

AN ARCHAEOLOGICAL RESOURCE ASSESSMENT OF THE LOWER AND MIDDLE PALAEOLITHIC IN BUCKINGHAMSHIRE

Dr Barbara Silva, February 2008

1. INTRODUCTION

1.1 Project background, methods and sources

The aim of the Solent-Thames archaeological framework is to provide: 'a summary of up-to-date knowledge about all aspects of the rich and diverse past of...Buckinghamshire [and] identify gaps in our knowledge and set out a research strategy to encourage future investigation'. This section will focus on the evidence for the Lower and Middle Palaeolithic (Old Stone Age), before the arrival of modern humans around 40,000 years Before Present (BP), the Upper Palaeolithic. Some of the themes suggested for the period-based resource assessments of which this is a part cannot be applied to the Palaeolithic and Pleistocene record; categories such as 'warfare, defences and military' or 'crafts, trade and industries' have no relevance to the topic being discussed. Therefore, this resource assessment will focus on the themes of 'Landscape and Natural Use' and 'Chronology'.

Dates will be stated as follows: 150,000 yrs BP (years Before Present). The chronological model for climatic change will be based upon the Marine Oxygen Isotope Stage record (MIS), and this terminology will be adopted for the following discussion. Given the difficulties of dividing Lower from Middle Palaeolithic, a broad tri-partite chronological division has been adopted, based on major Pleistocene climatic events that are (a) easily recognisable in the geological record and (b) correspond with well-established phases of hominin occupation. The three phases are: pre-Anglian/Anglian (before c. 425,000 BP, MIS 12 or earlier); Hoxnian/Wolstonian complex (between c. 425,000 and 125,000 BP, MIS 11 to end of MIS 6); and British Mousterian (from c. 125,000 to 40,000 BP, MIS 5e to middle of MIS 3).

Within the SMR records from Buckinghamshire (stored at both Buckinghamshire County Council and Milton Keynes County Council), there are some 380 records that refer to Palaeolithic and Pleistocene finds in the county. In common with much of the country, few of these finds are the result of formal archaeological excavation. They mostly represent *chance* finds through construction, quarrying or field walking. The majority of finds, where condition *is* noted, are described as being 'rolled' suggesting that they are not *in situ* but their location is the result of secondary deposition. However, this statement must be interpreted with caution as many of the SMR records do not state the condition of the artefact. There are also sites (such as Station Pit in Taplow) where hundreds of artefacts have been uncovered with very little evidence for degradation or rolling suggesting that they are, if not *in situ*, then very close to it. Faunal and environmental remains (or "Ecofacts") are rarely mentioned in the SMR, and whilst it is possible that this is a fair representation as to the presence (or lack of) these finds in the county, it is more likely that this is due to a lack of reporting or recognition.

1.2 The Lower/Middle Palaeolithic

The Lower and Middle Palaeolithic period dates from the first appearance of early hominins (in Britain now dated to ca. 700,000 years ago; Parfitt *et al.*, 2005) to the appearance of anatomically modern humans (Upper Palaeolithic: ca. 40,000 years ago). The study of Palaeolithic archaeology has broadened significantly over the last 50 years, with an increasing awareness and acceptance of the data that can be provided by Quaternary Science beyond stone tools. The increasing recognition that early hominins represented another large mammal roaming the landscape, and requiring analysis as *part* of an ecological assemblage has brought a new perspective to this field of study incorporating the palaeoenvironmental evidence from Pleistocene sediments with the archaeological evidence.

The evidence we have for the Palaeolithic is dominated by the presence of stone tools (palaeoliths). Less common but no less valid are the organic remains that are also sometimes found, such as the butchered bones (e.g. the elephant bones from Southfleet Road, Kent, Wenban-Smith *et al.* 2006) and

wooden tools (e.g. the Clacton spear). It must also be stated that the majority of the evidence for the Pleistocene and Palaeolithic is to be found within fluvial sands and gravels.

Indirect evidence for the *potential* presence of early hominins can be inferred from the environmental evidence preserved in the sediments themselves. These can give us detailed information regarding former river courses and the presence of ancient glaciers. Within the sands and gravels, fossil bones can be preserved as well as smaller, but no less important fossils, in the form of shells, beetles and microscopic fossils such as pollen. These *ecofacts* (ecological artefacts) provide detailed snapshots of the Ice Age landscapes within which early hominins lived.

2. LANDSCAPE AND TOPOGRAPHY

The geology of Buckinghamshire can be divided into three broad categories of landscape. The northern part of the county, to just south of Stoke-Hammond and Aylesbury, is characterised by an undulating clay topography (Buckinghamshire clay lands), and low hills incised by rivers, namely the Thames and the Great Ouse. Moving southwards, the chalk hills of the Chilterns dominate a landscape incised by small valleys that in high areas is capped by clay-with-flint deposits. The Chilterns are generally drained by tributaries of, as well as the Thames itself. The southern extent of the county is comprised of the Middle Thames Valley, and the tributaries of the Colne and Wye rivers. This southern part of Buckinghamshire is characterised by fluvial terraces as well as the floodplain itself.

The main rivers of Buckinghamshire as outlined above are: 1) the Great Ouse that flows from the north of Brackley in an easterly direction, before being joined by the Padbury and Claydon Brooks near Buckingham, and the Rivers Tove and Ouzel at Newport Pagnell (in Buckinghamshire), before finally draining out in the Fens and Wash; 2) The River Thames, a tributary of the Thames that flows into Buckinghamshire from Aylesbury towards Thames; and 3) the River Colne, another tributary of the Thames that marks the eastern border of the county; and 4) the Thames delineating the southern extent of the county.

3. PLEISTOCENE BACKGROUND AND PALAEOGEOGRAPHY

3.1 Pleistocene deposits

Some of the most important Pleistocene deposits in Buckinghamshire are associated with the major rivers, such as the Great Ouse. There are four terraces associated with this river and, due to their location behind the Anglian ice limits, they must postdate this event i.e. are younger than 430,000 yrs BP. Little work has been conducted to date on establishing the ages of the terraces (c.f. Green *et al.*, 1996). Whilst prolific Palaeolithic and Pleistocene sites have been identified on the terraces of the Great Ouse (e.g. Biddenham and Barrington in Wymer, 1999), none have been identified in the Buckinghamshire stretch.

The stratigraphy of the Thames terraces in Buckinghamshire is complex. A detailed discussion of the issues can be obtained from Bridgland (1994), and for the purpose of this document, his model of terrace formation will be used here. Four main terraces have been identified: Harefield Terrace (believed to be pre-Anglian in age), the Boyn Hill Terrace (believed to have been deposited between ca.420,000 yrs BP, the end of MIS 12 and 340,000 yrs BP, end of MIS 10), Lynch Hill Terrace (deposited between 340,000 yrs BP, end of MIS 10 and 300,000 yrs BP, early MIS 8), and Taplow Terrace (ca. 250,000 yrs BP, end of MIS 8 to ca.120,000 yrs BP, MIS 5d). Generally, each terrace consists of a body of sand and gravel overlain by a deposit of loess rich material ('brick earth') or alluvium (Sherlock, 1960; Jukes-Browne & Osborne White, 1908). Around the modern river, flood deposits of alluvium and peat can also be observed. These terraces have historically been rich sources of Palaeolithic and Pleistocene finds. In contrast, only a few remnants of the river terraces associated with the Thames are still visible in Buckinghamshire. However, in the 19th century, Pleistocene finds were made within these sediments.

North of the Chiltern Hills, Chalky-Jurassic boulder clay or till can be found (the clay lands), testament to the presence of ancient ice sheets (Sherlock, 1960). Investigations by the Institute of Geological Sciences (Report no. 74/16 and 70/19) revealed the presence of a buried valley with lake clays

interspersed with chalky till under Deanshanger and Newport Pagnell/Ouzel. Very few Palaeolithic artefacts are reported from these deposits.

Within the Chilterns themselves, Pleistocene deposits are represented by the clay-with-flint caps on the high ground - the result of dissolution of the chalk-with-flint deposits. In the Chilterns, clay-with-flints is also sometimes referred to as Pebbly Clay and Sand, reflecting observations of a greater component of flint pebbles and sand in some deposits, but it is notable that neither includes far travelled components (Sherlock, 1960) and therefore by implication formed *in situ*. In places, there are also deposits of 'brick earth' comprised of mainly reworked tertiary deposits in this area (White, 1997) that are believed to represent infilling of chalk depressions during relatively wet interglacials (Catt, 1978). It is also likely that when lined with clay rich sediments, these depressions could have formed ponds and lakes (Catt, 1978) potentially attractive sites for early humans (White, 1997). Within the Chilterns themselves, dry valley gravels can sometimes be found lining the valleys through the hills as a consequence of post-glacial lake draining (Sherlock, 1960).

3.2 Landscape palaeo-zones

Four main landscape palaeo-zones can be identified:-

- 1) Great Ouze Valley
- 2) North Buckinghamshire clay lands
- 3) The Chilterns hills
- 4) Middle Thames Valley

4. LOWER/MIDDLE PALAEO-LITHIC RESOURCE

4.1 County overview

Within the SMR records from Buckinghamshire (stored at both Buckinghamshire County Council and Milton Keynes County Council), there are some 380 records that refer to Palaeolithic and Pleistocene finds in the county. In common with much of the country, few of these finds appear to be the result of formal archaeological excavation but rather represent *chance* finds through construction, quarrying or field walking. The majority of finds, where condition *is* noted, are described as being 'rolled' suggesting that they are not *in situ* but their location is the result of secondary deposition. However, this statement must be interpreted with caution as many of the SMR records do not state the condition of the artefact. There are also sites such as Station Pit in Taplow where literally hundreds of artefacts have been uncovered with very little evidence for degradation or rolling suggesting that they are, if not *in situ*, then very close to it. Ecofacts are rarely mentioned in the SMR, and whilst it is possible that this is a fair representation as to the presence (or lack of) these finds in the county, it is more likely that this is due to a lack of reporting or recognition of palaeoenvironmental finds. However, the majority of the Palaeolithic finds within the SMR records for Buckinghamshire do appear to be crudely clustered around the major river courses (Figure 1).

[MAP FROM SMR]

4.2 Site distribution

4.2.1 Great Ouze Valley Deposits

Pre-Anglian: none recorded

Hoxnian/Wolstonian:

At Stoke Goldington, an exposure of one of the terraces of the Great Ouze revealed a complex sedimentary sequence that contained a fossil assemblage associated with temperate conditions dating to ca. 200,000 years ago (MIS 7), although no artefacts were recorded (Green *et al.*, 1996). This site is comparable with the finds at Marsworth (see below) and adds further evidence for the existence of a previously unrecognised Interglacial episode.

British Mousterian: none recorded

Undated:

Great Ouze and tributaries - Only 3 records of palaeoliths being found in the river terraces of the Great Ouze recorded (2 handaxes and 1 flake – all un- or lightly rolled; Wymer, 1968). Several Palaeolithic finds (7 lightly and un-rolled artefacts) have been reported from the River Ouzel (Bletchley, Milton Keynes; in Wymer, 1968). Faunal and other palaeoenvironmental evidence appears to be limited, despite hints in the historical literature as to fossiliferous deposits. For example, Green (1864) notes that abundant elephant remains are found in the gravels of the river terraces and at Ascott, when cutting for the railway, the skeleton of a fossil elephant was found.

4.2.2 North Buckinghamshire clay lands

Pre-Anglian: none recorded

Hoxnian/Wolstonian: None recorded

British Mousterian:

The only site from Buckinghamshire to fit into this period is potentially associated with the river Thames. Horton *et al.*, (1995) noted some remnants of the Shabbington Terrace (third Thames terrace) around Starveall to the west of Aylesbury. These sediments are of interest as the historical records (Codrington, 1864 and Dawkins, 1869 in Horton *et al.*, 1995) suggest they contain fossiliferous deposits such as freshwater and terrestrial molluscs as well as abundant mammalian remains including hippopotamus. If this can be convincingly demonstrated, this would suggest that based on biostratigraphy, this terrace likely dates to the Last Interglacial (125,000 yrs BP).

4.2.3 Chiltern Hills

Pre-Anglian: none recorded

Hoxnian/Wolstonian:

Arguably, one of the most important Pleistocene sites in Buckinghamshire was uncovered at Pitstone Quarry, Marsworth (SMR Record No: 0473500000; Murton *et al.*, 2001). River channel deposits contained a rich palaeoecological assemblage including pollen, molluscs, beetles, ostracods and over 11,000 faunal remains. The samples from the channels, originally small chalk land streams, are thought to date from two separate interglacial episodes, MIS 7 and MIS 5e, and thereby establish the occurrence of a previously unrecognised interglacial between the established Hoxnian (MIS 11) and Ipswichian (MIS 5e) episodes. The lower channel finds included mammoth (*Mammuthus primigenius*), horse (*Equus ferus*), brown bear (*Ursus arctos*), wolf (*Canis lupis*), lion (*Panthera leo*) and northern vole (*Microtus oeconomus*). The presence of woolly mammoth (*Mammuthus primigenius*) is particularly important, as these remains may represent the earliest occurrence of this species in the UK. The upper channel contained the remains of hippopotamus (*Hippopotamus amphibious*), rhinoceros (*Stephanorhinus hemitoechus*) and giant deer (*Megaloceros giganteus*), and suggests a temperate woodland environment (Murton *et al.*, 2001).

British Mousterian: none recorded

4.2.4 Middle Thames Valley

Pre-Anglian:

In Buckinghamshire, only one artefact, of dubious provenance (Wymer, 1968, SMR No: 0129500000) has been reported from a gravel pit working the Harefield Terrace of the Thames, a supposed pre-Anglian deposit.

Hoxnian/Wolstonian:

More convincing and prolific evidence has been found in the sands and gravels of the Boyn Hill terraces, with quarries such as Deverill's and Cooper's Pits producing numerous artefacts dating from the Hoxnian/Wolstonian Complex.

In 1986, Gibbard *et al.*, published a paper recounting the discovery of an organic hollow at Slade Oak Lane, Denham. The organic muds contained within preserved pollen, spores and macroscopic plant remains in high concentrations allowing relatively detailed inferences to be drawn about the local vegetation cover. The authors date the site to the Hoxnian Interglacial (MIS 11) on the basis of the pollen stratigraphy, however this inference requires corroboration from an independent dating method. Any potential exposures of this deposit would benefit from further investigation that could shed light on an important period in Buckinghamshire's palaeoenvironmental history.

The Boyn Hill terrace sediments have produced substantial evidence for the presence of Palaeolithic peoples, with gravel extraction producing prolific Palaeolithic artefact sites such as Deverill's Pit (Grid reference: SU947840; Wymer, 1968; SMR Record No: 0202501000) and Cooper's Pit (Grid reference: SU945843; Wymer 1968; SMR Record No: 0155001000). Although the sediments were stratified (see Wymer, 1968), the artefacts found at this site are all rolled suggesting that they are not *in situ*. There has also been several other find spots on the Boyn Hill Terrace where rolled flakes and handaxes have been uncovered, again suggesting a process of re-working. Wymer (1999) concludes that this evidence reflects human occupation during MIS 11 under temperate interglacial conditions as being the most likely explanation but this hypothesis has not yet been conclusively determined.

The Lynch Hill terrace gravels are thought to have been deposited between 340,000 yrs BP (end of MIS 10) and 300,000 yrs BP (early MIS 8), with Wymer (1999) suggesting that the main period for human occupation was during the MIS 9 interglacial. The finds from this terrace are generally of a very similar nature to the Boyn Hill Terrace artefacts, most of which have been typified by Acheulian industries. Again several prolific sites have been uncovered by gravel extraction including Danefield Pit (SU878852; Wymer, 1968) where over 130 artefacts were recovered, almost all rolled suggesting that they were in secondary deposition. A series of quarries in the Burnham area have also produced a large number of palaeoliths including a 33cm long handaxe (reported in Oakley, 1937). Over half the Burnham artefacts are reported as being sharp (Wymer, 1968), suggesting they are *in situ*.

Superimposed above the Boyn Hill Thames Terrace can be found loess deposits (by implication *younger* than the gravels of the terrace), particularly in the Burnham area. These have proved to be rich sites for *in situ* archaeology, with the finding of sharp and unrolled artefacts (handaxes and flakes). A key site, requiring re-evaluation and dating (Wymer, 1968), is Dorney Wood, Burnham where numerous unrolled artefacts as well as faunal remains were uncovered.

Unlike the upper terraces, the Lynch Hill Gravels contain evidence for not just Acheulian industries. At Farnham Royal, possible examples of Clactonian industries have been identified (Wymer, 1968). Also, various aggregate extraction sites in Eton and Slough have revealed a range of artefacts. The most prolific site at Bakers Farm (SU958822; Wymer, 1968; SMR No: 0159900000) where several hundreds of palaeoliths have been found, 66 of which were in sharp condition (Wymer, 1968). Key finds include a Levalloisian tortoise core and Levalloisian flake suggesting a *maximum* age for these deposits of c. 250,000 yrs BP (MIS 8 and the appearance of Levalloisian industry in Britain) at odds with the generally accepted age of these deposits. In nearby Iver, again prolific finds (including some Levallois type artefacts) have been made in gravel extraction sites (such as Lavender's Pit, TQ025802; Lacaille, 1936; Wymer, 1968; SMR Record No: 0084401001). However, the nature of the palaeoliths recorded is different, they are predominantly rolled suggesting that they are not *in situ*. In the complex 'brick earth' type deposits overlying the gravel, several Levallois artefacts have been found (e.g. Great Western Pit; Lacaille, 1936) and Wymer (1968) suggests that they are much younger than the other finds.

The Taplow Terrace appears to hold evidence for three glacial and two temperate episodes dating from ca. 250,000 yrs BP (end of MIS 8) to ca.120,000 yrs BP (MIS 5d?) (Bridgland, 1994). In Buckinghamshire, only five find spots have been reported from this deposit as providing evidence for Palaeolithic peoples (Dean's Pit, SU849879; Marlow Brickyard, SU 861873; Well End Pit, SU883585; Station Pit, SU919816l; Wexham, TQ012801; Wymer, 1968, Bridgland, 1994) but the majority of palaeoliths are rolled suggesting they have been reworked. A few Levallois flakes (Wexham and Station Pit) have also been found, but unfortunately not *in situ* (Wymer, 1968). Various sites have also provided faunal remains. At Well End Pit various mammalian finds have been uncovered including mammoth (*Mammuthus primigenius*) and straight-tusked elephant (*Palaeoloxodon antiquus*) teeth,

the latter find at least suggested as dating to MIS 7 and subsequently re-worked into cold-climate gravels (Bridgland, 1994). At Station Pit (SU919816; Wymer, 1968; SMR Record No: 0191201000) faunal remains included mammoth, woolly rhino and a musk ox skull (Sherlock and Noble, 1922).

British Mousterian: none reported

5. Discussions and Conclusions

5.1 Great Ouze Valley

The terraces from the Great Ouze and its tributaries (mainly the Ouzel) have frustratingly only been reported as producing 10 artefacts from various find spots – at odds with prolific sites, such as Biddenham, in neighbouring counties. A key Pleistocene site however is represented by the sediment exposures at Stoke Goldington (Green *et al.*, 1996) providing palaeoenvironmental evidence for a little known Interglacial episode. It would be useful to establish whether the artefacts recorded in the SMR are a fair reflection of the arte- and eco-fact deposits in Buckinghamshire and why this is the case.

Key Site:

Great Ouze Terrace

- Stoke Goldington (Green *et al.*, 1996)

5.2 North Buckinghamshire clay lands

There appear to have been little formal investigations into the glacial deposits of North Buckinghamshire and as such this appears to be an area that could usefully be explored in the future. The presence of Pleistocene lacustrine sediments within Buckinghamshire is referred to tantalisingly by the Institute of Geological Sciences (Report no. 74/16 and 70/19) as being present under Deanshanger and Newport Pagnell/Ouzel. However, there appears to have been no finds, Pleistocene or Palaeolithic, associated with these sediments.

In terms of river terrace deposits, little is known in terms of archaeology from the Thames terraces, but historical records suggest that they are potentially interesting and may contain fossiliferous deposits from the Last Interglacial as outlined previously in this paper.

5.3 Chiltern Hills

Clay-with-flint deposits are found in the higher reaches of the Chilterns in Buckinghamshire. So far no finds archaeological or palaeoenvironmental, have been recorded from these deposits, in contrast to prolific sites from similar deposits elsewhere. It is possible that this absence of evidence is not evidence of absence, and as such requires further investigation.

5.4 Middle Thames Valley

The range of these deposits mainly consists of river terraces associated with the major rivers in Buckinghamshire. The time period covered by these deposits ranges from potentially pre-Anglian deposits (c.f. Thames Harefield Terrace) to the modern day (alluvial floodplains). Arguably the best preserved suite of terraces in Buckinghamshire is associated with the Thames, although the potential of the Great Ouze has not yet been fully explored.

In terms of Palaeolithic finds, the most implementiferous sites are to be found in the Thames terraces, particularly the Boyn Hill and Lynch Hill terraces, with sites such as Bakers Farm producing hundreds of artefacts. In terms of evidence for Pleistocene environments, faunal remains have only been reported in the county from the Taplow Terrace.

Not all the sites are terrace deposits. An infilled doline near Denham (Gibbard *et al.*, 1986) provided significant palaeoenvironmental evidence for the Hoxnian Interglacial - the only investigation of lake sediments in Buckinghamshire for the time period concerned here.

Based on the present evidence, the key sites all seem to be concentrated in the Thames terraces.

Boyn Hill Terrace

- Deverill's Pit (Grid reference: SU947840; Wymer, 1968; SMR Record No: 0202501000)

- Cooper's Pit (Grid reference: SU945843; Wymer 1968; SMR Record No: 0155001000)

Lynch Hill Terrace

- Danefield Pit (SU878852; Wymer, 1968)
- Burnham area quarries (Wymer, 1968)
- Bakers Farm (SU958822; Wymer, 1968; SMR No: 0159900000)
- Iver quarries (e.g. Lavender's Pit, TQ025802; Lacaille, 1936; Wymer, 1968; SMR Record No: 0084401001).

Taplow Terrace

- Station Pit (SU919816; Wymer, 1968; SMR Record No: 0191201000)

Marsworth

- Pitstone Quarry ((SMR Record No: 0473500000; Murton *et al.*, 2001)

There also appear to be deposits that are dominated by wind blown material, and are mainly recorded in association with the river terraces of the Thames, and particularly the Boyn Hill and Lynch Hill terraces. However, their composition of predominantly wind-blown material or loess (after Sherlock, 1960) requires re-evaluation. These are potentially important deposits as they appear to contain fresh, unrolled artefacts, and the key sites are:

Boyn Hill Terrace

- Dorney Wood, Burnham (SMR No: 0129401000)

Lynch Hill Terrace

- Great Western Pit (SMR No: 0239600001)

In conclusion, the main areas of interest for the Palaeolithic and Pleistocene in Buckinghamshire may be summarised as follows:

Sub-drift channels in the north of the county

These deposits could prove to be important sources of palaeoenvironmental and Palaeolithic evidence. The indication that they contain lake sediments along with chalky till suggests that they may date as far back as MIS 12, and the sediments could contain an important record of the environments of this period. If suitable exposures are available, it would be valuable to sample them for Pleistocene remains.

Clay-with-flint deposits in the Chilterns

The lack of finds from these deposits is intriguing considering the records from similar deposits in nearby counties, and as such merit further attention.

River terraces

By far, these deposits have produced the majority of the evidence available on Buckinghamshire Pleistocene and Palaeolithic past. However, many of the investigations have focussed purely on the archaeology with less attention paid to establishing a firm geochronology, using techniques such as OSL dating, or reconstructing the palaeoenvironmental evidence. Targeted sampling, where suitable sediments are uncovered, for geochronological and palaeoenvironmental analysis, could provide a valuable context to the finds already recorded in the SMR.

6. FUTURE WORK

6.1 Priority research questions

These questions are presented on the assumption that suitable deposits are exposed. It is very likely that the majority of these questions will take a significant period of time to answer based on suitable sites being worked, and sediments exposed. It is also important to note that whilst these questions are highly significant, the time required to sample and study these sediments is relatively small

compared with more 'traditional' archaeology, and much investigation could be conducted alongside the developments taking place.

6.1.1. General research questions and issues for Buckinghamshire

- What is the evidence for the earliest human presence in Buckinghamshire?
- Dating the onset of the Middle Palaeolithic in Buckinghamshire and particularly the appearance of Levallois artefacts.
- Compile the mammalian evidence and explore the possibility of using biostratigraphy to date key sites.
- Establish the archive potential of the tills of the Buckinghamshire clay lands.
- Explore the role of the Buckinghamshire landscape as a migration corridor along the major rivers; Great Ouse and Thames, as well as in the Chilterns themselves
- To develop a GIS model of the available Palaeolithic and Pleistocene evidence to provide an overall view of the palaeo-landscape as well as a predictive tool for the identification of potentially artefact and fossil rich deposits
- Investigate the locations and migrations of Palaeolithic peoples, within a tightly constrained geochronological framework, between fluvial and non-fluvial landscapes (to be identified)

6.1.2 Great Ouse Valley

- Establish a firm geochronological framework for the major river terraces
- Can a chronology be established for the Great Ouse terraces and can these be tied in with the Thames Valley sequence?
- Investigate the potential of these sediments to contain palaeoenvironmental evidence for Pleistocene landscapes and/or human presence?

6.1.3 North Buckinghamshire clay lands

- To investigate the potential of the lake sediments under Milton Keynes.
- To investigate the possible fossil content of the River Thame Shabbington terrace

6.1.4 Chiltern Hills

- To explore potentials for *in situ* finds associated with the clay-with-flints, both Palaeolithic and Pleistocene.

6.1.5. Middle Thames Valley

- To independently date the sediments of the infilled hollow at Slade Oak Lane and investigate the possibility of other proxies as well as artefacts being present.
- To resample and establish the sedimentary composition of the brick earth deposits as being Aeolian in nature, and to establish a chronology for the loess deposits and the artefacts contained within them
- To explore and establish the potential for palaeoenvironmental evidence, in particular mammalian remains, that could potentially be used for biostratigraphic dating.

Table xx. [County] Lower/Middle Palaeolithic resource summary

<i>Palaeo-zone</i>		<i>Fluvial complex</i>	<i>Colluvial /solifluction</i>	<i>Clay-with-flint /residual</i>	<i>Aeolian</i>	<i>Lacustrine</i>	<i>Glacigenic</i>	<i>Fluvio-glacial</i>
1. North Buckinghamshire clay lands	<i>Site presence</i> *	X	-	-	0	-	0	0?
	<i>Key sites</i> **	Stoke Goldington						Sediments under Newport Pagnell etc?
2. Chilterns	<i>Site presence</i>	X	0	0	0	-	-	-
	<i>Key sites</i>	Marsworth - Pitstone Quarry (0473500000)						
3. Thames terraces	<i>Site presence</i>	XXX	-	-	XX	X	-	0

	Key sites	Burnham: Deverill's Pit (Map 7 -35; 0202501000); Cooper's Pit (Map 7- 34; 0155001000). Cookham: Danefield Pit (Map 7-1); Slough: Bakers Farm Pit (Map 7-32; 0159900000); Iver: Lavender's Pit (Map 7- 0084401001); Taplow: Station Pit (0191201000) .			Burnham: Dorney Wood (0129401000); Great Western Pit (0239600001)	Denham		
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* Site presence	
-	NA, no deposits in zone
0	No sites known
x	Few or very few sites, none of them prolific
xx	Moderately common sites, one/some of them prolific
xxx	Common sites, often prolific

**** Key sites — just list them by name, ideally with their Southern/English Rivers Project map-name and find-spot ID**

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