

ON THE SURVEY OF A NEOLITHIC OVAL BARROW AT DORNEY REACH, BUCKINGHAMSHIRE

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Magnetometry and resistivity surveys were undertaken on the site of a cropmark at Dorney Reach, Buckinghamshire, which had previously been interpreted as a Neolithic long barrow, oval barrow or mortuary enclosure. The resistivity survey revealed an oval barrow, potentially with a split-timber mortuary structure, among other archaeological and recent anomalies. Comparable monuments in the region are discussed and the relationship of oval barrows to causewayed enclosures and other monuments is considered against aspects of social change in the early and middle Neolithic.

INTRODUCTION

The gravel terraces of the River Thames in south Buckinghamshire are rich in Neolithic archaeology, as exemplified by excavations prior to the construction of Dorney Lake and the Jubilee River. These excavations revealed early Neolithic middens, deposits in tree-throw holes, *in situ* flint scatters and dozens of early, middle and late Neolithic pits. The excavations also yielded human remains from a former channel of the River Thames (Allen *et al.* 2000; Allen *et al.* 2004; Allen *et al.* forthcoming). Several Neolithic monuments are also known, including causewayed enclosures at Dorney and Eton Wick, but in contrast to the wealth of data generated by the excavation of ephemeral features, comparatively little is known about these monuments. Monument plans have been generated from cropmarks and only the Eton Wick causewayed enclosure has been subject to any excavation, and even this was restricted to limited trenching (Ford 1991–1993; Ford 1986). In the absence of firm data, these monuments have been subject to speculation and debate. The cropmark at Dorney Reach that is the subject of this note, has been variously interpreted as a long barrow, oval barrow and mortuary enclosure from three distant, oblique aerial photographs. In light of this speculation, magnetometry and resistivity surveys were undertaken over the cropmark to clarify the interpretation.

LOCATION, TOPOGRAPHY AND GEOLOGY

The Dorney Reach cropmark site is located on a South Buckinghamshire District Council recreation ground centred on SU 9170 7955, *c.* 250 m ENE of the River Thames (Fig. 1). It is situated on level ground on the floodplain of the River Thames at *c.* 23 m O.D. The underlying geology is Pleistocene first terrace gravels, which are primarily composed of poorly-sorted flint nodules, with a smaller component of quartzite pebbles (Sumbler 1996).

ARCHAEOLOGICAL BACKGROUND

The Dorney Reach monument appears as a cropmark on oblique aerial photographs taken by Dr J. K. St Joseph in 1957 and 1959 (VP12, VP23, VP24). The cropmark was first plotted by Philip Carstairs as a broadly north-south aligned, straight-sided oval ditch, with entrances to the north and south, and three prominent internal features resembling substantial pits or postholes (1986, Figure 3, Site A). The monument was originally plotted as measuring *c.* 30 m in length, but re-examination suggested it was smaller measuring *c.* 18 by 8 m (NMR monument report 1232883). Re-examination of the aerial photographs by one of the authors (HLW) revised its location from SU 9159 7955 to 9170 7955. It also appeared that the monument differed in form from the original interpretation, although the small scale of the photograph made it difficult to be confident over any interpretation.

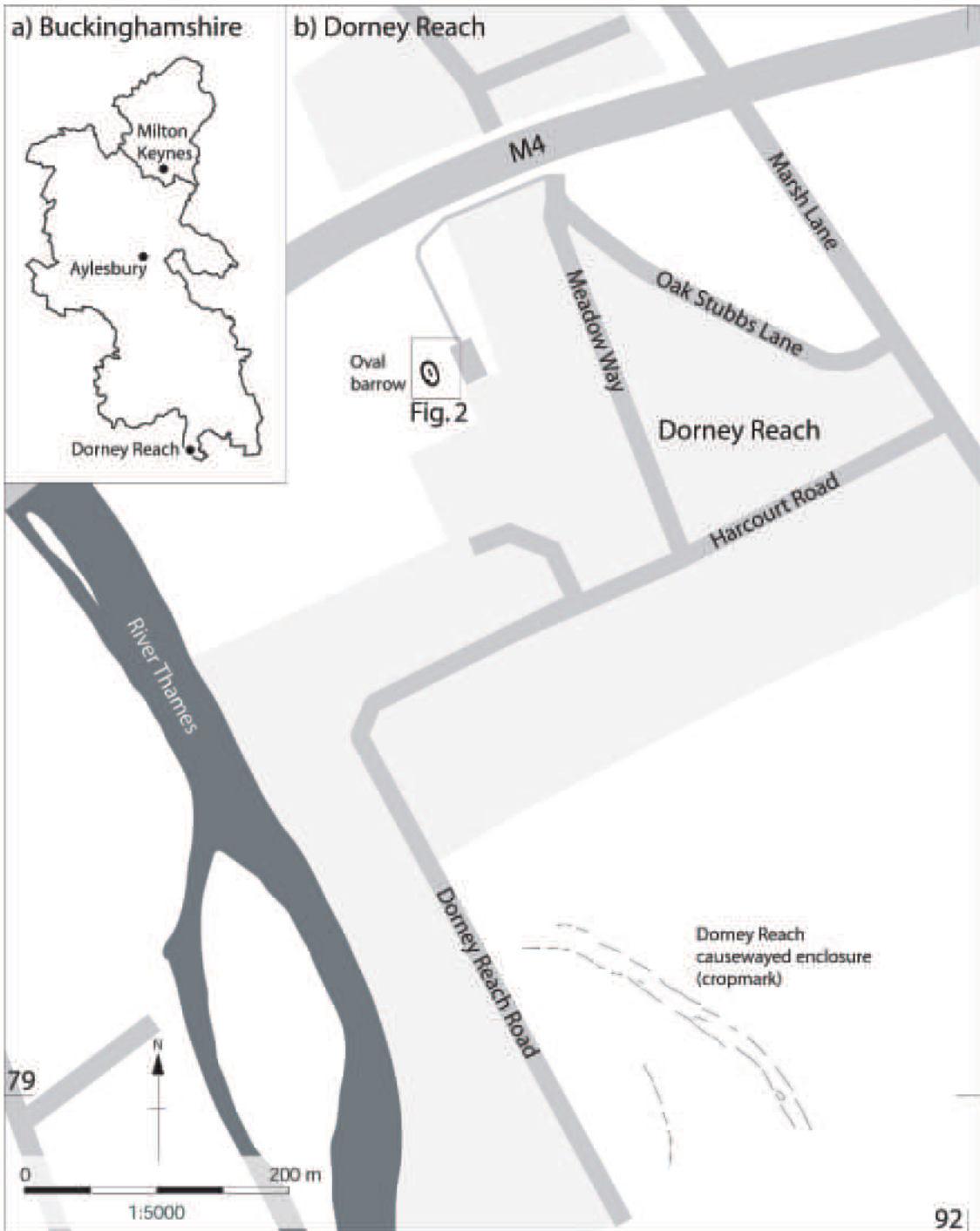


FIGURE 1 a) The location of the oval barrow at Dorney Reach in Buckinghamshire and, b), its relationship to the River Thames and the cropmark of a possible causewayed enclosure.

The ditch appeared to be oval and continuous around the southern side, with two possible breaks on the northern edge. The three internal features were prominent, but several possible smaller features were also noted. Vertical aerial photographs from 1975 (NMR SU9179/7) indicate the dumping of soil to the north of the site, presumably to level the ground.

METHODOLOGY

The survey employed resistivity and magnetometry as complementary non-invasive techniques to maximise insight into the construction and form of the monument. A Bartington Grad 601 magnetic gradiometer with dual sensor, was employed to survey a 30 m by 60 m area at 0.5 m traverse spacing. This revealed its location and subsequently a Geoscan FM-15 twin probe resistivity meter was employed at 0.5 m intervals and 0.5 m traverse spacing across an area of 30 m by 30 m, directly over it. Data was processed using Geoplot software at the University of Reading Archaeology Department.

RESULTS

The magnetometer survey yielded poor results due to ground contamination from metal debris, the presence of overhead wires across the south of the survey area and a fence along the north-eastern side. In the northern half of the survey area, the image is obscured by responses to large ferrous objects, metal spikes from goalpost sockets. The survey does, however, reveal the trace of a continuous oval ditch in the northern half of the grid and several linear and pit-like anomalies that are possibly archaeological.

The resistivity survey yielded clearer results, revealing the monument and other archaeological features (Fig. 2). The ditch is oval, *c* 2–2.5 m wide, with external dimensions of *c* 20 m by 12.5 m on a NNE-SSW axis. Four large pit-like anomalies are present within the ditch, including two which form a pair at its centre. The pair of pit-like anomalies may represent a split-timber mortuary structure. The pit-like anomaly to the south of the interior appears to have a relationship with the ditch, but the most northern anomaly correlates with magnetic response that represent the former location of a goal-post. A linear ditch aligned SSE-

NNE crosses the eastern edge of the oval ditch. This turns 90° towards the east at the north of the survey area and may form part of an enclosure or boundary. Towards the southern edge of the survey area, two positive pit-like anomalies correlate with positive magnetic results and probably represent archaeological features. A large anomaly to the north of the grid and a negative anomaly on the corner of the enclosure, are difficult to interpret and may be geological, but it is notable that these areas are close to the goal-posts identified by the magnetometer. A diffuse negative anomaly to the north, may result from irregularities in the geology or the presence of soil used to level the field.

DISCUSSION

These geophysical surveys have clarified the form of the oval barrow at Dorney Reach and other interpretations can finally be laid to rest. The oval barrow is likely to date from the middle Neolithic (*c* 3300–2800 cal BC), but earlier phases of activity are probably also present. Comparable monuments have long and complex histories; frequently the cutting of the oval ditch and construction of a mound occur late in the sequence. The interpretation of oval barrows solely as funerary monuments is problematic as mortuary activity on such sites significantly pre-dates the construction of the barrow. In a review of comparable sites below, the relationship of oval barrows to other monuments is considered against aspects of social change in the early and middle Neolithic.

Four oval barrows are known in the Middle Thames Valley, of which three have been excavated, in addition to Dorney Reach (Fig. 3). The closest example is just 650 m to the north east of the Dorney Reach oval barrow, at Marsh Lane East (site 2) on the Jubilee River (Lamdin-Whymark 2008). Unfortunately, the earliest phase of this monument provided no dating evidence as the ditch was extensively recut in the Bronze Age and none of the internal features were Neolithic. At Horton, less than 1 km to the north of the Staines causewayed enclosure, an oval ditch encircled an earlier Neolithic U-shaped ditch (Ford and Pine 2003). At Eton Wick an oval barrow is known as a cropmark (Ford 1991–1993). Recent re-interpretation of aerial imagery suggests this monument also represents a U-shaped ditch encircled by an oval barrow (Lamdin-Whymark 2008). The final phase oval

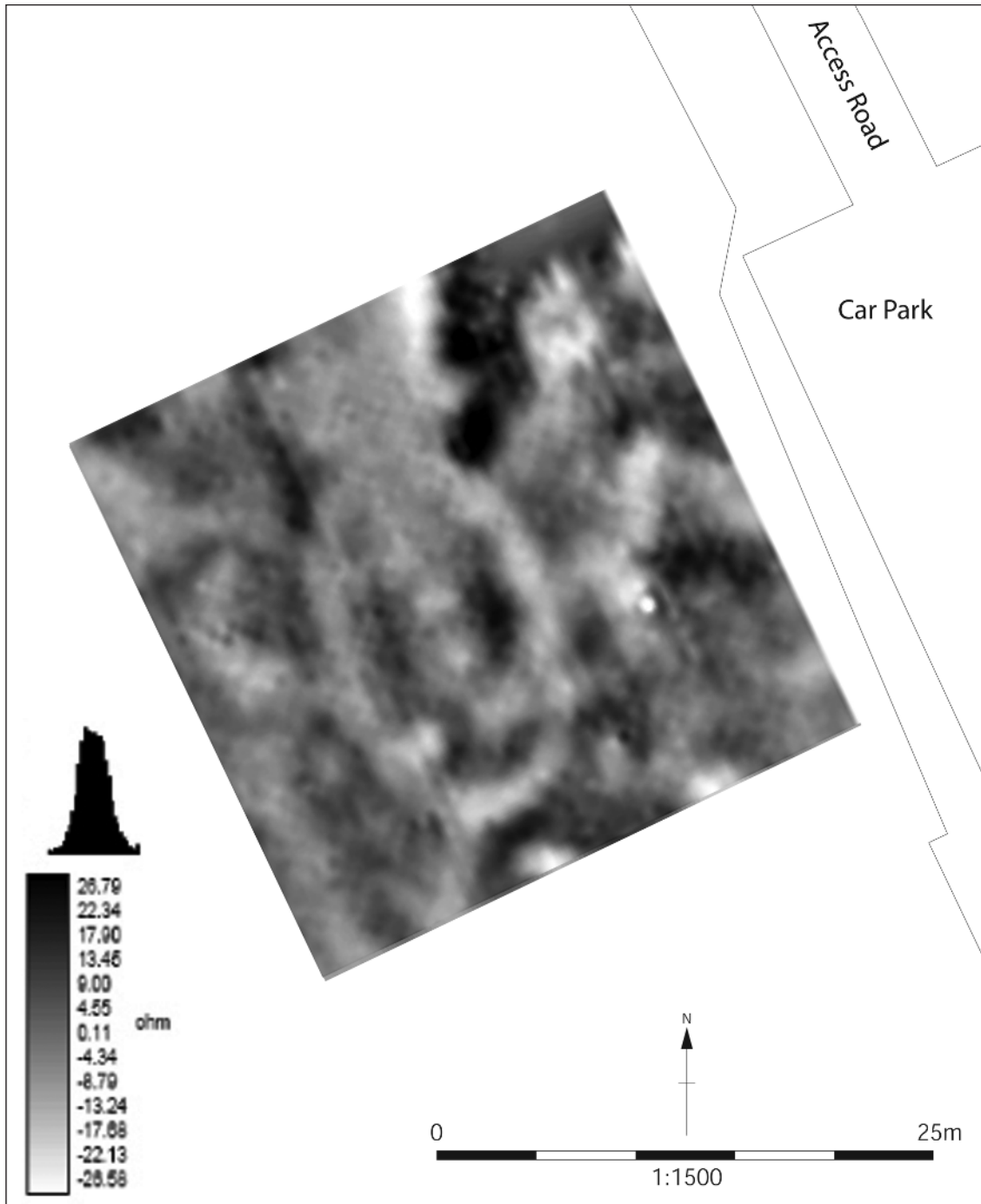


FIGURE 2 Results of the resistivity survey over the oval barrow at Dorney Reach. Data has been despiked, clipped, filtered with High Pass Filter to emphasise the archaeological anomalies and smoothed for clarity.

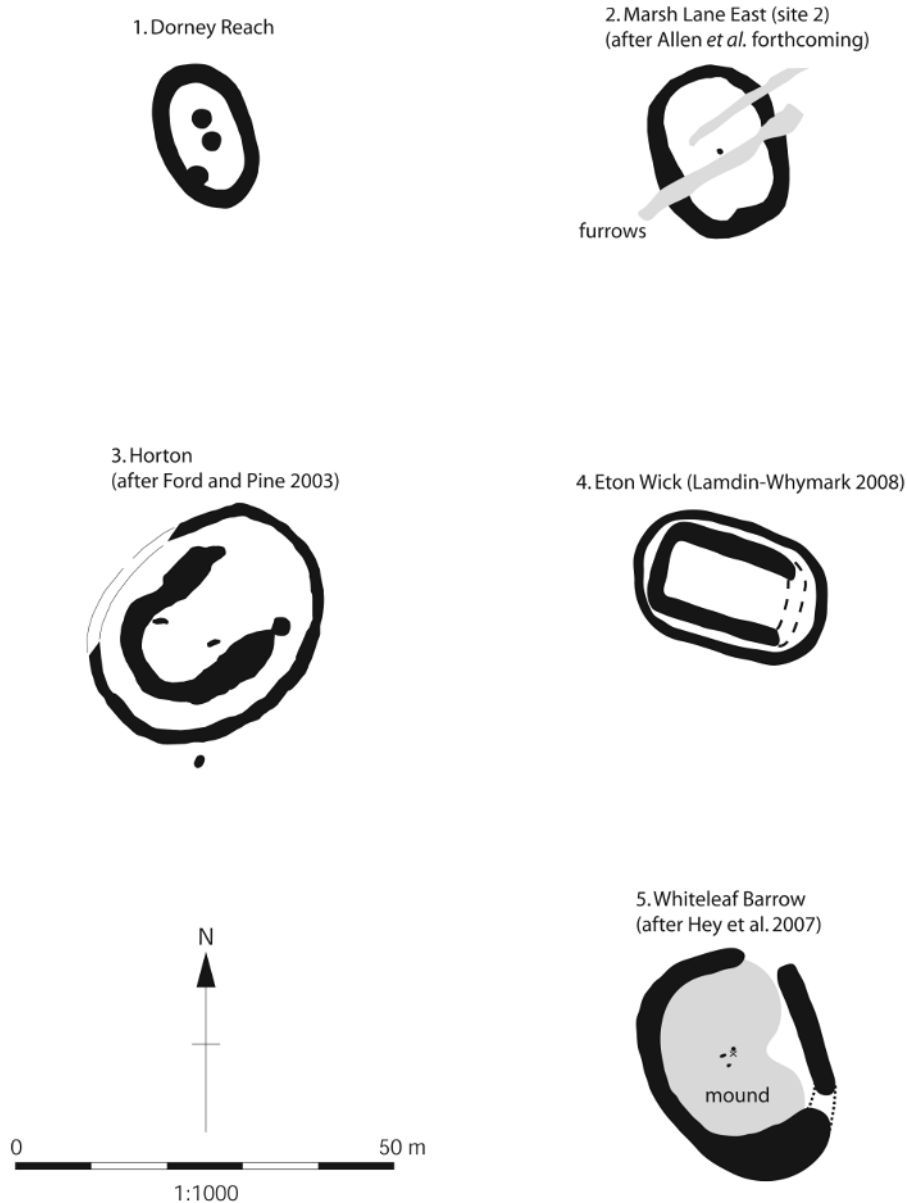


FIGURE 3 Comparative plans of oval barrows in the Middle Thames Valley. 1, Dorney Reach, is plotted from the magnetic survey. 2 and 3 are re-drawn from excavation plans. 4 was plotted from an aerial photograph and 5 was re-drawn from excavation and earthwork survey plans.

barrow, on Whiteleaf Hill, Princes Risborough, does not encircle an earlier ditch, as at Horton and Eton Wick, but does demonstrate an equally elaborate history. The earliest features here were two,

opposed, oval postholes forming a split-timber mortuary structure, alongside which the body of an adult male was exhumed; this skeleton has been dated to 3695–3645 cal BC (68% probability, Hey

et al. 2007, 69). A considerable period of 70–150 years (58% probability) or 45–65 years (10% probability) elapsed before a rich deposit of Mortlake Ware pottery and flint, perhaps representing the remnants of a feast, was deposited in a low mound over the site. The chalk mound and oval ditch were constructed at a considerably later date; an antler from the mound has been dated to 3370–3100 cal BC (95% probability: Hey *et al.* 2007).

Evidence from the excavated barrows and cropmarks demonstrates that these sites have different histories prior to the creation of an oval barrow and, while the split-timber mortuary structure and subsequent development at Whiteleaf is superficially the most comparable to Dorney Reach, broad similarities are apparent between all of the sites. At both Whiteleaf and Horton the earliest phases of activity are related to mortuary practice. At Whiteleaf, this involved the excarnation of a single adult male, while at Horton disarticulated cranial fragments and a calcaneum of two or three individuals were present in discrete groups alongside Plain Bowl pottery and flint from the U-shaped ditch. The sites at Dorney Reach, Marsh Lane East, Eton Wick and Horton are also located close to causewayed enclosures, which also had a mortuary function. Causewayed enclosures first appear around 3700 cal BC and continue until *c.* 3300 cal BC (Oswald *et al.* 2001), so the mortuary activity undertaken at the enclosures and the oval barrows is broadly contemporary. The close spatial relationship of both kinds of site indicates that activities at these sites were related, perhaps reflecting the circulation of human remains in the landscape. It is also significant that these sites are located close to the River Thames, as the river also represents a focus for the deposition of human remains in the Neolithic (Allen *et al.* 2000; Lamdin-Whymark 2008).

At Horton and Whiteleaf Hill, a considerable period of time elapsed between the earlier Neolithic mortuary activity and construction of the oval barrows in the middle Neolithic. This was a period of considerable social change; causewayed enclosures fell out of use and arguably these small related mortuary sites also became redundant. The earlier sites, however, remained important places in the landscape and were frequented. Sherds of middle Neolithic Peterborough Ware were, for instance, recovered from the upper fills of the causewayed enclosure ditches at Staines and Eton

Wick (Robertson-Mackay *et al.* 1987; Ford 1991–1993). At Whiteleaf Hill, the later deposit was more dramatic, taking the form of a midden-like mound, and may indicate that an episode of feasting took place here. Ultimately, at both Whiteleaf and Horton, substantial oval ditches were excavated and mounds raised over the earlier phases of activity. At Horton, a series of deposits were placed on the base of the newly excavated ditch which due to remarkable waterlogged preservation includes a wooden staff and offerings in birch bark containers, as well as, antlers, flints and a fragmentary Ebbsfleet Ware vessel. Radiocarbon dating of these deposits indicates this ditch was cut around 3315–2920 cal BC (Ford and Pine 2003), which compares well to the date of 3370–3100 cal BC on an antler from the Whiteleaf chalk mound.

The midden at Whiteleaf and the artefacts in the ditch at Horton were formally deposited, and contain animal species that may reference and venerate the earlier mortuary activities. The jaws of a large *c.* 1 m long pike, perhaps originally representing an entire fish head, were placed in the ditch at Horton, while the midden at Whiteleaf included a beaver incisor and two bird bones. These species are all rare in Neolithic contexts and do not appear to have been commonly consumed (Pollard 2006). The two former species reference the river, a context that was a focus for the deposition of human remains in the Neolithic. The funerary associations of fish are further demonstrated by the recovery of a pike bone from a middle Neolithic flat grave at Dorney Lake (Allen *et al.* 2000). In contrast, the bird bones reference the sky. The inclusion of animals that inhabit rivers and the sky may be of cosmological significance as both realms are liminal to living people and the species which inhabit these realms may be associated with other worlds and the dead. Feathers and fur may also have been employed in ritual and ceremonial clothing.

The act of cutting a ditch around the area of earlier activity and encasing it within a mound effectively closes the site to further use (Ford and Pine 2003). This act of closure is part of a wider realignment of belief systems in the middle and later Neolithic. In the Middle Thames Valley, oval barrows are among the last monuments constructed in the Neolithic; henge monuments and the substantial timber and stone constructions that dominate Wessex are entirely absent. For the

Middle Thames Valley during the middle and later Neolithic, the natural landscape becomes the focus of ritual and the River Thames becomes central to the deposition of valued artefacts and human remains, establishing a tradition that extends throughout prehistory (Bradley 1998, 2000; Bradley and Gordon 1988; Lamdin-Whymark 2008).

The excavations at Horton and Whiteleaf Hill provide good reason to suggest that the Dorney Reach oval barrow may have had a long and elaborate sequence of construction and use, but only excavation would clarify the specific sequence and character of this monument. The geophysical survey proved an extremely useful exercise in clarifying the morphology of the monument and similar investigation of the Dorney Reach and Eton Wick causewayed enclosures, and the Eton Wick oval barrow, would be of further benefit in the study of the Neolithic landscape along this stretch of the Thames.

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