

Chapter 10: Discussion

by Tim Allen

Late Glacial

Only a very few struck flints dating from the late Glacial were recovered from the Eton Rowing Course excavations to complement the pollen record from Channel P at Lot's Hole. A single large flake probably of this period was found across the river at Weir Bank Stud Farm, Bray (Montague, 1995, 21). Excavations along the Thames Valley over the last decade have revealed a growing number of sites of this date, the most significant being those at Uxbridge (Lewis *et al.* 1992; Lewis and Rackham 2011), at Gatehampton Farm, Goring (Barton in T Allen *et al.* 1995) and at Charvil (Boismier 1998; Lovell and Mephram 1998-2003). These mostly represent butchery sites. The Eton finds belong with a larger number of sites like Drayton, Oxfordshire (Barclay *et al.* 2003) with only limited evidence of the passing of hunter-gatherers, presumably following the migration of reindeer.

Early Mesolithic (Fig. 10.1)

The amelioration of the climate and the growth of woodland at the beginning of the Holocene was accompanied by evidence of significant Mesolithic lakeside occupation (Trenches 166, 173 and 180). Although only evaluated and thereafter preserved *in situ*, the scale and density of early Mesolithic occupation was clearly considerable. Adjacent Trenches 166 and 180 indicate a zone of deposition covering at least 30m by 30m along the terrace edge, and the density in the areas sampled in detail ranges from 8 to 40 struck flints per m². The presence of early Mesolithic material in Trench 165 some 40m inland suggests that the site spread some way onto the gravel terrace, while a density of *c* 30 struck flints per m² was found on the gravel terrace edge in Trench 173 more than 100m away. This may represent either two separate concentrations, or (less likely) part of one continuous spread along the terrace edge. Even if separate, however, it is likely that some 30,000 struck flints were present in the main site, and several thousand more in the area of Trench 173. As there was no comprehensive field-walking strategy it is not possible to be certain how far this occupation extended, but the absence of Mesolithic flintwork from Trenches 160, 161, 164 and 172, with only a handful of Mesolithic flint in Trench 157 beyond, suggests that activity was largely confined to the terrace edge.

The radiocarbon date of 9160-8740 cal BC (OxA-14088: 9540±45 BP) obtained on an aurochs bone

from the flint-bearing horizon in Trench 166 indicates human activity at an early phase within the early Mesolithic relative to other sites in the region. Similar dates (9230-8550 cal BC, OxA-894: 9490 ±110; 9660-8780 cal BC, OxA-732: 9760 ±120; and 9120-8490 cal BC, R-24999/2: 9418 ±60) were obtained from Thatcham IV (Gowlett *et al.* 1987, cf Healy *et al.* 1992) and Faraday Road, Newbury (Ellis *et al.* 2003, 130), but other sites in the Kennet Valley, and at Uxbridge (Lewis *et al.* 1992; Lewis and Rackham 2011) are later. The very large site at Holyport, Bray (Ames 1993) was not subjected to radiocarbon dating, but on typological grounds the author believed that the site was intermediate between the early and later Mesolithic. Ford, however, suggested that elements of both early and late Mesolithic activity might be present within the assemblage of 15,000 struck flints (Ford 1987a, 59-61).

The environmental context of this activity is provided by waterlogged evidence from peat in Trench 167 only 50m distant, which produced a very similar radiocarbon date of 9220-8740 cal BC (OxA-9411: 9560±55 BP). The presence of charcoal from the burning of reeds may plausibly be related to the adjacent human occupation, and is the earliest evidence of such activity from the Thames Valley.

While in Trench 166 the struck flint was principally confined to one deposit (layer 4), and the struck flints in Trench 173 were mostly recovered from a reworked early Holocene soil, a series of layers containing struck flints of fresh appearance was recovered from Trench 180. Several of these also contained microdebitage. This sequence is open to several interpretations. It may indicate several separate episodes of human activity, but it is alternatively possible that a single accumulation of struck flints on the lake edge was subsequently washed into the water by rainfall or by fluctuations in the local water level on several successive occasions. On the grounds of numbers of struck flints alone, however, it is likely that the main site resulted from a number of successive visits, and it is also likely that the adjacent site found by Trench 173 resulted from one or more additional visits.

The tool types include heavy-duty axes, microliths, burins and scrapers, evidence presumably of limited clearance and modification of timber for wooden structures or objects, of hunting or fishing tools, and of hide preparation. The animal bones suggest that aurochs, red and roe deer and wild pig were hunted, while sieved bones demonstrate the presence of beavers and shrews.

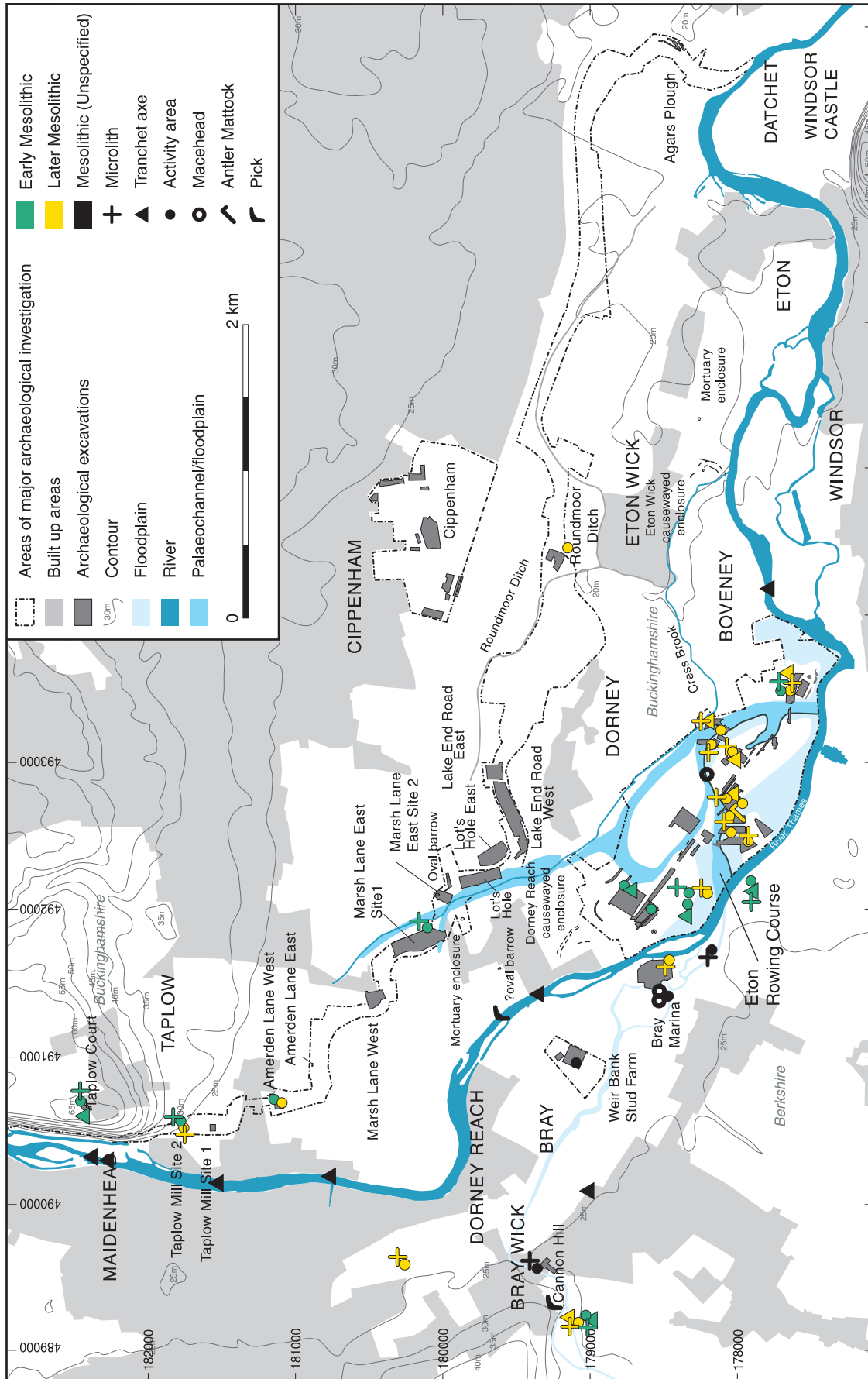


Fig. 10.1 Mesolithic evidence (Crown copyright 2013 Ordnance Survey 100005569)

In general terms, the size of site and range of tools suggest that these sites fall into the class of river valley base camps exemplified in the work of Messars and Rheinhardt (1978) and the Thatcham early Mesolithic sites (Wymer 1962). Given the limited scale of investigation it is difficult to characterise the activities carried out more specifically, but in more modern parlance this was almost certainly a 'persistent place' (Thomas 2008). As well as the Holyport site, found beneath flood loams some 3km to the west, a probably similar site was found in a back garden on the south bank of the present Thames just east of Down Place (ie just west of the Eton Rowing Course: Wymer 1977; Ford 1987a, 59 and fig. 23). A large collection of both early and later Mesolithic flintwork including a similar range of tool types was found adjacent to the river bank. This was possibly originally another lakeside settlement.

Work adjacent to Star Carr in the Vale of Pickering around Lake Flixton has, however, demonstrated the wide variability of activity areas, many of them small-scale, in river valley or lakeside settlements (Conneller and Schadla-Hall 2003), and the same may well be true of the Dorney area. Small numbers of early Mesolithic flints have been found in three other areas of the Eton Rowing Course site: on the edge of the former Channel N in Area 20, in Area 24A and in Area 6. The Area 20 and Area 6 finds show the significance of ancient watercourses for Mesolithic activity, whether for ease of travel through the wooded landscape or the importance of watering places for game. The Area 24 finds perhaps indicate transient activity along an ancient routeway across the gravel terrace. Small numbers of diagnostic flints have also come from the northern sites on the Flood Alleviation scheme, again alongside former channels (Fig. 10.1).

In the surrounding area, and particularly west of the modern Thames, there are a considerable number of early Mesolithic sites or findspots such as Cannon Hill and Weir Bank Stud Farm (Bradley *et al.* 1975-6; Montague 1995, 21-2), and we should envisage widespread exploitation of the many shifting channels criss-crossing the valley floor in the early Mesolithic. The site around Trenches 166 and 180 was buried by more than half a metre of later alluvium, and there are likely to be many more such sites than are indicated by the known distribution of sites (Fig. 10.1).

Other local Mesolithic sites include the high ground of the promontory at Taplow Court, possibly visited because of its unparalleled views over the local Thames Valley, and as a source of plateau gravel (Cramp in Allen *et al.* 2009). Sites such as Taplow Court may also represent the winter occupation sites on high ground complementary to the summer lakeside camps in the Thames Valley at sites such as the Eton Rowing Course.

The territories of Mesolithic communities may have been very considerable, possibly extending over 10-20 miles in any direction, so the sites considered so far may have formed only a small part of the

range of local groups. Holgate (1988) has considered the links between sites in the Middle Thames Valley and the Chilterns.

Later Mesolithic

On the gravel terrace in Area Ex1, later Mesolithic activity is indicated by two tree-throw holes with significant assemblages of struck flint, one including evidence of rod microlith manufacture, and by residual material including tranchet axes and microliths in others. On the adjacent floodplain overlying the earlier Mesolithic backswamp deposits, an assemblage of later Mesolithic flints was recovered from a tree-throw hole radiocarbon-dated to 5220-4940 cal BC (OxA-9412: 6130±45 BP), peat from which indicated alder carr covering the floodplain. A number of microliths were found on the levee beside the palaeochannel of the Thames, particularly in Area Ex3, and a small group found at a high level in Evaluation Trench 69 to the west probably also come from the levee. An antler burr-mattock of probable later Mesolithic date was also found on the levee in Area Ex3, and a small flint scatter was recovered during evaluation on the floodplain between Areas Ex3 and 16. No phase of the former Thames palaeochannel was dated to the later Mesolithic, so presumably the channel followed the same course as in the early Neolithic, but either did not deposit significant quantities of silt during the late Mesolithic or was comprehensively scoured later on.

Microliths and other tools were also found on the gravel terrace in Area 16, where it was concluded that a reasonable proportion of the flintwork was of later Mesolithic date. On the west bank of the channel on Terrace Y (Fig. 2.1) further Mesolithic struck flints were found during evaluation, though the material was not sufficiently diagnostic to determine whether these were of early or later Mesolithic date.

Downstream from this, a probably Mesolithic pebble macehead was recovered from the Thames channel edge in Area 14. Although usually described as maceheads, it is perhaps more likely that these objects had a function similar to that of the weights on digging sticks illustrated in Bushmen drawings (Wymer 1991, fig. 7.1). Where the river curved north-eastwards in Areas 3 and 5, further evidence of later Mesolithic activity in the form of small knapping and tool-production scatters were found on the floodplain and levee on the south side. Most of this material came from surface scatters, though some was also deposited in tree-throw holes. Some activity was also evident on the north side of the channel in Area 3. Little investigation of the channel edge was carried out between Area 3 and Area 6, where a small assemblage including microliths and tranchet axes was found. Away from the river on the gravel terrace a small number of Mesolithic pieces was identified in Area 10, though more may have been lumped in with the very large early Neolithic assemblage from

this site. Although blades and blade cores were found in Areas 15 and 4, there was nothing diagnostically Mesolithic, suggesting that activity was largely confined to the river's edge.

Activity in the later Mesolithic along the Flood Alleviation Scheme was also widespread but small-scale, and is again focussed close to the former Thames palaeochannels (Fig. 10.1). A similar picture comes from the adjacent area west of the modern Thames. There appears to have been a significant change in the scale of activity compared to the early Mesolithic. There were no very large sites (although the Holyport site may include substantial later Mesolithic activity). In part, however, the difference may result from a change in the character of activity, rather than just from an overall reduction in activity. At the Eton Rowing Course, for instance, the early Mesolithic activity was more concentrated, whereas in the later Mesolithic there was evidence of activity along more than 1km of the Thames palaeochannel within the Eton Rowing Course. Across the modern Thames to the west, a similar spread of activity is evident, and there are enough indications from Roundmoor Ditch, Amerden Lane West and Taplow Mill Site 2 to suggest something similar over a much larger area. When added together, the quantity of later Mesolithic flint is not inconsiderable, although clearly much less than in the succeeding early Neolithic.

The change from large base camps to smaller activity areas may reflect use of the area by smaller and more mobile groups, and for shorter periods at a time. This shift is mirrored on many other sites along the Thames Valley (Holgate 1988; cf Mesolithic sites on the floodplain at Thames Valley Park, Reading (Harding 1997, 16-23), Whistley (Harding and Richards 1991-3), and smaller sites known from fieldwalking in East Berkshire (Ford 1987b, 59-61)). It has recently been argued (Hey and Barclay 2007) that this change was a response to the drying up of the resource-rich large backswamps of the early Mesolithic, and the closing in of the climax woodland, so that only smaller groups could be sustained. Larger-scale later Mesolithic sites do, however, occur along the Thames and Kennet (see, for instance, the sites at Gatehampton Farm, Goring (Brown in T Allen *et al.* 1995) and Cherhill near Avebury (Evans and Smith 1983)).

Although activity in the Dorney Area was generally small-scale, there is evidence for a variety of activities, from limited clearance (tranchet axes), through hunting (microliths), butchery and skinning (blades), hide preparation (scrapers), plant gathering and preparation (serrated flakes), flint procurement (bone mattocks and flint axes) and manufacture (knapping scatters) to gathering (pebble weights for digging sticks and hazelnuts). Activity is concentrated near the rivers, and tree-throw holes are appropriate places for deposition of lithic artefacts. All these are elements that also occur in the following early Neolithic, and in much the same locations.

There is, however, little evidence of continuity between the late Mesolithic and early Neolithic communities in the area. Although late Mesolithic microliths and other tool types have been found on many of the early Neolithic sites on the Eton Rowing Course, these are generally clearly distinguishable from the Neolithic flint scatters in terms of raw material, cortication and freshness. Given the widespread evidence of later Mesolithic activity alongside the river, and the long duration of the later Mesolithic (c 6500 – 4000 cal BC), it is unclear what, if any, significance we should attach to the conjunction of flintwork of these two periods. In some areas of the floodplain, it is likely that Mesolithic activity was more widespread, but that it was only in those areas excavated with particular care due to the early Neolithic flint clusters that microliths were recovered. The latest radiocarbon dates for Mesolithic activity are late 6th to early 5th millennium cal BC. It has been argued that rod microliths, manufacture of which was found in Area Ex1, represent a particularly late tool type, but regrettably, no material suitable for radiocarbon dating was present to date this activity. The most that can be said is that many of the elements of the late Mesolithic exploitation of this area can also be found within the early Neolithic patterns of exploitation. This could be the result of continuing cycles of use by the same local communities rather than having been entirely the product of similar environmental constraints.

There is now considerable evidence of Mesolithic activity in the Middle Thames Valley, yet this represents the results of the examination of only a very small part of the area. The excavations on the Eton and the Jubilee River have demonstrated the existence of several phases of palaeochannels of the Thames, and aerial photographs and historic maps suggest a far greater number and complexity within this short stretch of the river. At the Eton Rowing Course, much of the Mesolithic activity that has been identified was found below later alluvium on the floodplain, and the need to deal with later archaeology on the floodplain has probably resulted in less extensive investigation of the earlier horizons. Work on palaeochannels at this site concentrated on those that remained active after the Mesolithic, where no late Mesolithic channel sequences survived, and much of the Mesolithic activity may have been removed or disturbed by later scouring or human activity. Other palaeochannels that were cut off earlier may have better-preserved Mesolithic deposits.

One pattern that may be genuine is the concentration of the vast majority of Mesolithic activity along the channel edges, as might perhaps be expected in a largely wooded landscape. The absence of Mesolithic material from Ford's excavations at Cippenham, for instance, which lay only a little way north of the nearest palaeochannel, may be significant (Ford *et al.* 2003).

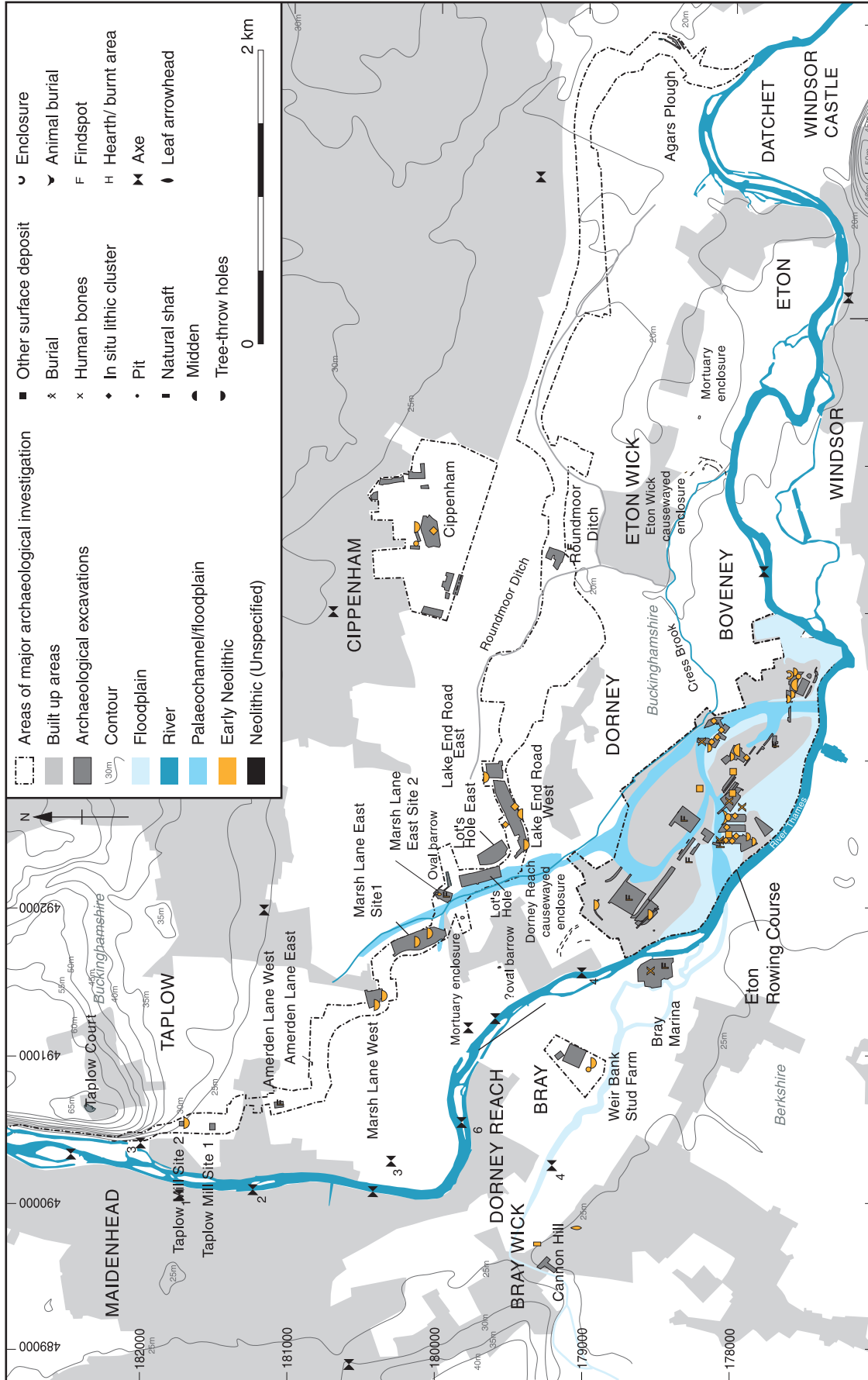


Fig. 10.2 Early Neolithic evidence (Crown copyright 2013 Ordnance Survey 100005569)

The Neolithic (Figs 10.2-3 and 10.5)

A significant concentration of Neolithic activity was already known in the stretch of the Middle Thames Valley between Maidenhead and Windsor (Fig. 10.2). On the south bank of the Thames, a natural shaft at Cannon Hill, Berkshire, contained a deposit of early Neolithic Carinated Bowl (Bradley *et al.* 1975-76), while salvage in the Hoveringham Gravel Pit at Bray revealed an early Neolithic deposit consisting of human bone, antler combs and struck flints interpreted as coming from a flat grave (Holgate 1988, 278). Charcoal associated with the Cannon Hill pottery gave a date of 4220-3800 cal BC at 95% confidence, although the wood is likely to have had an offset that may have been 50-100 years or more. More recently, early Neolithic pottery and flintwork was recovered from a pit and a hollow in excavations at Weir Bank Stud Farm, Bray (Barnes and Cleal 1995, 11).

Excavations at Cippenham south-west of Slough, and only 2km from the Eton Rowing Course, revealed pits containing early Neolithic Plain Bowl (Ford *et al.* 2003), while upriver at Taplow early Neolithic flintwork has also been found (Allen *et al.* 2009). A survey carried out by P Carstairs for Thames Water (Gates 1975, maps 28 and 29; Carstairs 1986, fig. 2, Site D) identified one possible causewayed enclosure at Dorney Reach just north-west of the Rowing Course, with a probable mortuary enclosure adjacent to the north, and another causewayed enclosure only 5km downstream at Eton Wick. Limited excavation by Steve Ford has since confirmed the existence of the Eton Wick enclosure (Ford 1991-3), producing radiocarbon dates of 3700-3370 cal BC and 3630-3350 cal BC (BM 2533, 4750 ± 80; BM 2535, 4680 ± 50), and has identified the cropmark of another probable mortuary enclosure. The dating of this enclosure has recently been re-examined (Whittle *et al.* 2011), suggesting that the enclosure was not constructed before 3625 cal BC (*ibid.*, 395). On the basis of the recent redating programme for causewayed enclosures, the authors have plausibly suggested that none of the causewayed enclosures that have been re-examined date from before 3700 cal BC, other than those in Kent (*ibid.*, 380-381).

To this, the excavations at the Eton Rowing Course have added two very extensive midden deposits in Areas 6 and 10, the latter accompanied by lesser foci of activity evident from finds of Plain Bowl pottery and struck flints. Smaller but similar deposits were also recovered from Lake End Road West and from Amerden Lane on the Jubilee River. The floodplain in Areas Ex1-3 revealed a spread of struck flint clusters ranging from large activity areas containing evidence of arrowhead production to small knapping clusters, while the adjacent Gravel Terrace Site X also produced early Neolithic pottery and struck flint. A similar though smaller-scale pattern of activity was evident on the floodplain and terrace edges alongside the former Thames channel in Areas 3 and 5. Significant quantities of animal

bone, together with pottery and struck flints, were recovered from the channels in both Areas Ex1 and 5. On the northern bank of the channel in Area 14 was a hearth associated with a Carinated Bowl. Small quantities of pottery and flint were also recovered from the gravel terrace in Site F West. Along the Jubilee River early Neolithic pottery and flints have been recovered on all of the sites close to the palaeochannels of the Thames: from small pits or from tree-throw holes at Lot's Hole, Marsh Lane East and West, Taplow Mill Site 2 and Roundmoor Ditch.

In Area 16, the Plain Bowl pottery was accompanied by Decorated Bowl, suggesting occupation in a later phase of the early Neolithic. Tree-throw holes at both ends of the Eton Rowing Course (RC1 and Area 6) contained Ebbsfleet pottery and early Neolithic flintwork, while on the floodplain an Ebbsfleet Ware assemblage came from the edge of the Thames palaeochannel (Area Ex1).

In Area 6 two unaccompanied flat graves of middle Neolithic date (possibly associated with a penannular enclosure) were found adjacent to the larger early Neolithic hollow deposit, and Mortlake Ware was also recovered from Areas 6, 10, Site F East and the floodplain (Fig. 10.3). At least 4 vessels are represented in the finds from limited excavations in Area 18 and evaluation of Site F East, possibly indicating a significant focus of activity in this area. A group of nine pits, containing a large assemblage of Mortlake and Fengate Ware, came from Lake End Road West. Further Peterborough Ware pits were found at Taplow Mill Site 1 and Marsh Lane East. Tree-throw holes along the Flood Alleviation Scheme have also produced evidence of the manufacture of chisel arrowheads. An oval ring ditch, possibly Neolithic, was found at Marsh Lane East on the Flood Alleviation Scheme.

Excavation at Cippenham also revealed a pit containing a Mortlake bowl (Ford *et al.* 2003). A later Neolithic assemblage of struck flint was excavated at Maidenhead Thicket (Boismier 1995), while the river itself has yielded a collection of Neolithic axes from dredging (Adkins and Jackson 1978, fig. 3).

Almost no Grooved Ware was known in the area before the Eton Rowing Course excavations revealed pits in Areas 16 and 24, and a human skeleton within the palaeochannel in Area 6 (Fig. 10.3). A variety of flint clusters of late Neolithic/early Bronze Age date were found on the floodplain, but cannot be more closely dated.

In the wider Middle Thames context (Morigi *et al.* 2011), this area is only 10km upriver from the excavated sites of Runnymede, Staines, Shepperton, Horton and Terminal 5 Heathrow (Needham 1991; Robertson-Mackay 1987; Jones 2008; Ford and Pine 2003; Chaffrey and Brook 2011; Framework Archaeology 2006; Lewis *et al.* 2010).

The middens within the Rowing Course site

Two extensive deposits of early Neolithic material lay in hollows less than 1km apart, and a third

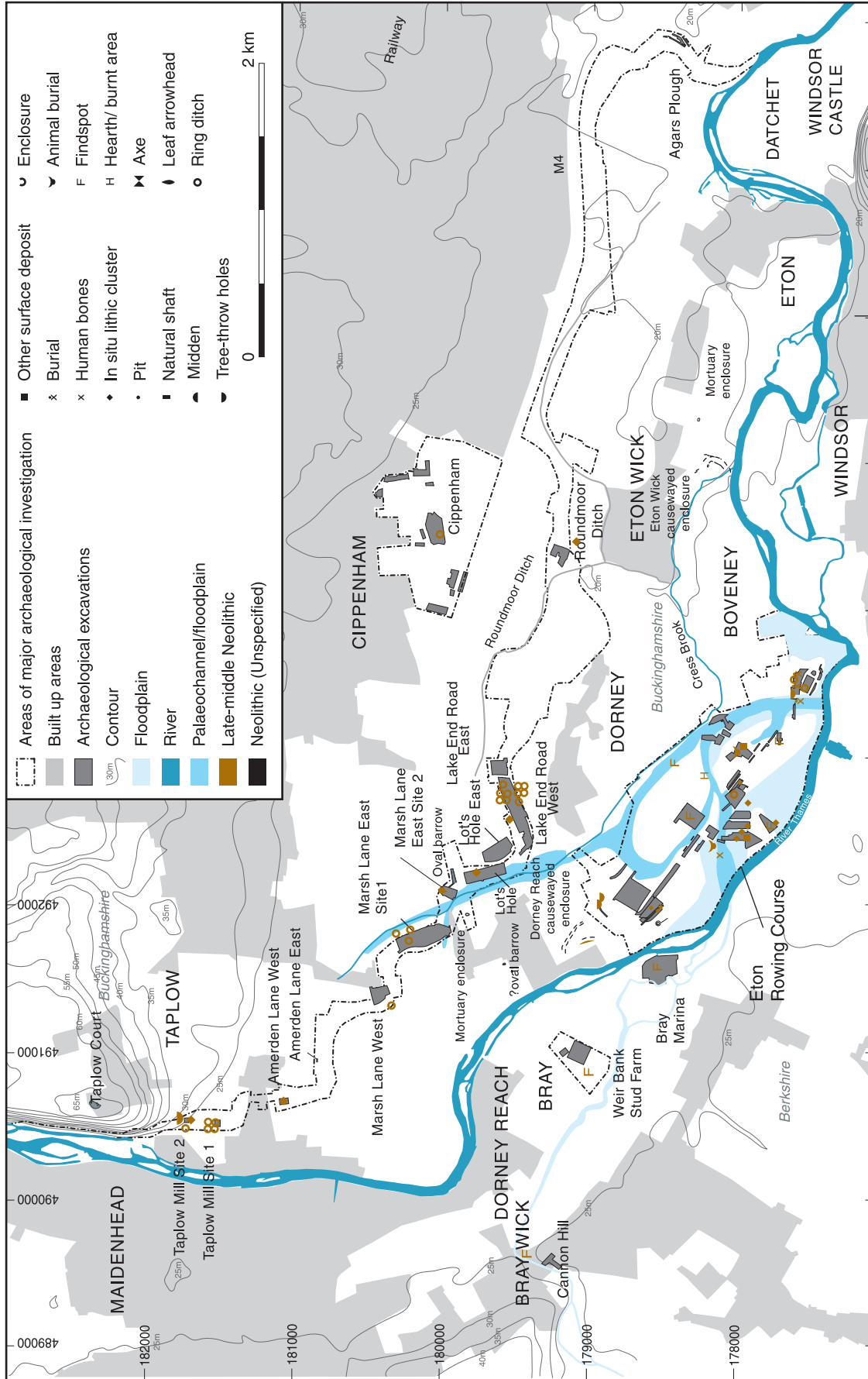


Fig. 10.3 Middle and late Neolithic evidence (Crown copyright 2013 Ordnance Survey 100005569)

smaller but similar hollow deposit was found at Lake End Road West. The middens survived due to one or more early post-glacial channels that at one time carved through the centre of the site. While these became choked with sands and gravels in the vicinity of Areas 6 and 10, leaving only shallow hollows, parts of the same channels remained open as backwaters such as those excavated in Areas 15 and 4. Despite the limited environmental remains from the hollows themselves (including an absence of pollen), the waterlogged palaeochannels within a few hundred metres have been shown by radiocarbon dating to provide broadly contemporaneous information about the surrounding environment (Parker and Robinson 2003). The environmental evidence indicates an environment which was largely wooded but with some clearings, which Robinson believes may have been 1-2 ha in extent (Parker and Robinson 2003; Robinson pers. comm.).

Dating of the hollow deposits

Pottery typology, flint typology and radiocarbon dating have been combined to provide dates for the Neolithic activity in the hollows in Areas 6 and 10. On both sites the pottery is of similar types, including a substantial proportion of Carinated Bowl, which is usually associated with the earliest or primary Neolithic (Herne 1988), but predominantly of vessels in the early Neolithic Plain Bowl tradition, with smaller elements of Decorated Bowl, and of the later Ebbsfleet, Mortlake and Fengate, Grooved Ware and Beaker traditions. The lithic typologies suggest a similar range of dates, comprising mostly types datable to the early Neolithic, such as leaf-shaped arrowheads and laurel-leaf points, plus a small admixture of later Neolithic and early Bronze Age diagnostic tool types. In Area 6 this evidence is also supported by a fragment of oval shale bead best paralleled in the first half of the 4th millennium BC.

Due to the shallowness of the deposits, and the absence of clear stratification (except for the dark midden spreads and tree-throw hole fills), some mixing of finds over the last 5000 years or more through root action, soil cracking and worm-sorting is unsurprising. The presence of occasional sherds of middle and late Neolithic, or even Bronze Age date, or occasional later flint implements, does not invalidate the evidence provided by the bulk of the material, which belongs to the early Neolithic.

Radiocarbon dates from Area 6 support this chronology, whether obtained on pottery residues, charred cereal grains or nuts, or on animal bones. Only beech charcoal, not otherwise securely attested in the early Neolithic in Britain, proved to be intrusive. Although the date range covers a long period, most of the dates fall in the first half of the 4th millennium BC, more than half before 3630 cal BC and two before 3700 cal BC, showing that occupation began at this site towards the beginning of the 4th millennium, in the primary Neolithic.

Together with the occupation at Runnymede, the dates from this area represent the earliest Neolithic evidence in the Middle Thames Valley (Whittle *et al.* 2011, fig. 14.50). The occupation is modelled as beginning 3830-3730 cal BC (see Chapter 5). A substantial proportion of the dates from Area 6 indicate activity earlier than the construction of the Eton Wick causewayed enclosure (*ibid.*, fig. 8.8). One of the two earliest dates from the middens was upon a Carinated Bowl sherd, supporting the primacy of this pottery style in the early Neolithic. The dates that run on across the middle of the 4th millennium are consistent with dates for Plain Bowl assemblages elsewhere, and only one date has a range extending into the last quarter of the 4th millennium (up to 3150 cal BC).

Only four radiocarbon dates were obtained from Area 10, and of these two have very large margins of error. In contrast to Area 6, there are no dates from the early 4th millennium BC. Both of the two more precise dates cover the second half of the millennium. The earlier part of the ranges for these dates is consistent with the dates for Plain Bowl pottery from Area 6 and elsewhere. The ranges of the dates with wide margins of error start within the first half of the 4th millennium, and extend into the 3rd as well.

Although the radiocarbon dates are consistent with the suggestion that Area 10 was later than Area 6, and may have been occupied subsequent to the abandonment of Area 6, this is not the picture provided by the pottery and struck flint evidence, as Carinated Bowl was also in evidence in Area 10, and the flint included a fair number of diagnostically early Neolithic types. Given the very large error margins of two of the four dates from Area 10, the sample of radiocarbon dates is really too small to establish the date range with confidence. In the following discussion the evidence of the pottery and struck flint is preferred, and occupation at Area 10 is seen as starting at the same time as that in Area 6. Additional support for the earlier origin of the Area 10 occupation may also be derived from the evidence for clearance between 3640 and 3370 cal BC (CAMS-57207: 4730±40 BP) from the pollen at Area 15, on the same gravel island as Area 10, and only 250m downstream.

Continuing use of the hollows for deposition on a smaller scale is shown by Mortlake and Fengate Ware, Grooved Ware and Beaker pottery, by one or two chisel arrowheads, Levallois cores and barbed and tanged arrowheads, and in Area 6 by a shaft-hole adze from Whin Sill in Northumberland and by a perforated antler-base tool (presumably a mattock) of late Neolithic type. Secure radiocarbon dates are provided for Mortlake and Fengate Ware at Lake End Road West and Taplow Mill Site 1 (Allen, Barclay and Lamdin-Whymark 2004) and for Grooved Ware from the Eton Rowing Course itself.

In Area 6 this later activity took place adjacent to two middle Neolithic crouched burials and one late Neolithic body from the river (all dated using radio-

carbon, see Allen *et al.* 2000), perhaps suggesting a change in the use of this site after the end of the early Neolithic. The main occupation in both hollows was, however, represented by a wide variety of occupation material deposited in the early Neolithic over a considerable period, perhaps as much as 700 years.

The preservation of the deposits

A longitudinal profile of the Area 6 hollow indicates that it was not of even depth, but had a deeper area just east of the middle of the site. This deeper area was where distinct areas of black soil containing the highest concentrations of artefacts were found. Some of these proved to be lying upon the surface of the hollow; others to be infilling tree-throw holes. The survival of these dark surface spreads, and the fact that the vast majority of the finds from them were of one period, indicates that the surviving deposits were little disturbed. To the east and west, concentrations of finds were also discovered, but although the containing soil matrix was dark, distinct areas of very dark soil were absent, the concentrations lessened as the hollow shallowed, and the assemblages became more mixed in date. These soils had a high humic content, and although sharing some characteristics with ancient topsoils, these deposits were further darkened by occupation material including widespread charcoal and occasional ash. There was no evidence of structures such as postholes or stakeholes, trampled floors or hearths within the hollow, possibly indicating that the occupation material did not derive from *in situ* activity.

The deposits may originally have been thicker, the upper part of the deposits presumably having been truncated, but having protected the surviving deposits. The surviving dark soils were sealed by a thin layer of soil, itself containing pottery dating to the later Neolithic and the early and middle Bronze Age, as well as early Neolithic material. The extent of this soil was not very well-defined during the excavation, but only removal of this layer revealed the full extent of the darker soil patches and the denser finds concentrations within them. Plotting of the three-dimensional locations of the individual finds also demonstrated that most of the later pottery lay within the uppermost few centimetres of the hollow, within this sealing layer. The extent of the layer, established both in plan and in the sections of the excavated squares, was larger than that of the dark soil and artefact spreads, but also corresponded to the deeper part of the hollow.

This soil may have derived from gradual colluvial inwashing after the end of the main period of occupation, which effectively sealed the early Neolithic deposits and protected them from further truncation. If so, the predominance of early Neolithic finds in this layer may result from a combination of the accidental spreading of midden material by passing animals and people and by

treefall, and perhaps from the excavators not always distinguishing a thin covering soil, itself truncated by later ploughing, from the occupation deposits immediately below and in some cases perhaps already poking through.

As has been suggested above, it is possible that the midden deposits were originally much deeper, and that they had been truncated subsequently by agriculture, leaving only the thin surface middens that were found. The overlying soil layer could then have been the degraded remains of this deposit – hence the large quantities of Neolithic finds that it contained. If so, this process must have taken place in antiquity, as there were no finds later than the Bronze Age mixed in with the sealing layer, and there were almost no finds made in the overlying ploughsoil. When this cultivation took place is less clear. Burials were made in the middle Neolithic, and barrows with accompanying burials were constructed from the Beaker period to the middle Bronze Age. Episodes of ploughing separating phases of construction have now been recognised on a wide variety of British and Continental Neolithic monuments (Bradley 2005), and it is possible that something similar could have occurred here, but the evidence is not strong, and given the middle Bronze Age pottery within the putative ploughed soil it seems most likely that the ploughing took place either during or subsequent to the middle Bronze Age. A date late in the middle Bronze Age or later would appear most plausible, as there were pits, a ditch and a waterhole of this date on the site, but very little evidence for late Bronze Age or Iron Age activity. The radiocarbon dates for middle Bronze Age cremations show that the southern barrows remained a focus for cremation burials for at least a century, and well into the 13th century BC, so the phase of cultivation is likely to have been after this. Later Bronze Age features were found at Eton Wick downstream (Ford 1991-3) and burials along the palaeochannel within the Rowing Course site show that the site was still visited in the late Bronze Age.

Beyond the sealing layer to the west the finds from the excavated squares were generally much more mixed in date, the result of direct contamination by much later ploughing. Preservation was, therefore, related to the depth of the underlying hollow, and the extent of the dark artefact-rich deposits could have been to some extent fortuitous. The fieldwalking carried out over Area 6 prior to excavation recovered very little struck flint and no prehistoric pottery. Although the walking was not carried out in ideal conditions, even less material was recovered from over the hollow than from the soils over the terraces either side, supporting the proposition that little or nothing of the Neolithic material in the hollow deposits had been incorporated into the recent ploughsoils.

The test-pitting carried out north of the hollow prior to excavation was primarily undertaken to investigate the extent of possible Mesolithic activity,

but also provides an indication of the quantity of Neolithic material originally present on the gravel terrace outside the hollow. Ploughing in this area came down directly onto gravel, so any artefacts would have been incorporated into the ploughsoils, resulting in the probable destruction of anything but lithic artefacts. Although only a limited sample of the retrieved sievings was analysed, in general a very low number of struck flints was found. This indicates that the density of activity on the gravel terrace north of the hollow was not anything like as great as that within the hollow, suggesting that the excavated deposits do not simply represent the fortuitous survival of a fragment of a Neolithic land surface. Instead the density of artefacts suggest that the hollow was a preferred location for either carrying out of a variety of activities, or at least for the deposition of the materials resulting from them.

South of the hollow, the ploughsoil overlying the gravel terrace was not investigated, but residual finds from later archaeological features may give an indication of the quantity of material originally present. Two Bronze Age barrows, a segmented ditch, a number of cremations and a post-medieval field boundary in this areas were excavated, plus a number of tree-throw holes. Very little Neolithic pottery or flintwork was found, except in one crouched burial, which may have been Neolithic. There were also no tree-throw holes containing dark soils and midden debris. This would suggest that, as on the north, the density of Neolithic material originally deposited was low, and that deposition was concentrated in the area of the hollow itself.

In Area 10 no fieldwalking or test-pitting was carried out to test the survival of material in the ploughsoil, but the evaluation and excavation provided a rather different picture of Neolithic activity. A concentration of early Neolithic material was found in Evaluation Trench 88 some 70m from the hollow, and residual early Neolithic pottery and struck flint was common in later features across the area. This indicates that early Neolithic activity was not exclusively focussed on the hollow, in apparent contrast to Area 6. This possible difference in the location of activities and of deposition needs to be borne in mind when considering the scale and duration of activity on the two sites. It is possible that Area 10 was used as much as Area 6, and by as many people, but that material was deposited across a much wider area in Area 10.

The origin and character of the deposits

As stated above, there were no structural features within the hollows to suggest the presence of buildings or external hearths. All of the dark spreads contained high densities of artefacts, and in all cases the artefacts are a mixture of struck flints, pottery and animal bones of mixed types. The spreads and tree-throw fills do not therefore individually represent clearly separated activity areas. Apart from

some of the flint tools and cores (not all of which were spent), there were no complete objects to suggest that any of the material was *de facto* refuse from activity areas (as defined by Drewett 1982, 328-9 following Schiffer 1976). In surface spreads 11422 and 11421 groups of conjoining sherds from several vessels were found, demonstrating that material had been deposited either as partial vessels or as groups of recently broken large sherds. These vessels include Carinated Bowls. These areas are interpreted as representing discrete areas of dumping or middens. In Area 10 no such discrete areas of black soil survived except in one small area in the very deepest part of the hollow. Otherwise dark areas of soil were only found within tree-throw holes. This is probably due to the direct ploughing of the top part of the surviving hollow, rather than the fact that occupation was originally of a different character in Area 10. In both areas lesser concentrations of pottery and struck flint were identified, and around these was a background scatter. The density of finds ranged from 400 down to 4 per m².

Within the zone of dark spreads in Area 6 there were also striking variations in the density of artefacts. The overall spread of artefacts of all types contained an almost blank area surrounded by deposits 11421, 11422, 11179, 11426, 11420 and 11423. Between 11423 and 11421 on the west side there was a decidedly greater concentration of artefacts on the general landsurface (which was not excavated further) than in the central area (which was excavated). This too could have been partly the result of differential survival, as there was an outcrop of gravel within this area, perhaps indicating an undulating land surface that was locally truncated. Another factor may have been the presence of fallen trees, or it could indicate an area deliberately kept clear of debris.

The ceramic material from these two middens includes refitting elements of semicomplete vessels in discrete dumps, clusters of similar material that may represent individual dumps, and a more abraded element in which the degree of fragmentation or brokenness is relatively high. The varied state of the material supports a picture of repeated occupation. The assemblages include a range of vessels such as cups, fine burnished bowls and heavier coarser bowls. There is evidence of use in the form of absorbed fatty and burnt residues. Some vessels have been refired or overfired indicating either deliberate or accidental contact with fire or perhaps waster material from ceramic production. There is also slight evidence that some vessels were repaired.

In his report on the pottery (Chapter 5), Barclay concluded that all of the pottery had been brought to the hollow in an already broken, mixed and partly abraded state, probably from a temporary midden on the settlement site. This, however, introduces two stages of middening, which seems unnecessarily complicated, and the evidence can be interpreted differently.

One of the arguments in favour of previous middening is the small number of groups of refitting sherds found. It must, however, be remembered that only 20% of the hollow was excavated in detail, and that parts of several middens were not included in this sample. The remainder of the hollow deposits was removed by machine, and only a proportion of the finds could be recovered during this rapid process. The material recovered from these areas could not be attributed specifically to individual middens, and was not included in the refitting exercise. Other refitting groups may well have existed, but may not have been recovered. This will also have affected the refitting of struck flints.

The large refitting sherds of vessels in middens 11421 and 11422, which include some of the most recognisable early Carinated Bowl vessels, need not imply primary as opposed to secondary refuse, as Barclay suggests. Indeed, were he correct, this part of the midden would have to have been deliberately avoided by both people and animals throughout its long life for these groups to have survived relatively intact. Instead, the survival of these vessels, and the absence of other such groups, can be explained by how rapidly and how deeply they were buried by further midden material. It is likely that the middens were considerably deeper in the Neolithic period, but that the decay of any organic component, the raking over of middens for materials for reuse (provisional discard), animal trampling and eventually ploughing had reduced them to the depth still surviving on excavation. If the carinated bowls in middens 11421 and 11422 were buried below further midden material fairly rapidly, they would not have been liable to damage from trampling, nor were they likely to be found and re-exposed. Other middens, particularly the larger ones, may have accumulated more slowly, and so have more easily been raked through for reuse, and more liable to breakage through trampling and abrasion from exposure to the elements.

The movement of some sherds, even of the Carinated Bowl vessels in middens 11421 and 11422, and their worse state of preservation, is testament to the fact that they were not uniformly deeply buried by design, but by chance, so that some less deeply buried sherds were disturbed by people or by animals and exposed, leading to greater surface abrasion. Provisional discard and periodic reuse of materials on the middens would also explain the movement of refitting sherds, perhaps assisted by being transported by kicks from human or animal feet.

The lithic assemblages from the Area 6 and 10 hollows (of which respectively 23,000 and 3500 struck flints were analysed) also indicate repeated or continuous occupation, partly from their size and the variety of retouched tools, but more significantly from the overall degree of utilisation. The degree of utilisation, indicated by examination of samples of 8% and 11% of the flakes respectively, using low-power magnification, was between 50%

and 65%. The utilisation is also of varied character, and is coupled with a low proportion of refitting material. All of this indicates very intensive use of these areas, and is most plausibly explained by the utilisation and reworking of deposited material over an extended period of time. There were also large quantities of burnt flint (upwards of 15kg in Area 6 and 62kg in Area 10).

The struck flint was generally in a fresh state, but the evidence of frequent breakage of flakes and of slight edge damage indicates that the material was exposed for some time before being fully buried, and was probably trampled occasionally.

The animal bones, antler tools, charred cereal grains (albeit few), quernstones and pounders, fragments of fired clay and a bone gouge all indicate mixed farming. Significantly, the middens lack exotic material. There were only two small human bones in each midden (none certainly dated to the Neolithic), and only two partially articulated cattle skeletons (both in Area 10). Otherwise, there were no unusual or 'special' deposits of bones. The pottery was made in a limited range of fabrics, which petrological analysis suggests could all have been of local origin. Almost all of the flint is local gravel flint. Most of the polished axe fragments are of a light grey flint, potential sources for which range from south Oxfordshire via Buckinghamshire to Sussex. Contrary to earlier assumptions of 'ritual destruction' (Allen *et al.* 1997, 124), it now seems likely that the breakage of polished axes occurred during use (cf Jorgensen 1985, 45), and that the pieces were then reworked to make further tools. The only truly exotic item in Area 6 was a fragment of an oval shale bead from the south coast. An unstratified flake from a Group 6 axe found in Area 10 could have derived from the hollow there.

These assemblages can be described as 'domestic' in character, in that they contain a great quantity and a fair range of material, almost all of which is of local origin, much of it broken, and there is no evidence of the selective deposition characteristic of 'ceremonial' deposits. They are, therefore, interpreted as evidence for repeated episodes of occupation at the Eton Rowing Course site, beginning in the earliest (or primary) Neolithic. A third smaller hollow deposit at Lake End Road West, although only producing 670 sherds of pottery and 800 struck flints, is also regarded as the remnants of a similar midden, as usewear of an 11% sample of the lithics suggested that nearly two-thirds (65%) were utilised. However, this midden lacked the range of artefactual material found at Areas 6 and 10, and the pottery was entirely Plain Bowl. A further, but much more disturbed, deposit combining lithic clusters, Plain Bowl pottery and animal bone existed at Amerden Lane West, and may also have been another midden deposit.

Charred cereal grains and quern fragments were recovered from both the Area 6 and Area 10 middens. Four dates obtained on charred emmer grains from Area 6 lie between 3800 and 3630 cal BC

at 95% confidence. A charred hazel nutshell associated with one of the charred cereal grains, and a cattle bone associated with another, date from before 3700 cal BC, suggesting that some of the cereals may date from the earlier part of their ranges, and possibly in the first quarter of the 4th millennium cal BC. Cereals are a significant element of the deposits found at the Stumble (Wilkinson *et al.* 2012), and of the possible midden deposit found at Woolwich Manor Way in East London (Bates and Whittaker 2004, 64 and 67), and Lamdin-Whymark (2008, 46-50) has suggested that these middens were associated with the processing of crops. The quantity of charred cereal grains (93 from the bulk environmental samples) was not, however, large, and cultivated cereals hardly figure in the pollen evidence. Despite recent suggestions (Schulting 2008, 95) that cereals may have been much more important than their remains suggest, it seems most likely that cereal cultivation was a minor, though important, element of the diet at the Rowing Course. The presence of hazel nutshells could indicate either gathering from the wildwood or the harvesting of managed coppice woodland (Schulting 2008, 94).

The animal bone assemblage also indicates a predominance of cattle, traditionally woodland browsers. Measurements of the cattle bones have established that the majority of the animals were domesticated. One of the bones from domesticated cattle in Area 6 gave a radiocarbon date of 3940-3650 cal BC (GrA-22561: 4970±45 BP), one of the earliest confirmed dates for domesticated cattle in Britain. Lipid residue analysis carried out by a team led by R Evershed at Bristol University has shown that a significant proportion of the early Neolithic vessels contained animal fats, almost exclusively those of cattle or sheep, and some vessels had clearly held milk (see above and Copley *et al.* 2003; Copley *et al.* 2005). Dairying was, therefore, part of the animal husbandry of the early Neolithic. Other domesticated species were sheep and (probably) pigs.

There was also a fair proportion of wild species including aurochs, wild boar, red deer, roe deer and badger. The last may have been hunted for its pelt. Although the ratio of wild to domestic cattle indicated by the bones is small, the greater size of the aurochs means that its contribution in meat would have been larger than the number of bones suggests. The same is true of red deer, the bones and antlers of which suggest that they were large (larger than the domestic cattle). Nevertheless, Jones believes that these two species probably contributed no more than 10% of the meat in the early Neolithic diet. The newly introduced domesticated animals were managed within a largely wooded landscape, where, as the pollen evidence indicates, clearings were relatively small, and where the wild animal fauna was still an important resource. The early Neolithic community would have practiced a mixed economy including animal husbandry, hunting and gathering and small-scale cereal cultivation. Pike bones also show that some

fishing was undertaken, though the fact that pike is the only species may indicate that a particular significance was attached to it. One of the crouched middle Neolithic inhumations in Area 6 was found with a pike bone, possibly a deliberate offering. A pike bone was also found within the Neolithic enclosure ditch at Goring (Wilson 1995, 105-6), and two dentaries with a mallard bone in early Bronze Age ring ditch 12 at Barrow Hills, Radley, Oxfordshire (Barclay and Halpin 1999, 110). These were the only fish bones from these sites, showing the special significance of this species throughout earlier prehistory in the Thames valley. Recent isotopic studies of human bones have reinforced the conclusion that fish did not play a significant part in the Neolithic or early Bronze Age diet (Richards *et al.* 2003). Marine shells were also occasionally incorporated in middle Neolithic burials, as, for example, at Lambourn, Berks (Garwood with Barclay in Morigi *et al.* 2011, 392).

No hearths, floor surfaces or posthole buildings were found accompanying the middens within the hollows, nor in the surrounding excavated areas. These may have existed north of Area 6 or to the north-east of Area 10, but in the latter case in particular, sufficient of the surrounding area was excavated to suggest that the middens lay at some distance from any substantial buildings. Within the Area 6 midden, one small pit was found which contained a similar mix of finds to those in the middens and tree-throw holes.

The penannular gully (5500) found north of the hollow may, however, have been of early Neolithic date (Fig. 10.4). This did not resemble the ditch around a barrow like the other three Bronze Age examples, since it was very slight and had a very wide entrance (upwards of 5 m). It contained mainly Neolithic finds. There were no particular concentrations of occupation material, not even at the terminals, as is common with later Iron Age penannular enclosures, but with the midden adjacent the traditions of rubbish disposal were clearly different.

Possible parallels for such a structure exist both in the Upper and Middle Thames Valley (Fig. 10.4). The best of these is an enclosure found at Thrupp near Abingdon in Oxfordshire, which contained early Neolithic pottery and aurochs bones (Miles unpubl. archive). Two similar examples of middle Neolithic date are known. One was a larger penannular enclosure at Linch Hill, Stanton Harcourt, Oxfordshire, surrounding a central burial (Barclay *et al.* 1995, 100-101). The other, at Imperial College Sports Ground in the Colne valley, was a penannular enclosure 13m across with a gap nearly 5m wide. It contained two cremations in pits (Barclay *et al.* 2009; Hey *et al.* 2011, fig. 15.7). This latter site is one of a group of small ditched enclosures, mostly circular and mostly middle Neolithic in date, from the Middle Thames Valley (Framework Archaeology 2010, 66-7). Finally, a multiphased enclosure at Yarnton, Oxfordshire, surrounding a finds scatter of Neolithic date and

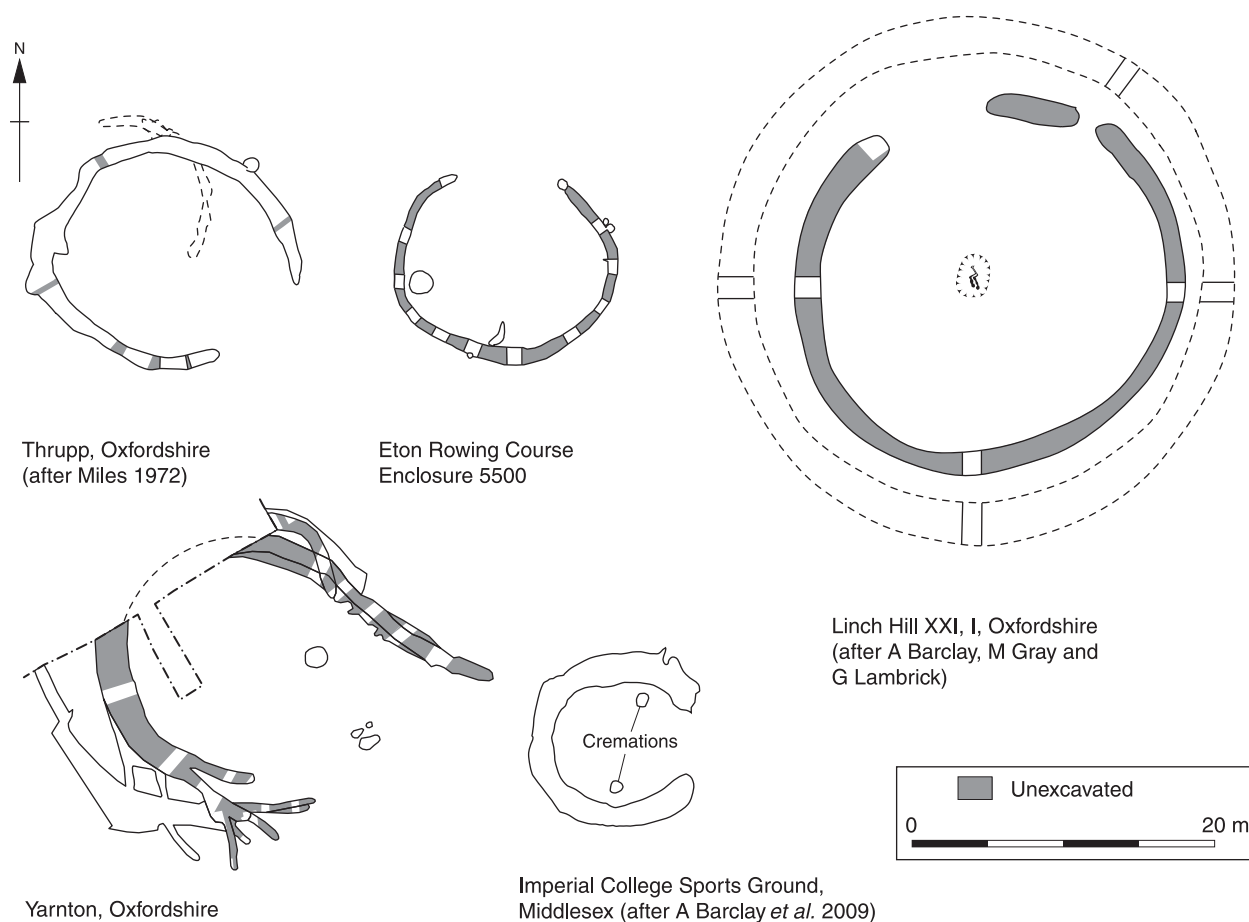


Fig. 10.4 Enclosure 5500 in Area 6 and other comparable Neolithic enclosures in the Thames Valley

sealed by middle Bronze Age deposits, was also characterised by a very wide entrance (Hey in prep.).

The purpose of enclosure 5500 is uncertain. It contained no evidence of burning, nor any human bone to suggest a burial enclosure, though internal features such as shallow cremation pits or hearths would have been truncated, if not completely removed by ploughing. Its orientation, facing away from the hollow and the midden deposits, may be significant, putting the midden out of sight, and looking north onto the higher (and drier) part of the gravel terrace.

If the crouched burial south of the hollow (5127) is an early Neolithic burial, as the pottery from the grave would suggest, then this site was linked to burial from very early on, a tradition continued in the Peterborough Ware period and thereafter until the late 2nd millennium BC.

Differences between the hollow deposits

The quantities of pottery, struck flint and animal bone in Area 10 were considerably smaller, by factors of 4, 7 and 17 respectively, than those in Area 6. Although more broken up than in Area 6, the relative numbers and weights of pottery sherds

show only slightly greater fragmentation in Area 10, and recovery of struck flint from Area 10 was similar to that in Area 6. The character of the material in both pottery and lithic assemblages is very similar, and no significant variation in activities can be discerned. The huge difference in the animal bones is largely a factor of preservation, the Area 10 hollow being shallower and its upper part having been damaged by ploughing. Burnt flint was, however, at least four times as common in Area 10 as in Area 6. This may perhaps be explained by later (and probably middle Bronze Age) burnt flint having become incorporated into the hollow from adjacent waterholes by ploughing.

Overall these differences can, nonetheless, be interpreted as indicating a lower level of deposition at Area 10, possibly due to fewer visits. Given, however, that the date range indicated by the pottery is similar to that in Area 6, there may be other explanations of the difference in quantity of material. A spread of early Neolithic pottery and struck flint was found in Evaluation Trench 88 some 50m south of the Area 10 hollow. Although there were very few early Neolithic features outside the hollow (only two tree-throw holes and one possible small pit), excavation of later features in Area 10 has also revealed widespread residual early Neolithic

pottery and flint. This indicates that such material was widely deposited across the landscape in this area.

In Area 6 by contrast, very little Neolithic pottery or flint was recovered from the later features to the south, or from the test-pits to the north. It may be, therefore, that there was a different pattern of deposition in these two areas, the Area 6 hollow being virtually the sole repository for artefactual material, whereas in Area 10 the hollow was only one favoured location of several for settlement and for deposition.

The evidence from the Stumble in the Blackwater Estuary, Essex

Although the Stumble has already been mentioned as similar to the midden sites at the Eton Rowing Course, its recent publication (Wilkinson *et al.* 2012) has provided a detailed account of the evidence, and this, and the interpretations offered by the authors, should be considered before further discussing the role of the Rowing Course sites in their regional context.

At the Stumble, an early Neolithic land surface that was then several metres above high tide level was found (*ibid.*, 137-8) preserved beneath later tidal silts as the area was gradually inundated at the end of the Neolithic and after. These silts had continued to accumulate until recently, although the tide is now gradually exposing and eroding parts of the topsoil. As a result, the Neolithic horizon was remarkably well-preserved. Excavation was difficult and restricted in extent by its intertidal location, so the excavations were only able to examine a small sample in detail. The whole of the exposed horizon (called Area J) covered an area 200m by 150m, and finds were retrieved by gridded sampling (*ibid.*, 9-14). Within this, Areas A/B/E (10m by 8m with a 4 by 4m extension) and Area C (31 by 18m) were excavated in particular detail (*ibid.*, 15-29 and 30-35), and others – Area F (20 by 10m) and Areas D/G/H (20 by 10m and 15m by 10m) – less intensively (*ibid.*, 14 and 36-40). Areas D/G/H proved to be mainly late Neolithic; the other areas were all predominantly early Neolithic.

The finds were recovered in a series of spits or passes, and were logged either individually or in 1m collection squares. Some 7,500 sherds of pottery were recovered, the vast majority of early Neolithic date (*ibid.*, 45-8), the remainder of late Neolithic and early Bronze Age date, together with 11,000 struck flints, again mostly of early Neolithic type, although an element of later Mesolithic and later Neolithic material was also present (*ibid.*, 62-9). Charred plant remains were also widespread (*ibid.*, Chapter 5), but animal bones (other than burnt fragments) amounted to only 40 (*ibid.*, 70). The overall environmental evidence suggested a woodland environment with only limited clearings (*ibid.*, 142-3).

Associated with the Neolithic topsoil, which was a dark grey or greyish brown clay loam with

charcoal, were a variety of features. In some cases these cut through the horizon, in others they were apparently sealed by it. In Area A/B/E these comprised shallow hollows, a few small pits and a number of possible postholes, but these did not form any comprehensible buildings (*ibid.*, 22-28). In Area C there were a variety of features: some were irregular very shallow hollows, a few were circular, possibly postholes or small pits, but most were larger and deeper features, of which some crescent-shaped, others roughly linear. These features often had a profile with one vertical and one more sloping side, and layers of fill underneath collapses of natural subsoil (*ibid.*, 31-5).

The pottery is very similar in general character to that from the Eton Rowing Course, consisting predominantly of Plain Bowl, with a few carinated vessels and some heavier rims and decorated vessels (*ibid.*, 45-61), and a smattering of Peterborough Ware, Grooved Ware and Beaker sherds (*ibid.*, 61-2), and the struck flint also exhibits a similar range of tools, though fewer in number (*ibid.*, 62-9). Radiocarbon dating was less extensive than at the Rowing Course, and the two early Neolithic dates (one from a charred hazelnut, the other from charred cereal grains) indicated a slightly later date range for occupation, between 3685 and 3370 cal BC (*ibid.*, 85-6). A second phase of occupation in the late Neolithic (2870-2465 cal BC) was also indicated, continuing into the early Beaker period (2490-2285 cal BC).

The points of similarity with the Eton Rowing Course are striking. Densities of pottery exceeded 50 sherds/m² in Area C, and corresponded to darker areas of soil. Flint was also most abundant in these areas, though the patterns of density of pottery and struck flint did not entirely correspond. Areas A/B/E and F were also identified as denser spreads than in the surrounding areas, which contained a more diffuse and widespread scatter of finds. Joining sherds were not very numerous, but were found both adjacent and scattered over some distance, just as at Dorney. This pattern could well indicate surface middens, although in the intertidal conditions, it might have been more difficult to define these. Much of the flint was broken, and in most areas the average sherd weight of the pottery was only 5g, as at the Eton Rowing Course, leading to the suggestion of frequent trampling of the deposits. There were better preserved sherds in parts of Area C, both on the surface and within the deeper features, as was the case for some of the middens at Dorney.

There are, however, significant differences in the interpretation of the evidence at Dorney and at the Stumble. The excavators interpreted the larger features in Area C as clay quarries for buildings (*ibid.*, 35), but the description of their shape and fills makes it more likely that these were in fact tree-throw holes, which were filled with material indistinguishable from that in the land surface around, just as at the Eton Rowing Course.

Area C is described as ‘close to the centre of habitation’, due to the greater density of finds and their slightly better preservation. Variability in preservation between middens has been demonstrated at the Eton Rowing Course, and may just as easily account for the differences in the character of the material between areas observed at the Stumble. A chronological difference was also suggested at the Stumble between earlier occupation in Area A/B/E and later activity in Area C on the basis of the pottery (*ibid.*, 30). If true, the middens in A/B/E could well have suffered more trampling before being buried than those in Area C.

The idea of ‘provisional discard’ is not considered for the Stumble, but the possibility of reuse of discarded materials, as indicated by the level of utilisation of flint flakes in the Dorney middens, may well explain the reworking of midden deposits and consequent low level of refits. Animal trampling is also not taken into account in their discussion. Both the Stumble and the Eton Rowing Course, however, suffer from only partial excavation, so the overall level of refitting within these sites cannot really be gauged.

The features in both Areas A/B/E and C are interpreted as a palimpsest of parts of structures (*ibid.*, 139 and 142), despite the very limited number of postholes and the absence of clear structural elements, or of any hearths, which were also absent at Dorney. The shallow features were interpreted as areas of wear, but as the authors observed, these did not correspond to the proposed buildings (*ibid.*, 139). Such areas can also be caused by animals. The case for substantial buildings at the Stumble is not proven, and in their final discussion the authors shift towards an interpretation of temporary structures like those at Barleycroft Farm, Cambridgeshire, ‘representative of cyclical occupation in a largely wooded environment’ (*ibid.*, 143; Evans *et al.* 1999).

Interpretation of the site as representing shifting settlement of a cyclical and sporadic sort, proposed by Thomas (1999, 12), is accepted as one possibility, but the authors argue that the scale and intensity of occupation at the Stumble could equally represent permanent occupation (Wilkinson *et al.* 2012, 142). There certainly appears to be a greater proportion of charred cereals than survived at Dorney, but this was only one element of an economy that included gathering (and presumably domestic livestock), and this does not necessarily imply permanent occupation. As stated earlier, they admit that there was no evidence of permanent boundaries within the wooded landscape, and they also argue that the charcoal scatters may indicate deliberate burning of the Neolithic woodland, suggesting a shifting pattern of cultivation, perhaps developed from local practices in the later Mesolithic (*ibid.*, 143). This interpretation is similar to that proposed for the Dorney landscape, and better fits the evidence from both sites than permanent settlement.

One last point deserves comment. The authors of the Stumble report also suggest that there is little

reason to suppose that other Neolithic sites for which only subsoil deposits survive did not originally feature superficial deposits like those found at the Stumble. If by this is meant that most Neolithic sites included a midden, then this is supported by the discovery of three (or perhaps four) middens within the Middle Thames landscape. The increasing recognition of the fragmentary nature of the material recovered from Neolithic pits, and particularly those of the middle and late Neolithic (see Lake End Road West above), also suggests that much of this material came from middens. This implies that middening was a relatively common practice throughout the Neolithic. In itself this argues against the haphazard discard of materials across habitation or activity areas, which also does not accord with the evidence from Area 6, although a wider area of pottery deposition is suggested at Area 10. These sites are not fragments of a Neolithic landscape littered with dark soils and artefacts preserved at random due to local topography; they were chosen locations that were maintained and revisited over very long periods of time. The longevity of use found at the Eton Rowing Course is also demonstrated by the evidence for middle and late Neolithic and early Bronze Age activity at the Stumble.

The early Neolithic occupation in context

The midden sites have been interpreted as domestic occupation sites visited repeatedly over a long period of time. Continuous occupation throughout this time seems unlikely, firstly because of the absence of signs of permanence such as buildings, hearths and numerous pits or permanent field boundaries, secondly because the environmental evidence from the adjacent areas does not support such permanent settlement, and thirdly because (despite their size) the quantities of artefacts are not sufficiently large for the likely period of use.

Instead, a cycle of repeated visits, perhaps seasonal, would fit the evidence better. Given the number of early Neolithic sites now known in the vicinity, a pattern of cyclical movement between them is needed to explain both their number and the environmental evidence for only limited clearance of the woodland. In such a scenario there are a number of possibilities, but practical considerations suggest that some are more plausible than others. A pattern of random visits, for instance, or visits with gaps of more than 30 years, are less likely than more frequent ones, as the midden sites would have become almost completely overgrown in a generation. Visits every year on a seasonal basis are inconsistent with the environmental evidence, and might perhaps have left more material behind than is suggested by what was found. A cycle of visits at longer intervals, perhaps of 7-10 years, would, however, provide several advantages. It would allow for soil nutrient replenishment in between episodes of cultivation. The clearance of regener-

ating scrub would be a relatively minor undertaking, and coppiced woodland that had regrown would have produced timber of a useful size for fences and temporary structures. Recognition of cleared sites would still have been easy after this length of absence. It has been noted that middens would have provided particularly fertile ground for the growth of plants, many of them growing from seeds of edible plants that had been discarded during the last visit (Bell and Walker 1992, 112). This discovery, made probably by accident, will soon have become an additional reason for revisiting such sites, and by the early Neolithic, a more deliberate policy of midden creation is likely. In this respect, the choice of the hollows for the creation of the middens may not have been accidental, but have encouraged the development of a deeper tilth for growing.

A cycle of this sort would allow a local group to have moved between these midden sites, and others as yet undiscovered, cultivating one or two small plots every year. The proximity of these sites to one another means that it is also possible that the clearings were visited more frequently by domesticated animals and their minders, to crop the pasture and browse on the new woodland, and thus to help keep the clearings open.

On the basis of the pottery and the existing radiocarbon dates, the Area 6 and Area 10 sites were first occupied before the causewayed enclosures at Eton Wick and Staines came into use. The possibility therefore has to be considered that these midden sites were gathering places performing a range of functions similar to the causewayed enclosures, as has been suggested recently (Hey in Morigi *et al.* 2011, 240). Hey also suggests that the cessation of intensive midden use coincides with the construction of the first large-scale monuments in the Thames Valley (*ibid.*). At the Eton Rowing Course, however, both midden sites continued in use contemporaneously with the adjacent causewayed enclosures, and the general absence of human bone and exotic materials at the Eton Rowing Course makes the midden sites here unlikely to have been the location of gift-exchange or ceremonies suggested by the presence of these materials at causewayed enclosures. It is possible that long-distance exchange did not occur on any scale in the primary Neolithic, only becoming established at the time that causewayed enclosures appeared. Even if that were the case, however, once causewayed enclosures came into existence, the restricted range of materials and the absence of exotic materials at the Rowing Course sites suggests that they were still not involved in such exchange. On the basis of the recent redating of causewayed enclosures, and their relatively limited duration (Whittle *et al.* 2011, 712-6), the quantities of material deposited at these sites on each visit also probably exceeds that deposited at the middens.

With at least one causewayed enclosure so close by (at Eton Wick), the functions of the midden sites

are unlikely to have been the same. Although it is possible that the continuation of visits to the midden sites was linked to the presence of one or more causewayed enclosures nearby, they were not so close that they need be seen simply as campsites for those visiting the monuments. The sites lay at least 1km from either Dorney Reach or Eton Wick, and across a channel of the prehistoric Thames from both. In this largely wooded landscape, the causewayed enclosures would not have been visible, or necessarily audible, to the inhabitants of the midden sites. As has already been said, both Area 6 and Area 10 were used over some time before the causewayed enclosures were constructed. An alternative, and perhaps better interpretation, would be to see these sites as domestic encampments used by a semi-nomadic local population for the majority of the early Neolithic period.

Tree-throw holes and pits

The black soilmarks within the middens proved to be of two types, representing either surface spreads (true middens) or tree-throw holes filled with dark occupation material. The tree-throw holes were largely filled with the same dark soils and finds, though sometimes gravel spills separated two or more episodes of infilling. The density of finds within the tree-throw holes was just as great as that of the surface middens, and the composition and utilisation of the lithic assemblages from both types of deposit was very similar. It therefore appears that the tree-throw holes were filled deliberately, but incorporating some material that had been lying about for some time.

The role of trees in the environment in which these middens were created is clearly significant. Tree-throw holes were used to dump midden material, and there were three of these in close proximity to one another, though not necessarily contemporaneously. The creation of clearings in the wooded environment may have been caused by felling, but given the large size of wildwood trees it is possible that occupation made opportunistic use of spaces created through windthrow, that were then encouraged by grazing livestock to create larger more permanent clearings. There may have been trees still present and falling within the Area 6 hollow several hundred years after occupation began, if the heavier pottery rims evident in the north-western tree-throw holes do represent a later phase in the early Neolithic. Midden areas may not, therefore, have been completely cleared, and gaps in the debris may have been caused by still present, rotting tree trunks.

A range of similar tree-throw features from across southern Britain have been discussed in a paper by Evans, Pollard and Knight (1999). All of these belong to the early Neolithic, and the authors have interpreted the deposits within them as deliberate acts of middening, not the chance accumulation of material washed in from surrounding occupation.

Although the Eton Rowing Course hollows show that high surface densities of artefacts can be extensive, the concentration of finds in the tree-throw holes in the hollows bears out this general conclusion. The authors also argued that the middening had taken place after the trees had fallen, rather than being deposited at the foot of standing trees and later becoming incorporated (Evans *et al.* 1999, 248). At the Rowing Course the flintwork at the bottom of the tree-throw holes included a significant proportion of corticated material including residual Mesolithic flintwork, whereas the upper fills had denser finds of fresh appearance. This strongly suggests that the middening occurred after the trees had fallen.

Evans *et al.* drew attention to the widespread use of tree-throw holes on their 90 ha excavation, with another 15 examples of significant deposition of early Neolithic date in tree-throw holes overall. This pattern is repeated in the Dorney area, since another 7 tree-throw holes (at Taplow Mill Site 2, Marsh Lane West and East and Lake End Road East) on the Flood Alleviation Scheme have produced significant assemblages of flintwork and in some cases Plain Bowl pottery, and considerably more tree-throw holes contained smaller assemblages of flintwork. At the Rowing Course there was possibly another of the former type on Area 16 (9026), and among the latter were tree-throw holes within the Area 6 midden, in Area 16 and at the north-west end of the Rowing Lake that were associated with early Ebbsfleet Ware.

Evans *et al.* (1999) compared the use of tree-throw holes for deposition of large assemblages of material to the large early man-made pits such as the Stonehenge Anomaly at Coneybury (Cleal in Richards 1990), and implied that the use of tree-throw holes was superseded by the groups of inter-cutting pits of middle and late Neolithic date within their site. The use of natural hollows appears to be a locally common phenomenon in the Dorney area, as a similar deposit was found in a natural shaft at Cannon Hill, Maidenhead, Berkshire (Bradley *et al.* 1975-76). The origins of such a practice may lie with the indigenous Mesolithic population (cf the natural shaft at Fir Tree Farm, Down Farm, Dorset (Allen and Green 1998)). The association of tree-throw holes with large assemblages of Mesolithic struck flint has been known for a long time, but has occasioned little comment, being regarded either as residual material incorporated into the tree-throw hole, or as the result of hunters using tree-throw holes as temporary shelters or working hollows while hunting. Given the clear evidence from pottery and other finds for deliberate infilling of tree-throw holes on primary Neolithic sites, however, archaeologists should perhaps consider whether this might not be the continuation of a Mesolithic tradition. Just such a late Mesolithic tree-throw hole containing more than 150 struck flints was found in Area Ex1, and another possible example with 18 struck flints in Area 16.

As for the replacement of tree-throw holes by man-made pits later in the Neolithic, the Dorney landscape contains only seven certain pits of early Neolithic date (two in Area Ex1 and one each in Areas 6, 16, Lake End Road West, Lot's Hole and Marsh Lane East Site 2). Early Neolithic pits were, however, more common at Cippenham only 2-3km to the north-east (Ford *et al.* 2003). The use of tree-throw holes for deposition of significant groups of artefacts appears to disappear in the Dorney area after the early Neolithic, the latest material in such features being chisel arrowheads and Ebbsfleet Ware (except for a single sherd in RC1). In contrast, groups of Peterborough Ware pits appear at several sites: ten at Lake End Road West, four at Taplow Mill Site 1 and three at Marsh Lane East Site 1. A further pit containing two Mortlake Ware vessels was found at Cippenham (Ford *et al.* 2003, 69, fig. 3.21). These features do not, however, simply replace tree-throw holes, as they contain distinctive types of finds assemblages different to those of the early Neolithic.

Overall, pit digging is a dominant and recurring feature of the middle Neolithic in the Dorney area, while middens and deposition within tree-throw holes and other natural features seems to decline. Although pit deposits seem to represent the richer assemblages, there is evidence that other features were still used for deposition. It has been noted above that deposition on a more reduced scale still took place at all three middens. Fengate Ware was deposited in the Area 6 midden and at Amerden Lane West.

It is, however, clear that practice varied widely within the Middle Thames Valley. A tight cluster of early Neolithic pits dated between 3630 and 3370 cal BC is known close to the early Neolithic house at Kingsmead Quarry, Horton (Chaffey and Brook 2010). No middle Neolithic pits were found, although both pottery and charred plant remains suggest that the area was visited during this period, but a separate area of late Neolithic pits was uncovered. As the authors note, large numbers of middle Neolithic pits were present at Harlington some 6km to the east, where early and late Neolithic activity was very slight. This reinforces the impression from the Dorney area that activities were varied, and thus left different residues, in different parts of the landscape, and that the focus of specific types of occupation changed during the Neolithic.

The density of Neolithic activity at the Eton Rowing Course and in the adjacent landscape is considerable. The tree-throw holes and previous finds demonstrate the widespread use of the whole area. The hollow deposits in themselves represent remarkable concentrations of material residues, at present only paralleled by midden deposits found at the Stumble on the Essex coast (Wilkinson *et al.* 2012), and perhaps at Woolwich Manor Way in Newham, East London (Bates and Whittaker 2004, 64 and 67). Earlier evidence of middening comes from beneath the long barrows at Ascott-under-

Wychwood, Oxfordshire, and Hazleton North, Gloucestershire, dated to the very start of the 4th millennium cal BC (Whittle *et al.* 2011, 466, fig. 9.23) but both were superseded by monuments, probably within a century. Another large midden also existed at Runnymede, but it is unclear whether this began as early as that at the Eton Rowing Course (Needham and Spence 1996; Needham 2000, 240; Morigi *et al.* 2011, 253).

In addition to the three or four middens and the tree-throw holes already mentioned within the Dorney landscape, at the Eton Rowing Course there were also smaller foci of early Neolithic activity at the southern edge of Area 10 (Trench 188 and context 2127/2130) and another in Area 16 on the western edge of the central island. Early Neolithic pottery or struck flint has also been recovered from Areas 15 and 4 midway between Areas 10 and 6. Other activity of this date may include a probable hearth associated with part of a Carinated Bowl to the north of the former Thames palaeochannel (Area 14), and further sherds were recovered from Areas 18 and Site F East, and from Areas 20 and 24 in the north-west part of the site. A scatter of early Neolithic pottery was found at Marsh Lane East Site 2 and a lithic scatter at Roundmoor Ditch.

On the floodplain at the Eton Rowing Course (Areas Ex1-3) numerous *in situ* lithic scatters were found sealed beneath later alluvium, and another concentration of struck flints was found on the north bank of the loop of the Thames palaeochannel (Area 3). The fairly arbitrary sample of the floodplain excavated suggests that a similar density of scatters is likely to exist elsewhere along the floodplain in this area. A further floodplain scatter occurred along the Flood Alleviation Scheme at Taplow Mill Site 2. All of this adds up to a broadly continuous spread of early Neolithic activity from Taplow to Eton Wick.

In the wider landscape in general, early Neolithic activity is concentrated close to the river Thames and its palaeochannels. Quite apart from the Eton Rowing Course palaeochannel, most of the sites in the northern half of the Flood Alleviation Scheme lie along the line of a former palaeochannel. As well as lines of communication, the prehistoric Thames and its tributaries provided the water source needed by early herders for their livestock.

Other than at Amerden Lane, which was probably another midden site, due to the soil conditions on the floodplain only crumbs of pottery survived even in the largest lithic clusters, so these can only be dated by the associated tool types as broadly early Neolithic. Animal bone was also sparse, and proved too degraded to obtain radiocarbon dates. Plain Bowl pottery was, however, found in the channel edge in Area 5 (layer 3839) and early Ebbsfleet pottery in Area Ex1 (layer 718) along with struck flint. Radiocarbon dates have been obtained on an associated human skull (SF 46603) and waterlogged seeds in Area 5 and on a beaver-gnawed twig in Area Ex1. Those from Area 5

combine to indicate a date between 3520 and 3370 cal BC, and that from Ex1 a date between 3640 and 3360 cal BC.

Despite the difference in preservation, it is clear that the character of some of these clusters was different from that of the middens. Apart from the relative lack of pottery, quernstones and charred cereal grains were absent. The largest such cluster was found in Area Ex1 in an arc around a burnt area, probably the site of repeated fires, as some of the flint debitage had been burnt. This cluster included 27 incomplete or misshaped leaf-shaped arrowheads, indicating a production site. One interpretation would be to see this as a hunting camp, but the few animal bones associated with the cluster included sheep, suggesting that this was not necessarily remote from areas of grazing and domestic settlement. The partially worked arrowheads appear to represent a considerable amount of unproductive effort, and perhaps indicates that the group was relatively inexperienced at manufacturing them, perhaps including youngsters learning the skill.

Other lithic clusters of varying sizes indicate the range of activities that occurred on the floodplain, from the manufacture of new toolkits to the utilisation of already-prepared tools and their eventual discard (Allen 1998). There is a strong correlation between the presence of burnt flint and the size and variety of the struck flint assemblage amongst these clusters, suggesting that the larger sites involved the lighting of fires, and thus were probably camps used for one or more nights.

The context of these floodplain scatters also needs to be borne in mind. The major palaeochannel of the Thames was flanked by wide areas of floodplain covered by extensive alder carr in the later Mesolithic. By the early Neolithic the floodplain was drying out, and during the whole of the period there was relatively little (0.15 m) sediment deposited on the floodplain. At the Eton Rowing Course both the pollen evidence and the plant and insect remains suggest that there were clearings in the early Neolithic woodland, and that clearance increased gradually in scale throughout the period. Lithic concentrations of early Neolithic character were found in a zone extending up to 50m from the channel edge wherever excavation took place. In the extensive floodplain areas only one early Neolithic scatter was found further than 50m from the channel. This was initially interpreted as suggesting that in a largely wooded environment waterways were the main routes of communication and transport, and also that away from settlement foci, penetration into the wildwood was limited (Allen *et al.* 2004). A fair quantity of early Neolithic pottery was, however, found along the edge of the floodplain and gravel terrace behind these scatters, so the explanation of this patterning may be related to the cultural perception of the suitability of certain locations for particular tasks rather than to environmental constraints. Early Neolithic activity at the

Eton Rowing Course, however, stretches over half a millennium, and it is possible that activity was indeed concentrated close to the channel edge at first, only spreading inland later as clearings were extended.

The sole lithic cluster found far from the channel overlay patches of burnt soil, and similar but more extensive patches of burning were found in Area Ex1 all along the edge of the gravel terrace and the floodplain, although there was little associated dating material. It is possible that this burning was indeed early evidence of clearance, opening up this area for occupation, evidence of which was found for the middle and late Neolithic, and the succeeding Beaker and early Bronze Age periods.

Implications of the discoveries

Later Mesolithic settlement in the Thames Valley was seen as centred upon base camps by the river (Holgate 1988, 129-133). Although there are later Mesolithic sites at Cannon Hill and at Green Lane, Maidenhead within the study area (Holgate 1988, 223 and map 9), and extensive small-scale activity at the Eton Rowing Course (Areas Ex1 and 6), there were no large base camps at the Eton Rowing Course such as existed in the early Mesolithic. The immediate area may therefore have been visited frequently, but not intensively used, in this period. Several very large collections of Mesolithic material are recorded at Bray and Maidenhead by Wymer (Wymer 1977, 4-5 and 8), including one on the south bank of the Thames opposite the Rowing Course, but it is not clear whether these are early or later Mesolithic. In the Dorney area the largest primary Neolithic settlements in the area occur at Areas 6 and 10, both of which lie on islands of gravel approximately 1km long between two arms of the contemporary river Thames. If Neolithic settlers, or at least Neolithic ways of life, were unfamiliar in the area, it may have seemed safer to site the earliest such settlements in restricted areas surrounded by water. It is also possible that Neolithic practices, and possibly settlers, moved up the Thames from Kent, where the recent radiocarbon dating programme (Whittle *et al.* 2011, figs 14.48 and 15.8) places the earliest Neolithic activity in Britain (or possibly downriver from another early focus in the Upper Thames Valley).

The Rowing Course sites may also indicate continuity of Mesolithic practices. Holgate (1988, 132-5) contrasted a pattern of later Mesolithic base camps by rivers with one of domestic early Neolithic settlement on higher ground, and only task-specific sites close to the Thames (Holgate 1988, 132-5). The occupation sites, including large-scale middens, at the Rowing Course, seem rather to continue his late Mesolithic pattern, and Area 6 in particular includes a small quantity of late Mesolithic material, principally recognisable as microliths. Pollard has drawn a distinction between large Mesolithic midden sites, which he interpreted as the result of repeated

seasonal visits over hundreds or thousands of years, and the much smaller Neolithic occupation deposits, which he took to indicate short-term occupation and shifting 'swidden' agriculture (Pollard 1999, 82-3). The Rowing Course evidence shows that longer-term middening did occur in the early Neolithic. On the basis of the available evidence it is more likely that this resulted from repeated occupation of the same locations (continuing Mesolithic practice) rather than from permanent sedentary occupation in Areas 6 and 10. This was also one of the two interpretations of the evidence from the Stumble considered in the report discussion (Wilkinson *et al.* 2012, 139 and 142-3), and the one apparently ultimately favoured (see also the reinterpretation offered above).

As the radiocarbon dates show, Area 6 represents a domestic occupation site of the primary Neolithic, with clear evidence of both animal husbandry and cereal cultivation. The pottery suggests a similar date range for Area 10. Because of its scarcity in the archaeological record, except in association with large rectangular buildings (as at Lismore Fields) or in pits, some scholars have suggested that cereal cultivation was more social and symbolic than dietary, and was connected only with particular types of site (Thomas 1999, 24-5). There is, however, no evidence of any special character to the midden deposits at the Eton Rowing Course. A similar conclusion was drawn in relation to the use of the house and pit cluster recently excavated at Horton, where small quantities of cereals, pottery, struck flints and burnt flint were also found (Chaffey and Brook 2010).

Excavation around the hollows containing the midden deposits in Areas 6 and 10 was not sufficiently comprehensive to rule out the presence of substantial buildings in the vicinity. No watching brief was carried out beyond the excavation areas. Nevertheless, the absence of associated buildings, and the virtual absence of pits, within either site, may indicate that these middens were not created in association with houses. Neither of the sites along the Thames that have produced large rectangular posthole buildings, at Yarnton, Oxfordshire and White Horse Stone, Kent, were associated with middens, although a former midden was postulated from phosphate distributions outside the trench-built building at Horton (Chaffey and Brook 2010). At Runnymede rows of postholes suggest that there may have been buildings of mid-4th millennium BC date buried by a middle Neolithic midden deposit (Morigi *et al.* 2011, 234-5). Middens found beneath the long cairns at Hazleton North, Gloucestershire (Saville 1990, 240-41) and Ascott-under-Wychwood (Benson and Whittle 2007), did occur alongside hearths, pits and postholes, but in neither case did the excavators interpret the postholes as belonging to substantial post-built structures, although it has more recently been suggested that they might have belonged to more substantial houses (Morigi *et al.* 2011, 231-2 and fig. 11.8).

In contrast to all of these, the Dorney middens were not overlain or superseded by the construction of monuments. Instead, midden accumulation continued over a period of several hundred years, resulting in assemblages otherwise exceeded in size only at causewayed enclosures. The middens are prime examples of Pollard's 'physical demonstrations of long-term commitment to particular locales' (Pollard 1999, 82).

By the middle of the 4th millennium Neolithic activity is apparent over a much wider area. One remarkable aspect of the excavations between Taplow and Eton is the density of early Neolithic activity overall. The evidence discussed here is from the north side of the river but finds from Cannon Hill, Maidenhead and Bray indicate that the same may be true of the south side. Further up river, early Neolithic material has come from a variety of sites close to the river at Marlow, Caversham, Remenham (Holgate and Start 1983-5) and Charvil. Down river there are sites at Runnymede (Needham 2000), Horton (Ford and Pine 2003; Chaffey and Brook 2010) and Staines (Robertson-Mackay 1987; Bradley 2004) and nearer to London there are sites at Shepperton (Jones 2008), Brentford, Twickenham, Kingston, Chiswick and Fulham (Barclay pers. comm.). The variety of sites is now considerable, with a house and pit group at Horton, a causewayed enclosure at Staines and smaller enclosures at Horton and Shepperton, the remainder being characterised by spreads of flints and pottery. The house and pit group at Horton has a radiocarbon date of 3980-3720 cal BC, although there are others suggesting use after 3700 cal BC (Chaffey and Brook 2010). Comparisons with other Neolithic houses suggest a similarity with Irish examples, and a date more likely after 3800 cal BC (*ibid.*). Shepperton is the only other site to produce an assemblage including Carinated Bowl, though there the radiocarbon dates suggest a date in the middle of the fourth millennium cal BC (Jones 2008, 73).

In contrast, despite the evidence of an earlier start to the Neolithic (Whittle *et al.* 2011, 735 and fig. 14.51), excavations of comparable scale of the gravels and floodplain in the Upper Thames at Yarnton, Oxfordshire, did not reveal anything like the same density of pottery. From recent excavations in the Lower Kennet Valley near to Reading it appears that the same may be true there. The environmental evidence for only gradual clearance of the landscape would suggest that within the area as a whole the evidence is the result of shifting but continuous settlement over a very long period.

As already discussed, the later part of the occupations represented by the midden sites, and by the lesser pottery assemblages in the area, are broadly contemporary with the life of the causewayed enclosure and adjacent cropmark mortuary enclosure only 1km downriver at Eton Wick (Ford 1991-3). The scale of occupation evident both on the gravel terraces and the floodplain on both schemes shows that the hinterland of this monument was

certainly not peripheral to settlement, as has previously been claimed for the surroundings of causewayed enclosures (Thomas 1999, 38-41), and casts doubt on the arguments often quoted as reasons for siting causewayed enclosures in geographical locations such as this.

Cropmark evidence suggests that a second enclosure (and a second mortuary enclosure) existed at Dorney Reach, so that there was once a pair of causewayed enclosures, one at either end of the divided channels of the Thames that surround the two island primary Neolithic settlements. The location of the causewayed enclosures might then be related to the earlier settlements on the islands in between, perhaps the ancestral foci of settlement in this area. The primary settlements themselves continued in use, although by the time Mortlake Ware was in vogue the scale of activity seems to have reduced considerably. The continued existence of midden sites in the middle Neolithic is evident at Runnymede, and is also paralleled at the site partly excavated at Baston Manor, Hayes, Kent, (Philp 1973, 4-23), where several thousand potboilers, over 2000 struck flints and 225 sherds of Peterborough Ware pottery were found within a small area, with a density comparable to that at Area 6. At Dorney there is a greater concentration of finds in pits and tree-throw holes at Lake End Road West and at the north-west end of the Eton Rowing Course, indicating a definite shift in the concentration of activity.

The function and significance of the ancestral settlements at Areas 6 and 10 may have been redefined, as two crouched burials, one an adult female (5587) and one a juvenile (5856), were placed in Area 6, and a partial animal skeleton (6915) was buried in a pit in Area 10. All these have been radiocarbon-dated to the late 4th millennium BC. In one sense this is the same sequence as for the midden sites at Hazleton and Ascott-under-Wychwood, where the midden was followed by burials, albeit within a monument and after a much shorter interval of time than at the Eton Rowing Course. The Eton Rowing Course middens were also treated in a similar way to early Neolithic monuments, with the addition of secondary burials and placed deposits. At Horton in the Colne Valley both of the early Neolithic foci underwent similar transformations. A late Neolithic inhumation was added to the early Neolithic pit group and house, while the early Neolithic U-shaped enclosure the ditch of which contained midden-like deposits was enclosed by an oval ditch containing placed deposits including a complete Fengate Ware pot, stitched bark containers and a wooden staff (Ford and Pine in Preston 2003). Further up the Thames at Goring, a secondary inhumation was inserted into the ditch of a possible causewayed enclosure (T Allen *et al.* 1995).

The range of Neolithic burial traditions in this area is now very wide. There is a possibly Neolithic oval barrow at Marsh Lane East Site 2 and two cropmark probable mortuary enclosures adjacent to

the causewayed enclosures at Dorney Reach and Eton Wick (Carstairs 1986; Ford 1991-3), and there are two middle Neolithic crouched inhumations in flat graves in Area 6. It is possible that a third flat grave on this site (5127) was early Neolithic. It now seems unlikely that the flat graves were peripheral to a Neolithic circular ring ditch (*contra* Allen *et al.* 2000, 71). A skull (minus the mandible) was placed in the edge of the channel in Area 5 with a large potsherd close by, the crown of another skull of similar date came from the channel upstream of Area Ex1 and an ox skull overlain by a red deer antler lay on the western channel edge in the same area (Allen *et al.* 2000, 86-9). These indicate the significance of the river for deliberate ritual deposition, but of a different type to the exotic stone axes and complete pots recorded elsewhere along the Thames (Bradley 1998a, 67). Skulls of Neolithic date were found in the sample of skulls from the Thames in museum collections dated by Bradley and Gordon (Bradley and Gordon 1988), but the Eton examples provide some context and association for this practice.

In addition, finds of disarticulated human bones are associated with other cultural material, such as a clavicle with Ebbsfleet Ware pottery and struck flint in the channel in Area Ex1, or a femur in the middle of a struck flint cluster on the floodplain. A human skull and femur were found together with an antler comb on a buried soil on the floodplain south of the Thames at the Hoveringham Gravel Pit (Anon 1964, 99). This pattern matches the deposition of bodies amongst cultural material in the causewayed enclosure at Staines (Robertson Mackay 1987) and in the ditched enclosure at Horton (Ford and Pine 2003, figs 2.10-11). Single bones (a skull fragment in Area 16) were also found in pits. All of these suggest that the movement of human bones around the landscape, usually particularly associated with long barrows and causewayed enclosures, was occurring as an accompaniment to the full range of human activities. This is particularly important as evidence for the involvement of rituals concerning the ancestors (Barrett 1988, 31), or at least the dead, in all aspects of Neolithic life rather than having been confined to certain places or times, and the absence of a distinction between secular and religious activity as we understand these concepts.

Despite the shift in concentration of activity, middle Neolithic activity was still widespread, being evident at Areas 6, 10 and 16, along the terrace edge in Areas Ex1-3, on the river bank west of Area 1 and in two separate parts of Site F East, and at the north-west end of the site in RC1 close to the groups of pits at Lake End Road West. Middle Neolithic pits were found further north at Marsh Lane East Site 1, at Taplow Mill Site 1 and at Cippenham. While none of the excavated sites of middle Neolithic date bears comparison with the scale of the early Neolithic midden sites, or even with some of the other occupation sites of this period, the evidence does indicate wide-ranging activity across

this landscape throughout the period. Significantly, both the midden sites on the Eton Rowing Course continued to be visited, showing that ancestral sites were probably not forgotten.

The pits of the Neolithic period in the middle Thames have been the subject of a recent PhD thesis (Lamdin-Whymark 2007 and 2008), so only a few comments will be offered here. None of the middle Neolithic features intercut, and the radiocarbon dates all have fairly broad ranges, so it is not possible to establish the relative chronology of activity across the two schemes, or indeed within single sites. The likely contemporaneity of the group of pits at Taplow Mill Site 1 has been suggested by the occurrence of sherds probably from the same vessels linking three of the four pits. As a large proportion of the finds within these pits probably came from middens, associated sherds from single vessels are not proof of contemporaneity, but because of the very similar character of all of the pottery at Taplow Mill, are likely to indicate deposition within a relatively brief period of time, even if as a result of several visits. At Lake End Road West, the 10 pits were spatially grouped into pairs or threes, and this too may indicate that several pits resulted from a single phase of occupation. Direct associations were only found between two of the pits at Lake End Road West, and the occupation here may then have covered a longer period of time. Whether proximity to the causewayed enclosure at Dorney Reach was a factor will remain uncertain until excavation confirms or denies the existence of this site.

Late Neolithic activity is known from pits containing Grooved Ware pottery at Areas 16 and 24, and from pottery in the middens in Areas 6, 10, and Ex1; the double ring ditch south of Area 24 is probably either middle or late Neolithic in origin (Fig. 10.3). The skeleton of one late Neolithic individual was found in the former Thames channel in Area 6, but it is unclear whether this was a deliberate burial or someone who accidentally drowned. Inhumation burials of this date are, nationally, very rare. The burnt flint concentration in Area 16 adjacent to the former Thames channel certainly indicates limited clearance for fuel, but the reasons for its creation are unclear. Its location next to the channel perhaps indicates cooking; a burnt flint spread associated with a square pit interpreted as a boiling pit at Shepperton was dated to the very end of the late Neolithic (Jones 2008).

Little activity of late Neolithic date is known in the immediate area; there was nothing from the Flood Alleviation Scheme or from Cippenham. Until recently evidence in the wider Middle Thames was also sparse, consisting of single pits like that found at Green Park, Reading (Brossler *et al.* 2004). In the Colne valley, however, groups of pits and hearths have been found at Lower Mill Farm, Stanwell (Morigi *et al.* 2011, 258), ten pits spread across the landscape at Terminal 5 Heathrow (Framework Archaeology 2011), and 15 pits plus an

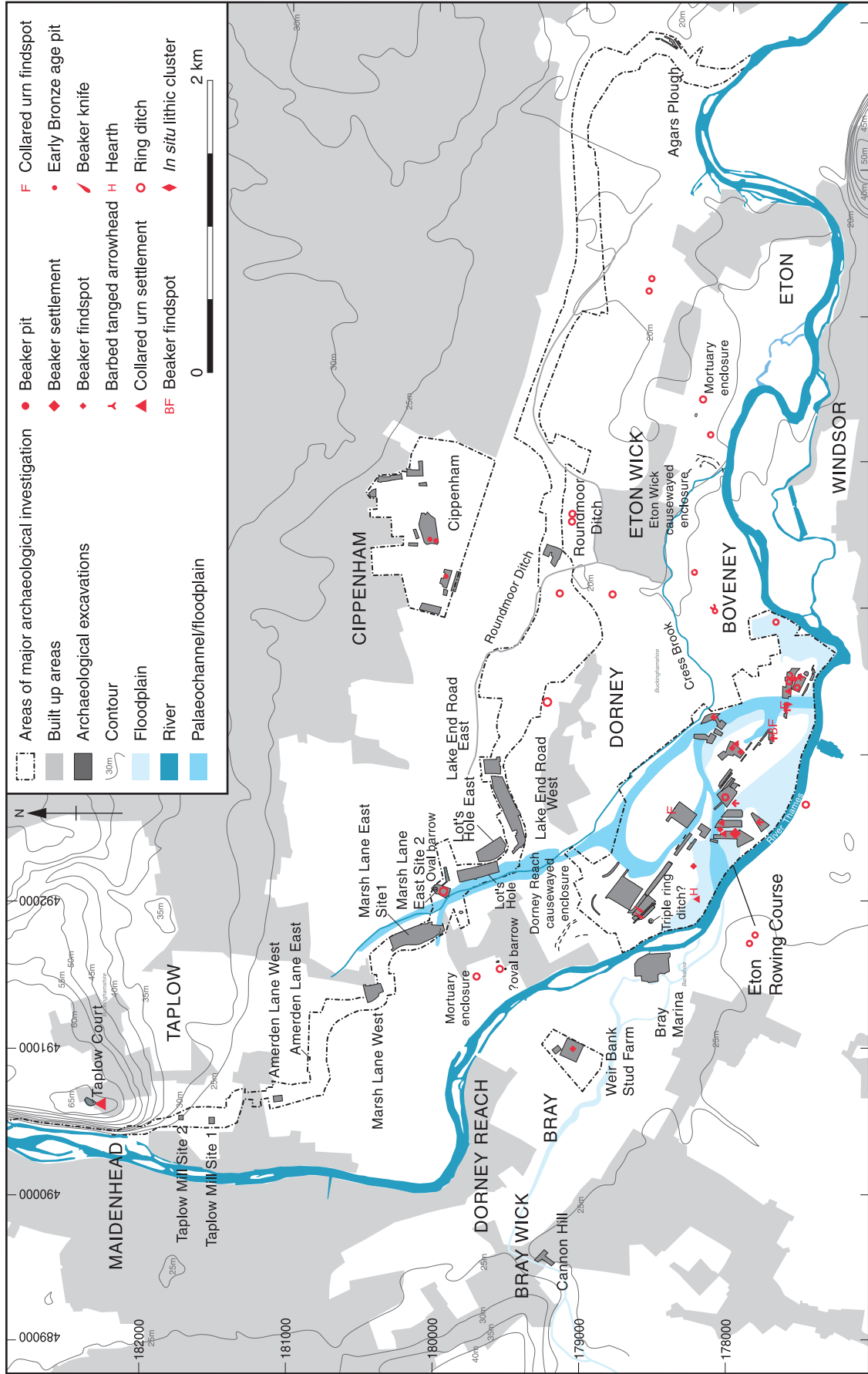


Fig. 10.5 Beaker period and early Bronze Age evidence (Crown copyright 2013 Ordnance Survey 100005569)

inhumation burial at Horton (Chaffey and Brook 2010). The limited range of activity of this date may be partly a reflection of the character of middle and late Neolithic houses, which are very rare in the Thames Valley (Morigi *et al.* 2011, 252-3); a much larger number of the latter is now known from the excavations at Durrington Walls (Parker Pearson *et al.* 2006), but they were all small and relatively slight structures, unlikely to have survived ploughing.

Prior to these excavations, there was very little evidence for Beaker activity in the Middle Thames Valley, but three ring ditches at the Rowing Course, one in Area 16 and two in Area 6, probably date to this period, and an occupation area was found on the floodplain in Area Ex1 (Fig. 10.5). Beaker pottery and barbed and tanged arrowheads were also recovered from the Neolithic middens in Areas 6 and 10 and on the channel edge in Area 3, and pottery and a knife from Area 24. A Beaker sherd was also found at Amerden Lane West. A number of flint scatters and tool types such as barbed and tanged arrowheads from Areas 4, 11 and 15 can only be dated to the late Neolithic or early Bronze Age, though it is clear that the level of activity was significant in Area 15 and in Area 11. A Collared Urn cremation burial was found within a ring ditch at Marsh Lane East on the Flood Alleviation Scheme, a hearth and early Bronze Age pottery in Trench 159 on the floodplain at the Rowing Course, and other vessels in Area Ex2. The midden in Area 6 also contained pottery, as did later features on Area 16. A series of pits or hollows containing Collared Urn pottery and struck flints have also been found at Taplow Court (Allen *et al.* 2009).

Burial in the early-middle Bronze Age (Fig. 10.5)

At the Eton Rowing Course cropmark evidence strongly suggests that there was another ring ditch in Site F East. There was, therefore, at least one on every gravel terrace island.

The cropmark ring ditch in Site F West, and the possible one in Site F East, have not been excavated, but both appear to be large, and that in Site F West has a double or triple ring (Fig. 10.6), implying that it was enlarged at some stage, and therefore had a long life. The group of ring ditches

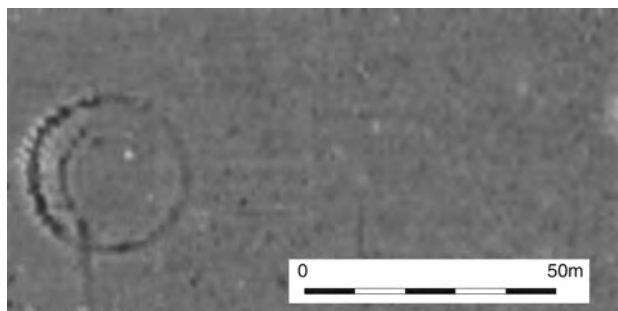


Fig. 10.6 Geophysical survey of the ring ditch on Site F West by Phil Catherall

in Area 6 appear to include two Beaker examples (the south-western and the north-western ones). The south-eastern example contained only middle Bronze Age burials, and enclosure 5500 on the north-east has been interpreted as Neolithic (see above). Neither the north-western nor the south-western ring ditch had any burials in the interior or in the ditch. The single ring ditch in Area 16 also had Beaker associations, but was still being used for burial in the later Bronze Age.

There were thus at least three, and probably four burial foci within 1km of one another in this landscape, an ever-present reminder to those living in or moving through this area. All of the ring ditches were placed close to rivers, those in Site F West, Area 16 and Area 6 by the Thames, and the putative ring ditch in Site F East between both the Cress Brook channel and Channel N. In this low-lying area the most prominent and visible places for burial mounds were on cleared ground by rivers, which were still the most convenient routes of travel and communication.

Late Neolithic/early Bronze Age lithic concentrations were common across the floodplain south of the Thames palaeochannel (Areas Ex1-3), and barbed and tanged arrowheads were found throughout the site, but the chronology of this activity is vague. Specifically Beaker activity was shown by a domestic site on the edge of the floodplain in Area Ex1, and a burnt flint spread in Area 11, possibly from a clearance episode. Beaker pottery and flintwork was also found in the hollow in Area 10, remote from any monument, and therefore probably also resulting from domestic activity. A Beaker pit and tree-throw hole in Site F West may have been evidence of ceremonial activity connected with the adjacent ring ditch, and Beaker sherds and barbed and tanged arrowheads from the Area 6 hollow may also have resulted from ceremonies connected with the monuments.

Early Bronze Age vessels in Area Ex 2, and a hearth with associated pottery on the northern side of the Thames palaeochannel (Trench 159), demonstrate continuing use of the floodplain between the monuments. Environmental evidence for the developing landscape between 2000 and 1500 cal BC is sparse at the Eton Rowing Course, but burnt mounds, molluscan and waterlogged evidence all combine to suggest an increasing opening of the landscape in the late Neolithic and early Bronze Age.

Many barrows and barrow groups in the Upper Thames and in Wessex are sited either directly upon, or in relation to, earlier monuments, such as early Neolithic long barrows, as at Winterbourne Stoke Crossroads, Wiltshire (Woodward 2000, 41), the causewayed enclosure and oval barrow at Barrow Hills, Radley (Barclay and Halpin 1999) or the Devil's Quoits stone circle, Stanton Harcourt, Oxfordshire (Barclay *et al.* 1995). Bradley (1998b, 146) suggests that earlier monuments 'may have provided a vital source of legitimacy' for the placement of barrows. The barrows in Area 6 may also

have been placed in relation to a significant earlier site, though in this case not a monument but the former hollow containing a midden and its associated middle Neolithic burials. If the crouched burial just north of ring ditch 5361 was early Neolithic, then there was a tradition of burial on this site that spanned the early and middle Neolithic. Late Neolithic Grooved Ware pottery and diagnostic flintwork had also been deposited in the midden, and one late Neolithic individual had either drowned accidentally, or had been deposited in the water next to the site. There was also Beaker pottery and diagnostic flintwork in the hollow, suggesting a continuing tradition of visits to this location throughout the Neolithic and into the early Bronze Age, making it an appropriate place to commemorate with a mound, or at least a ditch and bank. A pre-existing Neolithic oval barrow was probably also the reason for the siting of the early Bronze Age barrow at Marsh Lane East.

The particular locations of the ring ditches may not have been fortuitous. The north-west ring ditch lay between the two middle Neolithic burials, which may originally have been covered by low mounds that were still visible. In a similar way, if the crouched burial just north of ring ditch 5361 was early Neolithic, it too could have been marked by a small mound. The distribution of early Neolithic material across the southern part of Area 6 was concentrated in and around the two ring ditches, perhaps indicating long-lived foci of activity prior to the construction of the ring ditches. The flint pick or adze found in a tree-throw hole within ring ditch 5361 argues either for Neolithic activity and deposition in this location that might well have been remembered, or for the deliberate harking back to an ancestral past by burying this object within the ring ditch at a later date. The south-western ring ditch surrounded a tree-throw hole cut by the central pit which contained Beaker sherds, and it may have been this tree, or the pit created when it fell, that was important in the siting of the ring ditch. Although the local pattern of use of tree-throw holes for deposition of large assemblages of artefacts appears to have ceased after the middle Neolithic, the use of tree-throw holes for placed deposits certainly continued, as is evident at, for example, Yarnton, Oxfordshire (Hey in prep.). The importance of trees in early Bronze Age religion is evident from the inverted tree found at the centre of timber circle 1 at Holme-next-the-Sea, Norfolk (Brennand and Taylor 2003).

There was no central primary burial in any of the ring ditches or within the penannular enclosure in Area 6, and no internal burials at all in any but the south-eastern ring ditch (5361). In the case of ring ditch 5361, the post-medieval ditch that obliterated the centre produced a few human bones that could have belonged to such a burial, but these are undated. Due to truncation by ploughing we cannot be certain that such burials were not originally present in the other ring ditches, but other inhumation

and cremation burials did survive on this site, indicating that they would have been truncated only if they were very shallowly buried or placed directly upon the old ground surface.

The absence of burials within the ring ditches, in contrast to the numerous Beaker burials, whether flat graves or within barrows, in the Upper Thames Valley, may be related to an observed division between deposition of metal objects on dry land in the Upper Thames and in the river in the Middle Thames Valley, particularly towards London (Morigi *et al.* 2011, 380-381). Beaker burials on land are extremely rare throughout the Middle Thames, and the Thames certainly contains examples of all of the high status artefacts associated in other regions (including the Upper Thames) with burial. The deposition of burials or deposits of human bone in water has a long, if intermittent, history at the Eton Rowing Course. Skulls and other human bones appear in the early Neolithic, and a skeleton in the late Neolithic. Neolithic skulls were found among those dated by Bradley and Gordon (1988, 503-9), and more recently Rick Schulting has found others of Neolithic date (R Schulting, lecture, Society of Antiquaries, 2010). Finds of whole pots such as those at Mortlake have suggested to some that burials were also made in water in the middle Neolithic. At the Rowing Course, no bones of Beaker date were recovered, but bones occur in greater quantity from the middle Bronze Age to the middle Iron Age, while there is also a late Iron Age cremation at the water's edge.

The ring ditches may therefore have been memorials containing only token deposits to the dead, who, with their grave goods, were themselves placed in water. Although human bones and metal finds of the Beaker period were not among the objects recovered from the palaeochannel of the Thames at the Eton Rowing Course, this may simply reflect the locations where detailed examination of the palaeochannel was possible, none of which was close to the ring ditches. Alternatively, or perhaps additionally, it is likely that one of their functions was to assert claims to territory, even if the ancestors were not physically present within or beneath them.

Ring ditches without central burials are quite common in the Upper Thames Valley (Lambrick and Robinson 2009, 299), and those without any apparent accompanying burials – cenotaphs – are now known from a variety of sites. The latter include Buckskin II near Basingstoke, Lake Down, Wilts and West Heath in Sussex (M J Allen *et al.* 1995; Woodward 2000, 39 and 76), where stake rings (and sometimes central posts) were associated with areas of feasting, later covered by barrow mounds. Ring ditches at Lockington, Leicestershire and Roxton, Bedfordshire, have also been interpreted as cenotaphs (Woodward 2000, 41-2 and 76-7).

Lacking the original ground surface, and due to truncation by ploughing, it is almost impossible to say whether any of the ring ditches had an accom-

panying mound. Using the spoil machined out of those parts of the southern ring ditches not excavated by hand, it is clear that there was sufficient spoil for substantial internal platforms or mounds. In the case of the northern ring ditch and penannular gully, however, the spoil from the ditch could only have made a small bank or mound.

Formal central burial under a mound did, however, occur in the early Bronze Age at Marsh Lane East. The burial consisted of a cremation contained within a Collared Urn. Other examples of such burials in the Middle Thames include ring ditch 23 at Hurst Park, East Molesey, Surrey (Andrews and Crockett 1996, 61-4) and Field Farm, Berkshire (Butterworth and Lobb 1992, 48-9). The Marsh Lane example lay adjacent to an oval ring ditch that did not contain a burial; its shape may indicate Neolithic origins, although no clear dating evidence was recovered, and the Hurst Park ring ditch was also oval rather than circular (Andrews and Crockett 1996, fig. 30). Despite the presence of two ring ditches, however, the site did not become a focus for numerous burials in the Neolithic or early Bronze Age. Garwood (in Morigi *et al.* 2011, 424) argues that 'there is little indication that primary burials...were foci for repeated visits for ritual performances or depositional acts. Instead, mounds appear to have been designed as an act of closure that excluded further actions and reinterpretations of the dead.' A little early Bronze Age pottery was, however, recovered from the Area 6 midden, and there does appear to have been more ritual and funerary activity around earlier ring ditches in the middle and late Bronze Age (Allen *et al.* 2000; see Volume 2).

The pattern of single ring ditches and small barrow groups in close proximity is also evident in the wider landscape, with two ring ditches evident as cropmarks some 2km downriver south of Eton Wick (Ford 1991-3) and a possible ring ditch on Taplow Hill 1km north (Fairclough pers. comm.). Slightly larger groups of barrows may exist within the region at Datchet some 5km downriver, where two groups of up to four and three ring ditches were found from cropmarks and geophysical survey only 500m apart (Kennish and Martin 2008), and upriver at Marlow (Thacker and Champness 2010). Even these, however, are small and much more widely spaced than many of the barrow groups in the Upper Thames Valley, where cemeteries of 10 or more barrows are common, and occur at intervals of only 4km (Bradley 1984, 87; Morigi *et al.* 2011, fig. 14.24). Large nucleated barrow cemeteries like those in Wessex and the Upper Thames are also unknown in Surrey. The largest known group, that at Stanwell, only consists of 9 ring ditches (Needham 1987, 106). This perhaps suggests that social groupings were smaller and more fragmented than in the Upper Thames and in Wessex, leading to a pattern of more numerous but smaller barrow groups.

It is also noticeable that, while there was a series of large henge monuments of late Neolithic/Beaker date in the Upper Thames and in Wessex, these were absent from the Middle Thames, unless the monument at Mayfield Farm, the date of which is uncertain, is of this type (Lewis 2000). In his discussion of Terminal 5 Heathrow, Lewis has drawn together a group of small ditched enclosures of Neolithic date from the Middle Thames (Framework Archaeology 2011, 66-7 and 122-3), and has raised the possibility that these might have been used instead, although he notes that few can be attributed to the late Neolithic rather than the middle Neolithic. If his suggestion is correct, then it might also suggest that the ceremonies acted out in these enclosures were carried out by much smaller social groups than those using the henges. In that case, the origin of the different social groupings in the Middle and Upper Thames would lie in the middle or late Neolithic. Smaller ditched monuments are, however, also present in the Upper Thames Valley, for instance at Stanton Harcourt and Corporation Farm (Morigi *et al.* 2011, 360), so the communal functions of the larger henges may have been met by other means in the Middle Thames Valley.

The linear arrangements at barrow cemeteries such as Barrow Hills, Radley, Oxfordshire (Barclay and Halpin 1999) may have been related to the occurrence of processions, passing a succession of monuments to important ancestors. Rather than indicating social fragmentation, the riverine distribution of barrows in this part of the Middle Thames might indicate that journeys there, whether in life or death, were made as much by river as on foot. Going downstream, a metaphor for the journey of life and death (from source to oblivion in the sea), the funerary procession would have covered distance more quickly, and as a result barrows may have been placed at intervals along the river, rather than bunched together.

The use of the floodplain for domestic activity in the early Bronze Age, although at that period the floodplain was significantly drier than today, was one of the most significant discoveries of the Yarnton excavations in Oxfordshire (Hey with Robinson in Morigi *et al.* 2011, 321-5). At that site a variety of structures was discovered, but although the evidence from the Dorney area is less clear, the presence of a Beaker activity area and of an early Bronze Age hearth, together with numerous lithic clusters and several broken vessels, as well as the burnt flint spreads indicating clearance, provides a varied picture of utilisation of the local landscape between burial monuments. Parallels for the deposition of significant portions of vessels in pits are numerous, but for vessels left exposed on floodplain surfaces are not, due to the rarity of excavations in such contexts.