Archaeological
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Complete Till-Tweed Fieldwalking Report

Fieldwalking on Gibbet Hill near Norham

ARS Ltd Report 2005/2
March 2005

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Executive Summary

This fieldwalking survey has focused primarily on gravel terraces in the valleys of the rivers Till (known as the Breamish in its upper reach) and Tweed. A total of 58 fields were walked extending over a combined area of 610 hectares. This produced 2727 stone artefacts together with 92 fragments of pottery, one coin, one button and two pieces of slag. In addition to this work a one metre square test-pit was excavated below a cache of Neolithic-Early Bronze Age flint blades in field 22 which produced an additional 48 large flints and a truncated archaeological feature at the base of the pit. A further 20 one metre square test pits were excavated below a very high density scatter of Mesolithic material in field 33 producing 128 stone artefacts and revealing a stepped linear feature at the base of one of the pits and the ditch fill of a rectilinear enclosure, known from crop marks, was observed in two of the other pits.

The stone tools included diagnostic pieces belonging to the Mesolithic, Neolithic and Bronze Age periods, although some probable Late Upper Palaeolithic and/or Early Mesolithic pieces may also be present. They comprise a wide range of artefact types from struck pebbles, cores, flakes and blades through to finely finished pieces such as scrapers, microliths, arrowheads, retouched, edge-trimmed and utilised flakes, as well as a possible broken quartz macehead. A wide range of raw materials was used for making the various stone implements including flint, agate, chert and quartz. It is a striking feature of this assemblage that it is only Mesolithic pieces that are made from the non-flint materials and that the flint that is used during this period is mostly beach flint. The sea is not far from the Till and Tweed valleys and beach flint would have been easily available to hunter-gatherer groups. In contrast the Neolithic and Bronze Age pieces are made exclusively from flint, which in many cases is high quality material that has been imported across long distances from primary chalk deposits to the south.

Particularly interesting clusters of material were identified throughout the survey area and these can be compared with the crop-mark data from the aerial photograph mapping programme. In field 3 a cluster of lithics were noted around a dried-up palaeochannel suggesting its attraction for early hunter-gatherer groups. An important cluster of crop-marks at Hedgeley/New Bewick also produced an extensive scatter of lithics that included some classic Neolithic and Early Bronze Age material, no doubt associated with pit features and a ring ditch observed on aerial photographs. The Mesolithic material in this area revealed spatial associations with kettle hole features, some of which still contain standing water. At Akeld an impressive collection of Neolithic-Early Bronze Age material was found in a cluster at the north end of field 22 and the test pit here confirmed the existence of buried archaeology where the aerial photographs had otherwise indicated a blank area. This buried archaeology is likely to consist of a Neolithic pit complex similar to those found at Thirlings and Woodbridge, and those in the New Bewick complex. The largest lithic concentration ever found in a surface survey in Northumberland was discovered in field 33 which produced 541 pieces, most of which were in a tight cluster. This scatter was exclusively Mesolithic in date and no doubt relates to early human settlement on the banks of the Tweed. Further important concentrations of material in the Lower Tweed valley include a cluster of lithics on an elevated terrace in field 29 at Wark-on-Tweed where a

crop mark of a possible mortuary enclosure has been recorded on aerial photographs, as well as important clusters of material on the raised terraces in fields 41 and 54 adjacent to crossing points of the Tweed at Norham. Other areas of interest include the high ground on top of subglacial landforms, such as in fields 37, 39 and 45 that appear to have formed foci for activity during later prehistory from the Neolithic through to the Iron Age. It is notable that the lithic densities in some areas of the Tweed are higher than those in the most favoured areas of the Milfield basin. Evaluation and excavation of the Tweed lithic scatters and crop-mark sites remains a key priority for any future regional study.

1. Introduction

This report presents the results of a fieldwalking study focused on the gravel terraces in the river valleys of the Till and Tweed in north Northumberland. This work follows on from an earlier landscape study in the lower reaches of the Till valley that centred on the Milfield basin (Waddington 1999; 2001). It has successfully expanded the field survey dataset allowing for a more accurate and geographically balanced understanding of early human settlement in the region as the coverage extends from the Cheviot foothills and the upper reaches of the river Till downstream to the lower reaches of the river Tweed near to the coast. This provides, conceptually, a transect extending from the Cheviot foothills downstream almost to the coast.

By using landscape zones as the spatial framework for fieldwalking this region an 'ecologically stratified' sampling strategy has been devised to drive both this and the previous fieldwalking project. As the efficiency of a sampling strategy is directly related to the distribution of that which is being sampled the archaeologist is faced with a dilemma: the distribution of that which is being sampled remains unknown until it is sampled. This onerous 'sampling paradox', as Mueller has termed it (1975, 37), requires some prior knowledge of the sampling unit in order to overcome this problem. By systematically sampling known landscape zones, rather than subjectively sampling the unknown extent of human activity, the sampling paradox is to some extent circumvented as the extent and variation of the landscape is known before it is sampled. This approach is particularly useful for the study of hunter-gatherer and mobile farming groups as they are known to use different landscapes and ecological areas in different ways. Therefore, variation in patterns of settlement and land-use throughout the Stone Age can be obtained by collecting surface lithics from across the different geologies (and therefore ecologies) of a given landscape.

This study has focused primarily on the fluvio-glacial gravel terraces that occur along the valley floors of the rivers Till and Tweed as these host the highest density of crop-mark remains, and are the areas most at risk from aggregate extraction. The previous study has included areas of Cheviot slope, sandstone escarpment, alluvial valley floor and areas of boulder clay.

The fieldwalking component of this research was undertaken in order to acquire an 'off-site' archaeological record which would allow consideration of the pattern of past human activity at a landscape scale. It has also provided an opportunity to link archaeological results with specific geomorphological landforms, ecotonal and slope locations that have been mapped within the valley as part of the project (see geomorphological report) as well as the distribution of crop and parch-mark sites observed from aerial photographs.

The fieldwalking results are concerned primarily with lithic artefact scatters as these form by far the vast majority of the finds. Out of a total 2804 surface finds 2723 (97.1%) are lithics, 79 are pottery sherds (2.8%), together with two pieces of slag, one coin and one button. All the pottery consisted of small sherds, most of which were body sherds with only the occasional fragment of base, rim and

handle. There was one tiny piece of prehistoric pottery, probably belonging to the Grimston Ware series, from field 22 and two fragments from field 29 that could be late prehistoric or early medieval pottery. The fragment of Grimston Ware was found at the north end of field 22 where a discrete concentration of Neolithic flints were discovered that included a leaf-shaped arrowhead, scrapers, serrated blade and a cache of Neolithic flints redeposited on the surface from a truncated feature below. The existence of the feature was proven by the excavation of a small test-pit below the cache and this produced an additional 48 Neolithic flints, as well as a buried feature that contained a silty fill with charcoal flecks (see below for further details). The feature was not excavated. Of the other pottery finds two others could also be prehistoric, one is early medieval, 39 are medieval and 6 possibly medieval, 25 are post-medieval and 14 possibly post-medieval while 6 remain unclassified. It was notable that five of the medieval pieces were found in the vicinity of Crawley Tower, a derelict medieval tower house that was sacked by the Scots. This material, from fields 3, 4, 5 and 6, together with the coin from field 3, could have resulted from manuring and or the disposal of refuse around the settlement. Another possibility is that it may have resulted from the plundering and burning of the site when it was sacked. Three sherds of probable medieval pottery was recovered from fields 24 and 27 which are adjacent to the medieval settlement of Wark-on-Tweed where the well-preserved earthworks of a medieval castle survive at the end of a glacial esker. Medieval and post-medieval sherds were recovered in quantities from fields 41, 43, 52, 53 and 54 at Norham which is home to a famous medieval castle and church, with much of the village retaining its medieval street pattern, including burgage plots. These fields lie between the church and the river and its old bridging points and the pottery spreads no doubt reflect a focus for medieval settlement on what is now the edge of the modern village.

2. Method Statement

The fieldwalking was undertaken during October-November 2003 and October 2004. All fields were line-walked at 5m intervals giving a *c*.40% coverage based on the assumption that walkers inspect the ground 1m either side of themselves (see Tolan-Smith 1997, 80). The only exception to this was field 22 which was walked at 2m intervals (*c*.100% coverage) as this area is to be fully surface stripped in advance of aggregate extraction. All walkers were asked to keep to this range of visibility to ensure consistency throughout the survey. Every find spot was point referenced with a total station and the field boundaries surveyed so that the field surveys could be related to the Ordnance Survey grid. Every field was also mapped by slope unit (morphometric mapping) so that each find spot could be ascribed to the type of slope unit in which it occurred. The slope units, which consist of areas of steep slope, moderate slope, flat, and so on are based on those devised during the previous fieldwalking project (Waddington 1999, 45-6), which were abstracted from the standard slope types identified by Butzer (1982, 58). Slope type has important implications for the interpretation of surface artefact distributions as geomorphic processes operating on different slope units will affect lithic distribution and retrieval in different ways (Waddington 1999, 85-91; Waddington and Passmore in press). These processes need to be taken into account before meaningful inferences can be made. However, it is noteworthy that in the case of this study many of the fields were relatively flat gravel terraces, and these experience least in the way of artefact movement and redeposition.

Figure 1. Fieldwalking across field 11 at New Bewick at 5m intervals.

3. Assemblage Chronology

Surface lithic scatter assemblages are typically characterised by their lack of dating control with usually only a small fraction of the material collected being chronologically diagnostic. Furthermore, this lack of temporal integrity is compounded by diagnostic lithics being only datable to very broad time periods which usually span several millennia rather than just a few centuries. Therefore, with the few artefacts that are diagnostic only being able to be ascribed to periods such as 'Mesolithic' or 'Neolithic' the chronology of lithic scatter assemblages is usually very coarse-grained. The type of patterning that is represented by fieldwalking data is frequently the sum of past human behaviour over a long period rather than simply the reflection of a short-lived event or occupation, although occasionally discrete assemblages do occur. However, such discrete assemblages can only usually be confirmed by recourse to excavation. Most fieldwalking assemblages tend to be an accumulation of material formed over a sustained period as a result of multiple human activities over time. In this sense fieldwalking assemblages often represent a form of archaeological palimpsest providing a view of, often, repetitious human behaviour over the *longue durée*. However, because there are generally few datable artefacts, and those that can be dated are only specific to a broad period, the archaeological palimpsest can only be divided up into very broad time slices. This has important consequences as it predicates, to some extent, the sort of questions that can be asked of the data and the sort of inferences that can be reasonably made. Therefore, questions which require detailed chronological information are often unable to be satisfactorily answered. This means that for the most part the sort of information that can be gained from surface lithic assemblages is pitched at the scale of long-term history rather than that of short term events. Accordingly it is the broad patterns produced by these largely cumulative records which can provide useful and pertinent insights, particularly within the context of landscape-scale studies.

Occasionally lithic scatters belonging to a specific occupation occur, as was the case with the lithics recovered from mole hills and an eroding cliff edge at Howick (Waddington *et al* 2003). In this case the archaeological deposits from which the flints had been eroded were able to be very accurately dated which proved that the 13,000 plus flints belonged to a *c*.150 year episode of occupation centred on a hut site. However, in most cases this kind of evidence is unavailable for lithic scatters and therefore it is difficult to test how long the duration of occupation was at any given lithic scatter site. Those sites that could be representative of a short or discrete phase of occupation are likely to have lithics diagnostic of one period only, with repetition of the same tool types, together with a reliance on the same raw material source.

There are some possible Palaeolithic pieces in the assemblage suggesting a much longer time-depth to human occupation in the north than has previously been thought. There are a number of Mesolithic pieces made on previously chipped, patinated, and in some cases beach-rolled flint that has evidently been collected from the coast. This provides proxy evidence for Palaeolithic occupation in areas off what is now the Northumberland coastline and this key observation

supports the recognition of the same phenomenon that has been made in relation to the Mesolithic material from Howick (Waddington 2003) and Middle Warren near Hartlepool (Waddington 1996). However, in a new departure some of the agates that have been re-chipped as cores also show evidence for previous chipping, having subsequently acquired patinas before their re-chipping episode in the Mesolithic. As the agates come from secondary glacial gravel deposits on land this indicates the presence of earlier, presumably Palaeolithic, activity further inland and not just in areas off what is now the North-East coastline.

As is typical for many fieldwalking assemblages the majority of the diagnostic lithics identified in this assemblage belong to the Mesolithic (see Table 1). A total of 419 lithics could be characterised as Mesolithic representing 15.4% of the total assemblage. Of these none could be definitively identified as early Mesolithic in date, and most were the product of a blade-based manufacturing tradition. However, this does not mean to say that a number of these are not of early Mesolithic date. As many are made from agate and chert (see below) these forms have yet to be dated in the North-East, and it is therefore conceivable that the Mesolithic material spans the full range of the period.

Period	**No. of Diagnostic Flints**	**% of the Assemblage**
Palaeolithic/Early Mesolithic ?	13	0.5%
Mesolithic	419	15.4%
Mesolithic/Neolithic	67	2.5%
Neolithic	28	1.0%
Neolithic/Early Bronze Age	23	0.8%
Early Bronze Age	9	0.3%
Early Modern	1	-
Total	**560**	**20.5%**

Table 1. Frequency of datable lithics in the Till-Tweed assemblage (not including possibles except in the case of the Palaeolithic/Early Mesolithic category).

Some of the blade-based lithics clearly belong to either the Mesolithic or Neolithic but are not sufficiently diagnostic to be confidently ascribed to one or other of the periods. These pieces form the 'Mesolithic/Neolithic' group (Table 1) which account for 2.5% of the assemblage. Neolithic pieces account for 1.0% of the assemblage while Early Bronze Age pieces account for just 0.3%. Those pieces that could belong to either the Neolithic or Bronze Age account for a further 0.8% of the assemblage. A single gun flint accounts for the one early modern piece of flintwork.

4. Fieldwalking Results

Distribution and Density

A total of 58 fields were walked as part of this study covering a total area of 609.8 hectares. All the fieldwalking was undertaken at 5m intervals with the exception of fields 15 and 22 that were walked at 2m intervals, the latter two providing 100% surface coverage. The tables below include an adjusted density per hectare column and this gives the density for each field assuming a 100% surface coverage. For those fields walked at the 5m interval, which equates to a 40% coverage, the actual number of finds is multiplied by 2.5 to give a notional 100% coverage figure and this number is divided by the area of the field to produce this density statistic. Although the raw counts and densities are also given in the table this notional 100% coverage statistic is useful as it allows surface densities from all fields within this study to be compared, as well as allowing for comparison to be made with other studies from the region where different interval spacings have been used.

Figure 2 below summarises the results for every field providing spatial information, density counts, chronological associations and a broad summary of the artefact types found. This table has been constructed in the same format as those used for the previous Milfield study (Waddington 2001) and for the Durham Archaeological Survey (Haselgrove and Healey 1992) allowing the results from these different studies to be compared.

The lithic densities from this study have a vast range varying from 0.0 per ha in field 49 to a massive 198.9 per ha in field 33. However, almost half the fields produced counts of between 5 and 11 lithics per ha which is high in relation to other regional studies in the North-East (see table 2 below). A total of 20 fields have 100% densities below 5 per ha, 27 have densities between 5 and 11 per ha, 7 have between 11 and 21 lithics per ha, 4 have between 21 and 36 lithics per ha, and one field has the huge total of 198.9 per ha. For a regional survey these counts are generally very high indicating a high density of Stone Age activity in this area compared to many other parts of the North-East region. One reason for this is that this study focused on the raised gravel terraces which, being free-draining and above the flood limits of the rivers, are extremely attractive for prehistoric settlement. This is also borne out by the high concentration of crop and parch-mark sites found on these surfaces.

Field	NGR	Parish	cological Zor	Field Size (ha.)	Count per ha (actual)	Count per ha. adjusted x 2.5 to 100%	Struck Pebbles	Cores	Flakes	Blades	Retouched/ Utilised Pieces	Other	Periods	Total Lithics
1	NU07101650	Hedgeley	Gravel Terrace	5.1	4.1	10.3		7	9	2	3		mes	21
2	NU07401665	Hedgeley	Gravel Terrace	8.2	0.4	0.9	1		2					3
3	NU07501640	Hedgeley	Gravel Terrace	9.3	2.4	5.9	1	3	13	1	4	1 pot, 1 coin	s, eba, med, pı	22
4	NU07101640	Hedgeley	Gravel Terrace	6.8	3.1	7.8		2	6	3	10	2 pot	mes, med	21
5	NU06901635	Hedgeley	Gravel Terrace	3.2	2.8	7.0		2	3	1	3	2 pot	nes, eba, mec	9
6	NU06701640	Hedgeley	Gravel Terrace	3.7	3.2	8.1		2	6	1	3	2 pot	mes, med	12
7	NU07651670	Hedgeley	Gravel Terrace	8.7	3.8	9.5		3	19	4	7		mes	33
8	NU08401865	Hedgeley	Gravel Terrace	7.1	3.0	7.4	1	3	10	2	5		mes	21
9	NU05402045	Hedgeley	Gravel Terrace	13.3	3.2	8.1	1	5	21	6	10	1 pot	nes, neo, mec	43
10	NU05502075	Hedgeley	Gravel Terrace	12.5	5.4	13.6		7	51	2	8	2 pot	nes, post med	68
11	NU06102065	Hedgeley	Gravel Terrace	14.3	1.7	4.4			14	3	8	1 pot	neo/eba, post	25
12	NU05802085	Hedgeley	Gravel Terrace	16.9	1.8	4.4		5	15	3	7		mes, neo, eba	30
13	NU07601845	Hedgeley	Gravel Terrace	7.2	0.8	2.1	1		4		1			6
15	NU03152985	Chatton	Gravel Terrace	7.6	5.5	5.5	1	6	16	6	13		pal?, mes, neo	42
16	NU07652100	Bewick	Gravel Terrace	12.9	7.1	17.8		5	62	7	18	1 pot	s, neo, post m	92
17	NU07352105	Bewick	Gravel Terrace	11.2	2.6	6.5			20	5	4		mes, neo?	29
18	NU05402015	Bewick	Gravel Terrace	14.2	3.1	7.8	1	3	27	2	11		mes, neo, eba	44
19	NU05702000	Bewick	Gravel Terrace	17.6	3.0	7.4		3	34	8	7		mes, neo, early n	52
20	NU06002000	Bewick	Gravel Terrace	16.2	1.0	2.5		1	7	3	5		mes, neo, eba	16
21	NU05002015	Hedgeley	Gravel Terrace	9.3	5.4	13.4		1	32	10	7	2 pot	neo, eba, post	50
22	NT95403130	Akeld	Gravel Terrace	32.8	5.1	5.1		22	70	22	52	3 pot	neo, eba, post	166
23	NT94703440	Ford	Gravel Terrace	16.0	2.6	6.4		4	27	2	8	2 pot	neo/eba, post	41
24	NT95903520	Ford	Till	20.6	1.8	4.6		2	23	1	12	2 pot	es, neo?, mec	38
25	NT95803040	Akeld	Alluvium	4.9	1.0	2.7		3	5	1	4		mes, ba?	13
26	NT84503825	Carham	Alluvium	5.7	8.2	20.6	1	3	35	4	4	1 pot	nes, post med	47
27	NT84253830	Carham	Alluvium	13.3	1.4	3.6			15		4	3 pot	s, med, post n	19
28	NT83953850	Carham	Alluvium	12.8	2.6	6.4		4	24	2	3	1 pot, 1 button	es, post med,	33
29	NT83203850	Carham	Gravel Terrace	17.1	11.0	27.5	1	19	118	20	30	3 pot	neo?, med, pos	188
30	NT87054225	Cornhill	Gravel Terrace	5.6	2.3	5.8		2	7	1	3	1 pot	neo?, eba?, r	13
31	NT92703035	Kirknewton	Gravel Terrace	11.0	2.7	6.8		10	12	1	7		mes	30
32	NT86904245	Cornhill	Gravel Terrace	16.0	14.1	35.3		19	126	54	27		mes, neo?	226
33	NT86904245	Cornhill	Gravel Terrace	6.8	79.6	198.9	1	39	378	82	41		mes, eneo?	541
34	NT82003860	Carham	Gravel Terrace	9.7	11.4	28.6		9	72	15	15		mes, neo	111
35	NT82903810	Carham	Gravel Terrace	8.1	3.5	8.6		1	14	8	5		mes	28
36	NT82533820	Carham	Gravel Terrace	5.7	1.6	3.9		2	5		2		mes	9
37	NT90304520	Norham	Gravel Terrace	8.6	4.7	11.8	3	6	21	5	5		pal/mes, mes, er	40

40	NT90404490	Norham	Till	6.2	0.7	1.8			3		1			4
41	NT89404730	Norham	Gravel Terrace	10.1	4.7	11.8	1	4	30	3	9	22 pot	mes, med	47
42	NT91054660	Norham	Till	Field Aborted				1	2		1			4
43	NT89804750	Norham	Gravel Terrace	4.7	0.2	0.5			1			8 pot	post-med	1
44	NT91704740	Norham	Gravel Terrace	14.0	2.5	6.3		11	13	2	9		pal?, mes, neo	35
45	NT91104610	Norham	Gravel Terrace	17.6	3.4	8.5		11	31	7	11	pal/mes, mes, neo, early-m		60
46	NT91104770	Horncliffe	Gravel Terrace	11.4	0.0	0.0								0
47	NT91204780	Horncliffe	Gravel Terrace	8.6	3.5	8.8	1	10	8	2	9	5 pot	mes, medieva	30
48	NT91004810	Horncliffe	Gravel Terrace	10.6	2.5	6.3	1	3	14	4	4	2 pot	mes, medieva	26
49	NT90804910	Horncliffe	Alluvium	7.0	0.0	0.0								0
50	NT91204940	Horncliffe	Alluvium	15.5	0.2	0.5			2		1	1 pot	es/neo, mediev	3
51	NT91504850	Horncliffe	Gravel Terrace	15.6	0.9	2.3	1	1	9		3		mes, mes/neo	14
52	NT89604730	Norham	Gravel Terrace	2.0	2.5	6.3		2	3			11 pot	s, med, post-m	5
53	NT89504750	Norham	Gravel Terrace	5.9	0.8	2.0			5			1 slag		5
54	NT89304700	Norham	Gravel Terrace	9.6	16.0	40.0	1	32	75	19	26	1 slag	s, neo, eba? M	153
55	NT92704930	Horncliffe	Gravel Terrace	9.0	3.7	9.3		5	22	2	4		mes, neo/eba	33
56	NT92304920	Horncliffe	Gravel Terrace	7.3	0.8	2.0			6					6
57	NT92504880	Horncliffe	Gravel Terrace	8.1	1.5	3.8	1	2	5	2	2		mes	12
58	NT92104930	Horncliffe	Alluvium	6.0	3.2	8.0		2	12	1	4		mes, eba	19
59	NT92904880	Horncliffe	Gravel Terrace	5.0	1.0	2.5	1	1	2		1		mes	5
60	NT94305000	Horncliffe	Gravel Terrace	12.9	1.5	3.8		6	6	4	3		mes, eba	19
Total				609.8	4.5	11.3	20	302	1607	340	458			2727
33	Test Pits	Cornhill	Gravel Terrace					11	85	19	13		mes	128
22	Test Pit	Ewart	Gravel Terrace					1	18	4	25		neo, eba	48

Project/Location	Average Adjusted (100%) density per ha.	Reference
Coastal Surveys		
Maiden's Hall, Northumberland coast	51.8	Archaeological Practice 2001
East Durham and Cleveland Coast	13.0	Haselgrove and Healey 1992, 6
Howick, Northumberland coast	11.9	Waddington 2000
Middle Warren, Durham coast	11.8	Archaeological Practice 1996, 5
Turning the Tide, Durham Coast	10.9	ASUD 1998
Inland Surveys		
Till-Tweed	11.3	This survey
Lower Tyne Valley	10.0	(calculated from) Tolan-Smith 1997, 82
Milfield Basin, Northumberland	4.9	Waddington 2001
Middle Tees Valley	3.1	Haselgrove and Healey 1992, 14
East Durham Plateau	0.6	Haselgrove and Healey 1992, 4
Tees Lowlands	0.3	Haselgrove and Healey 1992, 13
Wear Lowlands	0.3	Haselgrove and Healey 1992, 3

Table 2. Lithic counts per hectare from other North-Eastern fieldwalking surveys.

The fieldwalking took place around 13 locales in the Till-Tweed catchment (Fig. 3). In the Till catchment these locales were centred around Crawley Farm, Beanley, Hedgeley-Bewick, Mains Hill, Akeld and Kimmerston. In the Tweed catchment the locales were focused around Wark-on-Tweed, St. Cuthberts Farm, West Newbiggin Farm, Norham, Norham West Mains, Norham East Mains and Horncliffe. Table 3 below charts the quantities of lithics, areas covered and the density per hectare at each. The average adjusted density for the entire survey is 11.3 lithics per hectare which is the highest count for any inland study in the North-East region.

Locale	No. Fields	Area (ha.)	Total No. Lithics	Density per ha.	Density per ha adjusted to give notional 100% coverage (Total X 2.5)
Crawley Farm	7	45.0	121	2.7	6.7
Beanley	2	14.3	27	1.9	4.7
Hedgeley-Bewick	10	138.4	449	3.2	8.1
Mains Hill	1	7.6	42		5.5
Akeld	3	48.7	209		5.2
Kimmerston	2	36.6	79	2.2	5.4
Wark-on-Tweed	7	72.4	435	6.0	15.0
St. Cuthberts	3	28.4	780	27.5	68.7
West Newbiggin	5	55.1	168	3.0	7.6
Norham	5	32.3	211 (+4 from field 42)	6.5	16.3
Norham East Mains	7	82.7	108	1.3	3.3
Norham West Mains	5	35.3	75	2.1	5.3
Horncliffe	1	12.9	19	1.5	3.7
Total	**58**	**609.7**	**2727**	**Av. 4.5**	**Av. 11.3**

Table 3. Densities by fieldwalking locale.

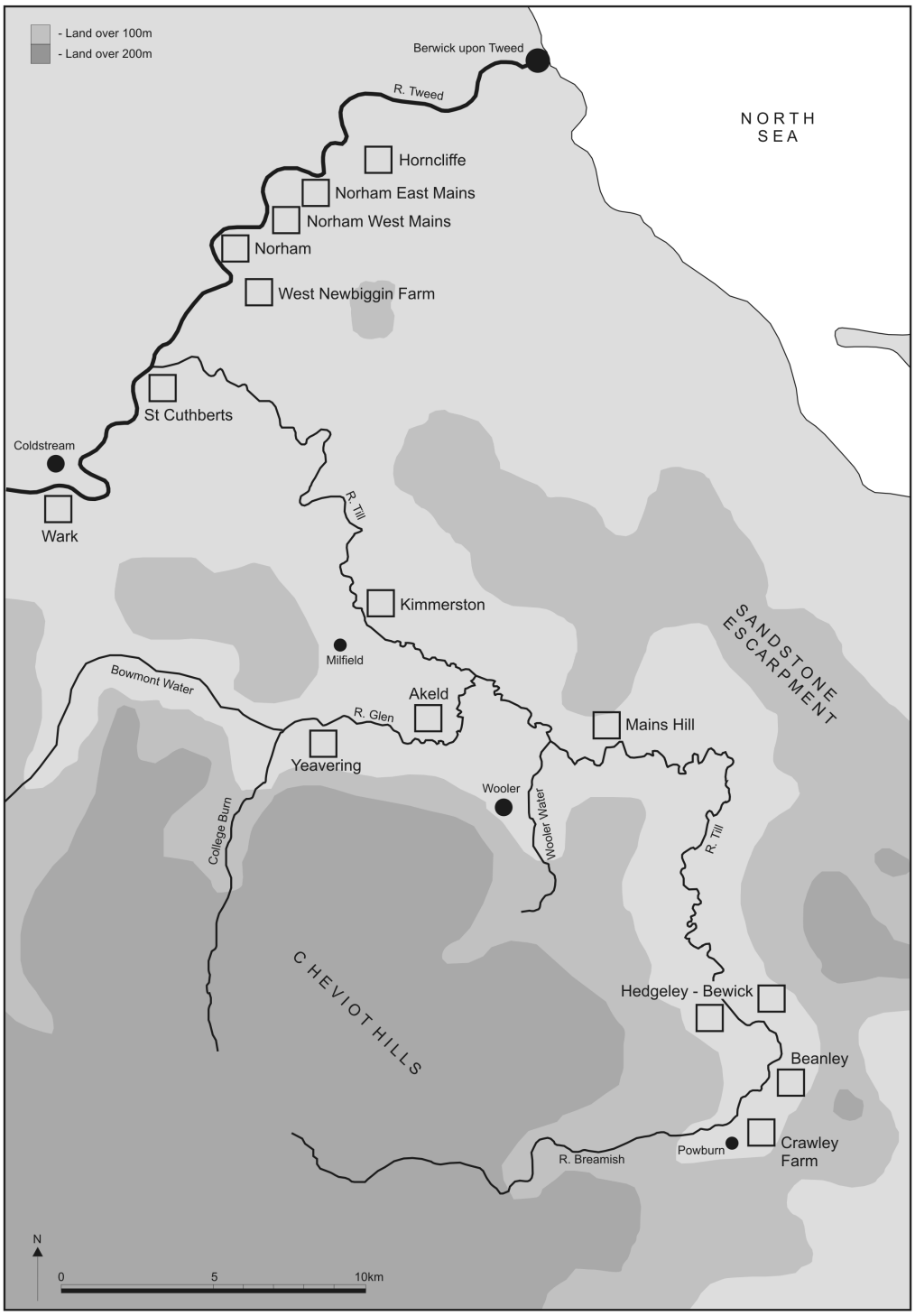


Fig. 3 Fieldwalking locales in the Till-Tweed catchment

The following maps (Figs. 4-17) show the location of each locale and the fields walked. Plots showing the findspots and slope mapping in each field are contained in the project archive.

Crawley Farm (Fields 1, 2, 3, 4, 5, 6, 7)
This area is located on high ground on the south side of the river Breamish (the name for the river Till in its upper reaches) above Powburn (Fig. 4). The ground slopes away from a high point of 160m to plateau areas between 140m and 150m. This block of land is formed from glacial gravels that have been modified by subsequent fluvial action. The artefact scatters on this local upland were most dense in fields 1 and 7 which had lithic densities of 10.3 and 9.5 artefacts per hectare respectively. Of particular note, however, was a concentration of material in the western half of field 3 around an ancient streambed. The streambed was recognisable as a linear depression on the ground surface extending to a currently active stream set in a very steeply incised valley. The streambed also had a much darker organic soil along its length compared to the surrounding light brown soil in the rest of the field. A concentration of lithic material was identified around this old streambed and included scrapers and cores belonging to the Mesolithic.

The lithic material from this area included many artefacts made from agate and chert as well as those made from flint. Most of the datable material belongs to the Mesolithic but an unexpected early Bronze Age component was also evident. This was identified by the presence of two fine Bronze Age thumbnail scrapers made from high quality flint as well as an edge-trimmed flake and some other probable Bronze Age scrapers. Some medieval pottery was found in these fields together with a coin from field 3. This material no doubt relates to the occupation of Crawley Tower, a defended towerhouse now occupied by Crawley Farm.

Beanley (Fields 8, 13)
The two fields surveyed at Beanley were located closer to the valley floor than those at Crawley Farm, lying between 75m and 120m above Ordnance Datum (Fig. 5). Field 8 had quite a high concentration of material overall having an adjusted lithic count per hectare of 7.4. In comparison field 13 was very low having an adjusted density of just 2.1. All the diagnostic material from field 8 was Mesolithic and included a high proportion of tools that included edge-trimmed blades and flakes.

Hedgeley-Bewick (Fields 9, 10, 11, 12, 16, 17, 18, 19, 20, 21)
The fields between Hedgeley and Bewick form the largest block of this survey and, with the exceptions of fields 16 and 17, are positioned on a defined gravel terrace with steep sides and which contains relict ice-wastage features in the form of in-filled kettle holes and others that still contain standing water (Fig. 6). These features appear to be associated with past human settlement as crop

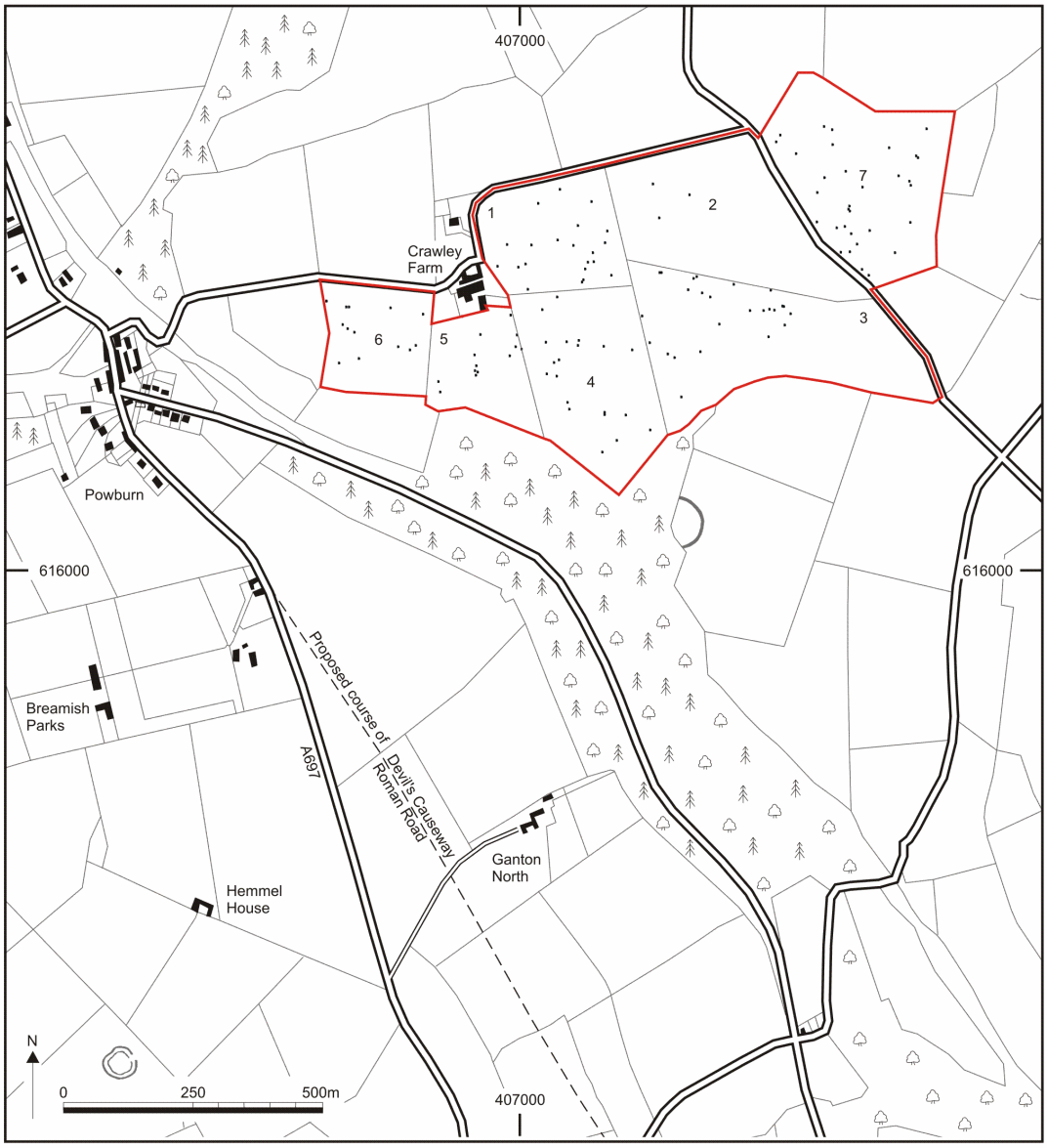


Fig. 4 Crawley Farm (Fields 1, 2, 3, 4, 5, 6 and 7)

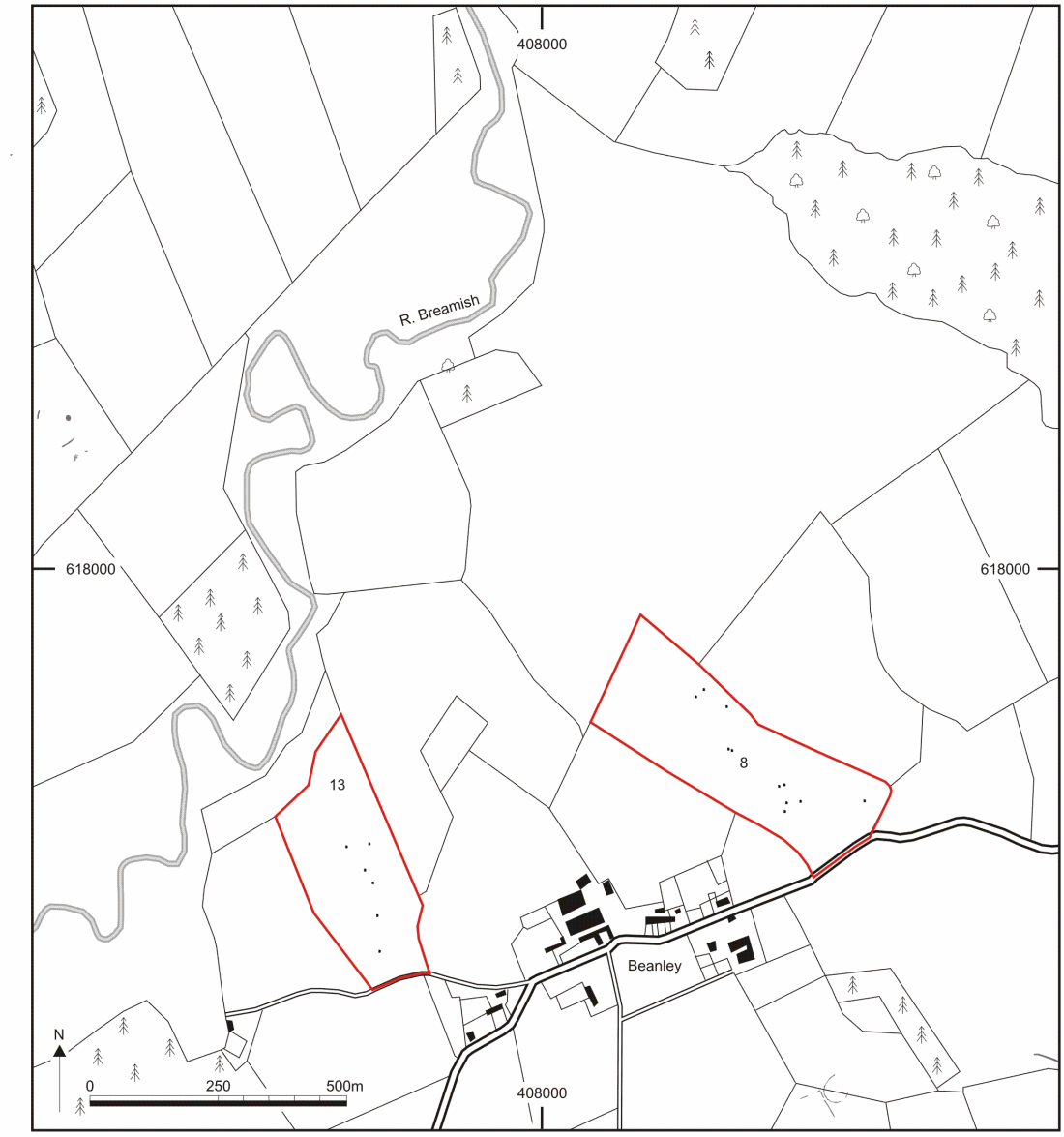


Fig. 5 Beanley (Fields 8 and 13)

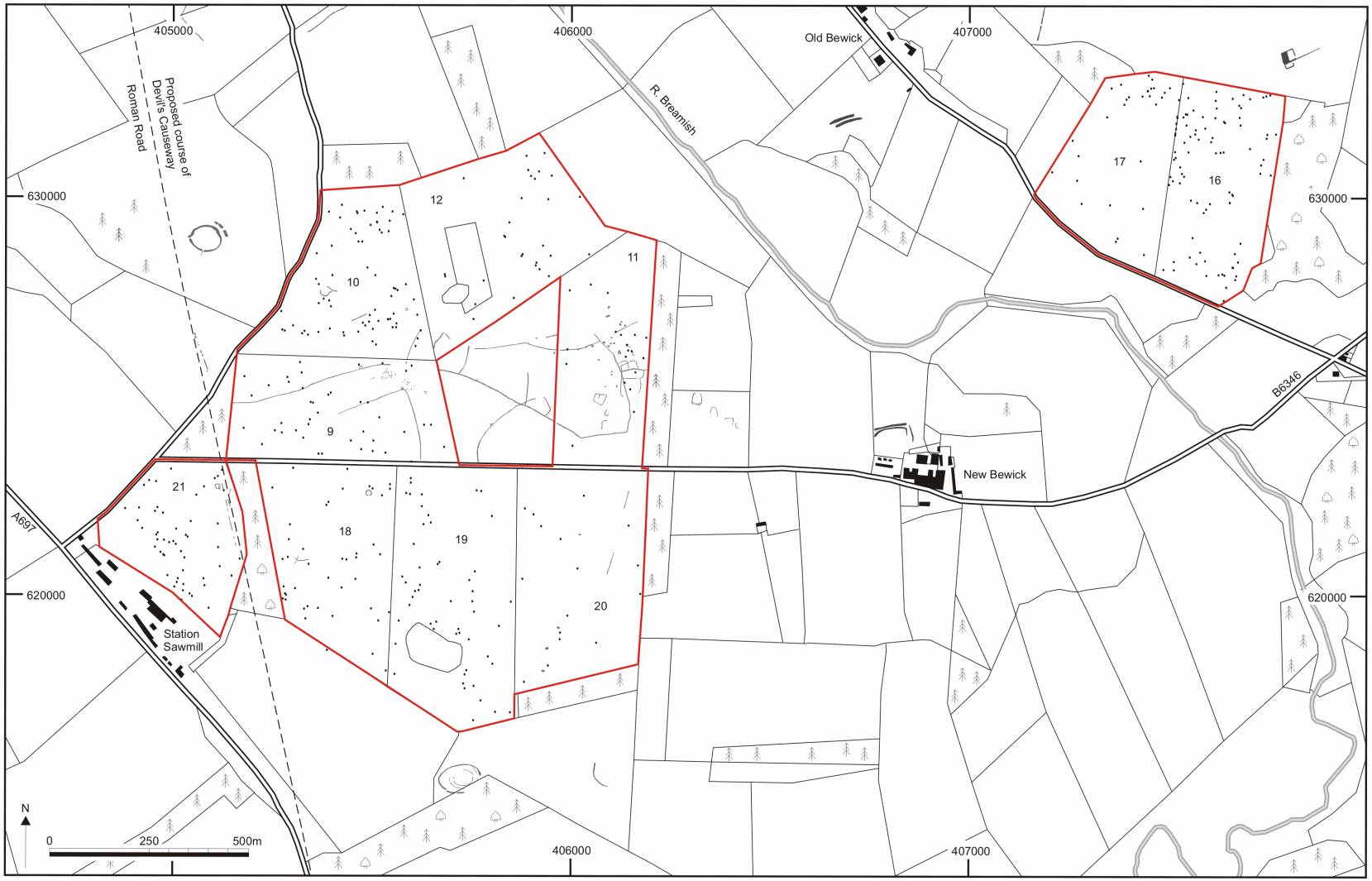


Fig. 6 Hedgley and Bewick (Fields 9, 10, 11, 12, 16, 17, 18, 19, 20 and 21)

marks of a boundary feature show an entrance way opening out immediately opposite the standing water in a kettle hole in field 12. The implication is that this pool of standing water was used as a watering hole for stock. Elsewhere a lithic scatter that included Mesolithic material was observed associated with an in-filled kettle hole in field 18 and another scatter with Mesolithic material was observed around a kettle hole in field 19 that still contains standing water. A backed blade 'narrow blade' microlith was also found in field 19. Mesolithic material was found across the entire area suggesting that hunter-gatherer groups found this area of free-draining terraces close to the river attractive for settlement.

Fig 7. The kettle hole in field 12 with Old Bewick Hill in the background.

The crop-mark evidence for this terrace system is particularly impressive and includes a series of pit features in field 9, together with linear boundary features that extend into the surrounding fields. There is also a ring ditch feature in field 18 as well as Grubenhaüser in field 11. It is interesting to note that a Neolithic component was recognised in the assemblage from field 9 and it is thought likely that this material may relate to the pit features identified on the aerial photographs in this same field. Clusters of Neolithic pits have been found elsewhere on the gravel terraces in this river system such as those sites at Woodbridge (Waddington 2000a), Coupland (Waddington 1999), Thirlings (Miket 1987) and probably at Akeld (see below field 22). A particularly fine end scraper made from high quality flint was recovered from field 9 in pristine condition suggesting that the ploughing of this area continues to disturb finds from buried and truncated archaeological features. A leaf-shaped arrowhead was found in field 20 while retouched blades were found in fields 9, 12, 16, and 21 and Neolithic scrapers in field 11.

Bronze Age activity is evidenced in this area not only by the presence of the ring ditch feature in field 18 but also by a barbed and tanged arrowhead that was found immediately next to a small in-filled kettle hole that extends below the modern road at the northern edge of the field. In field 11 and 20 some thumbnail scrapers that are most likely to be Bronze Age were also recovered, together with

an arrowhead tip from field 20, and a broken arrowhead segment from field 19, both being either Neolithic or Bronze Age in date.

Evidence for early medieval activity is known in this area from the crop-mark evidence for sunken featured buildings (Grubenhaüser) and the subsequent excavation of one of these sites by Gates and O'Brien (1988). A few isolated fragments of medieval and post-medieval pottery were recovered from fields 9, 10, 11 and 16.

Fields 16 and 17 were located on steeply sloping hillsides below Old Bewick hillfort which have experienced accumulation of fluvio-glacial gravel material on top of the underlying Fellsandstone hard geology. Field 16 produced a high density of lithics giving an adjusted count per hectare of 17.8 compared to 6.5 for field 17. Concentrations of material can be identified in field 16, particularly around localised areas of level ground on the slope. Whether this is the result of slopewash processes transporting material on to these flat areas or a reflection of the location of past human activities remains uncertain, although the former is considered more likely. Most of the material on the steep slopes are artefacts that are in the process of being moved downhill. Therefore, their presence is a reflection of past activity that took place higher up the slope at the base of the crags upon which Old Bewick hillfort stands. This is a commanding location and Old Bewick hilltop commands panoramic views across the valley to the Cheviots. Cup and ring marked rocks are located on the top of Old Bewick hill together with stone cairns. A Grimston Ware series bowl, now in the British Museum, is likely to have come from one of these cairns so there is clear evidence for Neolithic activity in this area of landscape. Some of the lithics from field 16 are likely to be Neolithic in date while there is also a Mesolithic presence in the assemblage from this field.

Mains Hill (Field 15)

The fieldwalking in field 15 at Mains Hill near Horton encompassed two areas: one in an area designated for gravel extraction on the top of a bluff overlooking a natural crossing point of the river Till, and a second on a flat area of alluvial river terrace below (Fig. 8). Lithic tools typical of the Mesolithic period were recovered from the area on the gravel bluff with concentrations recognisable on the east, more sheltered, side. A small number of undiagnostic lithics were recovered from the lower area and were widely spread. The lithics from the latter area are likely to have arrived in their respective locations as a result of slopewash and are unlikely to represent sub-surface archaeology, particularly as this area is alluviated.

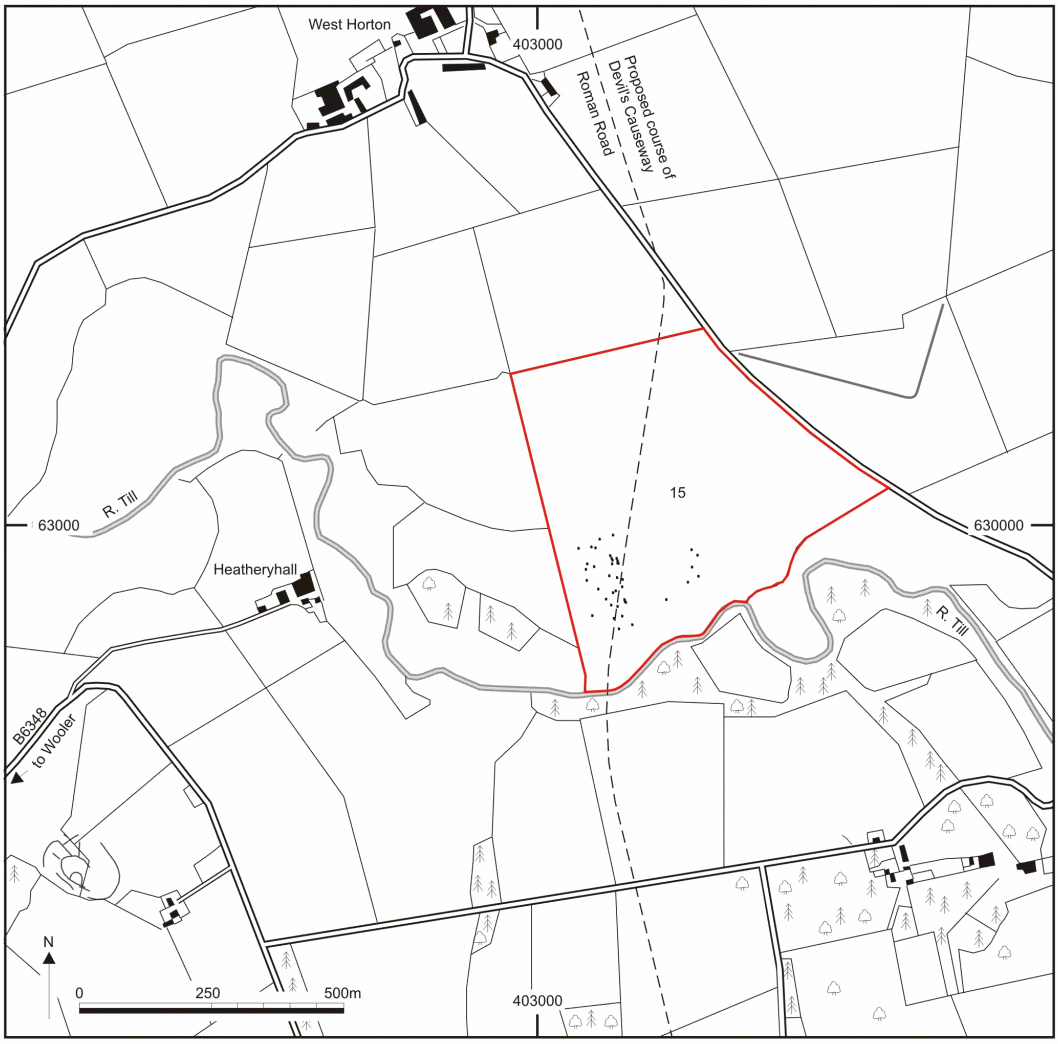


Fig. 8 Mains Hill (Field 15)

Analysis of aerial photographs show the existence of a Roman temporary camp in the fields immediately east of the extraction area. This corresponds with the Ordnance Survey suggested course of the Roman Road known as the Devil's Causeway. It is likely that the course of the road ran directly through the area designated for extraction. No surface trace of this road could be observed although there is a natural hollow on the ridge that may have been exaggerated by its use as a roadway.

Akeld (Fields 22, 25)

Field 22 is located on a gravel terrace above the river Till with views to south, east and west at an elevation of 50m above OD (Fig. 9). It forms an area designated for sand and gravel extraction by Tarmac and is likely to be removed in its entirety over the next 8 years. A total of 166 lithics were recovered from the ploughed field surface (see Fig. 2). There is a very clear cluster of finds in this field at its northern end which includes many Neolithic-early Bronze Age pieces as well as Mesolithic material. As the field is very large the overall density for the field is medium to low when compared with other fields in this survey. However, if the concentration of material at the north end of the site is taken on its own, and bearing in mind also the quality of the flintwork, then this cluster of material has a very high density and it constitutes one of the best assemblages of Neolithic material so far discovered in the county. Occasional clusters of Neolithic material were located away from this main concentration but the density of Neolithic finds falls off sharply. With only one diagnostic Neolithic piece in the southern area of the site this reinforces the view that the Neolithic-early Bronze Age activity is largely confined to the north end of field 22. It is also worth noting that diagnostic Neolithic and early Bronze Age flints have been previously discovered in the fields immediately north of field 22 in Ewart Park (Joan Weyman archive, Museum of Antiquities, Newcastle) where the crop marks of a henge, mortuary enclosure and pit alignments are located. It is likely that the field 22 cluster of material is associated with activity connected with the Ewart and Akeld ceremonial complexes.

Mesolithic material was also found dispersed across the field with some loose concentrations in both the northern and southern areas. This is typical for Mesolithic finds, which tend to have a more dispersed distribution pattern than the more tightly focused Neolithic and early Bronze Age scatters. It is feasible that some buried Mesolithic features may survive in the field and if any were to be anticipated then it is most likely that they would occur at the north end of the field in amongst the Neolithic features as this is where the highest density of Mesolithic material was located.

The assemblage from this field (including the finds from the test-pit, see below) is particularly notable for the quality and quantity of tools present and the amount of chronologically diagnostic material. Of the entire assemblage 36.4% are tools

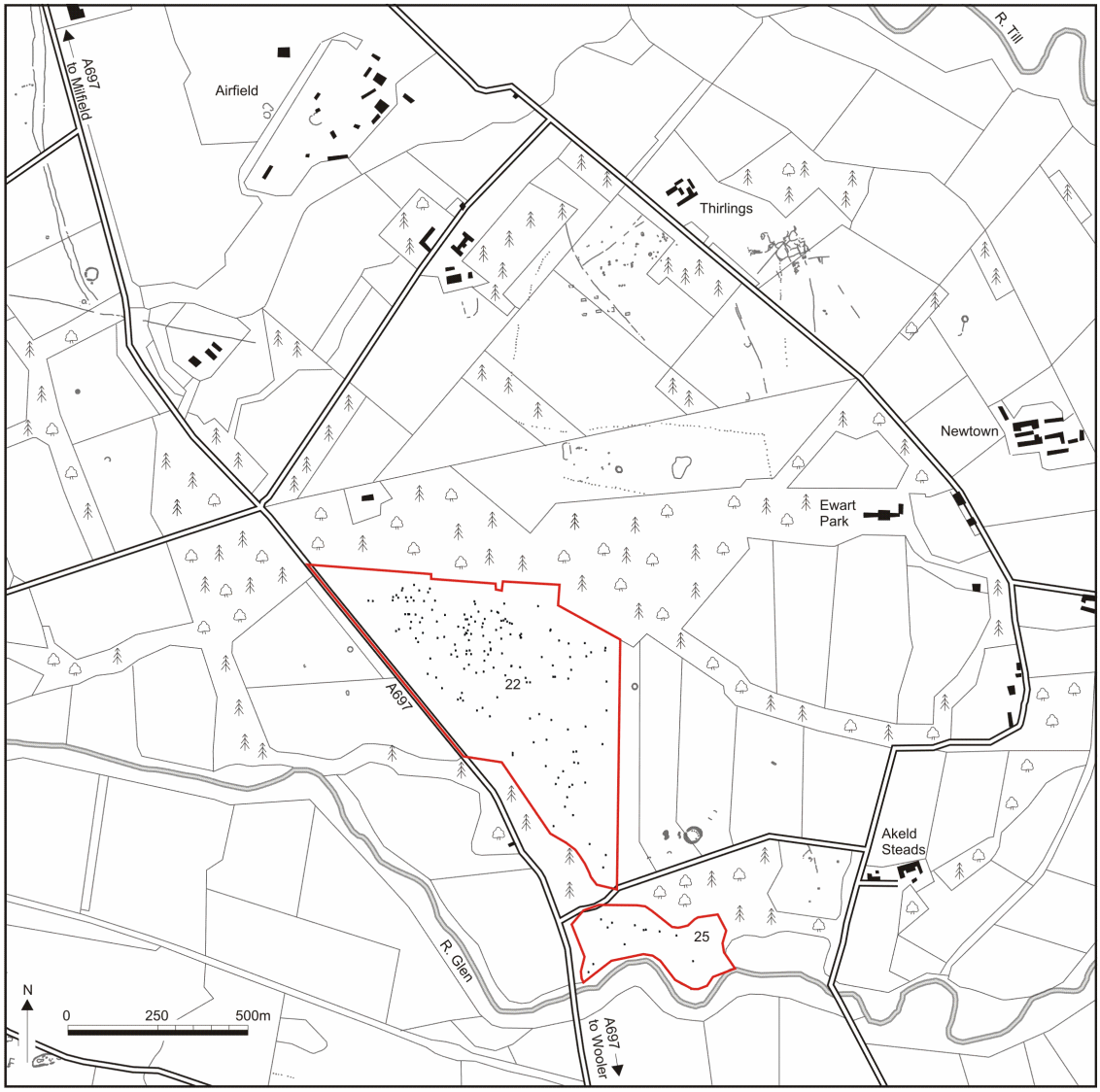


Fig. 9 Akeld (Fields 22 and 25)

(i.e. belong to the tertiary stage in the reduction sequence), while 52.3% belong to the secondary stage and 11.2% to the primary stage. Finds of particular note include a leaf-shaped arrowhead and a chisel arrowhead, both in pristine condition. There are also many other typical Neolithic pieces including end scrapers, edge-trimmed and retouched blades, a spear point and a serrated blade. Early Bronze Age pieces include a broken barbed and tanged arrowhead, as well as scrapers and flake tools. The Mesolithic material is represented by a large number of micro-cores (21), a variety of blades and blade tools, and some typical scrapers with abrupt unifacial retouch.

A small fragment of early prehistoric pottery (find no. 1035), most likely a piece of Grimston Ware series pottery, shares similarities with other Grimston Ware material that has been found at a number of sites across the gravel terraces of the basin (Waddington 2000). However, being such a small piece this attribution is not definite, although on the basis of its fabric, colour and lack of decoration it can certainly be considered to be Neolithic-early Bronze Age in date. As pottery does not survive long in the ploughsoil it is evident that this fragment was brought to the surface by the latest ploughing episode on the field. This suggests that the plough had clipped a buried archaeological feature, dislodging the pottery and bringing it to the surface as the soil was turned.

The two fragments of post-medieval pottery were both found at the very north-west end of the site (find no's 1115 and 1125). As there was such a small quantity of this ceramic from the field it is unlikely that it is representative of settlement activity, but rather could be associated with manuring or discard of waste.

A cache of 10 large blades and flakes interleafed with each other were discovered lying on the field surface in a patch of freshly ploughed up orange gravel (Fig. 16) occurring within the cluster of material at the north end of the field. The presence of these pristine pieces on the surface suggested that a sub-surface feature had been truncated by the plough and the flints from its disturbed fill redeposited on the surface. All the pieces are of nodular flint that has evidently been imported to the area, and all are typical of Neolithic or early Bronze Age manufacturing traditions. On examination most of the blades and flakes showed evidence of retouch and utilisation indicating their use as tools before they were discarded.

Fig 10. View of the blade cache in field 22 lying in freshly ploughed up orange gravel

A 1m by 1m test-pit was excavated around the flint cache and the entire contents of the pit passed through a 5mm sieve. An additional 48 large flint pieces were found in a tight 'cone' immediately below the cache, again all in pristine condition. They included an end scraper, a large cortical side scraper, together with a spear point and other retouched tool forms that are Neolithic-early Bronze Age in date. Including the flints from the surface cache (making a total of 58), 42 are diagnostic of the Neolithic-early Bronze Age. On cleaning the base of the pit an interface between differing natural geology was identified with orange gravel on the south side of the pit and buff coloured sand on the north side (Figs. 11 and 12). In the north-west corner of the pit part of an archaeological feature was identified that comprised a cut feature with a different coloured and textured fill than the surrounding natural substratum. The fill of the archaeological feature comprised a brown silty sand with charcoal flecks. It is thought that the cache of flints were brought up to the surface from this truncated feature.

Fig 11. Test pit looking south with natural orange gravel below the scale bar, buff coloured sand in the centre with the grey feature fill with charcoal flecks in the bottom right of the pit (scale = 0.5m)

The presence of the archaeological feature in the base of the test pit demonstrates the presence of buried archaeology at the north end of field 22. With its associated flints it can be reasonably attributed to the Neolithic-early Bronze Age, and as such, is likely to be contemporary with the ceremonial henge complexes at Akeld Steads to the east and Ewart Park to the north.

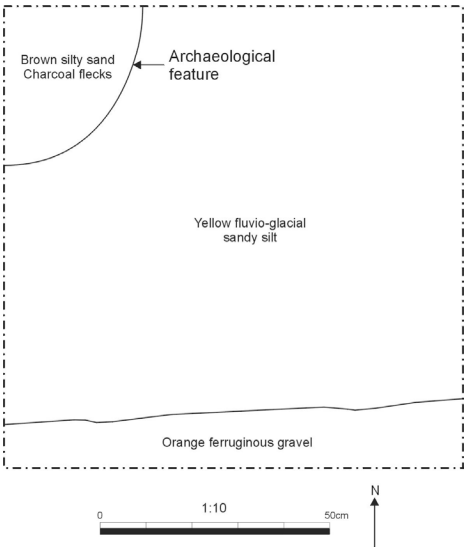


Fig 12. Plan of test pit

Field 25 is located on the alluvial flood plain at a lower elevation than field 22 being at 38-40m OD. The area walked extended over 4.9ha and produced a total of 13 lithics that included five flakes, three cores, two retouched flakes, one blade

and one utilised flake (see Fig. 2 above), together with a broken whetstone. The low count is, no doubt, partly a result of this low lying ground being an area that has accumulated a depth of alluvial deposits throughout the Holocene resulting in the masking of any earlier archaeology by a successive build up of fine-grained sediments resulting from overbank flow. Any archaeological remains that may survive in this area are likely to be buried at a depth of at least 0.5 – 1.0m if not considerably more. The 13 lithic finds are considered most likely to have been brought on to the surface of this area as a result of the downslope movement of artefacts from the surrounding higher slopes. Alternatively they may have been deposited by floodwaters that have brought eroded archaeological material from further upstream and redeposited it in this localised floodplain setting. However, the former is considered most likely as the lithics showed no evidence of having been rounded or rolled by river action and there is clear evidence for stone-age activity on the terrace above in field 22.

Field 31 is located at Yeavering at the mouth of the Glen Valley and contains the Yeavering henge monument together with other features associated with the prehistoric and Anglo-Saxon occupation of this site. The lithics recovered from the site were all non-flint material and are thought to be largely Mesolithic in date which corresponds with other evidence for Mesolithic occupation obtained during the excavations of the adjacent site by Hope-Taylor (1977). A discussion of Mesolithic activity at the site has been published elsewhere by the author (Waddington in press).

Kimmerston (Fields 23, 24)

Two large fields were surveyed at Kimmerston; one on the fluvio-glacial gravel terrace between Kimmerston Bog and the river Till at 40m OD, and the other on an area of plateau and hillslope on till and gravel deposits at 70m OD (Fig. 13). Both fields produced relatively low lithic densities; field 23 having an adjusted lithic count per hectare of 6.4 and field 24 a count of 4.6. The diagnostic material from both fields included Mesolithic material comprising cores, retouched flakes and blades and a scraper. However, there was also some Neolithic-Early Bronze Age material in field 23 that included a broken tool with invasive retouch, probably tanged, as well as a plano-convex knife. Neolithic and Early Bronze Age pottery has been recovered from the area around field 23 (Miket 1976; 1987) and, together with the lithics recorded by the fieldwalking, suggests this area formed an important focus for Neolithic and Early Bronze Age activity. This may be related to the fact that this area of terrace occupies a pinch point in the valley and forms the natural east-west crossing point within the Milfield Basin. The aerial photographs show a large pit alignment complex running through this field and excavations as part of the Milfield Basin Landscape Project have returned a series of Romano-British dates from their fills.

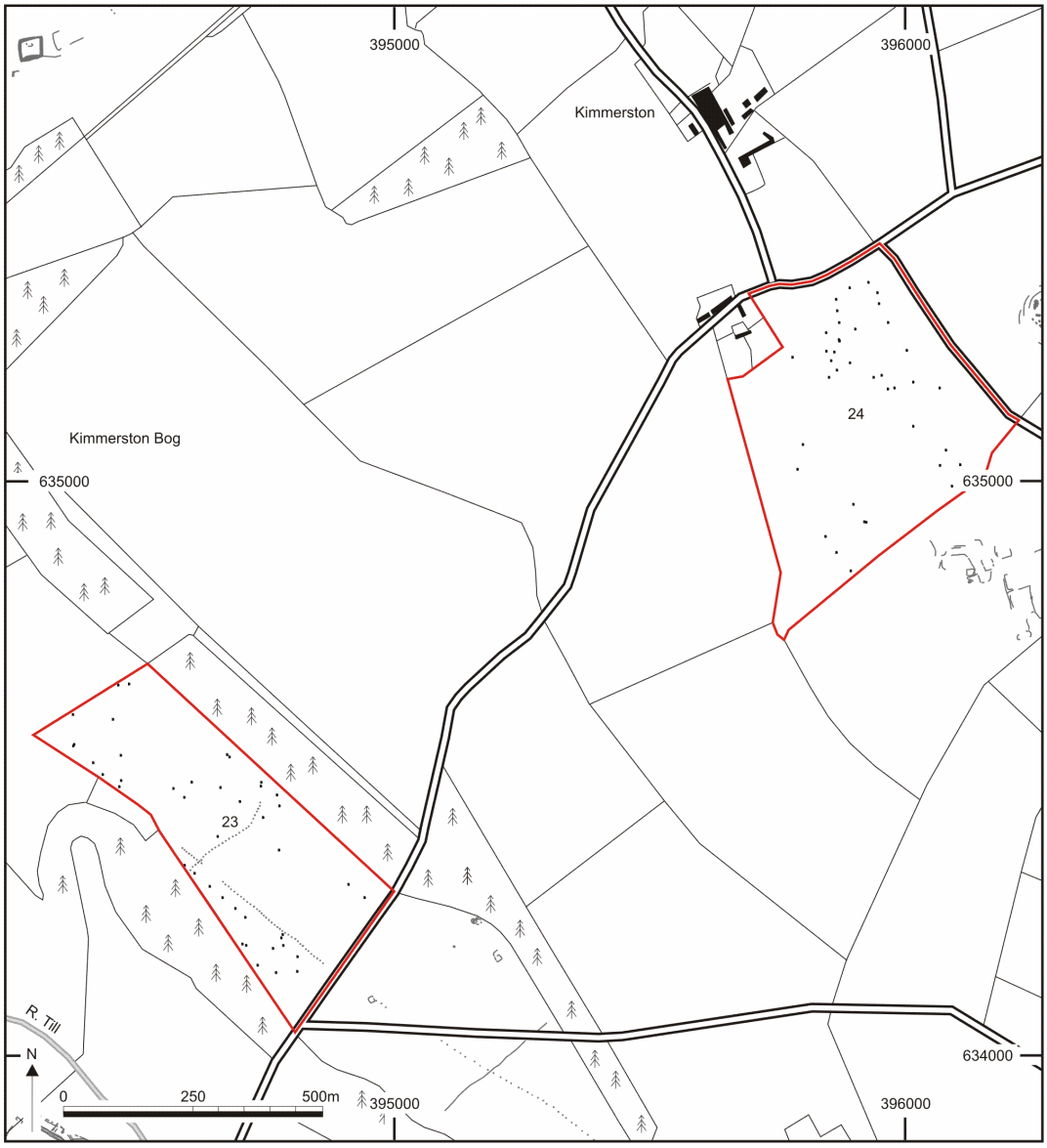


Fig. 13 Kimmerston (Fields 23 and 24)

Yeavering (Field 31)

The field containing the Yeavering henge was ploughed during the fieldwork season so it was decided that the opportunity should be taken to assess this field for surface artefacts as this field is rarely ploughed. A total of 30 lithics were recovered from the surface but only one of these was flint, the rest being agate (12), chert (11) and quartz (6). There were 10 cores, 12 flakes, 1 blade, 4 retouched and utilised flakes, 2 scrapers and 1 microlith (Fig. 14). The only diagnostic material in this assemblage was Mesolithic in character and this correlates with the findings of Brian Hope-Taylor from the adjacent field containing most of the Anglo-Saxon remains. He commented that, “Struck flakes of flint (and occasionally of chert) occurred as stray finds in the overburden, some of them unmistakable Mesolithic; but as there is a lack both of context and specific forms it would be pointless to illustrate and discuss them” (Hope-Taylor 1977; 194-6).

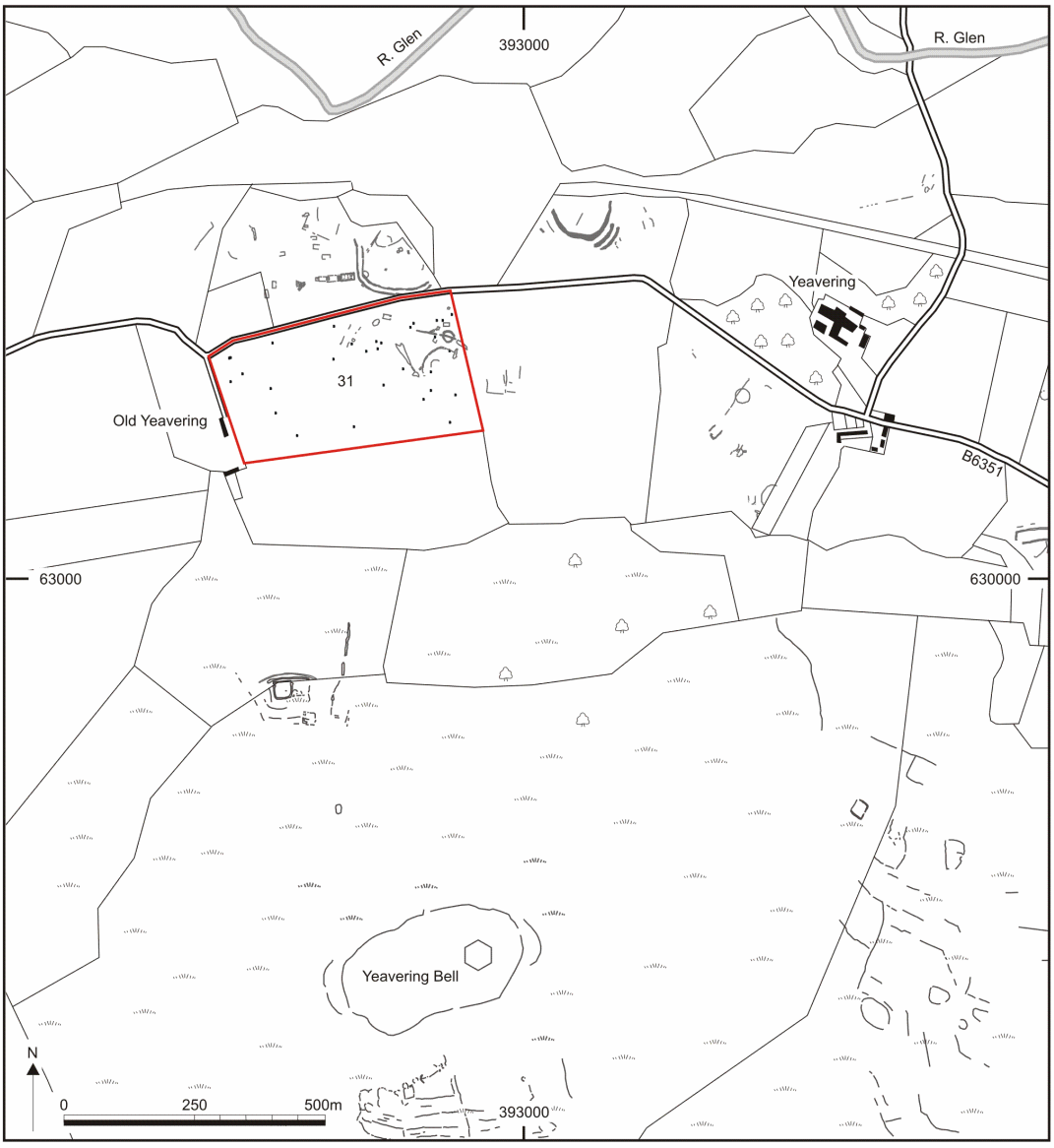


Fig. 14 Yeavering (Field 31)

Wark-on-Tweed (Fields 26, 27, 28, 29, 34, 35, 36)

Wark-on-Tweed is well known for its fine medieval castle earthworks situated at the end of a glacial esker overlooking the river Tweed which lies immediately to its north (Fig. 15). A cluster of 7 fields were walked in this area producing widely varying lithic densities. Fields were sampled on the alluvial valley floor, the low gravel terraces and on a higher raised gravel terrace. The alluvial fields 27 and 28 produced relatively low counts of 3.6 and 6.4 lithics per hectare but the other alluvial field 26 produced a very high count of 20.6. The diagnostic material from these fields was all Mesolithic in date. The two fields on the low gravel terrace, 29 and 34, produced very high counts of 27.5 and 28.6 lithics per hectare respectively. The diagnostic material from these fields included both Mesolithic and Neolithic material. The crop-mark data for field 29 shows an interesting group of features that includes an oval enclosure that could be a Neolithic mortuary enclosure providing a context for Neolithic activity in this area of the river valley. The fields surveyed on the higher gravel terrace, 35 and 36, produced medium to low counts of 8.6 and 3.9 respectively indicating a lower level of activity than on the terraces closer to the river. The only diagnostic material from this upper terrace were Mesolithic in date.

St. Cuthbert's Farm (Fields 30, 32, 33)

Named after the ruinous chapel dedicated to St. Cuthbert, this area lies at the confluence of the rivers Till and Tweed (Fig. 16). The area walked occupies a gravel bluff immediately above the river Tweed. Field 30 was set back further from the river and this produced a modest count of 5.8 lithics per hectare, although it potentially has finds belonging to the Mesolithic, Neolithic and Bronze Age, the most notable being a possible quartz perforated macehead, broken by the plough. However, field 32, and even more so field 33, stand out starkly from all the other fields surveyed as part of this project as they produced huge lithic densities. Field 32 produced an adjusted density of 35.3 lithics per hectare while field 33 produced a massive 198.9 lithics per hectare – the highest density ever recorded in north-east England. All the diagnostic material in these adjoining fields was Mesolithic and the huge cluster of material in field 33 is thought to represent a Mesolithic settlement site. This relatively tight scatter of material merits further investigation as it could conceivably overly buried remains similar to those recently discovered at Howick on the Northumberland coast (Waddington *et al* 2003). The Mesolithic material includes cores, retouched flakes and blades, utilised blades and a possible microlith and burin. The lithic assemblage contains a diverse mix of material that includes flint, agate, chert and quartz pieces.

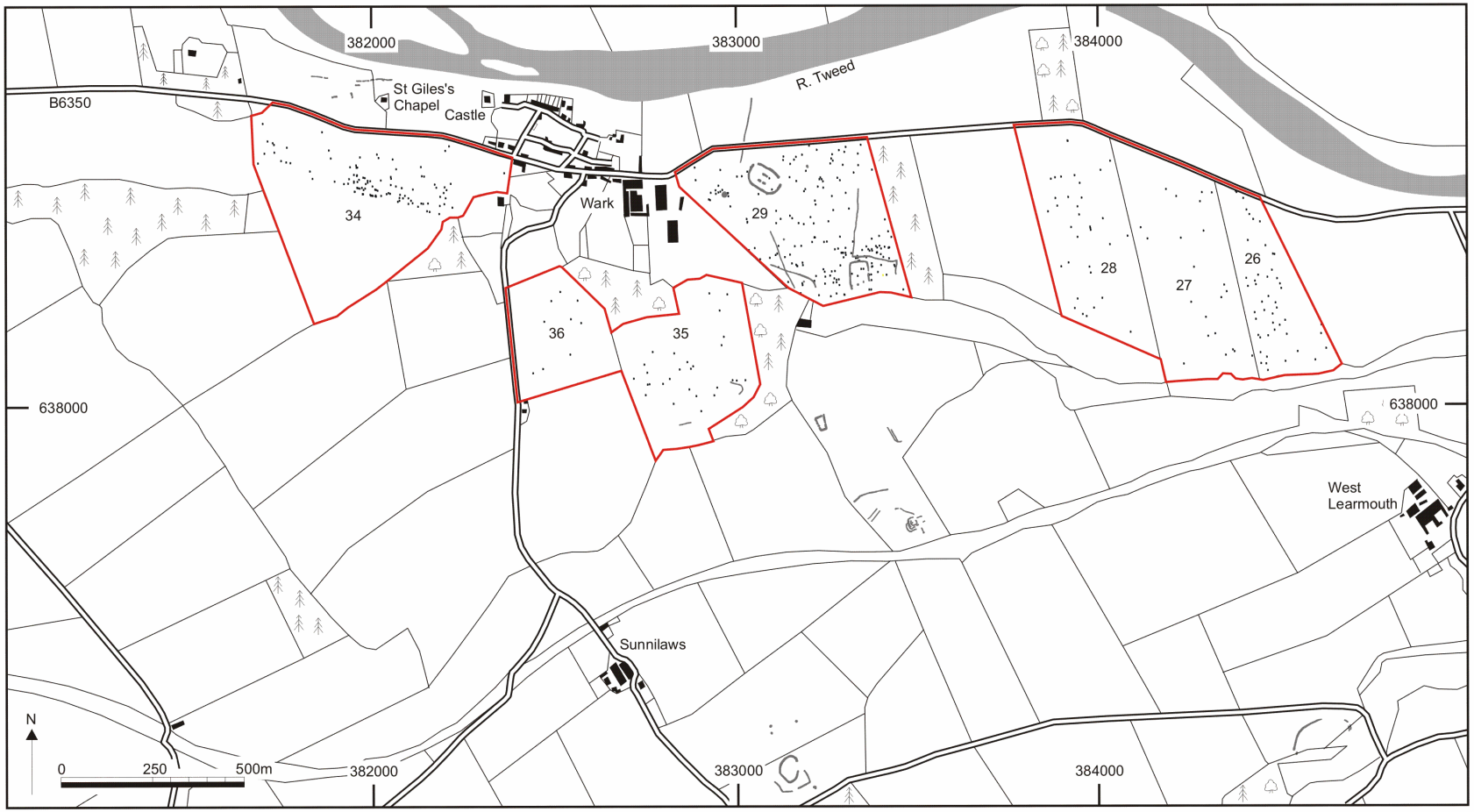


Fig. 15 Wark (Fields 26, 27, 28, 29, 34, 35 and 36)

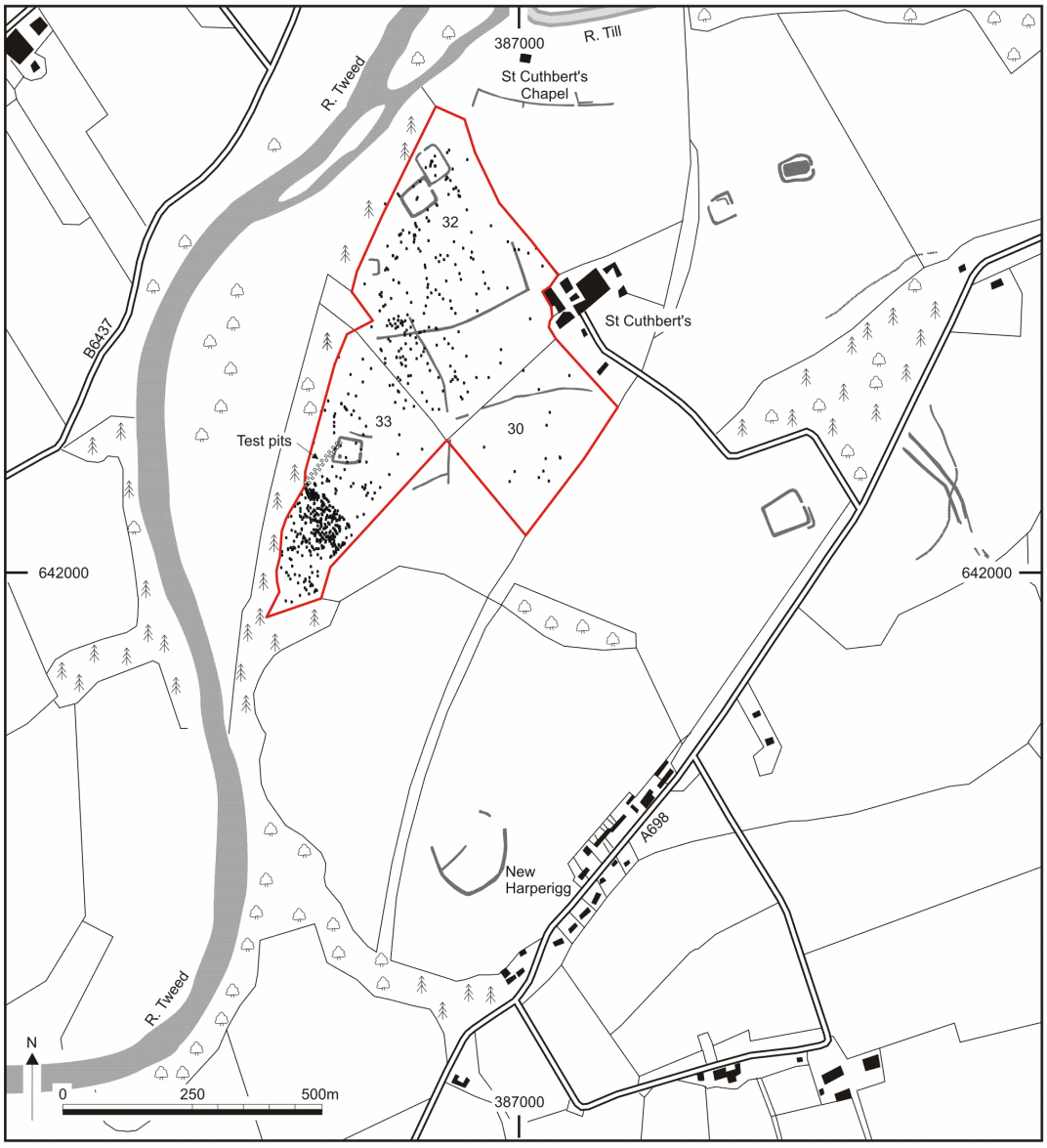


Fig. 16 St. Cuthbert's (Fields 30, 32 and 33)

Fig 17. Test pits in field 33 looking south-west.

Fig 18. Test pit 2 in field 33 showing excavated linear slot thought to have been the remains of a fallen timber.

It was decided to investigate the scatter of material in field 33 as the implied presence of a Mesolithic settlement held up the prospect of sub-surface structural remains surviving similar to those recently discovered at Howick on the Northumberland coast (Waddington *et al* 2003). A total of 20 1m square test pits were excavated by hand and their contents passed through sieves with a 10mm mesh to maximize finds recovery. The test pits were set out in two offset lines of 10 with each pit 5m apart. The aim of this sampling strategy was to identify

whether any sub-surface remains survived associated with the Mesolithic activity represented by the lithics. As the Mesolithic hut sites so far discovered in the British Isles all have diameters of c.6m the offsets and 5m spacings would ensure that any hut structure below the area sampled would have been picked up. In the event not hut deposits were identified but a linear slot (possibly the remains of a degraded timber) was recorded in pit 2 and the ditch fill of a rectilinear crop-mark enclosure was recorded in pits 10 and 18. Although no definite evidence for a hut feature were noted in this small sampling exercise it did produce evidence for buried features on this bluff, of which one could possibly date to the Mesolithic (i.e. the linear slot). An additional 128 lithics were recovered from the pits including a crescent microlith directly analogous to those found at Howick, together with 11 cores of mostly platform and blade varieties, three scrapers, one burin, one knife, four retouched blades, two uitlised blades a retouched flake, 19 blades and 85 flakes.

West Newbiggin Farm (Fields 37, 38 39, 40 and 45)

An important cluster of buried sites are located at Groathaugh on West Newbiggin Farm on the south bank of the Tweed that includes an unusual circular enclosure with an inturned entrance, as well as a small Roman temporary camp, a multivallate promontory fort and an oval palisaded enclosure that sits on the summit of Whidden Hill. A cluster of four fields were walked around Whidden Hill together with a fifth outlying field at East Newbiggin that is situated next to a late Iron Age/Romano-British rectilinear enclosure (Fig. 19). Together the fields extend over an area of 55.1ha and are located around a prominent localised hilltop formed by a drumlin. The highest concentration of material came from field 37 that contains the largest part of the hilltop area. These fields produced a total of 168 lithics that included struck pebbles, cores, flakes, blades and a range of tools such as scrapers (including an end scraper), retouched blades and flakes a microlith, a point and an awl. These finds were interesting as they include some pieces which could potentially be of Palaeolithic or Early Mesolithic age as well as the more typical later Mesolithic narrow-blade based forms and some probable Early Neolithic pieces. Together with the palisaded enclosure these finds indicate the long term attraction of this localised area of high ground throughout much of prehistory. The outlying field, 45, which includes part of an esker landform, produced a high concentration of material that included diagnostic artifacts such as a leaf-shaped arrowhead, Mesolithic cores, scrapers and edge-trimmed flakes. Again, it is the dry, locally high ground that appears to have formed an attractive locale for Stone Age activity. The slope mapping for these fields indicates that most of the material recovered on the slopes must have come from a source area on the high plateau in the

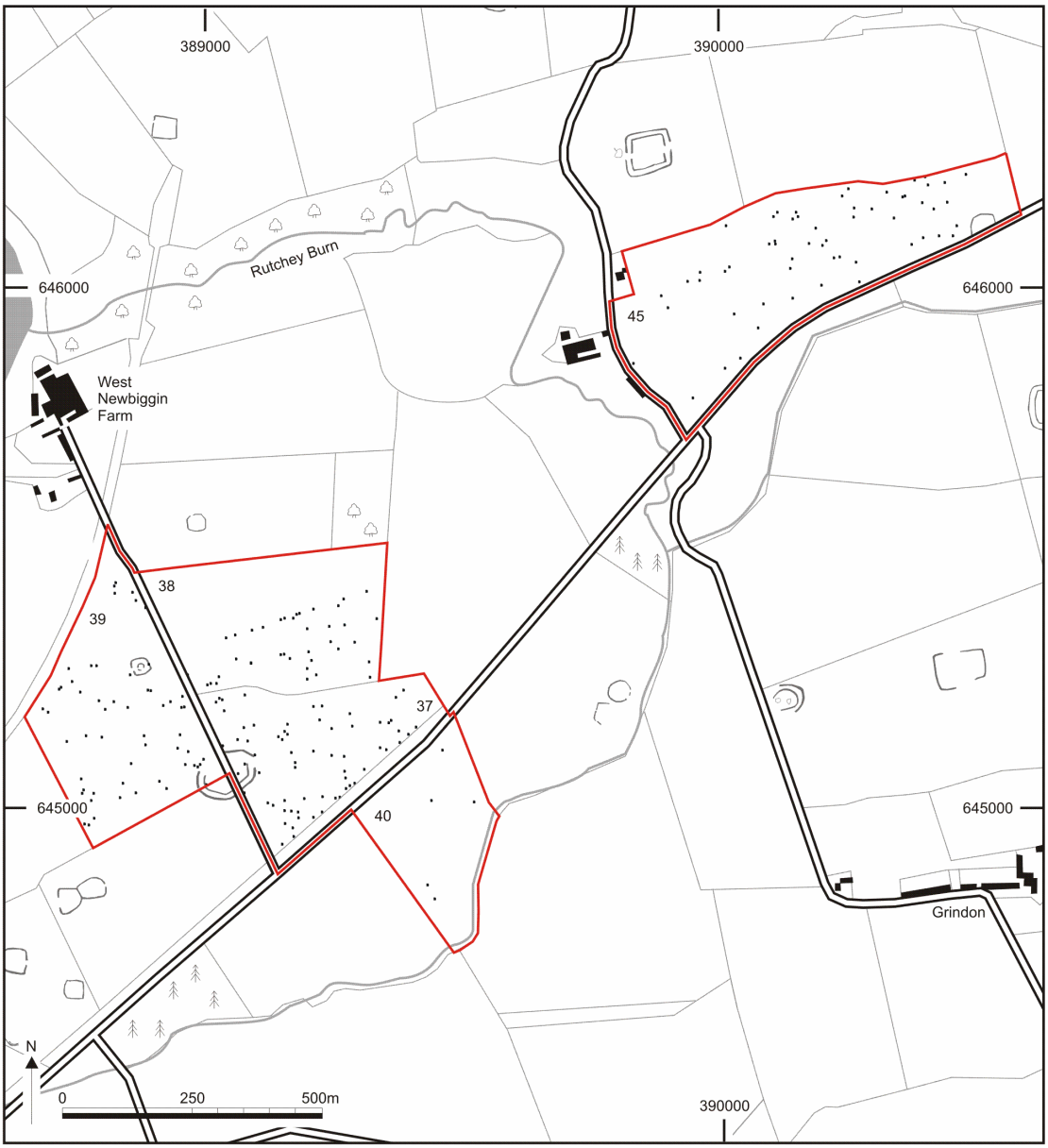


Fig. 19 West Newbiggin (Fields 37, 38, 39, 40 and 45)

Norham (Fields 41, 43, 52, 53 and 54)

The fields surveyed in the Norham area were clustered at the west end of the village opposite the river cliffs below Ladykirk and adjacent to the present and earlier bridging points (Fig. 20). The crop mark evidence indicates the presence of a DMV in fields 41, 52 and 53 and the presence of a roadway leading to the old fording/bridging area at Canny Island opposite the road that leads into Upsettlington. The discovery of a sword was reported from near the river at Bow Well Farm. The fields occupy a gravel terrace set up between 5m and 10m above the river level although the lowest terrace closest to the river bank has a veneer of fine alluvial sediments overlying the gravel. A total of 32.3ha were surveyed in this locale. The lithics cluster on the upper terraces that run through the fields on the areas of flat and gently sloping ground. Being located within the bend of the river this is a naturally protected and strategic location, particularly as it forms a natural bridging point by way of the river islands adjacent to field 54. The lithic density in fields 41 and 54 is high being 11.8 per ha and 40.0 per ha respectively. Moreover the assemblages demonstrate clear evidence for Mesolithic activity here that includes retouched an abundance of cores, blades and flakes, retouched and utilized blades and flakes as well as scrapers and microliths. This volume of diverse Mesolithic tools, which demonstrate flint knapping, processing activities and perhaps hunting, imply this area may have formed a settlement focus in the same way as the locale in field 33 at St Cuthbert's Farm. Some possible Palaeolithic and/or Early Mesolithic tools were also recovered from this area, notably in field 54, which included a flint knife and what appears to be an awl made from agate. A Neolithic end scraper was also found. In addition to the lithics a considerable number of pottery fragments were recovered from all of these fields dating to the medieval, post medieval and modern periods. These were spread widely across all of the fields and may result from the spread of domestic debris after the crop mark sites were abandoned. A small terrace of houses used to stand on the east side of field 41 but these were knocked down several decades ago. These fields are considered to have high potential for containing buried archaeological remains of many periods.

As part of the wider aims of this project an evaluation trench was excavated on an earthen bank at Norham Castle to test a hypothesis put forward by the recent English Heritage survey of the castle (Pearson *et al* 2002). The trench was placed over a bank that was thought could have formed part of an Iron Age promontory fort that pre-dated the medieval castle. This work has been written up as a separate report by ARS Ltd.

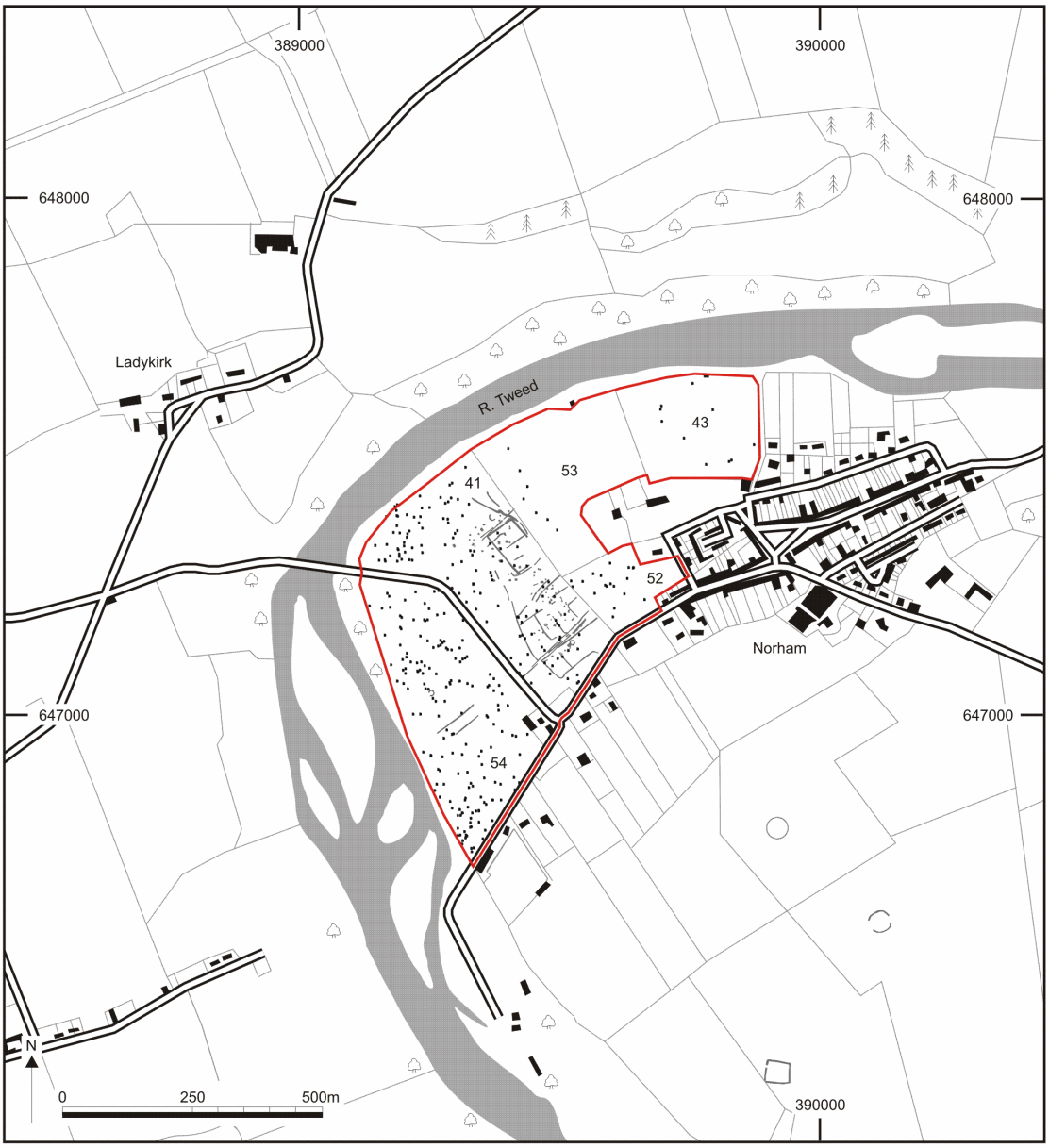


Fig. 20 Norham (Fields 41, 43, 52, 53, and 54)

Norham West Mains (Fields 44, 46, 47, 48, 49, 50 and 51)

A total of 7 fields were walked around the Norham West Mains area which extends over a large tract of land at the west end of a large meander belt of the Tweed (Fig. 21). A total of 82.7ha were sampled resulting in the recovery of 108 lithics. This is a relatively low density of material but the figure is depressed somewhat by two fields (46 and 49) that produced no finds and one field (50) that produced a meagre three lithics and one piece of pottery. Fields 49 and 50 are situated on a narrow flood plain of the Tweed and have been subject to deposits of fine-grained alluvial sediment and this process may have resulted in the masking of buried artefacts. Fields 44, 47 and 48 all produced medium to high lithic concentrations averaging 6.3, 8.8 and 6.3 per ha respectively. Mesolithic cores, scrapers and edge-trimmed flakes were found in 44 together with a Neolithic-Early Bronze Age retouched blade and a possible Palaeolithic flake. Field 47 produced Mesolithic cores, edge-trimmed and retouched blades, a microlith and scraper and field 48 produced Mesolithic cores, a scraper and retouched flakes. Medieval pottery sherds were also recovered from fields 47 and 48 which lie 400m east of Norham castle.

Norham East Mains (Fields 55, 56, 57, 58 and 59)

The land at Norham East Mains occupies the east end of a large meander belt of the Tweed. A total of 35.3ha were sampled resulting in the recovery of 75 lithics. The east end of a flat-topped spur that overlooks the steep valley of the Horncliffemill Burn has the greatest concentration of lithic material at 9.3 per ha, while all the adjacent fields have low densities. The flat-topped area of plateau appears to have been the focus of activity with findspots on the slopes below this area indicating where material has been eroded and transported downhill from this location. The only other field in this locale to produce a high density of material was field 58 which occupies a position that slopes down to a narrow flood plain from the steep bluffs above. A promontory fort is located on the bluff at Green Hill and an old stream course used to cross this field but has now been diverted underground. These slopes appear to have been the focus for activity and the discovery of a recently broken but very finely-made barbed and tanged arrowhead from near the old stream course in this field hints at the past existence of Early Bronze Age burials near the stream and overlooking the river Tweed. Other finds from 59 include Mesolithic cores, scrapers and a retouched blade. Finds from field 55 include Mesolithic cores, blades, and a scalene triangle microlith.

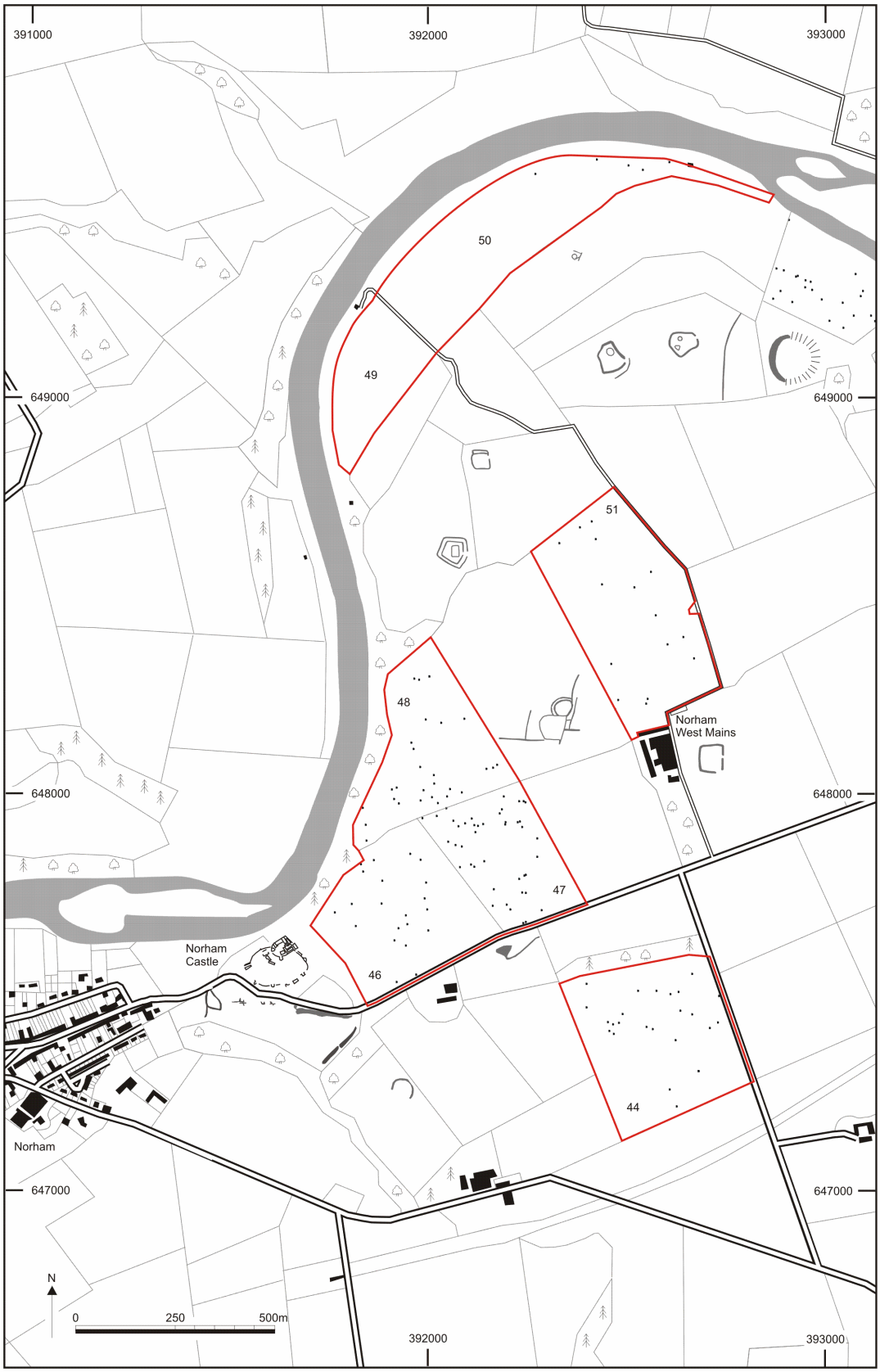


Fig. 21 Norham West Mains (Fields 44, 46, 47, 48, 49, 50 and 51)

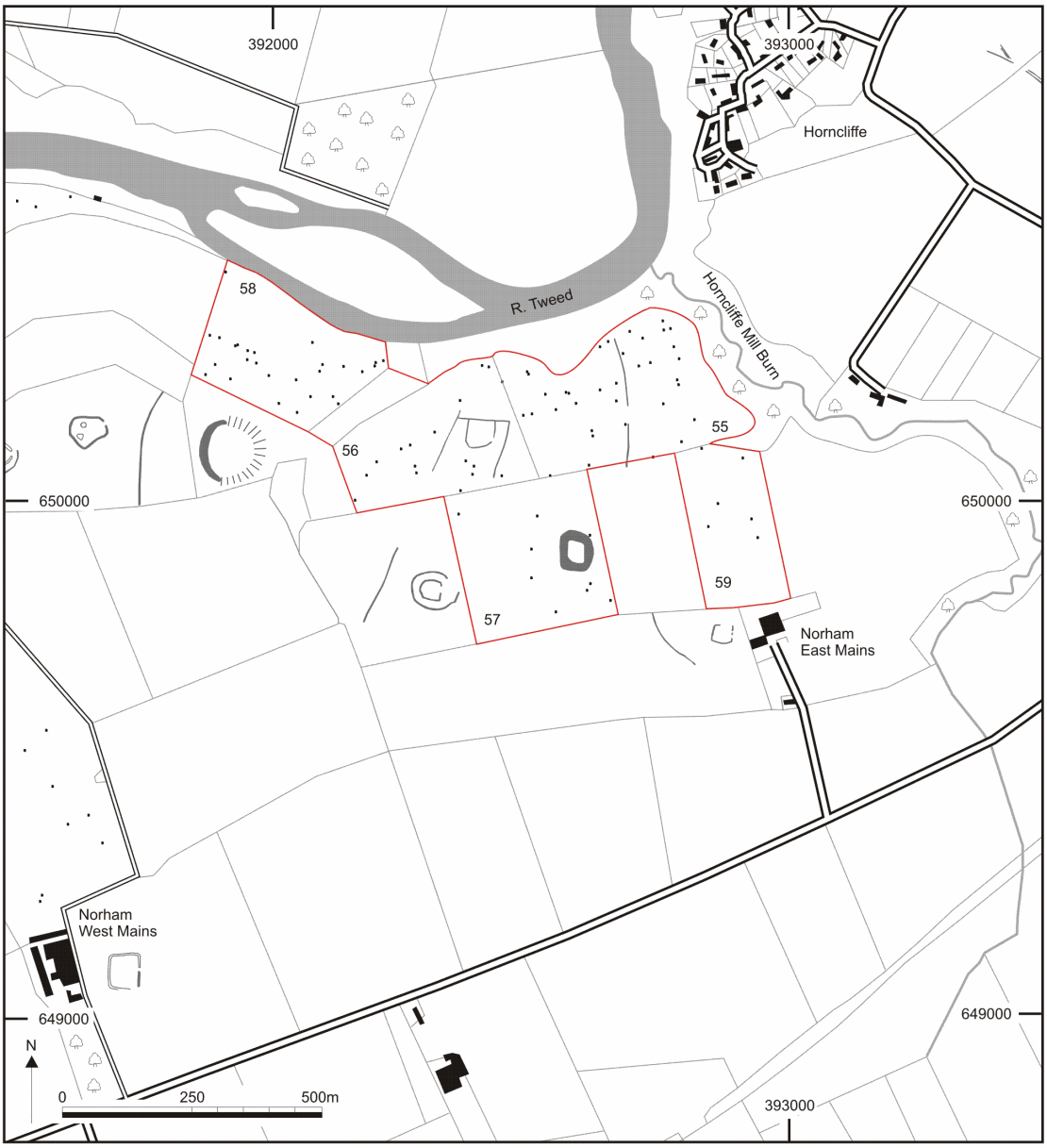


Fig. 22 Norham East Mains (Fields 55, 56, 57, 58, and 59)

Horncliffe (Field 60)

A single field surveyed in the Horncliffe area that extended over 12.9 ha forms the end of a ridge to the east of Horncliffe village. The field produced a low density of just 3.8 lithics per ha with most of the finds clustered on an area of slope above the course of a stream. The lithics from the field included Mesolithic cores, scrapers and blades as well as an early Bronze Age thumbnail scraper.

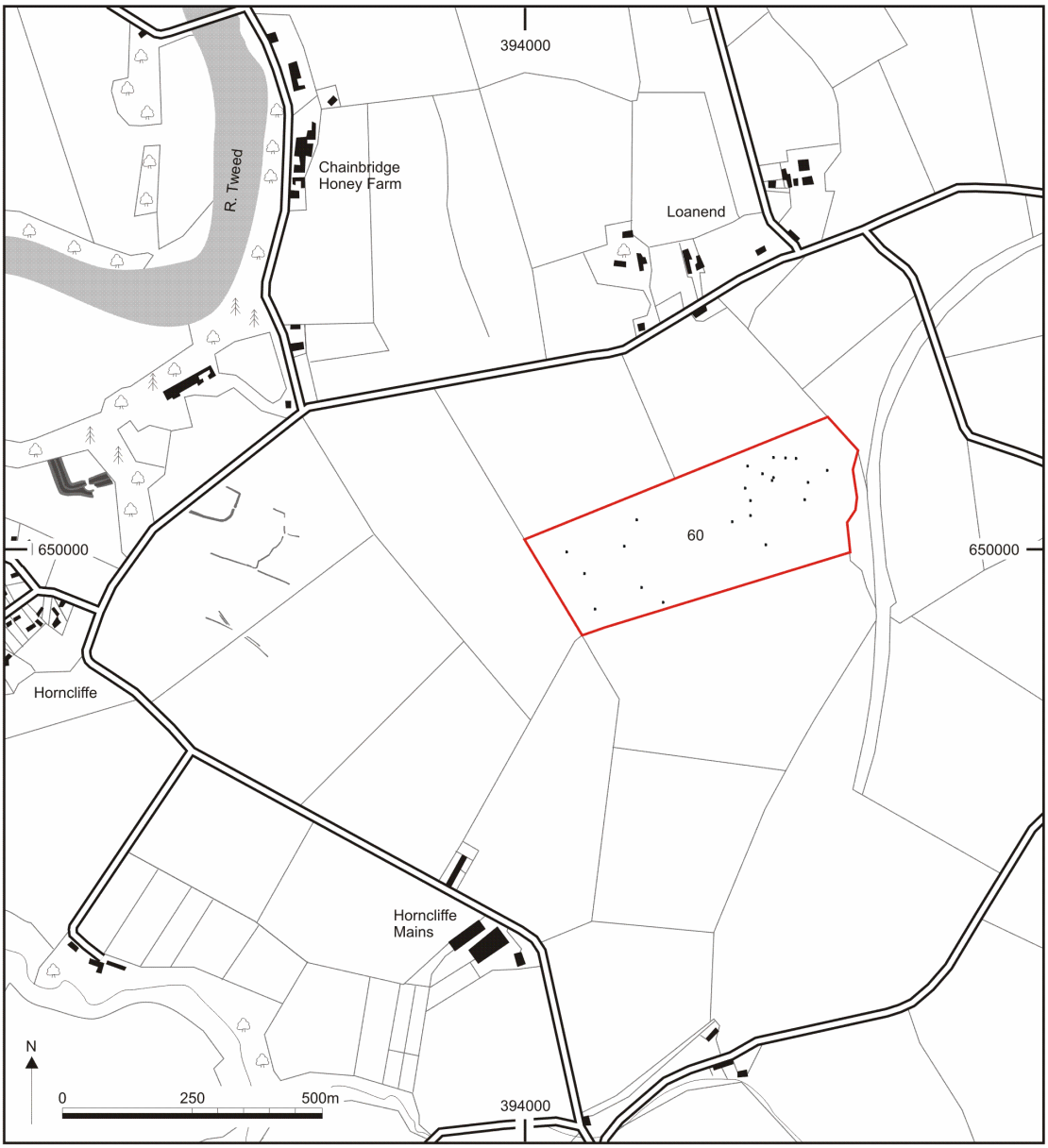
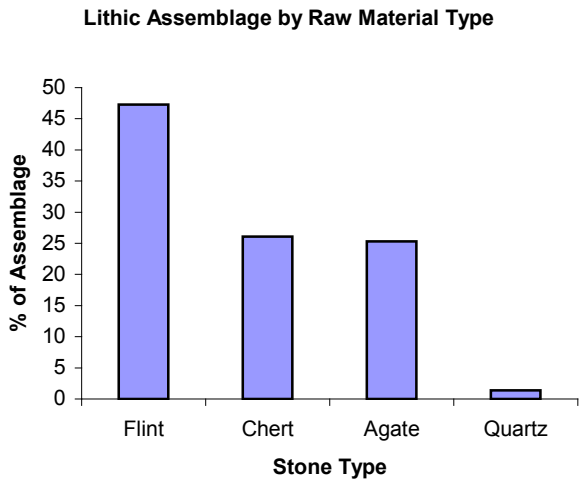


Fig. 23 Horncliffe (Field 60)

Raw Materials

The Till-Tweed lithics comprise a mixed assemblage of 2727 chipped stone pieces made from 47.3% flint, 26.1% chert, 25.3% agate and 1.4% quartz (see Fig. 24 below). This reveals a diverse range of materials although most of it is from locally available sources. The glacial gravels and boulder clays contain agate, chert and quartz nodules together with the occasional piece of flint. However, it is notable that of all the flint that could be provenanced (258 pieces), 60.5% was beach flint which indicates the importance of the coast for obtaining supplies of flint. The other sources of flint included 27.9% glacial material and 11.6% nodular flint, the latter being evidently imported to the region.

Fig. 24

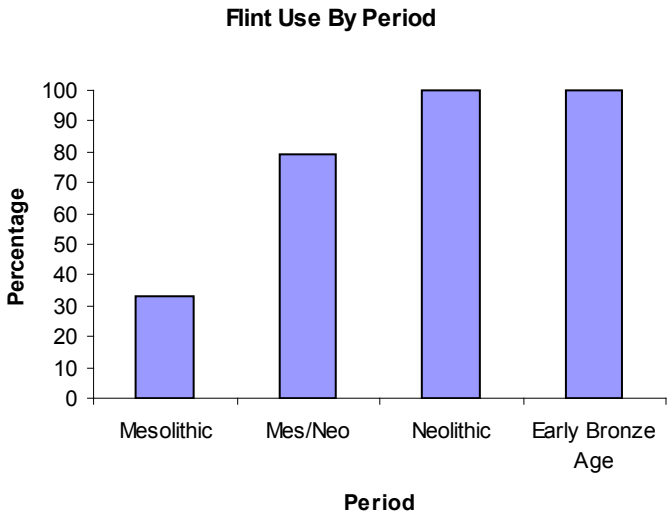


It is telling that all of the nodular pieces that had dating associations (10 out of 10) belonged to either the Neolithic or Bronze Age with none being of Mesolithic date. This indicates that the use of nodular flint is a phenomenon associated with the Neolithic and Bronze Age. This gains further support when the 48 flints from the test pit in field 22 are included as nearly all of these are from a nodular source and all belong to a Neolithic-early Bronze Age context. In contrast all the certain Mesolithic pieces that could be provenanced were of either beach or glacial origin (419 out of 419) with none made from nodular flint. This indicates that Mesolithic raw material acquisition revolved around the procurement of locally available flaking stone and not on the importation of flint from distant sources.

Using the datable lithics only, the proportion of lithics made from flint can be plotted for each period. Figure 25 below charts these results and it is plain that flint forms only one of a range of materials used for making tools during the Mesolithic, comprising just 37.2% of the Mesolithic assemblage. The Mes/Neo column includes those flints which could be of Mesolithic or Neolithic date on account of their blade form, and so this column tells us little except that the proportion of flint pieces is higher for the artefacts placed in this category. The result for the Mesolithic, however, contrasts sharply with the Neolithic and Bronze Age where flint appears to be the only type of stone selected for making tools as it comprises 100% of both assemblages. It is also pertinent to note that there are

no dated Neolithic or Bronze Age sites in Northumberland from which associated agate or chert artefacts have been recovered, suggesting that the chipping of chert, agate and quartz is primarily a Mesolithic, and perhaps also Paleolithic, phenomenon. This finding is of critical importance as it indicates that a significant shift took place in the procurement of raw materials during the transition from the Mesolithic to Neolithic periods. At one level it indicates a switch from locally-based procurement strategies in the Mesolithic to strategies that relied on importation of material, presumably via a system of exchange networks. This indicates an important difference in lifestyles as the Mesolithic inhabitants appear to have opted to employ a self-sufficient existence as opposed to Neolithic and Bronze Age groups who relied on wide-ranging exchange in order to obtain some essential heavy and bulky materials such as nodular flint. This use of nodular flint from the Neolithic onwards corresponds with the occurrence of the first flint mines in southern England from where some of the nodular flint no doubt came. Such mines provide the context for the mass procurement of this material that would have been necessary if it was being exported across the country to areas as far away as Northumberland. Indeed the flint mines of southern England have date ranges that span the Neolithic and early Bronze Age (Barber *et al* 1999) and this fits in with the datable artefacts made from nodular flint in regions such as Northumberland.

Fig. 25

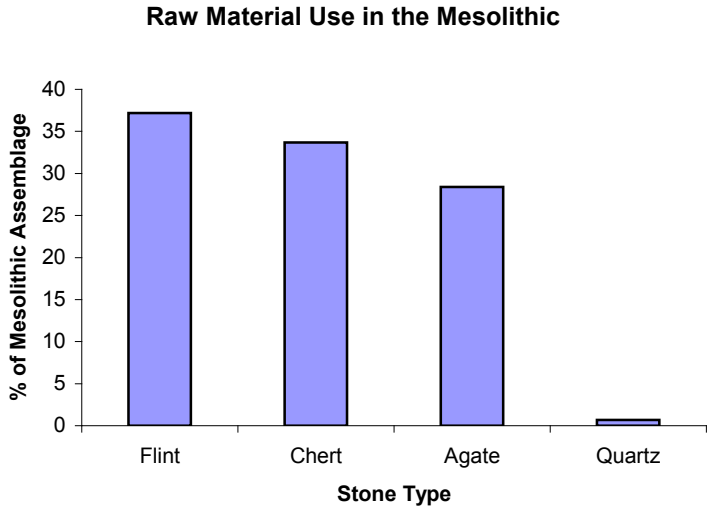


The abandonment of local stone sources such as agate, chert and quartz by the Neolithic suggests more than just a switch from the self-reliance strategies of the Mesolithic. It begs the question why such a decision was taken, as placing greater reliance on imported materials would expose the Neolithic inhabitants to greater risk if the supply chain failed. On a practical level the greater size of the nodular flint would have allowed the more widespread use of larger tools such as knives, sickles and flint axes in an area like Northumberland that only has access to very small flint nodules from the coast and boulder clays. Such items may have been considered important necessities for the new types of subsistence strategies that were employed by Neolithic groups. However, considering the social dimension the raw material could have played is probably also key to understanding this marked transition. By abandoning the use of non-flint material

and gaining access to high quality nodular flint the Neolithic occupants of Northumberland and Borders will have placed themselves within the wider milieu of Neolithic material culture traditions while at the same time demonstrating their access to, and participation in, such wider networks. In other words there may have been a social kudos, or statement of identity, associated with the abandonment of some locally available materials in favour of imported nodular flint.

As the Mesolithic assemblage includes material other than flint it is possible to breakdown further the relative abundance of different types of material used during this period. Figure 26 below shows what proportion of the 419 pieces that can be definitely attributed to the Mesolithic belong to different rock types. Flint, chert and agate account for 37.2%, 33.7% and 28.4 % respectively of the Mesolithic assemblage, with quartz accounting for just 0.7%. These statistics are to some extent surprising as they indicate a virtually equal reliance on flint, agate and chert for making tools, with just opportunistic use of quartzitic material as and when it could be worked. A preference for flint could have been expected given that it is easier to work and is more aesthetically pleasing, at least to our eyes. However, these percentages tell a different story indicating that it was just one amongst a number of locally available materials that was used in these inland valley-side areas.

Fig. 26



When compared with the previous Milfield Basin study, which sampled over a wider variety of geological zones than this survey, and so may also reflect differences in raw material choice in these areas, the results are not greatly dissimilar. In the Milfield study the diagnostic Mesolithic material comprised 44% agate, 37% flint, 12% chert, 4% quartz and 3% other materials. The key point to draw from this comparison though is the relative consistency of the flint count between both surveys as a proportion of the assemblage. In this study flint accounts for 37.2% of the Mesolithic assemblage against 62.8% non-flint material while in the Milfield study flint accounts for 37% of the assemblage against 63% non-flint material. This consistency across two large landscape surveys in the same region adds considerable strength to the observation that Mesolithic groups

occupying the valleys of inland Northumberland relied on a wide range of stone types, and not just flint, for meeting their task needs, and that acquisition of raw materials was structured around self-reliance and local availability. This is an important finding as it implies that groups not only had freedom of travel across relatively extensive tracts of landscape, such as access to the coast, but that groups had freedom of access to the sources of raw material across these area such as the beach flint itself. Perhaps this implies that 'ownership' of land and resources was not a formal feature of Mesolithic social organisation, although it is certainly possible that larger band or tribal groupings may have had rights of access over substantial tracts of land. Conversely, it implies that rights to resources was a critical issue for Neolithic and later groups and it is reasonable to assume that this is linked to the more sedentary existence associated with farming groups and their attachment to specific tracts of land. When Neolithic groups anchored themselves to the land, either by cultivation or rights to grazing land, this would have created tensions over access to static resources in the landscape such as stone tool sources. This need to gain access to such fixed resources may have been one of the principal factors that encouraged the creation and growth of wide-ranging exchange networks at this time as witnessed in the lithic assemblage from the Till-Tweed study (see above).

Artefact Types

A wide variety of lithic types are present in the Till-Tweed lithic assemblage ranging from struck pebbles (test pieces) through to cores, flakes, blades and a range of finished tools. Particularly fine pieces include the outstanding collection of Neolithic and early Bronze Age pieces from field 22 as well as some of the arrowheads and scrapers from the Hedgeley-Bewick block of fields. A probable perforated macehead was discovered in field 31 at St Cuthbert's Farm while a fine leaf-shaped arrowhead came from field 45 in the West Newbiggin block. Some classic Mesolithic pieces, including narrow-blade microliths, have come from the Tweed blocks, particularly fields 33, 41 and 54. Table 4 below summarises the quantity of different types of lithics together with their percentage as a proportion of the entire assemblage.

Artefact Type	**Total**	**% of Total Assemblage**
Struck Pebble/Test Pieces	20	0.7
Cores	302	11.1
Flakes	1606	58.9
Blades	339	12.4
Utilised Flakes	23	0.8
Utilised Blades	49	1.8
Edge-Trimmed Flakes	71	2.6
Edge-Trimmed Blades	47	1.7
Retouched Flakes	67	2.5
Retouched Blades	52	1.9
Scrapers	111	4.1
Microliths	12 (+ 3 poss)	0.6
Leaf Arrowheads	3	-
Barbed and Tanged Arrowheads	4	-
Transverse Arrowhead	1	-
Chisel Arrowhead	1	-
Arrowhead (unident)	2	-
Points	2	-
Serrated Blades	2	-
Knife	1	-
Awls	3 (+ 2 poss)	-
Burin	1	-
Macehead?	1	-
Whetstone	1	-
Gun Flint	1	-
Total	**2727**	

Table 4. Summary of lithic artefact types present in the assemblage.

The following two tables present the breakdown of lithic types by field in order to provide a quickly accessible guide to the location of the different artefact types summarised in table 4 above.

Field	Test Piece	Core	Flake	Blade	Utilised Flake	Utilised Blade	Edge-Trimmed Flake	Edge-Trimmed Blade	Retouched Flake	Retouched Blade	Scraper
1		7	9	2							3
2	1		2								
3	1	3	13	1			2				2
4		2	6	3		1		3	3		2
5		2	3	1		1			1	1	
6		2	6	1		1					2
7		3	19	4			3			1	2
8	1	3	10	2			3	1		1	
9	1	5	21	6	1			4	1	1	2
10		7	51	2	1	1	1	2	2	1	
11			14	3	1		1		2		4
12		5	15	3		1	2	1		2	1
13	1		4				1				
15	1	7	16	6	1	2			3	1	4
16		5	62	7		3	5		1	1	7
17			20	5			1			1	2
18	1	3	27	2	1	2		1	4		2
19		3	34	8		2		1			1
20		1	7	3					1	1	1
21		1	32	10		2		1		1	2
22		22	70	22	1	10	4	4	10	8	11
23		4	27	2			1	1	3	1	1
24		2	23	1	3	1	2		3	1	2
25		3	5	1	1				2		
26	1	3	35	4				1			3
27			15				1			1	2
28		4	24	2			1	1	1		
29	1	19	118	20	6	5	5	1	3	3	7
30		2	3	1					1	1	
31		10	12	1	2				2		2
32		19	126	54	1	7	4	2	1	1	7
33	1	39	378	81	3	5	10	9	4	9	
34		9	72	15			2	3	4	1	3
35		1	14	8	1		1	2			1
36		2	5						1		1
37	3	6	21	5					1	2	2
38		2	15	2						2	3
39		6	20	5					3	2	
40			3				1				
41	1	4	30	3		1	1		3		4
42		1	2							1	
43			1								
44		11	13	2			5			2	2
45		11	31	7			6				4
47	1	10	8	2			2	3		2	1
48	1	3	14	4			1		2		1
49											
50			2								
51	1	1	9				2	1			
52		2	3								
53			5								
54	1	32	75	18		4	1	4	1	1	10
55		5	22	2				1	2		
56			6								
57	1	2	5	2			1				1
58		2	12	1						1	2
59	1	1	2								1
60		6	6	4							3

Table 5. Summary of flint types by field.

Field	Microliths	Arrow Leaf	Arrow B & T	Arrow Trans	Arrow Chisel	Arrow Unident	Serrated Blade	Knife	Awl	Burin	Other
1											
2											
3											
4	1										
5											
6											
7	1										
8											
9	1										
10											
11											
12											
13											
15	1										
16											
17											
18			1								
19	1					1					1 gun fli
20		1				1					
21			1								
22		1	1		1		2				
23								1			
24											
25											1 whets
26											
27											
28											
29											
30											1 Mace
31	1										
32									1		
33	1 (+ 1 poss)										
34				1			1				
35											
36											
37											
38	1								1		1 point
39											1 point
40											
41											
42											
43											
44											
45		1									
47	1										
48											
49											
50									1		
51											
52											
53											
54	4								2 poss	1	
55	1										
56											
57											
58			1								
59											
60											

Table 6. Summary of flint types by field contd.

Struck Pebbles
A total of 20 struck pebbles (or 'test-pieces') were identified comprising 0.7% of the lithic assemblage. They include pieces made from flint, agate and chert. The mean average length of the non-broken pieces is 40.1mm and the mean average width is 35.0mm. They usually have one or two flake facets indicating where the nodule/pebble has been tested. Sometimes struck pebbles are referred to as test-pieces. The presence of these pieces suggest that a source for this raw material lies close by.

Cores
A total of 302 cores were identified comprising 11.1% of the lithic assemblage. They include pieces made from flint, agate and chert. Most of the cores were small in size and many of these were clearly intended for the production of microlith-size blades. A variety of different core types were evidenced and these included 53 platform cores, 29 flake cores, 21 multi-platform cores, 20 pebble cores, 11 bi-polar cores, 3 micro-cores, 2 prismatic cores and 2 opposed-platform cores, the rest not fitting into any obvious classification. All the cores that could be confidently dated belonged to the Mesolithic.

Flakes
A total of 1606 flakes were identified comprising 58.9% of the lithic assemblage. They include pieces made from flint, agate, chert and quartz. Based on the measurements of the 613 non-broken flakes the mean average maximum length, width and thickness are 20.9mm, 26.6mm and 8.5mm respectively. These figures indicate most flakes are short, squat and relatively thick when compared to flakes typical of assemblages in flint-rich regions to the south. This is indeed the case and can be accounted for by the fact that many of the flakes are made from chert and agate and these raw materials usually produce considerably thicker and squatter flakes than their counterparts made from flint. This is directly related to the flaking properties of these different raw materials.

Blades
A total of 339 blades were identified comprising 12.4% of the lithic assemblage. They include pieces made from flint, agate, chert and quartz. Based on the measurements of the 122 non-broken blades the mean average maximum length, width and thickness are 25.2mm, 13.0mm and 6.6mm respectively. These figures indicate blades are generally short and thick which, like the metrical statistics for the flakes, is related to the raw material and the size of nodules available to work.

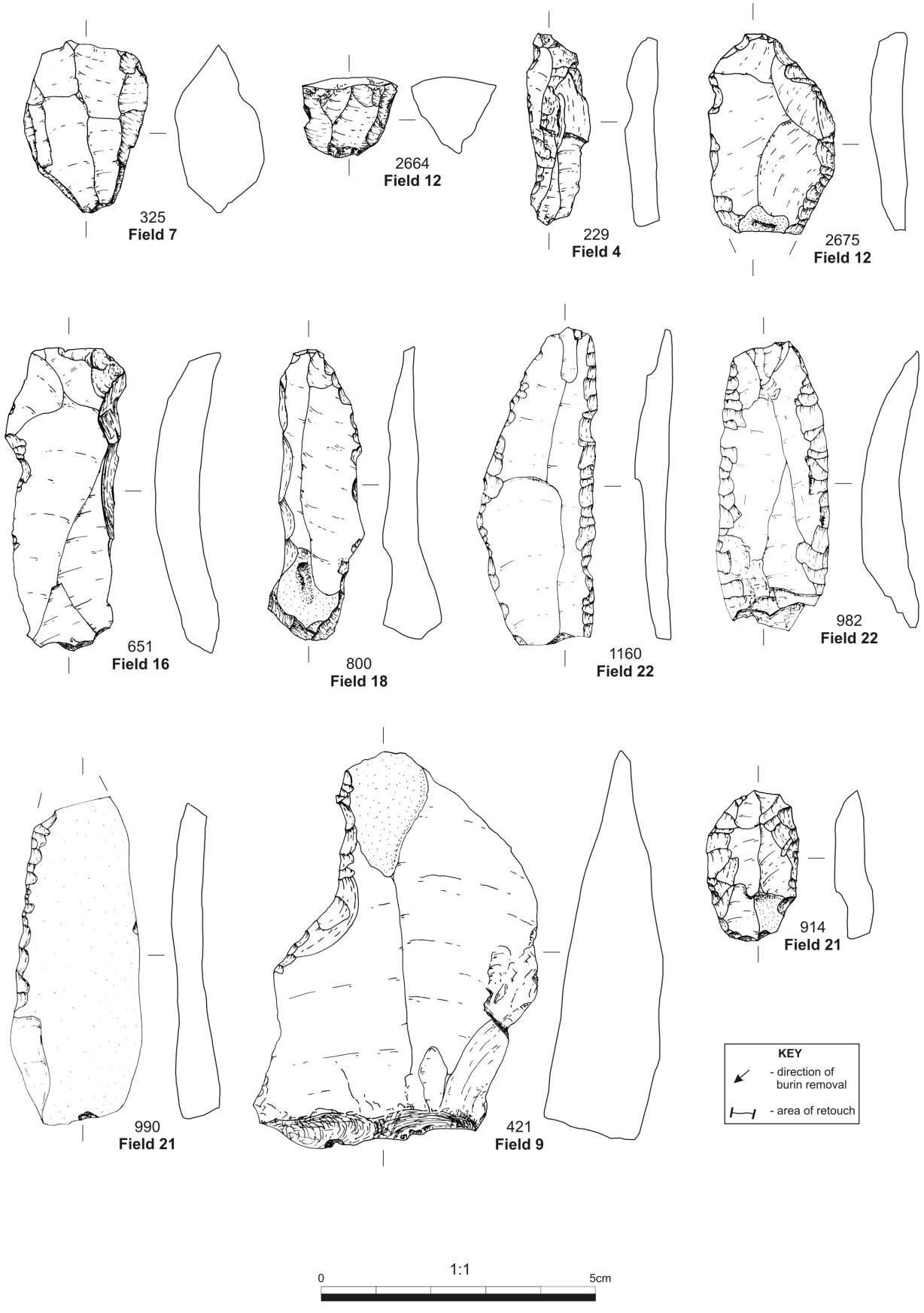


Fig. 27 Fieldwalking lithics from the Till catchment: 325 bipolar platform core; 2664 prismatic core; 229, 2675, 651, 800 edge-trimmed blades; 1160 serrated blade; 421, 914, 982, 990 retouched blades

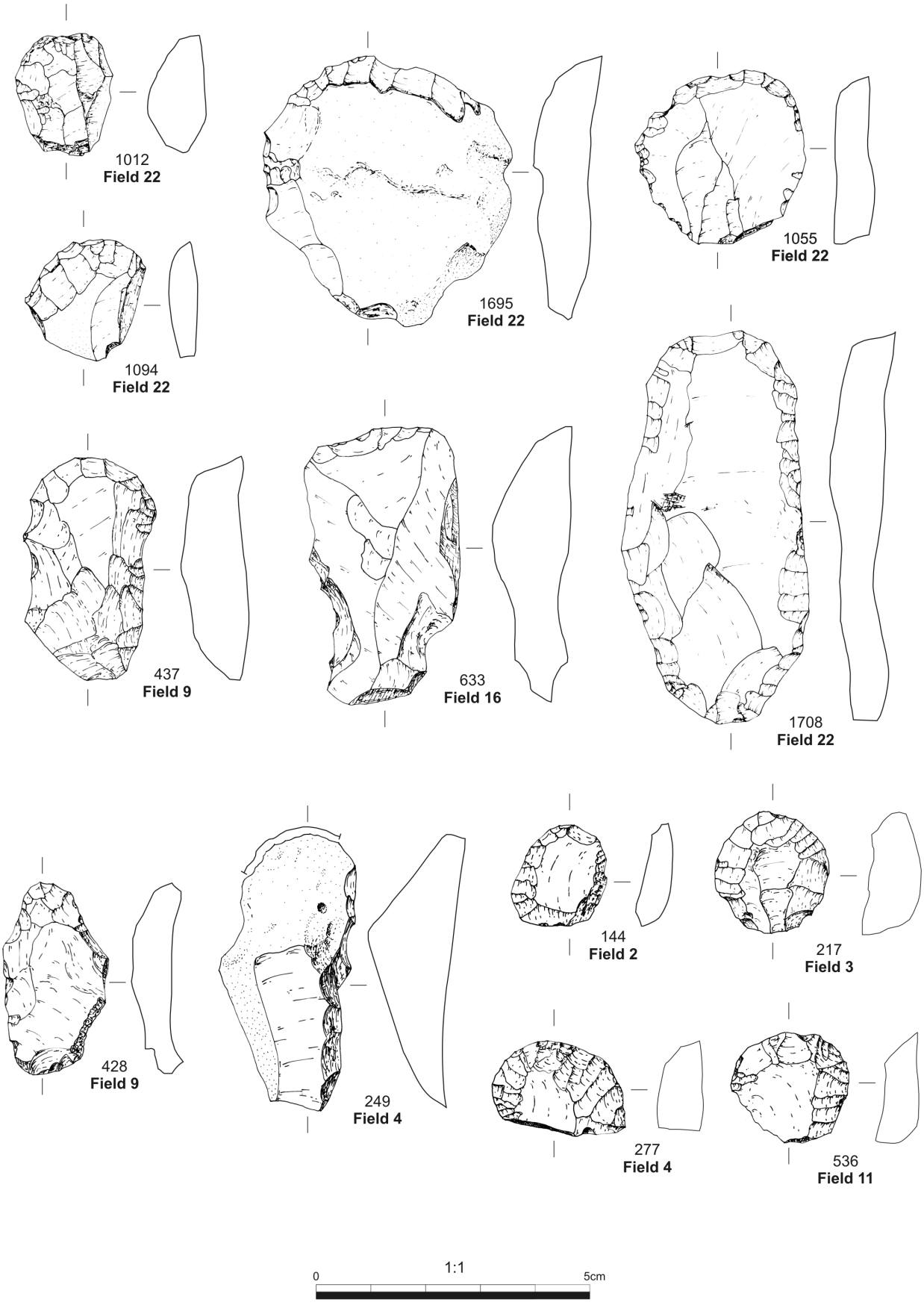


Fig. 28 Fieldwalking lithics from the Till catchment contd: 1012, 1094, 1695, 1055 scrapers; 437, 633, 1708, 428, 249 end scrapers; 144, 217, 277, 536 thumbnail scrapers

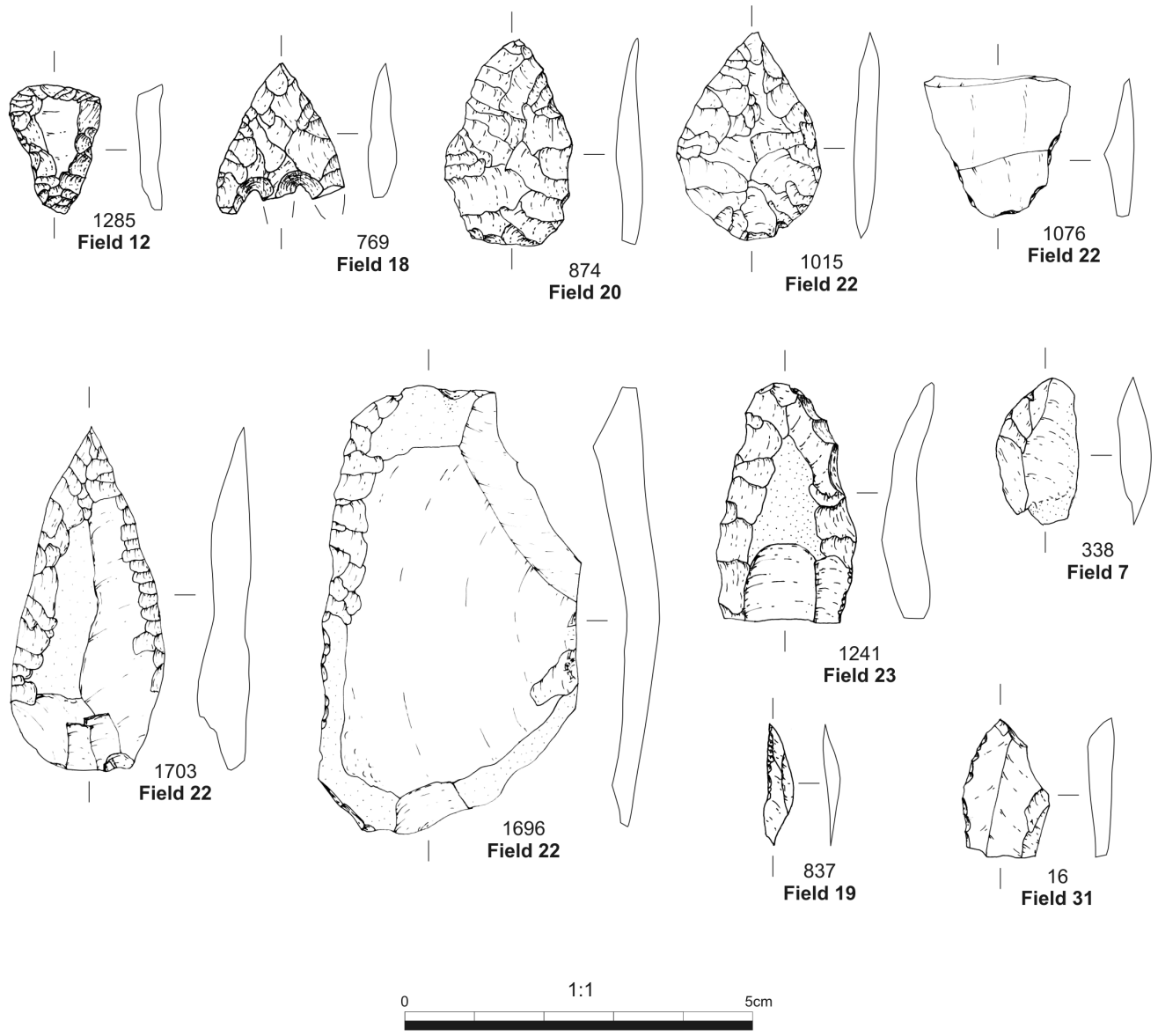


Fig. 29 Fieldwalking lithics from the Till catchment contd: 1285 tiny scraper; 796 barbed and tanged arrowhead; 874, 1015 leaf-shaped arrowhead; 1076 chisel arrowhead; 1703 spearpoint; 1696 knife; 1241 plano-convex knife; 338, 837, 16 microliths

Utilised Flakes and Blades

A total of 72 utilised flakes and blades were identified which together comprise 2.6% of the lithic assemblage. They include pieces made from flint, agate, chert and quartz. Based on the measurements of the non-broken pieces the utilised blades have mean average maximum length, width and thickness measurements of 30.1mm, 15.5mm and 6.6mm respectively. The non-broken utilised flakes have corresponding measurements of 25.3mm, 20.6mm and 9.9mm.

Edge-Trimmed Flakes and Blades

A total of 118 edge-trimmed flakes and blades were identified which together comprise 4.3% of the lithic assemblage. They include pieces made from flint, agate and chert. Based on the measurements of the 24 non-broken edge-trimmed blades these have mean average maximum length, width and thickness measurements of 29.3mm, 15.7mm and 7.6mm respectively. The 31 non-broken utilised flakes have corresponding measurements of 28.3mm, 25.0mm and 9.8mm.

Retouched Flakes and Blades

A total of 119 edge-trimmed flakes and blades were identified which together comprise 4.4% of the lithic assemblage. They include pieces made from flint, agate and chert. Based on the measurements of the 27 non-broken pieces the edge-trimmed blades have mean average maximum length, width and thickness measurements of 33.8mm, 18.2mm and 8.2mm respectively. The 28 non-broken utilised flakes have corresponding measurements of 22.6mm, 20.3mm and 8.5mm. Some of the broken retouched blades and flakes could be segments of other formal tool types including burins, scrapers and a tanged tool.

Scrapers

A total of 111 scrapers were identified comprising 4.1% of the lithic assemblage. They include pieces made from flint, agate, chert and quartz. The mean maximum measurements of the 83 non-broken scrapers is 26.3mm long, 19.8 wide and 10.0mm thick. A variety of scraper types representative of different periods are present in the assemblage including 27 end scrapers (some Neolithic and some Mesolithic), 4 pebble scrapers, 7 thumbnail scrapers (likely to be early Bronze Age) and 6 tiny scrapers (Mesolithic).

Microliths

A total of 12 microliths and 3 possible microliths were identified comprising 0.6% of the lithic assemblage. They include 8 pieces made from flint, 4 made from chert and 3 from agate. The types present include 4 scalene triangles, a backed blade, a geometric form, an obliquely blunted piece, one lamelles à cran and other non-readily classifiable pieces. The mean maximum measurements of the 11 non-broken microliths is 21.4mm long, 9.5 wide and 3.9mm thick. Being

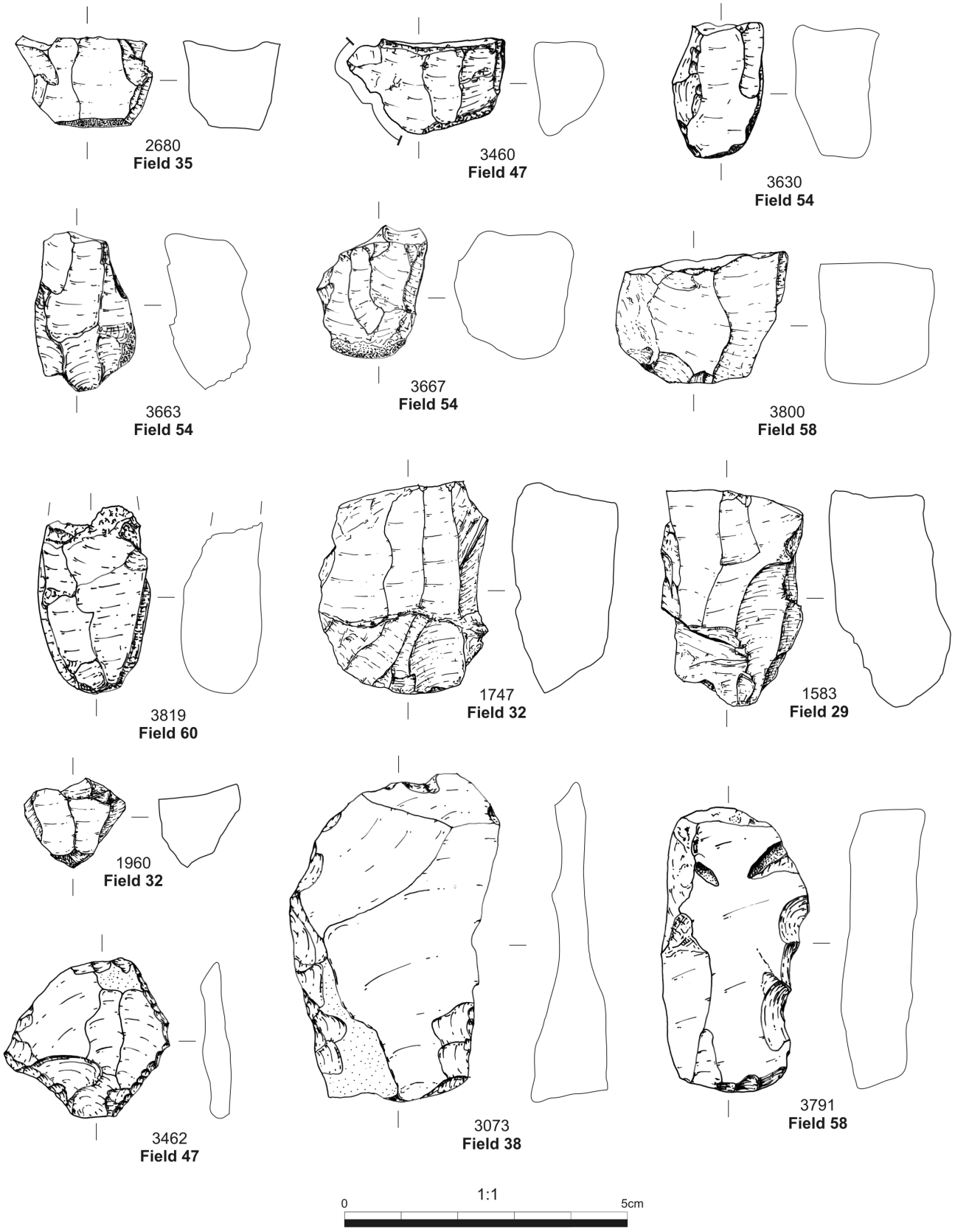


Fig. 30 Fieldwalking lithics from the Tweed catchment:
2680, 3460, 3630, 3663, 3667, 3800, 3819 platform cores;
1747 flake core; 1583 opposed platform core;1960 prismatic core; 3426 edge-trimmed flake;
3073, 3791 retouched blades;

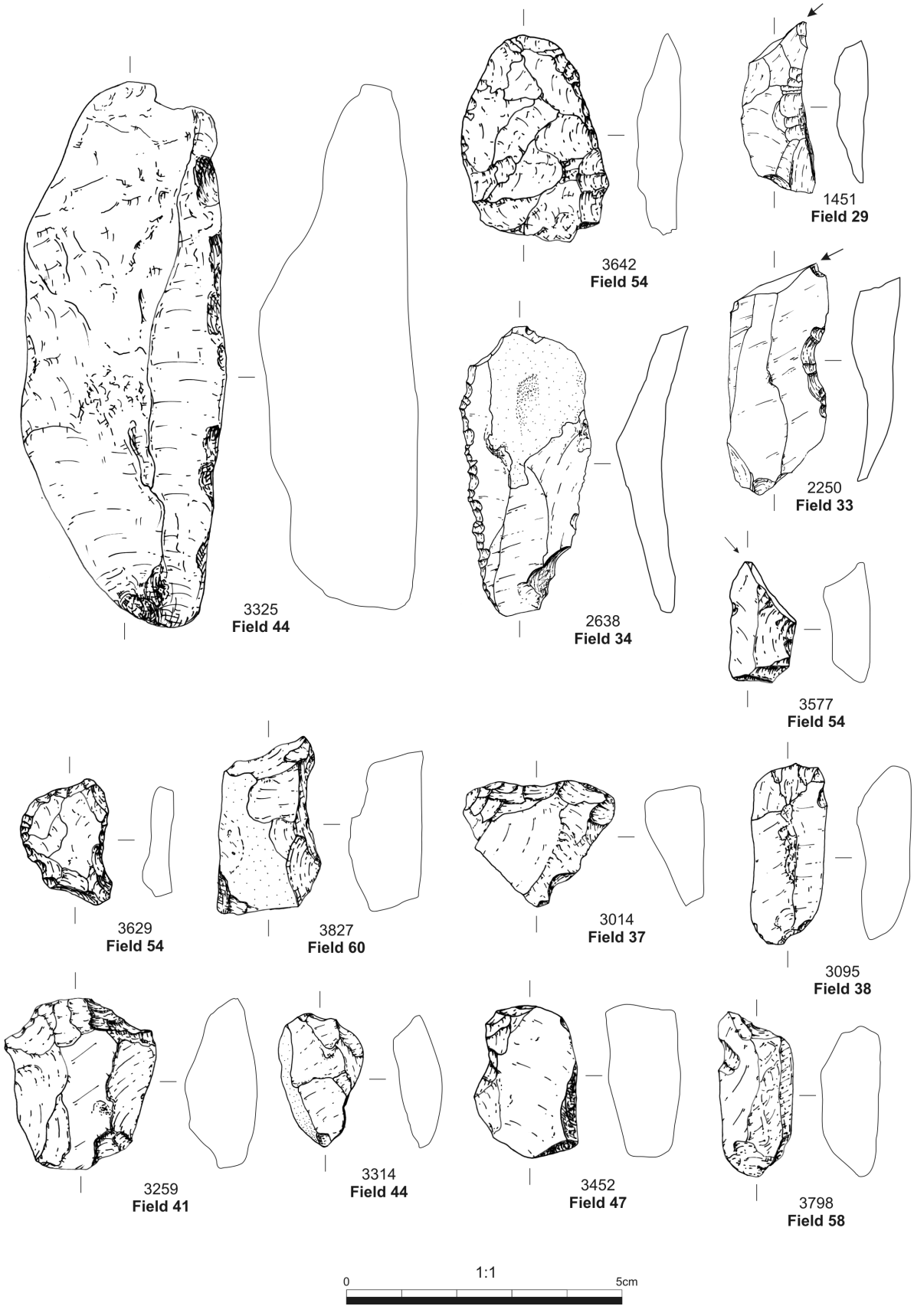


Fig. 31 Fieldwalking lithics from the Tweed catchment: 3325 bruised backed blade; 3642 edge-trimmed blade; 1451, 2250, 3577 burins; 3629, 3827, 3014 scrapers; 3095, 3259, 3314, 3452, 3796 end scrapers

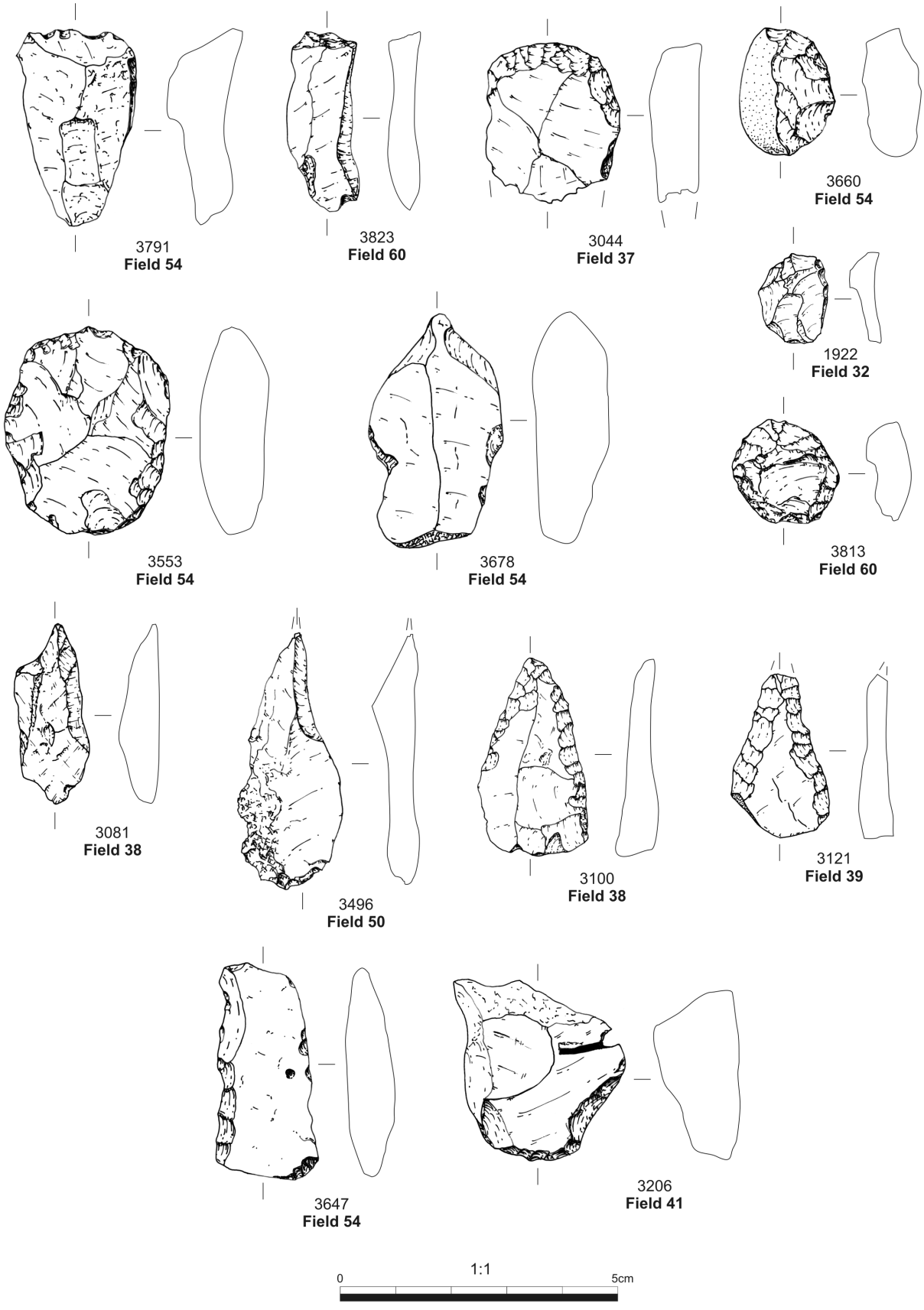


Fig. 32 Fieldwalking lithics from the Tweed catchment contd: 3791, 3823, 3044 end scrapers; 3660 pebble scraper; 1922 tiny scraper; 3553 scraper on levallois flake; 3813 thumbnail scraper; 3678, 3081, 3496 awls; 3100, 3121 points; 3647 knife; 3206 cut flint

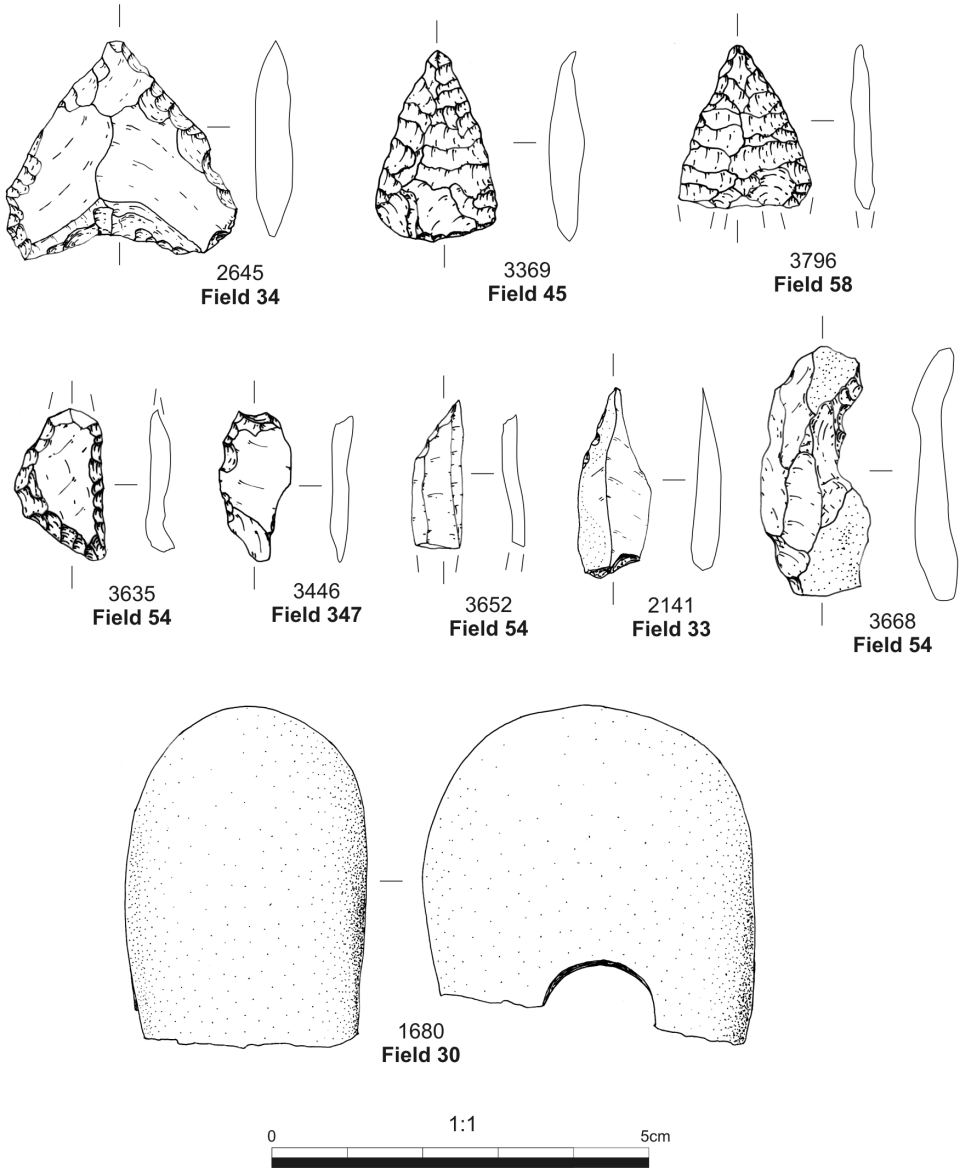


Fig. 33 Fieldwalking lithics from the Tweed catchment: 2645 transverse arrowhead; 3369 leaf-shaped arrowhead;3796 barbed-and-tanged arrowhead; 3635 scalene triangle microlith; 3446 crescent microliths; 3652 geometric microlith; 2141 microlith; 3668 lamelle a cran; 1680 possible pebble macehead

diagnostic of the Mesolithic period all these pieces are made on narrow geometrical blades and are therefore considered likely to belong to the later Mesolithic period.

Arrowheads

A total of 11 arrowheads and 2 points were identified together comprising 0.5% of the lithic assemblage. All are made from good quality flint and they include 4 barbed and tanged pieces (all broken) belonging to the early Bronze Age, 3 leaf-shaped arrowheads, together with one chisel-head arrowhead and one transverse arrowhead, all belonging to the Neolithic. The remaining two arrowheads were broken segments and were not able to be ascribed to a specific arrowhead type. The leaf-shaped arrowheads average 27.8mm long by 18.3mm wide by 3.5mm thick. The chisel-head arrowhead measures 19mm long by 21mm wide by 4.5mm thick while the transverse arrowhead measures 25.5mm long by 30 mm wide and 4mm thick. It is interesting to note that the arrowheads came from two principle clusters: five came from the fields at Hedgeley and three came from the scatter of Neolithic-early Bronze Age material in the north end of field 22 at Akeld. Single finds came from field 45 and field 58 near to the Tweed.

Other Tools

The other tool types present in the assemblage include two serrated blades, a plano-convex knife (early Bronze Age), three awls and two possible awls, a gun flint, a burin (Mesolithic), a whetstone and a what appears to be a broken quartz macehead (late Neolithic).

Test Pit Flints

A total of 48 flints were recovered from the test pit in field 22. They were all very large pieces with the 28 non-broken pieces averaging 43.9mm long by 37.2mm wide by 9.1mm thick. They were virtually all attributable to the Neolithic-early Bronze Age and were in pristine condition. It is likely that they were brought into the ploughzone from a recently truncated archaeological feature that was found in the base of the test pit.

Type	Total
Cores	1
Flakes	18
Blades	4
Retouched Flakes	1
Retouched Blades	1
Utilised Flakes	12
Utilised Blades	7
Scrapers	3
Spear Point	1
Total	**48**

Table 6 Summary of flint types from test pit in field 22

A total of 128 lithics were recovered from the 20 test pits in field 33 with all diagnostic types being attributable to the Mesolithic which is consistent with the composition of the surface scatter above. The assemblage comprised various

rock types including 58 flint pieces (45.3%), 56 chert pieces (43.8%), 13 agate pieces (10.2%) and one quartz piece (0.7%).

Type	Total
Cores	11
Flakes	85
Blades	19
Retouched Flakes	1
Retouched Blades	4
Utilised Blades	2
Scrapers	3
Burin	1
Crescent Microlith	1
Knife	1
Total	**128**

Table 7 Summary of flint types from test pits in field 33

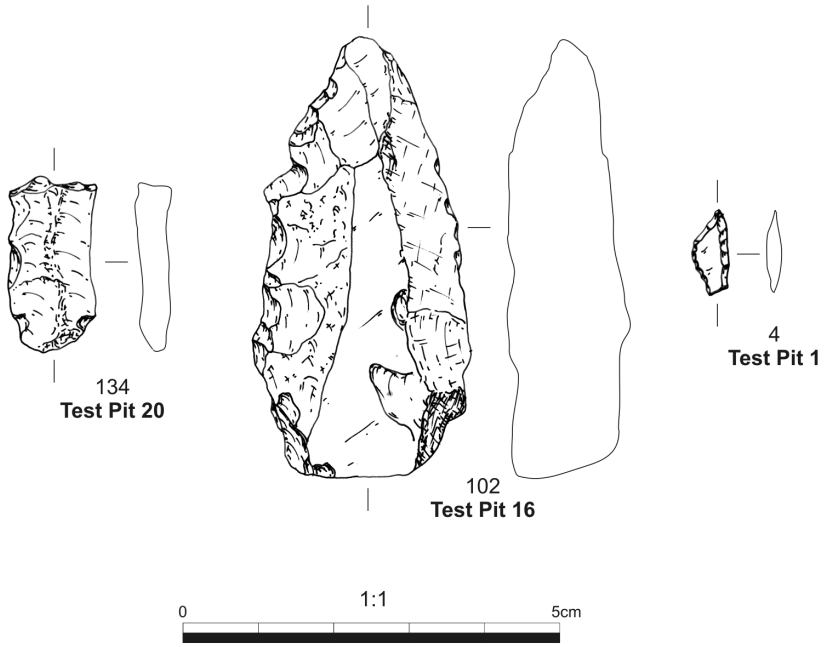


Fig. 34 Tweed test pit flints: 134 end scraper; 102 knife; 4 crescent microlith

5. Discussion

The lithic assemblage recovered by the Till-Tweed survey reveals some interesting patterns. Firstly, the density of finds recovered from the Tweed blocks are very high when compared to those from the Till. However, they have a higher incidence of non-flint lithics in their respective surface assemblages and this may relate primarily to Mesolithic, and perhaps even Palaeolithic, activity. The same is not necessarily true for the Neolithic and early Bronze Age as the clear concentrations of this material are located in the Till catchment particularly around the Hedgeley-Bewick area and at Akeld in the Milfield Basin. Some early Bronze Age activity was also suggested around Crawley Farm. This is not to say that Neolithic and early Bronze Age activity did not occur in the Tweed catchment, but rather that settlement had spread further inland where wide expanses of flat river terraces were favoured during these periods. The crop-mark evidence for a possible mortuary-enclosure monument at Wark, a possible ploughed out long barrow at St. Cuthbert's farm, together with the large upstanding barrow at Tillmouth farm, indicate that Neolithic and early Bronze Age activity took place along the lower Tweed valley, but so far the fieldwalking data has shown only limited traces of activity dating to this period. The main finds that can be attributed to the Neolithic in the Tweed blocks is the transverse arrowhead from field 34, the possible macehead from field 31 and the leaf-shaped arrowhead from field 45 and the barbed and tanged arrowhead from next to the river Tweed in field 58.

It is clear that the density of lithics in the Tweed block is generally higher *per se* than in the Till block. However, it must be stated that the current sample for the lower Tweed valley is skewed by the extraordinarily large concentration of material from field 33. The adjusted average density figure for the Tweed block as a whole is 14.0 lithics per hectare compared with 8.0 per hectare for the Till block. Given that Mesolithic material is nearly always more common in fieldwalking assemblages in the North-East than any other material, together with the greater chronological span of the period, this quantitative difference in lithic densities appears to relate directly to the relative density of Mesolithic settlement. As most of the lithics are representative of Mesolithic activity the conclusion that can be drawn from this is that the Tweed valley formed a key focus for Mesolithic settlement while the valleys further inland were not utilised to the same extent.

The huge density of debitage material in field 33, and to a lesser extent that in neighbouring field 32, are indicative of a Mesolithic settlement site. However, the complete absence of scrapers from the surface assemblage in field 33 is noteworthy and perhaps indicates that this site was used in a different way for tool production, repair and maintenance rather than settlement perhaps. Whether this was a place that was returned to over a protracted period or resulted from a short period of intensive occupation remains unknown without recourse to excavation. There were no diagnostic very late Mesolithic finds and neither were there any diagnostic early Mesolithic pieces so it would seem that the site is sandwiched somewhere between the 8th millennium cal BC and the 6th millennium cal BC. The limited proportion of primary material at this site indicates that the assemblage has not accumulated as a result of raw material extraction,

an activity that typically leaves very high densities of lithics. This leads to the conclusion that we are most likely dealing with hunting/fishing or logistical settlement-type activity. However, it is interesting that out of this massive total of 541 finds, most of which came from a single cluster in the field, there is not one scraper from the surface assemblage; three were recovered from the test pits. Nearly every other field in the survey produced two or more scrapers and so this absence of scrapers in field 33 has to be seen as a genuine pattern. There were a number of other finished tools in this field and there were Mesolithic scrapers in field 32 next door. Perhaps the Mesolithic settlement on this bluff was spread out over a wide area with zonation of certain activities. This could account for the high concentration of knapped debris but relatively few tools on one part of the bluff with scrapers, presumably associated with hide-working, located further along the bluff. The proximity of fresh water in the nearby river, together with its fishing potential and easy navigation to the coast must have made this an attractive place for hunter-gatherer-fisher groups.

The patterning evident in the use of lithic raw materials is of particular significance. The key finding is that there is a clear correlation between Mesolithic pieces and the use of a range of locally available flint (mostly beach) and non-flint materials on the one hand, and the exclusive use of flint for Neolithic and Bronze Age tools on the other, the latter being frequently made on higher quality imported material. It follows, therefore, that all the worked agate, chert and quartz belongs to the Mesolithic, and perhaps in some cases to the Palaeolithic. This is indicative of economic regimes based on self-sufficiency with only limited need for wider group contacts. This contrasts with the Neolithic and early Bronze Age evidence which indicates reliance on imported material for tool production, and some of it from long distances at that. This indicates very wide-ranging networks with contacts as far away as southern England. This provides a context for the widespread adoption of similar material culture, monuments and presumably ideological beliefs during the early Neolithic, as indicated by the distribution of long barrows, mortuary enclosures, round-based pottery and so forth with the beginning of the Neolithic.

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