting-craft activities, and debate will probably range about it being produced by either a number of groups or a repeated series of visits by one group. The topography here may be significant. The Trent-Devon interfluve on which the scatter of artefacts is located is overlooked by an area of higher ground immediately to the north-east: such terrain might have formed a classic 'lookout' N kill-site for watering/feeding animals.

4.3.5 There are no published assemblages clearly of this period which are so extensive, which are not in cave locations, and which appear to be of a single period.

4.3.6 Barton and Roberts have observed (1996, 259-260), following Jacobi (1991, 132-5), that sites producing Creswellian artefacts are less than half as numerous as those producing Final Palaeolithic artefacts.

4.4 Documentation

4.4.1 The documentation for the Creswellian assemblage consists of three sessions of fieldwalking (1991-4) and one episode of test-pitting (1994) with associated reports (sections 2.1-2.4). In each instance, the material has been identified by its surface cortication and basic form (section 1.1.3) to allow distributions to be plotted (Figs 1-3). To date, there has been no detailed analysis of the technology and typology of the assemblage, nor any systematic assessment of the degree of damage, both ancient and modern (section 2.5.1). The documentation of the stratigraphy is currently crude (because of its mode of collection by augering), and the stratigraphic horizon from which the flint has been disturbed by ploughing is unknown.

4.4.2 To our knowledge, no artefacts of this date had previously been reported from this location, though it is almost certain that subsequent undocumented flint collecting has occurred on this site.

4.5 Group value

4.5.1 Despite Jacobi's comments on the mixed nature of the surviving assemblages and records from Creswell Crags (1991, 134-6); it is these collections, together with those cave sites from the wider Magnesian Limestone (e.g. Anston, Mellars 1969), which provide an overall context for the Farndon Fields assemblages.

4.5.2 Rockman's interpretation of the distant flint sources for the Farndon Fields material (2.6) would fit with the recognition of the wide scale for the collection of the raw flint material (e.g. Jacobi 1991, 138; Barton and Roberts 1996, 260), besides our current understanding of the manner of subsistence of these LUP groups in following herd animals (Barton 1997), suggests that any reconstruction of LUP lifestyle will require a wide knowledge of a range of site-types and the activities conducted.

4.6 Survival/condition

4.6.1 Lithics are currently the only known indicator of this LUP occupation. The silts and sands of the Trent Valley are usually acidic, so prehistoric bone rarely survives unless waterlogged. Unless stratified and/or waterlogged deposits are found in the future, this will probably continue to be the case.

4.6.2 The impression from the current collection of lithics, predominantly from ploughsoil, is that most are in excellent condition with relatively little modem damage (section 2.5.1), though no detailed assessment has been made of their condition thus far. Since the original surfaces are corticated, any modern damage is usually clear, with little opportunity for misdiagnosis.

4.6.3 The consistent cortication of the raw material (or glossy patina for those few diagnostic pieces not corticated) will probably restrict the recovery of use-wear information from microscopic analysis of the flint-edges; though this avenue of investigation should be tested.

4.7 Fragility/vulnerability

4.7.1 The current assemblage of flint in the ploughsoil will be increasingly vulnerable to edge-damage with every cultivation.

4.7.2 The impact of the continued regime of ploughing on the subsoil rise on which the cluster sits (Figs 2, 3), is currently unknown, though it might be predicted that the eminence will be eroded by yearly ploughing.

4.7.3 Removal of the ploughsoil or subsoil will destroy the patterning of its contained lithics.

4.7.4 Studies elsewhere on the patterning of lithics in ploughsoils suggests that continued cultivation will disperse and smooth the variability in density of flints within the ploughsoil, and thus blur the pattern of activities that they reflect.

4.7.5 There is currently no evidence for any features or spreads of other material associated with the lithic activity: they are only likely to survive within sequences of deposits that will be highly vulnerable to any earthmoving. Mitigation by watching brief or monitoring of machining is inappropriate.

4.7.6 The impact of future burial on these deposits as a mitigation measure is unknown. Topsoils are often removed prior to burial because they tend to compact and settle because of their porous structure and humic content: most of the evidence for the LUP activities may be contained within the ploughsoils. Current evidence from test-pit 727 suggests that surviving material within the subsoil could be restricted to the upper horizons (section 2.4.2-2.4.4) and thus would be affected by topsoil removal. Burial of these deposits would probably result in the attrition of the flintwork (because of compaction and movement) in both or either ploughsoils or subsoils.

4.8 Diversity

4.8.1 The diversity of the assemblage is low, since it is likely to comprise almost exclusively lithics: this is not unusual for such period sites. Should the potential for palaeoenvironmental or material *in situ* within sequences of deposits be realised (sections 4.9.9-4.9.11), the diversity would increase.

4.8.2 The flint-using activities are spread widely across the Trent-Devon interfluve, and would appear to encompass specific artefact-groupings (section 4.3.4), suggesting that reconstructions of a range of activities will be demonstrable from both spatial patterning and different artefact associations.

4.9 Potential

4.9.1 Spatial patterning

The potential for study and understanding of the lithic technology, and from its character and patterning inference of behaviour patterns, is high (*cf.* section 4.3.4). The wide spread of artefacts - over at least 14ha, including at least one cluster containing blades, flakes and retouched tools - offer the potential for examination of the life of a set of blanks, from initial creation, followed by modifications as tools and flakes are put to use. The flint collected thus far has not yet been studied in detail. The quality of the preservation (section 2.5.1), and detail of its spatial patterning (Figs 2,3), mean that such study would provide significant insights into the behaviour behind the composition and form of the assemblage (*cf.* Jacobi 1986, 66).

4.9.2 The scale of preservation of *in situ* flintwork, or that having been transported down the soil profile into undisturbed subsoils, is currently unknown. However, there is some evidence from test-pit 727 (section 2.4.4) to suggest that the horizontal patterning, on both the micro and macro scale, in both subsoil and ploughsoil, has survived. Any future investigations should cater for both scales of analysis.

4.9.3 Analysis of the raw materials used at Farndon Fields (section 2.6.1) would contribute to inferences about the wider movements of groups (*cf.* Barton 1997, 124-6).

4.9.4 Dating

The potential for independent dating is the most difficult to assess. The most likely sources are charred plant and wood remains, e.g. from a hearth, TL/OSL of burnt flint (assuming that there are sufficiently diagnostic and thick pieces), radiocarbon of bone/shell.

4.9.5 The highest potential would be a sealed hearth, or activity horizon. Since the scatter is on an alluvial deposit, there is some potential for sealed deposits, though the discovery of the location of any such deposits clearly associated with the LUP activity would probably require extensive field investigation, coupled with luck, unless there were clear indications of buried horizons (which is currently not the case). In such circumstances, dating of the sequence of horizons would be a high priority.

4.9.6 All TL/OSL dates on burnt flint have an error of between 7-11% (http://www.users.globalnet.co.uk/~qtls/flint.htm - TL dating of heated flint and stone); which at 13-12000 BP will mean an error term of some 900 years. Coupled with this, 1mm of the surface of any burnt flint has to be removed, and since there are later flints, which are also corticated white when burnt, only diagnostic LUP forms could be used. Any dating by TL may have considerable problems.

4.9.7 OSL of fine-grained sediments has also been used on other sites and may be worth future consideration. However, unless surfaces contemporaneous with the LUP are preserved where it can be confident that the sediment grains have been thoroughly bleached (thus resetting the luminescence clock), any such dates are likely to be too old. The circumstances for use of this technique are likely to be very limited.

4.9.8 In general, the Trent terraces are too acidic for bone to survive, even from the last millennium. Bones are only likely to be located in anaerobic contexts (i.e. below the water-table) unless burnt. Unfortunately, burnt bone is not ideal for radiocarbon dating since it is the protein content that is used for dating: this disappears on burning.

4.9.9 Sequences/palaeoenvironmental material

The subsoils are of very variable thickness: the relation of this variability to the potential for sequences of deposits, and to the potential for sealed deposits, is currently unknown (section 3.3).

4.9.10 The cluster of artefacts (arrowed in Figs 2, 3) lie adjacent to an area of deep subsoil (Fig. 4). Other high points of subsoil, with deep subsoils adjacent, are present elsewhere within fields 373B and 374 (Fig. 4), but, so far, have not produced any higher-density flint scatters. It is unknown whether this is because they are genuinely absent or that they are below the reach of the plough.

4.9.11 The potential for sequences/sealed surfaces and palaeoenvironmental material in the vicinity should be investigated as the best chance of the recovery of a landscape context for the LUP activity. The two immediate targets are the spread of mapped Holocene alluvium along the edge of the River Devon and into fields 373A/B and 370B, just to the south and east of the known LUP scatter, and the organics in the geotechnical trial-pit 191A (Fig. 1, section 3.1.3). The organics in the trial-pit appear to lie at the base of a deeper alluvium than that recorded nearby, so may lie within a channel cutting through the Holme Pierrepont terrace (section 3.1.3). The organics have not been characterised or dated. The areas of pasture mapped from aerial photographs (dated between 1933 and 1984 - Cox and Palmer 1993), to the east and south of the currently known LUP scatter, may indicate potential areas of better preserved deposits (located by PP in Fig. 1).

4.10 Summary

The crucial frameworks for the interpretation of the site are:

the spread and scale of activity across the area

the recovery of any detailed sequences or subsoil deposits where flints could remain essentially *in situ*

but the absolute rarity of these sites, apparently uncontaminated by lithics that would be difficult to disentangle (e.g. Mesolithic and Final Palaeolithic), makes this site of National Importance. If sequences or sealed deposits were discovered, particularly those with associated palaeoenvironmental material, which would enable a detailed consideration of the landscape setting for the LUP activity, this would boost the importance of the site to International Importance.

5. A STRATEGY FOR FURTHER INVESTIGATIONS

5.1 East Midlands Frameworks documents

5.1.1 The LUP research priorities at http://www.le.ac.uk/archaeology/east_midlands_research_framework.htm applicable to Farndon Fields divide into two sections:

5.1.2 East Midlands issues

Promotion of fieldwalking programmes in the light of the success of the discovery of the Farndon Fields site: this requires specialist input on artefact recognition
Pursuance of such sites through predicative modelling
Gain detailed palaeoenvironmental information to provide landscape contexts
Review of SMR

5.1.3 Potential impact on broader scene

The validity, and refinement, of the current chronological subdivisions
Relations with continental developments
Identification of features unique to the British record
Modelling of lithic assemblages to individual, group and social/economic action

5.1.4 Our understanding of the manner of subsistence of these peoples suggests a highly mobile life-style, and outside of cave-sites, few obvious physical constraints on where they conducted their activities. Coupled with this, we might expect strong variability in the distribution of discarded artefacts, with clusters that are small in size and perhaps unevenly spaced. In addition, any post-depositional changes may not have affected all deposits equally: those where the material has survived *in situ* will give the greatest rewards, but will also be the hardest to locate. All these factors will mean that any understanding of the past LUP behaviour at Farndon Fields will require extensive characterisation to understand the scale, location and type of activities undertaken alongside consideration of the whole landscape context through palaeoenvironmental and riverine studies.

5.2 A proposed strategy: objectives

5.2.1 The proposed strategy focuses around three key objectives:

map the spatial distribution of material
understand the context of material in any undisturbed sediments
explore the potential for assessment of the landscape context for the LUP activities

5.2.2 map the spatial distribution of material

If we wish to model lithic assemblages to individual, group and social/economic action, then we need to understand the spatial distribution of material. This is at both the small scale (e.g. type of activity undertaken) and the broader scale (how individual activities relate to zones of landscape use).

5.2.3 At Farndon Fields investigations from some 10 years ago suggest a wide range and spread of activities over at least 14ha. It is unknown whether subsequent ploughing has affected that pattern, either in introducing new material (and patterns) into the ploughsoil, or by blurring the patterning (section 4.7.4).

5.2.4 The current distribution of the Farndon Fields lithics in the ploughsoil is highly variable with strong clustering: any future strategy of investigation needs to take cognizance of this fact.

5.2.5 At Farndon Fields, the extent of the LUP activity cannot be said to be secure. Holocene alluvium has been recently recognised to the south and east of this scatter (section 3.1.4): the relation of any LUP activity to this alluvium is unknown, though if they were located together the alluvium could have sealed surfaces disturbed elsewhere by ploughing.

5.2.6 The recovery of a corticated blade in field 370B and a casual find of a long-end scraper in the western part of field 373B (both plotted in Fig. 1) suggest the potential for a more extensive scatter than has previously investigated in detail. In addition, it should be noted that initial fieldwalking @10m transect intervals only located two LUP items in field 374, but that on repeated walking at 2.5m, this picture was dramatically changed by the recovery of another 80 pieces, some in a tight cluster (*cf.* Figs 1, 2). Hence, the lack of LUP artefacts from the initial walking in field 375 cannot be considered evidence that the LUP activities did not extend this far north, particularly given the proximity of the cluster in field 374.

5.2.7 understand the context of material in undisturbed sediments
The broad pattern of land-use may ultimately be derived from ploughsoil assemblages, but any material in undisturbed contexts will contain information that can be used to model individual episodes (e.g. the way in which the raw material was used to produce a particular end-product) and the way that the material has been transformed from its original depositional context (section 3.4.3).

5.2.8 Current evidence (based on a single test-pit) suggests that lithics survive in the upper, undisturbed horizon of subsoil (section 2.4). The extent of this survival in undisturbed subsoils is unknown. In addition, the subsoil has been demonstrated to be variable in character and depth (section 3.3): the potential for further clusters of lithics, any sealed horizons containing lithics, and sequences of deposits, cannot currently be predicted.

5.2.9 Materials for dating, clearly associated with the LUP activity, could only be derived from secure, undisturbed contexts.

5.2.10 explore the potential for assessment of the landscape context for the LUP activities
Detailed assessment of the context of the LUP lithics (above) may also provide palaeoenvironmental materials for analysis of information on the wider landscape, but it seems likely that palaeoenvironmental/economic materials are equally likely to be recovered in the immediately adjacent areas to the proposed route.

5.2.11 The potential for organic survival has been demonstrated on the proposed route in trial-pit 191A: this deposit would repay characterisation and dating.

5.3 A proposed strategy : programme of field investigation

5.3.1 The previous work has started to define the extent, preservation and character of the site, but if a cost-effective approach to any mitigation is required, further stages of investigation are required to narrow the targets.

5.3.2 The objectives in 5.2 could be furthered through a programme of field investigation that sets out to determine:

- the current spatial patterning of the flintwork
- test the extent and depth of Holocene alluvium, and the character of underlying deposits
- test the extent and date of the organic materials recorded in trial-pit 191A
- test the variability of subsoil thickness and horizons across the site
- collect flintwork from the ploughsoil and subsoil to assess the density, character and context of deposition across the site.

5.3.3 The results from this work should be used to determine a final strategy for mitigation. It is anticipated that all of the work on the road-line would be conducted prior to any road-construction and earthmoving: this should include all ancillary disturbances, together with the road-construction itself.

5.3.4 *the current spatial patterning of the flintwork*
By fieldwalking at 'total coverage' this will address the spatial patterning as well as issues relating to any evidence of increased erosion of the subsoil surface over the last 10 years (through the spread of artefacts in the cluster, the appearance of new clusters, the condition of the recovered lithics N material in good condition is almost certainly newly introduced into the ploughsoil). Inclusion of fields 370-375 in this exercise would help to demonstrate the extent of the LUP scatter.

5.3.5 In the past, the fieldwalking has collected/mapped all categories of surface finds: whilst this is helpful in understanding more recent activities and agricultural regimes, to be cost-effective, future fieldwalking should be more targeted and collect flint only. Since cortication is not a consistent feature of the LUP artefacts, all flintwork must be collected, processed, and analysed by a specialist N it is not possible to properly judge the date of finds in the field and thus aim to just collect the LUP material.

5.3.6 *test the extent and depth of Holocene alluvium, and the character of underlying deposits* in fields 373A/B and 370. Initial testing by auger-transects might indicate suitable locations for test-pits to be dug to investigate the sediment sequences.

5.3.7 *test the extent and date of the organic materials demonstrated in trial-pit 191A*: this deposit would repay characterisation and dating.

5.3.8 *test the variability of subsoil thickness and horizons across the site*, particularly those in the areas of the subsoil rise in field 374 and around the subsoil hollow in field 373B (Fig. 4). Since augering is relatively crude it is unlikely that further augering will help beyond the pattern already achieved: soils should be exposed in test-pit sections. It is important that the maximum information be gained from this exercise, so it is vital that the sections are not recorded mechanistically, but by a specialist with a sediments/soils background, with opportunity to assess the sections, then dig further test-pits should that be required to answer questions arising from the first set.

5.3.9 If LUP material is collected by future fieldwalking (section 5.3.3) in fields 370, 373A or 375, auger on a 25 grid to record the pattern of subsoil variation to match the data previously collected. Assess this information to consider whether these fields merit further testing by test-pitting: if so, include with programme for test-pitting (section 5.3.7).

5.3.10 collect flintwork from the ploughsoil and subsoil of the test-pits dug to study the subsoils (section 5.3.7) to assess the density, character and context of that flintwork. A proportion of the topsoil and subsoil should be sieved through an appropriate mesh to recover detailed information on the quantity and preservation quality of the lithics. The sieved subsoils should be kept separate so that if lithics are recovered, they can be wet-sieved through a fine mesh (?3mm) to see if tiny artefacts are present. If lithics are recovered from the subsoil, these horizons should be subject to detailed soil analysis to establish the context, and infer the processes, by which the lithics were emplaced.

6. BIBLIOGRAPHY

Ammerman A.J., 1985. 'Plow-zone experiments in Calabria, Italy', *Journal of Field Archaeology* 12, 33-40.

Barton, N. 1990. 'The en eperon technique in the British Late Upper Palaeolithic', *Lithics* 11, 31-33.

Barton, N. 1991. 'Technological innovation and continuity at the end of the Pleistocene in Britain' in N. Barton, A.J. Roberts and D.A. Roe (eds) *The Late Glacial in North-west Europe: Human Adaption and Environmental Change at the End of the Pleistocene.* London: Council for British Archaeology Research Report 77.

Barton, N. 1997. *Stone Age Britain.* London: English Heritage.

Barton, R.N.E and Roberts, A.J. 1996. 'Reviewing the British Late Upper Palaeolithic: new evidence for chronological patterning in the Lateglacial record' *Oxford Journal of Archaeology* 15 (3), 245-265.

British Geological Survey, 1996. Nottingham Sheet 126, solid and drift. 1:50,000 series.

Clark R.H. and Schofield A.J., 1991. 'By experiment and calibration: an integrated approach to archaeology of the ploughsoil', in Schofield, A.J. (ed.), *Interpreting Artefact Scatters: Contributions to Ploughzone Archaeology.* Oxbow Monograph 4.

Collcutt, S.N. 1992. 'The effects of non-anthropogenic phenomena on artefact taphonomy' in Barton, R.N.E. *Hengistbury Head, Dorset: Vol.2 The Late Upper Palaeolithic and Early Mesolithic Sites.* Oxford: Oxford University Committee for Archaeology Monograph 34.

Cooper, 1997. Launde (SK8003). In Cooper, N.J. 'Archaeology in Leicestershire and Rutland 1996', *Leicestershire Archaeological and Historical Society Transactions* 71, 91-93.

Cooper, L. and Jacobi, R. 2001. 'Two Late Glacial finds from north-west Leicestershire' *Leicestershire Archaeological and Historical Society Transactions*, 5, 118-121.

Cox, C. and Palmer, R. 1993. 'A46: Fosse Way: Newark to Widmerpool, Nottinghamshire, Aerial Photographic Enhancement'. Air Photo Services.

Garton, D. 2002 'Walking fields in South Muskham and its implications for Romano-British cropmark-landscapes in Nottinghamshire', *Trans Thoroton Soc Nottinghamshire* 106, 17-40.

Gob, A. 1991. 'The early Postglacial occupation of the southern part of the North Sea Basin' in N. Barton, A.J. Roberts and D.A. Roe (eds) *The Late Glacial in North-west Europe: Human Adaption and Environmental Change at the End of the Pleistocene.* London: Council for British Archaeology Research Report 77.
227-233

Geoquest Associates, 1994. 'A46: Newark to Widmerpool, Geophysical Survey of Sites 1,2 & 18: stage 2.0.' Geoquest Associates.

Henderson, A.H. 1979. 'Flint and chert implements from Froggatt, Derbyshire', *Transactions of the Hunter Archaeological Society* 10, 138-142.

Howard, A.J. 2004. 'A46 Newark to Widmerpool Improvement: Geoarchaeological Assessment'. Unpublished report to Highways Agency.

Huxtable, J. 1992. 'Thermoluminescence (TL) dating of burned artefacts from the Hengistbury sites' in Barton, R.N.E. *Hengistbury Head, Dorset: Vol.2 The Late Upper Palaeolithic and Early Mesolithic Sites.* Oxford: Oxford University Committee for Archaeology Monograph 34.

Jacobi, R.M. 1986. 'The contents of Dr. Harley's show case' in S. Collcutt (ed) *The Palaeolithic of Britain and its Nearest Neighbours.* Sheffield: Dept Archaeology and Prehistory.

Jacobi, R.M. 1988. 'Towards a British Lateglacial archaeology' in M. Otte (ed.) *De la Loire a L'Oder.* Oxford: British Archaeological Reports S444.

Jacobi, R. 1991. 'The Creswellian, Creswell and Cheddar', in N. Barton, A.J. Roberts and D.A. Roe (eds) *The Late Glacial in North-west Europe: Human Adaption and Environmental Change at the End of the Pleistocene.* London: Council for British Archaeology Research Report 77.

Jacobi, R. and Roberts, A. 1992. 'A new varient on the Creswellian angle-backed blade'. *Lithics* 13, 33-39.

Jacobi, R., Garton, D. and Brown, J. 2001. 'Fieldwalking and the Late Upper Palaeolithic of Nottinghamshire' *Transactions of the Thoroton Society Nottinghamshire,* 105, 17-22.

Kinsley, A.G. 1993. 'Fieldwalking, earthwork surveys and geological mapping on the Fosse Way (A46) between Widmerpool and Newark, Notts.' T&PAT.

Knight, D. & Kinsley, G. 1992. 'Archaeology of the Fosse Way, implications of the proposed dualling of the A46 between Newark and Widmerpool'. T&PAT. Vol 2

Shepherd, W., 1972. *Flint its Origin, Properties and Uses*, London.

Tingle M., 1987. 'Inferential limits and surface scatters: the case of the Maddle Farm and Vale of the White Horse fieldwalking survey', in A.G. Brown and M.R. Edmonds (eds), *Lithic Analysis and Later Prehistory.* British Archaeological Reports, British Series 162, 87-99.

Wessex Archaeology, 1995. 'Farndon Fields, Newark on Trent, Nottinghamshire, Archaeological Evaluation: fieldwalking, auger survey and test pitting'. Wessex Archaeology Report 37584b.

APPENDIX 7.1: CRITERIA FOR THE ASSESSMENT OF SITES

Within this document the format used to assess each individual site is based on the scheduling criteria laid down in Annexe 4 of *Planning Policy Guidance 16: Archaeology and Planning* (PPG 16) issued by the Department of Environment. These criteria may be summarised as follows:

Period

All types of monument that characterise a category or period should be considered for preservation, in order that a representative sample be preserved for posterity.

Rarity

There are some monument categories which in certain periods are so scarce that all surviving examples which still retain some archaeological potential should be preserved. In general, however, a selection must be made which portrays the typical and commonplace as well as the rare. This process should take account of all aspects of the distribution of a particular class of a monument, both in a national and a regional context.

Documentation

The significance of a monument may be enhanced by the existence of records of previous investigations or, in the case of more recent monuments, by the supporting evidence of contemporary written records.

Group value

The value of a single monument (such as a field system) may be greatly enhanced by its association with related contemporary monuments (such as a settlement or cemetery) or with monuments of different periods. In some cases, it is preferable to protect the complete group of monuments, including associated and adjacent land, rather than to protect isolated monuments within the group.

Survival/condition

The survival of a monument's archaeological potential both above and below ground is a particularly important consideration, and should be assessed in relation to its present condition and surviving features.

Fragility/vulnerability

Highly important archaeological evidence from some field monuments can be destroyed by a single ploughing or by other unsympathetic treatment, and such monuments would particularly benefit from the protection which scheduling confers. There exist also standing structures of particular form or complexity whose value can again be severely reduced by neglect or careless treatment, and which are similarly well suited for scheduled monument protection (even if these structures are already listed historic buildings).

Diversity

example, a Roman town with associated field systems.

Potential

The nature of the evidence cannot always be specified precisely, but it may be possible to demonstrate the potential value of a monument as a result of evaluation work.

Additional Criteria
In addition to the Secretary of State's criteria, a general account of the sites and their environs, is provided in Section 4.

An indication of the **importance** of a site and the **degree of threat** posed by the development is provided in the assessments.

Importance is judged in three categories:
Nationally Important Sites: Scheduled Ancient Monuments of all types or sites considered to be worthy of scheduling though not as yet scheduled.
Regionally Important Sites: Sites listed by the County Sites and Monuments Record, or other reliable sources, which contribute in a significant manner to the archaeology of the region.
Locally Important Sites: Sites listed by the County Sites and Monuments Record, or other reliable sources, which, either through their intrinsic character or their degree or state of preservation are not of greater importance.

APPENDIX 7.2 THE NUMBER OF FLINTS BY CONTEXT (PLOUGHSOIL OR SUBSOIL) RECOVERED FROM THE TEST-PITS

Test-pit	Test-pit size in m	Number of flints spot-located i.e. found by hand-excavation	Context	Number of flints not spot-located i.e. probably found by sieving	Context
700	1x1	3	P	-	
701	5x5	-		1	S
702	1x1	-		-	
703	1x1	-		-	
704	5x5	1	P	-	
706	1x1	-		-	
707	5x5	-		-	
708	1x1	1	P	-	
709	1x1	1	P	-	
711	1x1	-		2	P
				1	S
723	1x1	2	P	-	
724	1x1	1	P	1	S
725	5x5	1 + 5	P	1	P
		1	S	-	
726	1x1	3	P	-	
727	5x5	**54** + 4	P	-	
		6	S	-	
728	1x1	-		2	P
730	5x5	-		4	P
731	1x1	1	S	-	
732	1x1	2	P	-	
733	1x1	-		1+1	P

All the ploughsoils and subsoils of the 1x1m test-pits were sieved. 4% of the topsoil and 15% of the subsoils of the 5x5m test-pits were sieved.

P = ploughsoil S = subsoil

Corticated flints, i.e. those certainly of LUP date are in red/bold. Non-corticated flints may be LUP, but diagnostic forms are required to be certain. A burnt fragment has surface cortication from the ploughsoil of test-pit 733, its form is not obviously of LUP type, so it has not been counted.

The flints recovered by sieving were not listed separately (information confirmed by L. Mepham, Wessex Archaeology): those not spot-located are assumed here to have probably been found by sieving.

Fields 373 and 374 measure 17, 900m^2. The test-pits comprise 164m^2 = 0.9% of the area sampled.

APPENDIX 7.3 DESCRIPTIONS OF THE SEDIMENTS IN THE TEST-PITS (Wessex Archaeology 1995, Appendix 5)

Test pit 700	PlotB	Co-ordinates: 77962 / 52010	Ground level (m OD.): 11.08	Size: 1m x 1m
Depth	*Description*			*C/xt No.*
0 - 0.38m	Ploughsoil. Brown (10YR 4/3) silty clay with very frequent flints and fluvial gravel inclusions 0.05m+			7000
0.38m+	Natural fluvial gravels. Very frequent gravel inclusions 0.05m+, in a dark yellowish brown (10YR 3/6) clayey sand matrix.			7001

Test pit 701	Plot B	Co-ordinates: 78005 / 51985	Ground level (m OD.): 10.80	Size: 5m x 5m
Depth	*Description*			*C/xt No.*
0 - 0.30m	Ploughsoil. Brown (10YR 4/3) silty loam. Frequent coal and domestic rubbish inclusions, and large clumps of shredded semi-decomposed vegetable matter. The coal is very broken down and evenly mixed throughout the soil structure.			7010
0.30m - 0.45m	Subsoil. Greyish brown (10YR 5/2) clay with modern glass, CBM and ceramic inclusions, and frequent fluvial gravel inclusions 0.05m+.			7011
0.45m+	Natural fluvial gravels. Very frequent gravel inclusions 0.05m+ in a brownish yellow (10 YR 6/6) sandy clay. Two natural gullies (7013 and 7015) noted within the gravels, filled respectively with grey and light brownish grey (10YR 6/1 and 10YR 6/2) clay.			7012

Test pit 702	Plot B	Co-ordinates: 78047 / 51958	Ground level (m OD.): 11.02	Size: 1m x 1m
Depth	*Description*			*C/xt No.*
0 - 0.30m	Ploughsoil. Dark brown (10YR 3/3) sandy silt loam. Frequent coal fragments, ceramics, and lots of shredded vegetable matter. Has uneven lower boundary.			7020
0.30m - 0.50m	Subsoil. Yellowish brown (10YR 5/6) silt loam. Common small flecks of coal in worm holes, common manganese stains and concretions, occasional fragments of glass.			7021
0.50m+	Natural sand. Brownish yellow (10YR 6/6) fine, clean sand with occasional iron panning and small concretions.			7022

Test pit 703	Plot B	Co-ordinates: 77985 / 52057	Ground level (m OD.): 11.39	Size: 1m x 1m
Depth	*Description*			*C/xt No.*
0 - 0.35m	Ploughsoil. dark greyish brown (10YR 4/2) sandy loam. Frequent domestic refuse inclusions, with a layer of shredded straw at 0.15m below surface. Regular gravel inclusions 0.05m+.			7030
0.35m - 0.59m	Subsoil. Yellowish brown (10YR 5/8) sandy clay, with occasional regular fluvial gavel inclusions 0.05m+.			7031
0.59m+	Natural fluvial gravel. Very frequent gravel inclusions 0.05m+ in a brownish yellow (10YR 6/8) silty clay matrix.			7032

Test pit 704	Plot B	Co-ordinates: 78028 / 52035	Ground level (m OD.): 10.84	Size: 5m x 5m
Depth	*Description*			*C/xt No.*
0 - 0.30m	Ploughsoil. Dark brown (10YR 3/3) silty clay, occasional flints and fluvial gravel 0.03m+. Frequent post-medieval/modern CBM, ceramic and glass inclusions.			7040
0.30m - 0.40m	Subsoil. Dark greyish brown (10YR 4/2) silty clay similar to ploughsoil, with occasional fluvial gravels 0.05m+. Coal inclusions 0.03m+, fewer CBM/ceramic/glass inclusions than for ploughsoil.			7041
0.40m+	Natural fluvial gravels. Very frequent gravel inclusions 0.05m+, with dark yellowish brown (10YR 4/6) sandy matrix and occasional clay lenses			7042

Test pit 706	Plot B	Co-ordinates: 78002 / 52101	Ground level (m OD.): 11.13	Size: 1m x 1m
Depth	*Description*			*C/xt No.*
0 - 0.30m	Ploughsoil. Brown (10YR 4/3) silty clay with frequent fluvial gravel 0.05m+.			7060
0.30m - 0.40m	Subsoil. Brown (10YR 4/3) silty clay - compacted layer beneath the crop turn line of the ploughsoil. Frequent fluvial gravel 0.05m+, and charcoal and coal inclusions 0.02m+.			7061
0.40m - 0.50m	Subsoil. Yellowish brown (10YR 4/6) compacted silt layer with frequent fluvial gravel 0.05m+.			7062
0.50m+	Natural fluvial gravels. Very frequent gravel inclusions 0.07m+, in a dark yellowish brown (10YR 4/6) silty sand matrix.			7063

Test pit 707	Plot B	Co-ordinates: 78047 / 52080	Ground level (m OD.): 11.25	Size: 5m x 5m
Depth	*Description*			*C/xtNo.*
0 - 0.30m	Ploughsoil. Brown (10YR 4/3) silty clay with frequent fluvial gravel inclusions 0.05m+.			7070
0.30 - 0.37m	Subsoil. Brown (10YR 4/3) silty clay, compacted, with frequent fluvial gravel inclusions 0.05m+ and charcoal inclusions 0.01m+.			7071
0.37 - 0.42m	Subsoil. Yellowish brown (10YR 4/6) silty clay with occasional fluvial gravel inclusions 0.05m+.			7072
0.42m+	Natural fluvial gravels. Very frequent gravel inclusions 0.05m+, in a dark yellowish brown (10YR 4/6) sandy clay matrix with very frequent iron panning.			7073

Test pit 708	Plot B	Co-ordinates: 78091 / 52058	Ground level (m OD.): 11.34	Size: 1m x 1m
Depth	*Description*			*C/xt No.*
0 - 0.30m	Ploughsoil. Brown (10YR 4/3) silty clay with frequent fluvial gravel inclusions 0.05m+, post-nineteenth century domestic artefacts and the deposition by plough action of shredded crop remnants at a depth of 0.30m.			7080
0.30m - 0.40m	Subsoil. Brown (10YR 4/3) compacted slightly silty clay with frequent charcoal inclusions 0.01m+ and frequent fluvial gravel inclusions 0.05m+.			7081
0.40m+	Natural fluvial gravels. Frequent gravel inclusions 0.05m+ in a dark yellowish brown (10YR 4/6) silty sandy matrix. Frequent iron and staining and concretions.			7082

Test pit 709	Plot B	Co-ordinates: 78020 / 52146	Ground level (m OD.): 11.13	Size: 1m x 1m
Depth	*Description*			*C/xt No.*
0 - 0.34m	Ploughsoil. Dark brown (10YR 3/3) silty clay with frequent modern domestic refuse inclusions and a layer of decayed vegetable matter from the turning of the soil by ploughing at 0.15m below the surface.			7090
0.34m - 0.59m	Subsoil. Dark yellowish brown (10YR 4/6) sandy clay with occasional fluvial gravel inclusions 0.05m+. Some modern domestic refuse inclusions.			7091
0.59m+	Natural sand with clay lenses. Yellowish brown (10YR 5/8) sand with frequent iron staining combined with dark yellowish brown (10YR 3/6) clay lenses within the predominantly sandy natural.			7092

Test pit 711	Plot B	Co-ordinates: 78111 / 52108	Ground level (m OD.): 11.67	Size: 1m x 1m
Depth	*Description*			*C/xt No.*
0 - 0.30m	Ploughsoil. Brown (10YR 4/3) silty clay with frequent flints and fluvial gravel inclusions 0.05m+, and inclusions of modern domestic refuse.			7110
0.30m - 0.40m	Subsoil. Brown (10YR 4/3) compacted silty clay with occasional fluvial gravel inclusions 0.05m+ and frequent charcoal inclusions 0.05m+.			7111
0.40m - 0.47m	Subsoil. Dark yellowish brown (10YR 4/6) compacted silty clay with occasional fluvial gravel inclusions 0.05m+.			7112
0.47m+	Natural fluvial gravels. Very frequent gravel inclusions 0.05m+ in a dark yellowish brown (10YR 4/6) sandy clay matrix. Frequent ferrous staining and concretions.			7113

Test pit 723	Plot A	Co-ordinates: 78032 / 52312	Ground level (m OD.): 11.94	Size: 1m x 1m
Depth	*Description*			*C/xt No.*
0 - 0.30m	Ploughsoil. Brown (10YR 4/3) silty clay with occasional flints and fluvial gravel inclusions 0.05m+, with frequent post-nineteenth century artefact inclusions and a band of decomposing crop remains at the ploughsoil-subsoil interface.			7230
0.30m - 0.53m	Subsoil. Dark yellowish brown (10YR 4/6) compacted silt with occasional fluvial gravel inclusions 0.05m+ and also very occasional coal inclusions 0.01m+.			7231
0.53m+	Natural fluvial gravels. Very frequent gravel inclusions 0.07m+ in a dark yellowish brown (10YR 4/6) fine silt matrix.			7232

Test pit 724	Plot A	Co-ordinates: 78055 / 52307	Ground level (m OD.): 11.99	Size: 1m x1m

Depth	*Description*	*C/xtNo.*
0 - 0.35m	Ploughsoil. Brown (10YR 4/3) silty clay with occasional fluvial gravel 0.05m+, very frequent modern domestic artefact inclusions and a layer of decomposing crop at the limit of ploughing.	7240
0.35m - 0.60m	Subsoil. Dark yellowish brown (10YR 4/6) silt with occasional flints and fluvial gravel inclusions 0.05m+ throughout, but with archaeological finds in only the upper 0.10m of the layer.	7241
0.60m+	Natural fluvial gravels. Very frequent gravel inclusions 0.07m+ in a dark yellowish brown (10YR 4/6) silt matrix.	7242

Test pit 725	Plot A	Co-ordinates: 78097 / 52272	Ground level (m OD.): 11.92	Size: 5m x 5m

Depth	*Description*	*C/xt No.*
0 - 0.40m	Ploughsoil. Brown (10YR 4/3) silty clay with occasional flint and fluvial gravel inclusions 0.05m+ and frequent assorted post-nineteenth century artefacts and lenses of decomposing crop, this time not in a continuous layer.	7250
0.40m - 0.55m	Subsoil. Dark yellowish brown (10YR 4/6) compact silt with occasional fluvial gravel inclusions 0.05m+ and archaeological finds only in the upper 0.10m of this layer.	7251
0.55m+	Natural fluvial gravels. Very frequent gravel inclusions 0.07m+ in a dark yellowish brown (10YR 4/6) silt matrix.	7252

Test pit 726	Plot A	Co-ordinates: 78010/ 52345	Ground level (m OD.): 12.02	Size: 1m x 1m

Depth	*Description*	*C/xt No.*
0.30m - 1.10m	Subsoil. Dark yellowish brown (10YR 4/6) very compacted silt with very occasional fluvial gravel inclusions 0.05m+ .	7261
1.10m+	Natural fluvial gravels. Frequent gravel inclusions in a light yellowish brown (10YR 3/6) sandy matrix.	7262
Comments:	Due to Health and Safety considerations, hand excavation was halted at a depth of 0.85m. The lower 0.25m of the subsoil layer 7261 (i.e. from 0.85 - 1.10m below ground level), and the natural gravels were investigated by augering.	

Test pit 727	Plot A	Co-ordinates: 78056 / 52332	Ground level (m OD.): 12.07	Size: 5m x 5m
Depth	*Description*			*C/xt No.*
0 - 0.40m	Ploughsoil. Brown (10YR 4/3) silty clay with occasional flints and fluvial gravel inclusions 0.05m+ and also with a high density of flint artefacts within the layer, as well as the frequent presence of modern domestic artefacts.			7270
0.40m - 0.90m	Subsoil. Dark yellowish brown (10YR 4/6) compact silt with occasional flints and fluvial gravel inclusions 0.07m+ throughout, but with archaeological and modern finds within only the upper 0.15m of the layer.			7271
0.90m+	Natural fluvial gravels and sand. Very frequent gravel inclusions 0.07m+ in a dark yellowish brown (10YR 4/6) silt matrix; with dark yellowish brown (10YR 4/4) fine sand natural with no inclusions, underlying and rising around the mainly gravel natural.			7274
Field drain 7272	A linear modern field drain oriented north-east / south-west, cut through the subsoil (7271) and into the natural (7274). 0.20m wide, 0.50m+ deep and 5.0m+ length exposed in the test pit. Filled with 7273, comprising imported large fluvially-rounded gravel inclusions 0.15m+.			7273

Test pit 728	Plot A	Co-ordinates: 78145 / 52264	Ground level (m OD.): 11.79	Size: 1m x 1m
Depth	*Description*			*C/xt No.*
0 - 0.35m	Ploughsoil. Brown (10YR 4/3) silty clay with occasional flints and fluvial gravel inclusions 0.05m+ along with frequent modern domestic debris inclusions and lenses of decomposing vegetable matter.			7280
0.35 - 0.39m	Subsoil. Dark yellowish brown (10YR 4/6) thin layer of compact silt with very occasional fluvial gravel inclusions 0.05m+.			7281
0.39m+	Natural fluvial gravels. Very frequent gravel inclusions 0.07m+ in a dark yellowish brown (10YR 4/6) silt matrix.			7282

Test pit 730	Plot A	Co-ordinates: 78235 / 52190	Ground level (m OD.): 11.35	Size: 5m x 5m
Depth	*Description*			*C/xt No.*
0 - 0.33m	Ploughsoil. Dark greyish brown (10YR 4/2) silty clay with frequent fluvial gravel inclusions 0.05m+			7300
0.33 - 0.50m	Subsoil. Dark yellowish brown (10YR 4/6) sandy clay with occasional fluvial gravel inclusions 0.05m+. This layer increases in depth from 0.07m on the eastern side of the test-pit to 0.17m on the western side, due to the undulations of the underlying natural gravels.			7301
0.50m+	Natural fluvial gravels. Very frequent gravel inclusions 0.08m+ in a dark yellowish brown (10YR 4/6) silt matrix and frequent iron panning. A central ridge of gravels runs into the southern baulk of the test pit, and this has become stained (to dark brown/ brown 10YR 4/3) due to the thinness of the subsoil over this ridge and resultant leaching from the ploughsoil.			7302

Test pit 731	Plot A	Co-ordinates: 78292 / 52170	Ground level (m OD.): 11.43	Size: 1m x 1m
Depth	*Description*			*C/xt No.*
0 - 0.35m	Ploughsoil. Brown (10YR 4/3) silty clay with frequent flints and fluvial gravel inclusions 0.05m+. frequent modern domestic debris such as CBM. glass. ceramics			7310
0.35m - 0.50m	Subsoil. Brown (10YR 5/3) silty clay with occasional fluvial and flint gravel inclusions 0.05m+.			7311
0.50m - 0.63m	Subsoil. Dark yellowish brown (10YR 4/6) sandy layer with a slightly silty content and occasional fluvial gravel inclusions 0.07m+.			7312
0.63m+	Natural fluvial gravels. Very frequent gravel inclusions 0.07m+ in a dark yellowish brown (10YR 4/6) silt matrix with regular iron panning and concretions.			7313

Test pit 732	Plot A	Co-ordinates: 78063 / 52356	Ground level (m OD.): 11.98	Size: 1m x 1m
Depth	*Description*			*C/xt No.*
0 - 0.34m	Ploughsoil. Dark greyish brown (10YR 4/2) silty clay with occasional flints and fluvial gravel inclusions 0.05m+. Frequent modern refuse, CBM. glass and ceramics. and a thin layer of shredded decaying vegetable matter at 0.15m below the surface.			7320
0.34 - 1.21m	Subsoil. Dark yellowish brown (10YR 4/6) compacted silt with occasional fluvial gravel inclusions 0.05m+ and modern ceramic finds but only in the top 0.20m of the subsoil deposit.			7321
1.21m+	Natural fluvial gravels. Very frequent gravel inclusions in a light yellowish brown (10YR 3/6) sand matrix.			7322
Comments:	Due to Health and Safety considerations, hand excavation was halted at a depth of 0.91m. The lower 0.30m of subsoil layer 7321 (i.e. from 0.91 - 1.21m below ground level). and the natural gravels were investigated by augering.			

Test pit 733	Plot A	Co-ordinates: 78082 / 52330	Ground level (m OD.): 12.11	Size: 1m x 1m
Depth	*Description*			*C/xt No.*
0 - 0.35m	Ploughsoil. Brown (10YR 4/6) silty clay with occasional flints and fluvial gravel inclusions 0.05+ and assorted modern CBM. ceramic and glass domestic inclusions.			7330
0.35 - 0.65m	Subsoil. Dark yellowish brown (10YR 4/6) compact silt with occasional fluvial gravel inclusions 0.05m+ and modern artefacts in the upper 0.20m of the layer.			7331
0.65m+	Natural fluvial gravels. Very frequent gravel inclusions 0.07m+ in a dark yellowish brown (10YR 4/6) silt matrix.			7332

CBM: ceramic building materials (e.g. brick, tile, ceramic field drains)

Soil description of monolith sampled from test-pit 727.

The sequence is described following the pedological notation outline in Hodgson J.M. (1976) *Soil Survey Field Handbook*, Soil Survey Technical Monograph 5.

The profile described is a podozolic/typical brown earth (Avery 1990) over sands;

0 - 33cm Ap (7270) Brown (10YR 4/3*) humic silty clay loam; the sand present is fine. Almost stonefree but with rare medium stones at the base of the plough pan. 0.5% fine macropores, inclusions of straw (ploughed in), sharp smooth boundary.

33 - 67cm E/B (7271) Dark brown (7.5YR 4/2*) stonefree silty clay loam with moderate medium blocky structure, 0.2 - 0.5% very fine macropores, smooth gradual boundary

67 - 80 + cm B\C Brown (7.5YR 5/4*) loose but compacted silty sand with massive structure. A reddish hue indicates iron, but no direct evidence of mobile iron is seen in this of the E/B horizon. Weathered parent material; pedogenically altered.

* all Munsell colours were recorded moist.

Avery, B.W. 1990. *Soils of the British Isles*.

APPENDIX 7.4: STATE OF FIELDS WHEN WALKED

TRAT FIELD NO	CROP	TOPOGRAPHY	LAND STATE	LAND STATE	LAND STATE	LAND STATE	SUBSOIL SHOWING ?	TRAN SECT SPACE	DIRECTION OF WALKING	YEAR WALKED	MONTH WALKED
370A	Cereal	Flat field.	Damp	Sown	Thick/Walkable	Low sunlight	N	10	N-S	92	FEB
371	Ground	Long ,narrow,flat	Dry	Sown/Unweathered	Not through	Even light	N	10	N-S	92	FEB
373A	Cereal	Large flat field.	Damp	Sown	Just through	Even light	N	10	N-S	92	FEB
373B	R	Large flat field.	Damp	Sown	Just through	Even light	N	10	N-S	92	FEB
374	Cereal		Dry	Sown	Just through	Even light/Low	N	10	NW-SE	93	MARCH
375	Cereal		Dry	Sown	Thick/Walkable	Low sunlight	N	10	NE-SW	93	MARCH
370B	Cereal		Dry	Sown	Thick/Walkable	Low sunlight	N	10	N-S	93	MARCH
373B	Cereal		Dry	Sown	Thick/Walkable	Even light	N	10	NE-SW	93	MARCH
FFF 373 + 3 74	Cereal		Dry	Sown	Thick/Walkable	Low sunlight	N	2.5	N-S	93	MARCH

Areas 1000 and 4000, were walked in August-September 1994 where both 'had been ploughed and disc harrowed, presenting a flat surface for walking, and had weathered sufficiently for artefact visibility to be good' Wessex Archaeology 1995, B3.1. Each area was divided into 10m squares, which were then divided by tapes into 2.5 m collection units.

Fig. 1. The proposed road-line in the area of Farndon Fields walked @ 10m transects in 1991-3 (green outline) showing only those lithics attributed to the Late Upper Palaeolithic scatter (key as Figs 2,3), and the extent of Holocene alluvium mapped by the British Geological Survey (1996). The whole area lies between 12m-15m on the OS 1:25,000 mapping, with heights between 10.8m and 12.0m OD within the fieldwalking area of 'total' coverage. The fields identified as permanent pasture from aerial photographs taken between 1933 and 1984 are located.

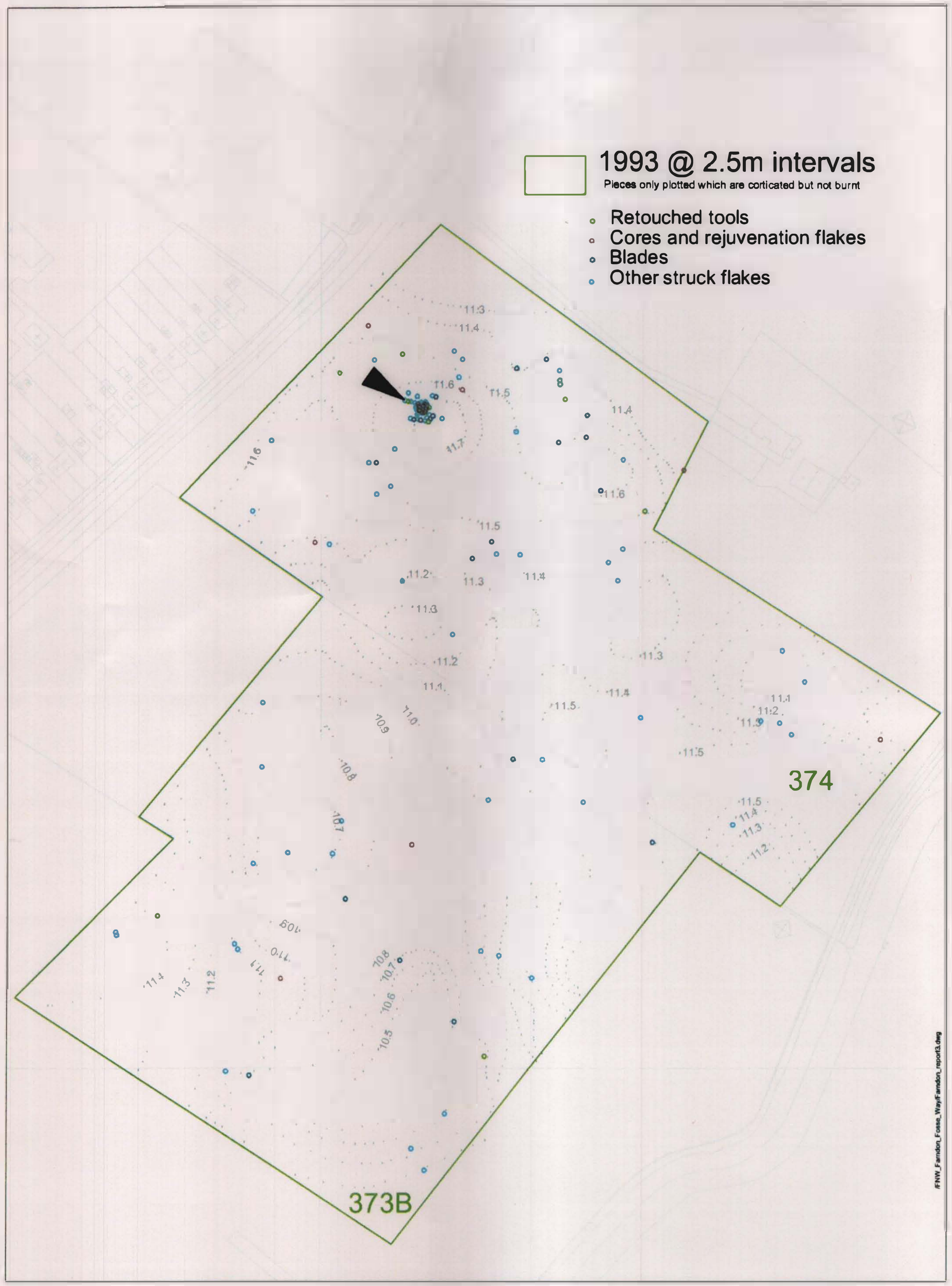

Fig. 2. The fields walked at 2.5m interval transects in 1993 (green outline) with the LUP lithics are categorized by form. The cluster of artefacts referred to in the text is arrowed. The grey dotted form lines are the contours of the subsoil surface at 0.10m interval derived from auger survey in 1994. Scale 1:2500.

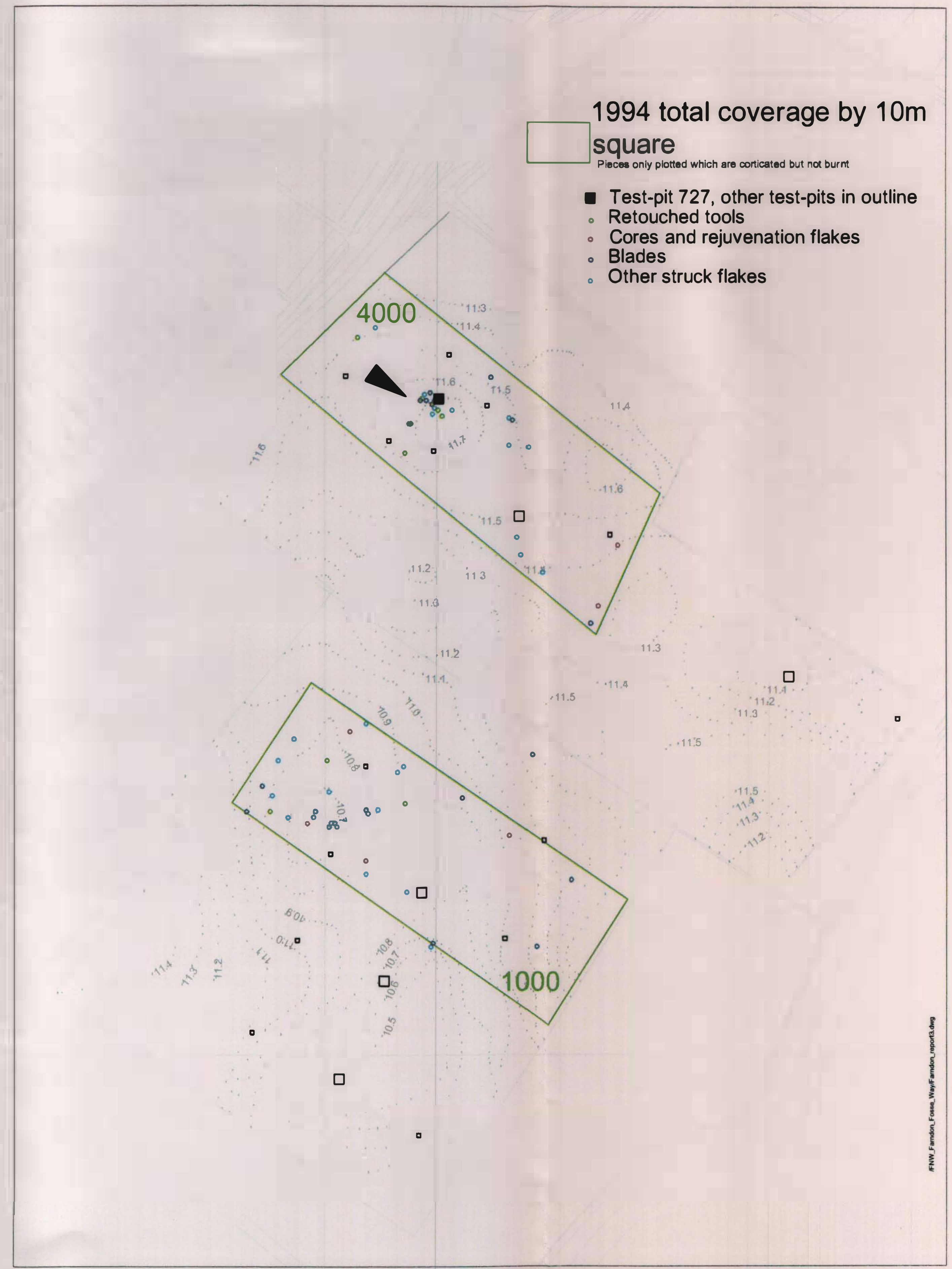

Fig. 3. The areas walked at 'total coverage' in 1994 (green outline) with the LUP lithics are categorized by form. The grey dotted form lines are the contours of the subsoil surface at 0.10m interval derived from auger survey in 1994. The 5x5 and 1x1m test-pits are located. Scale 1:2500.

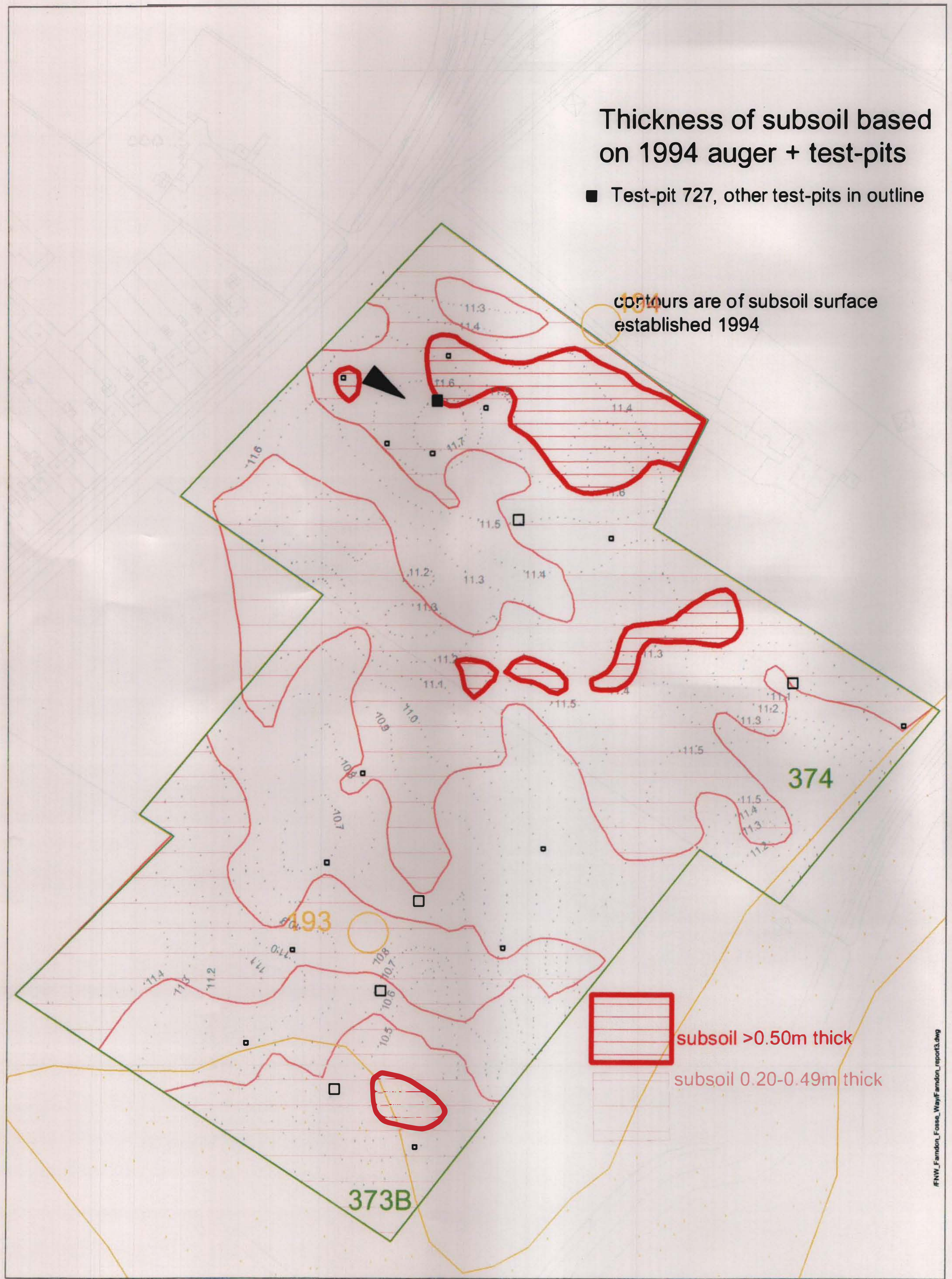

Fig. 4. Summary plan of the thickness of the subsoil and the height of its surface in fields 373B and 374. The darker the red and closer the hatch, the thicker the depth of subsoil. This is plotted against the contours of the surface of the subsoil - grey dotted form-lines. Both data sets derived from auger survey in 1994. The 5x5 and 1x1m test-pits are located. The cluster of LUP flintwork recovered in 1993/4 is arrowed. Scale 1:2500.

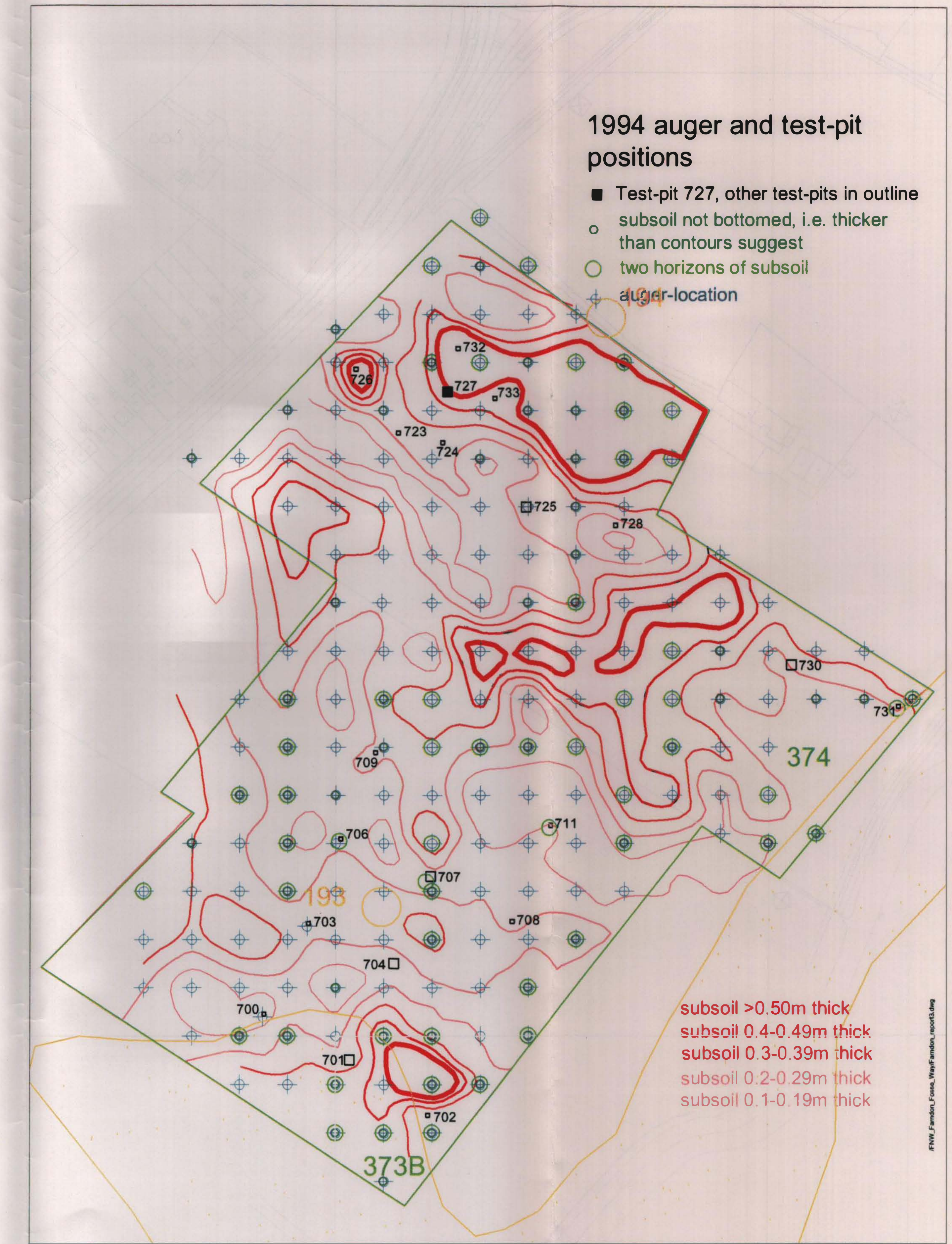

Fig. 5. Location of the auger-holes (blue) and test-pits (black squares - numbered) in fields 373B and 374 from which information about subsoil character, thickness and height is derived. The thickness of the subsoil is plotted by form-lines at 0.10m interval in red. Where the subsoil has at least two horizons (see section 3.3.1), this is indicated by a larger circle, where the complete depth of the subsoil is unknown (section 3.3.1), a smaller circle. Scale 1:2500.